

Exploring the relationships between child maltreatment and risk factors for pregnancy complications

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Abstract

Objective. This study explored the pathway underlying the relationships between child maltreatment (CM) subtypes (i.e., physical, sexual, emotional abuse, and neglect) and factors associated with a heightened risk of pregnancy complications by examining post-traumatic stress disorder (PTSD) symptoms as a potential mediator.

Methods. A sample of 98 pregnant parents between the ages of 18 and 29 was recruited on social media pages and community organizations throughout Canada. Participants completed a series of surveys on their CM exposure, PTSD symptoms, and pregnancy experiences on a secured online platform. Following data cleaning procedures, 85 participants were included in this study.

Results. Four separate mediation analyses were conducted with child neglect, physical abuse, sexual abuse, and emotional abuse on factors associated with a heightened risk of pregnancy complications (i.e., a conglomerate score of limited prenatal care, weight gain concerns, smoking, second-hand smoking, alcohol consumption, substance use, and insufficient food intake during pregnancy). Each CM subtype was associated with increased PTSD symptoms which were in turn associated with the presence of more factors known for increasing the risk of pregnancy complications. Neglect, physical abuse, sexual abuse, and emotional abuse were all indirectly associated with the presence of more factors associated with a heightened risk of pregnancy complications through their association with PTSD symptoms.

Conclusions. Findings from this study could encourage prenatal care providers to screen for CM histories and PTSD symptoms. Furthermore, mental health treatment early in the prenatal period may improve pregnant parents' health and lower the risk of pregnancy complications.

Keywords: Child maltreatment; Post-traumatic Stress Disorder symptoms; Pregnancy complications; Risk factors

Introduction

Child maltreatment (CM; emotional, physical, and sexual abuse, neglect, and exposure to interparental violence) is a widespread issue with prevalence estimates ranging from a quarter to a third of adults in higher-income countries¹ and more than half of the adults in lower-income countries². CM can elicit both immediate and long-term deleterious effects for the survivor, such as psychopathology³ and substance use⁴. Throughout the past decade, researchers have explored the psychological, physiological, and behavioural impacts of CM during the prenatal period^{5,6}. This study examined more closely the potential mechanisms by which CM is associated with harmful pregnancy outcomes.

Pregnant parents with a history of CM have been found to be at greater risk of experiencing pregnancy complications (e.g., prematurity, low birth weight, and neonatal intensive care unit admission)⁷ compared to those without such histories^{6,8}. Researchers speculate that this may be attributable to the heightened vulnerability of CM survivors to experience impaired neurobiological stress response processes⁹, making them feel less equipped to manage the typical stressors associated with pregnancy and parenting. Others suggest an epigenetic explanation, as CM has been found to alter DNA methylation, which can impact gene expression levels, and result in abnormal physiological stress responses¹⁰. To cope with this stress, survivors of CM may engage in tobacco, caffeine, cannabis, opioid, and other illicit substance use during pregnancy^{9,11,12}, which can pose complications to the health of the parent and fetus⁷. Furthermore, risk of pregnancy complications can be increased by weight gain concerns and lack of prenatal care; both of which have been found to be positively associated with CM^{13,14}. Overall, CM has the potential to predict factors that may heighten the risk of pregnancy complications.

Pregnant parents with a history of CM have indeed reported more mental health issues during pregnancy than counterparts without such histories⁵. Huth-Bocks et al.¹⁵ found that neglect, emotional, physical, and sexual abuse each uniquely and similarly predicted at least three PTSD symptoms in the prenatal period (avoidance, dysphoria, hyperarousal). Evidence suggests that exposure to intimate partner violence during childhood on its own does not seem to predict PTSD symptoms during pregnancy¹⁶. Additionally, those struggling with PTSD symptoms during their pregnancy are at greater risk of engaging in risky coping behaviours such as substance use⁹. Therefore, PTSD symptoms may play a vital role in the association between CM and factors that may heighten the risk of pregnancy complications.

Nevertheless, the current body of literature on CM, PTSD symptoms, and risk factors for pregnancy complications lacks mediation or path models to determine more precisely how these variables interplay. Further, research has not yet begun to investigate the idiosyncrasies of CM subtypes in these relationships. Evidence suggests that the CM subtypes affect the pregnancy continuum differently⁸. For instance, sexual abuse has been found to predict preterm birth, however when examining other CM subtypes (i.e., physical and emotional abuse and neglect), no such relationships were identified^{6,17}. The present study aimed to examine PTSD symptoms as a potential mediator in the relationship between histories of various subtypes of CM (i.e., emotional, physical and sexual abuse, and neglect) and factors associated with a heightened risk of pregnancy complications (i.e., smoking, substance use, lack of prenatal care, weight gain concern, and insufficient food intake during pregnancy) in a sample of pregnant individuals aged 18 to 29 years old. We hypothesize that CM will be associated with increased PTSD symptoms, which in turn will be associated with the presence of more factors related to a heightened risk of

pregnancy complications, and that childhood sexual abuse may have stronger associations with these variables than other maltreatment types.

Methods

Participants

Ninety-eight pregnant parents with and without CM histories were recruited from January 2020 to January 2021 through advertisements posted on social media groups targeting parents (e.g., neighbourhood community groups) as well as at community locations in metropolitan areas. The study was advertised as a project examining childhood adversity and pregnancy. Inclusion criteria for participation included being 18 to 29 years old and greater than 16 weeks pregnant. The age criterion was selected to attain a more homogeneous sample. Indeed, pregnancy complications such as chronic hypertension and gestational diabetes have been found to be linearly associated with increasing maternal age¹⁸. Accordingly, a younger and smaller age range reduced the risk of spurious findings. The average age of our sample is 25.39 years old, which is three years younger than the national average age of first birth¹⁹. In addition, being at least 16-weeks pregnant increases the likelihood that participants initiated prenatal care, therefore having an opportunity to identify potential complications with the pregnancy. Furthermore, this inclusion criteria surpasses the crucial point where miscarriages are more likely to occur (less than 1% at 16 weeks of gestation)²⁰. Participants were excluded if they 1) did not reside in the target areas for recruitment ($n = 2$); 2) did not meet our inclusion criteria ($n = 3$) or; 3) displayed careless responding ($n = 8$; e.g., completed the survey in less than half the modal time of completion and incorrectly answered two out of three validation questions). The final sample was composed of 85 participants, which was sufficient to attain a power of 0.80²¹. Participant demographics are displayed in Table 1.

Measures

Socio-demographics

Participants' demographics were collected via 20 forced-choice and open-ended items. Items included information on relationship status, ages of other children, ethnicity, education, household income, and health status.

Pregnancy Status and Lifestyle

Participants were administered seven forced-choice and open-ended items that assessed for factors associated with heightened risk for pregnancy complications, including 1) lack of prenatal care; 2) weight gain concerns (too much or too little); 3) smoking during pregnancy; 4) presence of smoke inside home or car; 5) alcohol consumption during pregnancy; 6) substance use during pregnancy and; 7) insufficient food intake. Results from the items were congregated into a single score of risk factors for pregnancy complications. Scores ranged from 0-7 according to the endorsement of any of these items. Internal consistency of this scale in the current study's sample was $\alpha = 0.55$.

Child Maltreatment

The IPSCAN Child Abuse Screening Tool Retrospective Version (ICAST-R²²) and Early Trauma Inventory Self-Report Short Form (ETI-SR-SF²³) were used to assess the presence of CM. The 5-item Neglect Subscale of the ICAST was used. Participants responded to each item with "Yes" or "No". In this five-item subscale, internal consistency in the current study's sample was adequate ($\alpha = 0.63$). Three subscales from the ETI-SR were used to measure physical (5 items), sexual (6 items), and emotional abuse (5 items). Items included statements such as "Before the age of 18, were you often put down or ridiculed?" to which participants answered in a dichotomous format (*yes/no*). As the presence or absence of CM subtypes were the

predictors of interest, dichotomous scores were calculated for each CM type. If participants endorsed at least one item in the subscale, they were considered to have experienced that CM type. Internal consistencies of the ETI-SR subscales were adequate, ranging from 0.72 to 0.85.

PTSD Symptoms

The PTSD Checklist for DSM-5 (PCL- 5²⁴) is a 37-item self-report measure that assesses the presence and severity of PTSD symptoms. Statements such as “Feeling upset when something reminded you of the stressful experience” are rated on a 5-point Likert scale (0 = not at all, 4 = extremely). The PCL-5 is valid and reliable in quantifying symptom severity and is sensitive to change over time²⁴. Internal consistency in the current study’s sample was high ($\alpha = 0.96$).

Procedure

All measures were compiled in an online survey hosted on the secure platform Qualtrics. After participants provided their consent, they were directed to the questionnaires, which took approximately 30 minutes to complete. The present study obtained ethical approval from the Research Ethics Board at (MASKED FOR REVIEW) (REB File #108 0719).

Results

Preliminary Analyses

Preliminary and descriptive analyses were conducted using SPSS 21. Descriptive analyses were calculated for demographic and study variables (Table 1). To determine potential covariates, correlations and group differences in risk factors for pregnancy complications were calculated. No group differences in medical diagnoses, family status, annual income, parity, and education level were found for risk factors for pregnancy complications. Furthermore, no correlation was found between number of interpersonal traumatic experiences in adulthood and

risk for pregnancy complications. However, the correlation between age and risk factors for pregnancy complications was statistically significant and negative with younger parents presenting higher risk scores. Therefore, age was used as a covariate in the mediation analyses (see Table 2).

Independent sample t-tests were conducted to determine the mean differences in the PTSD symptoms and risk factors for pregnancy complications scores for maltreated ($n = 65$) and non-maltreated ($n = 20$) participants (see Table 3). Results indicated that, for each maltreatment type, maltreated participants presented more PTSD symptoms and a higher risk score than non-maltreated participants.

Furthermore, correlations between CM subtypes were examined. Most CM sub-types were moderately correlated ($r = 0.39 - 0.45$). Physical and emotional abuse were highly correlated ($r = 0.64$), as well as neglect and emotional abuse ($r = 0.52$). Yet, correlations did not reach levels indicative of problematic multicollinearity; four separate mediation models were run.

Mediation Analyses

The results from the mediation analyses are presented in Tables 4 and 5. Mediation models were tested separately for each CM type using PROCESS macro Version 3²⁵. To reduce the risk of Type I error given the multiple comparisons, models were analysed with 97% confidence intervals and indirect effects were assessed using bias-corrected bootstrap confidence intervals (10 000 samples)²⁶. Results from the mediation analyses indicated that neglect, physical abuse, emotional abuse, and sexual abuse were each associated with increased PTSD symptoms, which were in turn associated with higher pregnancy complications risk scores. In the mediation models, histories of neglect and physical abuse were not directly associated with pregnancy

complications risk, however, indirect effects were found. For the sexual and emotional abuse models, direct, positive effects were observed between histories of CM and pregnancy complications risk; indirect effects of CM on pregnancy complications risk through increased PTSD symptoms were also found. As such, neglect, physical abuse, sexual abuse, and emotional abuse were all indirectly associated with increased risk factors for pregnancy complications through their association with PTSD symptoms. Furthermore, age was negatively associated with both PTSD symptoms and pregnancy complications risk in the models with neglect, physical abuse, and sexual abuse. However, for the model with emotional abuse, maternal age was only negatively associated with PTSD symptoms. Overall, the final mediation models explained from 23 to 31% of the variance of pregnancy complications risk (31% for neglect, 26% for physical abuse, 23% for sexual abuse, and 27% for emotional abuse).

Discussion

To our knowledge, this is the first study that aimed to further understand the mechanisms underlying the relationships between different subtypes of CM and factors associated with heightened risk for pregnancy complications by examining PTSD symptoms as a potential mediator. Results indicated that neglect, physical abuse, sexual abuse, and emotional abuse were all related to the presence of more factors associated with pregnancy complications through increased PTSD symptoms. This is consistent with prior literature showing that, for CM survivors, pregnancy may trigger painful memories of being parented or devastating childhood experiences and increase one's sense of vulnerability; both of which may exacerbate PTSD symptom⁹. In the current sample, 25% of participants endorsed clinical levels of PTSD, and of these participants, all but two experienced a history of CM. In addition, results are consistent with previous studies, such as Morland et al.,²⁷ who discovered that entering pregnancy with a

diagnosis of PTSD increased individuals' risk of smoking, alcohol and substance use, and excessive weight gain during pregnancy as well as attending less than 6 prenatal care visits. These factors can each increase the odds of low birth weight, neonatal intensive care unit admission, and stillbirth.

Despite finding that PTSD symptoms were deemed a significant mediator in each CM subtype model, there is reason to believe that CM subtypes can affect pregnancy experiences differently⁸. In the current study, it appears as though neglect may be the strongest predictor compared to the other maltreatment subtypes. However, the current study did not have the sample size to integrate all CM subtypes in a single path model, thus their unique contribution and interaction cannot be examined. As such, further research should examine the unique role of CM subtypes in predicting pregnancy complications risk factors and the potentially differing mediators and moderators involved.

Limitations and Future Directions

The current study serves as a preliminary support to examine the role of CM and PTSD symptoms in pregnant parents with the intention to inform further research. Due to the nature of this preliminary study, several limitations are worthy of discussion. First, the sample size is small and composed of mostly Caucasian individuals. In addition, CM prevalence rates were higher in this sample than in the general public²⁸. It is possible that the high CM rates are attributable to the self-report and dichotomous response format of the CM measures, since this method of assessment has the potential to lead to informant bias and overestimate prevalence²⁹. Self-selection may also play a role in the higher CM prevalence, since it was advertised that we were recruiting for a project on childhood adversity and pregnancy. Accordingly, the characteristics of the sample limit the generalizability of our findings. Furthermore, this study was cross-sectional,

preventing us from establishing temporal precedence of the observed associations. Exposure to intimate partner violence was not examined as a predictor in the models and should be examined in future studies. Additionally, despite the Cronbach's alpha statistic typically underestimating the internal consistency of scales with fewer than 10 items³⁰, the internal consistency for current study's outcome variable was lower than desired. Finally, in the measure for PTSD symptoms, participants were asked to think about a traumatic event when they were answering the questionnaire, but we did not inquire about the specific event they had in mind. This prevented us from being able to examine the specific cause of their reported symptoms.

Future studies should replicate these findings using larger and more diverse samples with longitudinal designs. Studies should further examine the role of each CM subtype in contrast to polyvictimization experiences, as CM subtypes are known to co-occur²⁸. In addition, future studies should explore the dimensions of PTSD (e.g., avoidance, re-experiencing) that are likely to drive the relationship between CM and factors that may increase the risk for pregnancy complications. Other variables could be added to the models and examined as mediators and moderators such as perceived social support from intimate partners¹⁵ and other mental health symptoms (i.e., prenatal anxiety and depression⁹). Finally, as age was deemed a significant covariate, future studies could determine whether certain age brackets are more likely to present risk factors for pregnancy complications.

Conclusion

It is of utmost importance to emphasize that although this study examined risk factors for pregnancy complications, pregnant parents with a history of CM are not to blame for their trauma and the presence of complications. Our results offer preliminary evidence for the use of CM and PTSD screening early in prenatal care, such that if screening is positive, appropriate

support can be provided. Early trauma-informed care and education programs for pregnant CM survivors with PTSD symptoms may improve not only the health of the parent but potentially prevent adverse pregnancy outcomes.

References

- [1] Afifi TO, MacMillan HL, Boyle M, et al. Child abuse and mental disorders in Canada. *Can Med Assoc J* 2014;186:324-332.
- [2] Gilbert R, Widom C, Browne K, et al. Burden and consequences of child maltreatment in high-income countries. *Lancet* 2009;373:68-81.
- [3] Norman R, Byambaa M, De R, et al. The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLoS Medicine* 2012;9:1-31.
- [4] Edalati H, Krank MD. Childhood maltreatment and development of substance use disorders: A review and a model of cognitive pathways. *Trauma Violence Abuse* 2016;17:454-467.
- [5] Smith MV, Gotman N, Yonkers KA. Early childhood adversity and pregnancy outcomes. *Matern Child Health J* 2016;20:790-798.
- [6] Cammack AL, Hogue CJ, Drews-Botsch CD, et al. Associations between maternal exposure to child abuse, preterm birth, and very preterm birth in young, nulliparous women. *Matern Child Health J* 2019;23:847-857.
- [7] Grote NK, Bridge JA, Gavin AR, et al. A meta-analysis of depression during pregnancy and the risk of preterm birth, low birth weight, and intrauterine growth restriction. *Arch Gen Psychiatry* 2010;67:1012-1024.
- [8] BLIND
- [9] Osofsky J, Osofsky H, Frazer A, et al. The importance of adverse childhood experiences during the perinatal period. *Am Psychol* 2021;76:350-363.

- [10] Ramo-Fernández, L., Boeck, et al. The effects of childhood maltreatment on epigenetic regulation of stress-response associated genes: an intergenerational approach. *Sci Rep.* 2019; 9:1-12.
- [11] Chung EK, Nurmohamed L, Mathew L, et al. Risky health behaviors among mothers-to-be: The impact of adverse childhood experiences. *Acad Pediatr* 2010;10:245-251.
- [12] Svikis D, Berger N, Haug N, et al. Caffeine dependence in combination with a family history of alcoholism as a predictor of continued use of caffeine during pregnancy. *Am J Psychiatry* 2005;162:2344-2351.
- [13] Nagl M, Steinig J, Klinitzke G, et al. Childhood maltreatment and pre-pregnancy obesity: a comparison of obese, overweight, and normal weight pregnant women. *Arch Womens Ment Health* 2015;19:355-365.
- [14] Leeners B, Stiller R, Block E, et al. Prenatal care in adult women exposed to childhood sexual abuse. *J Perinat Med* 2013; 41:365-374.
- [15] Huth-Bocks AC, Krause K, Ahlfs-Dunn S, et al. Relational trauma and posttraumatic stress symptoms among pregnant women. *Psychodyn Psychiatry* 2013;41:277-301.
- [16] Kulkarni MR, Graham-Bermann S, Rauch SA, et al. Witnessing versus experiencing direct violence in childhood as correlates of adulthood PTSD. *J Interpers Violence* 2011; 26:1264-1281.
- [17] Selk S, Rich-Edwards J, Koenen K, et al. An observational study of type, timing, and severity of childhood maltreatment and preterm birth. *J Epidemiol Community Health* 2016;70:589-595.
- [18] Fuchs F, Monet B, Ducruet T, et al. Effect of maternal age on the risk of preterm birth: A large cohort study. *PloS one* 2018;13:1-10.

- [19] Statistics Canada [Internet] Fertility: Fewer children, older moms; 2018 [cited 2021 November 5]. Available from: <https://www150.statcan.gc.ca/n1/pub/11-630-x/11-630-x2014002-eng.htm>
- [20] Mukherjee S, Velez Edwards DR, Baird DD, et al. Risk of miscarriage among black women and white women in a US Prospective Cohort Study. *Am J Epidemiol* 2013;177:1271-1278.
- [21] Fritz MS, MacKinnon DP. Required sample size to detect the mediated effect. *Psychol Sci* 2007;18:33-239.
- [22] Dunne MP, Zolotor AJ, Runyan DK, et al. ISPCAN Child Abuse Screening Tools Retrospective version (ICAST-R): Delphi study and field testing in seven countries. *Child Abuse Negl* 2009;33:815-825.
- [23] Bremner JD, Bolus R, Mayer EA. Psychometric properties of the Early Trauma Inventory-Self Report. *J Nerv Ment Dis* 2007;195:211-218.
- [24] National Center for PTSD. The Life Events Checklist for DSM-5 (LEC-5) Available at: <http://www.ptsd.va.go>; 2013. Accessed July 18, 2019.
- [25] Hayes, A. F. (2017). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. 2nd ed. New York: Guilford publications; 2017.
- [26] Koopman J, Howe M, Hollenbeck JR, et al. Small sample mediation testing: misplaced confidence in bootstrapped confidence intervals. *J Appl Psychol* 2015;100:194-202.
- [27] Morland L, Goebert D, Onoye J, et al. Posttraumatic stress disorder and pregnancy health: Preliminary update and implications. *Psychosomatics* 2007;48:304-308.

- [28] Afifi TO, MacMillan HL, Taillieu T, et al. Relationship between child abuse exposure and reported contact with child protection organizations: Results from the Canadian community health survey. *Child Abuse Negl* 2015;46:198-206.
- [29] Berthelot N, Hébert M, Godbout N, et al. Childhood maltreatment increases the risk of intimate partner violence via PTSD and anger personality traits in individuals consulting for sexual problems. *J Aggress Maltreat Trauma* 2014;23:982-998.
- [30] Taber, KS. The use of Cronbach's alpha when developing and reporting research instruments in science education. *Res Sci Educ* 2018;48:1273-1296.

Table 1.
Sociodemographic Characteristics of the Participants

Characteristic	<i>M/n</i>	<i>SD/%</i>
Age (<i>n</i> = 85)	25.39	2.57
Weeks Pregnant (<i>n</i> = 85)	26.05	6.97
Number of Children (<i>n</i> = 85)		
First Pregnancy	37	43.5
More than one child	48	56.5
Ethnicity (<i>n</i> = 84)		
Caucasian	66	78.6
Indigenous	8	9.5
Black	3	3.6
Asian	2	2.4
Other	5	6
Family Status (<i>n</i> = 84)		
With parent of child	67	79.8
With parent of one of their children	13	15.5
Separated or divorced	2	2.4
Other	2	2.4
Education (<i>n</i> = 85)		
Pre-university or more	61	71.7
High school or less	24	28.3
Annual Family Income (<i>n</i> = 82)		
19 999 \$ CAD or less	9	11
20 000 \$ - 59 999 \$ CAD	28	34.2
60 000 \$ CAD or more	45	54.8
Health Diagnoses		
Mental Health	23	27.4
Physical Health	5	6
Both	5	6
Abuse (<i>n</i> = 85)		
Physical	49	57.6
Emotional	52	61.2
Sexual	39	45.9
Neglect	43	50.6

Table 2.
Group Differences in Risk of Pregnancy Complications

Variables	<i>n</i>	<i>r</i> / <i>M</i> (<i>SD</i>)	<i>F</i>	<i>p</i>
Age	85	-0.34		<0.001
Number of interpersonal traumas in adulthood	77	0.20		0.07
Education			0.02	0.88
Pre-university or more	24	1.33 (1.21)		
High school or less	61	1.37 (1.05)		
Annual Family Income			0.03	0.97
19 999 \$ CAD or less	9	1.44 (1.01)		
20 000 \$ - \$ 59 999 CAD	28	1.36 (1.06)		
60 000 \$ CAD or more	32	1.41 (1.21)		
Family Status			2.41	0.07
With parent of child	67	1.22 (1.11)		
With parent of one of their children	13	2.00 (1.35)		
Separated or divorced	2	2.50 (0.71)		
Other	2	1.37 (0.00)		
Physical Health Diagnosis			2.34	0.13
Confirmed medical diagnosis	5	0.60 (0.55)		
No medical diagnosis	79	1.42 (1.18)		
Parity			0.16	0.69
First birth	48	0.85 (1.17)		
Not first birth	37	0.76 (1.04)		

Table 3.
Independent Samples T-tests for Group Differences

Variable	Maltreated	Not Maltreated	T-test
	<i>M(SD)</i>		
Neglect			
PTSD Symptoms	28.74 (17.32)	11.12 (11.52)	5.51 ***
Pregnancy Complications Risk	1.26 (1.24)	0.36 (0.73)	4.07 ***
Physical Abuse			
PTSD Symptoms	26.59 (17.55)	11.11 (11.82)	4.58 ***
Pregnancy Complications Risk	1.18 (1.25)	0.31 (0.58)	3.90 ***
Sexual Abuse			
PTSD Symptoms	27.64 (18.40)	13.59 (13.00)	4.11 ***
Pregnancy Complications Risk	1.28 (1.26)	0.41 (0.78)	3.90 ***
Emotional Abuse			
PTSD Symptoms	26.58 (17.23)	9.73 (10.85)	5.02 ***
Pregnancy Complications Risk	1.19 (1.22)	0.21 (0.48)	4.39 ***

Note. *** $p < .001$

Table 4.
Mediation Models

Predictor	PTSD Symptoms			Pregnancy Complications Risk		
	<i>B</i>	SE	97% CI	<i>B</i>	SE	97% CI
Neglect	15.77***	3.23	[7.25, 24.29]	0.43	0.26	[-0.25, 1.12]
PTSD Symptoms				0.02*	0.01	[0.01, 0.04]
Physical Abuse	13.66***	3.35	[4.82, 22.50]	0.43	0.22	[-0.14, 0.76]
PTSD Symptoms				0.02*	0.01	[0.01, 0.04]
Sexual Abuse	12.02***	3.42	[3.00, 21.04]	0.52*	0.22	[0.00, 0.69]
PTSD Symptoms				0.02**	0.01	[0.01, 0.03]
Emotional Abuse	14.75***	3.43	[5.70, 23.07]	0.49*	0.23	[0.01, 0.89]
PTSD Symptoms				0.02*	0.01	[0.01, 0.03]

Note. * $p < .03$; ** $p < .01$; *** $p < .001$

Table 5.
Indirect effects of Childhood Maltreatment on Pregnancy
Complications Risk through PTSD Symptoms

Predictor	Estimate	SE	97% BC Bootstrap CI	Variance Explained
Neglect	0.27*	0.12	[0.05-0.63]	31%
Physical Abuse	0.23*	0.11	[0.03-0.54]	26%
Sexual Abuse	0.22*	0.10	[0.03-0.51]	23%
Emotional Abuse	0.24*	0.12	[0.02-0.58]	27%

Note. * $p < .03$

