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Amber N. Moore Date

The Impact of Depression and Childhood Trauma on Young Women's Attitudes Towards Pregnancy

By

Amber N. Moore

Master of Public Health
Epidemiology

_____

Kelli S. Hall, PhD, MS
Thesis Committee Chair

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By

Amber N. Moore

B.S.
The Ohio State University
2018

Thesis Committee Chair: Kelli S. Hall, PhD, MS

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Abstract

The Impact of Depression and Childhood Trauma on Young Women's Attitudes Towards Pregnancy

By Amber N. Moore

Unintended pregnancies, comprising nearly half of all pregnancies in the U.S., have been a significant concern for decades due to their negative impact on the individual, community, and global scale. Many factors have been shown to increase the risk of having an unintended pregnancy, including having a history of childhood trauma and experiencing moderate/severe depressive symptoms. However, almost all of this research focuses on actual pregnancies, and very little on the desires and attitudes of a woman as she navigates through the pre-pregnancy process. Research has shown that pregnancy attitudes help determine fertility intention, and that women with ambivalent attitudes are less likely to use contraception, and are at a higher risk for unintended pregnancies. This study examined the association between childhood trauma and depression and women's attitudes towards a hypothetical pregnancy to better understand their role in unintended pregnancy.

To understand these associations, this study utilized baseline data on 187 young women aged 15 to 24 years old that participated in the Young Women's Stress Study. Bivariate analyses and multivariate logistic regressions were conducted to address the two research questions. For the total sample, one hundred and forty-four (73.3%) women had ambivalent pregnancy attitudes. Women with ambivalent pregnancy attitudes were more likely to be experiencing moderate/severe depressive symptoms and have a history of childhood trauma than those with anti-conception attitudes. Through multivariable logistic regression, this study found that those with a history of childhood trauma were three times as likely to have ambivalent pregnancy attitudes compared to those with no history, and that the relationship was significant. This study also found a relationship between moderate/severe depressive symptoms and ambivalent pregnancy attitudes, although this was not found to be significant in this sample.

The results of this study suggest that women with a history of childhood trauma or moderate/severe depressive symptoms are more likely to have ambivalent pregnancy attitudes, which may place them at risk for unintended pregnancies. The impact of trauma and depression on pregnancy attitudes and the subsequent associations with pregnancy warrant further research.

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INTRODUCTION

Unintended Pregnancy

Public Health Significance of Unintended Pregnancy

Unintended pregnancy is any pregnancy that occurs when a woman was not actively trying to become pregnant. The rate of unintended pregnancy has gradually decreased in the United States, with 45% of all pregnancies classified as unintended in 2011, and 18% of all pregnancies classified as unwanted (1). Previous studies have shown strong relationships between several demographic characteristics and unintended pregnancy. Women who are younger, generally below the age of 24, are more likely to have unintended pregnancies. As age increases, the rate of unintended pregnancy decreases, until the age of 35, when it then increases (1, 2). Race also tends to be associated with a higher rate of unintended pregnancy, with non-Hispanic black women making up the highest proportion, followed by Hispanic women (1, 2). Additional factors that are associated with an increased risk of unintended pregnancy include being non-married but co-habitating, living below the poverty line, and having a lower level of education (1, 2).

Unintended pregnancies have long been considered a significant public health concern with social and economic consequences for women, their families, and society. On a societal scale, unintended pregnancies are associated with high medical costs, reduced quality of life, and reduced workforce efficiency. Several studies have estimated the director medical costs of unintended pregnancies in the United States at $5 billion per year (3, 4). When considering additional costs such as prenatal care, labor and delivery,

post-partum care, and 60 months of childcare, preventing all unintended pregnancies would save the United States $15.5 billion a year (4).

Avoiding unintended pregnancies, especially among young women, increases academic achievement (5) and improves health outcomes. Unintended pregnancies generally have worse health outcomes compared to intentional pregnancies for both the woman and the child. Women are less likely to receive early prenatal care or breastfeed (2, 6), and are more likely to smoke or drink alcohol during pregnancy (7). As a result, unintended pregnancy is highly associated with low birth weights and birth complications that can impact both the woman and child (6).

Measuring Unintended Pregnancy

Measuring unintended pregnancy is incredibly difficult, and the definitions of what connotates a pregnancy unintended has changed over time. Historically, pregnancies were dichotomized as being wanted or unwanted (8). However, this measurement far oversimplified the complexity of pregnancy intentions and was expanded by the National Survey of Family Growth and the Pregnancy Risk Assessment Monitoring System (PRAMS) in 1973 to three categories: intended, mistimed, or unwanted, with mistimed and unwanted pregnancies being considered unintended (8). A pregnancy is considered to be mistimed if the woman did not want to become pregnant currently but did in the future. An unwanted pregnancy is when a woman becomes pregnant but did not want to be pregnant currently or in the future (1).

This standard of classification has been critiqued by both researchers and women who experience pregnancy due to the intricacy in understanding pregnancy intentions and

the connotations of the language used with this measurement. When surveyed about the word choice utilized to describe unintended pregnancies, there was a strong dislike towards using the term “unwanted” (9). Therefore, a more nuanced understanding of pregnancy attitudes is necessary to truly comment on the predictors of unintended pregnancy.

The emotions and relationships that women experience regarding contraceptive use, conception and pregnancy are exceptionally complex. They can be molded and changed by social, economic, and personal constructs and by the woman’s lived experience (10). Recent literature has been exploring this relationship through two conceptionally and theoretically separate behavioral constructs: pregnancy attitudes and fertility intentions.

Pregnancy Attitudes

Pregnancy attitudes are defined as the feelings and emotions a woman would feel towards a real or hypothetical pregnancy. In the past, this was generally measured as having positive or negative feelings towards becoming pregnant. However, as previously discussed, there are many factors that impact how women feel about pregnancy and therefore dichotomization distorts the reality of pregnancy attitudes. The use of more complex measurement methods has allowed for variation in how pregnancy attitudes are determined, and now includes attitudes that are considered ambivalent (11).

Simple scales that measuring pregnancy attitudes include asking the woman how she would feel about becoming pregnant at this moment, with possible responses ranging from “It is the worst thing that could happen to me” to “It is the best thing that could

happen to me" (12). More in-depth scales have been developed to understand this construct and include feelings related to social support, financial stability, and ability to handle pregnancy (6).

Previous studies have shown that pregnancy attitudes may be related to uptake and consistent use of contraception for preventing pregnancy. Women with positive, or pro-natalist, attitudes are the least likely to use contraception, whereas women with negative, or anti-conception, attitudes are the most likely to use contraception (13). Ambivalent pregnancy attitudes have varying relationships with contraception use, although this group generally has significant nonuse and inconsistency as compared to women with negative attitudes (2, 14-16).

Due to the complex and dynamic nature of pregnancy attitudes, there are many factors that may influence a woman's thoughts and actions surrounding pregnancy. There is literature to suggest that personal characteristics such as religion (17-19), race (18, 20-22), income (21, 23, 24), education (23, 24) and age (18, 22) may all play a role in a pregnancy attitudes. Additionally, current and former life experiences have been suggested to have an impact as well, such as relationship status (18, 25) and parity (22, 25).

This study will focus entirely on the outcome of pregnancy attitudes, which is how a woman feels towards a hypothetical pregnancy. This is due to the severe lack of literature on that outcome when compared to other outcomes, such as pregnancy intentions and contraception use as it relates to actual pregnancies and births. Fertility intentions are best understood as the plan for pregnancy, and can range from a woman currently trying to become pregnant or a woman not planning on getting pregnant in the

next year (12). Much of this study's design and theoretical framework was built from the research that has been done regarding unintended pregnancies, fertility intentions, and contraceptive usage.

The role of other factors of women's health and wellbeing on pregnancy attitudes have not received as much attention. Critically, the impact of mental health and mental illnesses, especially depression, on a woman's decisions and attitudes is understudied in the current literature and needs to be addressed.

Depression

Public Health Significance of Depression

Mental illnesses, including depression, have been shown to be a pervasive public health concern in the United States and across the world. Depression, also known as major depressive disorder or major depression, is a common mental illness. Primary symptoms of depression include feelings of sadness, loss of interest in previously enjoyable activities, changes in sleep patterns and appetite, and increased fatigue (26). The prevalence of depression among American adults aged 18 and older has been estimated around 7.1%, and around 13.3% among adolescents aged 12 to 17 years (27).

Previous literature shows varying relationships between major depression and racial or ethnic identities in the United States. However, it has been generally demonstrated that non-Hispanic black and Hispanic individuals have higher rates of major depression compared to non-Hispanic whites and non-Hispanic Asians (28, 29). Non-Hispanic black individuals are less likely than non-Hispanic white individuals to experience acute episodes of major depression. Instead, these individuals are more likely

to experience chronic, severe and debilitating depression (30). Additional characteristics that may increase the risk of depression include female gender (27-29), lower education, lower income (28, 31), and living alone (28).

There are many barriers to diagnosis and treatment for depression, including stigma, lack of time (32, 33), lack of healthcare accessibility (32), and childcare issues, especially among women (33). Many of these barriers are also associated with an increased risk of depression, meaning that the people who may need diagnosis and treatment the most are not the ones who can access them. Stigma, or the perceived negative attitudes towards those with depression, plays a major role in individual's willingness to access treatment and the treatment they may receive from their providers (33).

Due the lack of treatment available for these individuals, depression has a significant impact on a societal and economic level. Globally, mental and substance use disorders account for a large portion of the years lived with disability (YLDs) and disability-adjusted life years (DALYs) globally. DALYs are calculated by adding years lost to premature mortality with YLD. In 2013, among mental and substance use disorder related DALYs, depression accounted for 40.5% (34). There is also a substantial economic burden associated with mental illnesses. Major Depressive Disorder (MDD) cost approximately $210.5 billion in the United States in 2010 alone. Most of this cost is associated with lost income as a result of disability and is not primarily due to direct costs, such as treatment (35).

Depression and Unintended Pregnancy

A reasonable body of prior literature has demonstrated an association between antecedent depression and unintended pregnancy as an outcome, or the proximate behavioral determinates of unintended pregnancy (i.e. sexual activity and contraceptive use) (36-40). The majority of these studies operationalized the concept of pregnancy intention as a dichotomous outcome focused on the pregnancy itself, rather than the intendedness of it: unintended pregnancy vs no pregnancy. Intention was measured in these studies by self-report with a single question, such as "Was this pregnancy wanted or unwanted?" (38, 40), or by utilizing validated scales, such as avoidance scales and the PRAMS module (36, 39). Pregnancy intention was measured in these studies prior to pregnancy (36) and during gestation (38-40). The outcome of interest in all of these studies was unintended pregnancy, as defined by a woman who was pregnant at baseline or became pregnant during the study period.

The theoretical framework for the observed association has not been well understood, although it is proposed that a woman's decision making and cognitive processes may be impacted by depressive symptoms (41), which have implications for her reproductive health decision-making capacity and behaviors. Depressive symptoms may impair risk assessment and social learning skills, as well as decrease motivation. A reduction in motivation could lead to lack of utilization of contraceptive methods or use of methods that are less effective. (36)

However, these hypotheses have not been studied in the context of family planning but warrant attention and are driving consideration behind the research question and approach in this study. Mental health and wellbeing and subsequent reproductive

health outcomes may also be shaped by social exposures and lived experiences. There is strong evidence to suggest having a history of childhood trauma is associated with a substantial increase in the risk of developing depression later on in life (42-44). This study hypothesizes that childhood trauma may impact a woman's attitudes towards pregnancy, either through mental health status, or by altering her perception of a hypothetical offspring's childhood experiences.

Childhood Trauma

Public Health Significance of Childhood Trauma

Childhood trauma is a complex and broad topic that encompasses several types of adverse experiences that a child, or person less than 18 years old, may face, including abuse and neglect. The three overarching types of abuse include: sexual, physical, and emotional (sometimes referred to as psychological) abuse. The two most common types of neglect include emotional and physical neglect, followed by other categories, including medical and educational neglect.

Child sexual abuse is defined as the involvement in a child any attempted or completed sexual act, sexual contact, or exploitation (45). Physical abuse is defined as the use of physical force against a child that may result in physical injury, and is intentional in nature (45). Emotional abuse is behavior by a caregiver that indicates to the child that they are unloved, worthless, or not valued. This may occur over a long period of time or may be acute in nature, and can include behaviors such as blaming, degradation and intimidation (45). Physical neglect is the failure of the caregiver to adequately provide basic necessities to the child, including shelter, nutrition, and hygiene (45). Finally,

emotional neglect is the failure of the caregiver to response appropriately to the child, including ignoring them (45).

Due to the stigma and fear that childhood abuse and neglect face, in addition to the lack of available reporting resources for children, it is extremely difficult to estimate the pervasiveness of this issue. However, many experts believe that approximately 1 in 4 children in the United States experience some type of maltreatment or trauma in their lifetimes (46). There are many factors that may put children more at risk for childhood trauma, including familial financial strain (47), race (46, 48), substance use by the parent, age of parents, and education level of parents (49).

Childhood trauma has been found to be associated with many negative health outcomes and has a high economic burden on both individuals and the United States. Adults who experienced childhood trauma are more likely to experience depression (50-52), Post-Traumatic Stress Disorder (53, 54), substance use (53, 55), risky sexual behaviors (42, 53), and may other health concerns. The cost of childhood trauma for an individual's lifetime is approximately $210,012 in 2010 dollars, and was estimated to cost the United States $124 billion in 2008 alone (56).

Childhood Trauma and Unintended Pregnancy

Previous literature has found a strong association between history of childhood trauma and unintended pregnancy. There is evidence to suggest that women who have experienced maltreatment in their childhoods, including abuse and neglect, are more likely to have unintended pregnancies when they are of reproductive age (57-59). Studies

have also demonstrated that this relationship may vary by the type and frequency of maltreatment that was experienced when this individual was a child (58, 59).

Although the pathway for this relationship has not been clearly defined, it has been hypothesized by many experts to be the result of chronic, psychosocial stress (57). However, it is also possible that this relationship is confounded by shared or common risk factors, including economic disadvantage, lack of education, or community factors (57).

Gaps in the Literature

Although there is significant literature to support the relationship between depression and unintended pregnancy, or childhood trauma and unintended pregnancy, there is very little that evaluates the association with pregnancy attitudes, especially regarding pregnancy ambivalence (60). The outcome of interest in a significant portion of the literature is actual pregnancy, with almost no measures on pregnancy attitudes or intendedness. This outcome oversimplifies the process of pregnancy intention that women undergo as they navigate their life course and loses the nuance in the factors that impact this intention. Therefore, the pathways in which depression and childhood trauma impact unintended pregnancy may be better understood by first examining a woman's attitudes towards pregnancy.

Furthermore, a significant portion of the current literature measures pregnancy intention during gestation, and therefore may be biased by social desirability and the societal expectation that women are excited to become mothers. A further limitation in the literature is that many of these studies are cross-sectional or begin with already

pregnant women, and therefore lack the ability to determine causality or temporality (38-40). Pregnancy attitudes that are expressed by women who are not currently pregnant may provide a less biased and insightful understanding of the roles of depression and childhood trauma.

Purpose Statement and Hypothesis

This thesis evaluates the influence of two distinct but highly related exposures: 1. Moderate/severe depressive symptoms as defined by a dichotomized measure of moderate/severe depressive symptoms in the last two weeks; and 2. Childhood trauma as defined by the experience of one or more types of maltreatment before the age of 18, including sexual abuse, physical abuse, emotional abuse, physical neglect, and emotional neglect, on pregnancy attitudes. The outcome of interest in this analysis is dichotomized pregnancy attitudes, as defined by either anti-conception or ambivalence. These associations will be analyzed at baseline. This study hypothesizes that the presence of current depression and a history of childhood trauma will be associated with ambivalent pregnancy attitudes.

METHODS

Study Sample and Design

This study is a secondary analysis of data obtained from a community-based longitudinal study, Young Women's Stress Study (YWSS), which seeks to understand the role of mental health and stress on early and unintended pregnancy among young women aged 15 to 24. The parent study recruited young women from metro-Atlanta with flyers and in-person snowball sampling in public areas from January 2017 to December 2017. Inclusion criteria for the study included: 1) English speaking, 2) Between 15 and 24 years of age, 3) Residing within 20-miles of Atlanta (metro-Atlanta resident) and 4) access to the internet. Exclusion criteria included current pregnancy, history of ovarian disease, cancer, primary amenorrhea and exposure to gonadotoxic therapies.

Young women gave informed consent, or parental consent and participant assent for minors, to participate in a year-long study based in the Rollins School of Public Health at Emory University. The initial visit included a two to three-hour baseline psychosocial and health survey that was administered by a trained research assistant and biological specimen collection. Emory Institutional Review Board approved this study. 199 young women completed the YWSS, and 187 individuals that were determined to have anti-conception or ambivalent pregnancy attitudes were included in this secondary analysis.

Measures

Pregnancy Attitudes

Pregnancy attitudes were measured at baseline and at one-year with the seven-item personal consequences of pregnancy scale. Participants were asked to rank how strongly they felt about each item and possible responses were “Strongly agree”; “Agree”; “Neither agree nor disagree”; “Disagree”; or “Strongly disagree”. Some of the items were reverse coded. Items included: “Getting pregnant at this time in your life is one of the worst things that could
happen to you.”; “If you had a baby now, you would feel less lonely.”; “If you got pregnant now, you could handle the responsibilities of parenting.”; “If you got pregnant now, you would be forced to grow up too fast.”; “If you got pregnant now, you would have to quit school.”; “If you got pregnant now, you could not afford to raise the child.”; “If you got pregnant now, your family would help you raise the child.”; and “It wouldn't be all that bad if you got pregnant at this time in your life.”.

Due to the lack of a standardized and validated scale in the literature, factor analyses of these items were conducted in this study. “If you got pregnant now, your family would help you raise the child.” was removed from the scale due to lack of fit with the other items. The final scale had strong internal reliability in this sample with a Cronbach’s alpha of 0.799.

Four categories were created using this scale: pro-natalist, anti-conception, indifferent and ambivalent. Those who answered strong negative pregnancy attitudes for 4 or more of the 7 items and did not answer any strong positive attitudes were coded as anti-conception. Those who answered strong positive pregnancy attitudes for 4 or more

of the 7 items and did not answer any strong negative attitudes were coded as pro-natalist. Those who had strong attitudes on both sides were coded as ambivalent. Individuals that scored in the middle with no strong attitudes were coded as indifferent.

Responses that were coded as "pro-natalist" (n = 5) or "indifferent" (n = 7) were removed from the analysis due to extremely low number of participants in the study sample that had these feelings. Sensitivity analyses were conducted including and excluding the pro-natalist and indifferent responses, as well as treating the variable as a categorical indicator. The direction and overall effects of the results remained consistent regardless of analysis. The author chose to define the outcome as a dichotomized variable with 0 representing those who were anti-conception and 1 representing those with ambivalent feelings towards pregnancy because ambivalent and anti-conception reflected almost the entire sample's attitudes, provided sufficient variation for analysis and have the most supportive literature base for young samples of women.

Depression

Moderate/severe depressive symptoms was measured by utilizing the nine-item Patient Health Questionnaire (PHQ-9), a well-known and validated scale that evaluates the presence and severity of depressive symptoms experienced in the previous two weeks (61). Participants were asked how many days out of the last two weeks they were bothered by a specific symptom. The items included: "Little interest or pleasure in doing things"; "Feeling down, depressed, or hopeless"; "Trouble falling or staying asleep, or sleeping too much"; "Feeling tired or having little energy"; "Poor appetite or overeating"; "Feeling bad about yourself- or that you are a failure or have let yourself or your family

down"; "Trouble concentrating on things, for example reading the newspaper or watching television"; "Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual"; and "Thoughts that you would be better off dead or of hurting yourself in some way." A Likert-scale was used to code the responses: 0 = Not at all; 1 = Several days; 2 = More than half the days; 3 = Nearly every day.

Scores can range from 0 to 27 with scores ≥ 10 demonstrating a sensitivity and specificity of 88% for major depression as well as high construct, criterion, and external validity in other studies (61). In this analysis, depression was defined as a dichotomous variable with 0 representing those with less than moderate symptoms and 1 representing those with moderate/severe symptoms. Reliability assessments of this scale in this sample have shown strong internal reliability with a Cronbach's alpha coefficient of 0.84.

Childhood Trauma

History of childhood trauma was measured using the Childhood Trauma Questionnaire Short-Form (CTQ), which uses self-reported items to identify traumatic conditions (62). There are five subscales with included in the questionnaire: physical abuse, emotional abuse, sexual abuse, physical neglect, and emotional neglect. Each subscale is comprised of five questions about how frequently they had certain types of childhood experiences with responses that are on a Likert Scale from 1 = never to 5 = very often. Example items in the questionnaire are: "When I was growing up, I was called names by my family" and "When I was growing up, I was hit badly enough that other people noticed" for emotional abuse and physical abuse, respectively.

The subscales ranged from 5 to 25, with a higher number indicating more exposure to traumatic events. The cutoffs varied between the subscales, with the following scores indicating a history of childhood trauma: physical abuse – 8 or more; emotional abuse – 9 or more; sexual abuse – 6 or more; physical neglect – 8 or more; and emotional neglect – 10 or more. The subscales have good internal reliability in this sample with the following Cronbach's alpha coefficients: physical abuse = 0.86; emotional abuse = 0.84; sexual abuse = 0.88; physical neglect = 0.68; and emotional neglect = 0.94. In this analysis, all subscales were dichotomized at those cutoff points. Then these subscales were combined into one dichotomous measure that represented a history of any type of childhood trauma, with 0 representing no childhood trauma and 1 representing experiencing one or more types of childhood trauma.

Covariates

The following covariates were examined as potential confounders in this study: age, race, personal income, educational attainment, religious importance, and relationship status. These covariates have been shown to impact depression, childhood trauma, and pregnancy attitudes (13, 14, 28, 63).

Age was measured on a continuous scale with a range between 15 and 24 years and was categorized to "15 to 18 years", "19 to 21 years", and "22 to 24 years". Race was categorized by participant self-identification. Responses incuded: "White"; "Black or African American"; "Hispanic or Latino"; "Asian or Pacific Islander"; "Other".

For income, participants were asked to indicate their total income without taxes in the last year. Responses ranged from "Under $1,000" to "$25,000 or more" and were categorized as "less than $12,500", "$12,500 to $24,999" and "$25,000 and up".

Participants self-reported educational attainment by responding the highest level of education they had completed, ranging from "8th grade or less" to "Beyond a college degree". Responses were categorized as "High School or less", "Some college", and "College graduate".

Religious importance was measured on a 5-point Likert Scale ranging from "Not at all important" to "Extremely important". It was then categorized to "Less or Not Important", "Important", and "More Important". Participant relationship status was asked and responses included "Married", "Engaged to be married", "Cohabitating with partner but not married or engaged", "In a serious relationship not living together", "Dating or having sex casually", "Not in any relationship", or "Other (please specify)". Relationship status was dichotomized to "In a Relationship" and "Not in any relationship".

Data Analysis

Univariate analyses were conducted for the exposures, outcome, and covariates to summarize the characteristics of the sample using unweighted frequencies and proportions. Pearson's Chi-Square tests were used to conduct bivariate analyses between: (1) moderate/severe depressive symptoms and demographic covariates; (2) history of childhood trauma and demographic covariates; (3) moderate/severe depressive symptoms and history of childhood trauma; (4) moderate/severe depressive symptoms and pregnancy attitudes; and (5) history of childhood trauma and pregnancy attitudes.

Multivariable logistic regression models were conducted using step-wise backwards elimination to estimate the relationship between moderate/severe depressive symptoms and history of childhood trauma and a woman's pregnancy attitudes while controlling for age, race, personal income, educational attainment, religious importance, and relationship status. The significance of each model was assessed using the Wald Chi-Square statistic, and goodness of fit was analyzed using the Hosmer Lemeshow test. The results for all models in this analysis are presented as adjusted odds ratios with 95% confidence intervals. Covariates were retained in the model if they demonstrated significant association with the outcome variable, or if they had strong conceptual ties to the research question and are consistent confounders in the literature. Statistical significance was assessed at the $p = 0.05$ level, and all analyses were conducted using SAS software version 9.4.

RESULTS

The sample consisted of all 187 participants, with all women in the YWSS responding to the pregnancy attitudes portion of the survey. Initial descriptive analyses showed a diverse sample, with a slight majority of the sample being 22 to 24 years old (43.9%) and most identifying as black or African American (40.6%). Education level was fairly evenly distributed, with slightly more having some college education (37.4%). Most women felt that religion was less or not important in their lives (46.5%), and had a personal income below $12,500 (71.0%). Relationship status was almost split in this sample, with slightly more women currently in a relationship (55.6%). Additional information for frequency analyses can be found in Table 1.

Most women were not demonstrating moderate/severe depressive symptoms in the previous two weeks (67.2%) in this sample. Proportions of moderate/severe depressive symptoms were higher among those who identify as black or African American (45.0%) compared to those who identify as White (15.0%), Hispanic or Latino (10.0%), Asian or Pacific Islander (10.0%), or any other race (20.0%), although this was not found to be statistically significant ($x^2 = 7.03$, p = 0.13). Proportions of ambivalent pregnancy attitudes (78.3%) were higher for those who had moderate/severe depressive symptoms compared to those without moderate/severe depressive symptoms (70.7%), although this was not significantly significant ($x^2 = 1.19$, p = 0.28).

Over half of the participants in this sample had a history of childhood trauma (55.6%). Proportions of relationship status were different in this sample, with more of those with a history of trauma in a relationship (64.4%) than those who had no history of trauma (44.6%) ($x^2 = 7.36$, p = 0.007). Proportions of moderate/severe depressive

symptoms were higher among those with a history of childhood trauma (39.4%) compared to those with no history of trauma (24.0%) ($x^2 = 4.81$, p = 0.03).

A large portion of the sample reported having ambivalent pregnancy attitudes (73.3%). Proportions of ambivalent pregnancy attitudes were higher among those who had a history of childhood trauma (62.0%) compared to those with no history of childhood trauma (38.0%) ($x^2 = 8.58$, p = 0.003). Similarly, proportions of income different in this sample with more of those with anti-conception attitudes having a very low personal income (88.8%) compared to those with ambivalent attitudes (64.2%) ($x^2 = 12.06$, p = 0.002). Furthermore, proportions of those in a relationship were higher among those with ambivalent attitudes (61.3%) compared to those with anti-conception attitudes (40.0%) ($x^2 = 6.74$, p = 0.009). Bivariate analyses for moderate/severe depressive symptoms are located in Table 2, history of childhood trauma in Table 3, and pregnancy attitudes in Table 4.

Multivariable logistic regression models were conducted with the two exposure variables independently and together and the outcome variable, while controlling for covariates. Income and relationship status were retained in all models because they were shown to be strong possible confounders and had a statistically significant associations with pregnancy attitudes during bivariate analyses. Religious importance was determined to be an important confounder during regression analysis and was therefore included in the final model. Although race was not statistically significant, it was also included in the final model because it was associated with both exposures in this analysis, and the possible implications discussed earlier.

When analyzed separately, the direction and overall significance of the relationship between each of the exposures and the outcome was not changed as compared to the final combined model with both exposures. However, the multivariable model with moderate/severe depressive symptoms as the exposure, as shown in Table 13, did show evidence of confounding when history of childhood trauma was removed from the model (aOR = 1.62, 95% CI = 0.73-3.62, p = 0.24). Due to these results and the literature that indicates a strong relationship between childhood trauma and moderate/severe depression, both exposures were kept in the final model.

The final model, shown in Table 5, analyzed the association between both moderate/severe depressive symptoms and childhood trauma with pregnancy attitudes while controlling for race, religious importance, personal income, and relationship status. This model had a strong fit with the data with a non-significant Hosmer and Lemeshow Test value (p = 0.49). The model also explained 25.2% of the variance in pregnancy attitudes (Nagelkerke R^2 of 0.2518). This adjusted model suggests that women that have a history of childhood trauma are 3.09 times more likely to have ambivalent pregnancy attitudes (aOR = 3.09, 95% CI: 1.42-6.73, p = 0.005) when compared to those who did not have a history of childhood trauma. Women who were experiencing moderate/severe depressive symptoms were 1.43 times more likely to have ambivalent pregnancy attitudes compared to women who had no moderate/severe depressive symptoms, although this relationship was not statistically significant (aOR = 1.43, 95% CI: 0.66-3.07, p = 0.37). No covariates in this model were significantly associated with the outcome. All other models analyzed in this analysis can be viewed below (Table 6 through Table 12).

DISCUSSION

Over the last few decades, there has been a significant push to understand and reduce the risk factors associated with unintended pregnancy. Among other factors, depression and history of childhood trauma have both been found to be associated with an increased risk of unintended pregnancy (36-39, 57-59). However, the pathway and methodology of these relationships are understudied and not well understood. It has been hypothesized that depression may impact decision making processes or reduce motivation to use contraception (36, 41). Childhood trauma may influence unintended pregnancy through chronic stress, or by changing how a woman views motherhood (57). Many of these studies focus on the outcome of actual pregnancy itself, and often do not investigate the nuanced desires of the women who are having the pregnancies.

Pregnancy attitudes may provide more insight into women's contraceptive and fertility decision making processes by reducing the social bias associated with actual pregnancies. To better understand how to reduce unintended pregnancies, this study aimed to assess the role of depression and childhood trauma on women's attitudes towards a hypothetical pregnancy. Specifically, the outcome of interest was ambivalent attitudes towards pregnancy, because women with those attitudes have been shown to use contraception less reliably and be at an increased risk of unintended pregnancy (2, 14, 15).

The first aim of this study was to evaluate the relationship between depressive symptoms and pregnancy attitudes among young women. Specifically, this study hypothesized that more women with moderate/severe depressive symptoms would have ambivalent pregnancy attitudes than would have anti-conception pregnancy attitudes. The

current study's results aligned with this hypothesis and found that women with moderate/severe depressive symptoms were more likely to have ambivalent pregnancy attitudes.

Generally, these findings align with a 2015 study on adolescent females with ambivalent attitudes towards pregnancy that were initiating contraception (60). However, unlike that study, the difference in prevalence of moderate/severe depressive symptoms among attitude groups was not determined to be statistically significant in this sample. The difference in the significance of these findings may be the result of the analysis choices made by the author. In the Francis et al. study, depression was categorized into three groups: no symptoms, mild symptoms, and moderate/severe symptoms, with only mild symptoms of depression had a statistically significant association with ambivalent pregnancy attitudes. The current study combined no symptoms and mild symptoms into one group and moderate and severe symptoms into another group, which may have reduced the effect that is observed in other studies.

The authors of the Francis et al. study propose that women who have moderate/severe symptoms have more anti-conception feelings due to their mental illness, possibly because they may recognize the severity and consequences of their illness (60). It has also been theorized that depression may interrupt certain processes in development, including decision making and goal attainment. Self-efficacy, or the belief in your own ability to execute a specific behavior, may also be impacted as a result of these disruptions (64, 65). The connection between depression severity and pregnancy attitudes is important to consider from both a clinical and research standpoint, and warrants further investigation. Future literature can build on this study and others that

have been conducted that evaluate this relationship by looking at depression severity, perhaps over time, and it's relationship with pregnancy attitudes. Additionally, researchers can combine the two study designs to look at pregnancy attitudes for young women that are not may or may not be obtaining contraception to fully understand the range of pregnancy attitudes that exist in the population.

The second aim of this study was to evaluate the relationship between childhood trauma and pregnancy attitudes among young women. This study hypothesized that more women with childhood trauma would have ambivalent pregnancy attitudes than would have anti-conception pregnancy attitudes. The current study's results strongly aligned with this hypothesis and found that women with a history of childhood trauma were more likely to have ambivalent pregnancy attitudes.

At the time of this study, there are no studies that evaluate the relationship between childhood trauma and pregnancy attitudes. However, this study's findings do align with other literature, which indicates that a history of trauma or adverse childhood experiences are associated with increased risk of unintended pregnancy (57-59). Future studies should look to build on this research by evaluating women's attitudes towards pregnancy, perhaps in conjunction with a follow up that monitors any pregnancies that may occurred and their intendedness.

There were several covariates that were included in the final analysis, including income, relationship status, religious importance, and race. Although none of the covariates were found to be statistically significant in the final model, all were included due to significant results during the bivariate analysis, regression analysis, or were identified in the literature as being confounders in previous studies.

The results of this study indicate that there may be a relationship between income status and pregnancy attitudes, with more women in the lowest income bracket having anti-conception attitudes. Previous research indicates that women may be concerned with exacerbating poverty with a pregnancy and therefore feel they strongly do not want to conceive (23, 24). Similarly, this study found that there appears to be an association between being in a relationship and having ambivalent pregnancy attitudes. This may be because those that are not in a relationship, especially younger women, do not want to have a pregnancy (25). Religious importance and race were not as strong of confounders in this analysis, but were important based on the body of literature. Both religious importance and race may influence pregnancy attitudes through culture, historical events, and societal expectations (17, 18, 20).

The findings of this study are important because they may offer an explanation for the pathway of the relationship between childhood trauma and unintended pregnancy. There is strong evidence that childhood trauma can increase risky sexual behaviors, such as earlier sexual debut, higher numbers of sexual partners (66). However, the results of this study indicate that childhood trauma increases ambivalent feelings towards pregnancy, which may also influence a woman's decision-making process and contraceptive use (14, 15). There are also hypotheses in the literature that this relationship may be the result of toxic, long-term stress, which can result in inflammatory and immune responses across the body (57). Previous studies have found that stress, both acute and chronic, can impact pregnancy planning and contraceptive use as well (36). This suggests that pregnancy attitudes may act as a mediator for the relationship between childhood trauma and unintended pregnancy, and should be investigated further.

Additional research is required to better understand these pathways and their role in unintended pregnancy.

Implications and Future Directions

This study has significant implications for policy, public health practice, and clinical practice. First, this study focuses on young women, which is an extremely important population to study because younger women are less likely to have had a pregnancy, and therefore would most strongly benefit from family planning and risk-reduction strategies. Given that a strong majority of the young women in this study had ambivalent attitudes towards pregnancy, interventions that target this population should absolutely consider pregnancy attitudes in conjunction with intentions or contraceptive use to be successful. Clinical practitioners should fully evaluate how a young woman feels towards pregnancy, because only asking one or two questions in an examination may not fully depict the patient's attitudes (67, 68). Furthermore, acknowledgement of ambivalent attitudes as a valid response to pregnancy, and including both strong positive and strong negative emotions, may encourage women to more freely discuss their pregnancy desires and subsequently choose the appropriate family planning measure, thereby reducing the risk of unintended pregnancy (67).

Clinicians and family planning interventions should also take into consideration young women's lived experiences and mental health status, as this study indicates there is likely a relationship between these exposures and attitudes towards pregnancy. Depression is a common and sometimes debilitating mental illness that has broad reaching impacts on the health and wellbeing of individuals (31, 34). Interactions with

health care providers during preventative care or gynecological appointments may provide an opportunity for screening for depressive symptoms and referral to appropriate resources (69, 70). This is especially critical for the group evaluated in this study, as both young individuals (27) and women (27-29) are at a higher risk of developing depression. The variation in the relationship between depression severity and pregnancy attitudes is essential for clinicians to understand, as simply screening positive for depression may not give a strong enough indication of a woman's desires and intention for pregnancy (60).

Childhood trauma is also a pervasive issue across the United States with an estimated 1 in 4 children being victims (46) and over half of this sample self-reporting a history of trauma. There is a strong, well-known relationship between childhood trauma and adult depression (50-52), which was echoed in this study's findings. Trauma informed care, a growing clinical field that utilizes screening tools, evidence-based treatments, and education to manage mental and physical health outcomes related to trauma (71), may be a viable solution for young adults. Integrating these practices with depression screening tools for young women may increase utilization of proper resources for improving wellbeing, and could help prevent unintended pregnancy (72), although more research is required in the field.

Finally, the findings of this study emphasize the need to identify and prevent childhood trauma and depression across the United States through policy and interventions. Policies should aim to reduce risk factors associated with childhood trauma, especially for parents, including improving education access for all individuals (49), strengthening government assistance programs (47) and increasing access to substance use treatment programs (49). Additionally, access to mental health resources,

such as counseling and psychiatric treatment may mitigate the impact of depression on individuals and improve health outcomes.

The findings of this study build on the previous literature and creates more evidence of a pathway from childhood trauma and depression to unintended pregnancy through pregnancy attitudes. Due to the results of this study and the lack of studies on the topic, future research should further examine the role of pregnancy attitudes, both for reducing unintended pregnancies, and to better understand women's choices and desires. Larger, more representative studies are warranted, especially to explore the impact having a history of childhood trauma, and a possible dose response of cumulative traumas. Ideally, a prospective study that follows girls from childhood through young adulthood would be the best way to determine the relationship between trauma and pregnancy attitudes. Additionally, conducting a follow-up study of the young women from this secondary analysis to observe pregnancy outcomes would be beneficial in confirming the hypothesized pathways.

Strengths and Limitations

The current study builds on the robust body of literature, specifically the work by Hall et al. on the impact of adverse life experiences and mental health on unintended pregnancy. The strong evidence presented in previous research on unintended pregnancy helped to inform the hypotheses on pregnancy attitudes and methodology utilized in this study. An additional strength was that the secondary analysis conducted in this study used a diverse sample of young women from a population-based prospective study. For this study, women's attitudes towards a hypothetical pregnancy were measured as opposed to retrospectively measuring intention of an actual pregnancy, which likely reduces bias and provides a more accurate representation of the fertility process. Although this study was of a cross-sectional nature, there is some ability to determine temporality in this study because the CTQ is specific to experiences that happened during childhood and current pregnancy attitudes. However, a longitudinal study that evaluates this relationship is necessary to truly understand the temporal relationship.

The study used the validated and reliable 9-item Patient Health Questionnaire to evaluate depression and the Childhood Trauma Questionnaire to evaluate history of trauma, which are both well-known and commonly used in the literature. Extensive analyses were conducted on the scale used to measure pregnancy attitudes and the selected items showed good internal reliability. This study controlled for several potential confounders in the final model that have been identified in the literature, including race, religious importance, personal income, and relationship status. Finally, missing data was not a significant concern in this study, with only 4% of data was missing in the regression analyses.

However, there are also several limitations to this study. All of the items included in this study were self-reported, which means that they are subject to recall bias and social desirability bias. Questions on childhood trauma are especially susceptible to these, as shown in this analysis. The only items refused to be answered by the participants were questions regarding history of sexual abuse, which may have influenced the results of this study. Temporality is also not able to be established for the relationship between depressive symptoms and pregnancy attitudes due to the cross-sectional nature of the study and the variables examined. The sample in this study may not be representative of the United States, although it had a diverse racial and educational make-up, due to sampling in the metro-Atlanta area near colleges and universities.

Conclusion

This study has addressed a large and important gap in the literature by evaluating factors that impact a woman's attitudes towards pregnancy, which is often overlooked in research. Reproductive health and mental health are undoubtfully connected, and this analysis shed some light on the role of lived experience and mental illness. This study found that both moderate/severe depressive symptoms and history of childhood trauma are associated with ambivalent feelings towards pregnancy, which can have implications for pregnancy outcomes in the future.

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TABLES

Table 1. Characteristics of Sample.

Characteristics	N (%)
Age	
15 to 18	48 (25.6)
19 to 21	57 (30.5)
22 to 24	82 (43.9)
Race	
White	49 (26.2)
Black or African American	76 (40.6)
Hispanic or Latino	19 (10.2)
Asian or Pacific Islander	17 (9.1)
Other	26 (13.9)
Education	
High School or Less	60 (32.1)
Some college	70 (37.4)
College graduate	57 (30.5)
Religion Importance	
Less or Not Important	87 (46.5)
Important	33 (17.7)
More Important	67 (35.8)
Income	
Less than $12,500	130 (71.0)
$12,500 to $24,999	24 (13.1)
$25,000 and up	29 (15.9)
Relationship Status	
In a Relationship	104 (55.6)
Not in Any Relationship	83 (44.4)
Current Depression	
Not Depressed	123 (67.2)
Depressed	60 (32.8)
Childhood Trauma	
No history	83 (44.4)
History of Trauma	104 (55.6)
Pregnancy Attitudes	
Anti-Conception	50 (26.7)
Ambivalent	137 (73.3)

N = 187. Results are unweighted Ns and proportions of total sample.

Table 2. Bivariate analysis of moderate/severe depressive symptoms and independent variables.

Independent Variable	Moderate/Severe Depressive Symptoms		
	Not Depressed	**Depressed**	**Chi-Square**
Pregnancy Attitudes			
Anti-Conception	36 (29.3)	13 (21.7)	1.19
Ambivalent	87 (70.7)	47 (78.3)	
Childhood Trauma			
No history	60 (48.8)	19 (31.7)	4.81*
History of Trauma	63 (51.2)	41 (68.3)	
Age			
15 to 18 years	30 (24.4)	18 (30.0)	1.75
19 to 21 years	40 (32.5)	14 (23.3)	
22 to 24 years	53 (43.1)	28 (46.7)	
Race			
White	39 (31.7)	9 (15.0)	
Black or African American	47 (38.2)	27 (45.0)	7.03
Hispanic or Latino	13 (10.6)	6 (10.0)	
Asian or Pacific Islander	10 (8.1)	6 (10.0)	
Other	14 (11.4)	12 (20.0)	
Education			
High School or Less	42 (34.2)	17 (28.3)	0.62
Some College	45 (36.6)	24 (40.0)	
College Graduate	36 (29.3)	19 (31.7)	
Religious Importance			
Not that Important	58 (47.2)	28 (46.7)	1.07
Important	23 (18.7)	8 (13.3)	
More Important	42 (34.2)	24 (40.0)	
Income			
Less than $12,500	86 (71.1)	42 (72.4)	0.33
$12,500 to $24,999	16 (13.2)	6 (10.3)	
$25,000 or more	19 (15.7)	10 (17.2)	
Relationship			
In a Relationship	69 (56.1)	33 (55.0)	0.02
Not in any Relationship	54 (43.9)	27 (45.0)	

N = 187. Results are presented as comparisons of N (%) in moderate/severe depressive symptoms by pregnancy attitudes, childhood trauma, and sociodemographic groups using Chi-square. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 3. Bivariate analysis of history of childhood trauma and independent variables.

Independent Variable	Childhood Trauma		
	No History	**History**	**Chi-Square**
Pregnancy Attitudes			
Anti-conception	31 (37.4)	19 (18.3)	8.58*
Ambivalent	52 (62.7)	85 (81.7)	
Depression			
No Depression	60 (76.0)	63 (60.6)	4.81*
Depression	19 (24.0)	41 (39.4)	
Age			
15 to 18 years	21 (25.3)	27 (26.0)	0.05
19 to 21 years	26 (31.3)	31 (29.8)	
22 to 24 years	36 (43.4)	46 (44.2)	
Race			
White	23 (27.7)	26 (25.0)	
Black or African American	34 (41.0)	42 (40.4)	4.80
Hispanic or Latino	11 (13.3)	8 (7.7)	
Asian or Pacific Islander	8 (9.6)	9 (8.7)	
Other	7 (8.4)	19 (18.3)	
Education			
High School or Less	26 (31.3)	34 (32.7)	2.56
Some College	27 (32.5)	43 (41.4)	
College Graduate	30 (36.1)	27 (26.0)	
Religious Importance			
Not that Important	34 (41.0)	53 (51.0)	3.32
Important	19 (22.9)	14 (13.5)	
More Important	30 (36.1)	37 (35.6)	
Income			
Less than $12,500	60 (73.2)	70 (69.3)	0.61
$12,500 to $24,999	9 (11.0)	15 (14.9)	
$25,000 or more	13 (15.9)	16 (15.8)	
Relationship			
In a Relationship	37 (44.6)	67 (64.4)	7.36*
Not in any Relationship	46 (55.4)	37 (35.6)	

N = 187. Results are presented as comparisons of N (%) in moderate/severe depressive symptoms by pregnancy attitudes, depressive symptoms, and sociodemographic groups using Chi-square. $P < 0.05$ considered significant.

* denotes p-value < 0.05

Table 4. Bivariate analysis of pregnancy attitudes and independent variables.

Independent Variable	Pregnancy Attitudes		
	Anti-Conception	**Ambivalent**	**Chi-Square**
Childhood Trauma			
No history	31 (62.0)	52 (38.0)	8.58*
History of Trauma	19 (38.0)	85 (62.0)	
Depression			
No Depression	36 (73.5)	87 (64.9)	1.19
Depression	13 (26.5)	47 (35.1)	
Age			
15 to 18 years	13 (26.0)	35 (25.6)	
19 to 21 years	21 (42.0)	36 (26.3)	5.16
22 to 24 years	16 (32.0)	66 (48.2)	
Race			
White	19 (38.0)	30 (21.9)	
Black or African American	17 (40.0)	59 (43.1)	
Hispanic or Latino	5 (10.0)	14 (10.2)	5.21
Asian or Pacific Islander	4 (8.0)	13 (9.5)	
Other	5 (10.0)	21 (15.3)	
Education			
High School or Less	17 (34.0)	43 (31.4)	
Some College	19 (38.0)	52 (37.2)	0.22
College Graduate	14 (28.0)	43 (31.4)	
Religious Importance			
Not that Important	30 (60.0)	57 (41.6)	
Important	5 (10.0)	28 (20.4)	5.57
More Important	15 (30.0)	52 (38.0)	
Income			
Less than $12,500	44 (88.8)	86 (64.2)	
$12,500 to $24,999	1 (2.0)	23 (17.2)	12.06*
$25,000 or more	4 (8.2)	25 (18.7)	
Relationship			
In a Relationship	20 (40.0)	84 (61.3)	6.74*
Not in any Relationship	30 (60.0)	53 (38.7)	

N = 187. Results are presented as comparisons of N (%) in moderate/severe depressive symptoms by childhood trauma, depressive symptoms, and sociodemographic groups using Chi-square. $P < 0.05$ considered significant.

* denotes p-value < 0.05

Table 5. Final Model: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	3.09 (1.42, 6.73)*
Depression	
No Depression	Ref.
Depression	1.49 (0.64, 3.44)
Race	
White	Ref.
Black or African American	1.62 (0.64, 4.11)
Hispanic or Latino	1.82 (0.50, 6.69)
Asian or Pacific Islander	1.92 (0.47, 7.76)
Other	1.89 (0.53, 6.73)
Religious Importance	
Not that Important	Ref.
Important	3.48 (1.06, 11.44)
More Important	2.01 (0.84, 4.82)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	9.45 (1.14, 78.43)
$25,000 or more	2.94 (0.88, 9.84)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.51 (0.24, 1.09)

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for race, religious importance, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 6. Model 1: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	2.85 (1.29, 6.33)*
Depression	
No Depression	Ref.
Depression	1.47 (0.62, 3.48)
Age	
15 to 18 years	Ref.
19 to 21 years	0.45 (0.12, 1.63)
22 to 24 years	0.93 (0.18, 4.85)
Race	
White	Ref.
Black or African American	1.23 (0.44, 3.42)
Hispanic or Latino	1.62 (0.42, 6.30)
Asian or Pacific Islander	2.10 (0.50, 8.89)
Other	1.70 (0.46, 6.37)
Education	
High School or Less	Ref.
Some College	1.15 (0.32, 4.11)
College Graduate	0.41 (0.07, 2.41)
Religious Importance	
Not that Important	Ref.
Important	3.79 (1.12, 12.80)
More Important	2.37 (0.90, 6.19)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	14.04 (1.45, 136.05)
$25,000 or more	24.05 (0.95, 17.22)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.48 (0.20, 0.99)*

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for age, race, education religious importance, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 7. Model 2: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	2.89 (1.31, 6.35)*
Depression	
No Depression	Ref.
Depression	1.56 (0.68, 3.69)
Race	
White	Ref.
Black or African American	1.31 (0.48, 3.55)
Hispanic or Latino	1.48 (0.39, 5.63)
Asian or Pacific Islander	2.18 (0.52, 9.12)
Other	1.64 (0.45, 5.99)
Education	
High School or Less	Ref.
Some College	0.75 (0.29, 1.911)
College Graduate	0.39 (0.11, 1.34)
Religious Importance	
Not that Important	Ref.
Important	3.75 (1.13, 12.48)
More Important	2.54 (0.98, 6.58)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	15.76 (1.64, 151.85)
$25,000 or more	4.93 (1.228, 19.76)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.46 (0.21, 1.01)

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for race, education, religious importance, income, and relationship status. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 8. Model 3: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	2.80 (1.28, 6.14)*
Depression	
No Depression	Ref.
Depression	1.58 (0.68, 3.70)
Age	
15 to 18 years	Ref.
19 to 21 years	0.46 (0.13, 1.60)
22 to 24 years	0.90 (0.18, 4.56)
Education	
High School or Less	Ref.
Some College	1.16 (0.36, 3.78)
College Graduate	0.42 (0.08, 2.17)
Religious Importance	
Not that Important	Ref.
Important	3.64 (1.11, 11.98)
More Important	2.24 (0.96, 5.70)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	14.02 (1.50, 131.05)
$25,000 or more	3.75 (0.92, 15.21)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.44 (0.20, 0.97)*

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for age, education, religious importance, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 9. Model 4: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	3.11 (1.41, 6.82)*
Depression	
No Depression	Ref.
Depression	1.41 (0.61, 3.26)
Age	
15 to 18 years	Ref.
19 to 21 years	0.49 (0.18, 1.29)
22 to 24 years	0.58 (0.19, 1.80)
Race	
White	Ref.
Black or African American	1.38 (0.53, 3.62)
Hispanic or Latino	1.67 (0.45, 6.22)
Asian or Pacific Islander	2.04 (0.49, 8.41)
Other	1.77 (0.47, 6.61)
Religious Importance	
Not that Important	Ref.
Important	3.78 (1.11, 12.84)
More Important	2.16 (0.86, 5.45)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	10.83 (1.19, 98.36)
$25,000 or more	3.30 (0.82, 13.35)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.46 (0.21, 1.00)

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for age, race, religious importance, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 10. Model 5: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	2.30 (1.07, 4.95)*
Depression	
No Depression	Ref.
Depression	1.39 (0.60, 3.21)
Age	
15 to 18 years	Ref.
19 to 21 years	0.46 (0.13, 1.61)
22 to 24 years	1.09 (0.21, 5.62)
Race	
White	Ref.
Black or African American	1.61 (0.63, 4.15)
Hispanic or Latino	1.95 (0.50, 7.59)
Asian or Pacific Islander	1.83 (0.45, 6.72)
Other	1.79 (0.51, 6.26)
Education	
High School or Less	Ref.
Some College	1.29 (0.37, 4.52)
College Graduate	0.51 (0.09, 2.86)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	10.88 (1.24, 95.80)
$25,000 or more	3.48 (0.86, 14.10)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.49 (0.23, 1.06)

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for age, race, education, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 11. Model 6: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	3.06 (1.41, 6.63)*
Depression	
No Depression	Ref.
Depression	1.52 (0.66, 3.49)
Age	
15 to 18 years	Ref.
19 to 21 years	0.48 (0.19, 1.23)
22 to 24 years	0.55 (0.19, 1.63)
Religious Importance	
Not that Important	Ref.
Important	3.69 (1.12, 12.16)
More Important	2.23 (0.93, 5.34)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	11.11 (1.26, 97.97)
$25,000 or more	3.17 (0.81, 12.37)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.46 (0.21, 0.99)*

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for age, religious importance, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 12. Model 7: Current Depression, Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	3.04 (1.42, 6.51)*
Depression	
No Depression	Ref.
Depression	1.64 (0.72, 3.73)
Religious Importance	
Not that Important	Ref.
Important	3.51 (1.09, 11.29)
More Important	2.14 (0.93, 4.93)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	9.32 (1.15, 75.83)
$25,000 or more	2.77 (0.85, 9.05)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.52 (0.25, 1.09)

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for religious importance, income, and relationship status. The estimate for each exposure (childhood trauma and depressive symptoms) controls for the other exposure. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 13. Model 8: Current Depression and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Depression	
No Depression	Ref.
Depression	1.62 (0.73, 3.62)
Race	
White	Ref.
Black or African American	1.59 (0.64, 3.92)
Hispanic or Latino	1.50 (0.42, 5.30)
Asian or Pacific Islander	1.79 (0.45, 7.00)
Other	2.15 (0.62, 7.43)
Religious Importance	
Not that Important	Ref.
Important	2.48 (0.80, 7.63)
More Important	1.63 (0.71, 3.74)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	9.04 (1.13, 72.28)
$25,000 or more	2.65 (0.82, 8.54)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.44 (0.21, 0.91)*

N = 179. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for race, religious importance, income, and relationship status. $P < 0.05$ considered significant.
* denotes p-value < 0.05

Table 14. Model 9: Childhood Trauma, and Pregnancy Attitudes.

Independent Variable	**OR (95% CI)**
Childhood Trauma	
No history	Ref.
History of Trauma	3.23 (1.49, 7.02)*
Race	
White	Ref.
Black or African American	1.77 (0.62, 4.45)
Hispanic or Latino	1.99 (0.55, 7.22)
Asian or Pacific Islander	2.45 (0.70, 9.66)
Other	2.09 (0.60, 7.30)
Religious Importance	
Not that Important	Ref.
Important	3.79 (1.17, 12.32)
More Important	2.01 (0.84, 4.80)
Income	
Less than $12,500	Ref.
$12,500 to $24,999	10.13 (1.23, 83.45)
$25,000 or more	2.94 (0.89, 9.77)
Relationship	
In a Relationship	Ref.
Not in any Relationship	0.51 (0.24, 1.08)

N = 183. Results are presented as adjusted Odds Ratios (aOR) and 95% Confidence Intervals (CI), controlling for race, religious importance, income, and relationship status. $P < 0.05$ considered significant.
* denotes p-value < 0.05