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Reproductive Coercion Victimization and Associated Mental Health Outcomes Among Female-Identifying Young Adults

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Abstract

Reproductive coercion is a serious public health problem. Victimization has been associated with poor mental health outcomes, including symptoms of posttraumatic stress disorder (PTSD) and depression in clinical and college samples. We build on these findings by examining the association between reproductive coercion victimization and mental and behavioral health outcomes, including depression, PTSD symptoms, anxiety, and drinking behaviors in a diverse community-derived sample of female-identifying young adults (mean age = 20; SD= .72). Participants (n = 368) were originally recruited as part of a study on dating violence in seven Texas public high schools. Participants completed an online study that included demographic questions and measures that assessed the variables of interest. Results of regression analyses showed that reproductive coercion victimization predicted depression, anxiety, and PTSD symptoms, after controlling for race, sexual orientation, and age. Findings also revealed that victims of reproductive coercion were more likely consume more drinks per drinking occasion compared to their non-victimized counterparts. These results add to the growing literature that experiencing reproductive coercion is a risk marker for poor mental and behavioral health. To develop targeted prevention and intervention programs, future research should examine potential mechanisms underlying this relationship.

Keywords

Reproductive coercion; intimate partner violence; mental health; alcohol use

Reproductive coercion is a form of intimate partner violence (IPV) that occurs when a person attempts to control the autonomous reproductive decision making of their intimate partner (Grace & Anderson, 2018). Reproductive coercion includes behaviors such as birth control sabotage (e.g., hiding or destroying contraception), pregnancy coercion (e.g., forcing or pressuring someone to become pregnant), and abortion coercion (e.g., pressuring a partner into terminating or not terminating a pregnancy). Research has shown that between 8–19% of women experience some form of reproductive coercion victimization from a partner

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during their lifetime (Basile et al., 2019; Grace & Anderson, 2018; Miller et al., 2010; Sutherland et al., 2015). Reproductive coercion victimization is associated with adverse health outcomes such as unintended pregnancy and an increased risk for sexually transmitted infections (Alexander et al., 2016; Capasso et al., 2019; Gee et al., 2009), as well as experiencing other forms of IPV, such as sexual, physical, and psychological abuse (Basile et al., 2019; Miller et al., 2010). Despite increased research attention, very little is known about the mental and behavioral health outcomes associated with victimization experiences. To address this gap in the literature, we examine the link between reproductive coercion and mental and behavioral health (i.e., depression, post-traumatic stress, anxiety, and alcohol use) in a diverse non-clinical and non-college sample of young adults.

Reproductive Coercion and Mental Health Outcomes

Research has demonstrated that reproductive coercion is associated with poor mental health outcomes, such as post-traumatic stress disorder (PTSD) and depression. Initial research on the mental health impacts found that women (n=953) in one rural town were more likely to report recent probable PTSD if they had experienced reproductive coercion (McCauley et al., 2014). A more recent study found that Black women between the ages of 18–25 (n=188) who experienced reproductive coercion were at heightened risk for both PTSD and depression (Alexander et al., 2021). Indeed, 69% of participants who endorsed experiencing reproductive coercion reported experiencing symptoms of depression and 45.1% met the diagnostic threshold for PTSD.

A study of 354 college women in abusive relationships found that nearly 25% of the sample had experienced reproductive coercion, and that victimization significantly predicted depression symptoms (Grace et al., 2022). However, this study only used two items to assess reproductive coercion, and one of the items did not assess a partner's intent to promote pregnancy, a key component of reproductive coercion. Therefore, this study was limited in its ability to distinguish reproductive coercion from other forms of IPV (i.e., sexual IPV). Still, the existing literature suggests that outcomes of reproductive coercion victimization extend beyond reproductive health concerns and may have serious consequences for mental health and well-being. Considering the limited number of studies that have examined reproductive coercion victimization and associated mental health outcomes, there is a clear need to build on this literature.

Reproductive Coercion and Alcohol Use

A primary area of focus in the broader IPV literature is the association between alcohol use and psychological, physical, and sexual IPV victimization. Research has consistently identified that individuals who have experienced IPV engage in more problematic alcohol use relative to individuals who have not. For example, a nationally representative study found that women who had experienced IPV in the past year, compared to women who had not, were more likely to be classified as severe or moderate problem drinkers (e.g., drinking that resulted in social problems, legal problems, or failure to fulfil major role obligations; La Flair et al., 2012). Longitudinal studies on alcohol use and IPV have also shown that alcohol can often precede victimization and perpetration among women (Stuart et al., 2013),

and it is often a consequence of victimization experiences (Øverup et al., 2015; Testa et al., 2003). The latter finding is consistent with the "self-medication" theory, which suggests that individuals who experience IPV victimization are more likely to engage in alcohol and substance use as a means of coping with the psychological distress caused by trauma (Øverup et al., 2015)

Despite the robust literature on IPV victimization and alcohol use, we are aware of only two studies that have examined the link between reproductive coercion victimization and alcohol use. In the same study referenced earlier (Grace et al., 2022a), findings showed that reproductive coercion was not significantly associated with alcohol use among college women in abusive relationships. Similarly, a study of 1,788 students recruited from a college health care clinic demonstrated that reproductive coercion victimization was not associated with episodic heavy drinking (Grace et al., 2022b). These unexpected findings, given the robust literature documenting the association between IPV and alcohol use, highlights the need for additional research on the association between reproductive coercion victimization and alcohol use to lay the groundwork for future longitudinal studies.

Current Study

We replicate and extend prior research by examining the association between reproductive coercion victimization and mental health outcomes, including alcohol use and symptoms of depression, PTSD, and anxiety in a diverse sample of female-identifying young adults. We hypothesize that victims of reproductive coercion, relative to non-victims, will have a heightened risk of reporting poor mental health. Given the limited research on the relationship between reproductive coercion and alcohol use, we are not making an a-priori hypotheses regarding the impact of victimization on alcohol use.

Method

Participants and Procedure

Participants were recruited as part of an ongoing longitudinal study on dating violence in seven Texas public high schools when students were, on average, 15 years old. This study received approval from the Institutional Review Board of the University of Texas Medical Branch. The public high schools were chosen for recruitment because their student population was representative of the ethnic/racial and socioeconomic characteristics of the city. All students in the high school were eligible to participate in the study, and participants were recruited during class periods that they were required to attend (i.e., English, World Geography, and Health). We received written parental consent and participant assent. Participants completed the survey in paper-and-pencil format from Waves 1 to 4. Participants completed the survey online in subsequent waves and when they no longer attended the school where they were initially recruited. For their participation, students were compensated with a \$10 gift card in years 1–3 (2010–2012), a \$20 gift card in years 4 and 5 (2013 and 2014), and a \$30 gift card in year 6 (2015). As mentioned, this study is still ongoing, and participants are assessed annually. This sample has been reported on in prior publications (Shorey et al., 2019; Temple et al., 2013).

Current data are from year 6 (2015) of this study and the subsample includes 368 femaleidentifying young adults (mean age = 20; SD= .72). Data on reproductive coercion for the total sample were not available for prior or subsequent waves at the time of analysis; therefore, the current study is using a cross-sectional design. The retention rate from Wave 1 to Wave 6 was 73%. Additional information about this sample, as well as retention rates across waves, are reported elsewhere (Choi et al., 2019).

The sample identified as 28.9% White/Non-Hispanic, 32.7% Latinx/Hispanic, 25.7% Black/African American, 4.6% Asian/Pacific Islander, and 8.1% as more than one race. Participants are described as "female-identifying" because gender identity was not assessed and this term aligns with the question that participants responded to in the survey. At Wave 6, 94.3% of participants reported having never been married, 4.6% reported being married, 0.8% reported being separated, and 0.3% reported being divorced. Of participants who were in an intimate relationship at Wave 6 (n = 231), 96.1% reported dating males and 3.9% reported dating females. In terms of sexual orientation, 72.5% identified as "completely heterosexual," 15.8% identified as "mostly heterosexual," 7.1% identified as "bisexual," 1.1% identified as "mostly gay/lesbian/attracted to a person of the same sex," 2.4% identified as "gay/lesbian/attracted to a person of the same sex," and 1.1% identified as "not sure." Participants who were in intimate relationships with females (n = 9), or who were not in an intimate relationship at Wave 6 (n = 139), were included in the analytic sample (N = 368) because we assessed lifetime reproductive coercion to account for previous victimization by a male partner. Further, research on reproductive coercion has shown that women who identify as single or dating more than one partner are at an increased risk for experiencing reproductive coercion relative to women who are in an exclusive relationship (Clark et al., 2014; Miller et al., 2010). For this reason, we elected to include single participants in the analytic sample, as they may have experienced reproductive coercion in the context of a casual relationship, but still identify as single. Prevalence of reproductive coercion in this sample has been reported on elsewhere (Muñoz et al., 2023).

Measures

Reproductive Coercion.—We use a 10-item measure to assess two aspects of lifetime reproductive coercion: pregnancy coercion and birth control sabotage (Miller et al., 2010). This is a widely used measure of reproductive coercion, including in racially and ethnically diverse samples recruited from family planning clinics and medical settings (Clark et al., 2014; Grace & Anderson, 2018; Miller et al., 2011). Items in this measure assessed both lifetime birth control sabotage (e.g., *"Has someone you were dating or going out with ever taken off the condom while you were having sex so that you would get pregnant?*") and lifetime pregnancy coercion (e.g., *"Has someone you were dating or going out with ever told you not to use any birth control (like the pill, shot, ring, etc.)?"*) with Yes/No response options. All items, as well as the prevalence of each item, are presented in Table 1. A total lifetime reproductive coercion score was calculated by summing all items for participants who completed at least 80% of the measure, which was the full sample (N= 368). This measure demonstrated low internal consistency in other samples (Miller et al., 2016). In this sample, and in violence studies generally, there are typically a low number of

participants who endorse experiencing victimization, which causes internal consistencies for violence measures to be artificially low and a poor indicator of psychometrics (Ryan, 2013). This is consistent with other research on intimate partner violence (Haynes et al., 2018; Rueda et al., 2018).

We would like to note that the following paragraphs use the term "victim" and "nonvictim" when discussing people who have and have not experienced reproductive coercion, respectively. We understand the importance of empowerment-based language and recognize that not everyone who has experienced reproductive coercion identifies as a "victim." However, we have decided to use these terms because 1) these terms are frequently used in the literature on reproductive coercion and 2) it makes the results section clearer and easier for readers to interpret.

Depression.—We measured depression with the 10-item Center for Epidemiological Studies Depression Scale was used (CESD-10; Andresen et al., 1994). The CESD-10 is a widely used, psychometrically sound, measure of depression symptoms. Participants were asked to indicate on a scale of 1 (rarely or never) to 4 [more or all of the time (5–7 days)] on how often they experienced each depressive symptoms (e.g., "*I could not get going*," "*I felt lonely*") in the past week. This scale was scored by summing all items, with higher scores representing the higher number of symptoms endorsed. The scale demonstrated acceptable internal consistency (Cronbach's $\alpha = 0.77$).

Anxiety.—We assessed anxiety with the Generalized Anxiety subscale of the Screen for Child Anxiety Related Disorders (SCARED; Birmaher et al., 1999). On a 0 (almost never) to 2 (often) scale, participants responded to on nine items such that assess anxiety symptoms in their everyday life (e.g., "*I worry about how well I do things*"). This scale was scored by summing all items, with higher scores representing the higher number of symptoms endorsed. This scale showed good internal consistency (Cronbach's $\alpha = 0.92$).

Trauma symptoms.—We assessed trauma symptomology with four items from the Primary Care-Post-Traumatic Stress Disorder questionnaire (PC-PTSD; Prins et al., 2003). Participants indicated whether they experienced PTSD symptoms in the past month by selecting yes or no in response to questions about their experiences (e.g., *"tried hard not to think about it or went out of your way to avoid situations that reminded you of it?*"). This scale was scored by summing all the items, with higher scores representing the higher number of symptoms endorsed. This scale demonstrated good internal consistency (Cronbach's $\alpha = 0.85$).

Alcohol use.—To assess alcohol use, we assessed the number of days in the past month participants drank alcohol, how many drinks they had per drinking occasion, and how many days they participated in heavy episodic drinking (HED). Respectively, these items included: 1) *During the past month, on how many days did you have at least one drink of alcohol?* 2) *On average, how many drinks do you have per drinking occasion? (please keep in mind that a beer, glass of wine, and shot of liquor each equal 1 drink), and 3) For the next question, binge drinking is defined as 5 or more drinks for boys and 4 or more drinks for girls. In the*

past month, how many days would you say you participated in binge drinking? Items were treated as independent indicators of alcohol use.

Data Analytic Plan

All analyses were conducted in IBM SPSS version 28.0. We first analyzed bivariate associations between all study variables and total scores of reproductive coercion for the entire sample. Next, we created dichotomous variables for lifetime reproductive coercion. Participants who experienced lifetime reproductive coercion victimization were categorized as "1" and those who had not experienced reproductive coercion were categorized as "0." To test our hypotheses, we used a series of three multiple linear regression models to determine whether victimization significantly predicted anxiety, depression, and PTSD symptoms. Known predictors of poor mental health outcomes, including age, race, and sexual orientation were entered into the models as control variables. Independent samples *t*-tests were used to examine differences between victims and non-victims of reproductive coercion on frequency of alcohol use, HED, and number of drinks per drinking occasion.

Results

Results demonstrated that 11.2% of participants reported experiencing some form of reproductive coercion in their lifetime, with 9.8% reporting pregnancy coercion and 3.3% reporting birth control sabotage. As shown in Table 2, total reproductive coercion score was significantly and positively associated with PTSD symptoms (r=.19, p<.05) and the number of drinks per drinking occasion (r=.15, p<.05). Further, scores on the pregnancy coercion subscale were significantly and positively associated with both depression (r=.14, p<.05) and PTSD symptoms (r=.20, p<.05). Scores on the birth control sabotage subscale were not significantly associated with depression, PTSD, or anxiety symptoms.

Separate linear regression models were used to examine the relationship between reproductive coercion victimization and mental health outcomes. Results demonstrated that reproductive coercion victimization was associated with increased anxiety symptoms (β =.11, *p*=.04), depressive symptoms (β =.11, *p*=.04), and PTSD symptoms (β =.20, *p*<.001) after controlling for race, sexual orientation, and age. Results for all regression analyses are shown in Table 3.

Independent samples *t*-tests did not demonstrate significant differences between victims (M = 5.80, SD = 6.06) and non-victims (M = 5.74, SD = 5.39) on frequency of drinking [t(295) = -1.01, p = .39]. Further, there was no difference between victims (M = 3.03, SD = 4.37) and non-victims (M = 2.26, SD = 3.82) on reporting HED [t(295) = -.058, p = .39]. Among participants who reported drinking at least once during the past month (n = 244), results showed significant differences between victims (M=4.80, SD=5.30) and non-victims (M=3.40, SD=2.09) in terms of the number of drinks per drinking occasion, [t(242) = -2.67, p < .05]. Follow-up linear regressions were performed, controlling for race, sexual orientation, and age, and results indicated that reproductive coercion did not predict frequency of drinking or HED, but did predict number of drinks per drinking occasion $(\beta=.14, p=.01)$

Discussion

In our diverse, non-college and non-clinical sample, we found that experiencing reproductive coercion predicted an increase in symptoms of depression, anxiety, and PTSD, relative to their non-victimized counterparts. This finding is consistent with past research using college and clinical samples (Grace et al., 2022a; Alexander et al., 2021), and provides continued evidence that reproductive coercion victimization is associated with adverse outcomes. Notably, we found that experiencing reproductive coercion is significantly associated with anxiety symptoms. Because this is one of the first studies to investigate the relationship between reproductive coercion and anxiety symptoms, replication of this finding is needed. Taken together, these findings highlight the need for mental health settings, such as community clinics and college counseling centers, to assess for a wide range of IPV-related victimization experiences, including reproductive coercion, and associated mental health outcomes.

Inconsistent with the limited research on reproductive coercion victimization and alcohol use, which have shown no relationship between alcohol and reproductive coercion victimization (Grace et al., 2022), our results demonstrated that victims reported more drinks per drinking occasion compared to non-victims. However, no differences between victims and non-victims emerged on the frequency of drinking or engaging in HED. This study demonstrated that reproductive coercion may have some implications for alcohol consumption, however, future research with more robust measures of alcohol use and alcohol related problems is needed. Moreover, due to the cross-sectional design of the current study, we were unable to determine whether alcohol consumption was a consequence of reproductive coercion victimization or if it creates risk for both victimization and perpetration. Existing longitudinal research on IPV has demonstrated that alcohol use often precedes both IPV victimization and perpetration (Stuart et al., 2013) and that increases in alcohol use often follow IPV victimization (Øverup et al., 2015; Testa et al., 2003). Longitudinal studies that examine the temporal link between alcohol use and reproductive coercion would be beneficial for determining whether these patterns hold true for reproductive coercion.

Limitations

As with all research, several important limitations should be considered when interpreting these findings. First, the overall sample size was relatively small, as was the percentage of individuals reporting reproductive coercion victimization. This may have contributed to the non-significant findings in relation to alcohol consumption. Second, this study utilized cross-sectional data, which did not allow us to examine the temporal relationship between reproductive coercion and study variables. Longitudinal research on alcohol consumption in relation to reproductive coercion is needed to test the "self-medication" theory (Øverup et al., 2015), as well as potential underlying mechanisms. Another notable limitation is that the measures of alcohol use were brief and did not assess alcohol-related problems. Further, the measure of PTSD is intended to be used as a brief screening instrument and does not examine all symptoms that people may experience following exposure to a traumatic event. Future research may benefit from utilizing a more thorough measure of PTSD, or a

Finally, a significant limitation of this study is that participants were only asked to indicate if they were female or male, which did not allow us to examine the experiences of people who may identify as trans, non-binary, or gender diverse. Future research should use more inclusive and comprehensive assessments of gender that measure the full spectrum of gender identity. This is particularly important for future studies examining reproductive coercion victimization, as studies have demonstrated that trans and gender diverse people experience high rates of other forms of IPV and related mental health difficulties (Henry et al., 2021; Testa et al., 2012). Further, gender minority stress (e.g., internalized transphobia, gender-related discrimination, and rejection, etc.) is related to other forms of IPV victimization (Sarno et al., 2023) and creates barriers to accessing reproductive health care (Moseson et al., 2020). Considering these findings, future research would benefit from examining how gender minority stress influences the relationship between reproductive coercion and mental and behavioral health outcomes.

Future Directions

Future research should consider examining other mental health consequences associated with victimization, including suicidality and other substance use, as these are important aspects of mental health that may be impacted by reproductive coercion. Substance use (cannabis, opioids, hallucinogens, and stimulants) has been linked to IPV victimization, and it's theorized that victims may use to cope with psychological distress related to these experiences (Nathanson et al., 2001; Testa et al., 2003). Recent research among college students has found that reproductive coercion occurring in the past four months is associated with using substances within the past month (Grace et al., 2022b). Given this finding, further examination among non-college samples is warranted. In addition, the association between suicidality and IPV, particularly physical and psychological violence, is well documented in the literature (Afifi et al., 2009; Cavanaugh et al., 2011; Devries et al., 2011). Thus, it is necessary to determine whether this holds true for reproductive coercion victimization, as this would inform screening tools and intervention services.

Research on reproductive coercion would also benefit from examining cultural and societal factors that may interfere with both reproductive autonomy and mental health. Societal factors, such as reduced access to reproductive health services, including contraceptives and abortion, may create additional stress for people experiencing reproductive coercion and worsen adverse mental health outcomes related to victimization. This is critical to consider given the recent overturn of *Roe v. Wade*, which protected the constitutional right to abortion, by the *Dobbs v. Jackson* decision in 2022. Reproductive justice activists and organizations have spoken out extensively against the *Dobbs* decision, noting the harmful mental health consequences of banning abortions. Evidence for this comes from the Turnaway Study, which found that people who were denied an abortion reported more anxiety symptoms, increased stress, lower self-esteem, and lower life satisfaction relative to those who received an abortion (Biggs et al., 2017) In light of this, research should continue

In states like Texas, where our sample was recruited, abortion access and reproductive healthcare were already limited prior to the *Dobbs* decision, especially for Black, Indigenous, and Latinx low-income people (Kaufman et al., 2022). This is largely due to systemic racism and harmful policies and practices across various social institutions (economic, healthcare, education, etc.; Sutton et al., 2021). Systemic oppression, as well as cultural factors (e.g., abortion stigma, discrimination, and acculturative stress), likely worsen outcomes related to reproductive coercion (Alarcão et al., 2021; Biggs et al., 2020; Brown et al., 2022). Further, research has identified that individuals who identify as a sexual minority or Black/African American or Latinx/Hispanic are at an increased risk of experiencing reproductive coercion (Clark et al., 2015; Muñoz et al., 2023, Pettyjohn et al., 2021; Swan et al., 2022). While this study did examine reproductive coercion in a sample that represents a wide range of sexual orientations and racial/ethnic identities, we did not examine differences in associated mental and behavioral health outcomes across these identities. Future research would benefit from using intersectionality as a lens for examining the experiences of marginalized groups to better understand how holding marginalized identities (and experiencing related forms of discrimination and oppression) impacts outcomes for people who are experiencing reproductive coercion (Bowleg et al., 2008). This research is critical, as it can inform the development of culturally-affirming interventions.

Clinical and Policy Implications

Findings from the current study, in conjunction with prior research on reproductive coercion, have several important implications for both clinical practice and public health policy. First, these findings highlight the serious mental and behavioral health consequences of reduced reproductive autonomy through reproductive coercion in a sample of female-identifying young adults (mean age=20). Currently, The United States Preventive Services Task Force (USPSTF) recommends screening "women of childbearing age" for IPV which would include the population represented in this sample (USPSTF, 2018). These findings support this recommendation and emphasize the importance of universal screening and psychoeducation on IPV and reproductive coercion in this vulnerable age group (Grace & Anderson, 2018).

Given the association between mental health concerns and reproductive coercion victimization, these results also suggest that mental health professionals (e.g., psychologists, counselors, psychiatrists, clinical social workers) can have an essential role in supporting clients who have experienced reproductive coercion. Research has identified that a lack of training on IPV is a significant barrier to effective assessment and intervention in mental health settings (Burns et al., 2022). Therefore, it is recommended that mental health professionals receive more in-depth training on violence assessment and develop competencies in addressing violence and reproductive decision-making in the context of treatment for mental and behavioral health concerns.

Finally, the results also point to the importance of public health policy that prioritizes reproductive health, as the effects of reproductive coercion and IPV are likely compounded by regressive policy that denies people the ability to make decisions about their reproductive lives. Longitudinal research has demonstrated that obtaining an abortion was related to decreases in violence victimization but being denied an abortion was not (Roberts et al., 2014). Being unable to terminate an unwanted pregnancy may keep people in violent relationships, which puts them and their families at an increased risk for adverse health outcomes long-term. Thus, public policy that allows for accessible contraceptives and abortion care is an important piece of IPV and reproductive coercion intervention and prevention.

Conclusion

Findings demonstrate that reproductive coercion is a significant public health problem among young adults that puts victims at an increased risk of experiencing depression, anxiety, and PTSD symptoms. Further, there were significant differences between victims and non-victims on the amount of alcohol they drink per drinking occasion, but not in frequency of drinking or HED. Given that this is one of the few studies to examine mental health and alcohol use in a non-clinical and non-college sample of young adults, it would be beneficial to replicate and extend these findings in a large sample of adults.

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References

- Afifi TO, MacMillan H, Cox BJ, Asmundson GJ, Stein MB, & Sareen J. (2009). Mental health correlates of intimate partner violence in marital relationships in a nationally representative sample of males and females. Journal of interpersonal violence, 24(8), 1398–1417. [PubMed: 18718882]
- Alarcão V, Stefanovska-Petkovska M, Virgolino A, Santos O, & Costa A. (2021). Intersections of immigration and sexual/reproductive health: an umbrella literature review with a focus on health equity. Social Sciences, 10(2), 63.
- Alexander KA, Willie TC, McDonald-Mosley R, Campbell JC, Miller E, & Decker MR. (2021). Associations between reproductive coercion, partner violence, and mental health symptoms among young Black women in Baltimore, Maryland. Journal of interpersonal violence, 0886260519860900.
- Alexander KA, Volpe EM, Abboud S, & Campbell JC. (2016). Reproductive coercion, sexual risk behaviours and mental health symptoms among young low-income behaviourally bisexual women: Implications for nursing practice. Journal of Clinical Nursing, 25(23–24), 3533–3544. [PubMed: 27272932]
- Andresen EM, Malmgren JA, Carter WB, & Patrick DL. (1994). Screening for depression in well older adults: evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). American journal of preventive medicine, 10(2), 77–84. [PubMed: 8037935]
- Basile KC, Smith SG, Liu Y, Miller E, & Kresnow M. (2019). Prevalence of Intimate Partner Reproductive Coercion in the United States: Racial and Ethnic Differences. Journal of Interpersonal Violence. 10.1177/0886260519888205

- Biggs MA, Brown K, & Foster DG. (2020). Perceived abortion stigma and psychological well-being over five years after receiving or being denied an abortion. PloS one, 15(1), e0226417. 10.1371/ journal.pone.0226417
- Biggs MA, Upadhyay UD, McCulloch CE, & Foster DG. (2017). Women's Mental Health and Wellbeing 5 Years After Receiving or Being Denied an Abortion: A Prospective, Longitudinal Cohort Study. JAMA psychiatry, 74(2), 169–178. 10.1001/jamapsychiatry.2016.3478 [PubMed: 27973641]
- Birmaher B, Brent DA, Chiappetta L, Bridge J, Monga S, & Baugher M. (1999). Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): a replication study. Journal of the American Academy of Child and Adolescent Psychiatry, 38(10), 1230–1236. 10.1097/00004583-199910000-00011 [PubMed: 10517055]
- Bowleg L. (2008). When Black+ lesbian+ woman Black lesbian woman: The methodological challenges of qualitative and quantitative intersectionality research. Sex roles, 59, 312–325.
- Brown K, Laverde R, Barr-Walker J, & Steinauer J. (2022). Understanding the role of race in abortion stigma in the United States: a systematic scoping review. Sexual and Reproductive Health Matters, 30(1), 2141972. [PubMed: 36416664]
- Burns SC, Kogan CS, Heyman RE, Foran HM, Smith Slep AM, Dominguez-Martinez T, ... & Reed GM. (2022). Exploring mental health professionals' experiences of intimate partner violence– related training: results from a global survey. Journal of interpersonal violence, 37(1–2), 124–150. [PubMed: 32125216]
- Capasso A, DiClemente RJ, & Wingood GM. (2019). Pregnancy Coercion as a Risk Factor for HIV and Other Sexually Transmitted Infections Among Young African American Women. Journal of acquired immune deficiency syndromes (1999), 82 Suppl 2(2), S155–S161. 10.1097/ QAI.00000000002174 [PubMed: 31658204]
- Cavanaugh CE, Messing JT, Del-Colle M, O'Sullivan C, & Campbell JC. (2011). Prevalence and correlates of suicidal behavior among adult female victims of intimate partner violence. Suicide & life-threatening behavior, 41(4), 372–383. 10.1111/j.1943-278X.2011.00035.x [PubMed: 21535096]
- Choi HJ, Mori C, Van Ouytsel J, Madigan S, & Temple JR. (2019). Adolescent sexting involvement over 4 years and associations with sexual activity. Journal of Adolescent Health, 65(6), 738–744.
- Clark LE, Allen RH, Goyal V, Raker C, & Gottlieb AS. (2014). Reproductive coercion and cooccurring intimate partner violence in obstetrics and gynecology patients. American journal of obstetrics and gynecology, 210(1), 42–e1.
- Devries K, Watts C, Yoshihama M, Kiss L, Schraiber LB, Deyessa N, ... & WHO Multi-Country Study Team. (2011). Violence against women is strongly associated with suicide attempts: evidence from the WHO multi-country study on women's health and domestic violence against women. Social science & medicine, 73(1), 79–86. [PubMed: 21676510]
- Grace KT, & Anderson JC. (2018). Reproductive Coercion: A Systematic Review. Trauma, Violence, & Abuse, 19(4), 371–390. 10.1177/1524838016663935
- Grace KT, Decker MR, Holliday CN, Talis J, & Miller E. (2022b). Reproductive coercion in college health clinic patients: Risk factors, care seeking and perpetration. Journal of advanced nursing.
- Grace KT, Perrin NA, Clough A, Miller E, & Glass NE. (2022a). Correlates of reproductive coercion among college women in abusive relationships: baseline data from the college safety study. Journal of American college health: J of ACH, 70(4), 1204–1211. 10.1080/07448481.2020.1790570
- Gee RE, Mitra N, Wan F, Chavkin DE, & Long JA. (2009). Power over parity: intimate partner violence and issues of fertility control. American journal of obstetrics and gynecology, 201(2), 148–e1.
- Haynes EE, Strauss CV, Stuart GL, & Shorey RC. (2018). Drinking motives as a moderator of the relationship between dating violence victimization and alcohol problems. Violence against women, 24(4), 401–420. [PubMed: 29332546]
- Henry RS, Perrin PB, Coston BM, & Calton JM. (2021). Intimate partner violence and mental health among transgender/gender nonconforming adults. Journal of interpersonal violence, 36(7– 8), 3374–3399. [PubMed: 29779457]

- Hunter J, Butler C, & Cooper K. (2021). Gender minority stress in trans and gender diverse adolescents and young people. Clinical child psychology and psychiatry, 26(4), 1182–1195. [PubMed: 34293962]
- Kaufman R, Brown R, Martínez Coral C, Jacob J, Onyango M, & Thomasen K. (2022). Global impacts of Dobbs v. Jackson Women's Health Organization and abortion regression in the United States. Sexual and reproductive health matters, 30(1), 2135574. 10.1080/26410397.2022.2135574
- La Flair LN, Bradshaw CP, Storr CL, Green KM, Alvanzo AA, & Crum RM. (2012). Intimate partner violence and patterns of alcohol abuse and dependence criteria among women: a latent class analysis. Journal of studies on alcohol and drugs, 73(3), 351–360. 10.15288/jsad.2012.73.351 [PubMed: 22456240]
- McCauley HL, Falb KL, Streich-Tilles T, Kpebo D, & Gupta J. (2014). Mental health impacts of reproductive coercion among women in Côte d'Ivoire. International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics, 127(1), 55–59. 10.1016/j.ijgo.2014.04.011 [PubMed: 24952817]
- Miller E, Decker MR, McCauley HL, Tancredi DJ, Levenson RR, Waldman J, Schoenwald P, & Silverman JG. (2010). Pregnancy coercion, intimate partner violence and unintended pregnancy. Contraception, 81(4), 316–322. 10.1016/j.contraception.2009.12.004 [PubMed: 20227548]
- Miller E, Jordan B, Levenson R, & Silverman JG. (2010). Reproductive coercion: connecting the dots between partner violence and unintended pregnancy. Contraception, 81(6), 457–459. 10.1016/ j.contraception.2010.02.023 [PubMed: 20472110]
- Miller E, Tancredi DJ, Decker MR, McCauley HL, Jones KA, Anderson H, ... & Silverman JG. (2016). A family planning clinic-based intervention to address reproductive coercion: a cluster randomized controlled trial. Contraception, 94(1), 58–67. [PubMed: 26892333]
- Moseson H, Zazanis N, Goldberg E, Fix L, Durden M, Stoeffler A, Hastings J, Cudlitz L, Lesser-Lee B, Letcher L, Reyes A, & Obedin-Maliver J. (2020). The Imperative for Transgender and Gender Nonbinary Inclusion: Beyond Women's Health. Obstetrics and gynecology, 135(5), 1059–1068. 10.1097/AOG.000000000003816 [PubMed: 32282602]
- Muñoz EA, Le VD, Lu Y, Shorey RC, & Temple JR. (2023). Reproductive Coercion and Intimate Partner Violence Victimization Among a Racially and Ethnically Diverse Young Adult Sample. Journal of interpersonal violence, 38(1–2), NP1261–NP1278. 10.1177/08862605221092349
- Nathanson AM, Shorey RC, Tirone V, & Rhatigan DL. (2012). The Prevalence of Mental Health Disorders in a Community Sample of Female Victims of Intimate Partner Violence. Partner abuse, 3(1), 59–75. 10.1891/1946-6560.3.1.59 [PubMed: 22741043]
- Øverup CS, DiBello AM, Brunson JA, Acitelli LK, & Neighbors C. (2015). Drowning the pain: Intimate partner violence and drinking to cope prospectively predict problem drinking. Addictive behaviors, 41, 152–161. [PubMed: 25452060]
- PettyJohn ME, Reid TA, Miller E, Bogen KW, & McCauley HL. (2021). Reproductive coercion, intimate partner violence, and pregnancy risk among adolescent women with a history of foster care involvement. Children and youth services review, 120, 105731. [PubMed: 33716368]
- Prins A, Ouimette PC, Kimerling R, Cameron RP, Hugelshofer DS, Shaw-Hegwer J, ... Sheikh JI. (2003). The primary care PTSD screen (PC-PTSD): Development and operating characteristics. Primary Care Psychiatry, 9, 9–14.
- Roberts S, Biggs MA, Chibber KS, Gould H, Rocca CH, & Foster DG. (2014). Risk of violence from the man involved in the pregnancy after receiving or being denied an abortion. BMC medicine, 12(1), 1–7.
- Rueda HA, Yndo M, Williams LR, & Shorey RC. (2018). Does Gottman's marital communication conceptualization inform teen dating violence? Communication skill deficits analyzed across three samples of diverse adolescents. Journal of interpersonal violence, 0886260518814267.
- Ryan KM. (2013). Issues of reliability in measuring intimate partner violence during courtship. Sex roles, 69(3–4), 131–148.
- Sarno EL, Newcomb ME, & Whitton SW. (2023). Minority stress and intimate partner violence among sexual and gender minorities assigned female at birth. Psychology of Violence.

- Shorey RC, Allan NP, Cohen JR, Fite PJ, Stuart GL, & Temple JR. (2019). Testing the factor structure and measurement invariance of the conflict in Adolescent Dating Relationship Inventory. Psychological Assessment, 31(3), 410–416. [PubMed: 30589276]
- Stuart GL, Moore TM, Elkins SR, O'Farrell TJ, Temple JR, Ramsey SE, & Shorey RC. (2013). The temporal association between substance use and intimate partner violence among women arrested for domestic violence. Journal of consulting and clinical psychology, 81(4), 681–690. 10.1037/ a0032876) [PubMed: 23647284]
- Sutherland MA, Fantasia HC, & Fontenot H. (2015). Reproductive coercion and partner violence among college women. Journal of Obstetric, Gynecologic & Neonatal Nursing, 44(2), 218–227.
- Sutton MY, Anachebe NF, Lee R, & Skanes H. (2021). Racial and Ethnic Disparities in Reproductive Health Services and Outcomes, 2020. Obstetrics and gynecology, 137(2), 225–233. 10.1097/ AOG.000000000004224 [PubMed: 33416284]
- Swan LE, Goffnett J, Pless J, & Andrews T. (2022). Reproductive coercion in heterosexual and sexual minority emerging adults: prevalence and behavioral health impact. Journal of interpersonal violence, 08862605221130394.
- Temple JR, Shorey RC, Fite P, Stuart GL, & Le VD. (2013). Substance use as a longitudinal predictor of the perpetration of teen dating violence. Journal of youth and adolescence, 42(4), 596–606. 10.1007/s10964-012-9877-1 [PubMed: 23187699]
- Testa RJ, Sciacca LM, Wang F, Hendricks ML, Goldblum P, Bradford J, & Bongar B. (2012). Effects of violence on transgender people. Professional Psychology: Research and Practice, 43(5), 452–459. 10.1037/a0029604
- Testa M, Livingston JA, & Leonard KE. (2003). Women's substance use and experiences of intimate partner violence: A longitudinal investigation among a community sample. Addictive behaviors, 28(9), 1649–1664. [PubMed: 14656551]
- USPSTF. (2018). Final update summary: Intimate partner violence and abuse of elderly and vulnerable adults. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/intimate-partner-violence-and-abuse-of-elderly-and-vulnerable-adults-screening

Table 1.

Prevalence of each Reproductive Coercion Item

Item	Prevalence
Tried to force or pressure you to become pregnant?	23 (6.6%)
Told you not to use any birth control (like the pill, shot, ring, etc)?	23 (6.6%)
Said he would leave you if you didn't get pregnant?	2 (.5%)
Told you he would have a baby with someone else if you didn't get pregnant?	3 (.8%)
Taken of the condom while you were having sex, so you would get pregnant?	8 (2.2%)
Put holes in the condom so you would get pregnant?	0 (0%)
Broken the condom on purpose while you were having sex so you would get pregnant?	1 (.3%)
Taken your birth control (like pills) away from you or kept you from going to the clinic to get birth control?	0 (0%)
Made you have sex without a condom so you would get pregnant?	4 (1.1%)
Hurt you physically because you did not agree to get pregnant?	0 (0%)

Table 2.

Bivariate Correlations among Measures of Reproductive Coercion and Study Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Reproductive Coercion – Total		.94 **	.62**	.08	.10	.19**	06	.01	.15*
2. Pregnancy Coercion			.31**	.08	.14**	.20**	05	.01	.15*
3. Birth Control Sabotage				.04	06	.07	06	.003	.07
4. Anxiety					.57 **	.38**	.11	.15*	.10
5. Depression						.46**	.04	.09	.01
6. PTSD							.12*	.25 **	.11
7. # of Drinking Days								.64**	.18**
8. # of HED episodes									.35**
9. # of Drinks per Drinking Occasion									
Mean	.17	.14	.04	8.74	10.90	1.07	4.74	1.95	3.46
SD	.54	.45	.20	5.17	5.16	1.46	5.42	3.63	2.72

** Note: *p* < .01

*Note: *p* < .05

Note: SD = Standard Deviation

Table 3.

Linear Regressions of the Associations between Reproductive Coercion and Mental and Behavioral Health

Dependent Variables								
Predictor Variables	Anxiety <i>B(SE)</i> <i>R</i> ² =.05	Depression B(SE) R ² =.08	PTSD B(SE) R ² =.09	Frequency of Drinking B(SE) R ² =.04	HED B(SE) R ² =.07	# of Drinks per Drinking Occasion B(SE) R ² =.06		
Reproductive Coercion	1.78(.87) [*]	1.82(.86) **	.87(.24) ^{***}	05(.82)	.49(.54)	1.07(.41) ^{**}		
	β=.11	β=.11	β=.20	β=003	β=.05	β=.14		
Age	29(.37)	25(.36)	.05(.10)	.53(.35)	30(.23)	12(.18)		
	β=04	β=04	β=.03	β=.08	β=07	β=03		
Sexual Orientation (Ref: Completely Heterosexual)								
Mostly Heterosexual	1.26(.75)	2.97(.74) ***	.40(.21)	.49(.71)	13(.47)	.20(.35)		
	β=.09	β=.21	β=.10	β=.04	β=02	β=.03		
Bisexual	1.03(1.06)	1.60(1.04)	.40(.29)	.04(1.001)	.45(.66)	.08(.50)		
	β=.05	β=.08	β=.07	β=.002	β=.04	β=.01		
Mostly Gay/Lesbian/ Attracted to a person of the same sex	3.74(2.60) β=.08	1.40(2.55) β=.03	.61(.72) β=.04	4.61(2.45) β=.10	4.71(1.61) ^{**} β=.15	.23(1.22) β=.01		
Gay/Lesbian/Attracted to a person of the same sex	.40(1.76)	1.80(1.73)	1.16(.49) [*]	1.42(1.66)	1.17(1.10)	1.24(.82)		
	β=.01	β=.05	β=.12	β=.05	β=.06	β=.08		
Not Sure	.72(2.62)	-2.25(2.58)	61(.73)	78(2.48)	97(1.63)	01(1.23)		
	β=.01	$\beta =05$	β=04	β=02	β=03	β=.00		
Race (Ref: Latinx/Hispanic)								
White/Non-Hispanic	.34(.69)	.17(.68)	.07(.19)	01(.65)	.05(.43)	30(.32)		
	β=.03	β=.02	β=.02	β=.00	β=.01	β=05		
Black/African American	-1.14(.71) β=10	55(.70) $\beta=05$	07(.20) β=02	$-1.72(.67)^{*}$ $\beta=15$	$^{-1.39(.44)}_{\beta=19}^{**}$	$^{-1.15(.33)}_{\beta=21}^{***}$		
Asian/Pacific Islander	2.46(1.34)	1.95(1.32)	.35(.37)	-1.70(1.27)	-1.44(.83)	88(.62)		
	β=.10	β=.08	β=.05	β=07	β=09	β=08		
Biracial/More than one race	01(1.08)	89(1.06)	.63(.30)*	76(1.02)	87(.67)	$-1.03(.51)^{*}$		
	$\beta=.00$	β=05	β=.12	β=04	β=07	$\beta=12$		

Note: SE= Standard Error

Note:

*** p<.001.

$$p < .01$$
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Note: Reproductive Coercion variable is dichotomous