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Drug- and Alcohol-Facilitated, Incapacitated, and Forcible Rape in Relation to Mental Health among a National Sample of Women

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Abstract

Objective—Rape is a well-established risk factor for mental health disorders such as posttraumatic stress disorder (PTSD) and depression. However, most studies have focused on forcible rape tactics and have not distinguished these from tactics that involve drug or alcohol intoxication. Our aim was to examine correlates of PTSD and depression in a community sample of women, with particular emphasis on evaluating the unique effects of lifetime exposure to three specific rape tactics.

Methods—A nationally representative sample of 3,001 non-institutionalized, civilian, English or Spanish speaking women (aged 18–86 years) participated in a structured telephone interview by use of Computer-Assisted Telephone Interviewing technology.

Results—Multivariable models showed that history of drug or alcohol facilitated rape tactics (OR = 1.87, $p < .05$) and history of forcible rape tactics (OR = 3.46, $p < .001$) were associated with PTSD. History of forcible rape was associated with depression (OR = 3.65, $p < .001$). Forcible rape tactics were associated with a number of factors that may have contributed to their stronger association with mental health outcomes, including force, injury, lower income, revictimization history, and labeling the event as rape.

Conclusions—Our results underscore the importance of using a behaviorally specific assessment of rape history, as rape tactic and multiple rape history differentially predicted psychopathology outcomes. The association between drug or alcohol facilitated rape tactics and PTSD suggests that these are important rape tactics to include in assessments and future studies.

Keywords

Rape; PTSD; Depression; Rape tactics; Substance use

Introduction

The lifetime prevalence of rape among national samples of women ranges from 12% to 18% of women (Kilpatrick, Edmunds, & Seymour, 1992; Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007; Tjaden & Thoennes, 2006). Sexual assault has significant implications for mental and physical health, as well as social and occupational functioning. Rape is a risk factor for depression, posttraumatic stress disorder (PTSD), social adjustment problems, chronic health problems, and lost productivity (Golding, 1999; Resick, 1993; Tjaden & Thoennes, 2006).

Rape has typically been defined as vaginal, anal, or oral sexual intercourse obtained through force or threat of force. Many legal statutes also define rape as unwanted intercourse that occurs through lack of consent, including inability to give consent due to intoxication. However, most studies have focused on rapes perpetrated through force/threat of force and have failed to distinguish this rape tactic from tactics that involve intoxication. When studies have included substance-involved rape, they have not differentiated between incidents in which the victim was unknowingly administered a drug by an assailant versus incidents in which the victim's voluntary use of substances led to incapacitation. Thus, little is known about the mental health correlates of substance-involved rape tactics, or how they may contribute to psychiatric outcomes beyond the effects of force. Understanding these differences could have significant impact on clinical and public health interventions in terms of tailoring prevention and treatment approaches to different populations of rape victims.

Several studies have examined incident and victim characteristics to help elucidate the relations between sexual assault and risk for psychiatric symptoms. Incident characteristics that predict poor mental health outcomes among sexual assault and crime victims include physical force, injury, and perceived life threat (Kilpatrick et al., 1989; Resnick et al., 1993; Ullman, Filipas, Townsend, & Starzynski, 2007). Victim characteristics that predict worse post-assault mental health functioning include prior trauma history, history of psychopathology, and self-blame (e.g., Koss & Figuerdo, 2004; Ullman et al., 2007). To date, research has not examined the associations between rape tactics, specifically substance-involved rape, and mental health problems.

Rape experiences can be differentiated in at least three ways, depending on the nature of the incident and the tactics employed by the perpetrator. First, forcible rape (FR) refers to rape that involves force, threat of force, or injury. Second, incapacitated rape (IR) involves rape that occurs after a victim voluntarily uses drugs or alcohol, but is too intoxicated to be aware of or control her behavior. Third, drug or alcohol facilitated rape (DAFR) involves rape that occurs after a perpetrator deliberately gives the victim drugs without her permission or tries to get her drunk. Similar to IR, the victim is too intoxicated to be aware of or control her behavior (Kilpatrick et al., 2007).

Research has identified several characteristics that tend to distinguish incidents primarily involving FR from incidents primarily involving IR/DAFR, many of which are key correlates of post-rape recovery. For example, substance use problems are more prevalent among victims of IR and DAFR, in comparison to victims of FR (Abbey, BeShears, Clinton-Sherrod, & McAuslan, 2004; McCauley, Ruggiero, Resnick, Conoscenti, & Kilpatrick, in press; Testa, Livingston, Vanzile-Tamsen, & Frone, 2003; Tyler, Hoyt, & Whitbeck, 1998). Further, in a community sample of 272 single women, women whose perpetrators primarily employed force reported more forceful strategies, greater injury, greater victim resistance, and more life disruption, in comparison to women whose perpetrators primarily employed intoxication (Abbey et al., 2004). With respect to victim's relationship to the perpetrator, studies have reported that perpetrators employing IR and DAFR are less likely to be known to the victims

(Harrington & Leitenberg, 1994; Testa et al., 2003). In terms of victim characteristics, women who have experienced rapes involving substance use are more likely than other victims to report adolescent substance use, feeling less “on guard” during the rape, and feeling responsible for what happened (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2001; Testa et al., 2003). Whereas prior substance use has emerged as a unique predictor of IR/DAFR, history of child sexual abuse, older age, sexually permissive attitudes, and low self-esteem have emerged as predictors of FR experiences (Testa et al., 2003; Tyler et al., 1998). Although these studies highlight the importance of differentiating substance-involved rape tactics from forcible rape tactics, they did not examine potential differences between IR and DAFR specifically, and did not examine differences in mental health outcomes across rape tactics. Furthermore, no studies have examined the relation between substance-involved rape tactics and mental health outcomes such as PTSD and depression, no analyses have examined relevant incident characteristics within the context of multivariable models, and no data thus far have been obtained from nationally representative samples.

Because several incident and victim characteristics have been differentially associated with mental health outcomes (e.g., injury, life threat, self-blame), it would be reasonable to expect that the different incident and victim characteristics associated with FR, IR, and DAFR would result in diverse mental health trajectories. The purpose of this study was to determine whether FR, IR, and DAFR differed in relation to mental health outcomes commonly associated with rape experiences (PTSD and depression). We also wished to explore the potential associations between substance-involved rape tactics and mental health symptoms. We controlled relevant risk and demographic factors (e.g., age, racial/ethnic status, income, rape history) to better differentiate the unique effects of each rape tactic. It was expected that FR would be a stronger predictor of mental health outcomes than IR and DAFR, due to its likelihood of involving more force and injury, as well as the probability of involving victims with prior sexual abuse history and poor self-esteem. It was expected that IR and DAFR would demonstrate weaker, yet significant associations with PTSD and depression. We also wished to examine the utility of differentiating IR from DAFR. While DAFR involves elements of IR and is often preceded by voluntary substance use, DAFR is unique in that the victim perceives that she has been administered a drug by a perpetrator with the express purpose of making her unable to consent or control the situation. Victims of DAFR may have experienced different levels of intoxication, perceived a greater degree of coercion, and made different attributions of responsibility for the rape. All of these factors could contribute to differential effects on mental health. A secondary purpose of the study was to explore incident characteristics that might account for any differential effects observed across rape tactics.

Method

Participants

Data from this study came from the “National Women’s Study-Replication.” The sample of 3,001 women was formed from two U.S. population samples: a national cross-section of 1,998 women aged 18 to 34, plus a cross-section of 998 women aged 35 and older, and 5 women who refused to provide their age. Weights were created and used for all analyses with this sample to maximize representativeness by bringing the distribution of sample demographics in line with 2005 U.S. Census figures. The resulting sample consisted of 3,001 women (aged 18 to 76 years), with a mean age of 46.58 ± 17.87 . We used random-digit-dial (RDD) methodology with a sample that was geographically stratified with sample allocation proportionate to population distribution. A sample of assigned telephone banks was randomly selected from an enumeration of the Working Residential Hundreds Block (defined as each block of 100 potential telephone numbers with an exchange that includes one or more residential listings). All interviews were conducted between January 23 and June 26, 2006.

Measures¹

Demographic Information—Women were asked to report their current age (at time of interview), ethnicity, and estimated personal yearly income.

Mental Health—Lifetime PTSD and major depressive episode (MDE) were assessed with the National Women's Study (NWS) PTSD and major depressive episode modules, structured interviews based on *Diagnostic and Statistical Manual of Mental Disorders* (APA, 1994) criteria (Acierno, Resnick, Kilpatrick, Saunders, & Best, 1997; Ruggiero et al., 2004). Research on the NWS-PTSD has provided support for concurrent validity and several forms of reliability (e.g., temporal stability, internal consistency, diagnostic reliability) (Kilpatrick et al., 2003; Resnick et al., 1993). The MDE module assessed hallmark symptoms of depression, including persistent feelings of sadness as well as loss of interest or pleasure. Support for internal consistency and convergent validity exist (Kilpatrick et al., 2003). Functional impairment was also assessed as part of the PTSD and MDE modules.

Rape Experiences—We assessed women's most recent and, for women with multiple rapes, first incident of rape. Rape was defined as penetration of the victim's vagina, mouth or rectum without consent. Questions were closed-ended and behaviorally specific. Women were asked:

1. Has a man or boy ever made you have sex by using force or threatening to harm you or someone close to you? Just so there is no mistake, by having sex, we mean putting a penis in your vagina.
2. Has anyone, male or female, ever made you have oral sex by force or threatening to harm you? So there is no mistake, by oral sex, we mean that a man or boy put his penis in your mouth or someone penetrated your vagina or anus with their mouth or tongue?
3. Has anyone ever made you have anal sex by force or threatening to harm you? By anal sex we mean putting their penis in your anus or rectum.
4. Has anyone ever put fingers or objects in your vagina or anus against your will by using force or threatening to harm you?
5. Has anyone ever had sex with you when you didn't want to after you drank so much alcohol that you were very high, drunk, or passed out? By having sex, we mean that a man or boy put his penis in your vagina, anus, or your mouth?
6. Has anyone ever had sex with you when you didn't want to after they gave you, or you had taken enough drugs to make you very high, intoxicated, or passed out? By having sex we mean that a man or boy put his penis in your vagina, anus, or your mouth?

Women endorsing a rape experience were then asked follow-up questions to distinguish between IR and DAFR characteristics:

1. When this happened, did the incident involve only alcohol use on our part, only drug use on your part, or some use of both alcohol and drugs?
2. When this incident happened, did you drink the alcohol (take the drugs) because you wanted to, did the person(s) who had sex with you deliberately try to get you drunk (give you drugs without your permission), or both?
3. When this incident happened were you passed out from drinking or taking drugs?

¹Interview measures are available upon request.

4. When this incident happened were you awake but too drunk or high to know what you were doing or control your behavior?

Cases were defined as FR if the perpetrator used force or threat of force. The key element of IR was that the victim perceived the perpetrator to have raped her when she was intoxicated and impaired via voluntary intake of drugs or alcohol by the victim. In contrast, the key element of DAFR was that the perpetrator was perceived by the victim as having deliberately attempted to produce incapacitation by administering drugs or alcohol to the victim. In both DAFR and IR cases, the victim was unable to consent to sexual intercourse due to incapacitation (e.g., lack of consciousness/awareness or ability to control behavior).

Classification of individuals into rape tactic categories was based on history of each type of rape tactic; classification was non-mutually exclusive. For example, women who reported a history of FR as their most recent incident but also reported a “first incident” that met criteria for DAFR were considered to have a history of both FR and DAFR. Women who reported elements of more than one rape tactic as part of the same incident were classified as having a history of experiencing each rape tactic for which they met criteria. The exception to this was that those meeting criteria for DAFR were not also classified as meeting criteria for IR for the same incident. Although 78% of DAFR incidents also involved voluntary substance use, the involuntary element of incapacitation in cases of DAFR was of interest to the study; therefore, these cases were classified as DAFR and differentiated from tactics that solely involved IR. Women who reported both a most recent incident and a first incident qualified for having multiple victimizations. A majority of DAFR cases also qualified as FR cases, and a significant minority of IR cases qualified as FR cases. Less than 10% of FR cases involved either IR or DAFR elements.

Rape Incident Characteristics—Several rape incident characteristics were assessed among women endorsing a rape experience, including whether they knew the perpetrator, peritraumatic fear, injury, use of force by the perpetrator, victim’s memory for the rape event, and whether the victim labeled the incident as a rape. Because some women reported multiple incidents, only data from the most recent/only incident were used to define these variables for the purposes of this study. Relationship to perpetrator was assessed by asking women if they “knew the (perpetrator) fairly well or not.” Peritraumatic fear was assessed by asking women if they were “afraid (they) might be killed or seriously injured.” Injury was assessed by asking if women suffered “serious physical injuries, minor physical injuries, or no physical injuries as a result of the incident.” Both serious and minor injuries were included as affirmative responses to injury, which was operationalized as a dichotomous variable. Use of force was assessed by asking women if they were “physically forced to engage in” reported sex acts. Memory of the event was assessed by asking women “how well do you remember the details of what happened in this incident.” Women reporting remembering “extremely well” and “very well” were coded as remembering the event well, whereas women reporting remembering the event “not so well” and “not well at all” were coded as not remembering the event well. Finally, acknowledgement of the event as a rape was assessed by asking if victims would describe the incident as a “rape,” “some type of crime but not a rape,” or an “unpleasant incident but not a crime.”

Procedure

Women were interviewed using a computer-assisted telephone interviewing (CATI) system. Only experienced female interviewers were involved in survey procedures. English and Spanish versions of the interview were developed; the version administered was based on respondent language preference. After determining that the residence contained one or more women eligible for the study, the interviewer introduced the study and provided a toll-free telephone number to confirm authenticity of the study. When a residence had more than one

woman who met study criteria, the woman with the most recent birthday was selected. After a complete description of the study was provided, oral consent was obtained. Completed interviews averaged 20 minutes. This study was approved by the Institutional Review Board at a major medical university.

Statistical Analyses

Separate logistic regression analyses were conducted for PTSD and MDE to identify if variables (age, racial/ethnic status, income, marital status, history of FR, history of IR, history of DAFR, number of rapes) were associated with the outcome. To help explicate these findings, post hoc analyses were conducted within the subsample of women who had a rape history. Two logistic regressions were performed (one for each outcome) to determine if rape characteristics (known perpetrator, fear of death, injury as a result of the assault, use of force, remembering the event well) were related to psychopathology. Correlations among study variables were also examined. SUDAAN (version 10.0) was used for all regression analyses to account for complex survey design and sample weighting.

Results

Among the full sample, 16.8% ($n=505$) of women met criteria for lifetime PTSD and 12.8% ($n=383$) met criteria for lifetime MDE. Three percent of women reported a history of IR ($n = 91$), 2% reported history of DAFR ($n = 69$), and 15% reported history of FR ($n = 439$).

PTSD

Results from the PTSD regression are displayed in Table 1. Low income was associated with increased likelihood of PTSD. Both DAFR ($OR=1.87$ vs. no DAFR history) and FR ($OR=3.46$ vs. no FR history) were associated with increased likelihood of PTSD, whereas IR and multiple rape history were not predictive of PTSD. A statistical comparison of odds ratios revealed that the risk of PTSD was significantly higher for FR, in comparison to IR ($z = -2.89, p < .01$). The odds ratio for DAFR did not significantly differ from FR or IR.

MDE

Age, income, and marital status were significant predictors of lifetime MDE, as displayed in Table 2. Women with a history of multiple rapes were at increased risk for MDE ($OR=1.78$ vs. single or no rape history). Among the rape tactic variables, only FR was related to increased risk of MDE ($OR=3.65$ vs. no FR history). A statistical comparison of odds ratios indicated that FR was associated with a significantly greater risk for MDE in comparison to IR ($z = -3.05, p < .01$) and DAFR ($z = -2.89, p < .01$).

Secondary Analyses among Rape Victims and Correlations among Study Variables

Given the associations between rape experiences and psychopathology, exploratory analyses in the subsample of rape victims ($n=556$) were conducted to determine if incident characteristics (i.e., known perpetrator, peritraumatic fear, injury, use of force, memory of the event, acknowledgement) were predictive of PTSD and MDE. As shown in Table 3, for PTSD, remembering the event well was associated with decreased risk ($OR=.46; p=.05$), and labeling the event as a crime or a rape was associated with increased risk ($OR = 3.53; OR = 3.12$, respectively; $p = .04$). In the MDE analysis, having an injury resulting from the rape was marginally associated with increased risk for the disorder ($OR=1.81, p = .06$). Acknowledging the event as a crime or a rape also resulted in a marginally significant increased risk for MDE ($OR = 2.62; OR = 2.90$, respectively; $p = .07$).

Correlations among study variables indicated significant overlap among rape tactics (Table 4). History of FR was negatively associated with income ($r = -.08, p < .001$) and strongly associated with multiple rape history ($r = .61, p < .001$). Correlations between rape tactics for the most recent incident and incident characteristics were also examined (Table 5). FR was positively associated with fear ($r = .46, p < .001$), injury ($r = .41, p < .001$), force ($r = .86, p < .001$), remembering the event well ($r = .40, p < .001$), and acknowledging the event as a crime or rape ($r = .40, p < .001$). IR was negatively related to knowing the perpetrator ($r = -.17, p < .001$), fear ($r = -.25, p < .001$), injury ($r = -.14, p < .001$), force ($r = -.40, p < .001$), remembering the event well ($r = -.35, p < .001$), and acknowledgement ($r = -.17, p < .001$). DAFR was also negatively related to knowing the perpetrator ($r = -.13, p < .001$), fear ($r = -.15, p < .001$), force ($r = -.20, p < .001$), remembering the event well ($r = -.27, p < .001$), and acknowledgement ($r = -.11, p < .01$).

Discussion

The current study examined relations between different rape tactics (forcible, incapacitated, and drug and alcohol-facilitated rape) and mental health outcomes. As expected, FR demonstrated significant positive relations with PTSD and MDE and emerged as the strongest predictor of these outcomes. Women who reported FR were over three times as likely as non-victims to meet lifetime criteria for both psychiatric disorders, even while accounting for other rape experiences and revictimization history. FR was associated with significantly higher risk for PTSD and MDE than IR, and significantly higher risk for MDE than DAFR and IR. Therefore, rape tactics did appear to differ in relation to these two common rape-related mental health outcomes. Additionally, this was the first study to look at DAFR and IR with respect to mental health correlates. Women reporting a history of DAFR were almost twice as likely as non-victims to meet criteria for PTSD. However, neither form of substance-involved rape emerged as a significant predictor of MDE.

It is likely that FR tactics demonstrated a stronger relationship with PTSD and MDE than substance-involved tactics due to several incident and victim characteristics associated with this type of encounter. First, FR was related to increased likelihood of reporting force, injury, and peritraumatic fear. Literature has indicated a positive relation between physical force, injury, fear, and mental health symptoms among sexual assault and crime victims (e.g., Kilpatrick et al., 1989; Resnick et al., 1993). However, force, injury, and fear did not emerge as significant predictors of mental health outcomes when analyzed in a multivariate model that included several incident characteristics. This may have been due to overlap with other variables in the model, or to the fact that we were only able to focus on characteristics from the most recent incident. Future studies should consider whether victims have experienced force, injury, or fear during any prior incidents.

FR was associated with many additional incident and victim characteristics that were significantly related to mental health outcomes in this study. FR was positively correlated with acknowledgement (labeling the event as a crime or rape), a factor that was associated with greater than three times the likelihood of reporting PTSD. Acknowledgement has been associated with PTSD and negative post-assault reactions in prior studies, although these studies did not control for correlates such as force and injury (Kahn, Jackson, Jolly, Badger, & Halvorsen, 2003; Layman, Gidycz, & Lynn, 1996). In contrast to FR, IR and DAFR were negatively related to acknowledgement. It is possible that experiencing FR fits better with a common rape script in comparison to substance-involved rapes, and that labeling the event as a rape allows for negative interpretations of the event and an increased sense of stigma. In addition to acknowledgement, FR was associated with other victim characteristics that represent risk factors for poor mental health, including lower income and sexual revictimization history. Therefore, it is not surprising that FR was the rape tactic most strongly related to mental

health outcomes. However, additional research is needed to more definitively establish the roles of physical force, injury, acknowledgement, and other risk factors in the relation between FR and mental health. It should also be noted that although the odds ratio for the relation between FR and PTSD was higher than the odds ratio for DAFR and PTSD, these differences were not statistically significant. Therefore, similarities and differences between FR and DAFR deserve further investigation.

Interestingly, remembering the event well was associated with decreased risk of PTSD. FR was positively correlated with event memory, whereas IR and DAFR were negatively correlated with memory. Trauma theorists have proposed that disrupted and disorganized processing of traumatic memories increases the likelihood of subsequent symptomatology, and this has been supported in studies of assault survivors (e.g., Ehlers & Clark, 2000; Halligan, Michael, Clark, & Ehlers, 2003). For those experiencing IR and DAFR, memory deficits may also be disturbing because the individuals are aware that elements of the assault may have occurred that were outside of their conscious awareness. This lack of control may be frightening to victims. It is possible that the pathways through which FR and DAFR lead to PTSD differ, and that disrupted memory for the event represents one avenue through which DAFR was related to PTSD in the current study. However, further research using more thorough assessments of assault memories are necessary to explore this possibility.

DAFR differed from IR in that it was significantly associated with PTSD, whereas IR was not associated with either PTSD or MDE. It is possible that victims of IR (which involved voluntary substance use) perceived that they had greater control over the event or a higher level of consent than victims of DAFR (which involved perception of perpetrator administration of substances as a strategy). It has been theorized that perceived uncontrollability of an aversive event plays an important role in the development of PTSD (Foa, Zinbarg, & Olasov-Rothbaum, 1992), and research has demonstrated that diminished perception of control is associated with greater PTSD symptom severity following adult sexual victimization (Bolstad & Zinbarg, 1997).

In general, there were no statistically significant differences between IR and DAFR, indicating that there may be more similarities than differences between these two types of rape tactics. IR and DAFR also demonstrated several similarities in regards to incident characteristics, including significant negative correlations with knowing the perpetrator, peritraumatic fear, memory of the event, and rape acknowledgement. Inherent difficulties in differentiating DAFR from IR tactics may have contributed to the inability to detect differences between these rape strategies. For example, the majority of DAFR incidents involved some level of voluntary substance use. Furthermore, in cases of alcohol use, the perception that the perpetrator was “trying to get you drunk” may not have equated to the perception that substances were administered involuntarily. In addition, impaired memory and reliance on victims’ perceptions of perpetrator intentions pose barriers to accurate reporting, measurement, and classification of these incidents. Future studies should consider improving measurement of DAFR (e.g., surveying additional witnesses, assessing perceived voluntariness of substance use), or combining DAFR and IR incidents when assessing their impact on psychiatric outcomes.

Although DAFR and IR were not strong predictors of MDE and PTSD after controlling for history of forcible rape, it is likely that these rape tactics may be stronger predictors of other psychiatric disorders, such as substance abuse and dependence. In fact, studies have demonstrated that victims of substance-involved rapes are more likely than other rape victims to report current and past substance use (Abbey et al., 2004; Abbey et al., 2001; McCauley et al., in press; Testa et al., 2003). Therefore, it does appear that victims of rapes involving different tactics, due to the varying nature of these experiences, may suffer from different psychiatric outcomes.

While the current study offers unique information on the mental health correlates of three variant rape tactics while controlling for history of exposure to the other tactics, several limitations should be noted. First, potential recall biases associated with retrospective, self-report methodology may have impacted participants' reports. The cross-sectional design of the investigation prohibited the careful study of the temporal relations among variables. Additionally, given that we measured lifetime mental health diagnoses and did not specifically link PTSD diagnosis with women's rape experience(s), we cannot draw definitive conclusions about the degree to which other potentially traumatic events were significant contributors. The use of telephone interviews excluded women who resided in homes without telephones, institutionalized women, and homeless women. However, it should be noted that relatively few women comprise these groups. The use of non-mutually exclusive categorizations of rape incidents allowed us to more accurately reflect that specific rape incidents often involve the use of more than one rape tactic and allowed us to avoid losing ecological validity by creating false delineations between rape tactics. However, future studies could extend these findings by comparing mutually exclusive categories of rape victims (e.g., IR only, IR/FR, DAFR/FR). Finally, due to the extensive costs associated with conducting large-scale epidemiologic phone surveys, we could not assess for all incidents of rape and are therefore limited to information on women's first and most recent rape incidents. Research that documents the full lifetime history of rape experiences by tactic may potentially elucidate unique contributions that various combinations of life events may make to mental health outcomes.

The findings of the current study have significant clinical implications. These results suggest that it could be beneficial for clinicians to employ behaviorally specific measures that assess for different rape tactics among rape survivors. While many assessments focus on FR or do not distinguish between rape tactics, our findings imply that including assessments of both FR and DAFR could help in identifying women at risk for adverse mental health outcomes. It is possible that these assessments could assist in tailoring treatment to different groups of women. However, the overlap among FR, DAFR, and IR suggests that, in practice, women reporting these different tactics may require comparable interventions.

In sum, this study provides initial evidence that differentiating the rape tactics employed during victimization episodes can provide important information about a woman's risk for developing different types of mental health symptoms. In particular, including an assessment of both FR and DAFR may be important in identifying and treating women at risk for PTSD and MDE. These findings await replication using longitudinal designs. Our study suggests that future research should explore the mechanisms, such as acknowledgement, memory, and perceived control, which link different tactics to various mental health outcomes. Finally, the effectiveness of tailoring treatment based on different rape experiences represents an important avenue for further investigation.

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References

- Abbey A, BeShears R, Clinton-Sherrod AM, McAuslan P. Similarities and differences in women's sexual assault experiences based on tactics used by the perpetrator. *Psychology of Women Quarterly* 2004;28:323–332.
- Abbey A, Zawacki T, Buck PO, Clinton AM, McAuslan P. Alcohol and sexual assault. *Alcohol, Research, & Health* 2001;25:43–51. [PubMed: 11496965]

- Acierno R, Resnick H, Kilpatrick DG, Saunders B, Best CL. Risk factors for rape, physical assault, and posttraumatic stress disorder in women: Examination of differential multivariate relationships. *Journal of Anxiety Disorders* 1999;13(6):541–563. [PubMed: 10688523]
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. Fourth Edition. Washington, D.C: 1994.
- Arata C. Repeated sexual victimization and mental disorders in women. *Journal of Child Sexual Abuse* 1999;7:1–17.
- Banyard VL, Williams LM, Siegel JA. The long-term mental health consequences of child sexual abuse: An exploratory study of the impact of multiple traumas in a sample of women. *Journal of Traumatic Stress* 2001;14:697–715. [PubMed: 11776418]
- Bolstad B, Zinbarg R. Sexual victimization, generalized perception of control, and posttraumatic stress disorder symptom severity. *Journal of Anxiety Disorders* 1997;11:523–540. [PubMed: 9407271]
- Cloitre M, Scarvelone P, Difede J. Posttraumatic stress disorder, self- and interpersonal dysfunction among sexually revictimized women. *Journal of Traumatic Stress* 1997;10:437–452. [PubMed: 9246651]
- Ehlers A, Clark DM. A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy* 2000;38:319–345. [PubMed: 10761279]
- Elliott DM, Mok DS, Briere J. Adult sexual assault: Prevalence, symptomatology, and sex differences in the general population. *Journal of Traumatic Stress* 2004;17:203–211. [PubMed: 15253092]
- Faravelli C, Giugni A, Salvatori S, Ricca V. Psychopathology after rape. *American Journal of Psychiatry* 2004;161:1483–1485. [PubMed: 15285977]
- Foa E, Zinbarg R, Olasov-Rothbaum O. Uncontrollability and unpredictability in post-traumatic stress disorder: An animal model. *Psychological Bulletin* 1992;112:218–238. [PubMed: 1454893]
- Frazier P. Self-blame as a mediator of postrape depressive symptoms. *Journal of Social & Clinical Psychology* 1991;10:47–57.
- Golding J. Sexual assault history and long-term physical health problems: Evidence from clinical population epidemiology. *Current Directions in Psychological Science* 1999;8:191–194.
- Halligan SL, Michael T, Clark DM, Ehlers A. Posttraumatic stress disorder following assault: The role of cognitive processing, trauma memory, and appraisals. *Journal of Consulting and Clinical Psychology* 2003;71:419–431. [PubMed: 12795567]
- Harrington NT, Leitenberg H. Relationship between alcohol consumption and victim behaviors immediately preceding sexual aggression by an acquaintance. *Violence and Victims* 1994;9:315–324. [PubMed: 7577759]
- Kahn AS, Jackson J, Kully C, Badger K, Halvorsen J. Calling it rape: Differences in experiences of women who do and do not label their sexual assault as rape. *Psychology of Women Quarterly* 2003;27:233–242.
- Kaltman S, Krupnick J, Stockton P, Hooper L, Green B. Psychological impact of types of sexual trauma among college women. *Journal of Traumatic Stress* 2005;18:547–555. [PubMed: 16281253]
- Kessler R, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry* 1995;52:1048–1060. [PubMed: 7492257]
- Kilpatrick, DG.; Edmunds, CN.; Seymour, AK. *Rape in America: A report to the nation*. Arlington, VA: National Victim Center & Medical University of South Carolina; 1992.
- Kilpatrick, DG.; Resnick, HS.; Ruggiero, KJ.; Conoscenti, LM.; McCauley, J. *Drug-facilitated, incapacitated, and forcible rape: A national study*. Charleston, SC: National Crime Victims Research & Treatment Center; 2007.
- Kilpatrick DG, Ruggiero KJ, Acierno R, Saunders BE, Resnick HS, Best CL. Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology* 2003;71(4):692–700. [PubMed: 12924674]
- Kilpatrick DG, Saunders BE, Amick-McMullan A, Best CL, Veronen L, Resnick HS. Victim and crime factors associated with the development of crime-related post-traumatic stress disorder. *Behavior Therapy* 1989;20:199–214.
- Koss M, Figuerdo AJ. Cognitive mediation of rape's mental health impact: Constructive replication of a cross-sectional model in longitudinal data. *Psychology of Women Quarterly* 2004;28:273–286.

- Layman MJ, Gidycz CA, Lynn SJ. Unacknowledged versus acknowledged rape victims: Situational factors and posttraumatic stress. *Journal of Abnormal Psychology* 1996;105:124–131. [PubMed: 8666701]
- McCauley JL, Ruggiero KJ, Resnick HS, Conoscenti LM, Kilpatrick DG. Substance abuse among college women as a function of rape experiences: Results from a national study of college women. *Addictive Behaviors*. (in press).
- Resick P. The psychological impact of rape. *Journal of Interpersonal Violence* 1993;8:223–255.
- Resnick HS, Kilpatrick DG, Dansky BS, Saunders BE, Best CL. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology* 1993;61:984–991. [PubMed: 8113499]
- Ruggiero KJ, Smith DW, Hanson RF, Resnick HS, Saunders BE, Kilpatrick DG, et al. Is disclosure of childhood rape associated with mental health outcome? Results from the National Women's Study. *Child Maltreatment* 2004;9(1):62–77. [PubMed: 14870998]
- Testa M, Livingston JA, Vanzile-Tamsen C, Frone MR. The role of women's substance use in vulnerability to forcible and incapacitated rape. *Journal of Studies on Alcohol* 2003;64:756–764. [PubMed: 14743937]
- Tjaden, P.; Thoennes, N. Extent, nature, and consequences of rape victimization: Findings from the national violence against women survey. Washington, DC: U.S. Department of Justice, National Institute of Justice; 2006.
- Tyler KA, Hoyt DR, Whitbeck LB. Coercive sexual strategies. *Violence and Victims* 1998;13:47–61. [PubMed: 9650245]
- Ullman SE, Filipas HH, Townsend SM, Starzynski LL. Psychosocial correlates of PTSD symptom severity in sexual assault survivors. *Journal of Traumatic Stress* 2007;20:821–831. [PubMed: 17955534]
- World Health Organization. *World Health Report 2001: Mental health—New understanding, new hope*. Geneva, Switzerland: World Health Organization; 2001.

Table 1

Logistic Regression Results: Predictors of PTSD

Predictor	OR	95% CI	p-value
Age			
18–24	1.00	-	.21
25–34	.94	.71–1.26	
35–44	.79	.53–1.17	
45–54	.96	.67–1.38	
55–64	.80	.37–1.75	
65 and older	.24	0.7–.76	
Race			
Caucasian	1.00	-	.41
African American	.72	.43–1.21	
Hispanic	1.28	.73–2.24	
Other	.90	.55–1.47	
Income			
<\$20,000	2.31	1.47–3.63	0.01
\$20,000–\$60,000	1.14	.82–1.61	
>\$60,000	1.00	-	
Married			
No	1.00	-	.33
Yes	.82	.56–1.22	
Multiple Rapes			
No	1.00	-	.21
Yes	1.33	.86–2.05	
History of Incapacitated Rape			
No	1.00	-	.22
Yes	1.37	.83–2.25	
History of Drug-Alcohol Facilitated Rape			
No	1.00	-	.03
Yes	1.87	1.07–3.26	
History of Forcible Rape			
No	1.00	-	<.001
Yes	3.46	2.36–5.07	

Table 2

Logistic Regression Results: Predictors of MDE

Predictor	OR	95% CI	p-value
Age			
18–24	1.00	-	.04
25–34	.88	.65–1.20	
35–44	.68	.43–1.06	
45–54	.68	.45–1.03	
55–64	.51	.21–1.25	
65 and older	.19	0.5–.73	
Race			
Caucasian	1.00	-	.71
African American	.76	.48–1.21	
Hispanic	.93	.59–1.46	
Other	.90	.47–1.69	
Income			
<\$20,000	1.71	1.09–2.66	.03
\$20,000–\$60,000	.98	.67–1.44	
>\$60,000	1.00	-	
Married			
No	1.00	-	<.01
Yes	.59	.42–.83	
Multiple Rapes			
No	1.00	-	.03
Yes	1.78	1.05–3.02	
History of Incapacitated Rape			
No	1.00	-	.32
Yes	1.30	.78–2.18	
History of Drug-Alcohol Facilitated Rape			
No	1.00	-	.37
Yes	1.30	.74–2.27	
History of Forcible Rape			
No	1.00	-	<.001
Yes	3.65	2.40–5.55	

Table 3

Logistic Regression Results: Rape Characteristics and Mental Health

Predictor	PTSD			MDE		
	OR	95% CI	p-value	OR	95% CI	p-value
Known Perpetrator						
No	1.00	-	.25	1.00	-	.10
Yes	1.62	.70–3.73		.51	.23–1.13	
Peritraumatic Fear						
No	1.00	-	.12	1.00	-	.17
Yes	1.70	.87–3.31		1.55	.83–2.91	
Injury						
No	1.00	-	.41	1.00	-	.06
Yes	1.31	.69–2.51		1.81	.97–3.36	
Force						
No	1.00	-	.99	1.00	-	.72
Yes	1.01	.40–2.55		1.15	.54–2.43	
Remember Event Well						
No	1.00	-	0.5	1.00	-	.19
Yes	.46	.22–0.99		.62	.30–1.27	
Acknowledgement						
Unpleasant Incident	1.00	-	.04	1.00	-	.07
Crime	3.53	1.26–9.90		2.62	1.05–6.54	
Rape	3.12	1.18–8.27		2.90	1.16–7.26	

Table 4

Correlations among Study Variables

	1	2	3	4	5	6	7	8	9
1. History of IR	---	.10***	.21***	.19***	-.03	-.04*	-.13***	.11***	.12***
2. History of DAFR		---	.20***	.16***	.00	-.04*	-.09***	.12***	.09***
3. History of FR			---	.61***	-.08***	-.06***	-.07***	.26***	.24***
4. Multiple Rapes				---	-.05***	-.07***	-.07***	.21***	.24***
5. Income					---	.44***	-.05*	-.12***	-.11***
6. Married						---	.05**	-.09***	-.12***
7. Age							---	-.15***	-.15***
8. PTSD								---	.54***
9. MDE									---

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

Table 5

Correlations among Rape Tactic and Rape Characteristics for Most Recent Incident

	1	2	3	4	5	6	7	8	9
1. IR	---	-.02	-.32***	-.17***	-.25***	-.14***	-.40***	-.35***	-.17***
2. DAFR		---	-.17***	-.13**	-.15***	-.07	-.20***	-.27***	-.11**
3. FR			---	.09	.46***	.41***	.86***	.41***	.40***
4. Known Perpetrator				---	.03	.04	.07	.21***	-.04
5. Peritraumatic Fear					---	.47***	.44***	.27***	.46***
6. Injury						---	.35***	.18***	.39***
7. Force							---	.36***	.43***
8. Remember Event Well								---	.24***
9. Acknowledgement									---

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