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CHILDHOOD MALTREATMENT AND LATER ADULT FUNCTIONING: AN EXAMINATION OF THE ROLES OF PERSONAL RESILIENCY AND PSYCHOLOGICAL DISTRESS

Maggie L. Gorraiz
University of Rhode Island, mlgorraiz@gmail.com

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BY

MAGGIE L. GORRAIZ

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MAGGIE GORRAIZ

APPROVED:

Dissertation Committee:

Patricia Morokoff

Joseph Rossi

Annemarie Vaccaro

Nasser H. Zawia

UNIVERSITY OF RHODE ISLAND
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ABSTRACT

Childhood maltreatment has been and continues to be a disconcerting public health concern worldwide. Over three decades of research indicates a gamut of negative long-term physical and mental health correlates of childhood maltreatment. However, there is limited knowledge on potential mediating factors in the relationship between childhood maltreatment and later adult functioning. This study examined the potential impact of childhood maltreatment on later adult functioning, specifically interpersonal functioning and protective sexual behaviors. The study also investigated the potential mediating roles of psychological distress and personal resiliency within this relationship. A college-based sample of 415 heterosexually active men and women, aged 18-25 years, completed survey measures on the model variables. Using structural equation analyses, personal resiliency partially mediated the relationship between childhood maltreatment and interpersonal functioning across the entire sample. Separate models for women indicated that personal resiliency completely mediated the relationship between childhood maltreatment and interpersonal functioning, while personal resiliency did not appear to be a mediator for men. Psychological distress was not a mediator across the entire sample or for men and women separately. Childhood maltreatment, personal resiliency, psychological distress did not predict protective sexual behaviors across the entire sample and for men and women separately.

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CHAPTER 1

INTRODUCTION

Childhood maltreatment (CM) is a ubiquitous public health problem with unsettling, often tragic, long-term consequences for the victim, as well as for society. The prevalence of CM has been well documented in not only clinical and university samples, but also community and population-based samples (see Vickerman & Margolin, 2009, for review). According to the Children's Bureau (2011) review, CM affects gender equally, with women being affected slightly more (51.2% versus 48.5%) than men. Within this sample, four-fifths (78.3%) of individuals reporting CM were neglected, 17.6% were physically abused, 9.2% were sexually abused, 8.1% were psychologically maltreatment and 2.4% were medically neglected.

Despite the fact that both genders are subject to CM, when forms of CM incidence are considered separately, gender differences appear to exist in terms of incidence rates. There is a higher incidence of childhood sexual abuse (CSA) among women compared to men. Findings indicate that between one-fifth and one-third of women experience some form of CSA (Briere & Elliott, 2003; Zwickl & Merriman, 2011). Additionally, there is evidence that there is a higher incidence of childhood physical abuse (CPA) and childhood neglect in men compared to women (Sobsey, Randall, & Parrila, 1997). When the prevalence of CPA is examined by gender, men were more likely than women to have experienced seven of 12 violent behaviors.

> More specifically, they were more likely to "*have had something thrown at them that could hurt; to have been pushed, grabbed, or shoved; to have been slapped or hit; to have been kicked or bitten; to have been beaten up; to have been hit with some object and to have been threatened with a weapon other than a gun*" by a caregiver (Thompson, Kingree, & Desai, 2004, p. 600).

Gender differences for CPA were not found for violent behaviors, where the caregiver reportedly pulled hair, choked or experienced drowning, or threatened with a gun, actual use of a gun, or another weapon. Gender does not appear to be a significant moderator for childhood emotional abuse (CEA), indicating that CEA affects males and females equally (Stolenborgh, Bakermans-Branenburg, Alink & van IJzendoorn, 2012)

In addition to gender differences found in the incidence of different forms of CM, there appears to be a higher incidence of CM in some minority populations. For example, findings indicate that there are higher rates of CSA and CPA among lesbian and bisexual women, compared to women that identify as heterosexual (Balsam, Rothblum, & Beauchaine, 2005; Corliss, Cochran, & Mays, 2002). A similar pattern is also indicated in men identifying as homosexual or bisexual, who report higher rates of CEA and CPA compared to heterosexual men (Corliss et al., 2002). Finally, Hussey, Chang, and Kotch's (2006) findings suggest that there is no significant pattern of results when examining incidence of CM among racial/ethnic groups. Relationships between racial/ethnic groups and CM diminished after adjusting for sociodemographic characteristics like family income. However, after adjustment for sociodemographic characteristics, there remained a greater likelihood for supervision neglect among Native Americans and physical neglect among African Americans compared to non-Hispanic whites.

Since Brown & Finkelhor's (1986) formative review on the effects of CSA, there are several decades of retrospective and longitudinal data suggesting that CSA, as well as other forms of CM have a significant, damaging impact on later adult functioning. Specifically, CM has been associated with increased risk in developing depression (DEP) (e.g. Nanni, Uher, & Danese, 2012), post-traumatic stress disorder (PTSD) (e.g. Margolin & Vickerman, 2011), alcoholism (e.g. Felitti et al., 1998), suicidality (e.g. Felitti et al., 1998) and physical health correlates such as obesity (e.g. Noll, Zeller, Trickett, & Putnam, 2007).

In addition to the impact on the individual in terms of long-term negative consequences, there are economic repercussions of CM at the societal level as well. Fang, Brown, Florence and Mercy (2012) estimated that the average lifetime cost per victim of CM in 2010 dollars was over $200,000. Moreover, the authors calculated that on a larger scale, the long-term physical and mental health correlates of CM are expected to cost relatively $124 billion each year collectively. It is important to note that this estimate includes costs of CM survivors' mental and physical health costs, child welfare services, lost occupational productivity, educational costs, and criminal justice services (Fang, Brown, Florence & Mercy, 2012). Thus, it appears warranted to further examine how the long-term effects of CM may be reduced at multiple levels.

All in all, CM is a pervasive problem with the true incidence likely occurring at higher frequencies than is often reported. While it appears that more actions need to taken (e.g. legislative and education) to help protect individuals at risk for CM and prevent CM from occurring in this culture, it also seems imperative to continue to investigate how CM affects later adult functioning to inform therapeutic interventions, with the goal of

diminishing suffering. This may be accomplished by investigating potential mediators or moderators in the relationship between CM and later adult functioning.

CHAPTER 2

REVIEW OF THE LITERATURE

While there are many theories to help explain the diverse set of long-term correlates of CM on adult functioning (see review Polusny & Follete, 1995), the present study investigates whether CM may reduce personal resiliency (PR) resources, while simultaneously increasing psychological distress (PD). Lamoureux, Jackson, Palmieri and Hobfoll (2011) proposed that the long-term consequences of CM may be explained by several integrated theories. They argued that that CM reduces PR resources, while simultaneously increasing PD. More specifically, the foundation for their argument lies on the conservation of resources theory (COR; Hobfoll, 1989), where traumatic stress may adversely impact an individual's PR resources, such as decreasing self-esteem and personal efficacy (Finkelhor & Brown, 1985). A reduction in these resources may interrupt or inhibit the development of healthy, intimate relationships in adulthood. Moreover, CM may contribute to PD, such as DEP, anxiety, complex PTSD, or other stages of cognitions such as betrayal, mistrust, oversexualization, and powerlessness (Briere, 1992; Davis & Petretic-Jackson, 2000; Finkelhor & Browne, 1985) and/or emotionally avoidant behavior (Polusny & Follette, 1995).

Consequently, increased PD and decreased PR, may negatively impact long-term adult functioning, specifically in the areas of interpersonal functioning (INT) and sexual risk behaviors. Therefore, the review of the literature will focus on the relationship

between CM and several outcomes, INT and sexual risk behaviors. In addition, the review of the literature will focus on the relationship between CM, PD, and PR.

Impact of CM on INT

CM is considered a form of interpersonal victimization, which has been found to contribute to a range of interpersonal dysfunction in adolescence and adulthood (Bensley et al., 2003; DiLillo, 2001). Interpersonal difficulties that may arise include mistrust, difficulty maintaining boundaries, lack of assertiveness, ambivalence about relationships, lower levels of satisfaction among romantic partners (DiLillo, 2001), powerlessness (Whitmire et al., 1999), difficulty in coping, affect regulation and shame attributions (see Classen, Palesh, & Aggarwal, 2005 for review). Lamoreux et al. (2011) found that that for women with a history of CSA, PD (e.g. PTSD and DEP) mediated the relationship to INT, defined as social support (SOC) and relationship conflict in adulthood.

DiLillo (2001) conducted a review of INT among women with CSA histories and found that women with a history of CSA were less well-adjusted than nonabused peers, report greater dissatisfaction in intimate partner relations, greater risk of revictimizaiton, and sexual dysfunction. On the contrary, Paradis and Boucher (2010) found that men and women with a history of CSA were not more vulnerable to interpersonal difficulties compared to their nonabused peers. However, men with a history of physical abuse, emotional abuse, or emotional neglect reported greater interpersonal difficulties in the context of romantic relationships than women.

CM and Protected Sexual Behavior (PSB)

CM may also contribute to an increase in risky sexual behaviors. Artime and Peterson (2012) examined the relationships among CM, emotion regulation difficulties, and risky sexual behavior. The findings indicated that a history of CM was significantly

associated with emotion dysregulation, increase number of sexual partners, and increased likelihood of a sexually transmitted infection. Moreover, in a clinical sample, a history of CSA was associated with greater number of episodes of unprotected sex in the previous three months, an increased likelihood of having exchanged sex, and greater number of lifetime and recent sexual partners across gender (Senn, Carey, Vanable, Coury-Doniger & Urban, 2006). In this study, gender moderated the relations between CSA and risky sexual behavior.

Wilson and Widom (2008) conducted a 30-year follow-up study, examining the relationship between CM and risky sexual behavior. Findings indicated that abused and neglected individuals were at increased risk to engage in high-risk sexual behavior, defined as early sexual contact and promiscuity. These associations were stronger for women than for men. In addition, CM has been found to be associated with an increased likelihood to report multiple sexual partners, sexual victimization, and inconsistent contraceptive use (Noll, Trickett, & Putnam, 2003; Senn, Carey, Vanable, & Coury-Doniger, 2008; Vickerman & Margolin, 2009;Walsh, Senn, & Carey, 2012; Whitmire, Harlow, Quina, & Morokoff, 1999). In the National Longitudinal Study of Adolescent Health, self-report of a recent STD was positively associated with CSA, CPA, physical neglect, and supervision neglect during childhood and adolescence in young adulthood. Moreover, young women who experienced physical neglect, as children were at increased risk for test-identified STDs ((Haydon, Hussey, & Halpern, 2011).

The Roles of PD and PR

While there is evidence that CM negatively impacts later adult functioning, such as interpersonal functioning and sexual behaviors, it is unclear how these long-term

effects occur in adult functioning. To elucidate how CM impacts later adult functioning in the areas of interpersonal functioning and sexual behaviors, the roles of PR and PD are reviewed.

CM and PD. Browne and Finkelhor (1986) suggested that one of the most common long-term effects of CSA among females is depression and anxiety symptomatology. There is considerable evidence of this association in studies of community (Sciolla, et al., 2011; Kendler, Kuhn, & Prescott, 2004; Molnar, Buka, & Kessler, 2001), clinical samples (Banyard, Siegel & Williams, 2004; Carlson, McNutt, & Choi, 2003; Gibb, Butler & Beck, 2003; Peleikis, Mykletun, & Dahl, 2005; Mancini, Van Ameringen, & MacMillan, 1995; Maniglio, 2010) and longitudinal studies (Schilling, Aseltine & Gore, 2007). Finally, previous research suggests that women may be more susceptible to affective, internalizing disorders, like DEP, rather than externalizing disorders such as substance abuse than men (MacMillian et al., 2001).

Gibbs et al., (2003) examined the relative specificity of three forms of CM: CPA, CSA, and CEA to determine its prediction of DEP and anxiety in adulthood. CEA was related more strongly to DEP; CPA was related more strongly to anxiety and CSA was equally strongly related to symptoms of anxiety and DEP; demonstrating that it may be in the context of other abuse that risk for DEP and anxiety increases in adulthood. In a sample comparing men and women in psychological adjustment, physically abused female adolescents and sexually abused female adolescents perceived their family environments as more hostile and less cohesive compared to non-abused counterparts. Physically abused male adolescents reported more conflict than those without physical

abuse, but did not differ with regard to cohesion and family dimensions (Meyerson, Long, Miranda, & Marx, 2002).

In addition to DEP symptomatology, post-traumatic stress disorder (PTSD) is a prevalent mental health correlate of CM, characterized by a set of maladaptive responses to serious, life-threatening trauma (e.g. sexual assault and violence) (Banyard et al., 2001, Trickett, Noll, & Putnam, 2011). High levels of CPA and CEA that co-occur at the time of CSA incident may also increase risk for developing psychopathology across gender (Balsam, Lehavot, Beadnell, & Circo, 2010; Carlson et al., 2003).

There also appears to be an association between the severity of CM and later PD. Molnar et al. (2001) found that CSA involving rape, was associated with higher rates of PTSD and DEP, while childhood molestation was associated with lower rates, suggesting that rape, a more severe form of abuse may predict a higher likelihood of developing later psychopathology. In addition, Sciolla et al. (2001) found similar findings among a sample of low-income African-American and Latina women, where severe forms of CSA (i.e. rape versus molestation) were associated with a higher risk of DEP. Depressive symptoms among African-American women were the highest in those who disclosed and reported high levels of self-blame at the time of the incident. Ethnic minorities, never been married, and less education were related to greater odds of lifetime PTSD for adult victims (Glover et al., 2010).

CM and PR. A majority of CM research has focused on psychopathology with less focus on the role of PR (Collishaw et al., 2007). Bonanno (2004) suggests that PR may play a larger role in the recovery from trauma than previously studied. He defines PR, as the ability to maintain relatively stable, healthy levels of psychological and

physical functioning, once exposed to a traumatic event (Bonanno, 2004). Other studies have found that resilience may be a strong protective psychological factor in the prevention of mental and physical illness after a traumatic event (Taylor, Kemeny, Reed, Bower, and Gruenewald, 2000). However, there are limited studies investigating PR among CM survivors. Lamoureux et al. (2011) defined PR as having a global sense of self-worth (Rosenberg, 1965) and a sense of agency or belief about abilities to exert control over the self and the environment (Bandura, 1997). In a sample of female CSA survivors, Lamoureux et al. (2011) found that PR mediated the role between CSA and sexual risk behaviors.

In addition to general self-efficacy (GSE) and self-esteem (SE), self-compassion (SCOM) may also be an aspect of PR that may serve as a protective factor in the face of adversity. Neff (2003), a leading researcher in SCOM has defined this concept as being understanding towards oneself, rather than being self-critical; perceiving one's experiences as part of the larger human experience; and exercising mindful awareness of painful thoughts and feelings. While most of the research is preliminary in the area of SCOM, one recent study explored individual differences in SCOM in buffering later emotion regulation difficulties among adolescent CM survivors and found that SCOM mediated the relationship between CM severity and later emotion dysregulation in both men and women (Vettese, Dyer, Ling Li, & Wekerle, 2011).

Given the pervasive incidence of CM, there is an abundance of studies examining the long-term effects of CM. However, there are several limitations in the literature to date. First, the effects of CM types are often studied in isolation (e.g. CPA), where many individuals experience multiple forms of CM simultaneously (Higgins & McCabe, 2000).

A more comprehensive model of CM that incorporates multiple forms of CM, both simultaneously and independently may be more useful in understanding the complexity of these interpersonal traumas. Secondly, there is limited information on mediators and moderators of outcomes of CM to elucidate how CM may affect later adult functioning. Maniglio (2009) suggests that future research on CSA should not only focus on how CM may impact later adult functioning, specifically mental disorders, but also a focus on "compensatory processes" such as high self-esteem. By doing so, research can illuminate the role of protective factors, like PR, that stand to buffer the negative impact of CM.

Present Study

Considering the aforementioned limitations in the CM literature, the primary purpose of this study was to investigate how CM affects INT and protective sexual behaviors (PSB) in young adults. A secondary purpose of this study was to examine the potential mediating role of PR and PD in the relationship from CM to INT and PSB. A tertiary purpose of this study was to examine gender differences, a much-needed direction in this field to help effectively develop gender-sensitive psychological interventions. The present study builds on Lamoureux et al.'s (2011) model investigating the long-term effects of CSA on interpersonal functioning and sexual risk behaviors in a sample of women.

Hypotheses

The proposed study investigated relationships between CM, PR, PD, INT and PSB. Figure 1 depicts the hypothesized structural model, including variables, measured predictors and arrows, illustrating the proposed hypotheses and exploratory analyses. Thus, the study's hypotheses were:

(1) Higher levels of CM will be associated with lower levels of INT and lower levels of PSB.
(2) Higher levels of CM will be associated with higher levels of PD and lower levels of PR.
(3) Higher levels of PR will be associated with higher levels of INT and higher levels of PSB.
(4) Higher levels of PD will be associated with lower levels of INT and lower levels of PSB.
(5) PD and PR will act as mediating variables between CM and INT, and CM and PSB.
(6) Based on previous research, it is hypothesized that:
    a. Men and women will report equal incidences of CM, with women reporting more CSA than men.
    b. Women will report higher levels of PD than men.
    c. Women will report higher levels of INT than men.
    d. Men and women will report equal levels of PR.
    e. Women will report lower levels of PSB than men.
(7) The pattern will be the same for both men and women, higher levels of CM will be associated with higher levels of PD, lower levels of PR, lower INT, and lower levels of PSB.
(8) Negative family environment (NFE) will negatively moderate the effect of CM

CHAPTER 3

METHOD

The Institutional Review Board at the University of Rhode Island approved the study in January of 2013 prior to data collection.

Participants

A total of 465 participants accessed the survey. The sample consisted of 298 females (64.0%), 165 males (34.5%) and two transgender (0.4%) with an average age of 19.27 years (SD = 2.94). More than half of the sample was freshman students and most participants identified as White. See Table 1 for complete demographic characteristics.

Eligibility requirements. All interested students were allowed to participate in the survey provided that they were at least 18 years old. For the purposes of data analyses, only participants who identified, as male and female were included, leaving the total sample size to 463, as two individuals identified as transgender.

Participant population and incentives. Data was collected from undergraduate psychology courses, as well as general education course at the university, a traditional four-year college in the New England area. The introductory psychology course has a research project requirement, where students participate in four research projects on campus and answer questions about the experience using a standard short-answer form provided by the professor. In exchange for their participation in research, they receive course credit. In addition the to the introductory psychology course, several undergraduate psychology courses received advertisements (e.g. PSY 301), as well as

popular general education courses (e.g. COM 101). In exchange for the student's participation, they were given an opportunity at the end of the study to enter their email addresses into a drawing, where they could win one of fourteen, $50 iTunes gift cards. Their email addresses were not linked to their survey data to ensure anonymity.

Procedure

To recruit participants, the student investigator attended an introductory to psychology course seminar and made an announcement about the research project, inviting students to participate if they were interested. The student investigator explained that the purpose of the research was to learn more about the relationship between childhood experiences, interpersonal relationships, and sexual health behaviors among college students. Additionally, the student investigator contacted several instructors of psychology undergraduate courses. The instructors that agreed to display the advertisement (Appendix A) and survey web link on their on-line course information page with instructions for interested students.

Data collection began in February 2013 and continued until May 2013. Only the principal investigator and student co-investigator had access to the survey, as well as the stored data. The online procedure provided anonymity as well as provided an online informed consent. The online informed consent procedure gave the participants an opportunity to consent or not to consent. Furthermore, participants were given information to the university's counseling center or community clinic, should the survey cause any personal distress. Contact information for the researchers was also provided for any questions or concerns about the study. Participants were allowed to withdraw from participation at any time.

Measures

Demographics

Participants were asked demographic questions including age, gender, race/ethnicity, sexual orientation, and year in school (see Appendix C).

Age. Participants were asked to identify their stated age in years.

Gender. Participants were asked to identify their self-identified gender from the following options: Male, female, and transgender.

Race/ethnicity. Participants were asked to select their self-identified race/ethnicity.

Sexual orientation. Participants were asked to select their self-identified sexual orientation from the following options: heterosexual, lesbian, gay, bisexual, undecided/questioning, and other.

Year in school. Participants were asked to identify their current level in college.

Age of Sexual Debut

Participants were asked to identify their age of first consensual sexual intercourse.

CM

CM was a latent variable with three indicators, sexual abuse, physical abuse, and emotional abuse.

CSA.A six-item measure adapted by Harlow et al. (1993) from Wyatt (1985) was used to measure CSA (Appendix D). This version of the scale has been previously used in other studies (e.g. Morokoff et al., 2009 and Whitmire et al., 1999). Respondents rated their level of exposure to CSA through the age of 14 years old by someone who was at least five years older on a five-point scale 0 (*no)* to 4 (*many times*). A sample item on the

scale was “Did anyone older ever show their genitals to you?” CSA was considered present if any of the items were endorsed. The CSA score was calculated by averaging the responses to the six items. The Cronbach alpha for this scale was .91 for the entire sample, and .92 for females and .89 for males.

Adolescent Sexual Abuse (ASA). A modified two-item measure was used to measure ASA through the ages of 14-18 years old on a frequency rating scale of 0 (*no)*to 4 (*many times*). A sample item on the scale was “Did anyone ever put his penis in your mouth, vagina, or rectum without your consent?” ASA was calculated by averaging responses to the two items. ASA was considered present if either of the items was endorsed. The Cronbach alpha was .60 for the entire sample, .57 for females and .70 for males. This measure was not included in the CM latent variable, but used for exploratory purposes.

Adult Sexual Victimization (ASV). A modified two-item measure was used to measure ASV after 18 years old on a frequency rating scale of 0 (*no)* to 4 (*many times*). A sample item on the scale was “Did anyone ever put his penis in your mouth, vagina, or rectum without your consent?” ASV was calculated by averaging responses to the two items. ASV was considered present if any of the items were endorsed. The Cronbach alpha was .43 for the entire sample, .42 for females and .49 for males. This measure was not included in the CM latent variable, but used for exploratory purposes.

CPA. Two items on the Traumatic Events Survey (TES; Elliott 1992) measured CPA (see Appendix E). Respondents rated their level of exposure to CPA through the age of 18 years old on a five-point scale 0 (*no)* to 4 (*many times*). A sample item on the scale was, “Before the age of 18, did your parents or caretaker ever do the following: hit

you with a fist, kick you, or throw you down on the floor, into a wall, or down stairs?" CPA was measured by averaging the items. CPA was considered present, if either of the two items were endorsed. The Cronbach alpha for this scale was .81 for the entire sample, and .82 for females and .79 for males.

Adult Physical Abuse (APA). A one-item measure was used to measure APA on a frequency scale of 0 (*no)* to 4 (*many times*):"Have you ever been involved in a physical altercation with a romantic partner, where you experienced a loss of consciousness, sprain, bruise, cut, physical pain, broken bone, or had to go to the emergency room or general practitioner?" APA was considered present if the item was endorsed. This measure was not included in the proposed analyses, but used for exploratory purposes.

CEA. A seven-item modified version of the Parental Psychological Maltreatment Scale (PYS; Briere & Runtz, 1990) measured the extent in which the participant experienced CEA by a caregiver (see Appendix F). Respondents rated their level of exposure to CEA on a five-point frequency rating scale 1(*never)* to 5 (*always).*A sample item on the scale was, "Prior to age 15, how often did the following occur during an 'average' year" followed by questions asking how often a parent, stepparent, foster parent, or adult in charge of you "yelled at you," "insulted you," "criticized you," "tried to make you feel guilty," "ridiculed or humiliated you," "embarrassed you in front of others," and "made you feel like you were a bad person" (Briere & Runtz, 1990). For the purposes of this study, the time span of "childhood" included all years prior to the age of 18 to minimize the requirement to recollect specific incident frequencies. CEA was calculated by averaging the responses. A higher score indicated a higher level of CEA. To meet criteria for CEA, responses of "often" or "always" on all seven-items were

categorized as an indication of CEA. The Cronbach alpha was .94 for the entire sample, .94 for females and .94 for males.

Adult Emotional Abuse (AEA). A seven item modified version of The Parental Psychological Maltreatment Scale was modified to measure the extent of which the respondent experienced AEA in their romantic relationships on a five-point rating scale 1 (*never)* to 5 (*always*). A sample item on the scale was, "Has a romantic partner ever done the following to you: "yelled at you," "insulted you," "criticized you," "tried to make you feel guilty," "ridiculed or humiliated you," "embarrassed you in front of others," and "made you feel like you were a bad person." AEA in adulthood was calculated by averaging the responses. A higher score indicated a higher level of emotional abuse. To meet criteria for AEA, responses of "often" or "always" on all seven-items were categorized as an indication of AEA in romantic relationships. This measure was not included in the proposed analyses, but used for exploratory purposes.

NFE

An adapted six-item measure from Project Respect (Harlow, Quina, & Morokoff, 1993), Family Perceptions Scale was used to measure the level of the participant's experience with a NFE. Respondents used a four-point frequency scale 1 (*never)* to 4 (*very often*). A sample item on the scale was, "People in my family were upset a lot of the time." NFE was calculated by averaging the responses to the six items. A higher score indicated a higher level of a NFE. The Cronbach's alpha for the scale was .77, and .80 for females and .68 for males. NFE was considered a latent construct with three composite indicators.

PD

PD was a latent variable with two composite indicators, DEP and PTSD.

DEP. A 10-item modified short-form from the Center for Epidemiologic Studies DEP Symptoms Index (Kohout, Berkman, Evans, & Cornoni-Huntley, 1993) was used to measure depressive symptoms on a five point frequency rating scale of 1 (*never)*to 5 (*very often*). A sample item on the scale was, "I felt that I could not get going." The composite DEP indicator was calculated by averaging the responses. Higher scores indicated higher levels of DEP. The Cronbach alpha was .78, and .77 for females and .78 for males.

Post-traumatic stress disorder (PTSD). The Modified Post-Traumatic Stress Symptom Scale- Revised (MPSS-SR; Falsetti, Resnick, Resnick, & Kilpatrick, 1993) is a 17-item that measured the frequency and severity of PTSD symptoms. To measure the frequency in which PTSD symptoms occurred, participants used a frequency rating scale from 0(*not at all)* to 3(*5 or more times per week*). A sample item on the scale was, "Have you had repeated bad dreams or nightmares." To measure the severity of the PTSD symptoms, participants used a scale ranging from 0 (*not at all upsetting*) to 3 (*extremely upsetting*). PTSD was calculated by summing the frequency and intensity scores. A higher score indicated higher level of PTSD symptoms. The Cronbach alpha for this scale was .96 for the entire sample, and .96 for females and .97 for males.

PR

PR is a latent variable, with three indicators, SE, GSE, and SCOM.

SES.A 10-item self-report, the Rosenberg (1965) SE scale asked participants to rate their level of agreement to items (e.g. "On the whole, I am satisfied with myself") on a scale ranging from 1 (*strong disagree)* to 4 (*strongly agree).* SE was calculated by

averaging the items. A higher score means a higher level of SE. The Cronbach alpha for this scale was .79 for the entire sample, .76 for female and .81 for males.

GSE. GSE was measured using the 10-item General GSE Scale (Schwarzer & Jerusalem, 1995). The scale assessed a general sense of perceived GSE with the aim in mind to predict coping with daily hassles, as well as adaptation after experiencing all kinds of stressful life events. Participants rated the statements (e.g. "I can always manage to solve difficult problems if I try hard enough") using a 4-item Likert scale ranging from 1(*not at all true)* to 4 (*exactly true).* GSE was calculated by averaging the items. Higher scores indicated a higher level of GSE. The Cronbach alpha for this scale was .92 for the entire sample, and .91 for females and .93 for males.

SCOM. SCOM was measured using a 12-item SCOM Scale (Raes et al., 2011). Participants rated statements (e.g. "When I fail at something important to me I become consumed by feelings of inadequacy"), ranging from 1(*almost never)* to 5(*almost always).* Higher scores indicated higher SCOM scores. The Cronbach alpha for this scale was .79, and .82 for females and .71 for males.

PSB

PSB (previously known as sexual risk behaviors in proposal) was considered a latent construct, measured by three indicators, condom use frequency (CUF), stage of change for condom use (CUS), and PSR (PSR) (Morokoff et al., 2009).

CUF. This measure was rated on a 5-point rating scale from 1 (*never)* to 5 (*everytime),* where participants rated their frequency of condom use during the last 30 days (CUF1) and during the last 60 days (CUF2). For the purposes of structural equation modeling, CUF2 was used. This rating scale has demonstrated reliability in at-risk

samples (e.g. Morokoff et al., 2009).

CUS. The CUS was calculated by assigning a numeric value to each of the stages of change (i.e. precontemplation = 1, contemplation = 2, preparation = 3, action = 4, and maintenance = 5). Respondents were asked questions about their current condom use, how long they have or have not used condoms, and if they plan to continue to use condoms or start to use condoms. An algorithm based on consistent or inconsistent condom use determined individuals to a stage (Brown-Peterside, Redding, Ren & Koblin, 2000 & Morokoff et al., 2009). Consistent with Morokoff et al. (2009) and previous research, precontemplation included individuals who were not using condoms consistently and were not intending to start within the next six months. Contemplation included those who reported not using condoms consistently and intent to start within the next six months or the next 30 days. Preparation included those who reported almost always using condoms and intent to begin using them consistently within the next 30 days. Action included those who reported using condoms consistently for at least the past 30 days and for less than six months. Maintenance included those who reported using condoms consistently for six months or more.

PSR. The PSR was be created by dividing participants' reports of the number of sex occasions in which they had used condoms by the total number of times they had sex for the past six months (PSR6) and the past two months (PSR2). For the purposes of structural equation modeling, the PSR6 was used to capture a more accurate PSR. The Cronbach alpha for PSR6 was .36 for the entire sample, .21 for females and .36 for males. The Cronbach alpha for PSR2 was .33 for the entire sample, .40 for females and .33 for males.

INT

INT was a latent construct with three composite indicators, interpersonal resources (INTR), social support (SOC), and relationship cohesion (RCOH).

INTR. This was measured using a nine-item scale from the Conservation of Resources-Evaluation (COR-E; Hobfoll & Lilly, 1993) to measure the extent an individual has encountered stressful conditions that result in loss of INTR (e.g. good relationship with partner, loyalty of friends) during the previous three months. Participants indicated the degree of loss (or threat of loss) of various INTR they had experienced in the previous three months along a 3-point scale, with possible responses of 1= (*no threat or loss)* to 3 (*great deal of threat or loss).* Items were reversed scored and averaged, where higher scores indicated greater levels of INTR. The Cronbach alpha for the entire sample was .90, and .89 for females and .93 for males.

RCOH. RCOH was assessed using a five-item measure, previously used in Lamoureux et al. (2011) study, assessing the frequency of interpersonal conflicts in the past four weeks. Participants indicated whether they have experienced problems, arguments, serious disagreements, excessive demands, and or feelings of anger or upset feelings in their close relationships by responding from 1 (*never)* to 5 (*very often*). Items in this scale were reverse-scored and averaged. A higher score indicated more RCOH or higher relationship stability. The Cronbach alpha for this scale was .93 for the entire sample, and .93 for females and .95 for males.

SOC. An individual's perceived level of SOC was measured using the Social Provisions Scale (SPS; Cutrona & Russell, 1987). Participants responded to questions about their *current* relationships with their friends and family by answering *no, some-*

times, *yes*, or *not sure*. This measure demonstrated adequate reliability and validity (Cutrona & Russell, 1987). Items were averaged. Higher scores indicated higher levels of perceived SOC. The Cronbach alpha for this scale was .83, and .82 for females and .84 for males.

Proposed analyses

The study used correlations, MANOVAs, and latent variable model analysis (LVM), a type of structural equation model analysis on the entire sample and by gender to test the study's aforementioned hypotheses (EQS 6.1, Bentler, 2003). LVM uses a maximum likelihood estimation to estimate a preliminary measurement model to determine if the proposed model will fit the data and if there is significant covariance among the factors.

Structural equation modeling must satisfy four conditions: (1) specification (determining the indicators for latent variables and causal paths between latent variables); (2) identification (determining whether there was adequate information to estimate the model); (3) estimation (testing the paths via structural equation modeling); and (4) model evaluation (see Kline, 2005). To determine identification, the latent variables should be scaled, fixing one indicator per latent variable. Because there were multiple indicators per construct, the indicators' errors were uncorrelated and that the indicators of the construct correlated with a separate indicator of another construct, while their errors were uncorrelated.

The following indices were used to assess model fit: chi-square goodness-of-fit index (GFI), the comparative fit index (CFI), as well as the root mean square error of approximation (RMSEA), R^2 values for estimating effect size, and standardized

regression path coefficients for each model. A nonsignificant chi-square value, chi square ratios of less than 2, CFI and GFI values of 0.90 or higher, and RMSEA of less than .10 are indicators of good fitting models (Byrne, 2006). Although insignificant chi-squares are ideal, due to the large sample size, it was expected that the chi- squares would be significant for the main analyses. Maximum likelihood (ML) estimation was used to estimate model parameters. For all analyses, a cutoff value for significance was set at p = 0.05 and ROBUST Satorra-Bentler methods were used when evaluating fit due to the large, non-normality of the sample (Tabachnick & Fidell, 2007).

The measurement model indicates the final decision for what indicators to include in the SEM analyses. If the measurement model fits the data, then the predictive, causal structural model will be tested. To determine the best-fit model, a chi-square different test was conducted using chi-square values and degrees of freedom from alternative, nested models, specifically the full model, direct model, and meditational model. In other words, different models with the same variables with one or more parameters added were compared to determine the best model fit. The chi-square test is the difference between the full model and the reduced model (e.g. direct or meditational model), using the difference in degrees of freedom as the degrees of freedom from the test.

To test differences in nested chi-square values, "the goodness-of-fit chi-square values of less restrictive, baseline models (M1) with the goodness-of-fit chi-square value of more restrictive, nested comparison model (M0)" (p.3, Bryant & Satorra, 2011). This analysis tests the hypothesis that the more restrictive model significantly worsens the model fit. If the difference chi-square is statistically significant, then one rejects the null hypothesis and concludes that he baseline model fits the data better than the nested

comparison model. If it is not significant, then the more parsimonious model is favored (Bryant & Satorra, 2011).

However, given that robust Satorra-Bentler chi-square values (e.g. standard goodness-of-fit chi-square values divided by a scaling correction factor) were calculated to account for the multivariate non-normality of the data, a traditional difference chi-square test would be invalid because the scaled chi-square value cannot be used for difference testing because it is not distributed as chi-square. To account for this, the researcher must compute the scaling correction factor (*c*) for each model to use in scaled difference testing (Bryant & Satorra, 2011 & Muthen & Muthen, 2005). For EQS, the scaling correction factor (*c*) for a given model is (maximum-likelihood (ML) chi-square test statistic) / (Satorra-Bentler (SB) scaled chi-square test statistic). Next, to determine the Satorra-Bentler scaled chi-square difference statistic, a program calculated was used to calculate the Satorra-Bentler scaled chi-square difference test (see Colwell, 2012 for program calculator; Muthen & Muthen, 2005).

CHAPTER 4

RESULTS

Data cleaning

Data was collected and automatically imported into the statistical analysis software SPSS (21.0 for Windows). The correct variable and value labels were assigned to the corresponding data set. Approximately 465 participants accessed the survey and 54 participants did not complete the survey in its entirety. After statistical consultation, it was deemed appropriate to eliminate the participants who completed less than 50% of the entire survey (N = 50). The total sample size was then 415, after eliminating two individuals who identified as transgender. Next, appropriate items were reverse coded in order to maintain a singular relationship within a construct. Composite variables were then computed. Then, each variable was checked for its frequency and range of values.

Analyses of normality of the distributions for each variable were also conducted. Results indicated that CM, PTSD and DEP were positively skewed. Transformations were not made because it is reasonable to expect that these variables would be skewed in the population (Tabachnick & Fidell, 2007). However, to take non-normality into account, the Satorra- Bentler robust statistical methods were used, provided by EQS 6.1 structural equation modeling software. The Satorra-Bentler statistical methods assess chi square statistics and standard errors by use of maximum likelihood estimation with the Satorra-Bentler scaled chi square and adjust the standard errors to the extent of the non-normality (Tabachnick & Fidell, 2007).

Demographic differences

Gender. Demographic information for the total sample is presented in Table 1.Men and women were compared on demographics items using a Chi-square test for independence (see Table 1). There were no significant differences between genders for any demographic variables. With respect to sexual history, approximately 77% of the females and 80% of the males in the sample reported that they had engaged in voluntary sexual intercourse at least once in their lifetime. There was no statistical difference in the age of sexual debut for women 16.42 (1.70) with a range from 12 to 26 years old and men 16.31 (1.84) with a range from 10 to 21 years old. In addition, approximately 238 total (147 female) and 91 (male) endorsed questions regarding condom use within the past two to six months.

CM. Individuals with CM versus individuals with no CM were also compared on demographic items using a chi-square test for independence. There was a significant association between individuals with CM compared to individuals with no CM for ethnicity,χ (1, n = 414) = 5.71, p = .05, where 56.1% of individuals who identified as Hispanic/Latino reported CM compared to 38.4% of individuals who did not identify as Hispanic/Latino. There was no statistical difference in the age of sexual debut for individuals with reported CM (M = 16.16, SD = 2.07) with a range from 10 to 26 years old and individuals with no reported CM (M= 16.53, SD = 1.47) with a range from 13 to 21 years old.

Trauma Incidences Across Childhood and Adulthood

Table 2 presents the percentages of the sample that endorsed various forms of trauma in childhood and adulthood, as well as the percentage of the sample that did not endorse a form of childhood or adulthood trauma.

Correlations

Table 3 presents correlations among all model variables for the entire sample. Table 4 presents correlations among the variables separately for gender. Table 5 presents correlations among all model variables separately for individuals with reported CM compared to individuals with no reported CM.

Summary of Model Variable Correlations for the Entire Sample

CM

CSA. There were small, positive correlations between CSA and CPA (r = .22, p <.01), CEA (r = .20, p <.01), and NFE (r = .20, *p* <.01), with higher levels of CSA associated with higher levels of other forms of CM. For PD, there was a small, positive correlation with DEP (r = .17, *p* <.01) and a moderate, positive correlation with PTSD (r = .31, *p* <.01), indicating that higher levels of CSA were associated with higher levels of DEP and PTSD. There were no significant correlations between CSA and the constructs making up PR, specifically SCOM, GSE, and SE. For INT, there were small, negative correlations between CSA and INTR (r = -.21, *p* <.01), RCOH (r = -.15, *p* <.01), and SOC (r = -.15, *p* <.01), suggesting that higher levels of CSA were associated with lower levels of INTR, lower RCOH, and lower SOC. Finally, there were significant correlations between CSA and CUF. A significant, negative correlation was found between CSA and CUF at 30 days (r = -.16, *p* <.05) and CUF at 60 days (r = -.13, *p* <.05), suggesting that

higher levels of CSA were associated with lower levels of CUF. There were no significant correlations with PSR or CUS and CSA.

CPA. There was a moderate correlation between CPA and CEA (r = .28, p <.01) and a moderate, positive correlation between CSA and NFE (r = .36, p <.01), With respect to variables comprising PD, there was a small positive correlation between CPA and DEP (r = .21, p <.01) and a small, positive correlation with PTSD (r = .21, p <.01). For variables comprising PR, there was a small, negative relationship between CPA and SE (r = -.16, p <.01), and nonsignificant correlations among SCOM and GSE. There were also small, negative correlations with INTR (r = -.24, p <.01) and RCOH (r = -.17, p <.01), but no significant correlation with SOC. There were no significant correlations with PSR, CUF, or CUS.

CEA. There was a moderate to large, positive correlation with NFE (r = .59, p <.01), indicating that greater CEA was associated with greater NFE. For PD, there was a small to moderate positive correlation with DEP (r = .37, p <.01) and a small, positive correlation with PTSD (r = .29, p <.01). For PR, there was a small, negative relationship with SCOM(r = -.22, p <.01), a small, negative relationship with SE (r = -.22, p <.01), and a positive, small correlation with GSE (r =.13, p <.01), indicating that greater levels of CEA were associated with lower levels of SCOM, SE, and greater levels of GSE. There were also small, negative correlations with INTR (r = -.31, p <.01) and RCOH (r = -.21, p <.01), and SOC (r = -.15, p <.01), indicating that greater levels of CEA were associated with decreased INT. There were no significant correlations with PSR, CUF, or CUS.

NFE

For PD, there was a small to moderate positive correlation with DEP (r = .36, p <.01) and a small to moderate, positive correlation with PTSD (r = .36, p <.01), indicating that greater levels of NFE were associated with greater levels of PD. For PR, there was a small, negative relationship with SCOM(r = -.28, p <.01), a small to moderate, negative relationship with SE (r = -.40, p <.01), and a small, negative correlation with GSE (r =-.19, p < .01), indicating that greater levels of NFE were associated with lower levels of SCOM, SE, and GSE. There were also small, negative correlations with INTR (r = -.33, p < .01) and RCOH (r = -.12, p <.01), and small to moderate, negative correlation with SOC (r = -.41, p <.01), indicating that greater levels of NFE were associated with decreased INT. There were no significant correlations with PSR, CUF, or CUS.

PD

DEP. There was a moderate, positive correlation with PTSD (r = .52, p <.01), indicating that greater levels of DEP were associated with greater levels of PTSD. For PR, there was a moderate, negative relationship with SCOM (r = -.58, p <.01), a moderate to large, negative relationship with SE (r = -.62, p <.01), and a small, negative correlation with GSE (r =-.22, p < .01), indicating that greater levels of DEP were associated with lower levels of SCOM, SE, and GSE. There were also moderate to large, negative correlations with INTR (r = -.57, p < .01) and RCOH (r = -.37, p <.01), and moderate, negative correlation with SOC (r = -.50, p <.01), indicating that greater levels of DEP were associated with decreased INT. There were no significant correlations with PSR, CUF, or CUS.

PTSD. For PR, there was a small to moderate, negative relationship with SCOM (r = -.30, p <.01), a small to moderate, negative relationship withes (r = -.36, p <.01), and a small, negative correlation with GSE (r =-.11, p < .05), indicating that greater levels of PTSD were associated with lower levels of SCOM, SE, and GSE. There were also moderate, negative correlations with INTR (r = -.54, p < .01), RCOH (r = -.37, p <.01), and moderate, negative correlation with SOC (r = -.50, p <.01), indicating that greater levels of DEP were associated with decreased INT. There were no significant correlations with PSR, CUF, or CUS.

PR

SCOM. There was a large, positive relationship with SE (r = .67, p <.01) and a small to moderate, positive relationship with GSE (r = -.43, p <.01), indicating that higher levels of SCOM were associated with higher levels of SES and GSE. There were also small to moderate, positive correlations with INTR (r = .33, p < .01), RCOH (r = .22, p <.01), and moderate, positive correlation with SOC (r = .46, p <.01), indicating that greater levels of SCOM were associated with greater levels of INT. There were several small, positive correlations for PSB, including PSR at six months (r = .12, p < .05), CUF at one (r = .15, p < .05) and two months (r = .14, p < .05), and CUS (r = .15, p < .05), indicating that higher levels of SCOM were associated with higher levels of PSB, specifically increased CUF, PSR within the past six months, and CUS.

SE. There was a moderate, positive relationship with GSE (r = .49, p <.01), indicating that higher levels of SES were associated with higher levels of GSE. There were also small to moderate, positive correlations with INTR (r = .38, p < .01), RCOH (r = .21, p <.01), and moderate, positive correlation with SOC (r = .53, p <.01), indicating

that greater levels of SE were associated with greater levels of INT. There were also several small, positive correlations for PSB, specifically CUF in the past month ($r = .15$, $p < .05$) and CUS ($r = .14$, $p < .05$), indicating that higher levels of SE were associated with higher levels of PSB, specifically increased CUF for the past month and CUS.

GSE. There appeared to be nonsignificant correlations with several of the INT indicators, INTR and RCOH. There was a moderate, positive correlation with SOC ($r = .50$, $p < .01$), indicating that higher levels of GSE were associated with higher levels of SOC. There were significant correlations with PSB.

INT

INTR. There were small to moderate, positive correlations with RCOH ($r = .45$, $p < .01$) and SOC ($r = .36$, $p < .01$), indicating that higher levels of INTR were associated with higher levels of RCOH and SOC. There was also a small, positive correlation with PSR for the past two months ($r = .13$, $p < .05$), indicating that higher levels of INTR were associated with higher levels of PSR for the past two months.

RCOH. There was small, positive correlation with SOC ($r = .17$, $p < .01$), indicating that higher levels of RCOH were associated with higher levels of SOC. There was also a small, positive correlation with PSR for the past two months ($r = .14$, $p < .05$), indicating that higher levels of RCOH were associated with higher levels of PSR for the past two months.

SOC. There were small, positive correlations with CUF at one month ($r = .20$, $p < .05$) and two months ($r = .20$, $p < .05$), indicating that higher levels of SOC were associated with higher levels of CUF.

PSB

PSR. PSR for the past six months had moderate, positive correlation with PSR for the past two months (r = .51, p < .01). It also had large, positive correlations with CUF1 (r = .79, p < .01) and CUF2 (r = .81, p < .01), indicating that higher levels of PSR were associated with higher CUF1. In addition, there was a large, positive correlation with CUS (r = .75, p < .01), indicating that higher levels of PSR for the past six months were associated with higher CUS. PSR for the past two months revealed similar patterns, with moderate, positive correlations with CUF1 (r = .54, p < .01), at two months (r = .56, p < .01) and a large, positive correlation with CUS (r = .83, p < .01).

CUF. CUF1 revealed a large, positive correlation with CUF2 (r = .94, p < .01), and CUS (r = .75, p < .01), indicating that higher levels of CUF1 were associated with higher levels of CUS. The findings were similar for CUF2, with a large, positive correlation with CUS (r = .83, p < .01).

Mean Comparisons

Gender Differences

Table 6 presents descriptive statistics among all model variables for the entire sample, and separately for gender, as well as independent samples t-test. Results indicated gender differences in SE, t (413) = -2.34, p < .05, where women reported higher levels of SE (M = 3.03, SD = .51) than men (M = 3.15, SD = .48). There were also gender differences in SOC, t (405) = -2.17, p < .05, where women reported higher levels of SOC (M = 3.25, SD = .46) than men (M = 3.14, SD = .45). Finally, there were gender differences in PSR2, t (119) = -2.21, p < .01, where men reported higher levels of PSR2 (M = .77, SD = 1.05) than women (M = .52, SD = .46).

To determine gender differences in the model constructs, five one-way between-groups multivariate analysis of variance (MANOVA) were conducted on the model constructs, CM, PR, PD, INT, and PSB. The results indicated gender differences for INT. More specifically, gender differences were found for the combined dependent variable INT, comprised of RCOH, SOC, and INTR, F (3, 404) = 5.633, p = <.01; λ = .960; $\eta 2p$ = .04, where women reported more SOC (M = 1.81, SD = .43) than men (M = 1.90, SD = .43).

There were no gender differences in the combined dependent variable CM comprised of CSA, CPA, and CEA, (3, 410) = .281, p = .84; λ= .998; $\eta 2p$ = .002. There were no gender differences in the combined dependent variable, PR comprised of SCOM, SE, and GSE, F (3, 404) = 1.74, p = .158; λ= .987; $\eta 2p$ = .013. Moreover, there were no gender differences in the combined dependent variable, PD comprised of DEP and PTSD, F (3, 405) = 1.114, p = .329; λ= .995; $\eta 2p$ = .005. Finally, there were no gender differences in the combined dependent variable, CUF2, PSR2, and CUS, F (3, 188) = 1.61, p = .19; λ = .975; $\eta 2p$ = .025.

CM Differences

To determine if individuals with reported CM differed on the model variables, compared to individuals with no reported CM, four MANOVAs were conducted on PR, PD, PSB and INT. In addition, an independent t-test was conducted to compare means on NFE. Table 6 presents descriptive statistics among all model variables for individuals with CM compared to individuals with no reported CM, as well as separately for each reported type of CM.

A one-way between MANOVA was performed to investigate differences in PR. Three dependent variables were used: GSE, SCOM, and SE. There was a statistically significant difference between individuals with reported CM versus no CM, F (3, 410) =7.68, p <. 01; λ = .947; $\eta 2p$ = .05. When the results were considered separately, SCOM and SE reached statistical significance. For SCOM, F (1, 412) = 8.373, p < .01, $\eta 2p$ = .02, individuals with no CM reported greater SCOM (M = 3.18, SD = .60) than individuals with CM (M = 3.00, SD = .59). For SE, F (1, 412) = 18.58, p < .01, $\eta 2p$ = .04, individuals with no CM reported greater SE (M = 3.15, SD = .46) than individuals with CM (M = 2.94, SD = .54).

A one-way between MANOVA was performed to investigate differences in PD. Two dependent variables were used: DEP and PTSD. There was a statistically significant difference between individuals with reported CM versus no CM for PD, F (2, 407) = 20.29, p <. 01; λ = .909; $\eta 2p$ = .09. When the results were considered separately, there were differences found in DEP and PTSD. For DEP, F (1, 408) = 25.65, p < .01, $\eta 2p$ = .06, where individuals with CM reported higher levels of DEP (M = 2.56, SD = .74) than individuals with no CM (M = 2.19, SD = .71). Moreover, there were differences in PTSD, F (1, 408) = 34.08, p < .01, $\eta 2p$ = .07, where individuals with CM reported higher levels of PTSD (M =52.1, SD = .19.79) than individuals with no CM (M = 42.41, SD = 13.65).

A one-way between MANOVA was performed to investigate differences in INT. Three dependent variables were used: INTR, RCOH, and SOC. There was a statistically significant difference between individuals with reported CM and no CM, F (3, 403) = 11.47, p <. 01; λ = .921; $\eta 2p$ = .08. When the results were considered separately, there

were differences found in INTR, RCOH, and SOC. For SOC, F (1, 405) = 15.32, p <. 01, $\eta 2p$ = .04, individuals with no CM reported greater SOC (M = 3.28, SD = .43) compared to individuals with CM (M = 3.11, SD = .48). In addition, there were differences found in INTR, F (1, 405) = 29.47, p <. 01, $\eta 2p$ = .07, where individuals with no CM reported higher levels of INTR (M = 2.73, SD = .40) than individuals with CM (M = 2.5, SD = .49). Finally, there were differences in RCOH, F (1, 405) = 6.9, p <. 01, $\eta 2p$ = .02, where individuals with no reported CM reported less RCOH (M = 4.2, SD = .78) than individuals with reported CM (M = 4.00, SD = 1.00)

A one-way between MANOVA was performed to investigate differences in PSB. Three dependent variables were used: CUF2, PSR2, and CUS. There was no statistical significant difference between individuals with reported CM and no CM, F (3, 188) = .30, p = 90; λ = .997; $\eta 2p$ = .00. Finally, individuals with reported CM reported a higher level of NFE (M = 2.19, SD = .63) than individuals with no reported CM (M = 1.71, SD = 56), t(412) = -8.13, p < .01.

Structural Equation Modeling

Prior to using LVM, several measurement models were tested on the proposed model (Figure 1). The first measurement model (Figure 2), predicted the dependent variable, INT, and the second measurement model (Figure 3), predicted the dependent variable, PSB. In addition, specific aspects of the model were evaluated by examining the significance of the hypothesized parameters and the effect sizes for mediators and outcome variables. Conducting a confirmatory factor analysis, measurement model, prior to testing the full structural equation model is important to determine if the relationships among the constructs are valid and "psychometrically sound" (Byrne, 2006, p. 189).

CM and INT

A confirmatory factor analysis of the relationships between CM, PR, PD and INT was conducted to determine if the data fit and if there was significant covariance between the factors. Results revealed several indicators producing errors in variance and not loading properly on their respective constructs, specifically general GSE indicator on PR and the RCOH indicator loading on the INT construct. The model was re-specified with the removal of these two indicators, to determine an improved fit. The results indicated good fit indices (S-Bχ^2(21, N =407) = 82.8, $p < .01$, CFI = 0.92, RMSEA = 0.08 [90% CI .07, .10], with a greater than +1.0 covariance between PD and INT, invalidating the fit indices (See Figure 3 for standardized parameter estimates). Table 9 shows the standardized factor loadings and standardized errors for each indicator for this measurement model.

Due to difficulties in model specification (Figure 3), it was warranted to break the measurement model into two smaller models (see Figure 4 for model breakdown), with Model 1 examining the relationship between CM, PR and INT and Model 2 examining the relationship between CM, PD and INT. The primary purpose of this decision was to reduce the size of the models to determine proper model specification and reliability and accuracy of model variables before building a larger model again. Thus, the following set of analyses will examine each model (i.e. Model 1 and Model 2) separately.

Model 1 specification and identification. Model 1, a three factor latent variable model, examined the relationships between CM (three indicators), PR (three indicators), and INT (two indicators). Model 1's measurement model revealed a good fit (S-Bχ^2(11, N =407) = 31.2, $p < .01$, CFI = 0.95, RMSEA = 0.07, [90% CI = .04, .10]), as well as

significant correlations between all of the factors (Figure 5 for standardized parameter estimates). Table 10 shows the standardized factor loadings and standardized errors for each indicator for this measurement model.

Given that the hypothesized three-factor measurement model specifications were psychometrically sound, a proposed predictive model was conducted to test several of the study's hypotheses, determine if higher levels of CM are associated with lower levels of INT and higher levels of PR and if higher levels of PR are associated with higher levels of INT.

The hypothesized structural model 1 (Figure 4) was tested in three nested causal model structures to determine the best model fit, specifically a direct model, meditational, and fully saturated model. A direct model, examined the direct relationship between CM and INT, while constraining the paths from CM to PR and PR to INT (Figure 6). The results revealed that CM was a negative, significant predictor of INT, accounting for a small to moderate level of variance, ($R^2 = .29$) in the prediction of INT (S-Bχ^2(13, N = 415) = 63.52, $p < .01$, CFI = 0.88, RMSEA = 0.10 [90% CI .07, .122] (see Figure 6 for standardized path coefficients and Table 10 for fit indices).

A meditational model examined whether or not PR mediated the relationship between CM and INT, while constraining the relationship between CM and INT (Figure 7). The results revealed that CM was a negative, significant predictor of PR and PR was a positive, significant predictor of INT, accounting for a moderate to large level of variance ($R^2 = .75$) in the prediction of INT, (S-Bχ^2(12, N =415) = 35.81, $p < .01$, CFI = 0.94, RMSEA = 0.07 [90% CI .04, .10] (see Figure 7 for standardized path coefficients and Table 10 for fit indices).

A fully saturated model examined the relationship between CM, PR, and INT, while allowing all paths to vary. The results revealed that CM was a positive, significant predictor of PR (R^2 value = .12), and a negative, significant predictor of INT. PR was a positive, significant predictor of INT, accounting for a large amount of variance (R^2=.81), (S-Bχ^2(11, N =415) = 31.2, p < .01, CFI = 0.95, RMSEA = 0.07 [90% CI .04, .09](see Figure 8 for standardized path coefficients and Table 10 for fit indices).

To determine the best model fit between the direct, meditational, and fully saturated model, Satorra-Bentler chi-square difference tests were conducted (see Bryant & Satorra, 2012). The meditational model was compared to the fully saturated model, revealing a significant result, (ΔS-Bχ^2(1) = 6.39), rejecting the null hypothesis, due to the value being greater than the upper-tail critical values (χ^2 (1) = 3.84). The results suggested that the fully saturated model was the best-fit model to the data. Table 10 provides a summary of the macro and micro fit indices for each causal structural model, direct, meditational, and fully saturated. Table 12 provides standardized factor loadings, standard errors, and standardized solution for the fully saturated model.

Mediation of PR. The aforementioned results indicate that the fully saturated model was the best-fit model, accounting for the greatest variance in the prediction of INT with CM and PR as predictors. To test whether or not PR partially mediates the relationship between CM and INT, an examination of the paths significance leading to and from PR were conducted, as recommended by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002).To meet MacKinnon's mediation method, there are three steps, starting with an analysis of the association between the independent variable, CM, and the hypothesized mediator, PR (path a). If path a is significant, the association between PR and the

dependent variable, INT is tested (path b). If path b is also significant, the last test requires computation of the joint significance of the paths (abs).

The direct non-nested path (c') from CM to INT revealed S-Bχ^2(8, N =415) = 6.68, p = .57, CFI = 1.0, RMSEA = 0.0 [90% CI .00, .52] (Figure 9). The standardized parameter estimate indicated that CM was a significant, negative predictor of PR, accounting for a moderate level of variance (R^2=.30) (see Table 13 for standardized factor loadings and errors). The direct non-nested path from CM to PR revealed good fit indices, S-Bχ^2(4, N =415) = 5.54 p = .23, CFI = 0.99, RMSEA = 0.03 [90% CI .00, .08] (Figure 9). CM was a significant, negative predictor of PR, accounting for a small level of variance (R^2 = .12) (see Table 14 for standardized factor loadings and errors). In addition, the direct non-nested path from PR to INT revealed good fit indices S-Bχ^2(1, N =407) = .00 p = .98, CFI = 1.0, RMSEA = 0.00 (See Figure 9). PR was a significant, positive predictor of INT, accounting for a large level of variance (R^2 = .72) (see Table 15 for standardized factor loadings and errors).

An examination of the indirect effects (path ab) indicated that more PR was significantly related to INT, demonstrating a significant mediated effect (ab) of CM on INT. This indicates that PR partially mediates the relationship between CM and INT, accounting for 80% of the variance in the model.

Moderation of NFE. To determine if NFE moderates the effects on INT in the fully saturated model, NFE (three indicators) served as an additional construct in the model. Results indicated model misspecification when NFE was added, as it had a +1.0 significant relationship with CM. However, when the model was tested again with NFE

as an indicator loading on CM, the model revealed significant misspecification. Thus, the moderating effect of NFE was not tested using structural equation analyses.

Model 2 specification and identification. Model 2, a three factor latent variable model, examined the relationships between CM (three indicators), PD (three indicators), and INT (two indicators). Model 2 fit indices revealed a good model fit, (S-Bχ^2(17, N=407) = 33.40, $p < .01$, CFI = 0.94, RMSEA = 0. 07 [90% CI .04, .10] (see Figure 10), with a strong correlation between the PD and INT constructs (i.e. +1.0), invalidating the model fit indices (see Table 16 for standardized loadings). The combination of INT and PD is not theoretically supported, and thus was not pursued.

Given that the hypothesized three-factor measurement model specifications were not psychometrically sound, a predictive structural model was not conducted in the prediction of INT. However, a smaller model examining the effect of CM and PD was conducted.

A direct model examining the relationship between CM and PD, revealed a good fit (S-Bχ^2(4, N=408) = 15.05, $p < .01$, CFI = 0.93, RMSEA = 0. 08, [90% CI .04, .13] (see Figure 11 for standardized path coefficients). Table 17 has factor loadings, standardized errors, and standardized solutions. CM was a positive, significant predictor of PD, indicating that greater levels of CM are associated with greater levels of PD, accounting for moderate to large amount of variance (R^2 value = .45) in the prediction of PD.

CM and PSB

Model 3 specification and identification. A confirmatory factor analysis of the relationships between CM, PR, PD, and PSB was conducted (see Figure 2 for model

diagram) to determine if the data fit and if there was significant covariance between the factors. The results indicated good fit indices (S-Bχ^2 (29, N =192) = 46.3, p < .05, CFI = 0.97, RMSEA = 0.06, [90% CI .02, .08] (see Figure 12 for standardized path coefficients). An examination of the structural parameter estimates revealed nonsignificant covariance between CM and PSB, PR and PSB, and PD and PSB. There were significant covariances between CM and PR and CM and PD (see Table 18 for standardized factor loadings and errors). Given that the measurement model did not reveal significant covariances among the proposed model variables, no structural model analyses were conducted in the prediction of PSB.

A direct model examining the relationship between CM and PSB, revealed S-Bχ^2 (8, N =415) = 9.2, p = .33, CFI = 1.0, RMSEA = 0.03 [90% CI .00, .09]. The standardized parameter estimate indicated a nonsignificant path from CM to PSB (see Figure 13 for non-significant standardized path coefficient). Table 18 has factor loadings and standardized errors. CM was nonsignificant in predicting PSB.

Next, a causal structural model was tested in the prediction of PD and PR from CM. The results indicated a good fit, S-Bχ^2(11, N =408) = 30.2, p <.01, CFI = .96, RMSEA = 0.06 [90% CI .04, .09]. The standardized parameter estimates indicated that CM was a negative, significant predictor of PR (R^2 = .13) and a positive, significant predictor of PD (R^2 = .30). In addition, there was a significant, negative covariance among the errors variances of PD and PR (see Figure 14 for standardized solution and Table 14 for standardized factor loadings and errors).

Gender Differences in CM and INT and PSB Outcomes

The second goal of this study was to determine if gender differences exist for the causal models in prediction of INT and PSB. Due to difficulties in obtaining psychometrically sound baseline models for men and women, multiple sample invariance testing could not be conducted (Byrne, 2006). Thus, to determine if gender differences exists in the prediction of the outcomes, women and men were analyzed separately for INT and PSB outcomes. It is important to note that the standardized coefficients in the women's and men's' models cannot be compared to one another. Rather, only the overall model fit can be interpreted and used for model comparisons.

CM and INT

To test gender differences in INT outcome, women and men were analyzed separately for each of the psychometrically sound models for INT across the entire sample.

Women. A three factor latent variable model, examined the relationships between CM (three indicators), PR (three indicators), and INT (two indicators). The measurement model revealed a good fit (S-Bχ^2(29, N =270) = 22.52, p = .80, CFI = 1.0, RMSEA = 0.00, [90% CI = .00, .05]), as well as significant covariances between all of the factors (see Figure 15 for standardized parameter estimates). Table 20 shows the standardized factor loadings and standardized errors for each indicator for this measurement model.

Given that the hypothesized three-factor measurement model specifications were psychometrically sound, a fully saturated, predictive causal model was tested to examine the relationship between CM, PR, and INT, while allowing all paths to vary. Fit indices revealed a good fit (S-Bχ^2(11, N =270) = 28.0, p < .01, CFI = 0.94, RMSEA = 0.08 [90% CI .04, .11]. The results revealed that CM was a positive, significant predictor of PR, and

a nonsignificant predictor of INT. PR was a positive, significant predictor of INT. The Wald test recommended dropping the parameter between CM and INT, due to no significance in the path. The model was re-specified with the removal of this path, revealing a good fit (S-Bχ^2(12, N =270) = 27.91, $p < .01$, CFI = 0.94, RMSEA = 0.07 [90% CI .04, .11]. CM was a significant, negative predictor of PR, accounting for a small amount of variance ($R^2 = .21$) and PR was a significant, positive predictor of INT, accounting for a large amount of variance ($R^2 = .77$) (see Figure 16 for standardized path coefficients and Table 21 for standardized factor loadings, standard errors, and standardized solution).

To determine if PR mediates the relationship between CM and INT, direct paths were analyzed. The direct path (c') from CM to INT revealed S-Bχ^2 (8, N =415) = 6.68, $p = .57$, CFI = 1.0, RMSEA = 0.0 [90% CI .00, .52] (Figure 17). The standardized parameter estimate indicated that CM was a significant, negative predictor of INT accounting for a small level of variance ($R^2 = .26$) (see Table 22 for standardized parameter coefficients). The direct path between CM revealed to PR revealed good fit indices, S-Bχ^2(4, N =270) = 6.2$p = .18$, CFI = 0.99, RMSEA = 0.04 [90% CI .00, .11] (Figure 17). CM was a significant, negative predictor of PR, accounting for a small level of variance ($R^2 = .20$) (see Table 23 for standardized factor loadings and errors). In addition, the direct path from PR to INT revealed good fit indices S-Bχ^2(1, N =270) = .08, $p = .77$, CFI = 1.0, RMSEA = 0.00 [90% CI .00, .11] (See Figure 17). PR was a significant, positive predictor of INT, accounting for a large level of variance ($R^2 = .75$) (see Table 24 for standardized factor loadings and errors).

An examination of the indirect effects (path *ab*) indicated that more PR was significantly related to INT, demonstrating a significant mediated effect (*ab*) of CM on INT (-.19÷.07) = -2.8). This indicates that PR fully mediates the relationship between CM and INT, accounting for large amount of variance in this model.

Men. A three factor latent variable model, examined the relationships between CM (three indicators), PR (three indicators), and INT (two indicators). The measurement model revealed a mediocre fit (S-Bχ^2(11, N =192) = 20.84, $p < .05$, CFI = .92, RMSEA = 0.08, [90% CI = .02, .13]). There was a nonsignificant covariance between CM and PR (see Figure 18 for standardized parameter estimates. Table 25 shows the standardized factor loadings and standardized errors for each indicator).

A modified, causal model was tested to examine the relationship between CM, PR, and INT, while not designating a parameter between CM and PR, due to its nonsignificance found in the measurement model. Fit indices revealed a poor fit (S-Bχ^2(12, N =143) = 25.2, $p < .01$, CFI = 0.90, RMSEA = 0.09 [90% CI .04, .14]. The results revealed that CM was a significant, negative predictor of INT and PR was a positive, significant predict of INT, accounting for a large amount of variance ($R^2 = .87$) (see Figure 19 for standardized path coefficients and Table 26 for standardized factor loadings, standard errors, and standardized solution). Furthermore, the path between CM and PR is nonsignificant, indicating that PR does not mediate the relationship between CM and INT for men.

CM and PSB

To test gender differences in the PSB outcome, women and men were analyzed separately.

Women. A five factor latent variable model, examined the relationships between CM (three indicators), PR (three indicators), PD (two indicators) and PSB (three indicators). The measurement model revealed a good fit (S-Bχ^2(29, N =122) = 22.52, p = .80, CFI = 1.0, RMSEA = 0.00, [90% CI = .00, .05]). Further analyses revealed nonsignificant covariances among CM and PSB, nonsignificant covariances between PR and PSB, and nonsignificant covariances between PD and PSB (see Figure 20 for standardized parameter estimates and Table 27 for the standardized factor loadings and standardized errors for each indicator)

Next, a causal structural model was tested in the prediction of PD and PR from CM. The results indicated a good fit, S-Bχ^2(11, N =267) = 19.3, p = 05, CFI = .98, RMSEA = 0.05 [90% CI .00, .09]. The standardized parameter estimates indicated that CM was a negative, significant predictor of PR (R^2 = .20) and a positive, significant predictor of PD (R^2 = .31) (see Figure 21 standardized parameter estimates and Table 28 for the standardized factor loadings and standardized errors for each indicator).

Men. A five factor latent variable model, examined the relationships between CM (three indicators), PR (three indicators), PD (two indicators) and PSB (three indicators). The measurement model revealed a good fit (S-Bχ^2(29, N =122) = 22.52, p = .80, CFI = 1.0, RMSEA = 0.00, [90% CI = .00, .05]). However, further analyses of micro-fit indices revealed nonsignificant covariances among CM and PSB, PR and PSB, and PD and PSB (see Figure 22 for standardized parameter estimates and Table 29 for the standardized factor loadings and standardized errors for each indicator). Several model modifications were conducted to determine if a revised causal model predicting PSB from CM and PD.

However, this revealed model misspecification and a predictive structural model could not be tested using LVM analyses.

CHAPTER 5

DISCUSSION

The study aimed to achieve three main goals. The first goal investigated how CM may impact INT and PSB in young adults. The second goal of this study examined the potential mediating role of PR and PD in the relationship from CM to INT and CM to PSB. The third goal of this study examined gender differences, a much-needed direction in this field to help effectively develop gender-sensitive psychological interventions. To help delineate the study's findings, the overall sample results will be discussed for each outcome, INT and PSB first, followed by a discussion on the study's findings for gender differences.

CM and INT

An examination of the fully saturated model (Figure 8), predicting INT from CM and PR across the entire sample, revealed good model fit, accounting for a large amount of variance (R^2 = .81). This finding supported hypotheses that higher levels of CM were associated with lower levels of INT (H1) and lower levels of PR (H2). In turn, higher levels of PR were also associated with higher levels of INT (H3). In addition, PR partially mediated the relationship between CM and INT (H5). These findings are consistent with previous research that CM contributes to poorer INT (Davis & Petretic-Jackson, 2000; DiLillo, 2001; Lamoureux et al., 2011). However, a novel contribution to this literature is the partial mediating role of PR in the relationship from CM to INT. The findings suggest that personal resiliency factors, such as practicing self-compassion in the

face of adversity and focusing on positive attributes, staying consistent with self-respect, and holding oneself to a high self-worth may attenuate the impact of childhood maltreatment on the individual's social support and relationship stability in later adult functioning.

Additional LVM analyses revealed support for the study's hypotheses that higher levels of CM were associated with higher levels of PD (H2). This finding is consistent with decades of previous research that state that CM is associated with high levels of DEP and PTSD (e.g. Browne & Finkelhor, 1986; Schilling, Aseltine & Gore, 2007). The relationship between PD and INT, as well as the mediating effects of PD was not tested (H5) using LVM analyses due to model misspecification. However, correlation analyses revealed that higher levels of PD were associated with decreased levels of INT (H4). This may indicate that DEP and PTSD may contribute to lower SOC and relationship stability. While the moderating effects of NFE could not be tested using LVM analyses (H8), correlation analyses reveal that the family of origin environment, whether it be positive or negative is associated with PR, PD, and INT.

CM and PSB

LVM analyses revealed that CM was not associated with lower PSB (H1), higher levels of PR were not associated with higher levels of PSB (H3), and higher levels of PD were not associated with lower levels of PSB (H4). Furthermore, PR and PD did not appear to have partially mediated roles between CM and PSB (H5). However, correlation analyses revealed that higher levels of CSA and PTSD were associated with lower levels of CUF and higher levels of SCOM and SES were associated with higher levels of CUF,

and CUS. Finally, it is unclear if NFE moderated these findings, as moderation could not be tested due to model misspecification (H8).

It is likely that the relationship between CM and PSB is complicated, and PR and PD as mediating variables did not capture the complexity of this relationship. Morokoff et al. (2009) is a study demonstrating the complexity of the relationship between a form of CM and risky sexual behavior. In a sample of men and women with a history of CSA, Morokoff et al. (2009) found that CSA predicted later adult sexual victimization, which in turn predicted sexual assertiveness for condom use, which in turn predicted condom use directly predicted unprotected sex for both men and women. In another example, Lamoureux et al. (2011) found that self-esteem and general self-efficacy mediated the relationship between CSA and risky sexual behavior in a sample of women with a history of CSA. This previous finding was not supported in this study.

Gender Differences

There were many hypothesized gender differences among the model variables. MANOVA analyses revealed that several hypotheses (H6a, H6) were not fully supported, as there were no gender differences in CM or PD. However, there were several findings that did support several hypotheses, such as men and women reported similar levels of PR (H6d). In addition, women reported higher levels of INT than men (H6c) and men reported higher levels of PSR2 than women (H6e).

When examining gender differences in the LVM analyses, findings did not support the hypothesized similar pattern of relationships for both men and women when investigating the relationship between CM and the INT and PSB outcomes. For women, higher levels of CM were associated with lower levels of PR and higher levels of INT. In

addition, PR fully mediated the relationship between CM and INT, accounting for a large amount of variance in the prediction of INT. On the contrary, for men, higher levels of CM were not associated with lower levels of PR, indicating that PR does not mediate the relationship between CM and INT. Although, higher levels of CM were associated with lower levels of INT.

Furthermore, LVM findings did not support prediction of PSB (H7). For women, higher levels of CM were associated with lower levels of PR and higher levels of PD. However, there was no association between CM and PSB, PR and PSB, or PD and PSB. On the contrary, for men in the measurement model, higher levels of CM were associated with higher levels of PD and higher levels of PD were associated with lower levels of PSB. However, a predictive model of PSB revealed model misspecification. Unfortunately, the direct comparison of gender across the predictive models of PSB could not be made due to difficulties in establishing baseline models for men and women separately.

Limitations

There were several assessment limitations, specifically related to CM. The LVM analyses combined all forms of CM (i.e. sexual, physical, and emotional) into one latent construct. By doing so, analyses were not conducted on how a specific form of CM may contribute or not contribute to later adult functioning. In addition, the correlation and MANOVA analyses combined all individuals with reported CM into one group. It is expected that different forms of CM are qualitatively and quantitatively dissimilar and may or may not predict different outcomes. Moreover, participants classified as "abused" may not have heterogeneous abuse experiences, ranging from a single incident to chronic

long-term victimization.

Another limitation is in regards to the generalizability of the study's findings. It is likely that college students have increased PR, reduced PD, and high INT, compared to clinical or community samples. In addition, the eligibility criteria in this study are not specifically constructed to recruit a sample at high risk for HIV and other STDs. It is also likely that college students have more PSB compared to clinical or community samples found in the literature. Moreover, college students are less diverse in terms of race/ethnicity and social class. Any expectations about the generalizability of study findings are limited by the fact that most participants are Caucasian and from a middle class background. Additional studies incorporating a nationally representative sample would be needed before broader generalizations were considered.

One serious limitation is that this is a cross-sectional study with mediational analyses. Definitive statements about causality can be made only with prospective, longitudinal design. Maxwell and Cole (2007) state that use of mediation in cross-sectional analyses is unlikely to accurately reflect longitudinal effects. The present results may serve as exploratory models to give ideas for further research. Ideally, the present results need to be replicated with longitudinal data with at least two to three time points (Maxwell & Cole, 2007).

In addition, there may be bias in retrospective reporting of trauma in that individuals with histories of CM may be less likely to respond or reluctant to disclose, or they may be more likely to respond. In addition, this proposed study is retrospective. Retrospective reports of abuse may lead to an underestimate of abuse or misclassification of events. In addition, self-reported measures of current functioning may be a biased

measure of actual functioning status.

Finally, one of the most significant limitations in any study evaluating CM and adult functioning is the lack of a standard, clear theory that links the psychological, biological, and social implications of abuse and neglect (MacMillan, 2009). It is assumed that there are likely many other protective factors that play a role in CM to later adult outcomes and the present study only captures a small part of this complex relationship.

Future Recommendations

Based on the current study's findings and limitations, several recommendations are made to further improve on the body of literature delineating long-term outcomes of CM. First, it is imperative that studies continue to understand direct outcomes of CM, as well as how protective factors such as PR may impact later functioning. It would be beneficial to continue to assess how various theories (see Polusny & Follette, 1995) help to explain the impact of CM. Furthermore, it will be important to examine how these issues not only within a heterosexual context, but also among women who have sexual relations with other women or men who have sexual relations with other men. Recruitment from diverse racial and religious backgrounds will also contribute to a richer understanding of the complexity of the long-term effects of CM, like cultural or spiritual factors.

Conclusion

The present study was conducted in order to gain a better understanding of the complex relationship between CM and several outcomes, INT and PSB, investigate the roles of PR and PD, and explore any gender differences among the model variables. Overall, the results from this study indicate that the relationship from CM to INT and

PSB are influenced by a complex combination of variables. It was demonstrated that PR partially mediates the relationship between CM and INT across the entire sample, fully mediates the relationship for women, and does not mediate the relationship for men.

The implications of these findings suggest that PR may be an area of focus during mental health treatment for individuals with a history of CM to improve interpersonal functioning, specifically for women. A focus on PR could also help ameliorate emotional difficulties, as preliminary study found in Vettese et al. 2011, where self-compassion helped to regulate emotions. Specific treatments that have an emphasis on mindfulness-based practices, intrapersonal compassion, and self-validation, like Dialectical Behavior Therapy (Linehan, 1993). The latter treatment is typically designed to treat individuals with a history of childhood trauma and crisis-related behavior. A specific focus on self-compassion may help to boost efficacy of treatment for those individuals with a history of CM. Overall, these results contribute to the current literature on CM and INT, in that it highlights the importance of psychological interventions that enhance PR and reduce PD for the young adult population.

Appendix A

Recruitment advertisement

Hello,

My name is Maggie Gorraiz and I am a fourth year doctoral student in the Clinical Psychology Ph.D. program at URI. I am inviting you to participate in my dissertation research that has been approved by the URI Institutional Review Board. The purpose of this research is to learn about the relationship between childhood experiences, interpersonal relationships, and sexual health behaviors among college students.

Participation will involve completing an online survey consisting of multiple-choice and free-answer questions. The survey will take approximately 25-30 minutes to complete. You will be asked to read and consent to an informed consent document prior to participating.

Your participation in this study is anonymous. That is, we will not know who provided which responses, and we will therefore not be able to trace responses back to participants.

At the end of the survey, you will have the option to enter your email addresses into a lottery for one of fourteen $50.00 iTunes gift cards. When you enter your email address, it will NOT be linked to your survey data.

If you are interested in participating or learning more about the study, please go to the following link: https://www.surveymonkey.com/s/PSY113CM

I really appreciate your time. If you have any questions, please contact the student investigator Maggie Gorraiz, M.A. (email: maggie_gorraiz@my.uri.edu) or principal investigator Dr. Patricia Morokoff (email: pmorokoff@mail.uri.edu).

Appendix B

Informed Consent

1. INFORMED CONSENT FORM
Title of Research Protocol: Trauma and Adult Functioning
Principal Investigator: Patricia Morokoff, Ph.D.
Student Investigator: Maggie Gorraiz, M.A.

CONSENT FORM FOR RESEARCH
You have been invited to take part in a research study described below. If you have questions, you may discuss them with principal investigator Dr. Patricia Morokoff who can be reached at 401-874-2193.

1. Description of the Project: The purpose of this research is to identify predictors of adult functioning in the areas of interpersonal relationships and sexual risk behaviors among college students.

2. What Will Be Done: You will be asked to complete an online survey. The survey consists of a number of multiple-choice and/or free-answer questions, and may be divided into a number of sections. You must complete all sections in one sitting, as you are not allowed to resume at another time from where you left off. While you are participating, your responses will be stored in a temporary holding area as you move through the sections, but they will not be permanently saved until you complete all sections and you are given a chance to review your responses. The survey will take approximately 25-30 minutes to complete.

3. Risks or Discomforts: There are no known risks associated with participating in this study. If these questions become upsetting or distressing, you may stop the study at any time without penalty. Here are several resources to contact should the need for therapeutic services arise:

University of Rhode Island Counseling Center 401-874-2288
Psychological Consultation Center 401-874-4263

4. Expected Benefits of the Study: The major benefit of participating in the online questionnaire is to enable you to participate in experimental studies, which will provide you with first-hand experiences in the research process and a deeper understanding of how psychological research is conducted. However, other than the possibility of course credit, there are no direct, tangible benefits from participation.

5. Confidentiality: Your participation in this study is anonymous. Your privacy and research records will be kept confidential to the extent of the law. Authorized research personnel and the URI Institutional Review Board may inspect the records from this research project. No identifying information will be present on any of the electronic data collected from the study. All electronic files will be kept on a password-protected

computer to which only key personnel have access during data analysis.

6. Decision to Quit at Any Time: Taking part in this project is entirely voluntary. If you wish, you may exit out of the questionnaire at any time. You do not need to give any reasons for leaving.

7. Rights and Complaints: If you are not satisfied with the way this study is performed, or if you have questions about your rights as a research subject, you may discuss your concerns with Dr. Patricia Morokoff (401-874-2193), anonymously, if you choose. In addition, you may contact the office of the Vice President of Research, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, RI 02882 (401-874-4328).

By moving forward to the survey at the bottom of this form I agree that:
I am of 18 years or older
I have fully read or have had read and explained to me this informed consent form describing a research project.
I have had the opportunity to question one of the persons in charge of this research and have received satisfactory answers.
I understand that I am being asked to participate in research.
I understand the risks and benefits, and I freely give my consent to participate in the research project outlined in this form, under the conditions indicated in it.

Yes, I consent.
No, I do not consent.

Appendix C

Demographics

For the following questions, please fill in the blank or check the answer that is best for you.

1. How old are you? _____ years

2. What gender do you identify with most closely?
    A) Female
    B) Male
    C) Transgender

3. What is your ethnicity?
    A) Hispanic or Latino
    B) Not Hispanic or Latino

4. What is your race?
    A) American Indian or Alaskan Native
    B) Asian
    C) Black or African American
    D) Native Hawaiian or other Pacific Islander
    E) White

5. Which term do you most closely identify as?
    A) Heterosexual
    B) Lesbian
    C) Gay
    D) Bisexual
    E) Undecided/Questioning
    F) Other

6. What year are you in school?
    A) Freshman
    B) Sophomore
    C) Junior
    D) Senior
    E) Other (please specify) _____

Appendix D

Childhood sexual abuse (CSA)

CSA Scale (Harlow et al., 1993)

Directions: As a child, you may have been in a sexual situation with someone five years or older than you. A sexual situation could mean someone showing their genitals to you. It could mean someone touching you in a sexual way. It could also mean someone putting his penis in your mouth, vagina, or rectum. Think back to when you were a child up to the age of 18, and answer the next questions.

Frequency Scale: 1 = "no", 2 = "once", 3="a few times", 4= "many times"

Before you were 14 years old:

1. Did anyone older ever show his or her genitals to you?
2. Did you ever see anyone older touch his or her genitals in front of you?
3. Did anyone older ever touch your breasts or genitals?
4. Did anyone older every rub their genitals against your body?
5. Did anyone older every *try* to put his penis in your mouth, vagina, or rectum?
6. Did anyone older every *put* his penis in your mouth, vagina, or rectum?

For the above questions, please tell us who those people were. Check all that apply?
__ Did not have any of these experiences before I was 14 years old.
__ A person I didn't know at all.
__ A person I didn't know very well.
__ A friend or relative not in my close family.
__ A brother or sister
__ My father, mother, or stepparent
__ Someone else

Adolescent Sexual Abuse (ASA)
Between the ages of 14- 18 years old:

1. Did anyone ever put his penis in your mouth, vagina, or rectum without your consent?
2. Did anyone ever pressure or force you to engage in sexual activity that you did not want to?

Adult Sexual Victimization (ASV)
After the age of 18 years old:

1. Did anyone ever put his penis in your mouth, vagina, or rectum without your consent?
2. Did anyone ever pressure or force you to engage in sexual activity that you did not want to?

Appendix E

Childhood physical abuse (CPA)

Traumatic Events Survey (Elliott, 1992)

Directions: Before the age of 18, did your parents or caretaker ever do the following:

(1) Hit you with a fist, kick you, or throw you down on the floor, into a wall, or down stairs?

Frequency Scale: 1 = “no” 2 = “once” 3 = “a few times” 4 = “many times”

(2) Do something to you on purpose that left marks, bruised, burned, or caused you to bleed, lose teeth, or have broken bones?

Frequency Scale: 1 = “no” 2 = “once” 3 = “a few times” 4 = “many times”

What age were you, when this first occurred?
_____ (years)

What age were you, when this last occurred?
_____ (years)

How upsetting did you find the event to be at the time it occurred?

A) Very upsetting B) Somewhat upsetting C) Not at all upsetting

After the age of 18 years old:
1. Have you ever been involved in a physical fight with a romantic partner, where you experienced loss of consciousness, sprain, bruise, cut, physical pain, broken bone, or had to go to the emergency room or general practitioner?

Frequency Scale: 1 = “no” 2 = “once” 3 = “a few times” 4 = “many times”

Appendix F

Childhood emotional abuse (CEA)

Parental Psychological Maltreatment Scale (PYS; Briere & Runtz, 1990).

Directions: Prior to age 18, how often did the following occur during an 'average' year"? Using the following scale, how often did a parent, stepparent, foster parent, or adult in charge of you:

Frequency Rating Scale:1 = "never," 2 ="rarely," 3 = "sometimes," 4 = "often," 5 = "always"

Yelled at you?
Insulted you?
Criticized you?
Tried to make you feel guilt?
Ridiculed or humiliated you?
Embarrassed you in front of others?
Made you feel like you were a bad person?

After the age of 18 years old:

1. Have you ever been involved in a physical fight with a romantic partner, where he/she yelled at you, insulted you, criticized you, tried to make you feel guilty, ridiculed or humiliated you, embarrassed you in front of others, and made you feel like you were a bad person?

Frequency Rating Scale: 1 = "never," 2 ="rarely," 3 = "sometimes," 4 = "often," 5 = "always"

Appendix G

Negative family environment (NFE)

NFE Scale (Harlow et al., 1993)

Rating Scale: 1 = Never 2= Rarely 3 = Often 4 = Very Often

A. Not understanding Family Indicator Items

1. I felt like the people who brought me up did not understand me.
2. I made choices that my family likes ®

B. Unhelpful Family Indicator Items

3. The people who brought me up helped make my life better ®
4. There were times when I couldn't stand my situation at home.

C. Unhappy Family Indicator Items

5. People in my family were upset a lot of the time.
6. I was pretty happy with my family life ®

Appendix H

Self-esteem (SE)

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

1. On the whole, I am satisfied with myself.
2.* At times, I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5.* I feel I do not have much to be proud of.
6.* I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others.
8.* I wish I could have more respect for myself.
9.* All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.
* Reverse coded

Appendix I

General self-efficacy (GSE)

GSE Scale (Schwarzer & Jerusalem, 1995)

Please answer the following statements with the following scale:
1 = Not at all true 2 = Hardly true 3 = Moderately true 4 = Exactly true

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can usually find several solutions.
9. If I am in trouble, I can usually think of a solution.
10. I can usually handle whatever comes my way.

Appendix J

Self-compassion (SCOM)
Self-Compassion Short Scale (Raes et al. 2011)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES
Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	2	3	4	5

_____1. When I fail at something important to me I become consumed by feelings of inadequacy.
_____2. I try to be understanding and patient towards those aspects of my personality I don't like.
_____3. When something painful happens I try to take a balanced view of the situation.
_____4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
_____5. I try to see my failings as part of the human condition.
_____6. When I'm going through a very hard time, I give myself the caring and tenderness I need.
_____7. When something upsets me I try to keep my emotions in balance.
_____8. When I fail at something that's important to me, I tend to feel alone in my failure
_____9. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
_____10. When I feel inadequate in some way, I try to remind myself that most people share feelings of inadequacy.
_____11. I'm disapproving and judgmental about my own flaws and inadequacies.
_____12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Appendix K

Depression (DEP)

Center for Epidemiologic Studies Depression Symptoms Index (Kohout et al., 1993)

Please assess your feelings within the past month using the following scale:

A) Never B) Rarely C) Sometimes D) Often E) Very often

1. I felt depressed.
2. I felt everything I did was an effort.
3. My sleep was restless.
4. I was happy. ®
5. I felt lonely.
6. People were unfriendly.
7. I enjoyed life. ®
8. I felt sad.
9. I felt that people disliked me.
10. I could not get “going.”

Appendix L

Post-traumatic Stress Disorder (PTSD)

Modified PTSD Scale (MPSS-SR; Falsetti et al., 1993)

The purpose of this scale is to measure the frequency and severity of symptoms in the past two weeks that you may have been having in reaction to a traumatic event or events that occurred during your lifetime (e.g. CSA, physical abuse, or emotional abuse). Please indicate the frequency, how often you have the symptom, to the left of the item. Then indicate the severity (how upsetting the symptom is) by circling the letter that fits best on the right side.

FREQUENCY	SEVERITY
0 = NOT AT ALL	A=NOT AT ALL DISTRESSING
1 = ONCE A WEEK OR LESS	B=A LIT BIT DISTRESSING
2 = 2 TO 4 TIMES A WEEK	C=MODERATELY DISTRESSING
3 = 5 OR MORE TIMES A WEEK	D=QUITE A BIT DISTRESSING
	E=EXTREMELY DISTRESSING

FREQUENCY	SEVERITY
_____1. Have you had repeated or intrusive upsetting thoughts or recollections of the event(s)?.....	A B C D E
_____2. Have you been having repeated bad dreams or nightmares about the event(s)?.....	A B C D E
_____3. Have you had the experience of suddenly reliving the event(s), flashbacks of it or acting or feeling as if the event were happening again?.....	A B C D E
_____4. Have you been intensely EMOTIONALLY upset when reminded of the event(s), including anniversaries of when it happened?.....	A B C D E
_____5. Do you often make efforts to avoid thoughts or feelings associated with the event(s)?.....	A B C D E
_____6. Do you often make efforts to avoid activities, situations, or places that remind you of the event(s)?....	A B C D E
_____7. Are there any important aspects about the event(s) that you still cannot recall?.....	A B C D E
_____8. Have you markedly lost interest in free time activities that used to be important to you?.....	A B C D E
_____9. Have you felt detached or cut off from others around you since the event?.....	A B C D E
_____10. Have you felt that your ability to experience emotions is less (unable to have loving feelings,	

feel numb, or can't cry when sad)?..... A B C D E

_____11. Have you felt that any future plans or hopes have changed because of the event(s) (for example: no career, marriage, children, or long life)?..... A B C D E

_____12. Have you been having a lot of difficulty falling or staying asleep?..... A B C D E

_____13. Have you been continuously irritable or having outbursts of anger?..... A B C D E

_____14. Have you been having persistent difficulty concentrating?..... A B C D E

_____15. Are you overtly alert (checking to see who is around you) since the event?..... A B C D E

_____16. Have you been jumpier, more easily startled, since the event?..... A B C D E

_____17. Have you been having intense PHYSICAL reactions (for example: sweating, heart beating fast) when reminded of the event(s)?..... A B C D E

Appendix M

Interpersonal Resource Loss (INTR)

Conservation of Resources-Evaluation (COR-E); Hobfoll & Lilly, 1993)

We are interested in the extent to which you have experienced loss in any of your interpersonal relationships. If you have experienced any loss in the last six months, please rate:
1 = no loss 2= some loss 3=great deal of loss.

1. Feeling valuable to others
2. Family stability
3. Intimacy with one or more family members
4. Good relationship with my children
5. Intimacy with a partner
6. Intimacy with at least one friend
7. Support from co-workers
8. Loyalty of friends
9. People I can lean on

Appendix N

Relationship cohesion (RCOH)
Relationship conflict Scale (Lamoureux et al., 2011)

Using the following scale:
1= never 2= occasionally 3= fairly 4= many times5=very often

In the past four weeks, have you:

1. Experienced problems in your close relationships?
2. Experienced arguments in your close relationships?
3. Experienced serious disagreements in your close relationships?
4. Experienced excessive demands in your close relationships?
5. Experienced feelings of anger or upset feelings in your close relationships

Appendix O

Social support (SOC)
Social Provisions Scale (Cutrona & Russell, 1984)

In answering the next set of questions, think about your current relationship with friends, family members, coworkers, peers, community members, and so on. Please tell me to what extent you agree that each statement describes your current relationships with other people. Use the following scale. So, for example, if you feel a statement is very true of your current relationships, you would tell me "strongly agree."

Scale: 1 = Strongly Disagree 2 = Disagree 3= Agree 4 = Strongly Agree

1 There are people I can depend on to help me if I really need it.
2 I feel that I do not have close personal relationships with other people.
3 There is no one I can turn to for guidance in times of stress. □
4 There are people who depend on me for help.
5 There are people who enjoy the same social activities I do.
6 Other people do not view me as competent.
7 I feel personally responsible for the well being of another person.
8 I feel part of a group of people who share my attitudes and beliefs.
9 I do not think other people respect my skills and abilities.
10 If something went wrong, no one would come to my assistance.
11 I have close relationships that provide me with a sense of emotional security and wellbeing.
12 There is someone I could talk to about important decisions in my life.
13 I have relationships where my competence and skills are recognized.
14 There is no one who shares my interests and concerns.
15 There is no one who really relies on me for their well-being.
16 There is a trustworthy person I could turn to for advice if I were having problems.
17 I feel a strong emotional bond with at least one other person.
18 There is no one I can depend on for aid if I really need it. □
19 There is no one I feel comfortable talking about problems with.
20 There are people who admire my talents and abilities.
21 I lack a feeling of intimacy with another person.
22 There is no one who likes to do the things I do.
23 There are people I can count on in an emergency.
24 No one needs me to care for them.

Appendix P

Protective Sexual Behavior (PSB)

Condom Use Frequency (CUF)
How often do you use a condom in the past 30 days? 60 days? (CUF2)

1. Never
2. Almost Never
3. Sometimes
4. Almost every time
5. Always

Stage of Condom Use (CUS)
Please use the following scale:

1. Never
2. Almost Never
3. Sometimes
4. Almost every time
5. Always

For how long have you been using condoms every time? _____

Are you considering to use condoms every time within the next 6 months?
_____

Are you planning to start using condoms every time within the next 30 days?
_____

1 = Precontemplation- not intending to start within the next 6 months
2 = Contemplation- intent to start within the next 30 days
3 = Preparation
4 = Action
5 = Maintenance

PSR

1. How many times have you had sex within the past 2months? (PSR2) 6 months? (PSR6)
2. How many times did you use a condom within the past 2months? 6 months?

Note. Items taken from Morokoff et al. (2009)

Table 1

Demographics of entire sample

	Women n (%)	Men n (%)	Total n (%)	χ^2	
Age	*M* = 19.14 (1.99)	*M* = 19.13 (1.38)	*M* = 19.13 (1.80)	7.58	9
Age of sexual debut	*M*=16.42 *SD* = 1.70	*M*=16.31 *SD* = 1.84	*M*=16.37 *SD* = 1.75	19.18	
Ethnicity				3.13	1
Hispanic or Latino	41 (15.5)	14 (9.7)	55 (13.5)		
Not Hispanic or Latino	223 (84.5)	130 (90.3)	353 (86.5)		
Race				1.58	1
American Indian or Alaskan Native	9 (3.4)	3 (2.1)	12 (2.9)		
Asian	16 (6.1)	8 (5.6)	24 (5.9)		
Black or African American	25 (9.5)	16 (11.1)	41 (10.0)		
Native Hawaiian or other Pacific Islander	8 (3.0)	5 (3.5)	13 (3.2)		
White	217 (82.2)	116 (80.6)	333 (81.6)		
Sexual Orientation				10.84	5
Heterosexual	230 (87.1)	136 (94.4)	366 (89.7)		
Lesbian/Gay	4 (1.5)	2 (1.4)	6 (1.5)		
Bisexual	9 (3.4)	3 (2.1)	12 (2.9)		
Undecided/Questioning	8 (3.0)	1 (0.7)	9 (2.2)		
Other	13 (4.9)	2 (1.4)	15 (3.7)		
Year in School				1.91	4
Freshman	139 (52.7)	79 (54.9)	218 (53.4)		
Sophomore	76 (28.8)	44 (30.6)	120 (29.4)		
Junior	36 (13.6)	14 (9.7)	50 (12.3)		
Senior	10 (3.8)	6 (4.2)	16 (3.9)		
Other	3 (1.1)	1 (0.7)	4 (1.0)		

Note. There were no statistically significant differences between men and women at the $p < .001$ or $p < .05$ level.

Table 2

Incidences of reported maltreatment during childhood, adolescence, adulthood

Types of trauma	Women N = 270		Men N =145		Total N = 415			
	Yes %	No %	Yes %	No%	Yes%	No%	χ^2	*df*
Sexual Abuse								
CSA	24.8	75.2	24.8	75.2	24.8	75.2	7.08	16
ASA	25.2	74.8	6.2	93.8	18.6	81.4	23.20**	5
ASV	12.6	87.4	2.8	97.2	9.1	90.9	12.71**	4
Physical Abuse								
CPA	21.9	78.1	22.1	77.9	21.9	78.1	4.96	6
APA	7.4	92.6	4.8	95.2	6.5	93.5	2.47	3
Emotional Abuse								
CEA	5.2	94.8	4.8	94.5	5.1	94.9	30.94	26
AEA	20	80	20.7	79.3	20.2	79.8	30.94	26
Overall CM	41.9	58.1	38.9	61.1	40.7	59.0	117.70	114
Overall adulthood maltreatment	31	68.9	23.4	76.6	28.4	71.6	48.78	48

Note. $p < .05$* $p < .001$**

Table 3

Zero order correlation matrix for entire sample

	CSA	CPA	CEA	NFE	DEP	PTSD	SCOM	SE	GSE	INTR	RCOH	SOC	PSR6	PSR2	CUF1	CUF2	CUS
CSA	-	.22**	.20**	.20**	.17**	.31**	-.08	-.07	.04	-.21**	-.15**	-.15**	-.05	-.05	-.16*	-.13*	-.08
CPA		-	.38**	.36**	.21**	.21**	-.09	-.16**	.01	-.24**	-.17**	-.08	.01	-.00	.02	.04	.07
CEA			-	.59**	.37**	.29**	-.22**	-.22**	.13**	-.31**	-.21**	-.15**	-.03	-.04	-.02	.03	.08
NFE				-	.36**	.36**	-.28**	-.40**	-.19**	-.33**	-.12*	-.41**	-.03	-.05	-.07	-.05	-.00
DEP					-	.52**	-.58**	-.62**	-.22**	-.57**	-.37**	-.50**	-.07	-.12	-.11	-.11	-.08
PTSD						-	-.30**	-.36**	-.11*	-.54**	-.31**	-.31**	-.10	-.11	-.14*	-.14*	-.10
SCOM							-	.67**	.43**	.33**	.22**	.46**	.12*	.08	.15*	.14*	.15*
SE								-	.49**	.38**	.21**	.53**	.08	.01	.15*	.11	.14*
GSE									-	.01	.05	.50**	.07	.10	.06	.07	.12
INTR										-	.45**	.36**	.11	.13*	.09	.11	-.01
RCOH											-	.17**	.10	.14*	.09	.05	.02
SOC												-	.05	-.04	.20**	.20**	.08
PSR6													-	.51**	.79**	.81**	.75**
PSR2														-	.54**	.56**	.83**
CUF1															-	.94**	.75**
CUF2																-	.83**
CUS																	-

Note. * p < .05 ** p <.001

Table 4

Zero order correlation matrix for gender

	CSA	CPA	CEA	NFE	DEP	PTSD	SCOM	SE	GSE	INTR	RCOH	SOC	PSR6	PSR2	CUF1	CUF2	CUS
CSA	-	.26**	.18**	.12**	.12	.22**	-.04	-.04	.04	-.19**	-.14**	-.06	-.04	-.04	-.07	-.07	-.04
CPA	.17*	-	.39**	.38**	.21**	.27**	-.14*	-.20**	-.03	-.29**	-.20**	-.07	.05	.09	.06	.09	.13
CEA	.24**	.37**	-	.66**	.38**	.34**	-.29**	-.30**	.04	-.33**	-.22**	-.13*	.06	.11	.06	.10	.14
NFE	.27**	.33**	.46**	-	.32**	.37**	-.29**	-.38**	-.20**	-.33**	-.16**	-.38**	-.05	.01	-.04	-.05	.01
DEP	.29**	.20*	.35**	.46**	-	.51*	-.59**	-.63**	-.29**	-.59**	-.40**	-.54**	.01	-.01	.03	-.03	-.00
PTSD	.54**	.12	.19*	.35**	.53**	-	-.28**	-.36**	-.14*	-.55**	-.38**	-.27**	-.08	-.08	.01	-.03	-.04
SCOM	-.12*	-.00	-.09	-.25**	-.54**	-.33	-	.67**	.49**	.34**	.25**	.49**	.10	.14	.10	.13	.11
SE	-.15	-.12	-.07	-.46**	-.58**	-.34	.64**	-	.54**	.38**	.26**	.52**	.05	.04	.07	.04	.05
GSE	.04	.07	.27**	-.19*	-.11	-.07	.33**	.41**	-	.12	.11	.55**	.06	.02	.06	.10	.11
INTR	-.24**	-.18*	-.28**	-.34**	-.54**	-.53	.29**	.35**	.06	-	.46**	.36**	.02	.04	-.02	.03	.05
RCOH	-.17*	-.13	-.21*	-.02	-.30**	-.16	.13	.09	-.05	.43**	-	.24**	.03	.03	.05	.03	.06
SOC	-.37**	-.10	-.18*	-.48**	-.46**	-.42**	.46**	.59**	.45**	.40**	.07	-	.05	.08	.12	.19*	.20*
PSR6	-.07	-.07	-.18	.01	-.19	-.12	.13	.08	-.04	.24**	.21*	.11	-	.93**	.85**	.86**	.84**
PSR2	-.07	-.07	-.18	.09	-.22*	-.13	.01	.13	-.10	.20*	.22*	-.08	.24*	-	.88**	.92**	.87**
CUF1	-.31**	-.04	-.12	-.13	-.36**	-.34**	.24*	.28**	.07	.27**	.15	.34**	.69**	.39**	-	.93**	.73**
CUF2	-.25**	-.03	-.09	-.07	-.22**	-.30**	.18	.22*	.05	.23*	.09	.24*	.73**	.39**	.95**	-	.80**
CUS	-.17	-.02	-.03	-.05	-.23*	.19	.20	.29*	.13	.30**	.13	.28*	.71**	.34**	.82**	.91**	-

Note. * p < .05 ** p <.001. The correlations for the female sample are on the top right and the correlations for the male sample are on the bottom left.

Table 5

Zero order correlation matrix for individuals with CM compared to individuals with no reported CM

	NFE	DEP	PTSD	SCOM	SE	GSE	INTR	RCOH	SOC	PSR6	PSR2	CUF1	CUF2	CUS
NFE	-	.30**	.23**	-.25**	-.34**	-.28**	-.21**	-.01	-.44**	.03	.13	-.02	.01	.04
DEP	.30**	-	.55**	-.56**	-.58**	-.25**	-.55**	-.36**	-.49**	-.06	-.11	-.11	-.13	-.07
PTSD	.35**	.43**	-	-.33**	-.32**	-.01	-.46**	-.27**	-.25**	-.12	-.12	-.13	-.17*	-.10
SCOM	-.24**	-.57**	-.22**	-	.65**	.48**	.33**	.24**	.48**	.17*	.10	.21**	.23**	.24**
SE	-.38**	-.63**	-.31**	.67**	-	.51**	.31**	.25**	.54**	.06	.11	.15	.10	.14
GSE	-.09	-.18*	-.13	.35**	.49**	-	.09	.04	.56**	.02	-.07	.11	.12	.16
INTR	-.31**	-54**	-.54**	.30**	.37**	.10	-	.38**	.32**	.01	.10	.01	.05	.07
RCOH	-.13	-.35**	-.30**	.16*	.13	.05	.48**	-	.12	.15*	.18*	.08	.05	.09
SOC	-.29**	-.46**	-.30**	.42**	.47**	.44**	.35**	.19*	-	.06	-.12	.21*	.18*	.18
PSR6	-.13	-.09	-.11	.05	.11	.02	.23**	.05	.06	-	.38**	.85**	.87**	.81**
PSR2	-.12	-.16	-.16	.04	.08	-.04	.27**	.13	.11	.90**	-	.51**	.52**	.45**
CUF1	-.09	-.10	-.14	.06	.14	-.01	.16	.09	.19*	.72**	.73**	-	.92**	.67**
CUF2	-.11	-.08	-.11	.03	.11	.03	.16	.05	.22*	.74**	.76**	.96**	-	.81**
CUS	-.09	-.11	-.12	.05	.15	.06	.24*	.10	.26*	.78**	.76**	.87**	.86**	-

Note. * $p < .05$ ** $p < .001$. The correlations for individuals with no reported CM are on the top right and the correlations for individuals with reported CM are on the bottom left

Table 6

Descriptive statistics for mode variables for men and women

		Women		Men		Total		*t*	*df*
	Range	(*n* = 264)		(*n* = 111)		(*n* = 408)			
Variable		*M*	*SD*	*M*	*SD*	*M*	*SD*		
NFE	1 - 4	1.90	.67	1.90	.57	1.89	.63	-.03	332
CM									
CSA	0 - 4	.22	.55	.19	.47	.21	.52	.48	412
CPA	0 - 4	1.29	.64	1.33	.74	1.30	.68	-.64	412
CEA	1 - 5	2.12	.95	2.14	.96	2.13	.96	-.33	412
PD									
DEP	1 - 5	2.38	.77	2.27	.70	2.35	.74	1.45	412
PTSD	0 - 119	14.90	20.75	12.67	19.09	14.11	20.19	.86	408
PR									
SCOM	1 - 5	3.07	.63	3.18	.53	3.11	.60	-1.84	337
SE	1 - 4	3.03	.51	3.14	.48	3.07	.51	-.24*	413
GSE	1 - 4	3.03	.48	3.05	.56	3.04	.51	-.64	412
INT									
INTR	0 -3	1.32	.52	1.17	.58	1.27	.55	-1.73	406
RCOH	1 - 5	1.91	.89	1.76	.87	1.86	.89	-1.57	406
SOC	1 – 3	1.90	.43	1.81	.43	1.84	.43	2.17*	405
PSB									
PROSR6	0 -1	.52	.46	.77	1.05	.62	.74	-1.98	303
PROSR2	0 -1	.56	.43	.66	.43	.59	.43	-2.65**	263
CUS	1 - 5	2.61	1.58	2.80	1.58	2.68	1.58	-.84	216
CUF1	1 - 5	2.98	1.73	3.06	1.70	3.00	1.72	-.38	268
CUF2	1 - 5	3.06	1.67	3.14	1.61	3.01	1.64	-.44	281

Note. * $p < .05$ ** $p < .001$.

Table 7

Descriptive statistics for variables among individuals with reported CM and no reported CM

		CM (n =169)		No CM (n =245)		t	df
Variable	Range	*M*	*SD*	*M*	*SD*		
Age of sexual debut		16.16 Range: 10 - 26	2.07	16.53 Range: 13 - 21	1.47	-1.76	219
NFE	1 - 4	2.19	.63	1.71	.56	8.00**	331
PD							
DEP	1 - 5	2.57	.74	2.19	.71	5.1**	412
PTSD	0 - 119	52.05	19.79	42.4	13.65	5.46**	272
PR							
SCOM	1 - 5	3.00	.59	3.18	.60	-2.89**	412
SE	1 - 4	2.94	.54	3.15	.46	-4.18**	321
GSE	1 - 4	3.01	.49	3.03	.55	-.34	412
INT.							
INTR	0 - 3	2.50	.49	2.73	.36	-5.16**	291.3
RCOH	1 - 5	4.00	1.00	4.23	.79	-2.45**	300.2
SOC	1 – 4	3.11	.48	3.28	.43	-3.8**	332.5
PSB							
PROSR6	0 -1	.60	.43	.58	.43	.37	303
PROSR2	0 -1	.61	.47	.61	.90	.03	263
CUS	1 - 5	2.75	1.65	2.62	1.52	.611	216
CUF1	1 - 5	2.93	1.73	3.06	1.71	-.63	268
CUF2	1 - 5	3.04	1.65	3.13	1.65	-.45	281

Note. * p < .05 ** p <.001.

Table 8

Summary of original indicators used to create latent constructs

CM (Higher scores, greater maltreatment)
Indicator 1: Composite CSA
Indicator 2: Composite CEA
Indicator 3: Composite CPA

NFE
Indicator 1: Composite indicator
Indicator 2: Composite indicator
Indicator 3: Composite indicator

PR (Higher scores, greater resiliency)
Indicator 1: Composite SE
Indicator 2: Composite SCOM
Indicator 3: Composite GSE

PD (Higher scores, greater distress)
Indicator 1: Composite DEP
Indicator 2: Composite PTSD

INT (Higher scores, greater INT)
Indicator 1: Composite INTR
Indicator 2: Composite RCOH
Indicator 3: Composite SOC

PSB (Higher scores, less sexual risk, more PSB)
Indicator 1: Composite CUF
Indicator 2: Composite CUS
Indicator 3: Calculated PSR

Table 9

Confirmatory factor analysis for measurement model examining relationships between INT, CM, PR, and PD

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.35	.94
CPA	2	.53	.85
CEA	3	.69	.73
PR			
SCOM	1	.78	.63
SE	2	.86	.51
PD			
DEP	1	.85	*.53*
PTSD	2	*.61*	*.79*
INT			
INTR	1	.64	.77
SOC	2	.57	.82

Table 10

Model 1measurement model factor loadings and standardized error for measurement across entire sample

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.33	.94
CPA	2	.56	.83
CEA	3	.66	.75
PR			
SCOM	1	.77	.64
SE	2	.87	.49
INT			
INTR	1	.55	.83
SOC	2	.66	.75

Table 11

Model 1 chi square values and fit indices for nested models, in the prediction of INT from CM and PR across entire sample

Fit Indices	Direct	Mediational	Full
X^2 (df)	63.52 (13), p < .01	35.81 (12), p < .01	31.2 (11), p < .01
R^2	.29	.75	.81
CFI	.88	.94	.95
RMSEA	.10	.07	.07
90% CI	(.07 -.12)	(.04-.10)	(.04 - .09)

Note. *N* = 415 ROBUST statistics displayed. Satorra-Bentler Scaled Chi Square

Table 12

Model 1 fully saturated model factor loadings, standardized errors, and standardized solutions across entire sample

Factors	Indicator	Loading	Standardized error	Standardized solution	R^2
F1: CM				-	
CSA	1	.34	.94		
CPA	2	.56	.83		
CEA	3	.66	.75		
F2: PR				F2 = -.35*F1 + .94D2	.12
SCOM	1	.77	.64		
SE	2	.87	.49		
F3: INT				F3 = .78*F2 - .25*F1 + .44D3	.81
INTR	1	.55	.83		
SOC	2	.66	.75		

Table 13

Direct model factor loadings and standardized errors CM and INT across entire sample

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.36	.93
CPA	2	.57	.82
CEA	3	.64	.77
INT			
INTR	1	.88	.48
SOC	2	.41	.91

Table 14

Direct model factor loadings, standardized errors for CM and PR across entire sample

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.32	.95
CPA	2	.57	.82
CEA	3	.67	.74
F2. PR			
SCOM	1	.76	.65
SE	2	.88	.47

Table 15

Direct model for factor loadings, standardized errors for PR and INT across entire sample

Factor	Indicator	Loading	Standardized error
F2. PR			
SCOM	1	.77	.64
SE	2	.87	.49
F3. INT			
INTR	1	.51	.86
SOC	2	.71	.86

Table 16

Model 2 measurement model factor loadings and standardized errors across entire sample

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.36	.93
CPA	2	.53	.85
CEA	3	.68	.74
PD			
DEP	1	.78	.63
PTSD	2	.67	.75
INT			
INTR	1	.70	.72
SOC	2	.52	.85

Table 17

Direct model for factor loadings, standardized errors for CM and PD across entire sample

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.37	.93
CPA	2	.53	.85
CEA	3	.67	.74
F2. PD			
DEP	1	.73	.68
PTSD	2	.71	.71

Table 18

Model 3 measurement model factor loadings and standardized errors across entire sample

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.44	.90
CPA	2	.50	.87
CEA	3	.67	.74
F2. PR			
SCOM	1	.77	.64
SE	2	.83	.55
F3. PD			
DEP	1	.90	.44
PTSD	2	.58	.81
F2. PSB			
CUF	1	.99	.12
PSR	2	.56	.83
CUS	3	.91	.40

Table 19

Direct model factor loading and standardized errors for CM and PSB across entire sample

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.39	.92
CPA	2	.58	.81
CEA	3	.64	.77
F2. PSB			
CUF	1	1.0	.08
PSR	2	.56	.83
CUS	3	.91	.41

Table 20

Model 1 measurement model factor loadings and standardized errors for women

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.29	.96
CPA	2	.57	.82
CEA	3	.70	.72
PR			
SCOM	1	.79	.62
SE	2	.86	.51
INT			
INTR	1	.55	.84
SOC	2	.66	.75

Table 21

Model 1 mediational model factor loadings and standardized errors for women

Factor	Indicator	Loading	Standard error	Standardized solution	R^2
CM					
CSA	1	.29	.96		
CPA	2	.57	.82		
CEA	3	.70	.71		
PR				F2 = -.460*F1 +.89D2	.21
SCOM	1	.79	.62		
SE	2	.86	.51		
INT				F3 = .88*F2 +.48D3	.71
INTR	1	.55	.84		
SOC	2	.66	.75		

Table 22

Direct model factor loadings and standardized errors for CM and INT for women

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.34	.94
CPA	2	.63	.78
CEA	3	.62	.79
INT			
INTR	1	1.0	.00
SOC	2	.36	.93

Table 23

Direct model factor loadings and standardized errors between CM and PR for women

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.29	.96
CPA	2	.56	.83
CEA	3	.71	.70
F2. PR			
SCOM	1	.78	.63
SE	2	.87	.49

Table 24

Direct model factor loading and standardized errors between PR and INT for women

Factor	Indicator	Loading	Standardized error
F2. PR			
SCOM	1	.79	.61
SE	2	.85	.52
F3. INT			
INTR	1	.51	.86
SOC	2	.71	.71

Table 25

Model 2 measurement model factor loadings and standardized error for men

Factor	Indicator	Loading	Standardized error
CM			
CSA	1	.53	.85
CPA	2	.40	.91
CEA	3	.53	.85
PR			
SCOM	1	.71	.70
SE	2	.90	.43
INT			
INTR	1	.55	.84
SOC	2	.66	.75

Table 26

Model fully saturated model with factor loadings, standardized errors, and standardized solutions for men

Factor	Indicator	Loading	Standard error	Standardized solution	R^2
CM					
CSA	1	.48	.88		
CPA	2	.45	.89		
CEA	3	.61	.79		
PR					
SCOM	1	.71	.70		
SE	2	.91	.42		
INT				F3 = -.47*F1+.81*F 2 + .36D3	.87
INTR	1	.52	.86		
SOC	2	.74	.86		

Table 27

Model 3 measurement model factor loadings and standardized errors for women

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.34	.94
CPA	2	.56	.83
CEA	3	.74	.67
F2. PR			
SCOM	1	.77	.63
SE	2	.84	.54
F3. PD			
DEP	1	.91	.43
PTSD	2	.60	.80
F2. PSB			
CUF	1	.99	.14
PSR	2	.96	.28
CUS	3	.92	.39

Table 28

Causal model factor loadings, standardized errors, and standardized solution for women

Factor	Indicator	Loading	Standard error	Standardized solution	R^2
CM					
CSA	1	.28	.96		
CPA	2	.53	.85		
CEA	3	.74	.67		
PR				F2 = -.45*F1 +.89D2	.20
SCOM	1	.79	.62		
SE	2	.86	.51		
PD				F3 = .55*F1 +.83D3	.31
DEP	1	.91	.42		
PTSD	2	.56	.83		

Table 29

Model 3 measurement model factor loadings and standardized errors for men

Factor	Indicator	Loading	Standardized error
F1. CM			
CSA	1	.82	.57
CPA	2	.25	.97
CEA	3	.46	.89
F2. PR			
SCOM	1	.70	.72
SE	2	.87	.49
F3. PD			
DEP	1	.72	.70
PTSD	2	.69	.72
F2. PSB			
CUF	1	.97	.24
PSR	2	.39	.92
CUS	3	.93	.37

Figure 1

Hypothesized structural model of relationships among CM, PR, PD, INT and PSB.

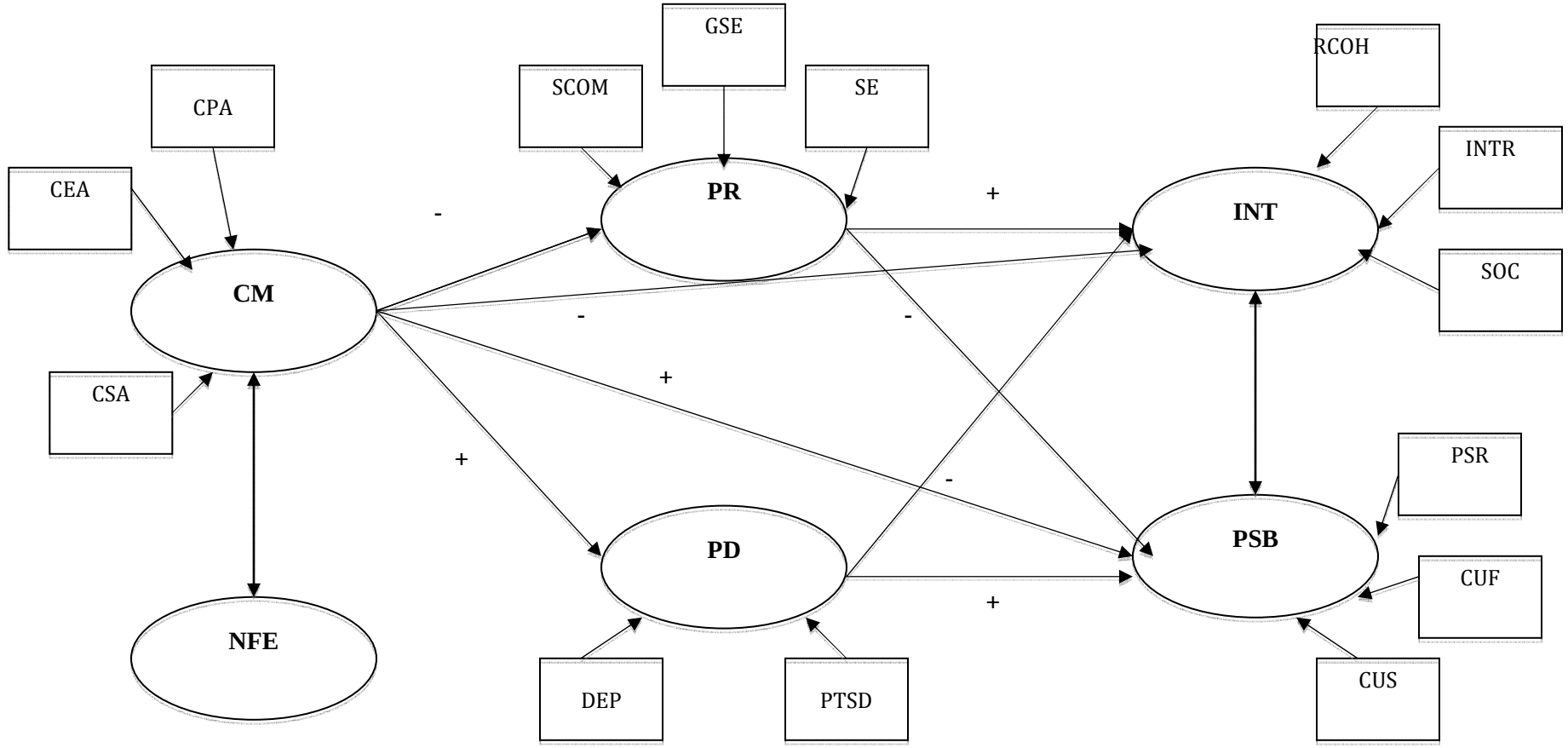


Figure 2.

Hypothesized structural models predicting INT and PSB

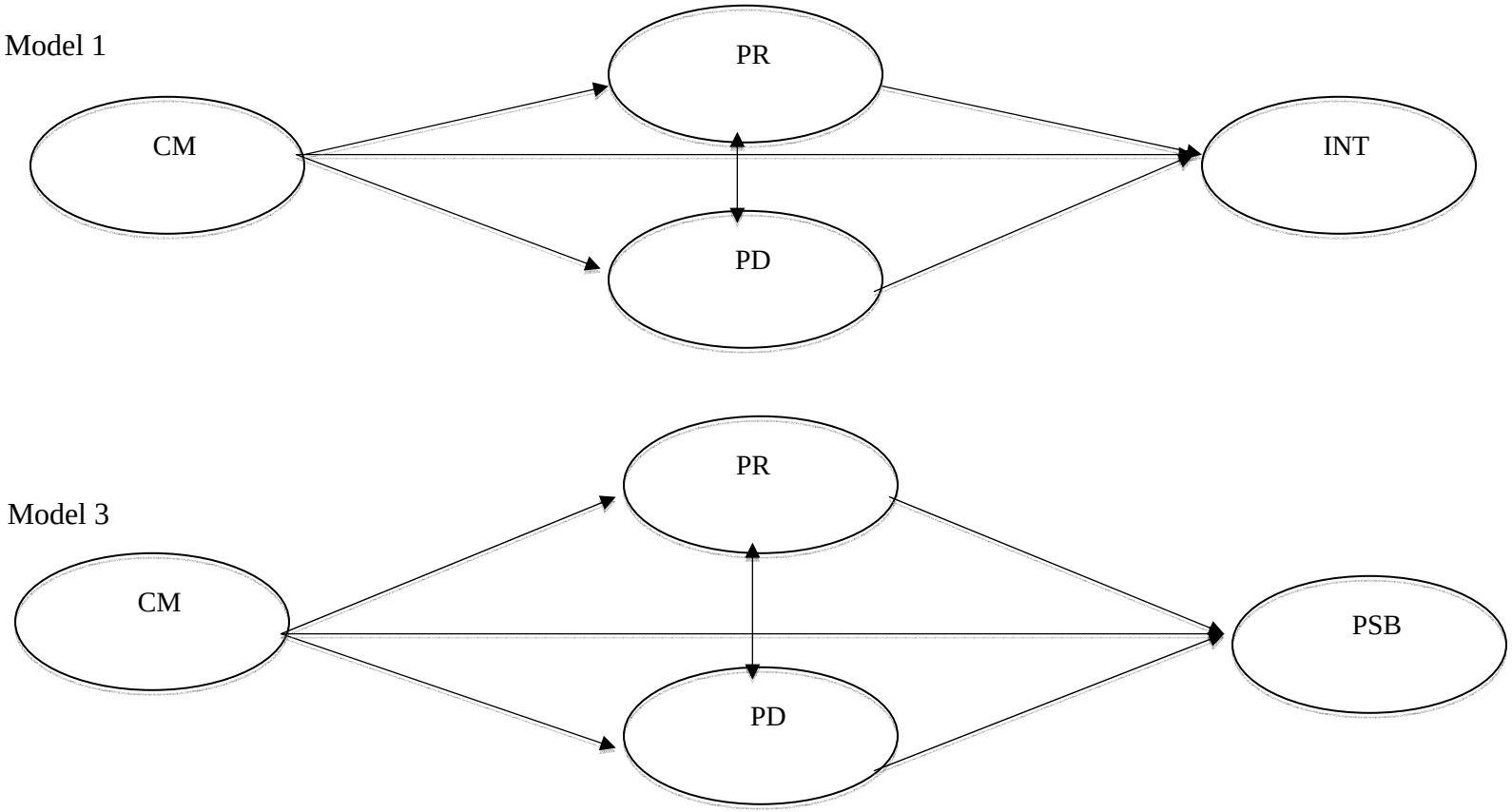


Figure 3.

Model 1 confirmatory factor model predicting INT from CM, PR, and PD

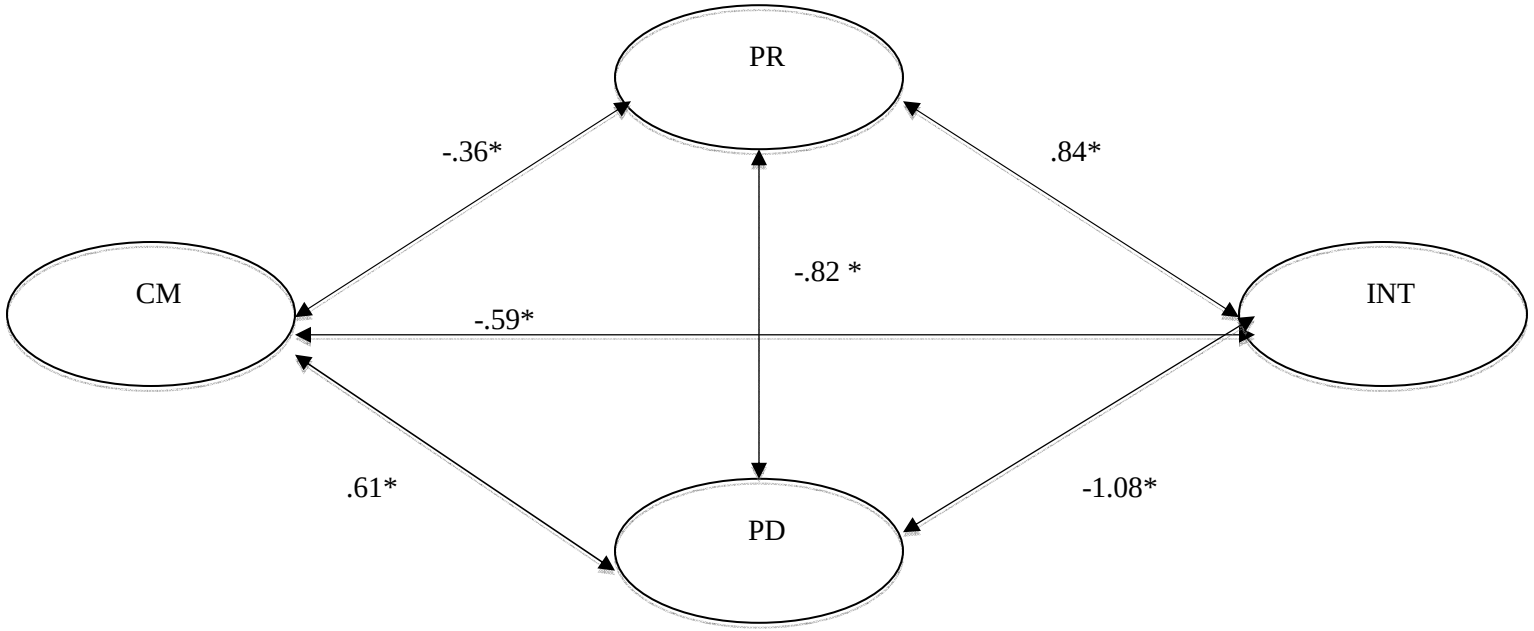
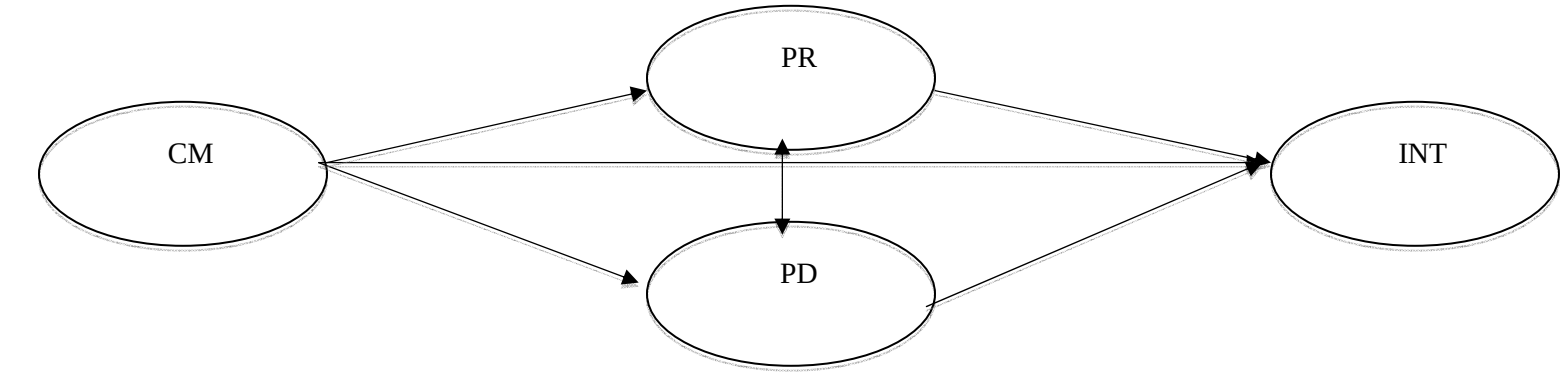
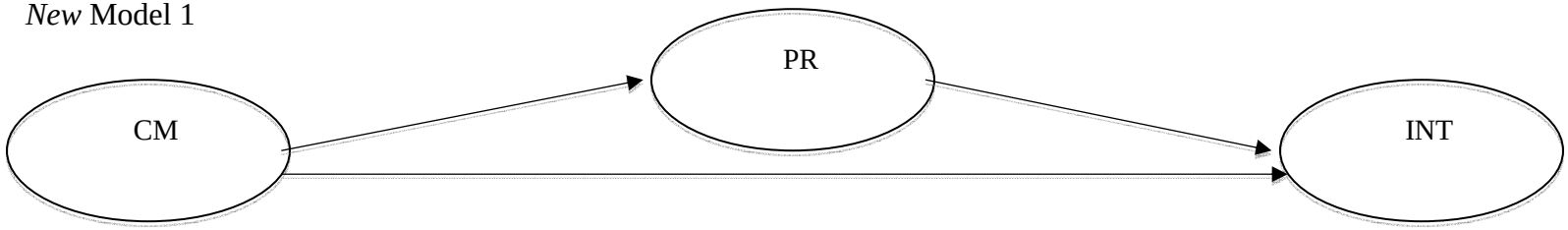


Figure 4

Hypothesized model breakdown due to misspecification



New Model 1



Model 2

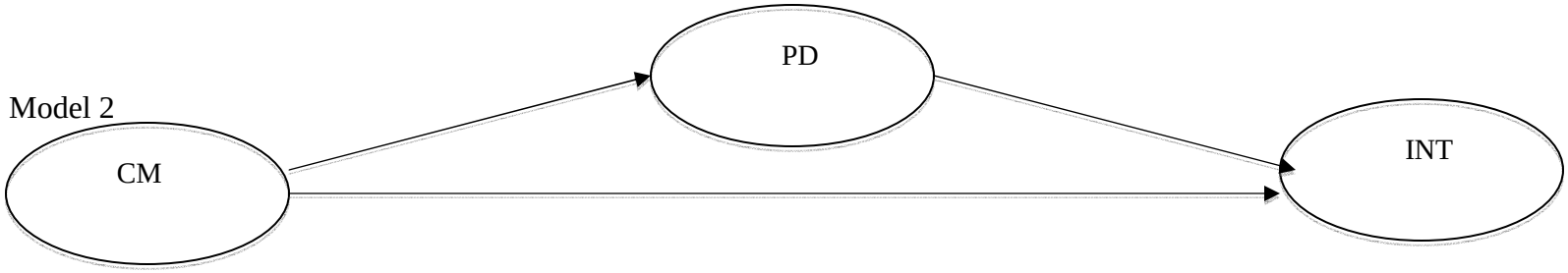


Figure 5.

Model 1 measurement model across entire sample

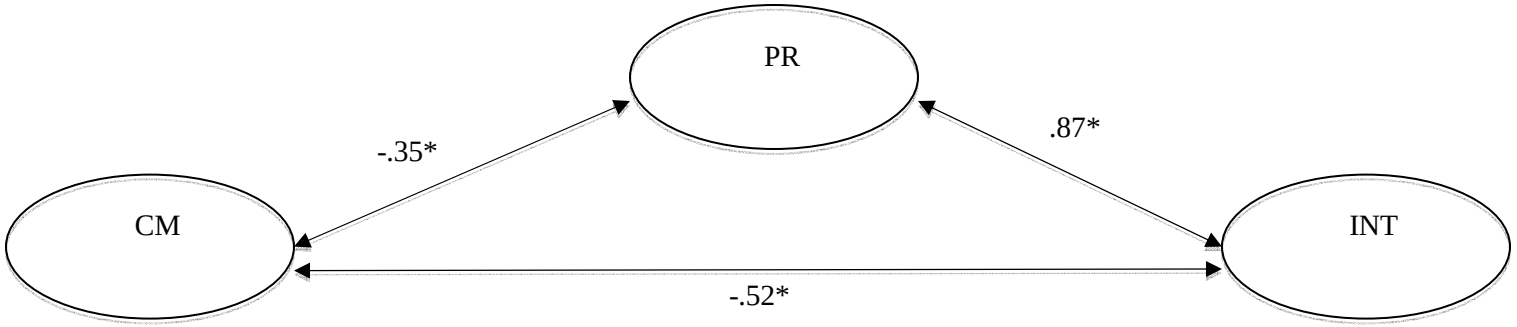


Figure 6.

Model 1 direct model predicting INT across entire sample

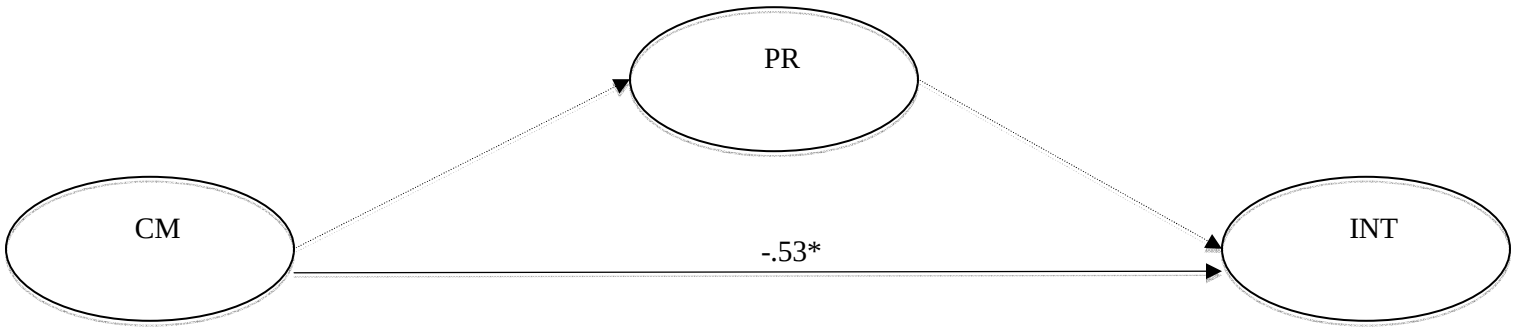


Figure 7

Model 1 mediational model predicting INT across entire sample

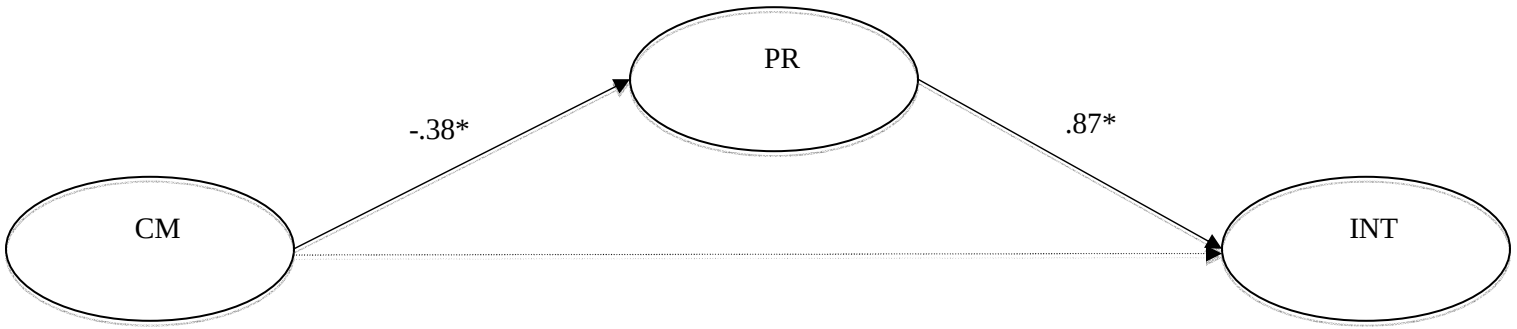


Figure 8

Model 1 fully saturated model predicting INT across entire sample

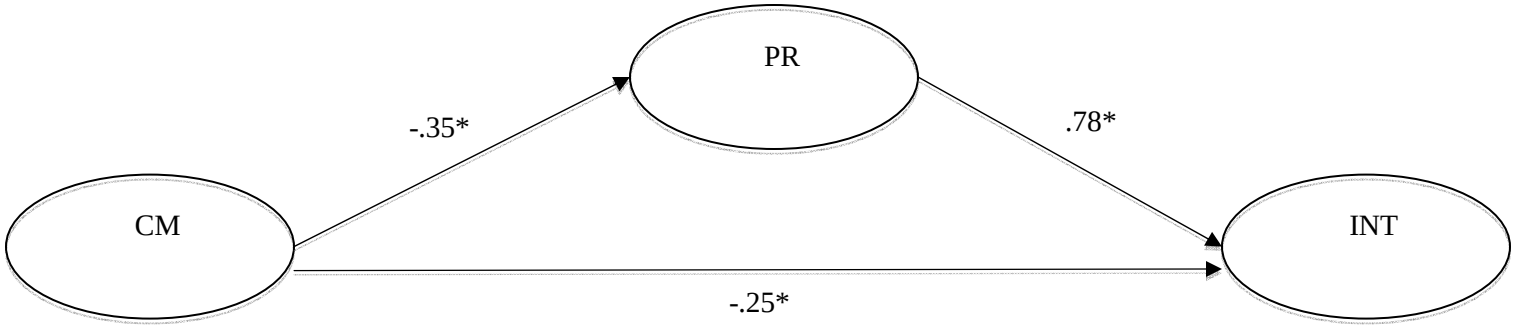


Figure 9

Mediational paths, direct path from CM to INT (c'), direct path from CM to PR (a), and direct path from PR to INT (b) across entire sample

Figure 10

Model 2 measurement model across entire sample

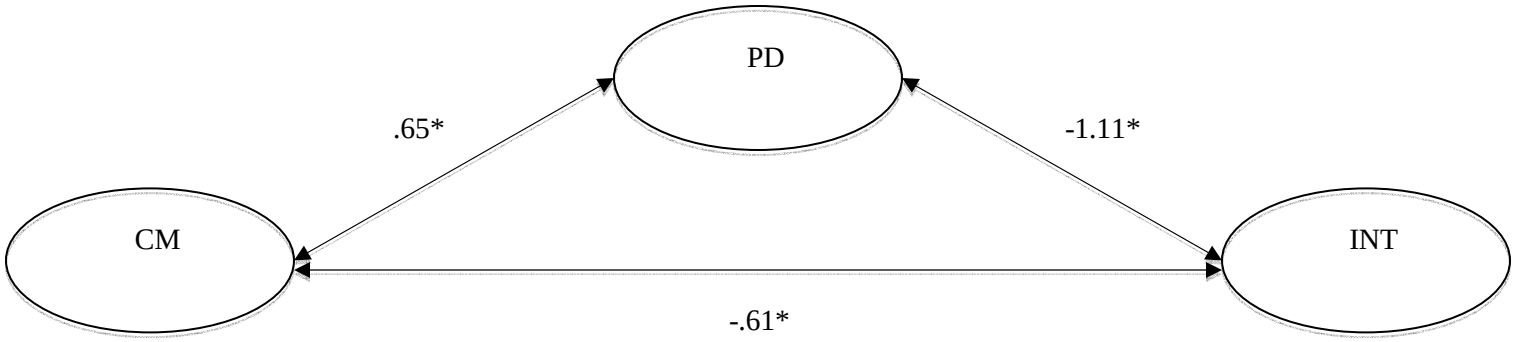


Figure 11

Direct path from CM in the prediction of PD across entire sample

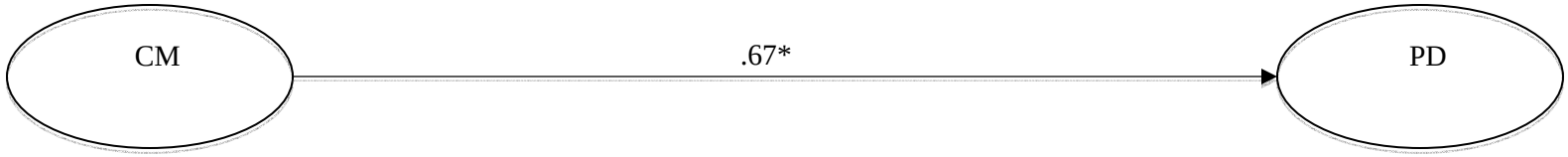


Figure 12

Model 3 measurement model across entire sample

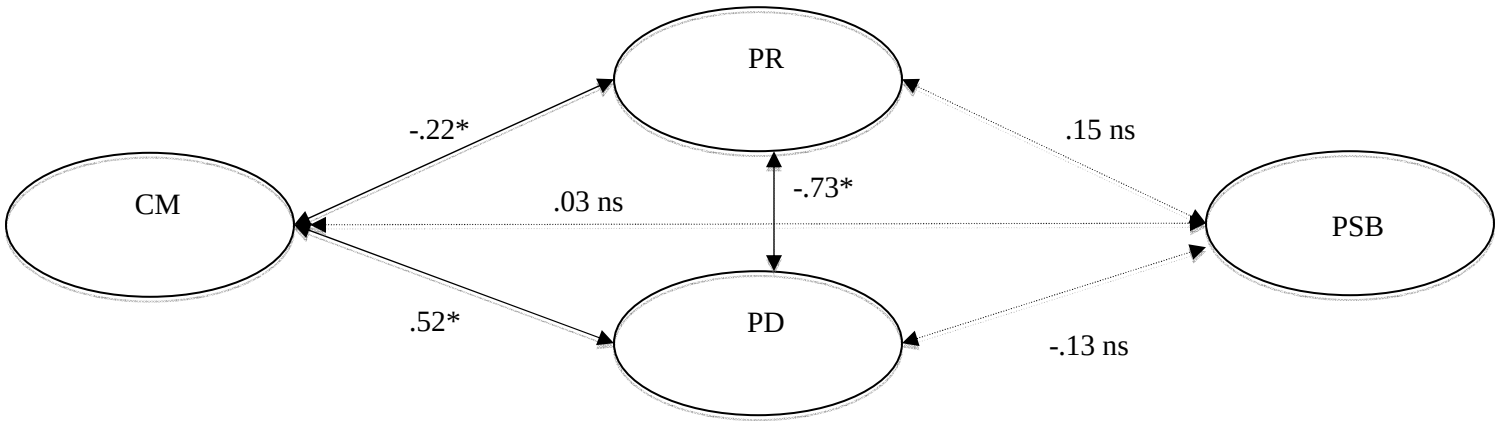


Figure 13
Direct path from CM in the prediction of PSB across entire sample

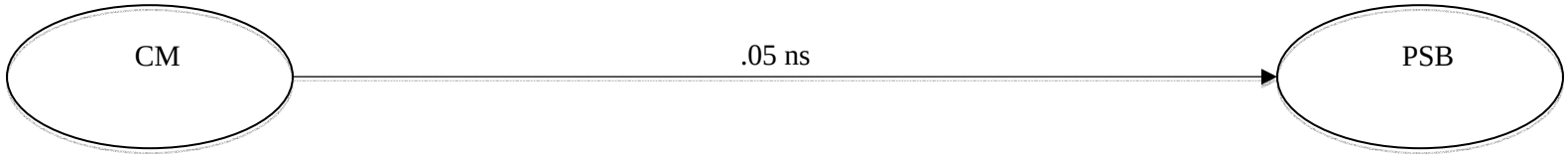


Figure 14

Model 3 structural model predicting PR and PD from CM across entire sample

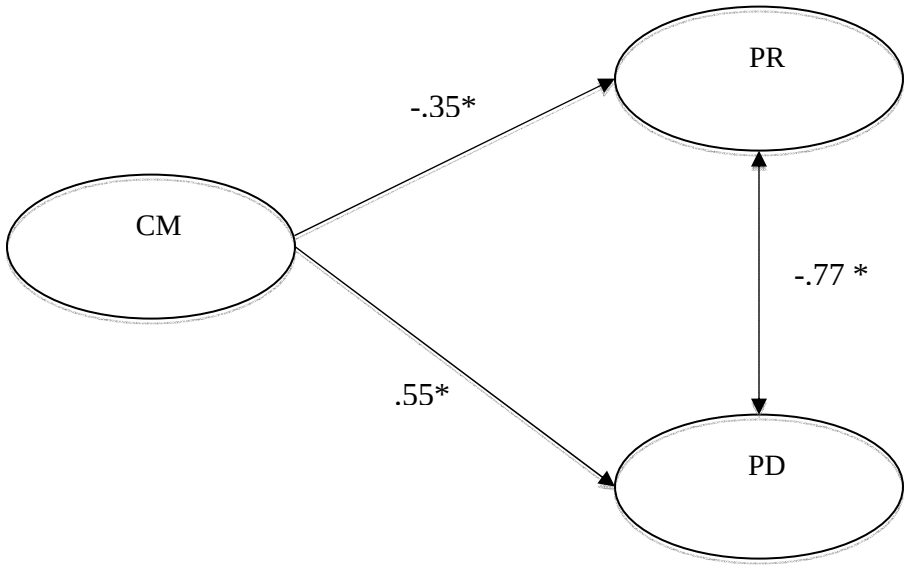


Figure 15.

Model 1 measurement model across female sample

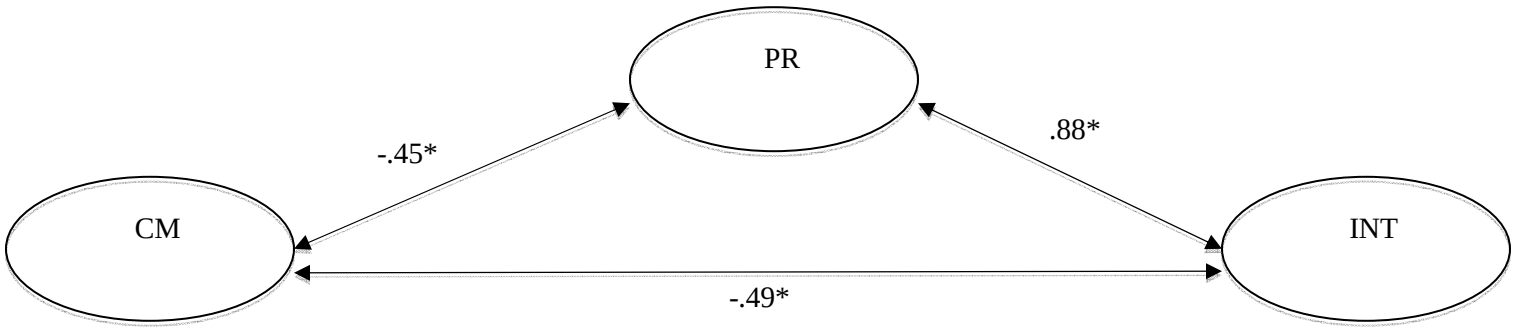


Figure 16.

Model 1 mediational model across female sample

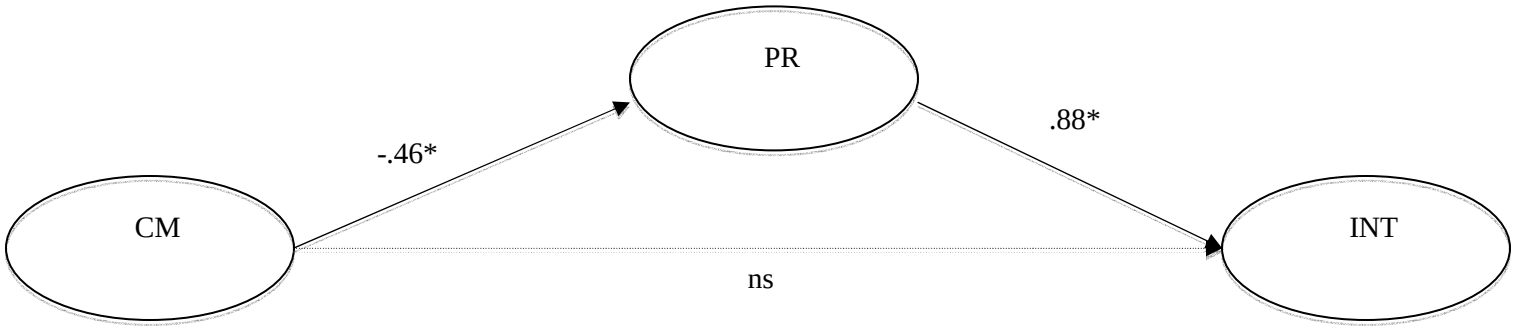


Figure 17

Mediational paths direct path from CM to INT (c'), direct path from CM to PR (a), and direct path from PR to INT (b) across female sample

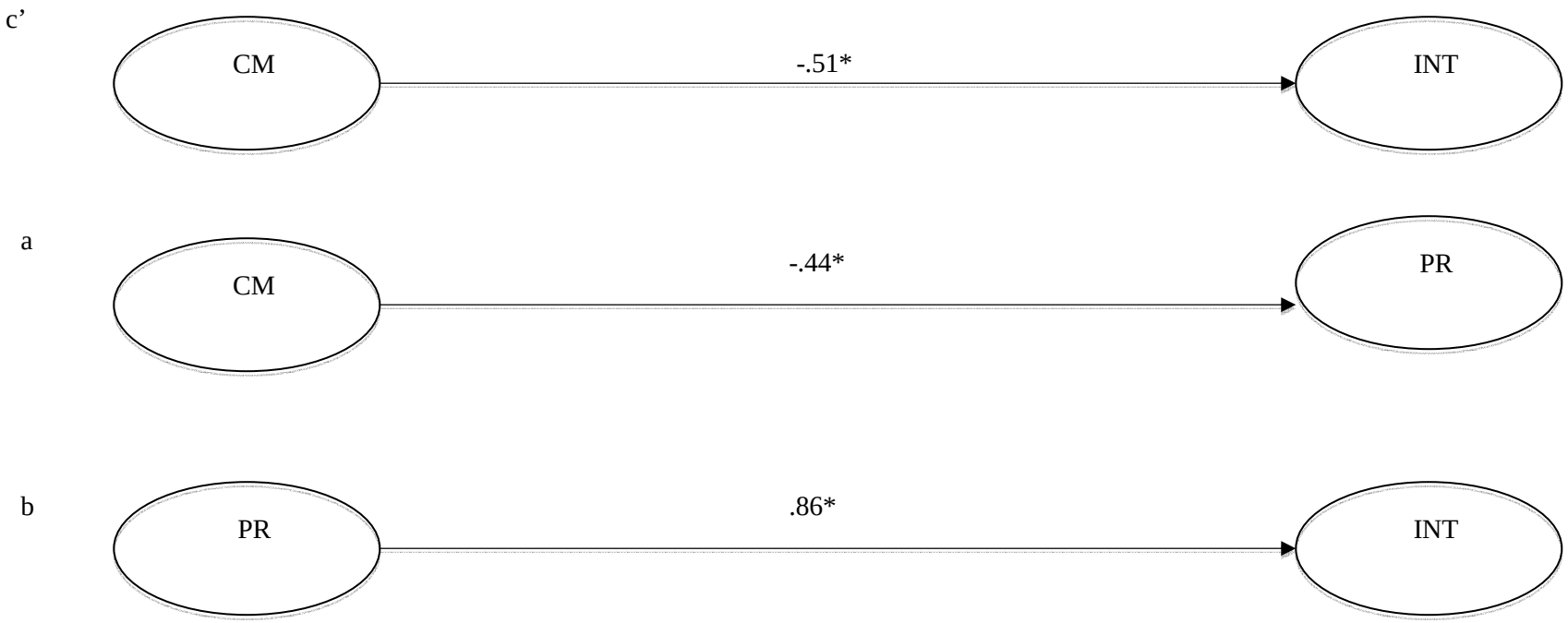


Figure 18.

Model 1 measurement model across male sample

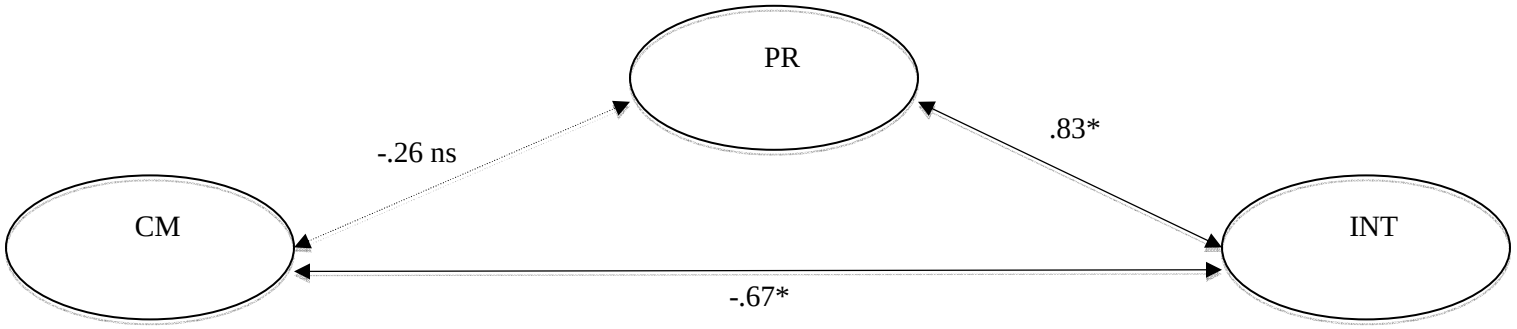


Figure 19.

Model 1 structural model across male sample

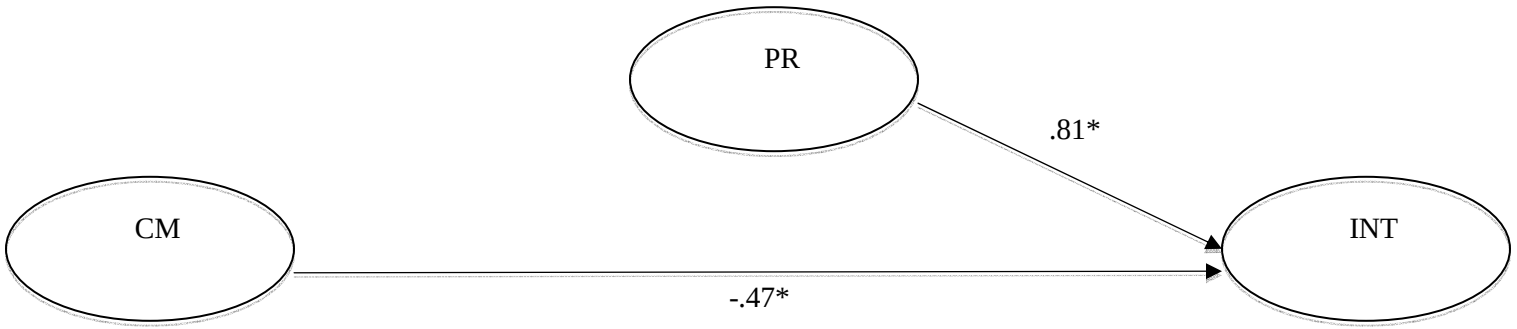


Figure 20

Model 3 measurement model across female sample

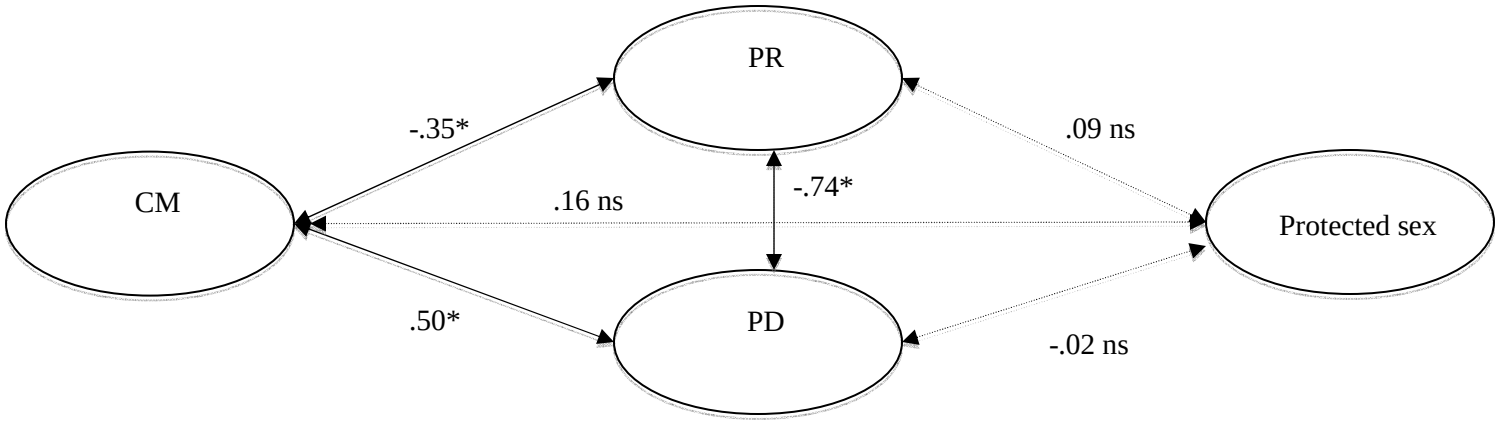


Figure 21.

Model 3 structural model across female sample

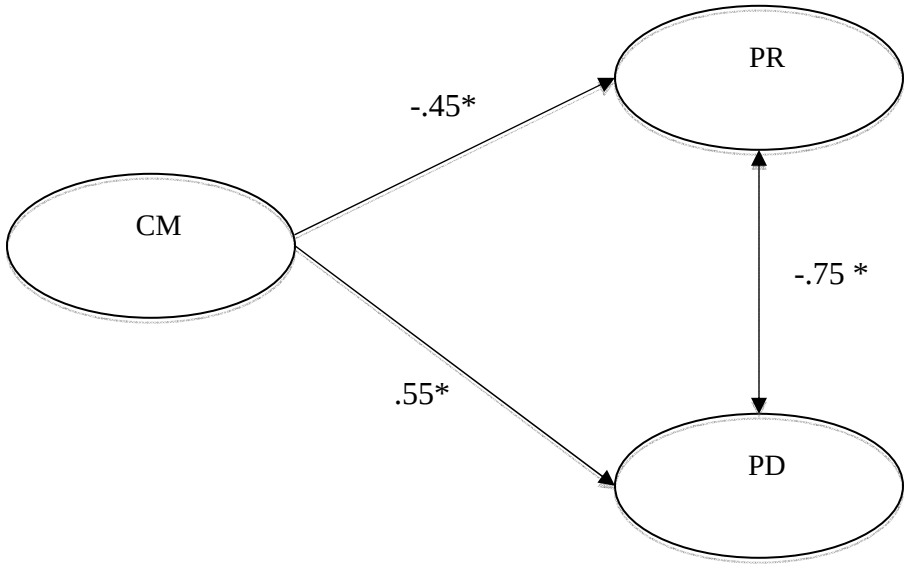
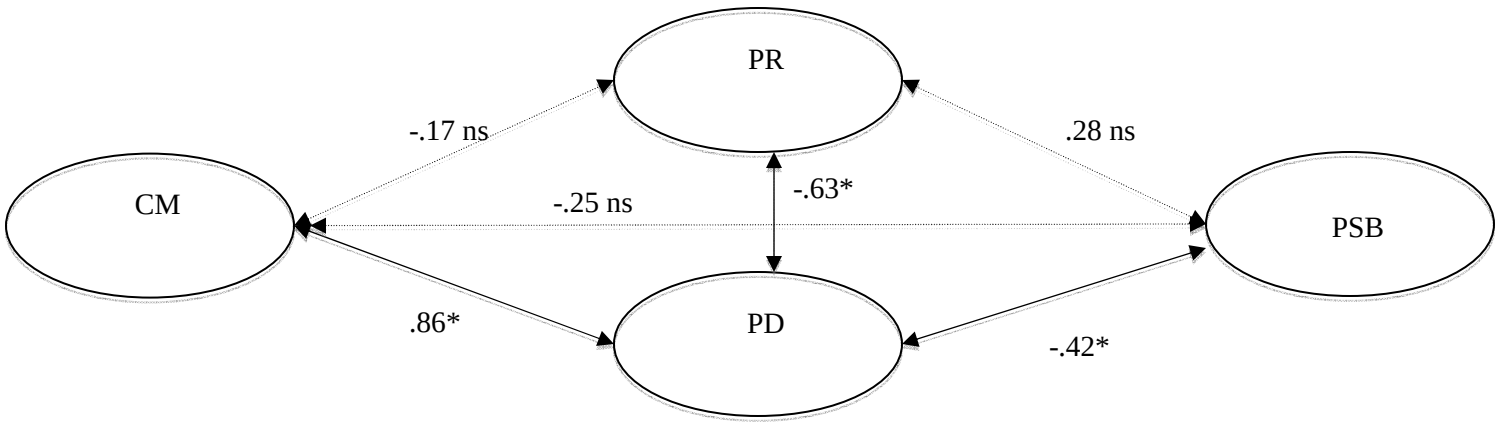


Figure 22

Model 3 measurement model across male sample



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