

The Examination of the Relationship between Intimate Partner Violence and Maternal

Mental Health During Pregnancy

by

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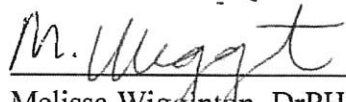
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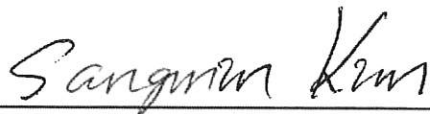
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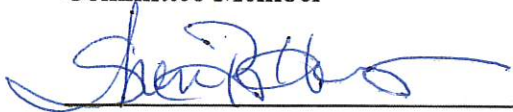
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Abstract

A mother is empathetic, loving, patient, supportive, and protective over her unborn child. From the start of conception to the birth of a child, a mother will do anything to make sure that her baby is safe. Over the nine months of pregnancy, the mother and father will begin to prepare for their new bundle of joy; however, some women don't have the privilege of having a supportive and loving partner. Instead they are inflicted with pain, violence, and harassment. Pregnant women who experience intimate partner violence are more likely to have depression or anxiety than pregnant women who do not experience this sort of violence. The aim of the study was to determine if intimate partner violence increases mental health illness during pregnancy, observe how age differences effect the rates of intimate partner violence among pregnant women, and lastly, examine how physical, psychological and sexual violence during pregnancy influence anxiety and depression. The participants chosen for this study were women who had recently given birth or were three to six months postpartum. The data used in this study was a secondary analysis of the National Pregnancy Risk Assessment Monitoring System (PRAMS). A Chi-Square Test of Independence was used to answer all three research questions. The findings of the study indicated that pregnant women who experience intimate partner violence have a higher risk of having some form of mental health illness compared to pregnant women who do not encounter this form of abuse.

Key words: pregnancy, women, mental health, intimate partner violence

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Review of Literature

Background

A mother is someone who raises a child with care, affection, protection, and love, and this begins in the womb. The next nine months of pregnancy, a mother's initial instinct is to protect and care for her child before he or she is born. Within this new chapter in a woman's life, she will begin to figure out how to raise her child with the help of her significant other. However, not every woman is lucky to have a kind and generous partner. In some cases, the partner is physically, psychologically, and/or verbally abusive. Intimate partner violence (IPV) is defined as physical, sexual, or psychological harm inflicted by a partner or spouse (Centers for Disease Control and Prevention [CDC], 2018). IPV is a silent killer that affects women on a national and global level. A World Health Organization (WHO) study confirmed that violence by an intimate partner is a collective experience worldwide (Garcia-Moreno, Jansen, Ellsberg, Heise & Watts, 2006). On a global level, about 30% of women who have been partnered (married, engaged in cohabitation, or in a current relationship) have experienced physical or sexual violence by a partner in their lifetime (WHO, 2019).

According to the CDC (2018), there are different forms of violence: physical violence, sexual violence, and psychological aggression (including coercive acts) by a current or former partner. Physical violence describes a range of behaviors from slapping, pushing, shoving, hitting with a fist or object, and choking or suffocating (CDC, 2018). Furthermore, sexual violence or sexual abuse includes rape, sexual coercion (non-physically pressured sex), and unwanted sexual contact (such as groping) (CDC, 2018). Psychological aggression comprises of expressive aggression

such as name calling, insulting or humiliating an intimate partner, coercive control, and emotional abuse (CDC, 2018).

Intimate partner violence occurs when an individual attempts to harm or control his or her current or former romantic partner against his or her will (Chester & DeWall, 2018). IPV can be perpetrated by a current or previous partner in a heterosexual or same-sex relationship (Lutwak, 2018). For this study, only heterosexual partner violence perpetuated by men will be examined.

Rates of Intimate Partner Violence

Intimate partner violence is a global public health issue, and the rate of IPV is higher in societies that exhibit higher levels of gender inequality and greater acceptance of norms that support violence and control over women (WHO, 2019). The WHO (2019) expressed that the rates of PIPV vary between 23% and 47% in different regions of the world. Moreover, on a global level, 86% of women who have reported being physically abused also reported injuries (WHO, 2019). Furthermore, women are more at-risk of violence from an intimate partner than from any other type of perpetrator (Garcia-Moreno et al., 2005).

At the national level, IPV is a public health menace that results in the most injury to women in the United States (Smith, Chen, Basile, Gilbert, Merrick, Patel, Walling, & Jain, 2017). Black, Basile, Breiding, Smith, Walters, Merrick, Chen, and Stevens (2011) explained that approximately one in four women have experienced severe physical violence by an intimate partner at some point in their lifetime. Additionally, nearly one in three women have been slapped, pushed, or shoved by their partner (The National Intimate, 2010). The data also showed that almost one in

two women had experienced psychological aggression (Black et al., 2011). The National Intimate Partner and Sexual Violence Survey data revealed that four in ten women had experienced at least one form of expressive aggression by an intimate partner during their lifetime (Black et al., 2011). Lastly, it is predicted that 32% of women will become victims of physical violence from a significant other (National Crime Victims' Rights Week Resource Guide, 2018). The following review of the literature discusses how intimate partner violence has a detrimental effect on pregnancy, the different forms of IPV, and how IPV influences the mental and physical health of women who experience it as well as the differences between age groups.

Intimate Partner Violence and Pregnancy

IPV affects most women, including pregnant women. The US Pregnancy Risk Assessment Monitoring System (PRAMS) indicated that IPV tends to decrease during pregnancy. However, for some women, the violence continues or becomes more severe (Devries, Kishor, Johnson, Stockl, Bacchus, Garcia-Moreno & Watts, 2010). March of Dimes (2019) revealed that one in six pregnant women have been abused by a partner. Saltzman, Johnson, Gilbert, and Goodwin (2003) conveyed that the prevalence of IPV across 16 states was 7.2% before pregnancy, 5.3% during pregnancy, and 8.7 % around the time of pregnancy. Furthermore, the risk of IPV exposure is significantly higher during pregnancy (Taillieu & Brownridge, 2010). Maternal health is negatively impacted when IPV is present in a relationship (Alhusen, Ray, Sharps & Bullock, 2015).

Pregnancy is often described as a beautiful experience; however, some women encounter a very different experience due to IPV. According to Yasien, Alvi, Washdev, and Moghal (2018), 32.9% of women dealt with IPV during pregnancy. Intimate partner violence results in repercussions in the form of both mental and physical health problems (Yasien et al., 2018). According to the literature, psychological, physical, and sexual violence increase the chances of women having depressive thoughts and other mental health illnesses (Gomes dos Santos & Ferreira de Souza Monteiro, 2018). Also, IPV is associated with a wide range of short-term and long-term physical and psychological health outcomes (Beydouna, Beydounb, Kaufmanc, Lod, & Zondermanb, 2012).

The physical effects of violence can include minor or serious injuries, such as bruises, cuts and broken bones (Office on Women's Health, 2019). In addition, there are long term conditions that affect women's health, for example arthritis, digestive pains like stomach ulcers, heart problems, irritable bowel syndrome, and migraine headaches (Office of Women's Health, 2019). In sum, there is evidence that suggests that intimate partner violence affects pregnant women's and the baby's health.

IPV affects a variety of domains of health. IPV generally has an adverse effect on mental health, and studies have shown that experiencing IPV during pregnancy also adversely affects women's mental health and increases the incidence of depression and anxiety (Tomasdottir et al., 2016). Women who experience IPV during pregnancy encounter additional negative health consequences that pose a significant threat to the health of the mother and baby. Beydoun, Al-Sahab, Beydoun, and Tamim (2010) showed that partner violence was found to be significantly related

to postpartum depression. Additionally, during pregnancy and afterward, psychological abuse, threats, and physical violence are likely to cause stress, anxiety, and depression (Adkins & Kamp-Dush, 2010).

In addition, the incidence of mental health problems among women experiencing IPV was 47.6% in 18 studies of depression (Beydoun et al., 2010). The mental health of women who are exposed to intimate partner violence declines quicker than those who are not exposed to IPV (Pico-Alfonso, Garcia-Linares, Celda-Navarro, Blasco-Ros, Echeburua & Martinez, 2006). Additionally, women facing and experiencing violence, specifically during their pregnancy, are more likely to develop symptoms of anxiety and depression (Yasien et al., 2018). O'Rinn and Mason (2014) found that 50% of the women who had experienced IPV suffered from mental health problems, and nearly 75% of the women who suffered from severe IPV had one or more diagnosed mental health disorders. Yasien et al. (2018) conveyed that violence against women, specifically during pregnancy, is prevalent and is related to symptoms of anxiety, depression, and stress. Furthermore, battered women have a variety of other mental health issues depending on the type of violence they encountered or experienced (Karakurt, Smith & Whiting, 2014). IPV is detrimental to women and their health; however, different types of intimate partner violence affect pregnant women in various ways and have an impact on their lives and health.

Psychological Aggression (Expressive Aggression)

There is a considerable amount of literature that established how psychological aggression, or expressive aggression, towards women affects their health outcomes. According to David-Ferdon, Vivolo-Kantor, Dahlberg, Marshall,

Rainford, and Hall (2016), psychological aggression is the use of verbal and non-verbal communication with the intention to harm another person mentally or emotionally. Furthermore, psychological aggression includes expressive aggression (for example: name calling, insulting or humiliating an intimate partner) and controlling or coercive behaviors (CDC, 2018). Women who were victims of frequent psychological aggression were found to have a higher risk for depression (Martin, Li, Casanueva, Harris-Britt, Kupper & Cloutier, 2006). According to Breiding, Chen, and Black (2014), 48.4% of women in the US have experienced at least one psychologically aggressive behavior by an intimate partner. Further, 41.1% of women have experienced at least one form of coercive control by a partner, and 31.9% have experienced at least one type of expressive aggression by an intimate partner during their lifetime (Breiding et al., 2014).

Pico-Alfonso et al. (2006) specified that psychological intimate partner violence was a stronger, independent predictor than physical IPV when analyzing depressive and anxiety symptomatology. Psychological abuse is not easy to measure; however, this type of violence increases the susceptibility to mental health illnesses for a broad spectrum of individuals that includes pregnant women. McMahon, Huang, Boxer, and Postmus (2011) explained that psychological aggression that occurred during pregnancy, even at low levels, was related to maternal depression during pregnancy.

Also, psychological abuse towards pregnant women can have a negative impact on their mental health post-delivery (Tiwari et al., 2008). Women who experienced psychological abuse by their partner during pregnancy had higher levels

of depressive symptoms (Tiwari et al., 2008). The occurrence of depression and anxiety were high during the entire pregnancy but was much higher during the first trimester (Teixeira, Figueiredo, Conde, Pacheco & Costa, 2009). As expressed, psychological violence or expressive violence is damaging to pregnant women's mental and physical health, because the mind has a strong influence over one's health.

Sexual Violence

Sexual violence is another form of intimate partner violence. Sexual violence occurs when an individual does not consent to sexual activities. The CDC (2018) defines sexual violence as rape, sexual coercion, unwanted sexual contact, and non-contact unwanted sexual experiences. Non-contact unwanted sexual experiences are defined as unwanted sexual attention that does not involve physical contact, such as making sexual comments often called verbal sexual harassment (CDC, 2018). David-Ferdon et al. (2016) found that more than one in three women experienced sexual violence involving physical contact during their lifetime. In the US, 43.6% of women experienced some form of contact sexual violence in their lifetime, and 21.3% reported completed or attempted rape at some point in their lifetime (Smith, Zhang, Basile, Merrick, Wang, Kresnow & Chen, 2018). Apart from this data, the literature conveys that 16.4% of psychologically abused women were also sexually abused by their partners (Pico-Alfonso et al., 2006).

In the literature, physical and sexual coercion before pregnancy were associated with anxiety, obsessive-compulsive disorder, and posttraumatic stress disorders symptoms (Gage & Hutchinson, 2006). Sexual pressure during pregnancy

was also found to be related to anxiety (Desmarais, Pritchard, Lowder & Janssen, 2014). Individuals who dealt with various levels of sexual abuse and physical assault by their significant other before or during pregnancy had higher levels of depressive symptoms compared to their non-abused counterparts (Martin et al., 2006). Gage and Hutchinson (2006) explained that 16% of women were subjected to violence by their partners during the 12 months preceding to the participation in their study. Women who experienced childhood and adult sexual abuse are more susceptible to adverse reproductive and physical health consequences such as chronic pains, injury, gynecological, and gastrointestinal problems (Gage & Hutchinson, 2006). Intimate partner sexual violence and abuse can lead to unwanted pregnancy and sexually transmitted infections. Furthermore, 16% of women who are married or in a cohabiting union experienced sexual violence in the past 12 months (Gage & Hutchinson, 2006). Women who have been sexually abused have higher depression and anxiety scores and greater life stressors compared to depressed women who have not been abused (Kendall-Tackett, 2007).

Sexual violence is detrimental to women's health and can lead to other issues such as unhealthy eating patterns, eating disorders, misusing alcohol or drugs, and inadequate prenatal care utilization (Breiding, 2014); these behaviors can negatively impact a woman's health and pregnancy. Bailey (2010) explained that women who are experiencing IPV are more likely to begin prenatal care in the third trimester. Women who begin prenatal care in their last trimester are at greater risk of preeclampsia, gestational diabetes, and other health conditions. In general, sexual

violence is a devastating and disheartening issue that has been shown to cause health problems.

Physical violence

The last area of intimate partner violence is physical violence, which is defined as a person who hurts or tries to hurt their partner by kicking, hitting, or using another type of physical force (David-Ferdon et al., 2016). Breiding et al. (2014) found that the occurrence of physical violence was significantly higher for female victims than their non-abused female counterparts. Possible health consequences for women exposed to physical violence include physical injuries such as trauma inflicted to the head, face, breasts, abdomen, genitalia, and reproductive system (Bailey, 2010). These consequences potentially lead to mental health illnesses, such as anxiety and depression, or physical health conditions, such as gastrointestinal disorders, psychosomatic disorders, pain syndromes, and reproductive consequences (Gartland, Hemphill, Hegarty, & Brown, 2011).

The literature demonstrated that women who endured physical assault a year prior to being pregnant were found to be depressed during the following year (Martin et al., 2006). Additionally, the level of physical assault or sexual coercion may endanger women's mental health, irrespective of the women's pregnancy status (Martin et al., 2006). In addition, the evidence suggests that women who encountered domestic violence during pregnancy may face a unique set of health problems such as preterm labor, palpitations, sexual dysfunction, and recurrent vaginal infections. Pregnancy can be affected by violence through direct and indirect mechanisms,

including are sexual assault, bullying, and emotional manipulation (Koski, Stephenson & Koenigl, 2011).

In addition, the occurrence and effects of physical violence are observed during postpartum. Agrawal, Ickovics, Lewis, Magriples, and Kershaw (2014) explained that 7.6% women dealt with physical IPV at six months postpartum and 8.5% of women dealt with physical violence at 12 months postpartum, indicating that physical IPV does not stop once the pregnancy is over. Ansara, Cohen, Gallop, Kung, and Schei (2005) conducted a study on women who were eight to ten weeks postpartum and found that women with a history of physical abuse are more likely to experience depression and physical health symptoms, such as postpartum fatigue, headaches, bleeding, chronic pains, insomnia, and anxiety. This data provides insight on how physical violence affects pregnant women and brings bring awareness to and provide a foundation for interventions to be created.

The harshness, severity, and extensiveness of violence against women influences how women will cope, both mentally and physically. For example, Hellmutha, Jaquier, Overstreet, Swan, and Sullivan (2014) explained that some women engaged in avoidance coping, which then influenced their mental health and drug use problems, especially when the violence was psychological or sexual. The ability for women to work through their trauma depends on their psyche and willingness to cope with the abuse rather than turning to unhealthy behaviors (Hellmutha et al., 2014). Additionally, the data expressed that women who experienced both physical and sexual violence scored higher on the Index of Spouse Abuse, a 25-item scale designed to measure the severity of physical violence, and on

the Women's Experience with Battering Scale, which is used to assess battering. (Coker, Smith, McKeown & King, 2000). Physical IPV is detrimental to women's mental health and physical health because this type of violence is oftentimes linked or combined with sexual violence or emotional aggression. Physical violence should not be taken lightly, because it causes a lot of issues for pregnant women who endure IPV within their relationship. Thus, the research shows that IPV can heavily influence a woman's quality of life, which in turn can shape her life while pregnant.

Intimate Partner Violence and Age

Intimate partner violence affects women between the ages of 18 to 29, 30 to 44, and 45 and older. Wilke and Vinton (2005) stated that less than 20% of the women sampled in their study experienced severe physical and mental health problems, and the data showed that the rates were significantly higher for women who are 45 and older in age. Additionally, in this study about 40% of the older women had injuries as a result of domestic violence and were more likely than the younger women, 18 to 44 years of age, to have prescriptions for psychotropic medications (Wilke & Vinton, 2005). Additionally, women who are 45 and older had a higher rate of chronic mental health problems and used tranquilizers and antidepressants more frequently than the younger women (Wilke & Vinton, 2005). This IPV occurred more often with the older women because they endured longer durations of violence from their partners or spouse (Wilke & Vinton, 2005).

The average rate of abuse that older women endured was 14.5 years, which was more than five times the average duration of violence in the youngest group of women (Wilke & Vinton, 2005). Wilke and Vinton found that older women are more

likely to remain with their abusers than younger women. Approximately 5.25% of older women reported being physically abused in the past year, and 22.8% were verbally abused in the past year (Mouton, 2003). Exposure to abuse was found to affect the mental health of older women (Mouton, 2003). Forty-nine percent of older victims reported physical abuse as their primary form of intimate partner violence, while another 50% were victims of emotional abuse (Lundy & Grossman, 2009). In addition, 14.8% of the older women reported mental health conditions compared to 3.2% of the younger group (Knight & Hester, 2016). When exposed to domestic violence, older women experienced higher levels of mental health problems (Wilke & Vinton, 2005). However, older adults experience all the same psychological effects as younger adults as a result of domestic violence (Knight & Hester, 2016).

Contrary to the findings outlined above, the literature also expressed that younger women encounter more IPV compared to their counterparts. Lundy and Grossman (2009) reported that 64% of the younger victims had endured physical abuse as the primary type of abuse, while 34% were emotionally abused only and 2% had sexual abuse as their primary form of abuse. The data shows that among women of reproductive age, young women are more at-risk of experiencing physical and sexual intimate partner violence (Stöckl, March, Pallitto & Garcia-Moreno, 2014). IPV decreases as age increases, according to Stöckl et al. (2014). Individuals who get married at younger ages are more likely to face relationship stressors that can lead to IPV, for example employment instability, early pregnancies, and financial difficulties (Stöckl et al., 2014). Researchers have found that younger-aged women with low education levels and low income are at greater risk for IPV (Alhusen, Ray, Sharps, &

Bullock, 2015). Young women with low income and educational status find it difficult to carry a household financially on their own. Therefore, they become dependent on their significant other and their power within the household decreases which can put them at greater risk to experience IPV (Gibbs, Duvvury & Scriver, 2017). Consequently, younger women reported greater levels of stress, depression, alcohol, and drug abuse in a study performed by Gibbs et al. (2017).

Thus, the research suggests that younger women have different psychosocial needs than older women (Wilke & Vinton, 2005). Stöckl et al. (2014) explained how young adults are more likely to engage in risky and unhealthy behaviors compared to older adults. Moreover, the development and growth of the prefrontal cortex is not fully accomplished until age 25 (Arain et al., 2013). Understanding how age difference interacts with IPV will help create effective interventions that are catered to older and younger women. In conclusion, age differences are an essential part to understanding why the effects of IPV vary among the older and younger women.

Conclusion

Intimate partner violence is a serious issue that negatively impacts women's mental and physical health. Pregnant women who are subjected to IPV during their pregnancy are, along with their unborn child, exposed to greater mental and physical health risks. Previous research has expressed that IPV victimization is associated with a higher risk of adverse mental and physical health outcomes (Coker, Davis, Arias, Desai, Sanderson, Brandt & Smith, 2002). Consequently, there are different forms of IPV that pregnant women endure, and each form of violence has its own negative effects. Finally, women, young or old, deal with the repercussions of IPV.

Purpose of the Study

The current study explored the effects of intimate partner violence on a mother's mental health during pregnancy. It examined the various types of IPV and their impact on anxiety and depression in pregnant women. Age differences in rates of IPV among pregnant women were also explored

Research Questions

The study answered the following research questions:

1. Does intimate partner violence increase maternal mental illness during pregnancy?
2. How do the various types of intimate partner violence that happen during pregnancy influence anxiety and depression?
3. Are there age differences in the rates of intimate partner violence among pregnant women?

Hypothesis

It is hypothesized that intimate partner violence affects maternal mental health during pregnancy. It is speculated that the different types of intimate partner violence that happen during pregnancy influence anxiety and depression. It is hypothesized that the rates of intimate partner violence do differ in age among pregnant women.

Method

Design

A cross-sectional design was used to examine the effects of intimate partner violence on maternal mental health during and after pregnancy. The data used in this study was a secondary analysis of the National Pregnancy Risk Assessment Monitoring System (PRAMS), which is part of the CDC (Shulman, D'Angelo, Harrison, Smith & Wamer, 2018).

Procedures

The collection of data for PRAMS was a combination of mail and telephone interviews. To contact the sampled women, health department staff make five attempts via mail and external professional survey research organizations make up to fifteen call attempts staggered over different times and days of the week (Shulman et al., 2018). All participants are first contacted through mail. One week after the last survey is mailed, telephone contact begins for all the participants who did not complete the survey via mail.

The CDC implemented the PRAMS integrated Data Collection System (PIDS) to help collect the data. PIDS is a secure web-based system that tracks all aspects of data collection. Once the data collection cycle is completed, the information in PIDS is extracted for data processing and weighting (Shulman et al., 2018). Data was collected from 47 states. Within the PRAMS survey, there are specific questions that ask about physical abuse, mental health, and physical health. The paper survey is a 14-page questionnaire that is mailed out to participants and

takes about 20 minutes to complete. The phone interviews are conducted by an interviewer and take about 25 to 30 to complete.

To obtain access to the dataset, a Pregnancy Risk Assessment Monitoring System Proposal Application Form was completed by the principal researcher. Within the application, the proposal title, contact information, and all other information regarding the research study (e.g. year of data requested, states/sites requested, abstract, proposal keywords, etc.) needed to be correctly completed. A complete list of all the indicators and a research abstract was required for the PRAMS review board to provide a general understanding of the research that would be conducted, and a data sharing agreement form was to be completed and signed by the primary researcher. Once all the required documents were completed, the researcher combined all documents into a single PDF to submit to PRAMS. The application was emailed to PRAMSProposals@cdc.gov. Once the application is received, it takes four to six weeks for the PRAMS review board to review the proposal. If approved, the PRAMS review board informs the researcher and a dataset is created, which is then emailed to the researcher within four to six weeks. This research study was approved on April 30, 2019 (Appendix B).

Participants

The population consisted of women who live in one of the 47 states that participated in the survey and recently gave birth to a live-born infant or mothers whose infants had died after a live birth during the surveillance year (Shulman et al., 2018). The participants are chosen at random through the state's birth certificate file system to help identify new mothers. The sample sizes per state varied from 1,000 to

3,000 women, and the stratification plan, a technique used to sort data, people, and objects into distinct groups, determined the sample size, the number of births, and the available budget for sampling (Shulman et al., 2018). Using G*Power Software, Version 3.1.9.2, a medium effect size, an alpha level of .05 and a power 95% was selected to estimate the minimum sample size of 207 female respondents for this particular study.

Independent Variable and Dependent Variable

The independent variable for the first research question was current spouse/partner abuse (PAD6HUS). This variable was labeled “Abuse During Pregnancy – by Husband/Partner” and was recoded to “AbuseDP_Husband.” Responses were reverse coded from “1 = No” and “2 = Yes” to “1 = Yes” and “2 = No.” For question two, the independent variables were the different forms of intimate partner violence (IPV) experienced during pregnancy, including feeling unsafe and controlled (when the abuser has the power and authority over the victim), partner anger (a strong feeling of hostility or annoyance towards the victim), and instances of sexual violence. Feeling unsafe (HDP_SAF) was recoded to “Unsafe_DuringPG”, anger (HDP_ANGR) was recoded to “Anger_DuringPG,” controlled (HDP_CTRL) was recoded to “Controlled_DuringPG,” and sexual violence (HDP_SEX) was recoded to “ForcedSex_DuringPG.” All four variables were reverse coded from “1 = No” and “2 = Yes” to “1 = Yes” and “2 = No.” For research question 3 the independent variable was maternal age (MAT_AGE_NAPHSIS). Maternal age is a categorical variable with seven response options: “1 = ≤ 17,” “2 = 18-19,” “3 = 20-24,” “4 = 25-29,” “5 = 30-34,” “6 = 35-39,” and “7 = ≥40.”

The dependent variables for questions one and two were mental health illness (e.g. depression and anxiety). Depression during pregnancy (MH_PGDX8) was recoded to “Dep_During_Preg,” and respondents’ responses were reverse coded from “1 = No” and “2 = Yes” to “1 = Yes” and “2 = No.” A “Yes” response meant depression was reported during pregnancy, while a “No” response meant depression was not reported during pregnancy. Anxiety during pregnancy (PG8_ANX) was recoded as “Anx_Dep_Preg,” and responses were reverse coded to “1 = Yes” and “2 = No.” A “Yes” response meant anxiety was reported during pregnancy, and a “No” response meant anxiety was not reported during pregnancy. For question three, the dependent variable was current spouse/partner abuse (PAD6HUS). This variable was recoded to “AbuseDP_Husband,” and responses were reverse coded from “1 = No” and “2 = Yes” to “1 = Yes” and “2 = No.” A “No” response meant no partner or spousal abuse occurred during pregnancy, and a “Yes” response meant partner or spouse abuse did occur during pregnancy.

Data Analysis

A Chi-Square Test of Independence was used to answer all three research questions. IBM Statistical Package for the Social Sciences (SPSS), Version 26 was used to conduct the analyses (IBM SPSS Statistics, 2019).

Results

Participant Demographics

The sample consisted of 38,549 women. The ages ranged from 17 to 40⁺ years of age at the time of the data collection (see Table 5). The female respondents who identified as White (non-Hispanic) made up 63.1% of the sample, followed by 21.4% who reported being Black and 15.1% who reported other which included Chinese, Filipino, Japanese, Native Hawaiian, and Other. Almost 14% of female respondents reported having depression during pregnancy and 19.6% reported having anxiety during pregnancy. Women who reported being controlled by their partner during pregnancy accounted for 4.6% of the sample, with 3.3% reported feeling unsafe, 1.3% reported forced sex during pregnancy, and 4.0% reported feeling anger from their partner during pregnancy.

Intimate Partner Violence and Maternal Mental Illness

In order to determine if there is increase in mental health illness during pregnancy is due to intimate partner violence, a Chi-Square Test of Independence was calculated. A significant relationship was found between the two variables ($\chi^2(1, N = 37,317) = 471.9, p < .001$). Pregnant women who were abused by their husbands or partners during pregnancy were found to be 5.20 times more likely to have depression than pregnant women who were not abused (see Table 1). To avoid a Type I, error a 20% random sample was conducted, and the results were still significant.

A Chi-Square Test of Independence was calculated comparing abuse in pregnant women and the increase in mental health illness. A significant interaction was determined ($\chi^2(1, N = 7,576) = 61.34, p < .001$) as shown in Table 2. Pregnant

women who endured abuse from their husbands or partners during their pregnancy were 3.77 times more likely to have anxiety than pregnant women who did not experience abuse during their pregnancy.

The Influence of Intimate Partner Violence on Anxiety and Depression

Anxiety. A Chi-Square Test of Independence was run to determine if a relationship exists between the different forms of IPV (feeling unsafe and controlled, partner anger, and forced sex) and anxiety. When looking at the relationship between women who felt unsafe and anxiety, a significant relationship was found between the two variables ($\chi^2(1, N = 974) = 8.90, p < .001$). Specifically, women who reported feeling unsafe during pregnancy were 2.72 times more likely to have anxiety compared to those who did not report feeling unsafe.

A Chi-Square Test of Independence was run to compare the frequency between women feeling controlled by their partners during pregnancy and anxiety. The results of the analysis found that there was a significant relationship between control and anxiety ($\chi^2(1, N = 1,884) = 34.19, p < .001$). Pregnant women who reported being controlled by their partner during their pregnancy were 3.83 times more likely to have anxiety than women who did not report being controlled by their partner (see Table 3).

A Chi-Square Test of Independence was conducted to determine if a relationship existed between partner anger and anxiety. The results of the analysis found that there was a significant relationship between two variables ($\chi^2(1, N = 973) = 20.27, p < .001$). Women who reported that their partners displayed anger towards

them during pregnancy were 4.50 times more likely to have anxiety compared to those who did not report that their partner displayed anger.

Thirdly, forced sex and anxiety were tested to determine if there was a relationship between the two variables. A statistically significant relationship was found ($\chi^2(1, N = 1,844) = 16.71, p < .001$). Thus, sexual violence during pregnancy does influence a woman's anxiety. Specifically, pregnant women who experienced sexual violence during pregnancy were 4.33 times more likely to have anxiety than women who did not report being forced to have sex with their partner.

Because multiple Chi-Square analyses were conducted to answer this research question, a Bonferroni correction was calculated, which reduced the p-value from 0.05 to 0.0125. Even with the Bonferroni correction, all results were still found to be significant.

Depression. A Chi-Square Test of Independence was calculated comparing the frequency of the various types of IPV (feeling unsafe and controlled, partner anger, and forced sex) and depression. A significant relationship was found between feeling unsafe during pregnancy and depression ($\chi^2(1, N = 5,759) = 207.54, p < .001$). Women who reported feeling unsafe during their pregnancy were 5.90 times more likely to have depression than women who did not report feeling unsafe during their pregnancy.

Additionally, feeling controlled (when the abuser has power and authority over the victim), and depression were tested to compare the frequency of responses. A Chi-Square Test of Independence determined that there was a significant relationship between the two variables ($\chi^2(1, N = 6,630) = 292.40, p < .001$). The

analysis expressed that pregnant women who reported being controlled by their partner during their pregnancy were 6.29 times more likely to have depression than women who did not report being controlled (see Table 4).

A Chi-Square Test of Independence was run to test the connection between partner anger and depression. A significant relationship was found ($\chi^2(1, N = 5,761) = 233.52, p < .001$). Women who endured anger from their partner during their pregnancy were 7.44 times more likely to have depression than women who did not endure anger from their partner.

Finally, a Chi-Square Test of Independence was conducted to determine the relationship between forced sex and depression. A statistically significant relationship was found between the two variables ($\chi^2(1, N = 6,629) = 96.23, p < .001$). Pregnant women who were forced to have sex during their pregnancy were 6.47 times more likely to have depression than women who were not forced to have sex.

Again, because multiple Chi-Square analyses were conducted to answer the second research question, a Bonferroni correction was calculated, which reduced the p-value from 0.05 to 0.0125. Even with the Bonferroni correction, all results were still found to be significant.

Age Difference in Intimate Partner Violence (IPV)

A Chi-Square Test of Independence was calculated to determine the relationship between age differences and intimate partner violence. A significant statistic was found ($\chi^2(1, N = 37,764) = 65.23, p < .001$). The analysis expressed that age does play a significant role in IPV. Women between the ages of 25 and 29 had the

highest rates of IPV than any other age group, accounting for over 50% of the cases of reported IPV (see Table 5).

Discussion

The goal of this study was to examine how physical violence, psychological violence, and sexual violence during pregnancy impact anxiety and depression in pregnant women; to determine if intimate partner violence increases mental health illness during pregnancy; and to observe how age differences influence the rates of IPV among pregnant women.

The Influence of Intimate Partner Violence on Anxiety and Depression

The results supported that different forms of IPV during pregnancy influence anxiety and depression. For example, the findings in this study suggested that women who felt unsafe during their pregnancy were 2.72 times more likely to have anxiety and 5.90 times more likely to have depression; these findings are consistent with Campbell's (2002) research suggesting that some battered women might have chronic depression due to the stress of a violent relationship. Moreover, the increase in frequency of the various forms of IPV contribute to an increased risk of developing a psychiatric disorder (Okuda et al., 2011). When IPV is experienced by adults, it has been found that it may increase the risk of new onset psychopathology (Okuda et al., 2011). In a study conducted by Makayoto, Omolo, Kamweya, Harder, and Mutai (2012), it was found that four out every ten participants suffered from IPV during pregnancy.

Additionally, research has found that forced sex is associated with anxiety and depression, and the results of this study expressed that 4.5% of the sampled women

who had experienced sexual violence had depression while 3.7% had anxiety. During pregnancy, more women reported enduring sexual violence despite feeling that IPV during pregnancy was less severe than before the pregnancy (Makayoto et al., 2012). This shows that women experience IPV more frequently than originally thought, and these relationships can be difficult for women to leave, especially pregnant women.

Experiencing bilateral violence during pregnancy increases the likelihood of women having adverse mental health outcomes (Thomas et al., 2019). Furthermore, in previous studies psychological aggression during pregnancy was related to symptoms of anxiety and posttraumatic stress disorder (Desmarais, Pritchard, Lowder & Janssen, 2014). According to Desmarais et al. (2014), sexual coercion during pregnancy was associated with symptoms of depression and anxiety while physical assault during pregnancy had the greatest impact on the maternal mental health and was correlated with depression, anxiety, obsessive-compulsive disorder, and posttraumatic stress disorder.

In contrast to previous research, the findings of this study showed that the associations between intimate partner abuse (any form) and psychological symptoms of depression and anxiety were significant. Sadly, pregnant women who endure some form of IPV during their pregnancy are at greater risk for mental health illness such as depression and anxiety.

Intimate Partner Violence During Pregnancy Increases Mental Health Illnesses

The current study also found that partners inflicting violence of any type towards their pregnant partner during their pregnancy does increase the occurrence of mental health illness. These results showed that 5.1% of women had depression and

4.0% of women had anxiety, which is consistent with the literature. Furthermore, IPV during pregnancy is a contributing factor to increasing adverse maternal mental health issues (Alhusen et al., 2015). Rurangirwa, Mogren, Ntaganira, Govender, and Krantz (2018) found that women exposed to IPV during pregnancy were more likely to have non-psychotic mental health disorders, such as depression, anxiety, suicide ideation and posttraumatic stress disorder, than those not exposed to IPV. Ludermir, Valongueiro, and Barreto de Araujo (2104) stated that women who reported all forms of IPV during pregnancy showed the highest association with a common mental disorder compared to non-pregnant women who also experience IPV.

It is evident that women who experience IPV are at a greater risk of having some form of mental health illness. To decrease the occurrence of IPV and mental health illness in pregnant women, an intervention that focuses on IPV and pregnancy needs to be implemented and include a single, brief individualized consultation, case management, and referral to social care workers as well as multiple therapy sessions during pregnancy and postpartum (Jahanfar, Janssen, Howard & Dowswell, 2013). This type of intervention will lead to effective change in women's mental health.

Moreover, health professionals, when talking with expectant mothers, should ask about the family dynamics within the household. Asking questions related to the father will provide more understanding of the home dynamic and assist the health professional in deciding the best approach to the situation and provide proper resources to help the mother-to-be.

Intimate Partner Violence and Age

IPV affects women of all ages. Women who are younger in age have a higher risk of experiencing violence in their relationships compared to older women.

Overall, both older and younger women endure IPV during pregnancy. The results suggested that women between the ages of 25-29 (n = 195) are more likely to experience and deal with IPV in their relationships while being pregnant compared to women between the ages of 40 and up (n = 12). These results aligned with the literature, for example, Stöckl et al. (2014) research suggested that as age increases intimate partner violence decreases.

Perhaps, the most interesting finding is that IPV affects women who are between the ages of 20-24 (27.0%) and the ages of 25-29 (32.7%) more than women who are in their 30s and 40s. This study's results showed that women in the thirties are the least likely to experience IPV 20.1%. These results imply that younger women are easier to control than older women which may be associated to life experience and a strong self-identity, as shown by the high percentage of women being abused during their pregnancy.

Study Limitations

This study had several limitations. First, there could have been an under-reporting or over-reporting of IPV, depression, and anxiety. Over-reporting may have occurred due to most of the participants being millennials who have a different perception or definition of abuse than the previous generations. Participants may have intentionally not completed the Pregnancy Risk Assessment Monitoring System (PRAMS) due to feeling shame or fear related to the sensitive nature of the questions

related to IPV. Furthermore, this data was collected via self-report survey and interviews which can evoke measurement errors such as recall bias and under-reporting. Selection bias may have occurred since the survey focuses on pregnant women and women who have given birth recently. Second, the design of the study is based on a cross-sectional correlational, so casual factors cannot be drawn from findings. Lastly, generalization should be taken with caution due to the study mainly focusing on IPV and pregnancy.

Public Health Implications

This study explored the various forms of IPV and its effects on maternal mental health during pregnancy, age differences, and how mental health illness increases in pregnant women who experience IPV during their pregnancy. The lack of awareness on IPV and its effects on pregnant women is one of the reasons why this is still occurring. Certainly, there needs to be more current and up-to-date research that focuses on the newer generation of mothers-to-be and new effective interventions that lead to solutions. IPV is plaguing our community, and the interventions that are currently in place need to be reevaluated through research.

Despite the limitations, the results have important implications for health care providers, community health workers, public health practitioners, health educators, social workers, and others who work with families and family planning. For example, screening should take place for all forms of intimate partner violence because different mental health issues arise from the different forms of IPV. Additionally, provisions for a therapist during and after the pregnancy should be made available. Health care providers should focus on the family unit by including both mothers and

fathers during the prenatal appointments (Charles & Perreira, 2007); this will allow the provider to have a better understanding of the home dynamic.

Public health practitioners can use this information from this study to better implement more community defined programs and interventions that are culturally appropriate by age and race. The implementation of up-to-date interventions can provide, support, and give communities the necessary skillset to build social support systems, support groups, reduce mental health illness among pregnant women, and expand awareness and the importance of addressing intimate partner violence among pregnant women and the mental health issues that comes with the abuse. Furthermore, public health professionals can work with organizations such as March of Dimes and Battered Women's Justice Project (BWJP) to collaborate on community events and domestic violence awareness month events to bring more awareness and prevent intimate partner violence within their community.

Conclusion

Overall, intimate partner violence is a very complex issue and focusing on one type of IPV at a time is not effective because women have different experiences with IPV. Therefore, different interactions or combinations of IPV that represent the different realities of IPV victims should be considered when assessing the impact of IPV on women's mental health. This is especially true for pregnant women, who experience these forms of violence during a sensitive and fragile time in their lives. This should not be taken lightly because IPV has a direct and indirect effect on the mother and unborn child which then can lead to detrimental health and mental health outcomes.

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Appendix A: Tables

Table 1

Crosstabulation of Intimate Partner Violence by Depression During Pregnancy

Partner Abuse	<u>Depression</u>		<u>OR</u>	χ^2	<u>df</u>	<u>p-value</u>	<u>95% CI</u>	
	<u>Yes</u>	<u>No</u>					<u>LL</u>	<u>UL</u>
Yes	262 (5.1%)	330 (1.0%)	5.20	471.9	1	.001	4.40	6.12
No	4870 (94.9%)	31855 (98.4%)						

Note. The sample size was n = 37,317.

Table 2

Crosstabulation of Intimate Partner Violence by Anxiety During Pregnancy

Partner Abuse	<u>Anxiety</u>		<u>OR</u>	χ^2	<u>df</u>	<u>p-value</u>	<u>95% CI</u>	
	<u>Yes</u>	<u>No</u>					<u>LL</u>	<u>UL</u>
Yes	59 (4.0%)	66 (1.1%)	3.77	61.34	1	.001	2.64	5.38
No	1427 (96.0%)	6024 (98.9%)						

Note. The sample size was n = 7,576

Table 3
Crosstabulation of Various Types of Intimate Partner Violence During Pregnancy by Anxiety

	<u>Anxiety</u>		<u>OR</u>	χ^2	<u>df</u>	<u>P-value</u>	<u>95% CI</u>	
	<u>Yes</u>	<u>No</u>					<u>LL</u>	<u>UL</u>
Unsafe								
Yes	16 (6.17%)	19 (2.6%)	2.72	8.90	1	.003	1.38	5.38
No	222 (93.3%)	717 (97.4%)						
Forced Sex								
Yes	14 (3.7%)	13 (0.9%)	4.33	16.71	1	.001	2.02	9.29
No	967 (85.1%)	5575 (99.3%)						
Controlled								
Yes	34 (9.0%)	37 (2.5%)	3.83	34.19	1	.001	2.37	6.19
No	863 (85.1%)	5464 (97.3%)						
Anger								
Yes	19 (8.0%)	14 (1.9%)	4.50	20.27	1	.001	2.20	9.06
No	219 (92.0%)	721 (98.1%)						

Note. The sample size for “Unsafe Sex” was n = 974. The sample size for “Forced Sex” was n = 1,844. The sample size for “Controlled” was n = 1,844. The sample size for “Anger” was n = 973.

Table 4
Crosstabulation of Various Types of Intimate Partner Violence During Pregnancy by Depression

	<u>Depression</u>		<u>OR</u>	χ^2	<u>df</u>	<u>p-value</u>	<u>95% CI</u>	
	<u>Yes</u>	<u>No</u>					<u>LL</u>	<u>UL</u>
Unsafe								
Yes	115 (12.5%)	114 (2.4%)	5.90	207.54	1	.001	4.51	7.73
No	807 (87.5%)	4723 (97.6%)						
Forced Sex								
Yes	46 (4.5%)	41 (0.7%)	6.47	96.23	1	.001	4.22	9.91
No	967 (85.1%)	5575 (99.3%)						
Controlled								
Yes	151 (14.9%)	152 (2.7%)	6.29	292.40	1	.001	4.97	7.97
No	863 (85.1%)	5464 (97.3%)						
Anger								
Yes	106 (11.5%)	83 (1.7%)	7.44	233.52	1	.001	5.53	10.01
No	816 (88.5%)	4756 (98.3%)						

Note. The sample size for “Unsafe Sex” was n = 5,759. The sample size for “Forced Sex” was n = 6,629. The sample size for “Controlled” was n = 6,630. The sample size for “Anger” was n = 5,761.

Table 5
Crosstabulation of Age Differences in Intimate Partner Violence

<u>Age</u>	<u>Partner Abuse</u>		χ^2	<u>df</u>	<u>p-value</u>
	<u>Yes</u>	<u>No</u>			
17 and below	13 (2.2%)	406 (1.1%)	65.23	6	.001
18-19	34 (5.7%)	1293 (3.5%)			
20-24	161 (27.0%)	6902 (18.6%)			
25-29	195 (32.7%)	11054 (29.7%)			
30-34	120 (20.1%)	10828 (29.1%)			
35-39	62 (10.4%)	5459 (14.7%)			
40 and up	12 (2.0%)	1225 (3.3%)			

Note. The sample size was n = 37,764.

Appendix B: PRAMS Review Board Approval

