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Sexual Violence Characteristics and Postsecondary Women's Mental Health

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ABSTRACT

This study examined the mental health of postsecondary students who reported sexual violence and explored if mental health effects of depression, anxiety, stress as well as posttraumatic stress were related to the types and forms of sexual violence experienced. A sample of 924 culturally diverse female-identifying students in Ontario, Canada answered questionnaires about sexual violence experiences, mental health, and educational outcomes. The results of the study revealed that students reporting any form of sexual violence had higher scores for depression, anxiety, stress, and posttraumatic stress than students not reporting sexual violence. This study also found that the type of sexual violence experienced and the methods or tactics used were differentially associated with mental health symptoms. The results of this study highlight the importance of acknowledging the unique roles that types of sexual violence – particularly non-physical methods of coercion – have on the mental health of female postsecondary students.

Keywords: sexual violence, postsecondary women, assault characteristics

Student mental health has been an issue of increasing concern on university and college campuses over the past decade, as evidenced by numerous surveys documenting the high rates of mental health problems experienced by postsecondary students (American College Health Association [ACHA], 2016, 2019; Association for University and College Counseling Center Directors [AUCCCD], 2012; Canadian Survey on Disability, 2017 [Cloutier et al.,2018]; Centre for Innovation in Campus Mental Health, 2022). Students frequently report anxiety, depression, and relationship problems (AUCCCD, 2012), and almost one in four students report taking psychotropic medications (ACHA, 2019). These findings have only increased

during the COVID-19 pandemic (Chirikov et al., 2020; Son et al., 2020) and placed additional resource demands on many campuses.

The development of mental health problems in students is influenced by various major stressors, including experiencing and/or witnessing sexual violence. Sexual violence can include any physical or psychological sexual act committed, threatened or attempted which targets a person's sexuality, gender identity or gender expression. The prevalence of sexual violence on university campuses (Carey et al., 2018; Fedina et al., 2018) and the pressure for postsecondary institutions to address this concern (Artime & Buchholz, 2016) among an increasingly diverse student population on Canadian university campuses has led to increased efforts to understand, prevent, and respond to its effects on student mental health. This study contributes to these efforts by examining the mental health impacts of different types of sexual violence among undergraduate women attending Canadian universities.

SEXUAL VIOLENCE AND STUDENT MENTAL HEALTH

An expanding body of research exists on the deleterious psychological and physical health consequences of sexual violence among postsecondary students. Several studies document how students who experience sexual violence have an increased likelihood of presenting with symptoms of depression and anxiety (Blanco et al., 2021; Campbell et al., 2009; Carey et al., 2018; Sorokas, 2017) as well as feelings of anger, fear, confusion, and guilt (Germain, 2016). Sexual violence among postsecondary students is also associated with high levels of posttraumatic stress disorder (PTSD; Dubosc et al., 2012; Lindquist et al., 2016; Schrag & Edmond, 2018) and an increased likelihood of suicidality (Bryan et al., 2013; Stephenson et al., 2006).

Forms of Sexual Violence and Mental Health

While any sexual violence experience may be associated with adverse mental health sequela among postsecondary students, the effect of specific types of unwanted sexual behavior is less understood. Students report various forms of sexual violence, including unwanted sexual contact or touching, attempted and completed sexual assault, as well as differing coercive strategies or tactics, including verbal pressure or persuasion, physical force, physical violence, and the use of intoxication (Stermac, 2019). Previous research has examined the impact of different sexual coercion methods or tactics on post-assault perceptions and functioning among community samples and found participants who were forced to engage in vaginal, anal, or oral intercourse by physical force experienced the most negative outcomes as a result of the sexual assault (Abbey et al., 2004; Pinsky et al., 2017). These women were more likely to perceive the event as more serious, label what happened as rape, and attribute responsibility to the perpetrator, in comparison to women who were sexually assaulted using verbal coercion (Abbey et al., 2004). Similarly, in a national community sample of women, Zinzow et al. (2010) reported women with a history of rape through force, incapacitation, or drug- or alcohol were all significantly more likely to meet the criteria for PTSD and a major depressive episode than women without a history of forcible rape.

In addition to community samples, some research has examined the impact of different coercion methods on post-secondary students' functioning. In a sample of predominately white women attending an American postsecondary institution, Brown et al. (2009) compared the psychological and traumatic consequences of three different methods of coercion - incapacitation, use of force, and verbal coercion. Overall, the researchers found the traumatic impact of incapacitation was less than forcible rape but more than verbal coercion. The consequences of both forcible rape and incapacitation were found to be similar in some domains (e.g., current perceived trauma and emotional impact), yet in other domains (e.g., attributions of responsibility), the consequences of incapacitation were similar to verbal coercion (Brown et al., 2009).

Two specific methods of coercion in sexual assault perpetration - threats/use of physical force and incapacitation - were examined in a study of majority white first-year college students (Griffin & Read, 2012). The researchers found threats/use of physical force and incapacitation predicted sexual re-victimization during students' first year of college. Sexual victimization using physical force also predicted PTSD symptoms over students' first year of college, whereas sexual victimization using incapacitation did not (Griffin & Read, 2012). Research by Blanco et al. (2021) found different forms of sexual violence experienced by Spanish students (i.e., unwanted sexual contact, attempted coercion, coercion, attempted rape, or rape) were associated with differences in post-assault mental health. Students who were rape victims had the highest risk for all mental health conditions studied except suicide attempts.

The existing research examining the adverse effects of sexual violence serves as an important step in understanding the relationship between methods and forms of sexual violence and mental health outcomes following sexual assault. However, several avenues of investigation remain. While previous research supports the notion some methods of coercion used during sexual violence perpetration result in differing impacts on women's post-assault perceptions, mental health, and future risk for sexual violence, existing studies have focused more on coercion methods of physical force and incapacitation. Only a limited number of studies have examined the relationship between mental health outcomes and the use of pressure and verbal arguments in sexual violence. This is an important consideration as some women may not consider coercive behaviors such as verbal coercion and pressure as sexual violence and may not perceive the unwanted sexual behavior as severe enough to seek support or intervention. Consequently, labeling, belittling, or suppressing emotions can worsen emotional conditions and mental well-being. This aligns with the theories and ideas of emotional suppression, which suggest individuals who use suppression as a means to regulate their emotions are likely to experience heightened depression and other unfavorable emotional responses (Cameron & Overall, 2018). Additionally, a significant number of studies lack broad representation from student populations within Canada making unknown the applicability of previous research findings to the more culturally diverse student groups within some Canadian universities. Thus, it is crucial to investigate how unwanted sexual experiences, including verbal pressure, are related to the mental health of Canadian undergraduate students.

Current Study

This study examined the mental health of students who reported sexual violence and explored if mental health effects were related to the types and forms of sexual violence they experienced. Specifically, we asked if levels of depression, anxiety, and stress, as well as symptoms associated with PTSD, were related to the coercive tactics and types of sexual violence that women reported. We predicted students who experienced sexual violence using any method of coercion, including those associated with verbal pressure and arguments would report more negative mental health symptoms than students who did not experience sexual violence. More intrusive forms and methods of sexual violence, including rape and the use of physical force, would be associated with higher levels of negative symptoms of depression, anxiety, stress, and PTSD. Investigating these questions regarding sexual assault types and coercion methods among postsecondary students in Ontario, Canada, addresses some of the existing gaps in this research on student mental health outcomes.

METHODS

Participants in this study included 924 undergraduate women attending large and medium-sized universities in Ontario who were part of a larger research project on sexual violence and women's education. Of the 924 participants, 741 reported experiences of sexual violence during their enrollment in university.

All participants in this study were undergraduates who averaged 20 years of age. Demographic characteristics are presented in Table 1. Over 20% of students self-identified as a sexual minority and were significantly more likely to report experiences of sexual violence than were heterosexual women, $\chi 2$ (2, N = 934) = 17.38, $p < .001$. Almost half of the participants (47%) self-identified as racialized - predominantly as East Asian, South Asian, and Black. Nearly 10% of students who experienced sexual violence reported having disabilities (8.9% for the entire sample). The majority of participants were in years one to four of their programs; students who reported sexual violence were significantly less likely to be in their first year, $\chi 2$ (4, N = 934) = 37.64, p = .001. Most study participants (over 92%) lived off campus and attended university full-time.

Procedures

The university ethics review board approved this research. Data in this study was collected as part of a research study examining women's health and educational outcomes associated with sexual violence. Undergraduate students attending universities in Ontario, Canada, were invited to complete an online self-guided survey using Qualtrics software, a secure web-based application for online survey development, management, and administration. Study invitations were posted broadly on student interest groups and organizational websites, as well as through research study information and invitation databases. Interested participants followed an advertised link to the survey, where they were provided with additional study information, a consent form, and an online survey questionnaire about their demographics, sexual violence experiences, mental health, and educational outcome

variables. All participants were provided with a list of support services and resources they could access at any time, retain, or print for use.

Table 1: Participant Demographic Characteristics as a Percentage

Characteristics	Experienced Sexual Violence (n = 741)	No Sexual Violence (n = 182)	p Value
Age	M = 20.79 SD = 2.18	M = 20.59 SD = 3.64	
Sexual Orientation			<.001
Heterosexual	77.5	90.1	
LGBTQ	20.4	7.1	
Other	2.1	2.2	
Self-Identified Disability	9.7	8.2	
Self-Identified Racialized	47.6	46.2	
Full-time students	92.2	94.0	
Year of study			<.001
First year	17.3	37.9	
Second year	22.7	18.1	
Third year	23.6	14.8	
Fourth year	22.1	17.0	
Other	13.8	12.1	
Living situation			
Off campus	82.3	79.7	
On campus	17.7	20.3	
Relationship status			
Single	44.0	47.3	
Non-single	55.8	52.7	

Measures

Information was collected on demographics and student characteristics, which included year of study, full-time or part-time status, campus living situation, and relationship status. Participants also provided information regarding whether they self-identified as a racialized individual, a member of a sexual minority, or a person with a disability.

Sexual violence information was obtained using the abbreviated Revised Sexual Experiences Survey (Testa et al., 2010). Questions included types of sexual violence behaviors experienced as well as methods of coercion or tactics used. Methods of coercion experienced included (a) arguments and continual pressure to obtain sex, (b) threats of physical harm, (c) physical force, and (d) sexual behaviors while incapacitated or intoxicated and unable to consent. Respondents were also asked about types of sexual violence behaviors experienced, which included: 1) unwanted sexual contact (i.e., touching and kissing), 2) attempted sexual penetration (i.e., intercourse, oral and/or other penetration), and 3) completed sexual penetration (i.e.,

intercourse, oral and/or other penetration). Respondents were asked to indicate (yes/no) whether each behavior and method of coercion had occurred during their enrollment in the university. Any affirmative response indicated that the respondent had experienced sexual violence.

The Depression Anxiety and Stress Scale (DASS-21; Henry & Crawford, 2005) was used to assess distress along three dimensions, including depression, anxiety, and stress. Individuals were asked to indicate whether they experienced a described symptom over the past three months or three months following the index incident(s). Items were scored on a four-point scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time) (Cronbach's $\alpha = .950$). DASS-21 scales have high internal consistency across various settings and populations (Sinclair et al., 2011).

The Posttraumatic Stress Checklist (PCL; Weathers et al., 1993), a 17-item self-report measure reflecting DSM-IV (American Psychiatric Association, 2013) symptoms of PTSD, was used to assess symptoms of stressful life experiences. Each of the 17 items has response options based on a 5-point Likert scale ranging from 1 (not at all) to 5 (extremely), which indicates the degree to which the respondent has been bothered by that particular symptom over the past month (Cronbach's $\alpha = .951$). The psychometric properties of the PCL are stable, with a criterion validity of 0.93 on the Clinician-Administered PTSD Scale (Blanchard et al., 1996). The measure is supported as a reliable and valid brief screening instrument for PTSD.

RESULTS

Mental Health and Stress Symptoms

Group differences for the effects of sexual violence on symptoms of depression, anxiety, and general stress, as well as posttraumatic stress, are presented in Table 2. The analysis revealed that students reporting any form of sexual violence had higher scores for depression, $t(886) = 5.99$, $p < .001$, anxiety, $t(886) = 7.44$, $p < .001$, and stress, $t(886) = 8.53$, $p < .001$ as measured by the DASS-21 than students not reporting sexual violence. Analysis of PTSD symptoms also revealed a significantly higher mean PCL measure score, $t(886) = 8.45$, $p < .001$ for students reporting sexual violence than those students not reporting.

Table 2: Mean Depression, Anxiety, Stress (DASS), and PTSD (PCL) Symptom Scores for Students Reporting Sexual Violence and No Sexual Violence

	Sexual Violence	*Mean*	*SD*	*t*	*df*	*p*
Depression				5.99	866	< .001
	Yes	18.55	11.98			
	No	12.52	11.58			
Anxiety				7.42	866	< .001
	Yes	15.79	10.66			
	No	9.34	8.61			
Stress				8.53	866	< .001

	Yes	20.05	10.16			
	No	12.82	9.40			
PTSD				8.45	866	< .001
	Yes	44.80	17.05			
	No	32.94	14.56			

Note. n = 693 for sexual violence; n = 175 for no sexual violence

Mental Health and Sexual Violence Type

A series of multiple regression analyses were used to assess the effect of sexual violence type on symptoms of depression, anxiety, and stress as measured by the DASS and posttraumatic stress symptoms as measured by the PCL. Three dummy coded variables were created to represent the variable Assault Type that included: 1) unwanted sexual contact (touching, kissing), 2) attempted intercourse, oral and/or other penetration, and 3) completed intercourse, oral and/or other penetration (see Table 3).

The combination of variables predicting depression scores from assault type was statistically significant, $F(3, 893) = 24.43$, $p < .001$, and explained 7.3% of the variance (adjusted R2 value of .07). Results of the regression analysis revealed that all assault types had a significant effect on depression scores with the highest means found for completed assaults.

The assault type variable used to predict anxiety scores was also significant, $F(3, 902) = 34.97$, $p < .001$, with an adjusted R2 value of .10. All assault types had a significant effect on anxiety scores, with the highest means found for completed assaults.

The effects of sexual assault type on symptoms of general stress, $F(3, 892) = 33.95$, $p < .001$ (adjusted R2 value .10) and posttraumatic stress, $F(3, 866) = 44.16$, $p < .001$ (adjusted R2 value .13) indicated that the models explained 9.9% and 13.3% of the variance. Results of the regression analysis indicate that all assault types had a significant effect on general stress and posttraumatic scores. The highest means were found for the category of completed assaults.

Table 3: Multiple Regression Analyses Predicting Symptoms of Depression, Anxiety, Stress and Posttraumatic Stress Symptoms from Sexual Assault Type

	Type of Mental Health Difficulties											
	Depression			Anxiety			Stress			Post-Traumatic Stress		
	B	SE B	95% CI†	*B*	SE B	95% CI†	*B*	SE B	95% CI†	*B*	SE B	95% CI†
None	13.20***	0.70	[11.89, 14.56]	10.31***	0.61	[9.23, 11.42]	14.09***	0.60	[12.92, 15.29]	34.14***	0.99	[13.76, 19.37]
Unwanted Sexual Contact	3.89*	0.70	[1.64, 6.12]	3.72***	0.95	[1.82, 5.69]	4.76***	0.94	[2.77, 6.67]	8.06***	1.55	[32.36, 35.89]
Attempted Sex	5.10***	1.11	[3.05, 7.14]	5.43***	0.91	[3.80, 7.10]	5.77***	0.90	[3.98, 7.45]	10.66***	1.50	[4.90, 11.22]
Completed Sex	8.94***	1.06	[6.91, 10.92]	9.11***	0.90	[7.35, 10.80]	8.79***	0.90	[7.11, 10.47]	16.54***	1.47	[8.00, 13.40]

Note. For Depression Adjusted $R^2 = .07$; $F(3, 893) = 24.43$, $p < .001$; for Anxiety Adjusted $R^2 = .10$; $F(3, 902) = 34.97$, $p < .001$; for Stress Adjusted $R^2 = .10$; $F(3, 892) = 33.95$, $p < .001$; for Posttraumatic Stress Adjusted $R^2 = .13$; $F(3, 866) = 44.16$, $p < .001$; *** $p < .001$; †95% Confidence Intervals with 5000 bootstrap samples for regression coefficients.

Mental Health and Methods of Coercion

Multiple regression analyses investigated the effect of the sexual coercion method on mental health symptoms. The coercion method included categories of 1) being overwhelmed (with arguments and continual pressure), 2) use of threats, 3) use of physical force, and 4) incapacitation (use of alcohol or drugs). Given the low frequency in the threats category (n = 20), a combined threats and physical force category was made before creating contrast variables for use in the multiple regression analysis. Three dummy coded variables were created to represent the categories of sexual coercion, i.e., overwhelmed, threat/physical, and incapacitated (see Table 4).

The multiple regression analysis investigating the effect of the sexual coercion method on symptoms of depression was significant, $F(3, 893) = 20.69$, $p < .001$ with an adjusted R2 value of .06. The mean depression scores for the coercion methods reveal that the use of threats/physical forces and incapacitation had the most significant impact on depression scores and did not differ from each other. Similarly, the effect of coercion methods on symptoms of anxiety was also significant, $F(3, 903) = 25.78$, $p < .001$, with an adjusted R2 value of .08. The use of threats/physical force and incapacitation had the most and similar effects on anxiety scores.

The combination of variables used to predict stress scores was statistically significant, $F(3, 893) = 34.16$, $p < .001$, with an adjusted R2 value of .10. The use of threats/physical force and incapacitation had the most effect on general stress scores. Similarly, the use of threats/physical force and incapacitation had the most and similar effects on posttraumatic stress scores, $F(3, 867) = 39.08$, $p < .001$ with an adjusted R2 value of .12.

DISCUSSION

Accumulating evidence in recent years has revealed the mental health consequences of sexual violence for women enrolled in postsecondary institutions. While existing research and clinical information document the overall negative impact of sexual violence on student mental health, less is known about the effect of specific methods and types of sexual violence on health symptoms and, in particular, the effect of methods of non-physical sexual coercion involving the use of pressure or verbal arguments. As well, few studies have examined this among Canadian student populations. In light of this, the current study addressed this limitation. It examined the relationship between sexual violence and mental health among a large group of culturally diverse Canadian postsecondary women. Specifically, it investigated whether the types of sexual assault and methods of coercion used in sexual violence perpetration were differentially associated with mental health.

Students in the present study who experienced sexual violence reported significantly more symptoms of depression, anxiety, general stress, and posttraumatic stress overall compared to students who did not report sexual violence. These findings

Table 4: Multiple Regression Analyses Predicting Symptoms of Depression, Anxiety, Stress and Posttraumatic Stress Symptoms from Coercion Method

	Type of Mental Health Difficulties											
	Depression			Anxiety			Stress			Post-Traumatic Stress		
	B	SE B	95% CI†	*B*	SE B	95% CI†	*B*	SE B	95% CI†	*B*	SE B	95% CI†
None	13.20***	0.71	[11.90, 14.53]	10.31***	0.62	[9.20, 11.43]	14.09***	0.66	[12.94, 15.29]	34.14***	0.99	[12.94, 15.29]
Overwhelmed	3.02*	1.27	[0.41, 5.65]	4.12***	1.10	[1.95, 6.33]	2.95**	1.08	[0.74, 5.22]	6.70***	1.81	[32.32, 35.89]
Threat & Physical	6.98***	1.37	[4.14, 9.76]	6.99***	1.18	[4.65, 9.34]	6.83***	1.15	[4.41, 9.23]	14.90***	1.20	[10.99, 19.13]
Incapacitated	6.83***	0.92	[5.02, 8.58]	6.66***	0.80	[5.20, 8.19]	7.52***	0.78	[6.00, 8.19]	12.81***	1.29	[10.47, 15.18]

Note. For Depression Adjusted $R^2 = .06$; $F(3, 893) = 20.69$, $p < .001$; for Anxiety Adjusted $R^2 = .08$; $F(3, 903) = 25.78$, $p < .001$; for Stress Adjusted $R^2 = .10$; $F(3, 893) = 34.16$, $p < .001$; for Posttraumatic Stress Adjusted $R^2 = .12$; $F(3, 867) = 39.08$, $p < .001$; * $p < .05$, ** $p < .01$,*** $p < .001$; †95% Confidence Intervals with 5000 bootstrap samples for regression coefficients.

support recent research indicating similar associations between sexual assault and depression, anxiety, and posttraumatic stress (e.g., Blanco et al., 2021; Carey et al., 2018; Schrag & Edmond, 2018; Sorokas, 2017; Zinzow et al., 2010). Of particular interest in the current study was the finding students also reported increased general stress reactions in addition to more defined symptoms of mental health such as depression.

Although all forms and types of sexual violence were associated with adverse health sequela, this study also found the type of sexual violence experienced and the methods or tactics used were differentially associated with mental health symptoms. Similar to some previous research on student and community samples (e.g., Abbey et al., 2004; Blanco et al., 2021; Griffin & Read, 2012; Zinzow et al., 2010), women who reported completed penetration or rape experienced more depression, anxiety, general stress, and posttraumatic stress compared to women who reported other forms of sexual contact such as unwanted touching or attempted penetration. The methods of coercion or tactics used in the perpetration of sexual violence revealed women who experienced threats of physical force or actual physical force and incapacitation through drugs or alcohol also reported more significant symptoms of depression, anxiety, general stress, and posttraumatic stress compared to women who experienced pressure and overwhelming arguments.

These results are also partially supported by a community-based study of adult women with experiences of adolescent or adult sexual assault by Masters et al. (2015) which found completed intercourse through physical force was associated with higher rates of depression, anxiety, and trauma symptoms compared to completed intercourse through incapacitation. This is in partial contrast to the present study, which did not find significant mental health differences between women who experienced sexual assault through physical force versus incapacitation. This may be explained by the fact the present study combined variables for threats of physical force and actual physical force or by the different populations surveyed (i.e., a community sample versus postsecondary students). Further investigation is needed to understand these differences better and determine whether the present findings generalize beyond the population of postsecondary students.

This study also examined non-physical methods of coercion as well as non-penetrative sexual contacts. As noted earlier, women may not always associate these behaviors with sexual violence and may not acknowledge their reactions as related to these experiences nor seek any support or interventions. Our findings demonstrate stress reactions and symptoms of depression, anxiety, and posttraumatic stress are still noted by women who experience these behaviors. This is particularly important given recent research indicating that help-seeking among undergraduate and graduate students who have experienced sexual harassment varies based on incident characteristics (Bhattacharya & Casey, 2024). Thus, while all methods and types of sexual violence are associated with mental health sequela, individuals who experience non-physical coercion and non-penetrative sexual contact may be less likely to seek help. An understanding of this would further alert university administrators and health personnel about the severe outcomes of all forms of sexual violence among students and the potential unacknowledged stress reaction resulting from these experiences for

some students. Such an understanding would be particularly crucial for undergraduate women who are members of oppressed or minoritized groups with experiences of sexual violence who already report more barriers to formal help-seeking (Zinzow et al., 2021). Previous research has also linked sexual violence with adverse educational outcomes and decreased campus engagement (Author, 2020). Overall, these results provide further evidence of the damaging effects of sexual violence on the education and mental health of postsecondary women.

While this study and others document the high levels of mental health difficulties and distress among students, the results may also reveal the possible cumulative effects of specific methods and types of sexual coercion. Stermac (2019) noted the high number of separate incidents of sexual violence reported by women and how only a minority of women reported experiencing a single act. As such, reports of an incident of sexual violence may not reveal types and forms of violence experienced previously and, which may contribute to possible cumulative mental health issues and symptoms.

The findings with Canadian students of diverse backgrounds are consistent with some existing literature on international student populations (e.g., Blanco, 2021; Griffin & Read, 2012; Zinzow et al., 2010) and suggest the effects of sexual assault type and methods of coercion used in sexual violence may be similar to student populations in other countries. Based on these findings, future research would benefit from examining more how different levels of depression, anxiety, general stress, and posttraumatic stress symptoms are related to the methods of coercion and types of sexual violence experienced by specific groups of postsecondary women.

Limitations

It is important to acknowledge this study used self-reported measures, which could introduce biases related to social desirability or recall. Although the measures employed in this study have demonstrated psychometric validity and reliability, there is a potential for individuals to provide answers that they perceive as more socially acceptable or may not accurately remember past experiences, especially in the context of reporting sexual violence. Likewise, it is vital to recognize self-report measures may be prone to errors due to memory lapses or the unavailability of memories, especially among individuals who may have a history of traumatic experiences that are often associated with hyperarousal (Haskell & Randall, 2019). Further, utilizing self-report responses assumes participants are inclined to disclose personal information, demonstrate the introspective ability to provide accurate responses, and understand questions consistently (Haskell & Randall, 2019).

Based on the correlational nature of the study, the observed relationship between sexual assault and mental health symptoms may be related to other factors. For instance, women who reported experiencing sexual violence were significantly more likely to identify as sexual minorities compared to women not reporting sexual violence experiences. Given the abundance of research indicating higher rates of mental health difficulties among sexual minority individuals compared to their heterosexual counterparts (e.g., Bostwick et al., 2010; King et al., 2008), including postsecondary students (e.g., Oswalt & Wyatt, 2011), the increased degree of

depression, anxiety, stress, and posttraumatic stress identified in the sexual violence group may be related in part to students' sexual minority group membership. Similarly, women who reported experiencing sexual violence were also significantly less likely to be in their early years of study compared to women not reporting sexual violence. Therefore, the increased degree of mental health difficulties identified in the sexual violence group may also be a function of the year of study. However, this explanation seems less probable given research indicating the reverse relationship. Specifically, Dyson and Renk (2006) reported higher levels of depression, anxiety, and stress among first-year postsecondary students, presumably due to the difficulties associated with transitioning from high school to postsecondary studies and from adolescence to adulthood (Srivastava et al., 2009).

Additionally, given an overwhelming majority of surveyed women reported living off-campus and attending university full-time, it is unclear whether the reported results will generalize to postsecondary women who live on-campus and/or attend university part-time.

Clinical and Policy Implications

While sexual violence prevention strategies are vital for addressing campus sexual violence, the results of this study suggest the need also for mental health awareness and support for women who have experienced all forms of unwanted sexual behaviors, including the use of coercive strategies that may not be labeled as sexual violence. Mental health personnel are advised to include in their assessment an awareness and discussion of the contextual factors of sexual assault. While women whose sexual violence experiences include physical force, incapacitation, or completed intercourse might be at risk for more significant mental health difficulties and may require greater supports, it is important to acknowledge the deleterious effects of all forms of coercion and types of sexual violence and to pay attention to the insidious nature of mental health symptoms. Within the context of institutions of higher learning, responses may include additional academic interventions and supports.

Greater efforts at eradication and prevention of campus sexual violence must be made, including perpetration-focused prevention, consent, and communication education, as well as bystander interventions. Based on the results of this study, both perpetration-focused and bystander-focused interventions would do well to include education on the range of coercion methods and types of behaviors which constitute sexual violence as well as the mental health consequences of such behaviors. For instance, education efforts should address common misinformation, such as the idea that repeated verbal pressure and arguments for sexual contact are a "normal" part of negotiation in a sexual relationship. A recent review by Orchowski et al. (2020) calls for an integrated approach to campus sexual assault prevention based on programming for men and student bystanders, in addition to women. Prevention efforts should include challenges to social norms and call on potential perpetrators to assume responsibility for their behavior. Many postsecondary institutions are implementing or expanding supports for women who have experienced sexual violence, particularly mental health supports. As specialized centers for sexual

violence support open on campuses, advertising and targeting mental health services directly to women with experiences of sexual violence is of vital importance.

CONCLUSION

With the mental health of postsecondary students becoming an increasing point of concern in the past decade, investigation into the extent and root of this problem has become an important focus of discussion and research investigation. While previous research has identified several significant stressors among postsecondary students, including finances, academics, and social relationships, less attention has been devoted to understanding the relationship that various forms and coercive methods of sexual violence have on mental health within the high-risk population of postsecondary students. This study builds upon prior research and contributes further to the understanding of how different contextual factors associated with postsecondary women's sexual violence experiences relate to adverse mental health outcomes. Understanding the unique roles that sexual violence type and coercion methods have on the mental health of sexual violence survivors is an important step towards improved care and integrated policy interventions within postsecondary institutions.

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