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Risk Factors for Physical Aggression in Couples

A Dissertation Presented

by

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Abstract of the Dissertation  
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Despite the amount of research on partner aggression, the field lacks a unified theory. Personality problems, substance use, marital distress, and psychological aggression are consistently included in models of physical aggression but these variables have not been incorporated into one concise model with a strong theoretical rationale. We hypothesize that psychopathic traits, borderline traits, and alcohol use problems are each risk factors for psychological aggression and physical aggression during relationship conflict. We also hypothesize that borderline traits suggest poorer relationship quality due to the interpersonal difficulties central to Borderline Personality Disorder, which in turn is a risk factor for greater psychological aggression. Finally, we suggest that psychological aggression is likely to escalate into physical aggression regardless of the associated psychopathology. This study tests a model of physical aggression in a sample of 194 men in treatment for physical or psychological aggression in the Madrid area of Spain. Results suggest the prevalence of aggression in this Spanish batterer sample is lower than in batterer samples in the US. In the path model highlighted in this paper, borderline traits were risk factors for poor relationship quality, psychological and physical aggression perpetration, and alcohol problems. Alcohol problems were associated with physical aggression. Psychological aggression and alcohol problems significantly mediated the association between borderline traits and physical aggression. These findings are discussed within a culture-sensitive context and we also address conceptual and treatment implications.

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## I. INTRODUCTION

In the broadest sense, relationship aggression includes physical violence (e.g., pushing, slapping, kicking), psychological violence (e.g., calling names, threatening), sexual violence (i.e., using force or coercion to engage in sexual activity), and injury caused by violence (e.g., cuts, bruises), based on the widely used self-report Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy & Sugarman, 1996). According to Straus and Gelles' (1990) seminal and widely cited nationally representative study, 12.4% of males and 11.6% of females in the United States report physical aggression victimization in the year prior. In fact, many nationally representative studies conducted in the US suggest the 12-month prevalence of physical aggression hovers around 10% (Jose & O'Leary, 2009). Not only is the occurrence of physical aggression prevalent in this country, the financial cost of aggression against women exceeds 5.8 billion dollars per year in the US according to the National Center for Injury Prevention and Control (NCIPC, 2003).

The prevalence of physical aggression in samples of batterers (i.e., men arrested for domestic violence) is even higher than rates in the general population, as batterer samples are, by definition, at high risk for relationship violence. Prevalence rates of aggression in a batterer sample can vary since the criteria for mandated intervention may differ from state to state. When assessing aggression in a sample of 82 men mandated to psychological intervention for partner aggression in New York State, the vast majority of men reported psychological (89.0%) and physical (70.7%) aggression perpetration in the year prior to starting treatment. Almost one quarter of the sample (24.4%) reported sexual aggression toward the partner, and close to half (48.8%) reported injuring the partner within that time frame (Vega & O'Leary, 2007). In the same study, the prevalence of female-to-male aggression (based on the men's victimization reports) was roughly similar for psychological (90.2%), physical (74.4%), and sexual (24.4%) aggression and injury (45.1%).

Despite the amount of research on the prevalence of aggression across samples in the US, there is a lack of aggression research on an international level. As findings indicate rates of violence around the world are often as high as, or higher than, rates of aggression in the US (Garcia-Moreno, Jansen, Ellsberg, Heise & Watts, 2005; Lary Kar & Garcia-Moreno, 2009), the study of physical aggression from an international, culturally sensitive lens, seems especially timely.

Based on research in the United States, physical aggression is a public health problem due to the physical and psychological correlates for perpetrators and victims. In addition to financial cost (e.g., NCIPC, 2003), aggression has been associated with negative physical outcomes such as injury (e.g., Archer, 2000; Capaldi & Owen, 2001; Capaldi, Shortt, Kim, Wilson, Crosby & Tucci, 2009), with illnesses such as HIV (e.g., Sareen, Pagura & Grant, 2009) and with poorer general physical health (e.g., Bonomi, Anderson, Rivara & Thompson, 2007; Taft, Vogt, Mechanic & Resick, 2007). In addition, physical aggression has been associated with negative psychological outcomes (e.g., Golding, 1999; Goodman, Koss, & Russo, 1993) such as substance use (e.g., Leonard, 2005), PTSD (e.g., Monson, Taft & Fredman, 2009), and Axis II pathology (e.g., Holtzworth-Munroe & Stuart, 1994), the latter especially related to perpetration.



Clearly, aggression has health consequences for those involved and considerable financial cost for society at large. For these reasons, the causes, correlates, and treatment of partner aggression are a crucial area for continued research. Still, there have been few models of aggression perpetration in the literature, with some exceptions. O'Leary, Slep, and O'Leary (2007) incorporated individual and dyadic variables into a multivariate model of perpetration in the community. Stuart and colleagues (Stuart, Meehan, Moore, Morean, Hellmuth, & Follansbee, 2006) have also tested a model of aggression in a sample of batterers which assessed individual psychopathology, other individual variables, and dyadic variables to predict physical aggression perpetration.

Like research on aggression prevalence, the study of risk factors for aggression perpetration is also limited internationally. One notable exception is an epidemiological study conducted in the Ukraine (O'Leary, Tintle, Bromet, & Gluzman, 2008). This study found that in addition to demographic (i.e., one marriage) and childhood (i.e., witnessing parental abuse) factors, early onset alcohol abuse and psychiatric problems (specifically a diagnosis of Intermittent Explosive Disorder) were predictive of men's reports of perpetration. Women's reports of victimization were predicted by early onset alcohol use, as well as demographic variables (i.e., younger age) and relationship problems.

The present study utilizes data from a sample of male batterers from the greater Madrid area of Spain to identify the prevalence rate and risk factors for aggression perpetration in a sample of men in a batterer program. As evidenced by Table 1, Spain is generally similar to the United States on a variety of demographic, educational, occupational, and health indicators, which may reflect the fact that both are developed countries. However, Spain and the United States differ in a number of ways that make the study of aggression in the Spanish context particularly interesting.

First, researchers and lawmakers have focused on the problem of relationship aggression in the United States since the 1970's, reflecting the changing societal perspective that aggression a broad public health problem rather than a problem limited to marginalized individuals. However, a change reflecting greater societal consciousness of relationship aggression did not gain momentum in Spain until the mid-to-late 1990's when the murder of a woman gained national and international media attention (*Death of a Wife*, 1997).

In 1997, Ana Orantes discussed her history of victimization by her partner and multiple unsuccessful attempts to obtain orders of protection from the police on television. Shortly after her television appearance, Ms. Orantes was beaten and set on fire by her husband, and died. This tragic case was extensively covered by the media at the time, and may be identified as a catalyst for change in Spanish laws and health initiatives.

Considering historical differences in the view of aggression as a public health problem across both countries, determining prevalence rates and risk factors for intimate partner aggression in Spain can improve the cross-cultural understanding of aggression. The present study also identifies individual and dyadic level risk factors for partner aggression that have been empirically supported in the United States. Identifying whether these variables continue to be significant risk factors for aggression in Spain, as well as noting similarities and differences in prevalence rates for aggression in Spain, may shed light into the effect of socio-cultural context on the study of relationship aggression.

The second difference between studying aggression in the United States and Spain involves the societal role of alcohol. Specifically, alcohol problems have been identified as an important risk for physical aggression perpetration in the United States. It would be interesting to determine whether this finding remains consistent in the Spanish context as Spain and the United States have different rates of alcohol consumption and may even attach different cultural meanings to alcohol use (e.g., Bloomfield, Stockwell, Gmel & Rehn, 2003). The literature on aggression in Spain compared to the United States, as well as the prevalence of alcohol use in Spain and the US, are discussed in turn below.

### ***Rates of Aggression in Spain Compared to the United States***

Limited research has been conducted on the prevalence of aggression in Spain. One exception is a recent study conducted by Graña (2009) on a large community sample ( $N = 4550$ ) in the Greater Madrid area. Graña found that 66% of female respondents reported male-to-female psychological aggression in the past year, while a slightly higher proportion of women reported female-to-male psychological aggression in the past year. These rates are somewhat lower than nationally representative rates of psychological aggression in the United States (Jose & O'Leary, 2009). Physical assault in this sample was approximately 12% for both male-to-female and female-to-male aggression using males' and females' reports. These rates are almost identical to prevalence rates found in one US study (Straus & Gelles, 1990).

In terms of sexual coercion, 19.3% of males and 17.4% of females reported male-to-female aggression in the past year, while 11.1% of males and 10.6% of females reported female-to-male sexual aggression in the past year (Graña, 2009). A nationally representative study conducted by Ramisetty-Mikler and colleagues (Ramisetty-Mikler, Caetano, & McGrath, 2007) assessed rates of sexual aggression separately for Black, White, and Hispanic individuals and found that male-to-female sexual aggression in the year prior ranged from 11% to 23% across groups, while female-to-male sexual aggression ranged from 5.5% to 13.5%. Compared to the Spanish study, the US rates were similar, although slightly lower at the low end of the range, in terms of sexual aggression perpetration and victimization.

Finally, injury rates as described by Graña (2009) were approximately 3% for both male-to-female and female-to-male aggression in the year prior. One nationally representative sample assessed injury rates in the US and found that 3.0% of female victims and 0.4% of male victims reported seeking medical care after relationship aggression (Stets & Straus, 1990). Injuries to female victims were similar across both countries while injuries to male victims were reported much more frequently in the Spanish sample than the US sample. The Stets and Straus study used a narrower definition of injury than the CTS2 (Straus et al., 1996), which Graña (2009) used to assess injury, suggesting a more conservative benchmark for injury in the US sample than the Spanish sample.

Another study explored victimization rates in a sample of 2,015 women living in urban areas throughout Spain (Medina-Ariza & Barberet, 2004). Using a modified version of the CTS2 (Straus et al., 1996), the point prevalence of women's psychological victimization in this study was 42.5% (15.2% for severe psychological victimization).

Rates of physical victimization were about 8% (4.9% for severe physical victimization); participants reported an 11.5% prevalence of sexual victimization and 5.8% rate of injury due to relationship violence. Rates for psychological and physical aggression are lower in this sample than in the representative US samples described above. However, rates for sexual aggression overlap with US findings, and rates of injury are almost double the US sample or the Graña (2009) sample. Prevalence rates in this study may have been affected by the lack of inclusion of women from rural areas, and the use of point estimates for prevalence (it is unclear how these were obtained).

Finally, a recently published study on prevalence rates for aggression in the Madrid area (Graña, Rodríguez & Pena, 2009) used data from 1908 individuals assessed with the CTS2 (Straus et al., 1996). When only men's 12-month perpetration was assessed, this study found lower rates for psychological perpetration (67.8%, 18.4% severe) and slightly lower rates for sexual aggression (22.1%, 2.6% severe) in the year prior compared to the US samples. The prevalence of physical aggression was slightly higher in this sample than US samples (15.5%, 3.4% severe) in the year prior while injury rates (2.6%, 1.3% severe) were roughly similar to rates in the US. Interestingly, there was no significant difference between men's self-reported perpetration for psychological or physical aggression, or injury. However, men reported significantly higher rates of total perpetration (with no difference for severe perpetration) when sexual aggression was assessed.

Although some research exists on the prevalence of aggression in Spain, less research has been conducted on aggression in a batterer sample. Perpetration research is particularly relevant in such a sample as these individuals are more likely to be involved in both the legal system and mental health services. Identifying risk factors for physical violence would allow clinicians to assess and intervene at these points. Individual-level interventions for men in batterer programs are particularly important as men in these programs may not be able to participate in treatment with their partners (e.g., safety concerns, restraining orders, relationship dissolution). Since the last decade has brought increased attention to the problem of relationship aggression in Spain, identifying rates of aggression as well as dyadic and individual risk factors are fruitful areas for continued research.

### ***Alcohol Use in Spain Compared to the United States***

Traditionally *wet* and *dry* countries can be differentiated by average per capita alcohol use. Wet countries (e.g., Mediterranean countries including Spain) typically have greater access to alcohol, and drink more frequently during daily life events such as meals, when compared to dry countries (e.g., Scandinavian countries, the United States). The preferred drink of wet countries is typically wine, while in dry countries, distilled spirits are favored. Dry countries have both higher abstinence and intoxication rates compared to wet countries (Bloomfield et al., 2003).

Indeed, some research suggests that the average per capita alcohol use in the US is 8.3 liters, while the per capita alcohol use in Spain is 11.7 liters. Thus, the per capita alcohol use in the United States is approximately 70% of what is found in Spain (Organisation for Economic Cooperation and Development; OECD, 2009) using data from 2003 for both countries. Meanwhile, the World Health Organization reports per

capita alcohol use of over 8 liters as measured in 2001 by the Food and Agriculture Organization of the United Nations (FAO) with beer accounting for over half of this amount, followed by spirits and then wine (FAO, as cited by World Health Organization, 2004a). In Spain, per capita alcohol use was between 10 and 15 liters in 2001, with drinking wine reported most frequently (approximately 5 liters per capita), and immediately followed by spirits then beer (FAO, as cited by World Health Organization, 2004b).

Despite differing per capita rates of consumption, alcohol use is prevalent in both the US and Spain, as demonstrated by recent large-scale studies. Data from the US National Household Survey on Drug Abuse (using data collected in 1995, 1998, 2001, 2002, and 2004) found the lifetime prevalence of alcohol use to range from 83.7% to 85.5%, while 65.6% to 68.1% of participants reported drinking in the year prior (Maxwell, 2008). According to this study, with the exception of teenagers (aged 14-19), in all age ranges and overall, men were more likely to report alcohol use in the year prior compared to women. There was no significant difference in alcohol use as a function of gender in teenagers.

Meanwhile, Gual (2006) reported results from a Spanish national sample with data collected every other year from 1997 to 2003. This study found that in individuals aged 15-65, lifetime alcohol use ranged from 87% to 91%, while alcohol use in the year prior ranged from 75% to 79%. This study also measured rates of daily drinking (13 – 16%) as well as the prevalence of hazardous drinking patterns (13% - 17%) in this sample. Overall, these studies suggest that rates of lifetime and 12-month alcohol use are higher in Spain than in the US.

Although the traditional dichotomization of alcohol use is beginning to fall out of favor due to increased globalization (leading to increased homogenization in drinking patterns), it is possible that the normativeness of drinking behavior may affect the association between alcohol use (and related problems) and aggression. The present study seeks to determine whether alcohol problems play a different role vis-à-vis physical aggression in a Spanish sample compared to a US sample.

### ***The Present Study***

We suggest that certain personality dispositions, namely borderline and psychopathic traits, both of which are marked by longstanding interpersonal difficulties, negatively effect romantic relationships by decreasing relationship quality and increasing psychological and physical conflict. Both borderline and psychopathic traits are characterized by impulsive behaviors (and it has been suggested that different kinds of impulsivity—hot or cold, emotional or instrumental, respectively—may underlie these personalities). We suggest that this impulsivity is exacerbated by substance use such that alcohol use problems are higher in those with borderline or psychopathic traits and in that alcohol use also increases the risk of relationship distress, conflict, and violence.

The present study uses path analytic techniques to determine the role of personality pathology (particularly borderline traits and psychopathic traits), alcohol problems, relationship quality, and psychological aggression in men's perpetration of aggression toward their partners. In addition to hypothesizing adequate model fit for the tested model (Figure 1), we hypothesize that all indicated paths will be significant.

We hypothesize that individuals exhibiting borderline personality traits will engage in physical aggression, and that those who score higher on borderline traits will exhibit less functionality in their interpersonal relationships (lower self-reported relationship quality, greater likelihood to engage in psychological aggression). We also hypothesize that alcohol may be used as a coping mechanism during times of increased emotional and behavioral dysregulation and thus may mediate the association between borderline traits and aggression. However, as alcohol decreases inhibitions and increases impulsive behavior, it may also be a significant risk factor for psychological and/or physical aggression.

Additionally, we hypothesize that individuals exhibiting more psychopathic traits will be more likely to engage in psychological and physical aggression than those who exhibit fewer psychopathic traits. Although we do not predict that relationship quality affects the association between psychopathic traits and aggression, we predict that alcohol problems mediate the link between psychopathic traits and aggression, as alcohol use problems have been associated with impulsivity and aggression (including relationship aggression) in much of the research to date.

Finally, we hypothesize that psychological aggression will be a risk factor for physical aggression for each partner separately. As we conceptualize aggression to be bidirectional and interactive, we also hypothesize that each partner's psychological aggression will indicate higher risk for the other partner's psychological aggression, while each partner's physical aggression indicates higher risk for the other's physical aggression.

The next sections will focus on detailing our predicted paths both theoretically and empirically. We will first discuss the association between dyadic variables (psychological aggression, relationship quality) and physical aggression, and then move to a discussion of the role of individual (personality pathology, alcohol problems) variables in physical aggression.

### ***The Role of Dyadic Variables in Aggression***

Although female-to-male aggression has also been studied, and consistently reported as high as or slightly higher as those of male perpetrators in multiple samples (Archer, 2000; Barling, O'Leary, Jouriles, Vivian & MacEwen, 1987; Jose & O'Leary, 2009; Schaefer, Caetano & Clark, 2002; Slep & O'Leary, 2005; Straus & Gelles, 1990), the present study focuses on male-to-female aggression since Archer (2000) and others have reported that 62% of those reporting injury are females, suggesting that aggressive behaviors may have a greater negative physical impact when females are victimized. Finally, Kar and O'Leary (in press) find that women who report physical victimization by their partners also report greater fear of their partners than men who report physical victimization.

***Psychological Aggression.*** Psychological aggression has been consistently identified as one of the strongest risks for physical aggression across settings, samples, and methods, with one meta-analysis finding an effect size of  $r = 0.49$  across 15 studies (Stith, Smith, Penn, Ward, & Tritt, 2004). Further, relationship aggression can be conceptualized as the result of a complex interaction pattern between both partners, as demonstrated in a community sample where measurement of the conditional prevalence

of aggression (the prevalence of male-to-female aggression given female-to-male aggression and vice versa) showed rates approximately doubling from the measured overall aggression rates (Slep & O'Leary, 2005). For these reasons, the present study assesses the role of both partner's physical and psychological aggression.

**Relationship Quality.** Aggression is often viewed as the result of complex interactions between partners; maladaptive conflict tactics (e.g., reciprocating a partner's negative behavior) are associated with an increased likelihood of relationship violence (e.g., Cordova, Jacobson, Gottman, Rushe & Cox, 1993). Dysfunctional, aggressive conflict management in a relationship can have an interactive effect: each partner's inability to handle dyadic problems appropriately due to their own personality characteristics (e.g., impulsivity, lack of empathy, inability to self-soothe) may increase relationship stress and can contribute to declining relationship quality. A recent meta-analysis found an effect size of  $r = -0.27$  for the association between physical aggression and relationship satisfaction (Stith, Green, Smith & Ward, 2007). However, it is unclear which variable predicts the other; findings for the direct association between poor relationship quality and physical aggression have been mixed (e.g., Murphy & O'Leary, 1989; Pan, Neidig & O'Leary, 1994). However, some findings suggest that poor relationship quality is a risk factor for psychological perpetration, which in turn is a risk for physical perpetration (e.g., Gavazzi, McKenry, Jacobson, Julian & Lohman, 2000; O'Leary, Malone, & Tyree, 1994; Stuart & Holtzworth-Munroe, 2005). In this model, we hypothesize that poor relationship quality will be a risk factor for psychological aggression perpetration, which in turn is a risk factor for physical perpetration.

### ***The Role of Individual Variables in Aggression***

**Personality Pathology.** Historically, research on the role of personality in relationship aggression showed that aggressive individuals had significant personality pathology across the board (e.g., Hamberger & Hastings, 1986). Since then, the focus of research has been to clarify the role of specific types of personality pathology in the perpetration of relationship aggression. More recent studies have focused on specific personality characteristics such as antisocial/psychopathic and borderline traits (e.g., Holtzworth-Munroe & Stuart, 1994; Mauricio, Tein & Lopez, 2007; South, Turkheimer & Oltmanns, 2008). For instance, Porcerelli and colleagues (Porcerelli, Cogan & Hibbard, 2004) demonstrated that violent men evidenced more antisocial ( $d = 1.10$ ) and emotionally dysregulated ( $d = 0.62$ ) behavior than a comparison group of nonviolent/distressed men when personality was assessed using clinician ratings.

Various empirical and theoretical models have been proposed to explain the association between personality and aggression (e.g., O'Leary et al., 2007; O'Leary et al., 2008; Stuart & Holtzworth-Munroe, 2005). One well known tripartite typology suggests the severity, frequency, and generality of violence as well as Axis II pathology can predict men's membership into one of three groups of perpetrators: generally violent/antisocial (GVA), dysphoric/borderline (DB), and family-only (FO; Holtzworth-Munroe & Stuart, 1994). Research has corroborated this typology to some extent (e.g., Holtzworth-Munroe, Meehan, Herron, Rehman & Stuart, 2000), while other studies suggest the role of personality in the model is unclear (e.g., Hamberger, Lohr, Bonge & Tolin, 1996; Tweed & Dutton, 1998; Waltz, Babcock, Jacobson & Gottman, 2000).

Antisocial behavior is often used to reflect criminal behavior in addition to a constellation of specific personality characteristics. However, the present research focuses on clarifying the specific role of borderline and psychopathic traits in perpetrating relationship aggression. Psychopathy, a construct with overlaps with antisociality (Lilienfeld, 2010), reflects impulsivity, manipulation, lack of empathy for others, and other behaviors reflective of antisociality without assuming the presence of significant criminal behavior.

Traits associated with borderline personality pathology have been associated with relationship aggression in multiple studies. For instance, high levels of dependency, arguably characteristic of borderline behavior, occur in aggressive men (Murphy, Meyer & O'Leary, 1994). Recent research indicates a correlation between borderline traits and psychological ( $r = 0.57$ ;  $p < 0.01$ ) as well as physical ( $r = 0.36$ ;  $p < 0.01$ ) aggression (Mauricio et al, 2007). These researchers also suggest borderline traits mediate the relationship between avoidant attachment and aggression, as well as the relationship between anxious attachment and aggression. Dutton (1994) found that Borderline Personality Organization (BPO), a construct he and his colleagues suggest are indicative of lower-level pathology on the spectrum of borderline traits, was correlated with men's physical and verbal aggression. Further, Dutton and Starzomski (1993) found significant correlations between men's self-reported BPO scores and their wives' reports of husband-to-wife aggression. Finally, Tweed and Dutton (1998) categorized participants as impulsively or instrumentally aggressive, and found that men categorized as impulsively aggressive scored higher on measures of BPO and also displayed other qualities suggesting borderline traits (e.g., higher chronic anger rates, greater likelihood of fearful attachments).

Theoretically, borderline traits such as emotional lability, dependency, and relationship instability may indicate difficulty maintaining happy, healthy relationships. Although research suggests borderline traits are associated with aggression, there is less research linking these traits to poorer marital quality. The research that does exist suggests a negative association between borderline personality traits and marital quality (e.g., South et al., 2008).

Psychopathic behavior, a hallmark of which is the pervasive disregard for the rights of others, can also set the stage for violent outcomes. Empirical findings have demonstrated a link exists between antisocial/psychopathic traits and aggression. For instance, Murphy and colleagues found aggressive men reported more antisociality than non-aggressive men (Murphy, Meyer & O'Leary, 1993). Murphy and colleagues (Murphy, O'Farrell, Fals-Stewart & Feehan, 2001) found, in a study of alcoholic men and their partners, that aggressive men displayed significantly more antisocial symptomatology than non-aggressive men. Kim and Capaldi (2004) found Antisocial Personality Disorder (ASPD) in men was associated with male-to-female physical and psychological aggression, concurrently *and* prospectively. In addition, Mauricio and colleagues (2007) found antisocial characteristics correlated significantly with psychological ( $r = 0.47$ ;  $p < 0.01$ ) and physical ( $r = 0.36$ ;  $p < 0.01$ ) aggression in a forensic sample. Analyses indicated antisocial traits mediated the relationship between avoidant attachment and (physical and psychological) aggression, as well as the relationship between anxious attachment and physical aggression. Furthermore, Stuart

and colleagues (Stuart, Meehan, Moore, Morean, Hellmuth & Follansbee, 2006) found that antisocial traits predicted trait anger and alcohol problems, each of which independently predicted psychological aggression (which in turn predicted physical aggression) in men arrested for partner aggression.

Though the links between psychopathic or antisocial behavior and aggression are clear, there is little research on the association between psychopathy (or antisociality) and relationship quality. However, it can be argued that a lack of empathy and disregard for others—core features of psychopathy (and ASPD)—may make it extremely difficult for psychopathic individuals to fully participate or be responsive to interpersonal relationships, including a relationship with a romantic partner. For this reason, it is theoretically unlikely that relationship quality will mediate the relationship between psychopathic traits and aggression.

***Alcohol Problems.*** In addition to the personality variables of interest, research suggests an association between alcohol problems and aggression perpetration. Not only has alcohol been associated with an increase in general aggression (Murdoch, Pihl & Ross, 1990), it has also been associated with higher rates of physical aggression in the context of romantic relationships. Two meta-analyses also suggest an effect size ranging from  $r = 0.23$  to  $r = 0.24$  on the association between alcohol and male-to-female aggression (Foran & O’Leary, 2008; Stith et al., 2004). Further, there is evidence that borderline traits longitudinally predict alcohol use problems two years later, even when controlling for parental alcohol use (Stepp, Trull & Sher, 2005). Additionally, antisocial and psychopathic traits and alcohol/drug use have been linked in a number of studies (e.g., Stuart et al., 2006; Stuart, Temple, Follansbee, Buccosi, Hellmuth & Moore, 2008). As alcohol problems tend to diminish impulse control and as impulsivity is a feature of both psychopathy and borderline traits, it is of interest to determine the role of alcohol problems vis-à-vis personality pathology in aggressive behavior.



## II. METHOD

### *Participants*

This study analyzes data from a sample of 194 men recruited from the greater Madrid area of Spain between January 2008 and December 2009. Participants had been referred to a court-mandated treatment program for physical or psychological relationship aggression. In this study, examples of physical aggression that led to mandated treatment included punching and hair pulling. Examples of psychological aggression included threats to kill the partner. Participants had typically been on probation for six to ten months prior to participating in the study.

Exclusion criteria for this study included reporting current drug abuse, current heavy drinking (six or more drinks per day) or exhibiting acute psychotic symptoms. Of those who did not meet any of the exclusion criteria, those who were able to read, write, and speak in Spanish were asked to participate in the study. Only the male participants were used for the present analysis. Of those who attended at least one assessment session, 21% did not complete the full assessment (e.g., scheduling or language barriers which would necessitate a referral to other programs, leaving the country, or refusing to complete the treatment program); only men who completed all of the assessments were included in the present study.

### *Materials*

***Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, de la Puente, & Grant, 1993).*** This 10-item measure of alcohol consumption, dependence, and related consequences is widely used for both research and clinical purposes. It has good internal consistency and excellent sensitivity and specificity as an alcohol screen (Allen, Litten, Fertig, & Babor, 1997). In the present study, internal consistency is adequate ( $\alpha = .80$ ). A score of 8 or greater on this measure is indicative of problem drinking, and 29.6% of this sample scored at a level consistent with problem drinking.

***Borderline Personality Organization Scale (Oldham et al., 1985).*** This 30-item self-report item utilizes three subscales (reality testing, use of primitive defenses, and identity disturbances) to measure borderline personality organization. According to Dutton (2003), individuals who had obtained an independent diagnosis of BPD had an average score of 73 on the BPO Scale, while those without a BPD diagnosis averaged a score of 59 ( $SD = 14$ ). In the present study, one person (0.5%) had a score of 73 or greater while eight people (4.0%) had a score of 59 or greater. Reliability for the total scale in this study is  $\alpha = .92$ , with subscale alphas ranging from  $\alpha = .78$  (identity disturbances and reality testing) to  $\alpha = .84$  (use of primitive defenses). Models using the BPO Scale can be found in Appendix C.

***CAGE Questionnaire (Ewing, 1984).*** This 4-item assessment is widely used as a brief screening tool to assess alcohol problems, particularly in healthcare settings. This measure focuses on behaviors and problems associated with alcohol use. In the present study, Cronbach's  $\alpha$  for the full scale is .74. One or more of the four CAGE items was endorsed by 45.3% of this sample. Problem drinking is reflected by a score of two or greater on the CAGE, and 27.1% of the sample reported problem drinking on this

measure. (This is similar to the rate of 29.6% for problem drinking as measured by the AUDIT in this sample). Models using the CAGE can be found in Appendix C.

**Conflict Tactics Scale, Revised (CTS2; Straus et al., 1996).** The CTS2 is a 78-item self-report questionnaire assessing behaviors that partners engage in during relationship conflict. Thirty nine items ask about perpetration and 39 items ask about victimization within the past year. Subscales of this measure include negotiation, psychological aggression, physical assault, injury, and sexual coercion. According to Straus and colleagues (1996), coefficient *alpha* ranged from .79 to .95 for subscales of the CTS2. In the present study, *alpha* for the full scale is .94 with subscales ranging from .68 (injury) to .91 (physical assault, negotiation). Psychological aggression, which is of interest in the present study, also demonstrates high reliability (*Cronbach's alpha* = .90).

**Dyadic Adjustment Scale (DAS; Spanier, 1976).** This 32 item scale measuring dyadic adjustment (measured by dyadic consensus, dyadic satisfaction, dyadic cohesion and affectional expression) has a range of 1 to 151. By convention those with scores of 97 and below are interpreted to have low levels of relationship satisfaction. The DAS has also been shown to distinguish distressed and non-distressed couples (Eddy, Heyman, & Weiss, 1991). Further, some research suggests that Item 31 on the DAS, measuring global relationship satisfaction, has a correlation between  $r = 0.67$  and  $r = 0.73$  with the full DAS (Goodwin, 1992) suggesting that it may be appropriate to use for screening. Using the present sample, coefficient *alpha* for the total scale was .91 while subscale *alphas* ranged from .55 (affection) to .86 (consensus); *alpha* for satisfaction was .82 in this sample.

In this sample, the mean full DAS score was 105.59 ( $SD = 23.08$ ), indicating non-distressed relationships based on conventional cutoffs. The full DAS was significantly correlated with the Satisfaction subscale ( $r = 0.87$ ;  $p < .01$ ) and DAS Item 31 ( $r = 0.59$ ;  $p < .01$ ) in this study. In addition, the DAS31 was significantly correlated with the Satisfaction subscale ( $r = 0.64$ ;  $p < .01$ ). Models in the present study use the full scale DAS but models using the DAS Satisfaction subscale as well as DAS Item 31 can be found in Appendix C.

**Levenson Primary and Secondary Psychopathy Scale (LPSP; Levenson, Kiehl & Fitzpatrick, 1995).** This 26 item self-report scale measures the domains of manipulation/ callousness (primary psychopathy) and impulsivity (secondary psychopathy). It has adequate psychometric qualities in independent research using a sample of non-institutionalized individuals with *alpha* between .68 and .84, while it was found to be .68 in a large scale study of undergraduates (Lynam, Whiteside, & Jones, 1999). This measure is viewed as an acceptable and appropriate self-report measure of psychopathic traits (Lilienfeld, 2010; Lilienfeld & Fowler, 2006). In the present study, coefficient *alpha* for the full scale is .53; the primary subscale *alpha* is .30 while the secondary subscale *alpha* is .42. Further 37.4% of this sample met criteria for childhood Conduct Disorder screen measured with self-report items based on the SCID-II (First, Gibbons, Spitzer, Williams & Benjamin, 1997). Conduct disorder has been etiologically linked to psychopathy in a number of studies and in the present study, the association between childhood conduct disorder and the LPSP was  $r = 0.23$  ( $p < .01$ ).

**McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003).** This 10-item true/false self-report scale measures BPD based on

the DSM-IV diagnostic criteria for BPD. Both internal consistency ( $\alpha = 0.74$ ) and test-retest reliability ( $\rho = 0.79$ ) were found to be high by Zanarini and colleagues (2003). In the present study, Cronbach's alpha was adequate at .78. The authors suggest that a cutoff of 7 or greater on this scale is reflective of a BPD diagnosis. In this sample, 12 people (6% of the sample) scored a 7 or greater on the MSI-BPD.

***UPPS Impulsive Behavioral Scale (UPPS; Whiteside & Lynam, 2001).*** This 45-item self report measure was used for post-hoc analyses. The measure includes four empirically derived subscales reflecting four types of impulsivity. Items are scored from 1 to 4, with higher scores reflecting greater impulsivity based on the scoring system used here. The subscales are (lack of) perseverance, (lack of) premeditation, urgency, and sensation seeking. The original research found *alphas* to range between .83 (lack of perseverance) and .87 (lack of premeditation). In this sample, *Cronbach's alpha* for the total scale was .91. Subscale *alphas* were generally high in this sample, ranging from .83 (lack of perseverance) and .90 (lack of premeditation).

### ***Procedure***

***Translation of Measures.*** Measures were translated into Spanish using back translation techniques at the Complutense University of Madrid. English-language versions of the questionnaires were translated into Spanish by a bilingual psychologist with significant professional experience translating psychological research papers from English into Spanish. Measures then were back translated by a Professor from the Department of English. A subset of the measures was then applied to a pilot sample of 15 men to determine whether potential participants had any difficulty with comprehension of the items. Pilot participants reported understanding the meaning of all items.

***Study Procedure.*** Participants that met all inclusion criteria for the study attended a series of sessions with two Masters-degree level therapists. During the first session, the lead therapist explained the study in detail, and obtained the participant's consent to participate in the present study as well as additional assessment tools. Those who decided not to participate in the study were still able to complete the mandated intervention course with no penalty.

Including the first session, participants met individually with the therapists for eight weekly sessions, each lasting approximately 60 minutes. Beginning in the second session, time was set aside for participants to complete each of the questionnaires for this study as well as additional assessment measures. All questionnaires are self-report, and all questions about the relationship referred to the relationship leading to domestic violence charges (i.e., not necessarily the current relationship). A therapist was available at all times to answer questions. The rest of the time during these sessions was devoted to individual therapy focused on building a therapeutic alliance between the participant and therapist and preparing participants for the group component of treatment, which was not evaluated in the present study.

### III. RESULTS

#### *Descriptive Statistics*

The average age of men this sample was 38.70 years ( $SD = 10.93$  years). In terms of self-reported social class, 47.7 % of participants reported being in the “lower” social class, 36.4% reported being “middle” class, 11.4% were “upper-middle” class, and 4.5% reported being in the “upper” class.

At the time of evaluation, 26.8% of participants reported being married, 32.3% were separated or divorced, and the rest of the sample was single/other. There was no significant difference between those who reported being married and the rest of the sample in any of the variables in terms of DAS, or DAS Satisfaction scores. There was a difference in DAS Item 31 scores such that those who were married had higher DAS 31 scores than those who were not (3.39 vs. 2.84;  $p < .05$ ).

In Madrid, individuals can be referred to batterer programs for physical, sexual, or psychological aggression perpetration and in this sample 91.1% were referred for physical aggression while 8.9% were referred for psychological aggression. No participants in this study had been referred for sexual aggression.

The vast majority of participants reported being Spanish ( $n = 102$ ). The second most frequently endorsed nationality in this sample was Ecuadorean ( $n = 32$ ). Of the remaining participants, 11 were Peruvian, nine were Moroccan, seven were Bolivian six were Dominican, and six reported multiple nationalities. The rest of the sample was Columbian ( $n = 3$ ), Romanian ( $n = 3$ ), Nigerian ( $n = 2$ ), Ukrainian ( $n = 2$ ), Afghan ( $n = 1$ ), Bulgarian ( $n = 1$ ), Chilean ( $n = 1$ ), Cuban ( $n = 1$ ), Filipino ( $n = 1$ ), Paraguayan ( $n = 1$ ), or Uruguayan ( $n = 1$ ). Spanish men were significantly younger than non-Spanish men in this sample,  $t(192) = -3.23$ ;  $p < .01$ . However, no significant difference emerged between Spanish and non-Spanish men in this sample on any of the aggression variables (psychological aggression, physical assault, sexual coercion, or injury).

#### *Prevalence of Aggression*

As reflected by Table 2, the annual prevalence rate of psychological perpetration or victimization was approximately 81%. Prevalence rates for physical aggression ranged from 54.2% (victimization) to 58.9% (perpetration). Rates for sexual aggression and injury, as well as the frequency of perpetration and victimization for each subtype of aggression are also presented in Table 2; males reported that psychological and physical victimization occurred more frequently than perpetration, and that injury perpetration occurred more frequently than injury victimization. No significant difference was found in the frequency of sexual aggression perpetration compared to victimization, although frequency of sexual aggression was very low. (Appendix A reports the prevalence and frequency of each of the psychological aggression and physical assault subscale items, as well as the prevalence of each of the sexual coercion and injury items in this sample).

#### *Bivariate Correlations*

Table 3 includes the mean and standard deviation of each variable described here and in the appendices on the diagonal. Above the diagonal are the bivariate correlations between specified variables, and their significance levels. As the table illustrates,

significant first-order associations exist across each of the scales that measure the same construct. For the most part, patterns of correlation reflect paths hypothesized in the tested models.

Specifically, a significant association of  $r = 0.70$  exists between the MSI-BPD (Zanarini et al., 2003) and the BPO Scale (Oldham et al., 1995), both of which measure borderline traits. (Although the present study only uses the MSI-BPD, models with the BPO Scale can be found in Appendix C). Both scales also exhibited significant bivariate associations with alcohol problems, psychological aggression, and physical aggression. Unlike our hypotheses, these scales are also significantly correlated with the LPSP (Levenson et al., 1995), which measures psychopathy.

The association between the AUDIT (Saunders et al., 1993) and the CAGE (Ewing, 1984) is also high and significant ( $r = 0.59$ ). The AUDIT and CAGE were both significantly correlated with psychological and physical aggression with values ranging from  $r = 0.21$  to  $r = 0.48$ , but generally not with relationship quality, consistent with our hypotheses. The present study analyzes models using the AUDIT; models using the CAGE can be found in Appendix C.

Two of the three measures of relationship quality (full DAS and DAS Satisfaction; Spanier, 1976) were correlated significantly with psychological perpetration. (Although the present study uses the full DAS, models using the DAS Satisfaction scale or DAS Item 31 can be found in Appendix C). However, unlike our hypothesized model, two measures of relationship quality (full DAS and DAS Satisfaction) were also significantly associated with physical aggression perpetration. Although the LPSP was not significantly associated with any measure of relationship quality, both the MSI-BPD and BPO Scale were associated with most of the relationship quality measures.

As hypothesized, the LPSP was not associated with any of the measures of relationship satisfaction, nor was it associated with psychological or physical victimization. Finally, physical and psychological perpetration and victimization variables, as measured by the CTS2 (Straus et al., 1996) were significantly and highly correlated with each other as expected, with values ranging from  $r = 0.46$  for the correlation between psychological victimization and physical perpetration and  $r = 0.72$  for the correlation between psychological and physical victimization.

### ***Path Analytic Strategy and Model Fit***

Path analyses were conducted using Mplus 5.0 statistical software (Muthén & Muthén, 2009) with maximum likelihood estimation. The originally hypothesized model was first tested. Then, modification indices (M.I.'s) were identified and all M.I.'s with a value of 10 or greater were added and the updated model was run once again. Once no more M.I.'s were suggested by the program, all non-significant paths were removed and the model was run once again (if additional M.I.'s above the cutoff were identified, the steps above were taken again). The final model was one in which no M.I.'s were above the cutoff, and no non-significant paths remained.

Although chi-square is the conventional measure of fit (non-significant values indicate good model fit), this measure is highly sensitive to sample size and may not be an appropriate measure of fit for larger samples such as this one ( $N = 194$ ). For this

reason, a number of other fit indices were also used to determine overall fit of the tested models.

Following Hu and Bentler's (1998) guidelines, model fit will be evaluated with multiple indices including the Comparative Fit Index (CFI; Bentler, 1990), Standardized Root Mean Square Residual (SRMR; Bentler, 1995), and chi-square. Model fit was evaluated with the following criteria: CFI > .90, SRMR < .08, and a non-significant chi-square each signifying adequate fit. Additional fit indices can be found in Appendix B.

The hypothesized model is presented in Figure 1. The MSI-BPD was used to assess borderline traits, as this measure is strongly reflective of DSM-IV criteria for Borderline Personality Disorder. Relationship quality was assessed using the full DAS. Alcohol problems were assessed with the AUDIT. Appendix C includes a series of additional path models using different measures of borderline traits (MSI-BPD, BPO), relationship quality (full DAS, DAS Satisfaction, DAS Item 31), and alcohol problems (AUDIT, CAGE) as well as the associated tables.

### ***Path Analytic Results***

***Original Hypothesized Perpetration/Victimization Models (A).*** The first set of models (A; e.g., 1a) test the hypothesized models of aggression identified in Figure 1, which include both perpetration and victimization variables and can be found in Figure 2. For the original hypothesized model including perpetration and victimization variables, adequate-to-fair fit was indicated for most indices, with the exception of significant chi-square values which indicate poor fit. Specifically, CFI = 0.97 and SRMR = .05 while chi-square was 20.46 ( $df = 11; p = .00$ ).

All path coefficients reflect standardized values. All hypothesized paths for physical and psychological aggression (perpetration and victimization) were significant. Borderline traits were significantly associated with all hypothesized variables (alcohol problems, relationship quality, psychological aggression perpetration, and physical aggression perpetration). Alcohol problems were significantly associated with physical perpetration but were not significantly associated with psychological perpetration. Notably, psychopathy was not significantly related to any of the hypothesized paths (e.g., alcohol problems, psychological perpetration, or physical perpetration) and relationship quality was not associated with psychological perpetration.

Upon closer inspection of the LPSP, first order correlations between the full scale and physical and psychological perpetration were significant (Table 3), but this was not the case for subscales of this measure. While secondary psychopathy (impulsivity) was significantly correlated with psychological ( $r = .30; p < .01$ ) and physical perpetration ( $r = .39; p < .01$ ), primary psychopathy (manipulation/callousness) was not significantly correlated with psychological ( $r = .14; n.s.$ ) or physical ( $r = .3014; n.s.$ ) perpetration in this sample.

To obtain a more nuanced idea about the role of borderline traits in aggression, the frequency of endorsement of individual MSI-BPD items was assessed. The most frequently endorsed item was Item 1 (46.6% endorsed), which asks whether close relationships have been "troubled by a lot of arguments or repeated breakups." Item 6 (endorsed by 33.3%) was the next most frequent, and asks about distrust towards others.

The least frequently endorsed items were Items 2 (6.3%) and 9 (7.3%) which ask about self-harm and unstable identity, respectively.

Competing models' Akaike Information Criterion (AIC) can be compared in rank order, with the lowest AIC value denoting the best fitting model. Unlike the chi-square difference test or log-likelihood ratio test, both of which yield significance tests to compare differences in model fit for nested models, the AIC is used to rank order (non-nested) models but does not provide data on statistical significance. For Model 1a, AIC = 3611.88.

***Original Hypothesized Perpetration/Victimization Models (B).*** The final models for aggression including both perpetration and victimization variables (*B*) are not included in this paper due to possible model recursivity (reciprocal influences between variables) which make interpretation of these models inappropriate. However, they can be found in Appendix C. Complete model fit indices for the *B* models can be found in Appendix B.

***Hypothesized Perpetration-Only Models (C).*** As the indirect association between psychological victimization and physical perpetration found in Model 1b may be due to the problem of recursivity, that final model is not presented here; rather, we hypothesized and tested a model of perpetration only which did not include reciprocal paths between perpetration and victimization. The hypothesized model can be found in Figure 3 and the model itself can be found in Figure 4. Fit indices indicated good fit, with CFI = 1.00, SRMR = .02, and chi-square = 1.97 ( $df = 3; p = .58$ ).

Model 1c showed significant paths from borderline traits to the hypothesized variables (alcohol problems, relationship quality, psychological perpetration, physical perpetration). Once again, psychopathy was not significantly associated with any other variables, and relationship quality was not a risk factor for psychological aggression. As in Model 1a, the AUDIT was associated with physical aggression. Finally, AIC values were computed for Model 1c (AIC = 2837.64).

***Final Perpetration-Only Models (D).*** The last set of models (*D*) present the final models for aggression including only perpetration variables, and are found in Figure 5. Fit indices for the *D* model was adequate, with CFI = 0.99, SRMR = .04 and chi-square = 6.53 ( $df = 3; p = .09$ ). Significant paths in final Model 1d were identical to those found in Models 1c. The AIC value for Model 1d was 2356.97.

***Comparison of Model Fit.*** The AIC was used in this study to rank order models based on overall fit (complete list of AIC values for all models can be found in Appendix D). Generally, final models had lower AIC values reflecting improved model fit compared to hypothesized models. In addition, perpetration-only models had better fit than perpetration/victimization models. Based on AIC values, the best-fitting model in each case seemed to be the final perpetration-only model (*D*). However, the caveat to these findings is that AIC values are rank-ordered and thus it cannot be determined whether fit is improved to a statistically significant level using one model compared to another.

### ***Mediation***

As some final models demonstrated possible mediation of psychological aggression and alcohol problems on the association between borderline traits and

physical aggression, we performed formal *post-hoc* tests of mediation. Mediation analyses were conducted using bias-corrected bootstrapping with 500 re-samples in Mplus 5.0 (Muthén & Muthén, 2009) for both final models (*B*, *D*); only the *D* mediation values are interpretable. Bootstrapping is a technique that randomly re-samples the dataset with replacement multiple times; it is currently the preferred method of determining mediation.

In the final model (1d), there was evidence that psychological perpetration is a significant partial mediator of the association between borderline traits and physical perpetration (0.27; 95%*CI* = 0.19 to 0.34). In addition, alcohol problems was found to be a significant partial mediator of the association between borderline traits and physical aggression (0.10; 95%*CI* = 0.03 to 0.16). The sum of indirect effects was 0.37 (95%*CI* = 0.26 to 0.47). Standardized estimates and standard errors for the indirect path (as well as the sum of indirect effects where appropriate), and 95% confidence intervals for all bootstrapped models can be found in Appendix E.

### ***Impulsivity: Post Hoc Analyses***

To better understand the lack of hypothesized significant associations between psychopathic traits and other variables in the model, the LPSP was examined further. The LPSP primary (manipulation/callousness) and secondary (impulsivity) subscales were correlated with the full scale at  $r = .87$  ( $p < .01$ ) and at  $r = .81$  ( $p < .01$ ) respectively, and were correlated with each other at  $r = .42$  ( $p < .01$ ). They were also associated with conduct disorder at  $r = .15$  ( $p < .05$ ) and  $r = .26$  ( $p < .01$ ), respectively. However, only secondary psychopathy was significantly associated with aggression perpetration, suggesting that impulsivity rather than psychopathy may be a risk factor for aggressive behavior.

Since the LPSP Secondary psychopathy subscale demonstrated low internal consistency in this sample, the UPPS (Whiteside & Lynam, 2001), a widely used and empirically supported measure of impulsivity was analyzed. Like the LPSP, the full UPPS and all subscales were significantly correlated with conduct disorder in this sample, further suggesting it may tap into impulsive aspects of psychopathic or antisocial behavior. The full UPPS is significantly associated with secondary ( $r = .29$ ;  $p < .01$ ) psychopathy but not primary ( $r = -.02$ ;  $p = .82$ ) or overall psychopathy ( $r = .14$ ;  $p = .06$ ) as measured by the LPSP.

Of the UPPS subscales, LPSP primary psychopathy was only significantly correlated with lack of perseverance ( $r = -.19$ ;  $p < .05$ ). The LPSP primary psychopathy subscale was non-significantly associated with lack of premeditation ( $r = -.14$ ;  $p = .06$ ), urgency ( $r = .13$ ;  $p < .07$ ), sensation seeking ( $r = .10$ ;  $p = .20$ ).

The LPSP secondary psychopathy subscale was significantly associated with urgency ( $r = .40$ ;  $p < .01$ ), sensation seeking ( $r = .24$ ;  $p < .01$ ), and the total UPPS ( $r = .29$ ;  $p < .01$ ). However, it was not significantly associated with lack of premeditation ( $r = .04$ ;  $p = .56$ ) or lack of perseverance ( $r = .11$ ;  $p = .15$ ).

The perpetration-only hypothesized model was run with the full UPPS Impulsivity Scale as well as each of the subscales taking place of the LPSP. Sensation seeking and urgency subscales were included in the model and demonstrated a pattern of results consistent with LPSP findings; impulsivity was not significantly associated with



any other variable. However, when lack of premeditation and lack of perseverance were incorporated in the model, these subscales were found to be associated with other variables in the model. Specifically, lack of premeditation was a risk factor for psychological perpetration which in turn was associated with greater physical perpetration. On the other hand, when lack of perseverance was considered in the model, it was predictive of greater alcohol use which in turn predicted physical aggression perpetration. The total UPPS score similarly predicted greater alcohol use which predicted physical aggression.

Overall, these results suggest that difficulty with premeditation and persevering in difficult circumstances may be the specific facets of impulsivity that contribute to physically aggressive behavior indirectly through greater psychological aggression or alcohol use, respectively. However, other facets of impulsivity (urgency and sensation seeking) did not seem associated with aggressive behavior in these models, despite the fact that urgency in particular was significantly and strongly correlated with almost every other variable in the model. Correlations between variables, model fit indices, hypothesized and final models incorporating the full UPPS measure and each of the subscales, and mediation effects for these post-hoc tests can be found in Appendix F.

## IV. DISCUSSION

This study assessed the prevalence of aggression, and tested a multivariate model of risk factors for perpetration, in a sample of men recruited from court-mandated batterer programs in Spain.

### *Prevalence of Aggression*

The annual prevalence of psychological perpetration and victimization was about 81% in this sample, approximately 9% lower than the prevalence rate reported in Vega and O'Leary's (2007) study of men in a New York batterer program. At least half to two thirds of individuals in Spanish or American community samples report psychological perpetration in the year prior; although psychological aggression seems relatively widespread in all samples, it is more frequently endorsed in batterer samples than community samples. Men reported over 10 instances of psychological victimization in the year prior, and about 9 instances of perpetration. This difference was statistically significant such that men were victimized more frequently than they perpetrated psychological aggression.

Physical aggression in this sample was 58.9% for male perpetration and 54.2% for male victimization; perpetration rates were about 12% lower for perpetration and 20% lower for victimization than reported in the Vega and O'Leary (2007) study. These rates are much higher than rates of physical aggression found in nationally representative US samples or community samples from Spain, which typically hover around 10%. Men in this sample reported over 5 instances of victimization, and about 4 instances of perpetration in the year prior; this difference was statistically significant.

Sexual coercion in this sample was similar to the rates found in a Spanish community sample, with 19.6% of men reporting perpetration, and 12.4% reporting victimization in the year prior. However, rates for sexual perpetration in this study were about 5% lower for perpetration and 12% lower for victimization than rates reported in the US batterer sample (Vega & O'Leary, 2007). There was no significant difference in male-to-female and female-to-male sexual coercion, as reported by the men in this sample.

Finally, injury rates were quite high in this sample with close to half the sample (45.6%) reporting perpetration, and almost one quarter of the sample (23.8%) reporting victimization; about 3% lower for perpetration and 22% lower for victimization compared to the US batterer sample (Vega & O'Leary, 2007). The findings from the present study are in stark contrast to the rates hovering around 3% that were found in the Spanish community sample (Graña, 2009). Furthermore, males reported that perpetration occurred significantly more frequently than victimization. This is consistent with the idea that those who are mandated for batterer programs may tend to engage in more severe forms of violence, leading to negative physical repercussions, and are an especially important subgroup of aggressive men to identify and provide services to in a mental health setting.

It is somewhat surprising that in a sample of men who were court-referred for perpetrating physical or psychological aggression against their romantic partners, reports would suggest that males were more often victims rather than perpetrators of both

physical and psychological aggression. This may be for a number of reasons: first, men were asked to report on violence in relationship they were in when they became involved with the legal system for domestic violence. These men are not necessarily still in the same relationship and thus may have difficulty recalling specific details about the past relationship. Even if these men remained in the aggressive relationship, their retrospective recall may be biased due to the long time frame that has to be recalled. Although Vega and O'Leary (2007) showed that batterers had remarkable stability of reports of physical aggression against a partner across a multiple week period, this may diminish as the time frame is extended.

Alternatively, aggression may have occurred bilaterally (e.g., male-to-female and female-to-male) in these relationships. However, it is clear that men in this sample reported perpetrating injury more frequently than they were victimized, suggesting that male-to-female aggression may have important severe negative consequences in this sample. In fact, this finding may be consistent with Archer's (2000) meta-analysis described earlier, which finds that the negative physical impact of aggression is greater on female victims than on male victims.

### ***Path Analyses***

For the most part, significance (and non-significance) of paths was consistent across models discussed here. As hypothesized, borderline traits put participants at higher risk for psychological and physical aggression in all four models. This is a particularly impressive finding considering that the high correlations between the psychological and physical aggression variables likely accounted for much variance in the models incorporating perpetration and victimization (*A*, *B*). Clearly, borderline traits have a detrimental effect on relationship functioning as well as individual psychopathology (i.e., alcohol problems). In addition, analysis of the specific MSI-BPD (Zanarini et al., 2003) items endorsed by participants suggest that the most frequently endorsed items are about troubled close relationships and distrust towards others, while the least frequently endorsed items were about self-harm behaviors and identity disturbances. This suggests that the interpersonal aspects of BPD, and possibly aspects of BPD specific to a sample of male batterers, may be driving its association with aggression and alcohol problems in this sample.

The psychological and physical aggression variables were generally associated with each other in all three models described here. However, contrary to predictions, psychopathy was not associated with any other variable in the path models despite significant first-order correlations with all variables it was hypothesized to be associated with in the models (nor was impulsivity, when substituted for psychopathy in Models 1c' and 1d'). There exist a number of possible explanations for this null effect.

First, there is a significant correlation between psychopathic and borderline traits. Although this association was not modeled for theoretical reasons (we hypothesized that antisocial and borderline traits reflected different types of psychopathology with different interpersonal expressions and types of impulsivity), the presence of a first-degree association between these variables may explain why borderline traits are associated with other variables and psychopathic traits are not.

Alternatively, the non-significant results may be due to cultural differences in the conceptualization of psychopathy in Spain compared to the United States. However, research on male batterers in a prison sample found the prevalence of psychopathy was approximately 12% using an interview measure (Echeburúa & Fernández-Montalvo, 2007), suggesting psychopathic behavior occurs in Spain as well as the US.

It may also be the case that psychopathy may not directly put one at risk for aggression. In a similar vein, it is possible that an aspect of psychopathy (e.g., impulsivity, callousness, lack of empathy), rather than the construct at large, may be associated with aggressive behavior. Additionally, the presence of a third variable (e.g., anger, hostility) may clarify a possible theoretical (and empirical) pathway linking psychopathic traits with physical perpetration.

Finally, it is possible that the self-report measure used (or perhaps self-report measures in general) may not be appropriate for use in assessing psychopathy. Although this has generally not been found to be the case (e.g., Lilienfeld & Fowler, 2006) and the LPSP is seen as comparable to widely used interview measures of psychopathy in prediction of general aggression (Lilienfeld, personal communication), the internal consistency of this scale in this sample was relatively low (*Cronbach's alpha* = .53). This suggests psychometric challenges for the LPSP in this sample.

The UPPS (Whiteside & Lynam, 2001) was used to measure impulsivity in a post-hoc analysis as the LPSP impulsivity subscale was more associated with physical aggression than the manipulation/callousness scale, but there were some concerns about the psychometrics of the LPSP in this sample due to low internal consistency. The UPPS and each of its subscales were significantly associated with conduct disorder, suggesting it may tap into the type of impulsivity that is associated with psychopathy.

In this sample, the total UPPS scale as well as two of the subscales (lack of premeditation, lack of perseverance) yielded significant paths such that the full UPPS and lack of perseverance were risk factors for alcohol use, and lack of premeditation was a risk factor for psychological aggression perpetration. Both alcohol use and psychological perpetration were risk factors for physical aggression perpetration. Generally, the pattern between the UPPS and its subscales suggest that the non-significant associations between psychopathic traits (as measured by the LPSP) and the other variables in the path model may reflect the fact that certain types of impulsivity are implicated differently in the perpetration of physical aggression.

Relationship quality was not a significant risk factor for psychological aggression in this study. This adds to the mixed findings in the literature about the association between relationship functioning and relationship aggression. One reason for this may be a ceiling effect: these participants recall their relationships with the partner they were aggressive toward as being non-distressed (the average total DAS score was almost 106 in this sample; the cutoff for relationship distress is typically 97). This is a surprising finding as other research on male batterers has found these men can be classified as distressed. Specifically, Stuart and colleagues use the Short Marital Adjustment Test (SMAT; Locke & Wallace, 1959), which has a cutoff of 100 to identify relationship distress and finds in multiple studies on batterers that batterer SMAT score range in the 60's and 70's, indicating relationship distress well below the cutoff (e.g., Stuart et al., 2008).

A retrospective bias may be at play here, with men in the sample recalling the relationship as less distressed than they would have reported it to be at the time of arrest. Alternatively, some participants may have been reporting the relationship adjustment of their current relationship, which is not necessarily the relationship in which they were arrested for violence. It may also be the case that there is no clear association between relationship quality and psychological aggression. Despite the significant association between relationship quality and physical aggression in the literature (e.g., Stith et al., 2007), this association was not illustrated in the final model. It would be of interest to determine whether other relationship variables (e.g., commitment, communication, respect for the partner, perceived financial/ social autonomy of the partner) may be a strong risk factor for aggressive behavior.

Finally, results linking alcohol problems to aggression were mixed in this sample. Alcohol was not associated with psychological aggression. This may be because psychological aggression is prevalent in this sample and in community, clinic, and batterer couple samples in general. However, it was a risk factor for physical aggression. This was the case even though excessive alcohol use (more than six drinks in one day) was an exclusion criterion for this study, suggesting that despite a ceiling effect in drinking frequency and quantity, an effect was found for alcohol problems on physical aggression.

While the AUDIT includes some general questions that are open to interpretation based on cultural factors, this measure also invites respondents to answer specific questions about alcohol use with discrete answers (e.g., about frequency of alcohol use within a specified time frame). Such items do not pull for a comparison to normative behavior but rather ask for behavioral reports. In a society where drinking is normative, there may be less shame or social desirability at play in responding to behaviorally specific questions about drinking behavior, and thus responses may be more accurate and clinically useful than in a cultural context where alcohol use is viewed more negatively. Thus, the behavioral specificity of the AUDIT suggests it is an appropriate tool to measure alcohol problems in the Spanish context, and results of this study indicate that problems with alcohol use measured in this manner are indeed associated with physical aggression.

### ***Implications***

A major implication for this study is that these findings demonstrate evidence for a multivariate conceptualization of partner aggression with a strong theoretical rationale, which incorporates both individual and dyadic factors. In addition, this study suggests the cross-cultural relevance of research on partner aggression. Not only are prevalence rates for psychological and physical aggression in this Spanish batterer sample broadly similar (though slightly lower) than rates in a batterer sample in the United States, a number of variables that have been found to be significantly associated with partner aggression in the United States have also been identified as significant risk factors for aggression in Spain (e.g., borderline traits, alcohol problems, psychological aggression). This is the case despite the two major differences between the samples that were highlighted at the start of this paper: that relationship aggression has been viewed as a public health

problem for much less longer in Spain than in the United States, and that alcohol use problems may play a different role in the socio-cultural context of each country.

The relatively lower prevalence of physical aggression in the current sample compared to US samples may have occurred for a number of reasons. To begin with, this sample as well as the Vega and O’Leary (2007) sample are both relatively small which may suggest difficulty with generalization. The differences may also be due to a retrospective reporting bias, or “faking good” as participants in batterer samples are faced with legal problems and may worry about incriminating themselves by accurately reporting aggression rates. Additionally, it may be that it’s inappropriate to equate US and Spanish batterer samples as they may be capturing different types and levels of severity of the underlying trait of aggression since there is no internationally standardized measure of “battering” used when arresting and mandating these men to treatment. Of course, the discrepant findings may also reflect a real difference in the prevalence of aggression across these two countries, a concept which merits further research.

The consistent association between alcohol problems and physical aggression across country contexts, and despite the ceiling imposed in this study, seems to suggest alcohol use is a real problem in aggression perpetration. This has also been found in other international research from the United States (e.g., Stuart et al., 2006) and the Ukraine (O’Leary et al., 2008).

The fact that borderline traits are significant risk factors for all hypothesized variables, even in the cases where perpetration and victimization were modeled ( $A$ ,  $B$ ), is striking. Borderline traits were consistently and robustly associated with poorer relationship quality, more problems with alcohol use, and more psychological and physical aggression even when much of the variance in the model was likely accounted for by the associations between perpetration and victimization variables. The significant effect of alcohol problems, despite the strong associations between perpetration and victimization, should also be interpreted in this manner.

The major treatment implication of this study is that the assessment and treatment of individual risk factors for aggression (specifically borderline traits and alcohol problems) may decrease the prevalence of psychological and physical aggression in this at-risk group. This is especially promising due to the strong evidence-based interventions that are available for both borderline traits (e.g., Dialectical Behavior Therapy; Linehan, 1993) and alcohol or substance use problems (e.g., motivational enhancement; Miller & Rollnick, 1991). As men in batterer treatment programs may not be able to work on their aggression-related problems with their partner (nor is this recommended when safety is a concern), individual treatments that can target problems associated with dyadic aggression as well as underlying individual psychopathology play a special role in the treatment of individuals arrested for domestic violence.

### ***Limitations and Future Directions***

Limitations of the present study are that it includes retrospective, cross-sectional data about the relationship the participant was in when he became involved with the legal system for domestic violence issues. In addition, all measures that were used were self-report and only the male partner’s report was used.

In addition to addressing the above limitations, future directions include further researching issues raised by these results. Specifically, the role of psychopathic behavior in aggression perpetration should be clarified. Similarly, research specifying the associations between relationship satisfaction and aggression in terms of directionality and strength of the associations is important in conceptualizing the temporal course of relationship conflict.

Second, it would be important to incorporate the socio-cultural context of the country that is being studied to a greater extent. For instance, it would be especially interesting to identify the role that attitudes toward women, or attitudes toward violence play in the risk for partner aggression. Specific to Spain, the role of *machismo* attitudes and behaviors in the study of violence perpetration will add to future research on this topic.

Third, future research identifying the prevalence and risk factors of aggression across various samples (e.g., community samples, treatment samples) in different cultural contexts, and using male, female, and dyadic reports would improve identification of universal and culturally specific risk factors for aggression in relationships.

Finally, the present study analyzed a multivariate conceptualization of partner aggression with a strong theoretical basis. For practical reasons, as well as reasons of statistical power, this study chose specific types of psychopathology to assess. However, a range of psychopathology has been implicated in the research as being associated with physical aggression perpetration. It would be of interest to identify common variables (e.g., impulsivity, the experience of trauma) or to explore a broader range of DSM psychopathology to determine interrelationships between variables both theoretically and empirically.

Table 1  
*Similarities in Demographic Indicators for Spain and the United States*

Indicator (Year Assessed)	United States	Spain
Population (2008)	304.06 Million (World Bank, 2008)	45.57 Million (World Bank, 2008)
GNI-PPP, Per Capita (2008)	US\$ 46,970 (World Bank, 2008)	US\$ 31,130 (World Bank, 2008)
Foreign-Born Residents (2005)	13.0% (ECOSOC, 2009)	10.7% (ECOSOC, 2009)
Life Expectancy (2007)	77 (UNICEF, 2007)	81 (UNICEF, 2007)
% Population Urbanized (2007)	81% (UNICEF, 2007)	77% (UNICEF, 2007)
Adult Literacy (2007)	99.0% (UNDP, 2009)	97.9% (UNDP, 2007)
Estimated Female-to-Male Income Ratio	.62 (UNDP, 2009)	.52 (UNDP, 2009)
Overall Health System Attainment Rank (2000)	15 <sup>th</sup> (WHO, 2000)	19 <sup>th</sup> (WHO, 2000)
Maternal Mortality, Lifetime risk (2005)	1 in 4,800 (UNICEF, 2005)	1 in 16,400 (UNICEF, 2005)
Under-5 Mortality Rate (2007)	7.60 per 1,000 (World Bank, 2007)	4.30 per 1,000 (World Bank, 2007)



Table 2  
*12-Month Prevalence and Frequency of Aggression*

Prevalence of Aggression			
	Male Perpetration (%)	Male Victimization (%)	
Psychological	80.8	81.2	
Physical	58.9	54.2	
Sexual	19.6	12.4	
Injury	45.6	23.8	

Frequency of Aggression			
	Male Perpetration Mean (SD)	Male Victimization Mean (SD)	<i>P-value</i>
Psychological	8.62 (8.31)	10.49 (9.81)	.00
Physical	3.67 (6.19)	5.36 (8.89)	.00
Sexual	0.77 (2.14)	0.51 (2.69)	.22
Injury	1.21 (1.81)	0.84 (1.94)	.00

Table 3

*Means, Standard Deviations, and Correlations among Variables (Excluding Impulsivity Analyses)*

	LPSP	BPO	MSI- BPD	AUDIT	CAGE	Full DAS	DAS Satisfaction	DAS 31
LPSP	51.20 (8.60)	.42*	.45*	.30*	.17*	-.03	-.10	.04
BPO		19.30 (16.11)	.70**	.53**	.32**	-.26**	-.20**	-.09
MSI-BPD			1.95 (2.20)	.52**	.29**	-.24**	-.24**	-.17*
AUDIT				5.97 (5.70)	.59**	-.18**	-.09	-.01
CAGE					.91 (1.21)	-.07	-.01	.06
Full DAS						105.59 (23.08)	.87**	.59**
DAS Satisfaction							32.26 (9.24)	.64**
DAS Item 31								2.98 (1.42)

	Psychological Perpetration	Psychological Victimization	Physical Perpetration	Physical Victimization
LPSP	.24**	.07	.30**	.12
BPO	.50**	.22**	.52**	.22**
MSI-BPD	.50**	.26**	.55**	.28**
AUDIT	.36**	.19**	.48**	.23**
CAGE	.21**	.08	.23**	.11
Full DAS	-.22**	-.30**	-.17*	-.29**
DAS Satisfaction	-.15*	-.24**	-.17*	-.28**
DAS Item 31	-.08	-.14	-.08	-.14
Psychological Perpetration	8.44 (8.16)	.69**	.69**	.54**
Psychological Victimization		10.43 (9.86)	.46**	.72**
Physical Perpetration			3.61 (6.09)	.64**
Physical Victimization				5.33 (8.92)

*Means (standard deviations) appear across the diagonal. For correlations: \*  $p < .05$ ; \*\*  $p < .01$*

Figure 1. Hypothesized Perpetration/Victimization Model

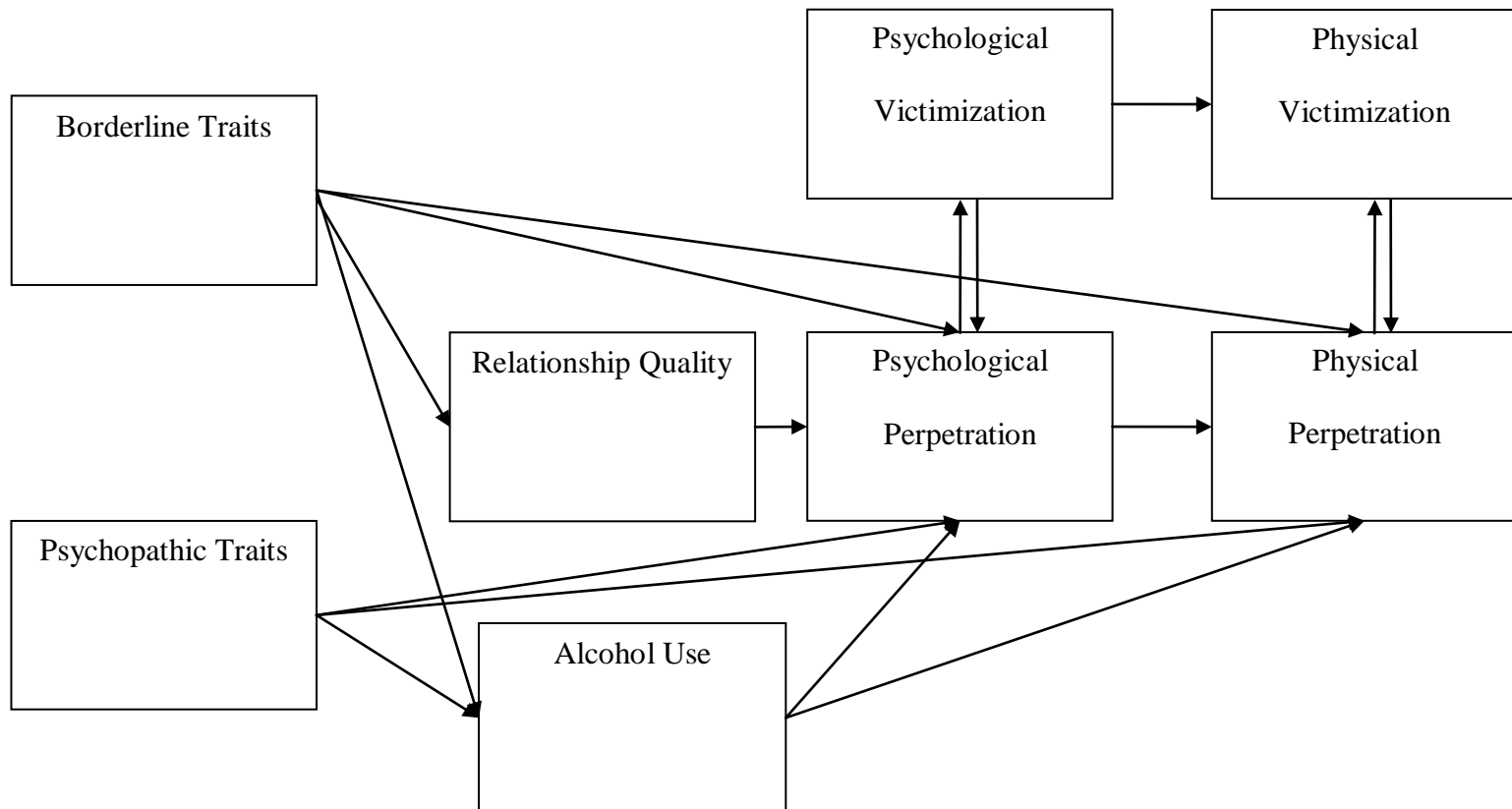


Figure 2. Original Perpetration/Victimization Model with AUDIT, Full DAS, MSI-BPD (1a)

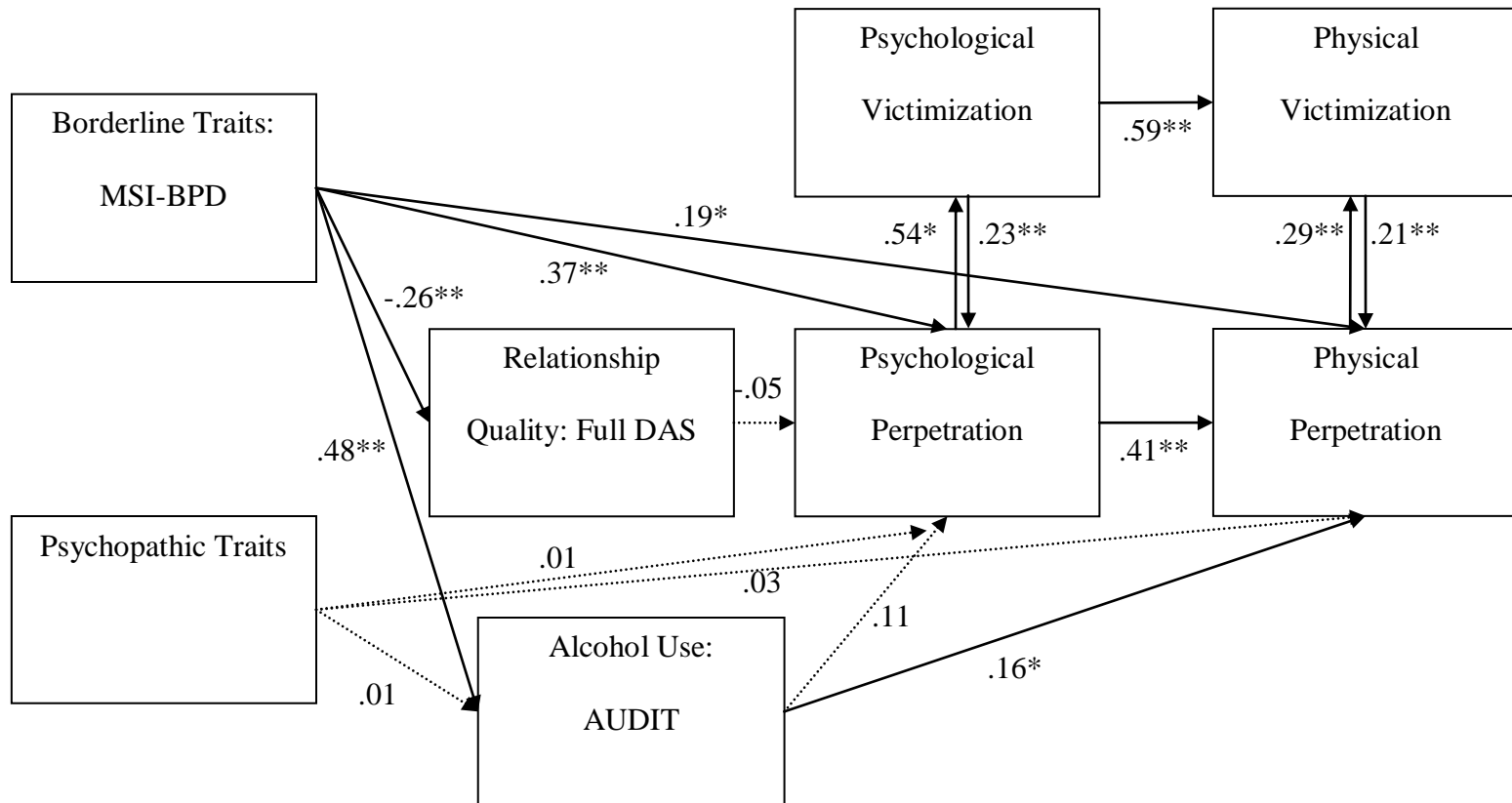


Figure 3. Hypothesized Perpetration-Only Model

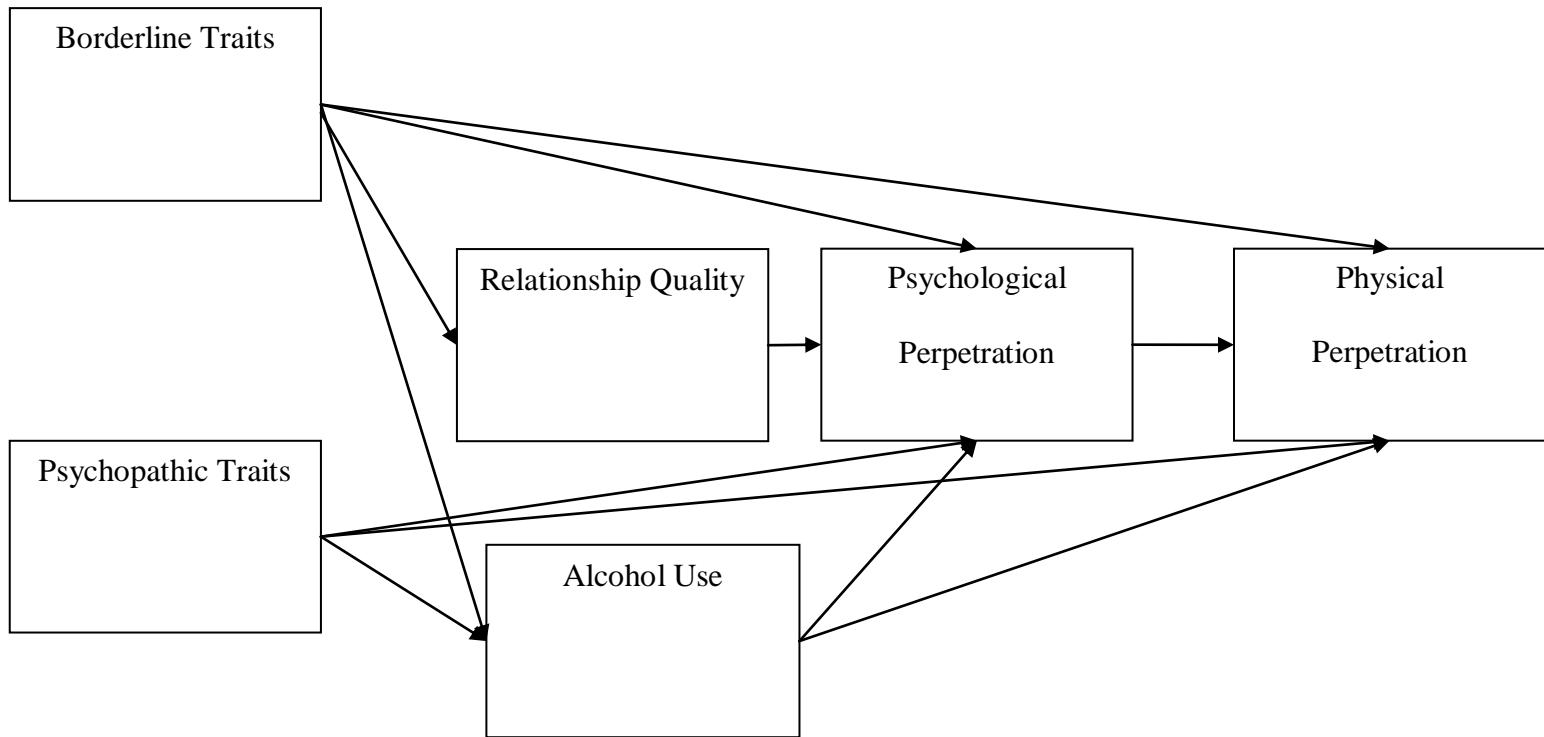


Figure 4. Original Perpetration-Only Model with AUDIT, Full DAS, MSI-BPD (1c)

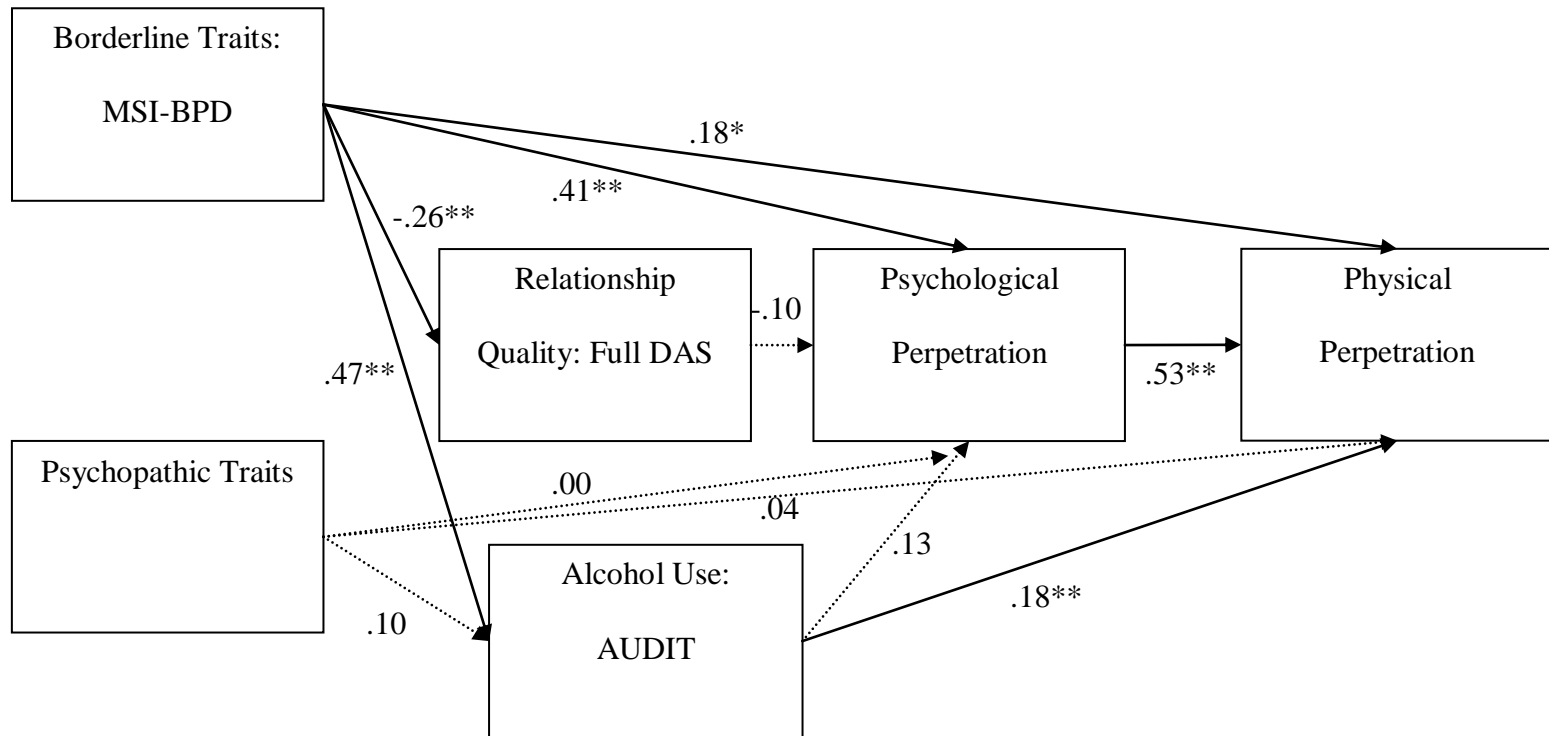
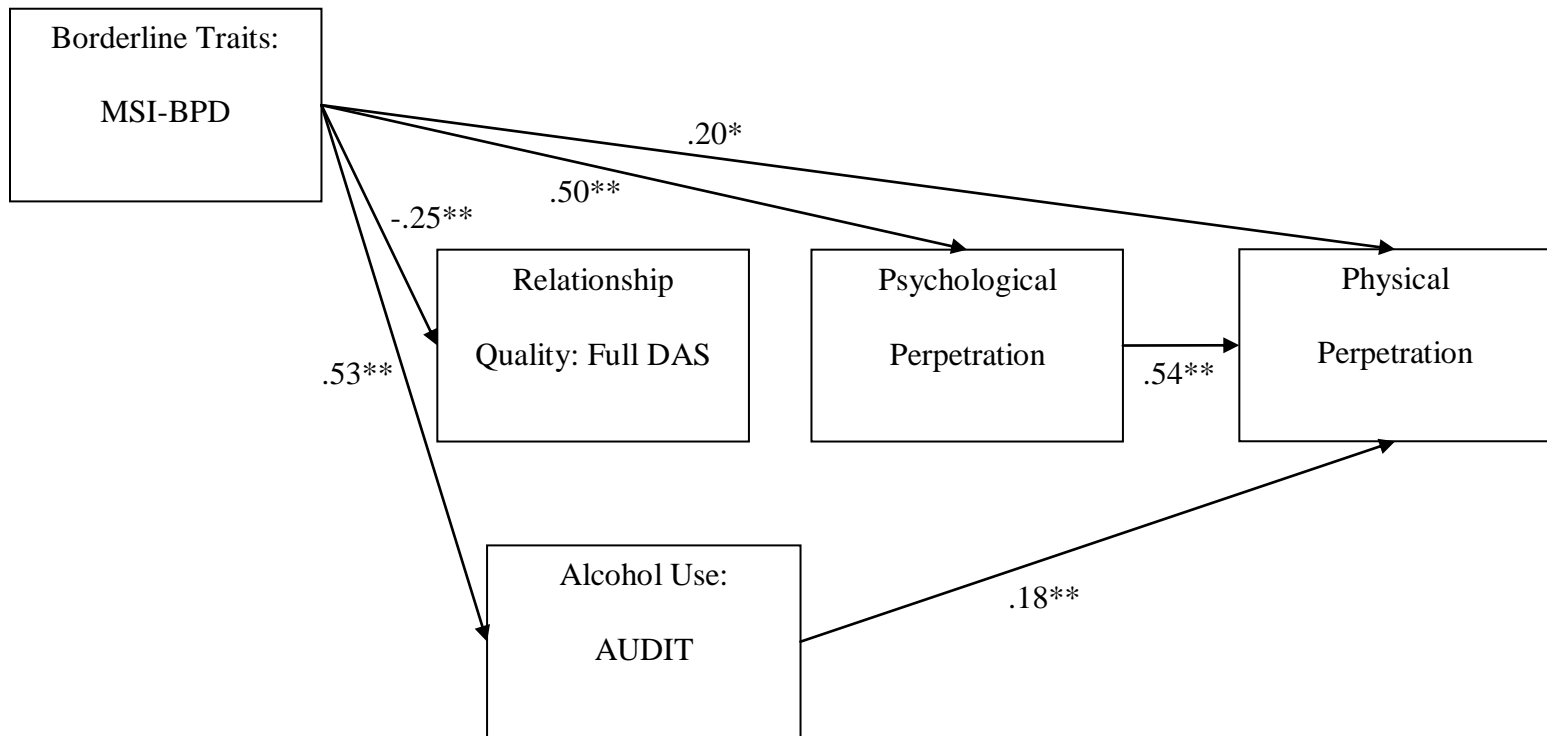


Figure 5. Final Perpetration-Only Model with AUDIT, Full DAS, MSI-BPD (1d)





## References

- Archer, J. (2000). Sex differences in aggression between heterosexual partners: A meta-analytic review. *Psychological Bulletin, 126*, 651-680. doi: 10.1037/0033-2909.126.5.651
- Allen, J.P., Litten, R.Z., Fertig, J.B., & Barbor, T. (1997). A review of research on the Alcohol Use Disorders Identification Test (AUDIT). *Alcoholism: Clinical and Experimental Research, 21*, 613-619.
- Barling, J., O'Leary, K.D., Jouriles, E.N., Vivian, D., & MacEwen, K.E. (1987). Factor similarity of the conflict tactics scales across samples, spouses, and sites: Issues and implications. *Journal of Family Violence, 2*, 37-54.
- Bentler, P.M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246. doi: 10.1037/0033-2909.107.2.238
- Bentler, P.M. (1995). *EQS structural equations program manual*. Encino, CA: Multivariate Software.
- Bloomfield, K., Stockwell, T., Gmel, G. & Rehn, N. (2003). International comparisons of alcohol consumption. *Alcohol Research & Health, 27*, 95-109. Retrieved from: <http://www.niaaa.nih.gov/Publications/AlcoholResearch/>
- Bonomi, A.E., Anderson, M.L., Rivara, F.P., & Thompson, R.S. (2007). Health outcomes in women with physical and sexual intimate partner violence exposure. *Journal of Women's Health, 16*, 987-997. doi: 10.1089/jwh.2006.0239
- Capaldi, D.M. & Owen, L.D. (2001). Physical aggression in a community sample of at-risk young couples: Gender comparisons for high frequency, injury, and fear. *Journal of Family Psychology, 15*, 425-440. doi: 10.1037/0893-3200.15.3.425
- Capaldi, D.M., Shortt, J.W., Kim, H.K., Wilson, J., Crosby, L., & Tucci, S. (2009). Official incidents of domestic violence: Types, injury, and associations with nonofficial couple aggression. *Violence and Victims, 24*, 502-519. doi: 10.1891/0886-6708.24.4.502
- Cordova, J.V., Jacobson, N.S., Gottman, J.M., Rushe, R. & Cox, G. (1993). Negative reciprocity and communication in couples with a violent husband. *Journal of Abnormal Psychology, 102*, 559-564. doi: 10.1037/0021-843X.102.4.559
- Death of a wife in Spain brings outcry on domestic violence. (1997, December 26). *The New York Times*, p. A5.
- Dutton, D.G. (1994). Behavioral and affective correlates of borderline personality

- organization in wife assaulters. *International Journal of Law and Psychiatry*, 17, 265-277. doi: 10.1016/0160-2527(94)90030-2
- Dutton, D.G. (2003). *The abusive personality: Violence and control in intimate relationships*. New York: Guilford.
- Dutton, D.G. & Starzomski, A.J. (1993). Borderline personality in perpetrators of psychological and physical abuse. *Violence and Victims*, 8(4), 327-337.
- Echeburúa, E., & Fernández-Montalvo, J. (2007). Male batterers with and without psychopathy: An exploratory study in Spanish prisons. *International Journal of Offender Therapy and Comparative Criminology*, 51, 254-263. doi: 10.1177/0306624X06291460
- Eddy, J.M., Heyman, R.E., & Weiss, R.L. (1991). An empirical evaluation of the Dyadic Adjustment Scale: Exploring the differences between marital 'satisfaction' and 'adjustment'. *Behavioral Assessment*, 13(3), 199-220.
- Ewing, J.A. (1984). Detecting alcoholism: The CAGE questionnaire. *Journal of the American Medical Association*, 252, 1905-1907.
- First, M.B., Gibbons, M., Spitzer, R.L., Williams, J.B.W., & Benjamin, L.S. (1997). *Structured clinical interview for DSM-IV axis II personality disorders, (SCID-II)*. Washington, D.C.: American Psychiatric Press, Inc.
- Foran, H.M. & O'Leary, K.D. (2008). Alcohol and intimate partner violence: A meta-analytic review. *Clinical Psychology Review*, 28, 1222-1234. doi: 10.1016/j.cpr.2008.05.001
- Garcia-Moreno, C., Jansen, H.A.F.M, Ellsberg, M., Heise, L., & Watts, C. (2005). *WHO multi-country study on women's health and domestic violence against women Initial results on prevalence, health outcomes, and women's responses*. Retrieved from [http://www.who.int/gender/violence/who\\_multicountry\\_study/en/index.html](http://www.who.int/gender/violence/who_multicountry_study/en/index.html)
- Gavazzi, S.M., McKenry, P.C., Jacobson, J.A., Julian, T.W. & Lohman, B. (2000). Modeling the effects of expressed emotion, psychiatric symptomatology, and marital quality levels on male and female verbal aggression. *Journal of Marriage & the Family*, 62, 669-682. doi: 10.1111/j.1741-3737.2000.00669.x
- Golding, J.M. (1999). Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence*, 14(2), 99-132.
- Goodman, L.A., Koss, M.P., Russo, N.F. (1993). Violence against women: Physical and mental health effects: II. Research findings. *Applied and Preventative Psychology*, 2(2) 79-89.

- Goodwin, R. (1992). Overall, just how happy are you? The magical Question 31 of the Spanier Dyadic Adjustment Scale. *Family Therapy, 19*(3), 273-275.
- Graña, J.L. (2009, November). Prevalence of partner aggression in a Spanish sample belonging to the Comunidad of Madrid. In K.D. O'Leary (Chair), *Universal or Country-Specific Vulnerability Factors for Partner Violence: Intervention Implications*. Symposium conducted at the 43<sup>rd</sup> annual meeting of the Association for Behavioral and Cognitive Therapies, New York, NY.
- Graña, J.L., Rodriguez, M.J., & Pena, E. (2009). Agresión hacia la pareja en una muestra comunitaria de la Comunidad de Madrid: Análisis por género. *Psicopatología Clínica Legal y Forense, 9*, 7-28.
- Gual, A. (2006). Alcohol in Spain: Is it different? *Addiction, 101*, 1073-1077. doi: 10.1111/j.1360-0443.2006.01518.x
- Hamberger, K. & Hastings, J. (1986). Personality correlates of men who abuse their partners: A cross-validated study. *Journal of Family Violence, 1*(4), 323-341.
- Hamberger, L.K., Lohr, J.M., Bonge, D., & Tolin, D.F. (1996). A large sample empirical typology of male spousal abusers and its relationship to dimensions of abuse. *Violence and Victims, 11*, 277-292.
- Holtzworth-Munroe, A., Meehan, J.C., Herron, K., Rehman, U., & Stuart, G.L. (2000). Testing the Holtzworth-Munroe and Stuart (1994) batterer typology. *Journal of Consulting and Clinical Psychology, 68*, 1000-1019. doi: 10.1037/0022-006X.68.6.1000
- Holtzworth-Munroe, A. & Stuart, G.L. (1994). Typologies of male batterers: Three subtypes and the differences among them. *Psychological Bulletin, 116*(3), 476-497. doi: 10.1037/0033-2909.116.3.476
- Hu, L. & Bentler, P.M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparametrized model misspecification. *Psychological Methods, 3*, 424-453. doi: 10.1037/1082-989X.3.4.424
- Jose, A., & O'Leary, K.D. (2009). Prevalence of partner aggression in representative and clinic samples. In K.D. O'Leary & E. Woodin (Eds.), *Psychological and Physical Aggression in Couples: Causes and Interventions* (pp. 15-35). Washington, DC: American Psychological Association.
- Kar, H.L. & O'Leary, K.D. (in press). Gender symmetry or asymmetry in intimate partner victimization? Not an either/or answer. *Journal of Partner Abuse*.

- Kim, H.K. & Capaldi, D.M. (2004). The association of antisocial behavior and depressive symptoms between partners and risk for aggression in romantic relationships. *Journal of Family Psychology, 18*, 82-96. doi: 10.1037/0893-3200.18.1.82
- Lary Kar, H. & Garcia-Moreno, C. (2009). Partner aggression across cultures. In K.D. O'Leary & E. Woodin (Eds.), *Psychological and Physical Aggression in Couples: Causes and Interventions* (pp. 59-75). Washington, DC: American Psychological Association.
- Leonard, K. (2005). Editorial: Intimate partner violence: When can we say that heavy drinking is a contributing cause of violence? *Addiction, 100*, 422-425. doi: 10.1111/j.1360-0443.2005.00994.x
- Levenson, M.R., Kiehl, K.A., & Fitzpatrick, C.M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology, 68*(1), 151-158. doi: 10.1037/0022-3514.68.1.151
- Lilienfeld, S.O. (2010, February). *Diagnosing Psychopathic Personality*. Grand Rounds presented at Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY.
- Lilienfeld, S.O. & Fowler, K.A. (2006). The self-report assessment of psychopathy: Problems, pitfalls, and promises. In C.J. Patrick (Ed.), *Handbook of the Psychopathy* (pp. 107-132). New York: Guilford Press.
- Linehan, M.M. (1993). *Cognitive-behavioral treatment of Borderline Personality Disorder*. New York: Guilford Press.
- Locke, H.J. & Wallace, K.M. (1959). Short marital adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living, 21*, 251-255.
- Lynam, D.R., Whiteside, S., & Jones, S. (1999). Self-reported psychopathy: A validation study. *Journal of Personality Assessment, 73*(1), 110-132. doi: 10.1207/S15327752JPA730108
- Mauricio, A.M., Tein, J., & Lopez, F.G. (2007). Borderline and antisocial personality scores as mediators between attachment and intimate partner violence. *Violence and Victims, 22*, 139-157. doi: 10.1891/088667007780477339
- Maxwell, J.C. (2008). Are we becoming more alike? Comparison of substance use in Australia and the United States as seen in the 1995, 1998, 2001 and 2004 national household surveys. *Drug and Alcohol Review, 27*, 473-481. doi: 10.1080/0959230802090055

- Medina-Ariza, J., & Barberet, R. (2004). Intimate partner violence in Spain: Findings from a national survey. *Violence Against Women, 9*, 302-322. doi: 10.1177/1077801202250073
- Miller, W.R. & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York: Guilford Press.
- Monson, C.M., Taft, C.T., & Fredman, S.J. (2009). Military-related PTSD and intimate relationships: From description to theory-driven research and intervention development. *Clinical Psychology Review, 29*, 707-714. doi: 10.1016/j.cpr.2009.09.002
- Murdoch, D., Pihl, R.O., & Ross, D. (1990). Alcohol and crimes of violence: Present issues. *International Journal of Addictions, 25*, 1065-1081.
- Murphy, C.M., Meyer, S., & O'Leary, K.D. (1993). Family of origin violence and MCMI-II psychopathology among partner assaultive men. *Violence and Victims, 8*(2), 165-176.
- Murphy, C.M., Meyer, S., & O'Leary, K.D. (1994). Dependency characteristics of partner assaultive men. *Journal of Abnormal Psychology, 103*(4), 729-735.
- Murphy, C.M., O'Farrell, T.J., Fals-Stewart, W. & Feehan, M. (2001). Correlates of intimate partner violence among male alcoholic patients. *Journal of Consulting Psychology, 69*, 528-540. doi: 10.1037/0022-006X.69.3.528
- Murphy, C.M. & O'Leary, K.D. (1989). Psychological aggression predicts physical aggression in early marriage. *Journal of Consulting and Clinical Psychology, 57*, 579-582. doi: 10.1037/0022-006X.57.5.579
- Muthén, B.O., & Muthén, L.K. (2009). Mplus (version 5.0) [Computer software]. Los Angeles: Muthén & Muthén.
- National Center for Injury Prevention and Control (2003). *Costs of Intimate Partner Violence Against Women in the United States*. Atlanta (GA): Centers for Disease Control and Prevention.
- Oldham, J., Clarkin, J., Appelbaum, A., Carr, A., Kernberg, P., Lotterman, A., & Hass, G. (1985). A self-report instrument for borderline personality organization. In T.H. McGlashan (Ed.), *The borderline: Current empirical research* (pp. 1-18). Washington, DC: American Psychiatric Press.
- O'Leary, K.D., Malone, J., & Tyree, A. (1994). Physical aggression in early marriage: Pre-relationship and relationship effects. *Journal of Consulting and Clinical Psychology, 62*(3), 594-602. doi: 10.1037/0022-006X.62.3.594

- O'Leary, K.D., Slep, A.M.S., & O'Leary, S.G. (2007). Multivariate models of men's and women's partner aggression. *Journal of Consulting and Clinical Psychology, 75*, 752-764. doi: 10.1037/0022-006X.75.5.752
- O'Leary, K.D., Tintle, N., Bromet, E.J., & Gluzman, S.F. (2008). Descriptive epidemiology of intimate partner aggression in Ukraine. *Social Psychiatry and Psychiatric Epidemiology, 43*, 619-626. doi: 10.1007/s00127-008-0339-8
- Organisation of Economic Cooperation and Development (2009). OECD Health Data 2009. Retrieved May 3, 2010 from: [http://www.oecd.org/document/16/0,3343,en\\_2649\\_34631\\_2085200\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/16/0,3343,en_2649_34631_2085200_1_1_1_1,00.html)
- Pan, H.S., Neidig, P.H. & O'Leary, K.D. (1994). Predicting mild and severe husband-to-wife physical aggression. *Journal of Consulting and Clinical Psychology, 62*, 975-981. doi: 10.1037/0022-006X.62.5.975
- Porcelli, J.H., Cogan, R., & Hibbard, S. (2004). Personality characteristics of partner violent men: A Q-sort approach. *Journal of Personality Disorders, 18*, 151-162. doi: 10.1521/pedi.18.2.151.32776
- Ramisetty-Mikler, S., Caetano, R., & McGrath, C. (2007). Sexual aggression among White, Black, and Hispanic couples in the U.S.: Alcohol use, physical assault, and psychological aggression as its correlates. *The American Journal of Drug and Alcohol Abuse, 33*, 31-43. doi: 10.1080/00952990601082639
- Sareen, J., Pagura, J., & Grant, B. (2009). Is intimate partner violence associated with HIV infection among women in the United States? *General Hospital Psychiatry, 31*, 274-278. doi: 10.1016/j.genhosppsych.2009.02.004
- Saunders, J.B., Aasland, O.G., Babor, T.F., de la Puente, J.R. & Grant, B.F. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption. *Addiction, 88*(6), 791-804. doi: 10.1111/j.1360-0443.1993.tb02093.x
- Schafer, J., Caetano, R., & Clark, C.L. (2002). Agreement about violence in U.S. couples. *Journal of Interpersonal Violence, 17*, 457-470.
- Slep, A.M. & O'Leary, S.G. (2005). Parent and partner violence in families with young children: Rates, patterns, and connections. *Journal of Consulting and Clinical Psychology, 73*(3), 435-444. doi: 10.1037/0022-006X.73.3.435

- South, S.C., Turkheimer, E., & Oltmanns, T.F. (2008). Personality disorder symptoms and marital functioning. *Journal of Clinical and Consulting Psychology, 76*, 769-780. doi: 10.1037/a0013346
- Spanier, G.B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38*, 15-28. doi: 10.2307/350547
- Steiger, J. H., & Lind, J. C. (1980,May). Statistically based tests for the number of common factors. Paper presented at the annual spring meeting of the Psychometric Society, Iowa City, IA.
- Stepp, S.D., Trull, T.J., & Sher, K.J. (2005). Borderline personality features predict alcohol use problems. *Journal of Personality Disorders, 19*, 711-722. doi: 10.1521/pedi.2005.19.6.711
- Stets, J.E., & Straus, M.A. (1990). The marriage license as a hitting license: A comparison of assaults in dating, cohabiting, and married couples. In M.A. Straus & R.J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families* (pp. 227-244). New Brunswick, NJ: Transaction.
- Stith, S.M., Green, N.M., Smith, D.B., & Ward, D.B. (2008). Marital satisfaction and marital discord as risk markers for intimate partner violence: A meta-analytic review. *Journal of Family Violence, 23*, 149-160. doi: 10.1007/s10896-007-9137-4
- Stith, S.M., Smith, D.B., Penn, C.E., Ward, D.B., & Tritt, D. (2004). Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression and Violent Behavior, 10*, 65-98. doi: 10.1016/j.avb.2003.09.001
- Straus, M.A. & Gelles, R.J. (Eds.) (1990). *Physical Violence in American Families: Risk Factors and Adaptations to Violence in 8,145 Families*. New Brunswick, NJ: Transaction Publishers.
- Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. B. (1996). The revised conflict tactics scales (cts2): Development and preliminary psychometric data. *Journal of Family Issues, 17*(3), 283-316.
- Stuart, G.L. & Holtzworth-Munroe, A. (2005). Testing a theoretical model of the relationship between impulsivity, mediating variables, and husband violence. *Journal of Family Violence, 20*, 291-303. doi: 10.1007/s10896-005-6605-6

- Stuart, G.L., Meehan, J.C., Moore, T.M., Morean, M., Hellmuth, J., & Follansbee, K. (2006). Examining a conceptual framework of intimate partner violence in men and women arrested for domestic violence. *Journal of Studies on Alcohol*, *67*, 102-112. Retrieved at: <http://www.jsad.com/>
- Stuart, G.L., Temple, J.R., Follansbee, K.W., Buccosi, M.M., Hellmuth, J.C., & Moore, T.M. (2008). The role of drug use in a conceptual model of intimate partner violence in men and women arrested for domestic violence. *Psychology of Addictive Behaviors*, *22*, 12-24. doi: 10.1037/0893-164X.22.1.12
- Taft, C.T., Vogt, D.S., Mechanic, M.B., & Resick, P.A. (2007). Posttraumatic stress disorder and physical health symptoms among women seeking help for relationship aggression. *Journal of Family Psychology*, *21*, 354-362. doi: 10.1037/0893-3200.21.3.354
- Tucker, L.R. & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, *38*, 1-10. doi: 10.1007/BF02291170
- Tweed, R.G., & Dutton, D.G. (1998). A comparison of impulsive and instrumental subgroups of batterers. *Violence and Victims*, *13*(3), 217-230
- UNICEF (2009). *At a Glance: Spain*. Retrieved December 23, 2009, from [http://www.unicef.org/infobycountry/spain\\_statistics.html](http://www.unicef.org/infobycountry/spain_statistics.html)
- UNICEF (2009). *At a Glance: Spain*. Retrieved December 23, 2009, from <http://www.unicef.org/infobycountry/usa.html>
- United Nations Development Programme (2009). *Human development report 2009: Overcoming barriers: Human mobility and development*. Retrieved from [http://hdr.undp.org/en/media/HDR\\_2009\\_EN\\_Complete.pdf](http://hdr.undp.org/en/media/HDR_2009_EN_Complete.pdf)
- Vega, E. M. & O'Leary, K. D. (2007). Test-retest reliability of the revised Conflict Tactics Scales (CTS2). *Journal of Family Violence*, *22*, 703-708. doi: 10.1007/s10896-007-9118-7
- Waltz, J., Babcock, J.C., Jacobson, N.S., & Gottman, J.M. (2000). Testing a typology of batterers. *Journal of Consulting and Clinical Psychology*, *68*, 658-669. doi: 10.1037/0022-006X.68.4.65
- Whiteside, S.P. & Lynam, D.R. (2001). The Five Factor Model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences*, *30*, 669-689. doi: 10.1016/S0191-8869(00)00064-7
- World Health Organization (2000). *The world health report 2000*. Retrieved from [http://www.who.int/whr/2000/en/annex09\\_en.pdf](http://www.who.int/whr/2000/en/annex09_en.pdf)



World Health Organization (2004a). WHO Global Status Report on Alcohol 2004 (United States of America). Retrieved May 3, 2010 from [http://www.who.int/substance\\_abuse/publications/en/united\\_states\\_of\\_america.pdf](http://www.who.int/substance_abuse/publications/en/united_states_of_america.pdf)

World Health Organization (2004b). WHO Global Status Report on Alcohol 2004 (Spain). Retrieved May 3, 2010 from [http://www.who.int/substance\\_abuse/publications/en/spain.pdf](http://www.who.int/substance_abuse/publications/en/spain.pdf)

Zanarini, M.C., Vujanovic, A.A., Parachini, E.A, Boulanger, J.L., Frankenburg, F.R., & Hennen, J. (2003). A screening measure for BPD: The Mclean Screening Instrument for Borderline Personality Disorder (MSI-BPD). *Journal of Personality Disorders, 17*(6), 568-573. doi: 10.1521/pedi.17.6.568.25355

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**A.1 12-Month Prevalence of Psychological Aggression, Item Data**

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Item	Prevalence (%)	
	Perpetration	Victimization
Insulted or swore at	62.4	70.6
Called fat or ugly	23.2	26.3
Destroyed property	16.5	25.8
Shouted or yelled at	65.8	69.1
Stomped out	49.0	38.5
Accused of being a lousy lover	11.3	14.4
Said something to spite	46.4	51.5
Threatened to hit or throw something	15.5	20.1

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## **A.2 12-Month Frequency of Psychological Aggression, Item Data**

Item	Mean (SD)		<i>p-value</i>
	Perpetration	Victimization	
Insulted or swore at	1.97 (2.03)	2.52 (2.22)	.00
Called fat or ugly	.57 (1.22)	.90 (1.77)	.00
Destroyed property	.29 (.84)	.65 (1.41)	.00
Shouted or yelled at	2.18 (2.11)	2.49 (2.17)	.00
Stomped out	1.42 (1.76)	1.14 (1.75)	.02
Accused of being a lousy lover	.30 (.99)	.44 (1.23)	.23
Said something to spite	1.31 (1.71)	1.71 (2.03)	.00
Threatened to hit or throw something	.40 (1.09)	.57 (1.36)	.00

### **A.3 12-Month Prevalence of Physical Assault, Item Data**

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Item	Prevalence (%)	
	Perpetration	Victimization
Threw something that could hurt	9.3	23.7
Twisted arm or hair	17.5	19.2
Pushed or shoved	41.8	39.7
Used a knife or a gun	1.5	10.3
Punched or hit with something that could hurt	19.1	26.8
Choked	2.6	2.1
Slammed against a wall	13.4	10.9
Beat up	6.7	7.2
Grabbed	45.4	35.6
Slapped	19.1	26.8
Burned or scalded	0.5	0.0
Kicked	8.3	12.9

---

#### **A.4 12-Month Frequency of Physical Assault, Item Data**

Item	Mean (SD)		<i>p-value</i>
	Perpetration	Victimization	
Threw something that could hurt	.15 (.55)	.62 (1.36)	.00
Twisted arm or hair	.32 (.83)	.43 (1.07)	.09
Pushed or shoved	.84 (1.35)	1.04 (1.69)	.06
Used a knife or a gun	.02 (.12)	.19 (.69)	.00
Punched or hit with something that could hurt	.30 (.79)	.71 (1.51)	.00
Choked	.05 (.40)	.04 (.31)	.63
Slammed against a wall	.22 (.73)	.24 (.80)	.76
Beat up	.10 (.46)	.14 (.62)	.41
Grabbed	1.07 (1.55)	.90 (1.54)	.03
Slapped	.32 (.79)	.71 (1.50)	.00
Burned or scalded	.03 (.43)	0 (0)	.32
Kicked	.16 (.59)	.36 (1.11)	.00



**A.5 12-Month Prevalence of Sexual Coercion, Item Data**

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Item	Prevalence (%)	
	Perpetration	Victimization
Sex without a condom	3.1	1.5
Used force to have oral/ anal sex	0.5	1.5
Used force to have sex	0.5	0.5
Insisted on sex (no physical force)	18.0	9.3
Used threats to have oral/ anal sex	0.0	0.5
Insisted on oral/ anal sex (no physical force)	5.7	2.1
Used threats to have sex	1.0	2.1

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**A.6 12-Month Prevalence of Injury, Item Data**

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Item	Prevalence (%)	
	Perpetration	Victimization
Sprain, bruise, or small cut	18.0	28.9
Passed out from being hit on the head	0.5	2.1
Went to a doctor	7.3	32.5
Needed to see a doctor, but didn't	5.2	4.6
Broken bone	0.5	2.1
Physical pain that still hurt the next day	10.3	20.7

---

**B.1 Model Fit Indices (Complete) for Models 1a-d**

Model	1a	1b	1c	1d
Borderline Variable	MSI-BPD	MSI-BPD	MSI-BPD	MSI-BPD
Relationship Quality Variable	Full DAS	Full DAS	Full DAS	Full DAS
Alcohol Variable	AUDIT	AUDIT	AUDIT	AUDIT
RMSEA	.09	.04	.00	.08
RMSEA 90% CI	.05 - .13	.00 - .10	.00 - .10	.00 - .16
CFI	.97	1.00	1.00	.99
TLI	.93	.99	1.02	.96
SRMR	.05	.04	.02	.04
Chi-Square ( <i>df</i> )	20.46 (11)	9.91 (8)	1.97 (3)	6.53 (3)
Chi-Square Significance	.00	.27	.58	.09

**B.2 Model Fit Indices (Complete) for Appended Models (A)**

Model	2a	3a	4a	5a	6a	7a	8a	9a	10a	11a	12a
Borderline Variable	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD
Relationship Quality Variable	Full DAS	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.
Alcohol Variable	CAGE	AUDIT	AUDIT	AUDIT	AUDIT	AUDIT	CAGE	CAGE	CAGE	CAGE	CAGE
RMSEA	.09	.07	.10	.09	.07	.09	.06	.10	.09	.07	.09
RMSEA 90% CI	.05 - .13	.01 - .11	.06 - .14	.05 - .13	.01 - .11	.04 - .13	.00 - .11	.06 - .14	.05 - .13	.02 - .11	.05 - .12
CFI	.97	0.99	0.97	0.97	0.99	0.97	0.99	0.97	0.97	0.98	0.97
TLI	.93	0.96	0.92	0.93	0.96	0.94	0.96	0.92	0.93	0.95	0.93
SRMR	.05	.03	.06	.05	.03	.05	.04	.06	.05	.04	.05
Chi-Square df = 11	28.17	20.13	32.34	28.64	20.13	27.02	19.11	30.28	27.90	21.50	27.22
Chi-Square Significance	.00	.04	.00	.00	.04	.01	.06	.00	.00	.03	.00

**B.3 Model Fit Indices (Complete) for Appended Models (B)**

Model	2b	3b	4b	5b	6b	7b	8b	9b	10b	11b	12b
Borderline Variable	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD
Relationship Quality Variable	Full DAS	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.
Alcohol Variable	CAGE	AUDIT	AUDIT	AUDIT	AUDIT	AUDIT	CAGE	CAGE	CAGE	CAGE	CAGE
RMSEA	.02	.04	.04	.02	.04	.03	.00	.00	.00	.00	.01
RMSEA 90% CI	.00 - .08	.00 - .12	.00 - .10	.00 - .08	.00 - .10	.00 - .10	.00 - .09	.00 - .06	.00 - .07	.00 - .07	.00 - .09
CFI	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TLI	1.00	0.99	0.99	1.00	0.99	0.99	1.00	1.00	1.01	1.00	1.00
SRMR	.03	.05	.05	.04	.05	.04	.02	.02	.02	.04	.03
Chi-Square ( <i>df</i> )	15.50 (14)	6.91 (5)	10.61 (8)	12.95 (12)	11.98 (9)	9.73 (8)	5.34 (6)	6.42 (9)	4.59 (7)	9.91 (11)	7.14 (7)
Chi-Square Significance	.35	.23	.23	.37	.21	.28	.50	.70	.71	.54	.41

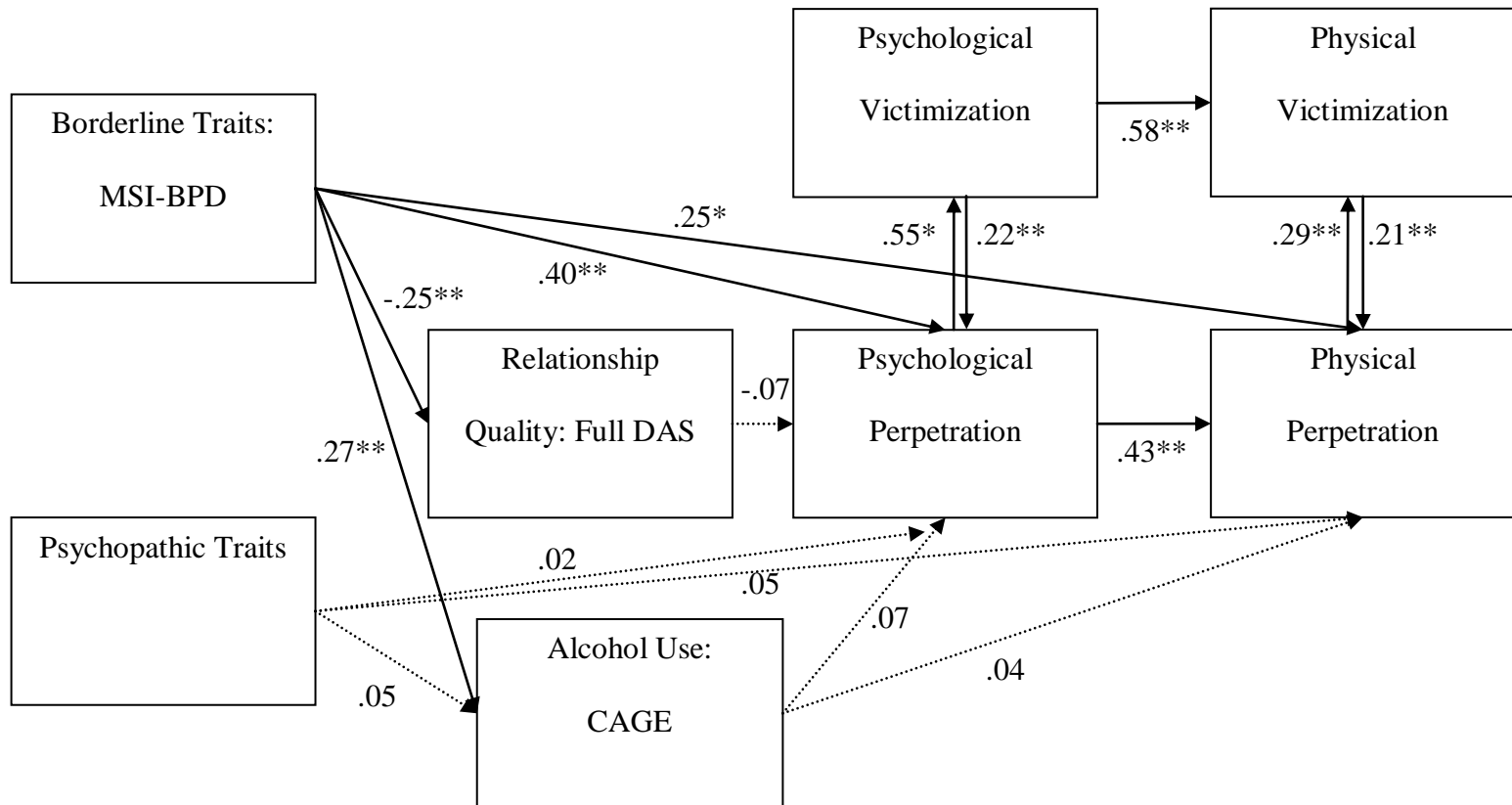
**B.4 Model Fit Indices (Complete) for Appended Models (C)**

Model	2c	3c	4c	5c	6c	7c	8c	9c	10c	11c	12c
Borderline Variable	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD
Relationship Quality Variable	Full DAS	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.
Alcohol Variable	CAGE	AUDIT	AUDIT	AUDIT	AUDIT	AUDIT	CAGE	CAGE	CAGE	CAGE	CAGE
RMSEA	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
RMSEA 90% CI	.00 - .07	.00 - .09	.00 - .10	.00 - .07	.00 - .12	.00 - .03	.00 - .11	.00 - .06	.00 - .09	.00 - .14	.00 - .07
CFI	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00
TLI	1.05	1.03	1.02	1.04	1.00	1.04	1.01	1.05	1.04	0.97	1.05
SRMR	.01	.01	.02	.01	.02	.01	.02	.01	.01	.03	.01
Chi-Square ( <i>df</i> )	.81 (3)	1.31 (3)	1.76 (3)	.76 (3)	2.81 (3)	.42 (3)	2.51 (3)	.73 (3)	1.25 (3)	4.36 (3)	.88 (3)
Chi-Square Significance	.85	.73	.62	.86	.42	.94	.47	.87	.74	.22	.83

**B.5 Model Fit Indices (Complete) for Appended Models (D)**

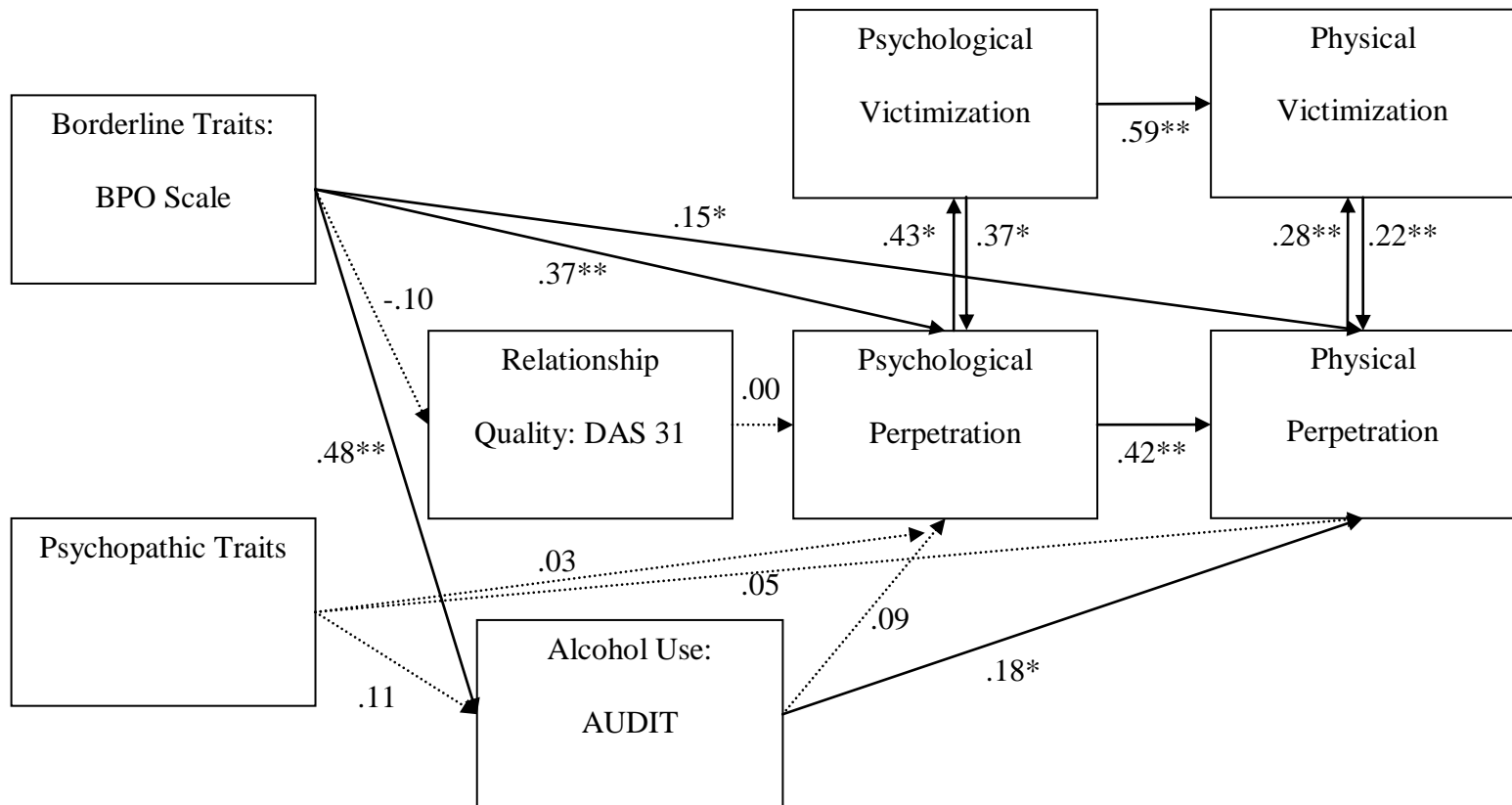
Model	2d	3d	4d	5d	6d	7d	8d	9d	10d	11d	12d
Borderline Variable	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD	BPO Scale	BPO Scale	BPO Scale	MSI-BPD	MSI-BPD
Relationship Quality Variable	Full DAS	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.	DAS 31	Full DAS	DAS Sat.	DAS 31	DAS Sat.
Alcohol Variable	CAGE	AUDIT	AUDIT	AUDIT	AUDIT	AUDIT	CAGE	CAGE	CAGE	CAGE	CAGE
RMSEA	.07	.11	.09	.08	.04	.05	.00	.03	.00	.00	.00
RMSEA 90% CI	.00 - .17	.00 - .25	.01 - .16	.00 - .15	.00 - .14	.00 - .14	.00 - .17	.00 - .15	.00 - .13	.00 - .11	.00 - .14
CFI	.99	0.99	0.98	0.98	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TLI	.96	0.95	0.95	0.96	0.99	0.99	1.01	0.99	1.01	1.03	1.01
SRMR	.03	.03	.04	.04	.03	.03	.01	.03	.02	.01	.02
Chi-Square ( <i>df</i> )	3.67 (2)	3.18 (1)	9.74 (4)	8.56 (4)	4.14 (3)	4.17 (3)	.55 (1)	2.40 (2)	1.48 (2)	.91 (2)	1.68 (2)
Chi-Square Significance	.16	.07	.05	.07	.25	.24	.46	.30	.48	.64	.43

**C.1 Model 2a**

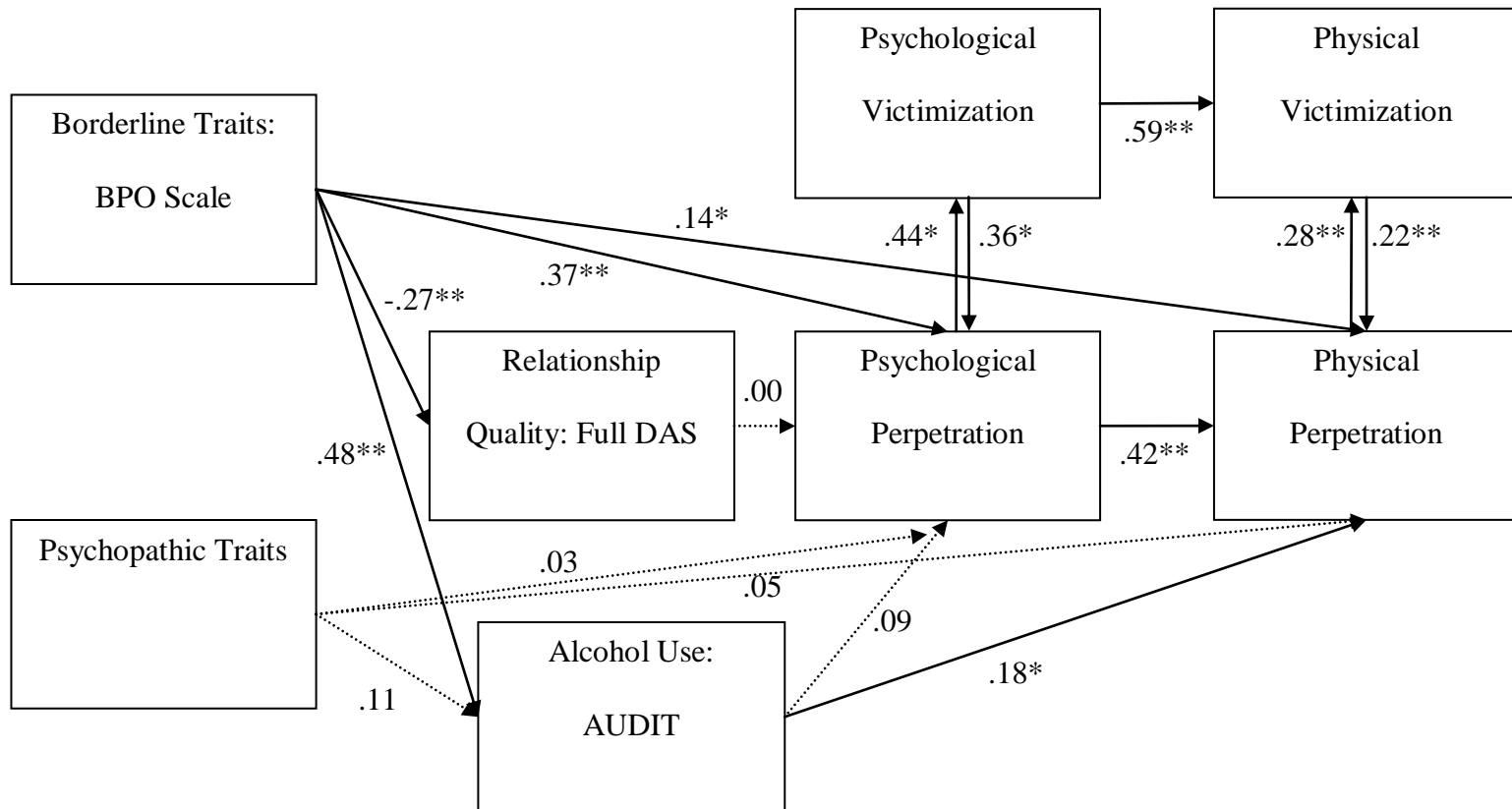




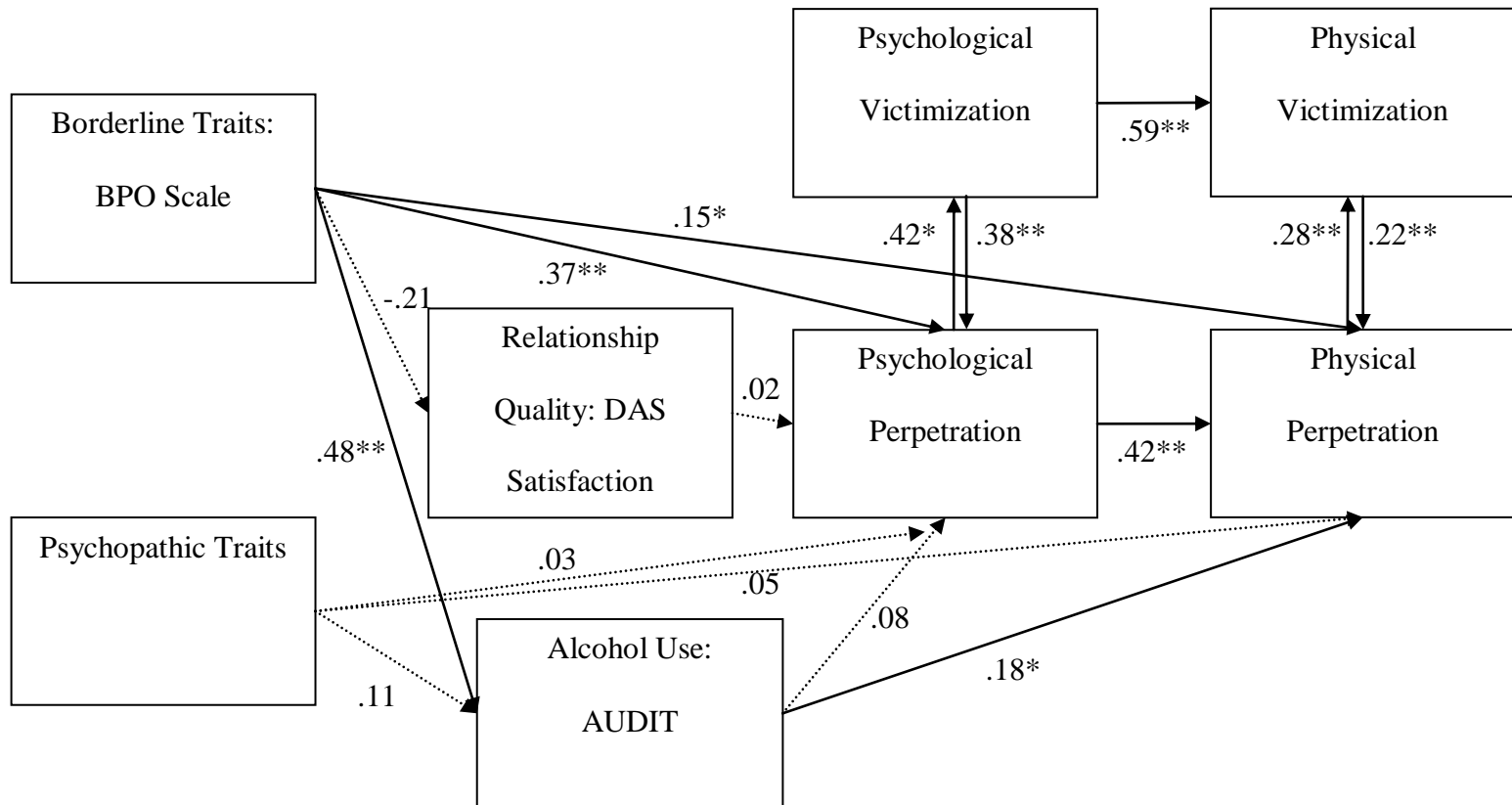
**C.2 Model 3a**



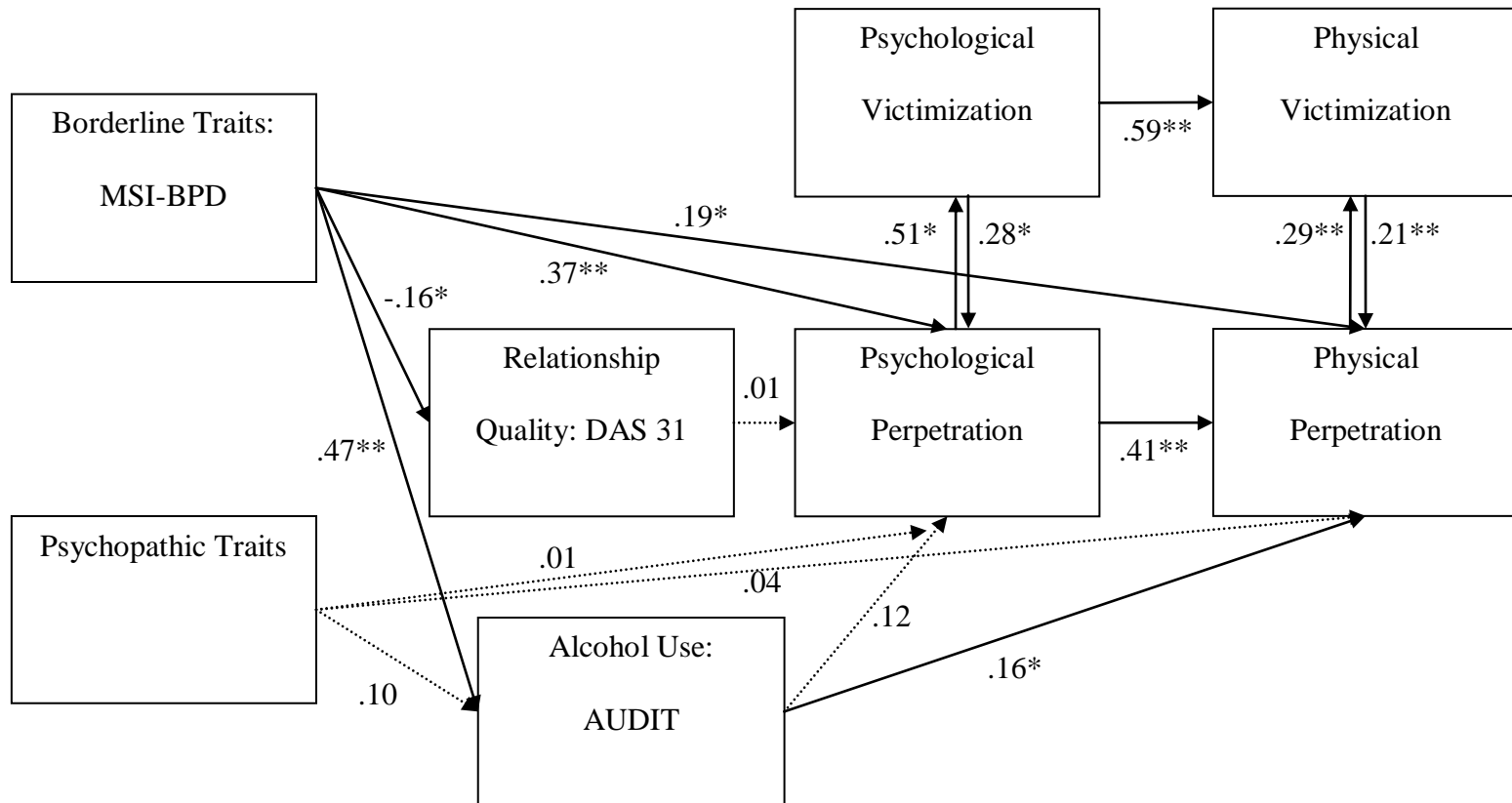
**C.3 Model 4a**



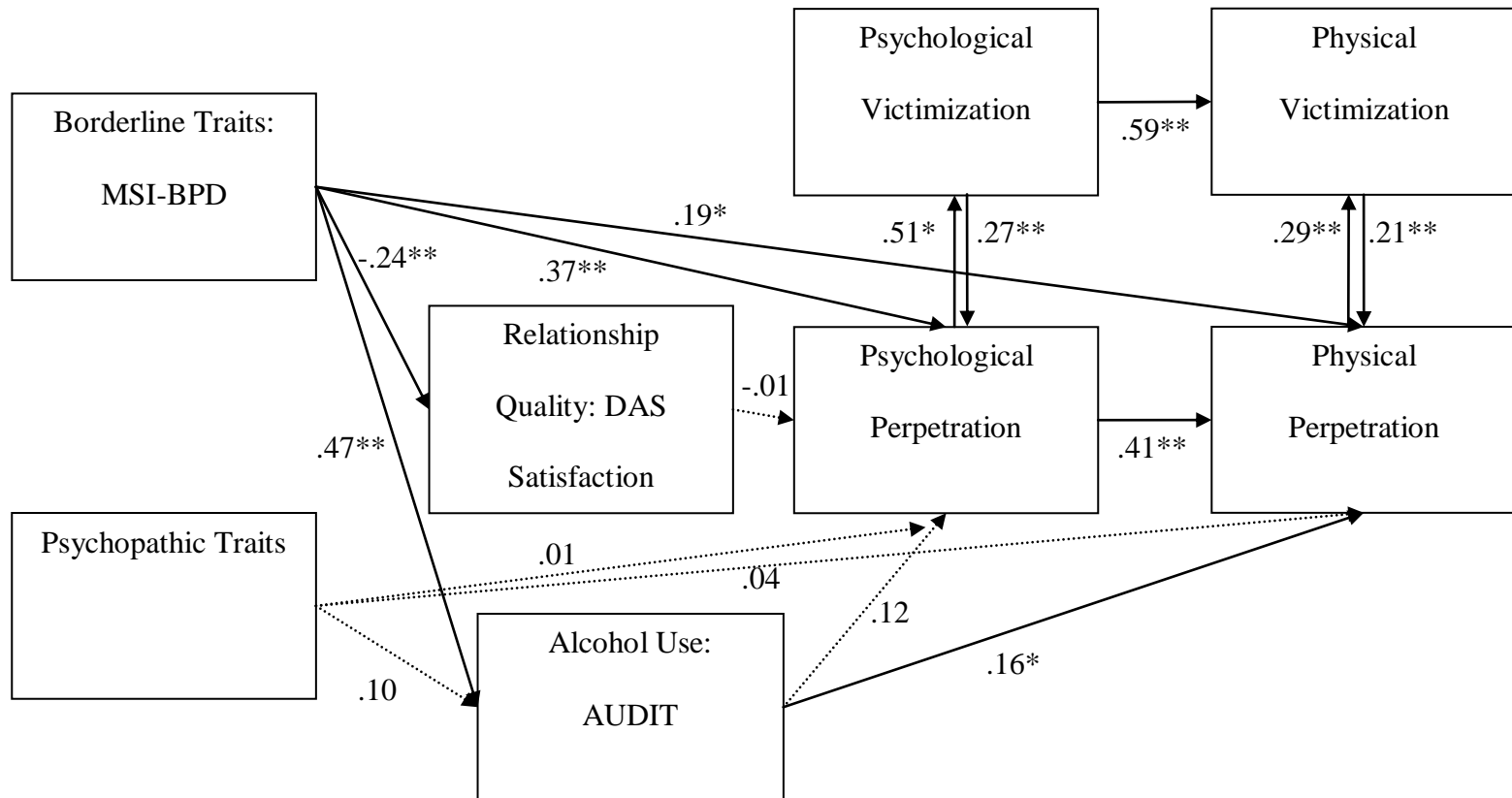
**C.4 Model 5a**



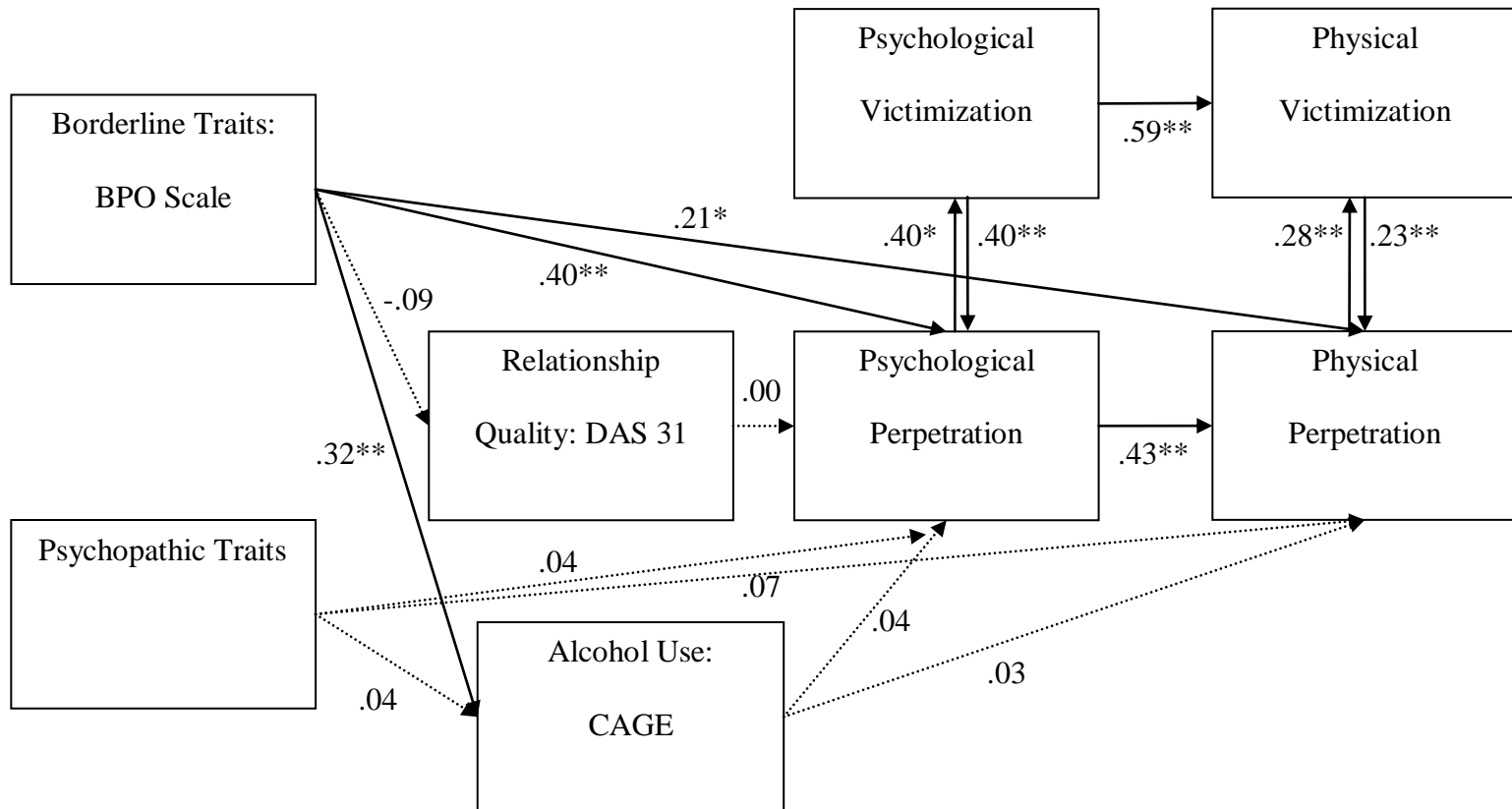
**C.5 Model 6a**



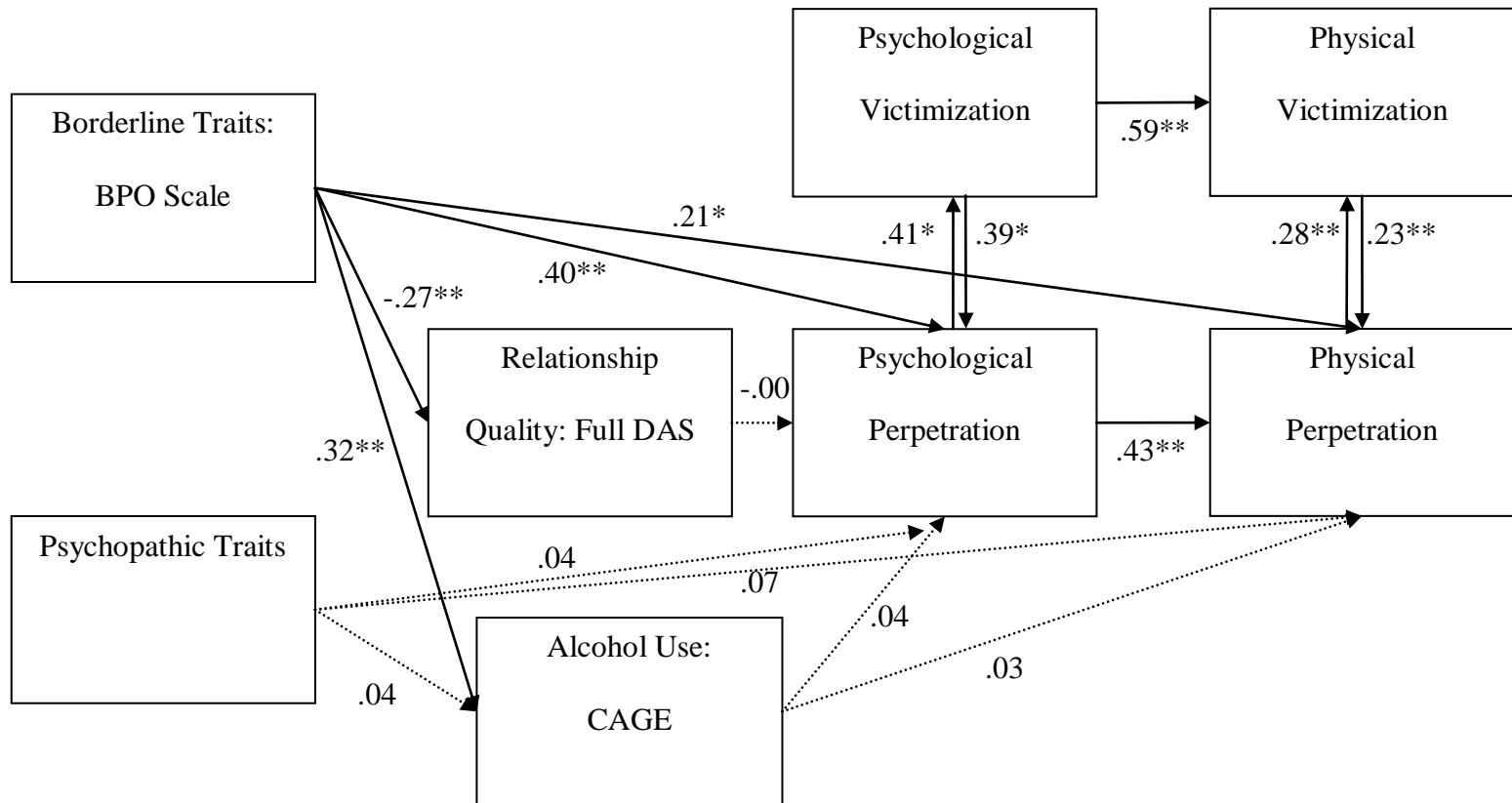
**C.6 Model 7a**



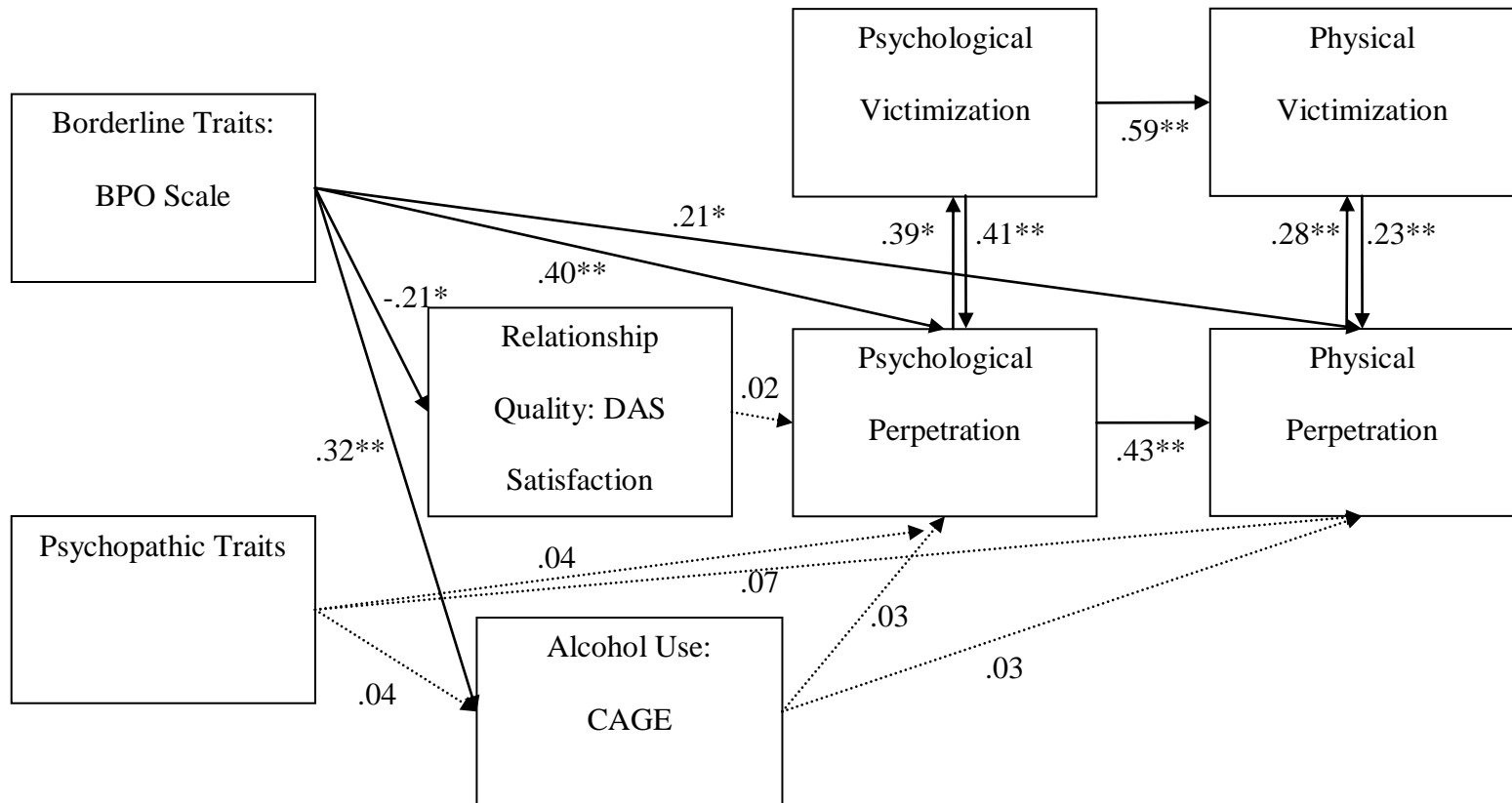
**C.7 Model 8a**



**C.8 Model 9a**

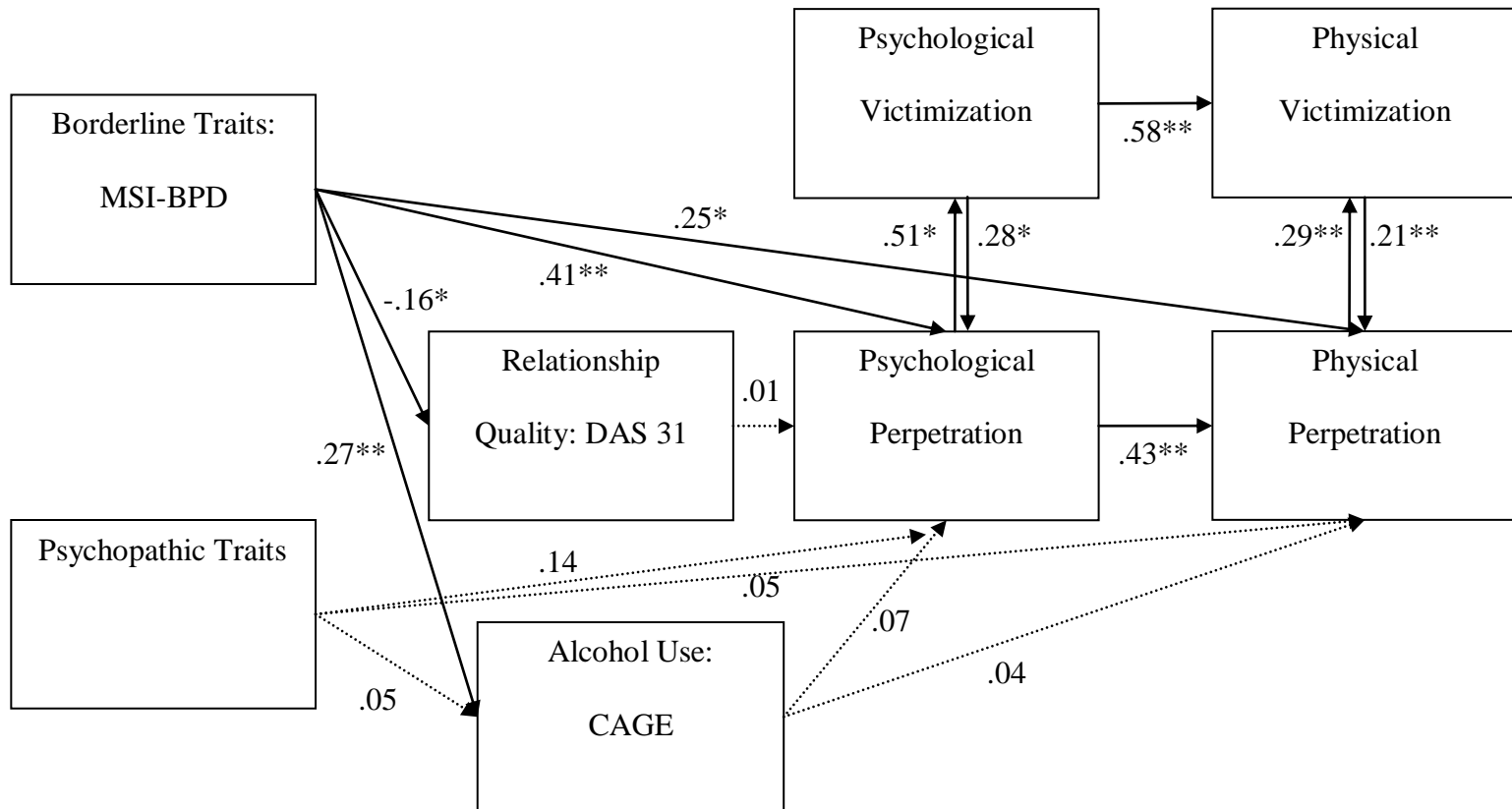


**C.9 Model 10a**

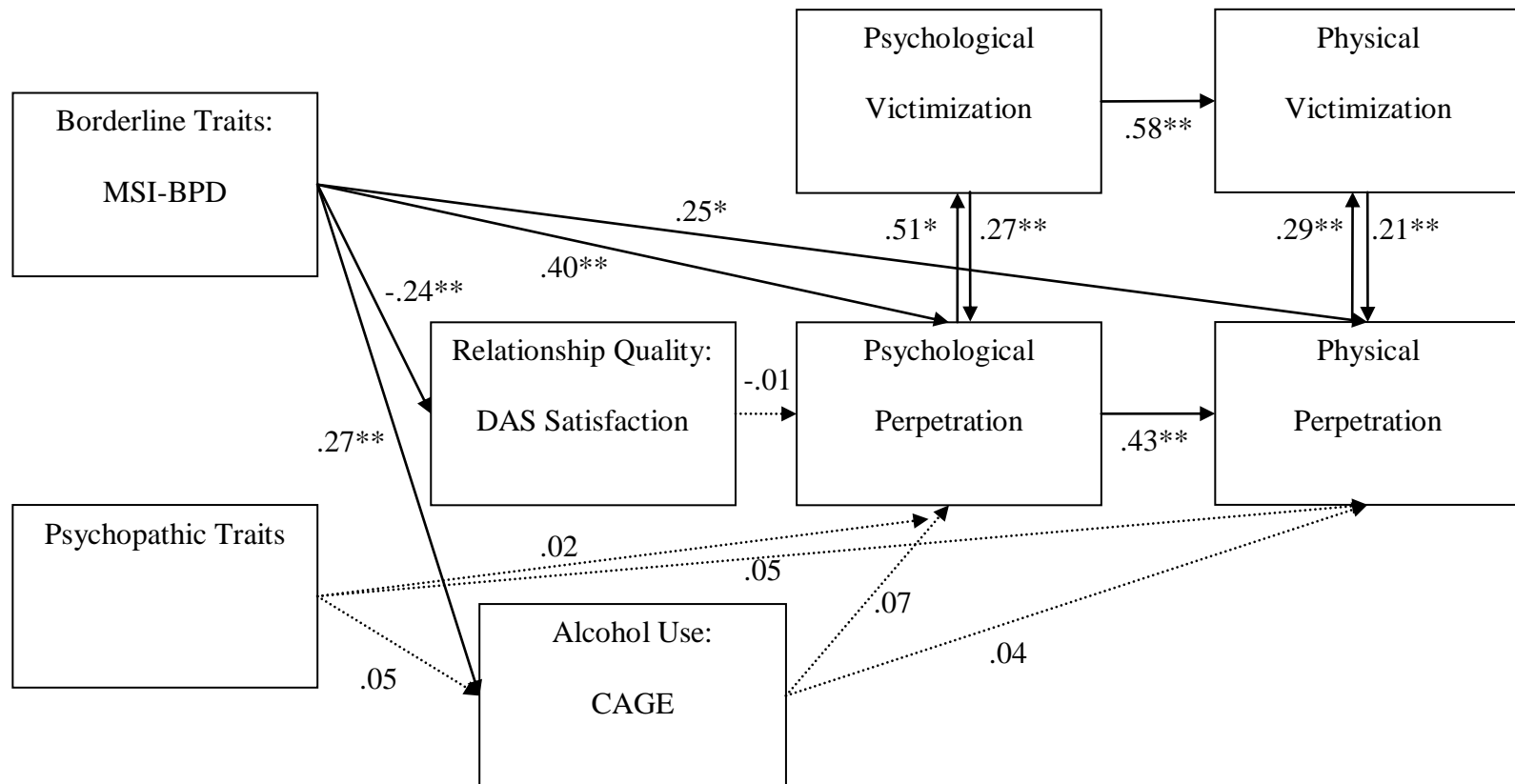




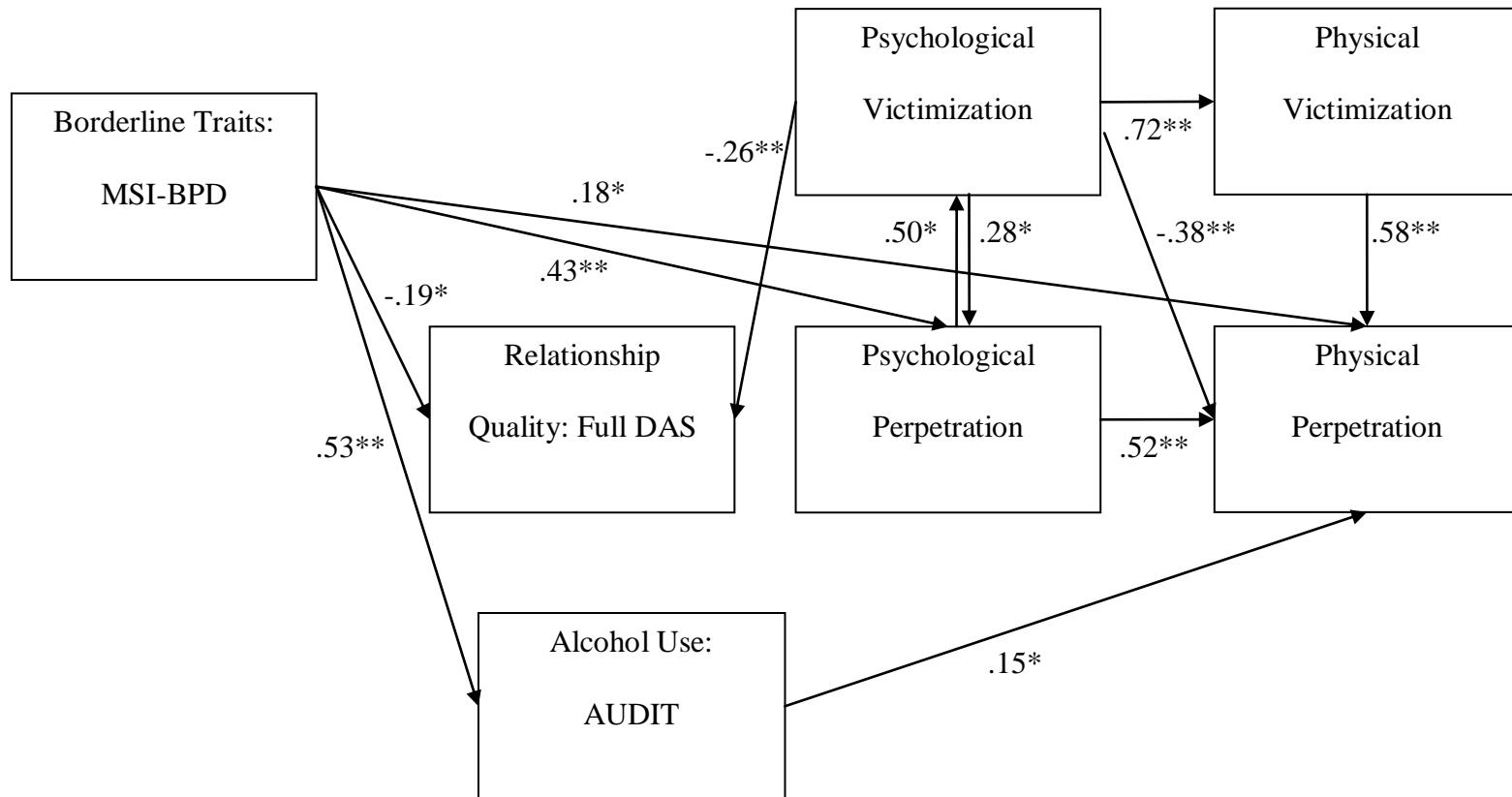
**C.10 Model 11a**



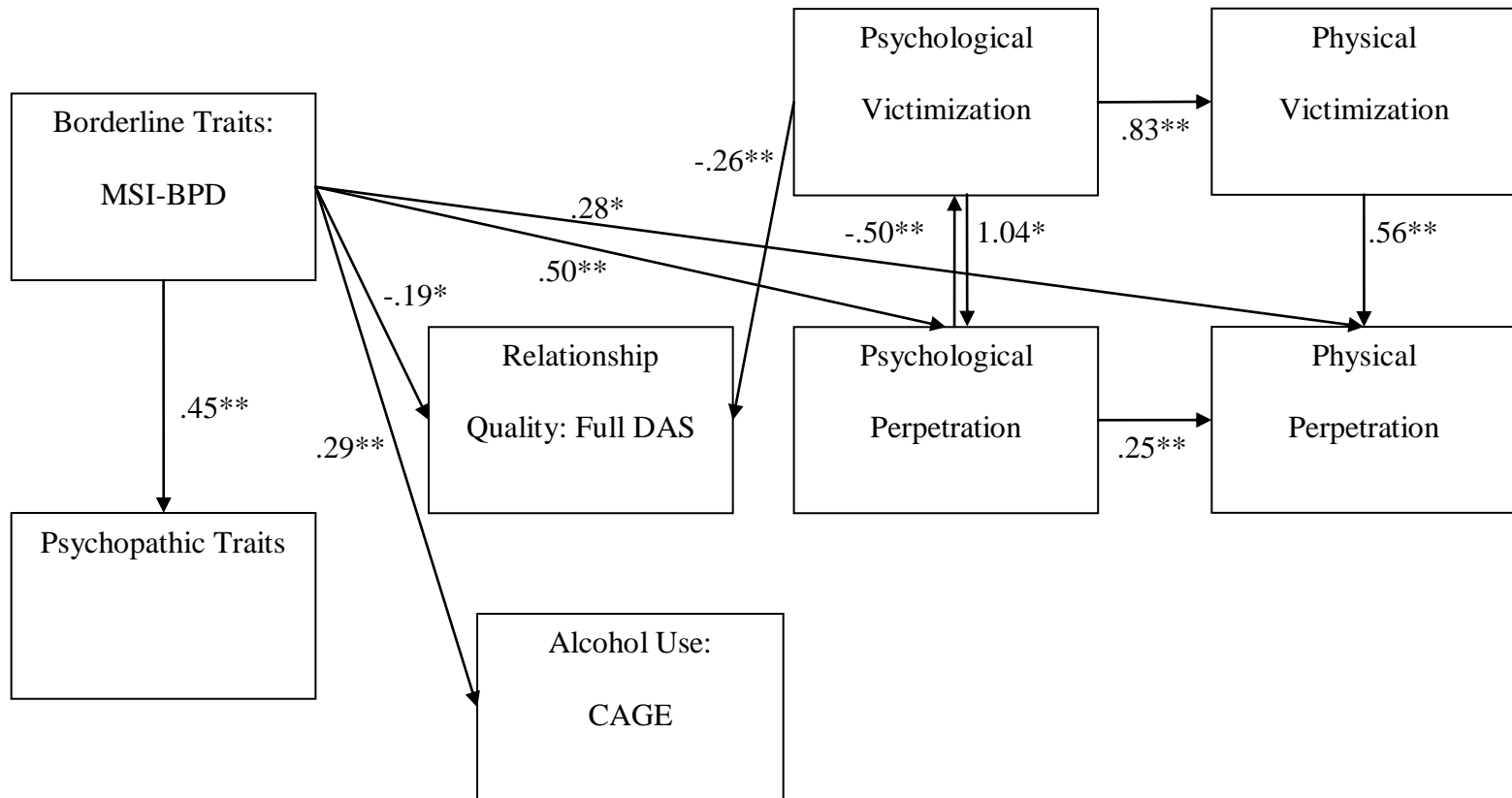
**C.11 Model 12a**



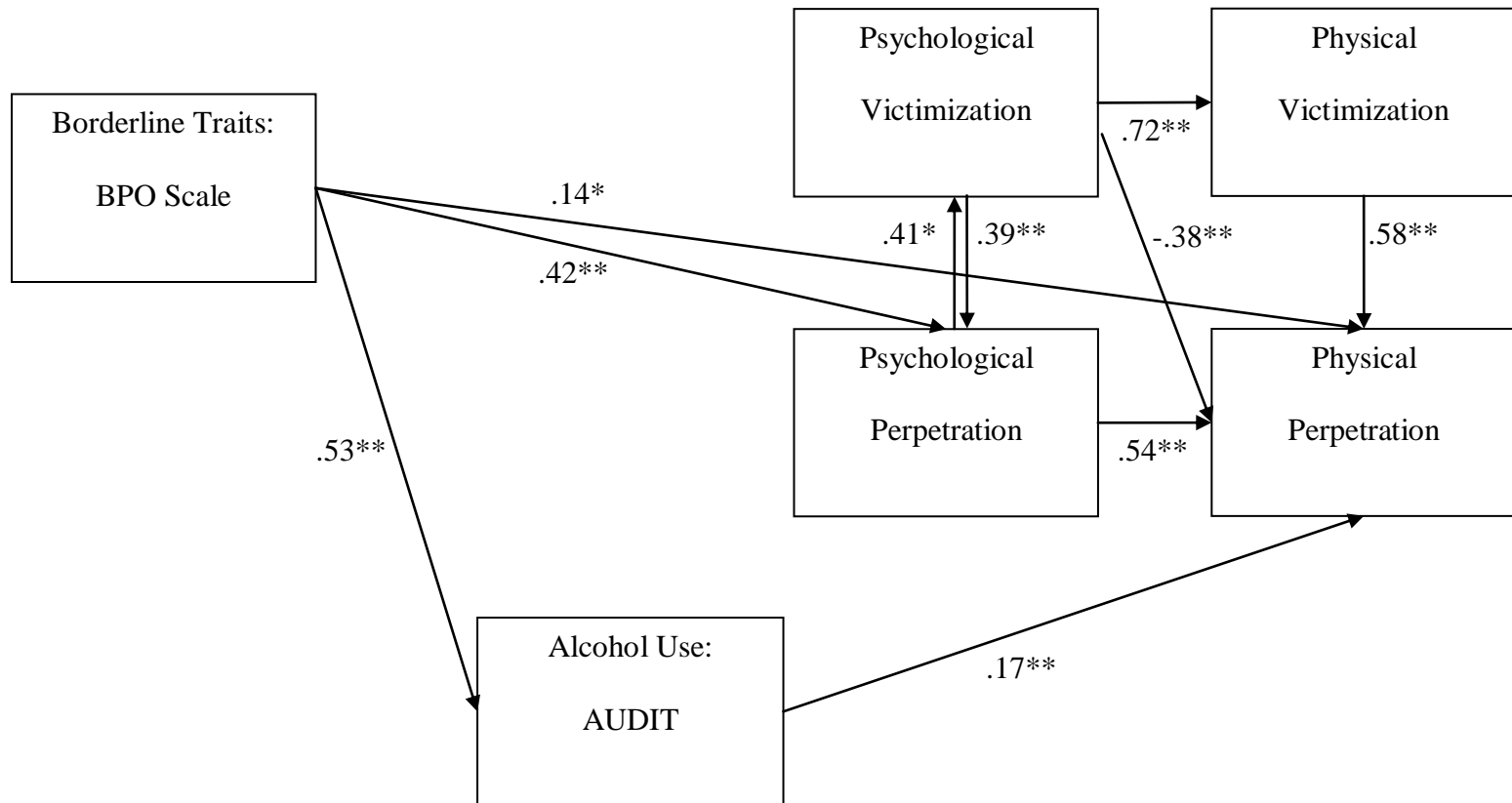
**C.12 Model 1b**



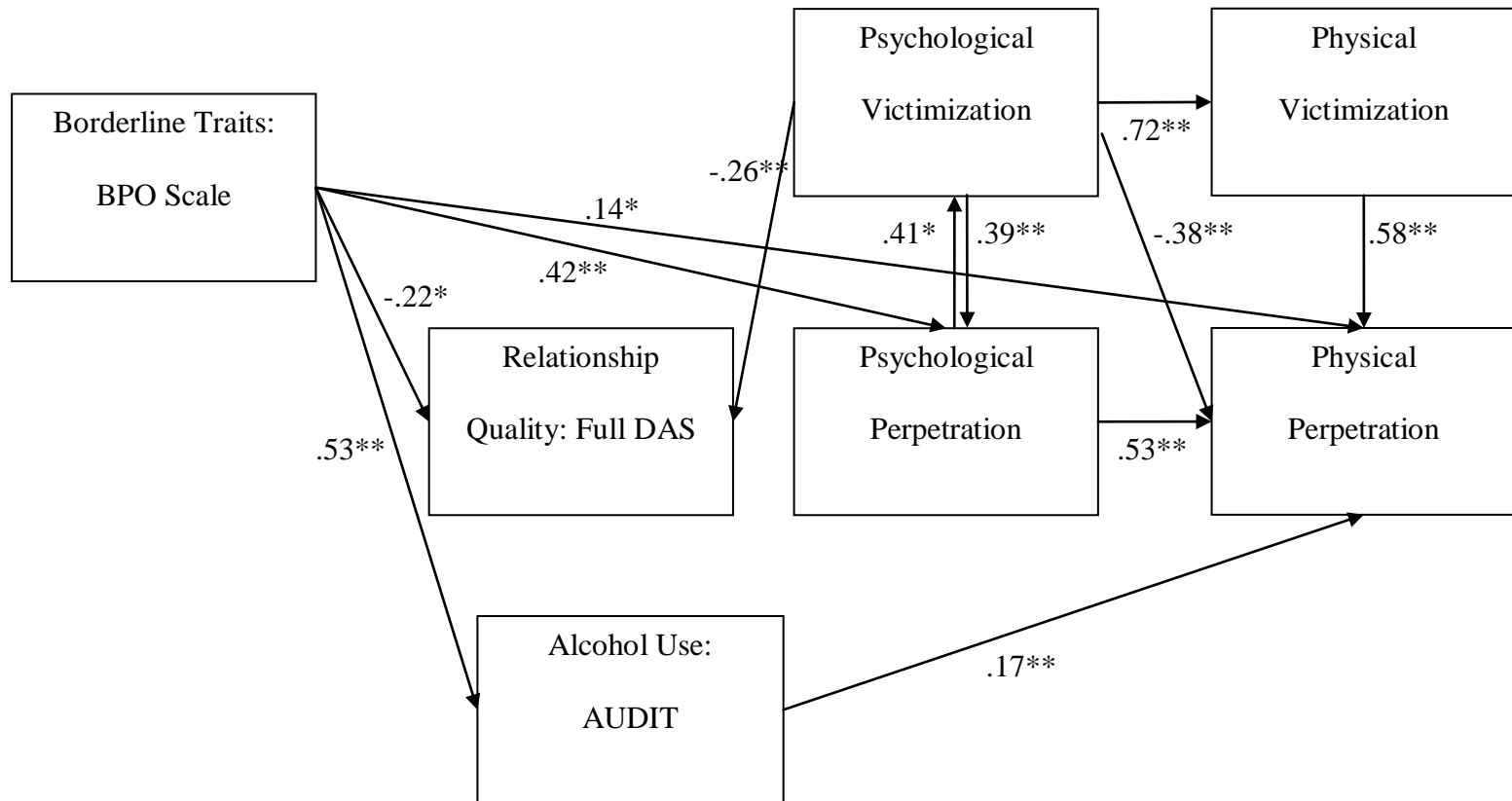
**C.13 Model 2b**



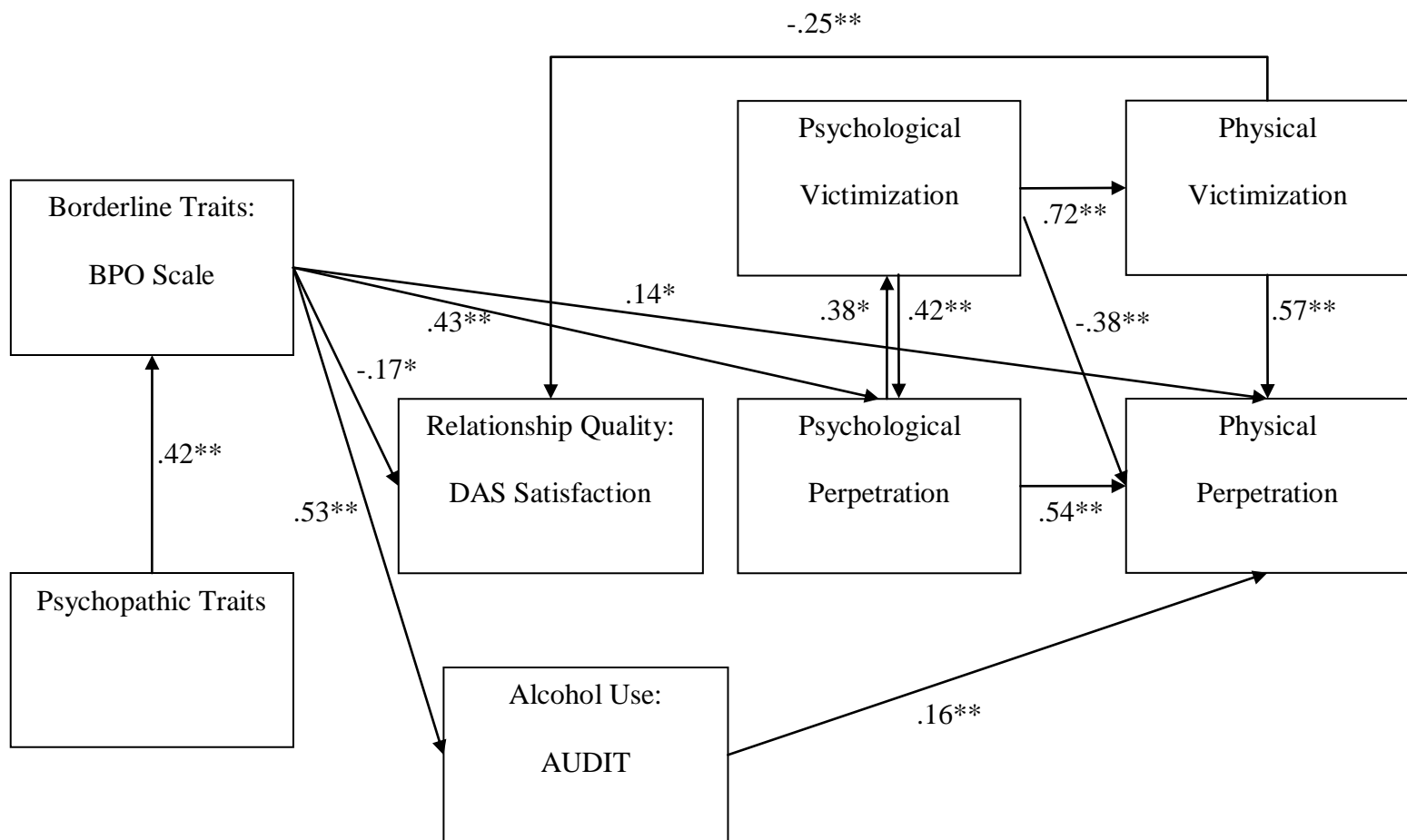
**C.14 Model 3b**



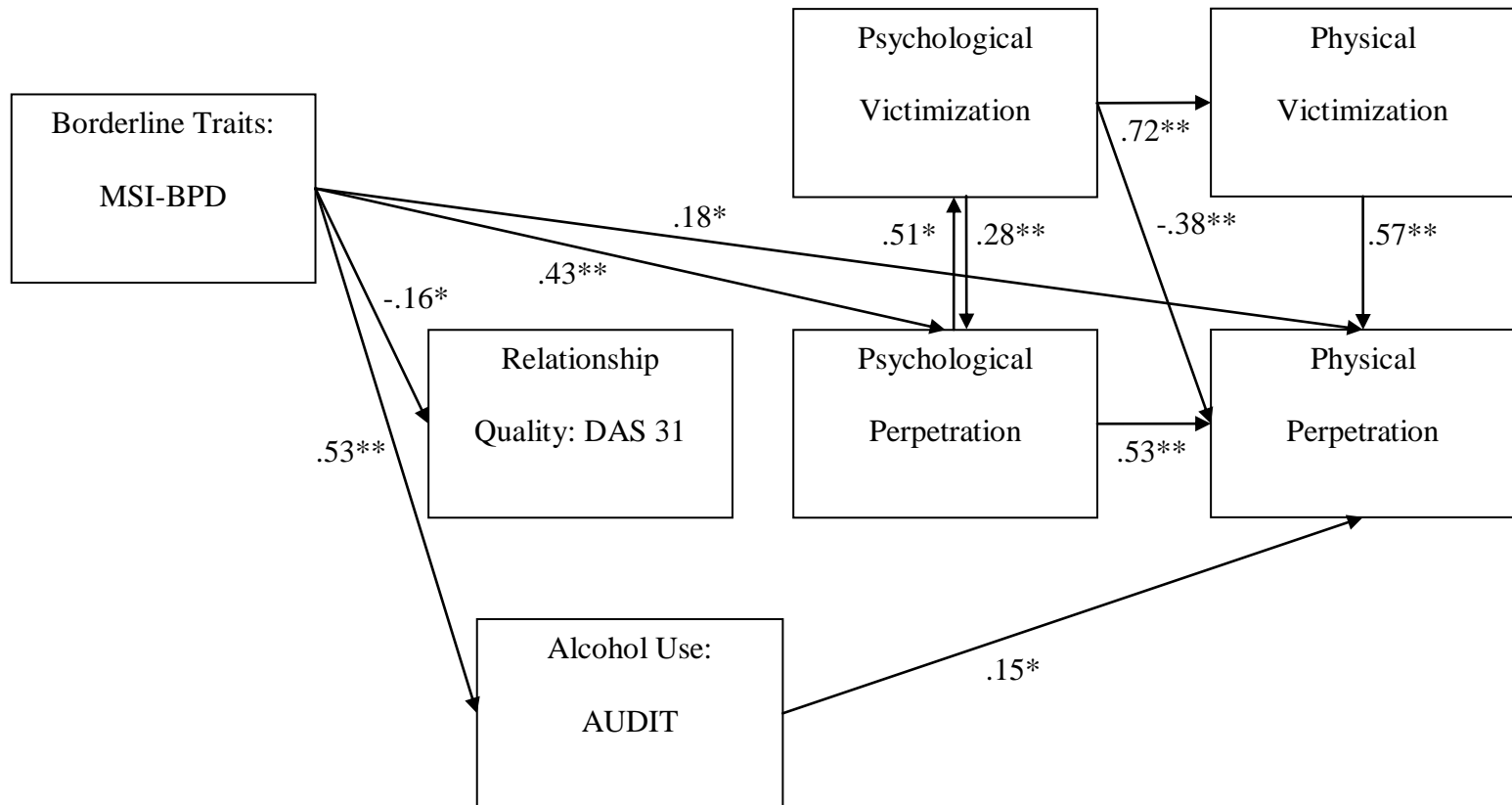
**C.15 Model 4b**



**C.16 Model 5b**

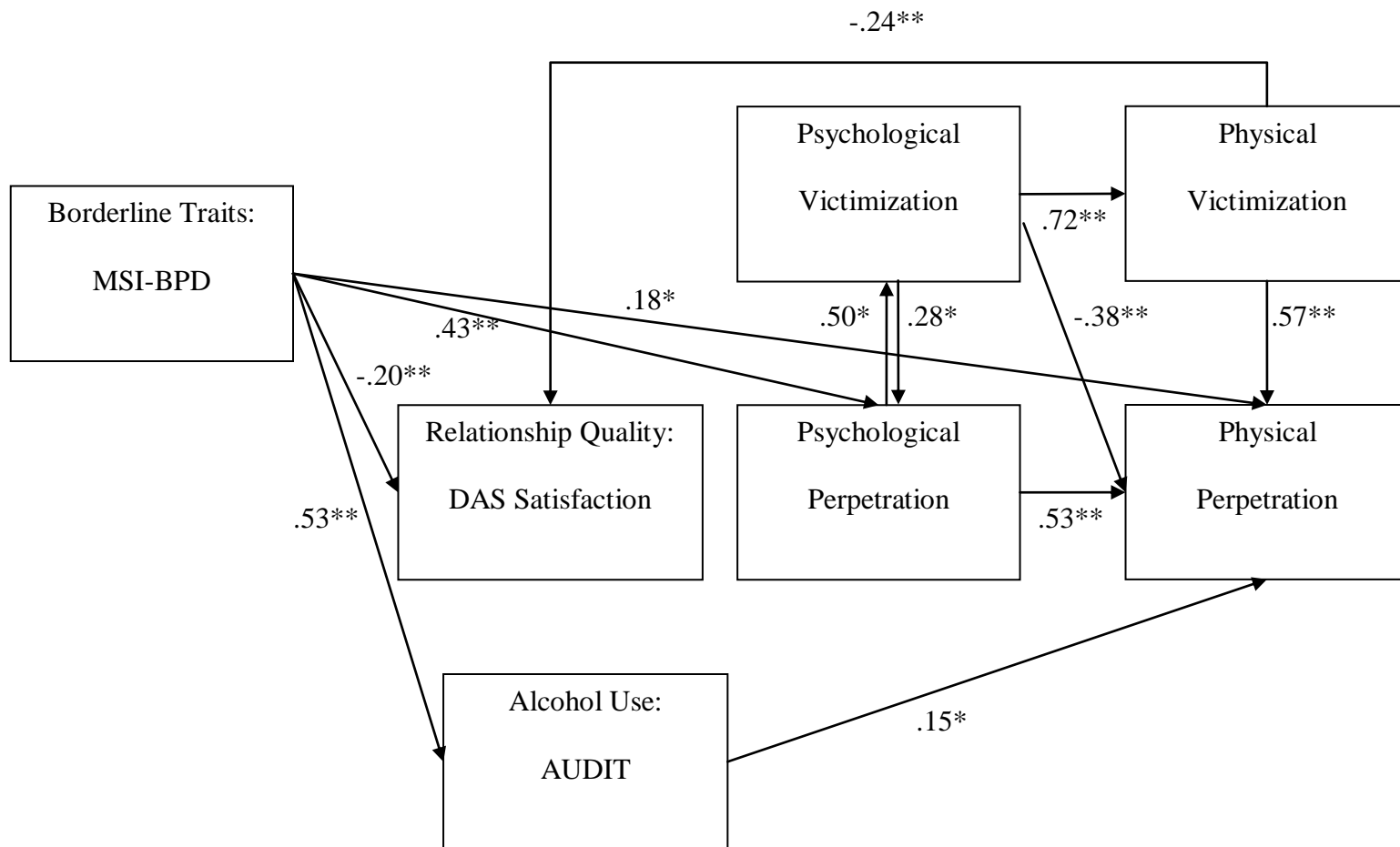


**C.17 Model 6b**

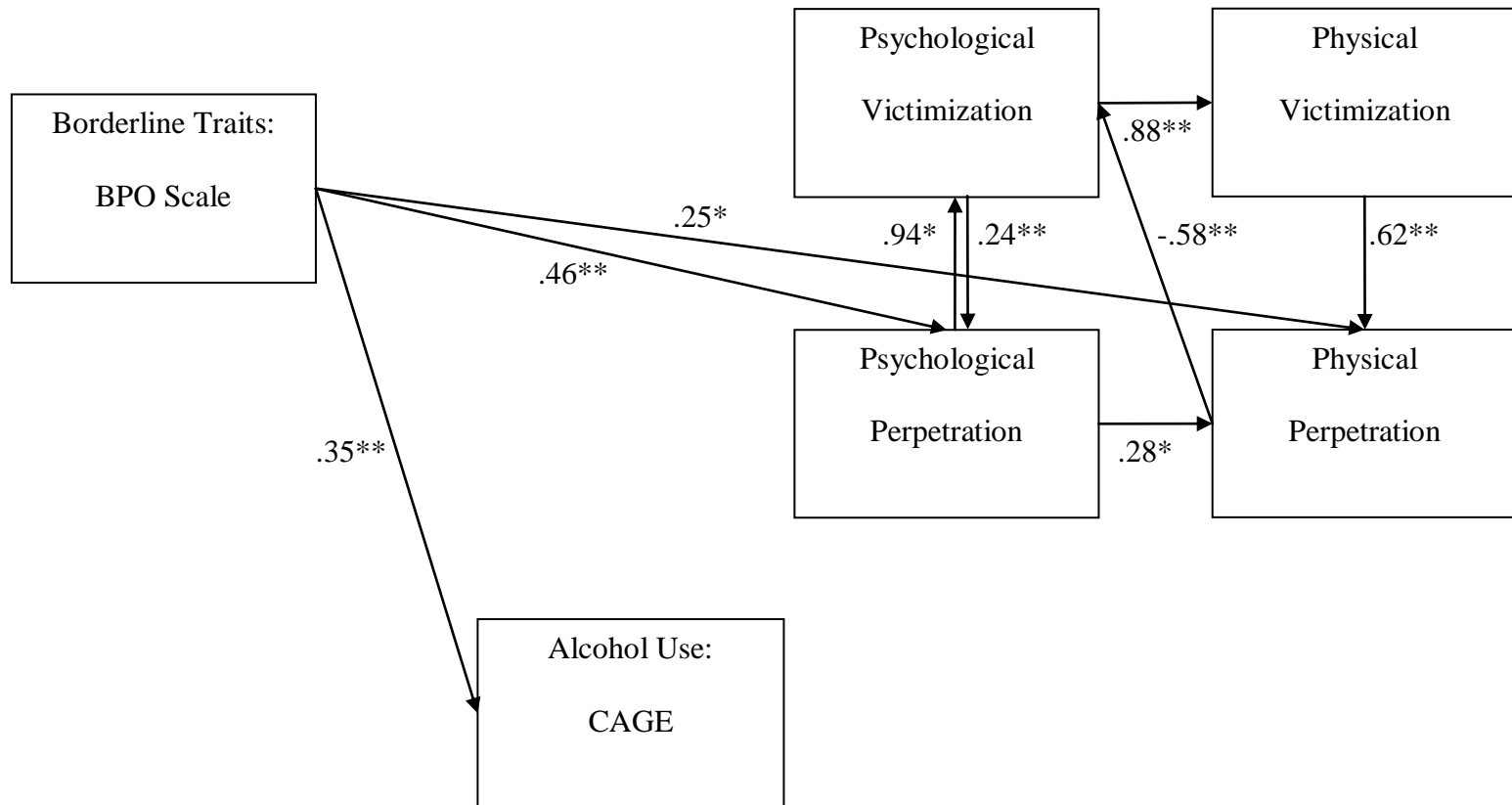




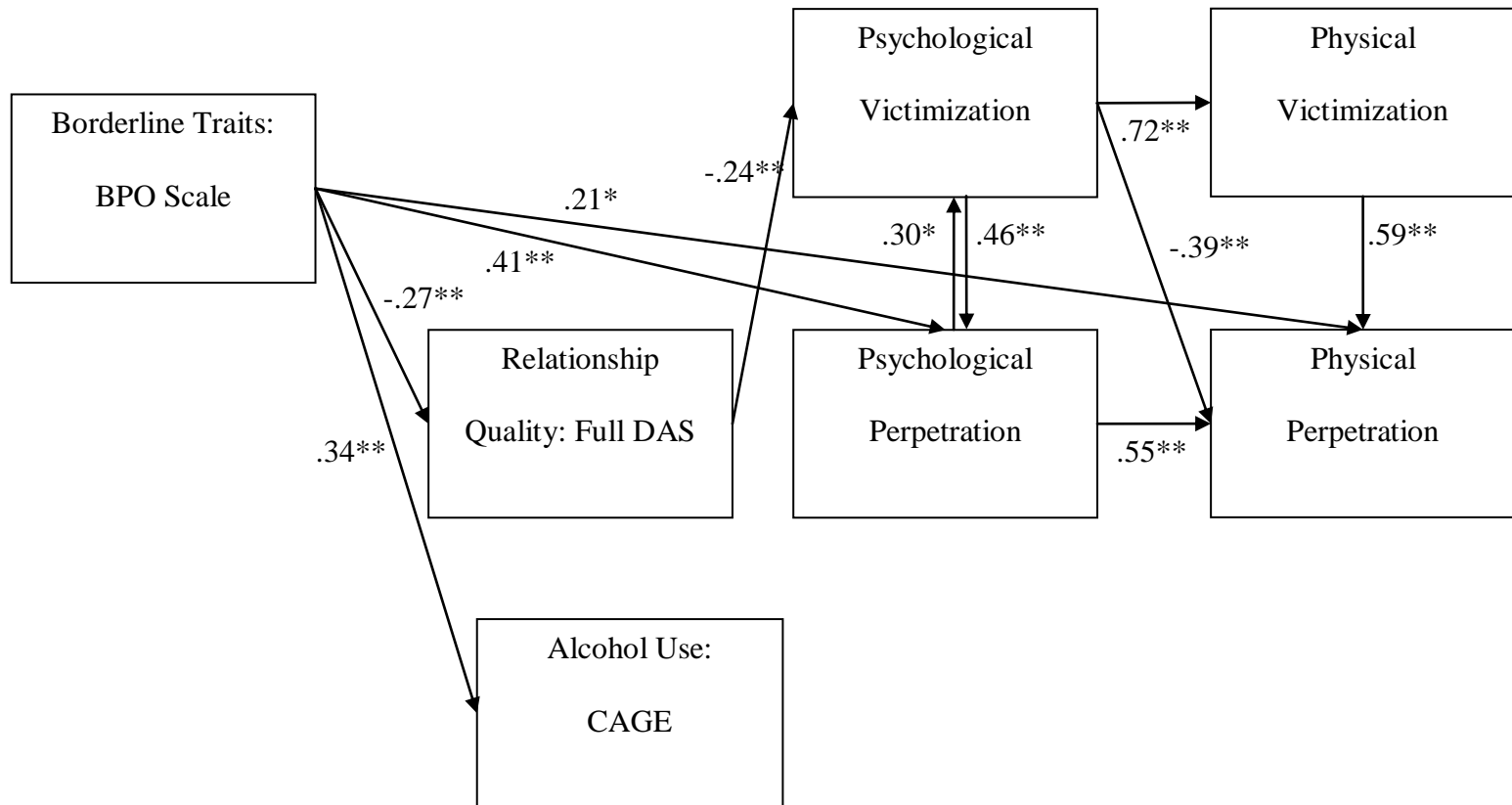
**C.18 Model 7b**



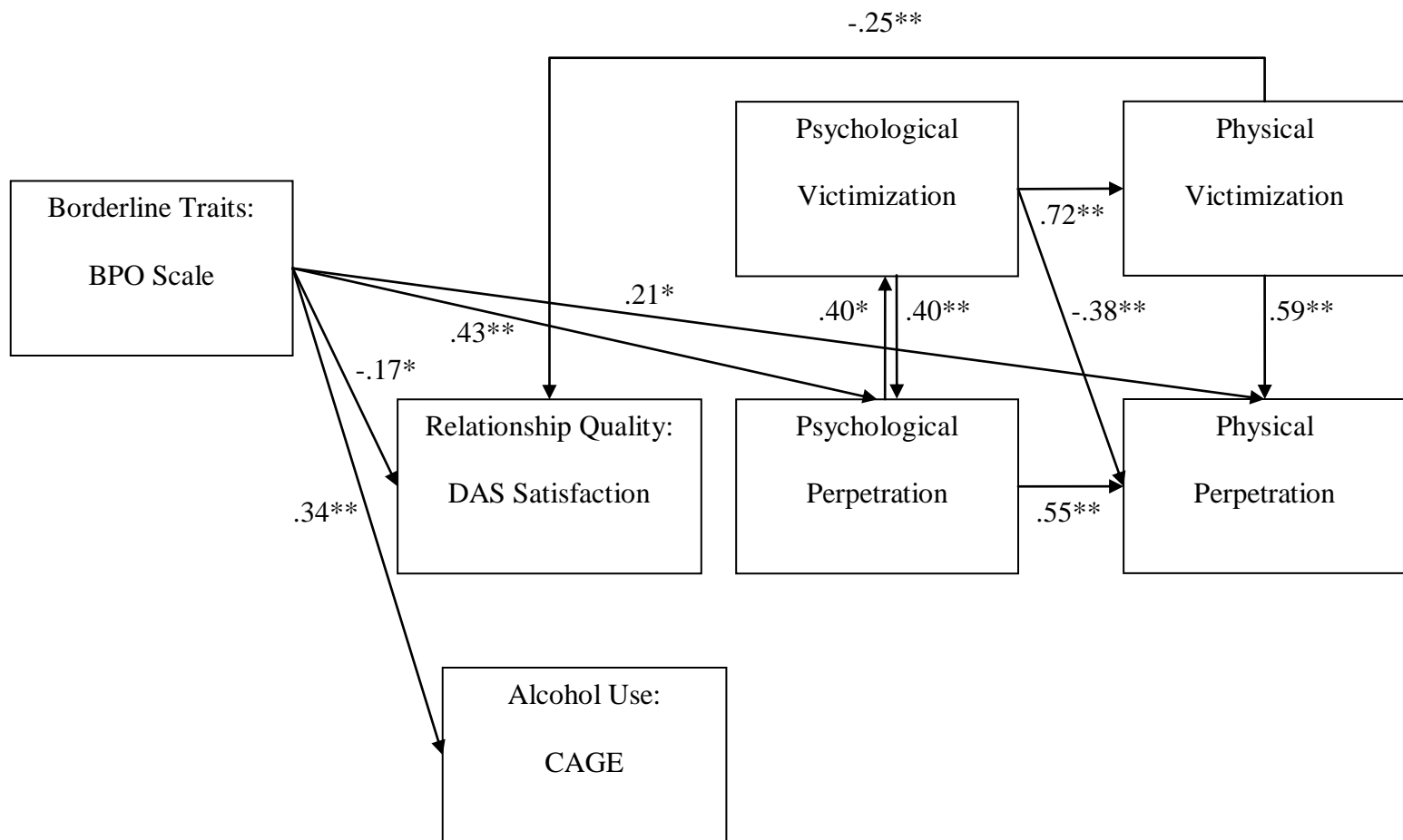
**C.19 Model 8b**



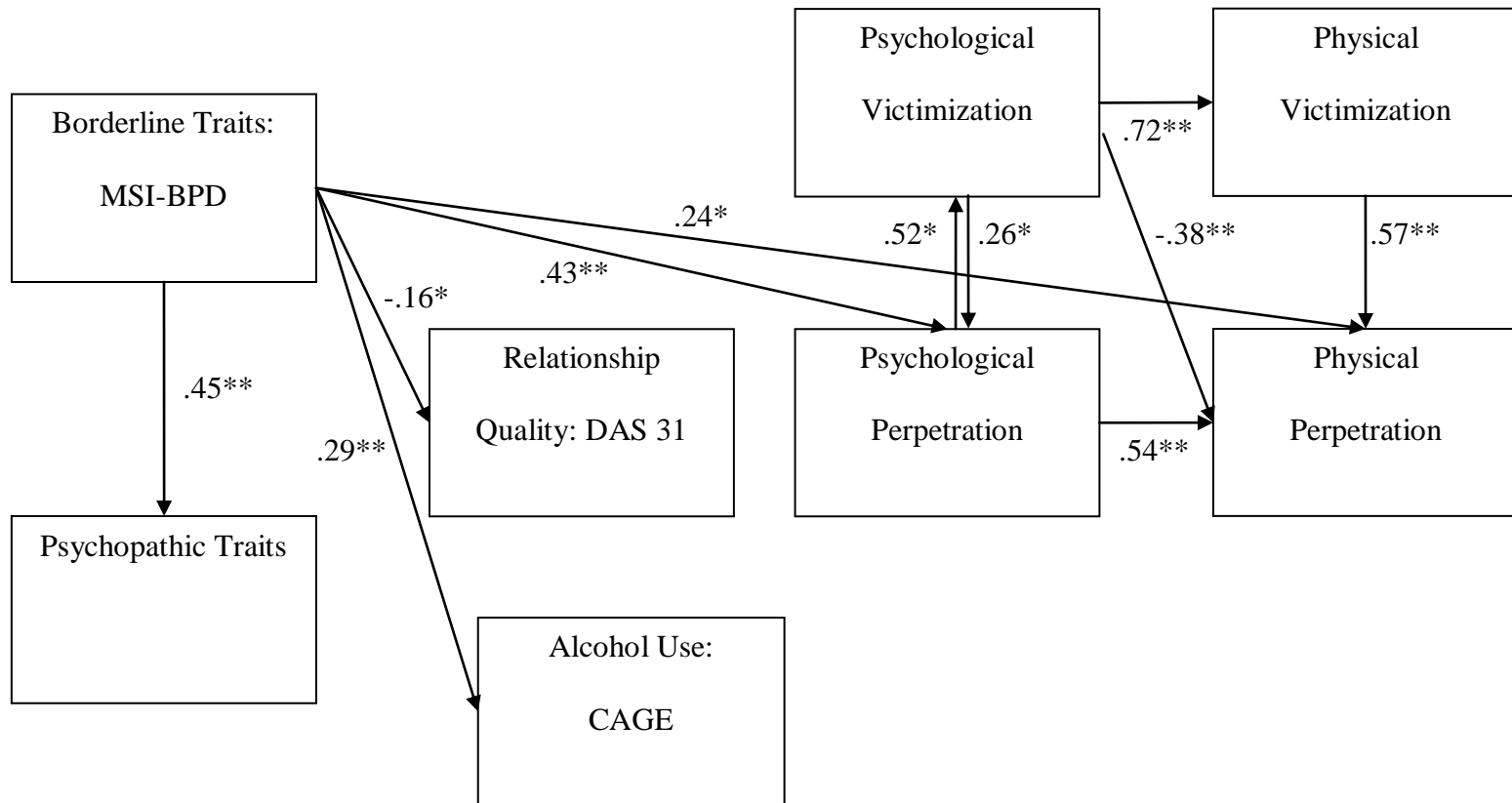
**C.20 Model 9b**



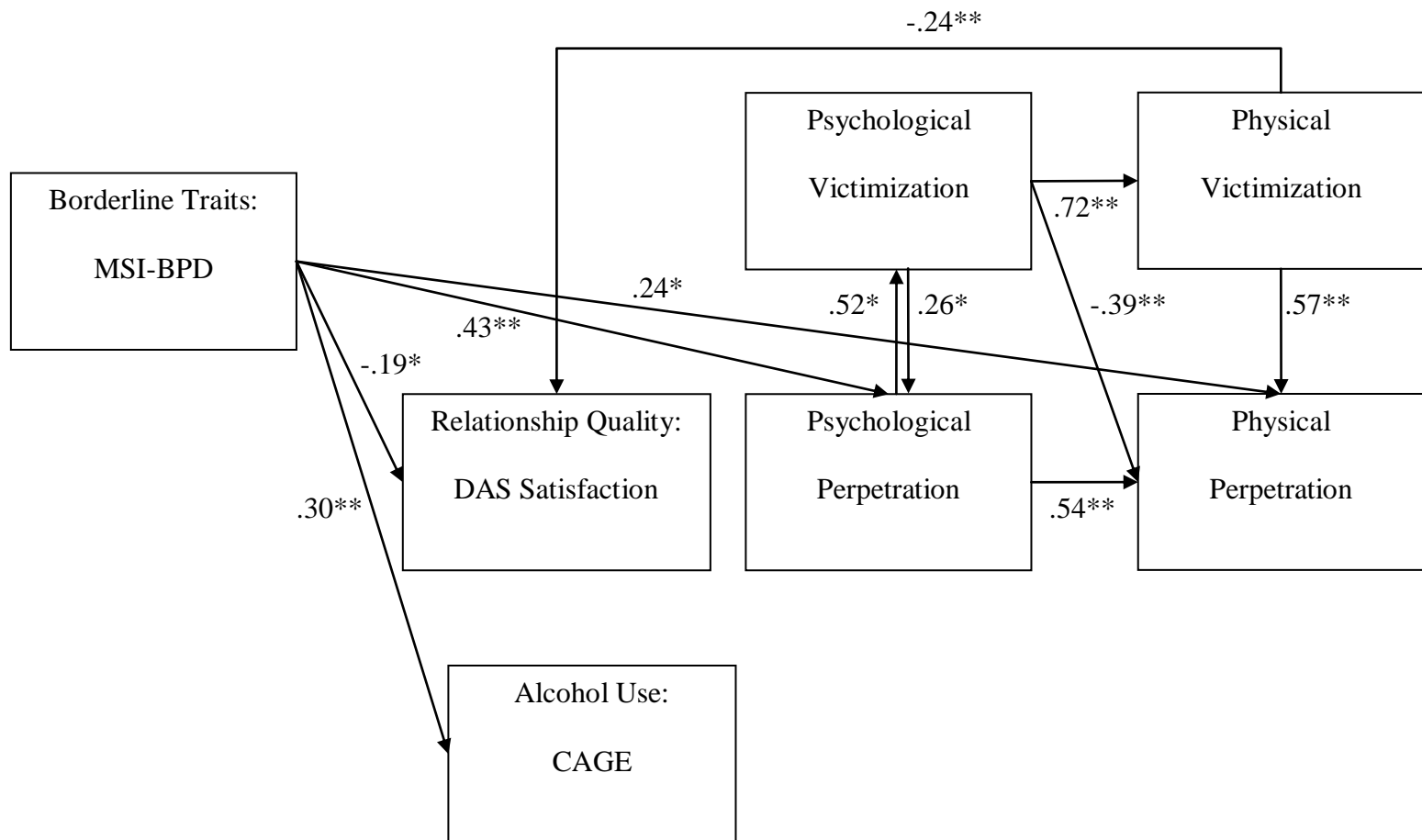
**C.21 Model 10b**



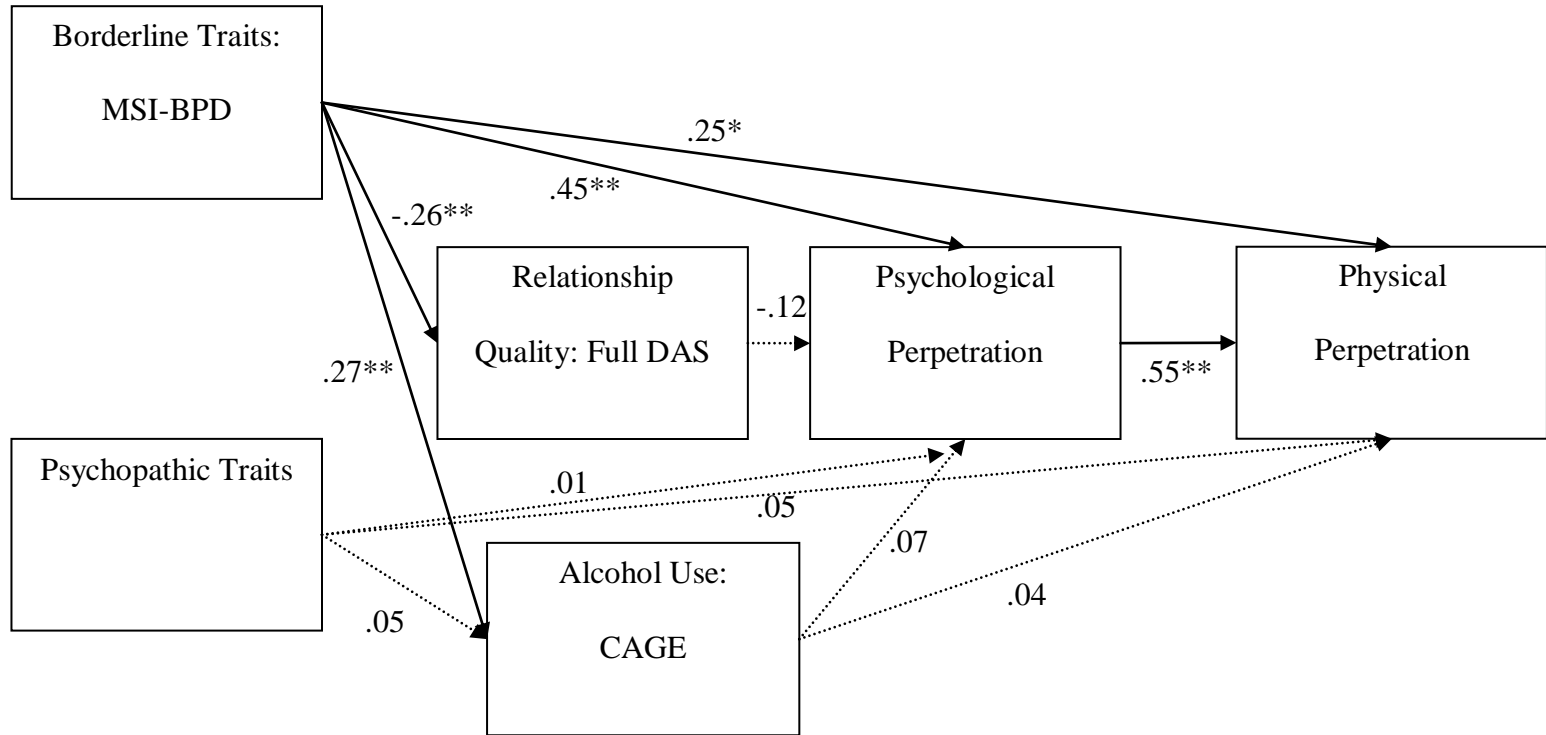
**C.22 Model 11b**



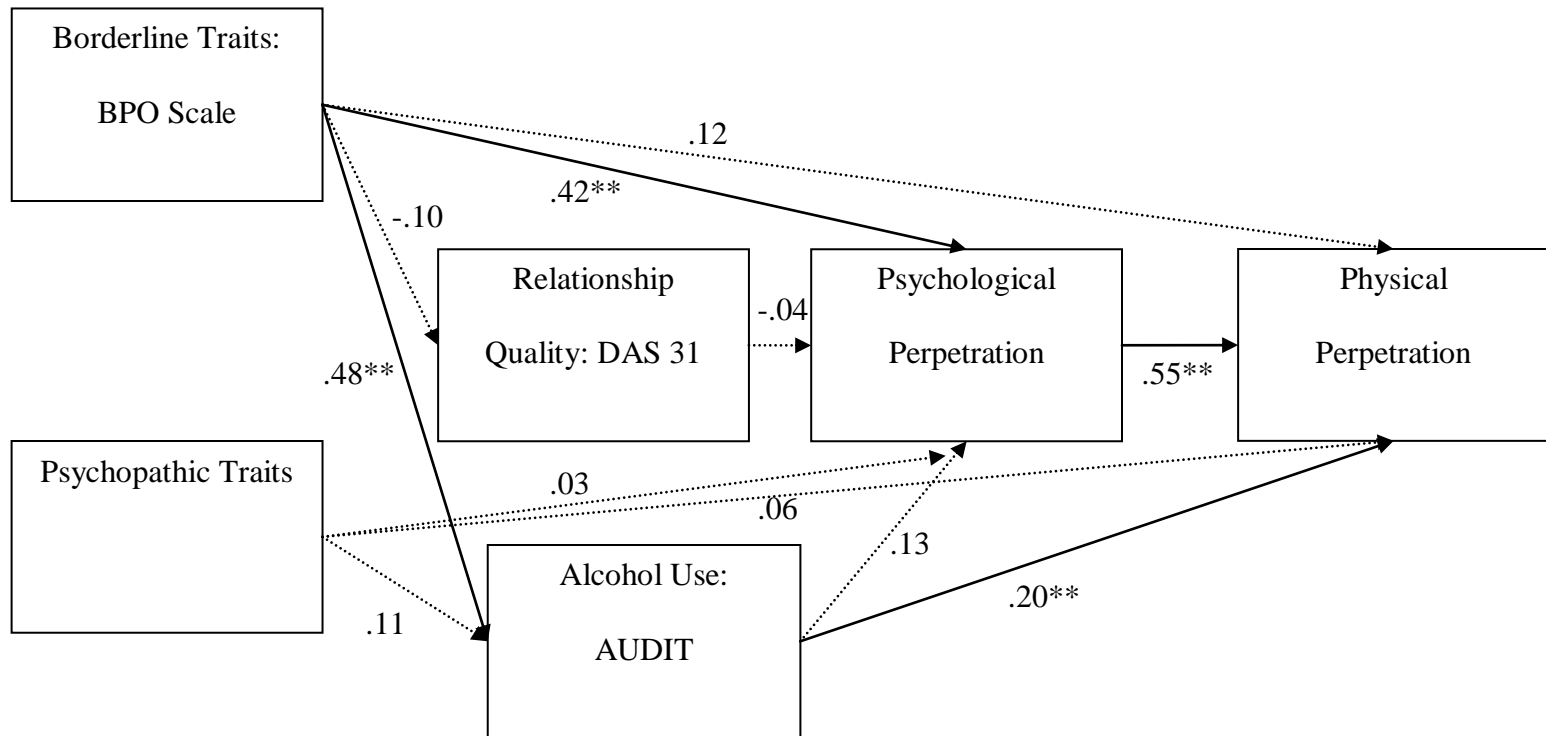
**C.23 Model 12b**



**C.24 Model 2c**

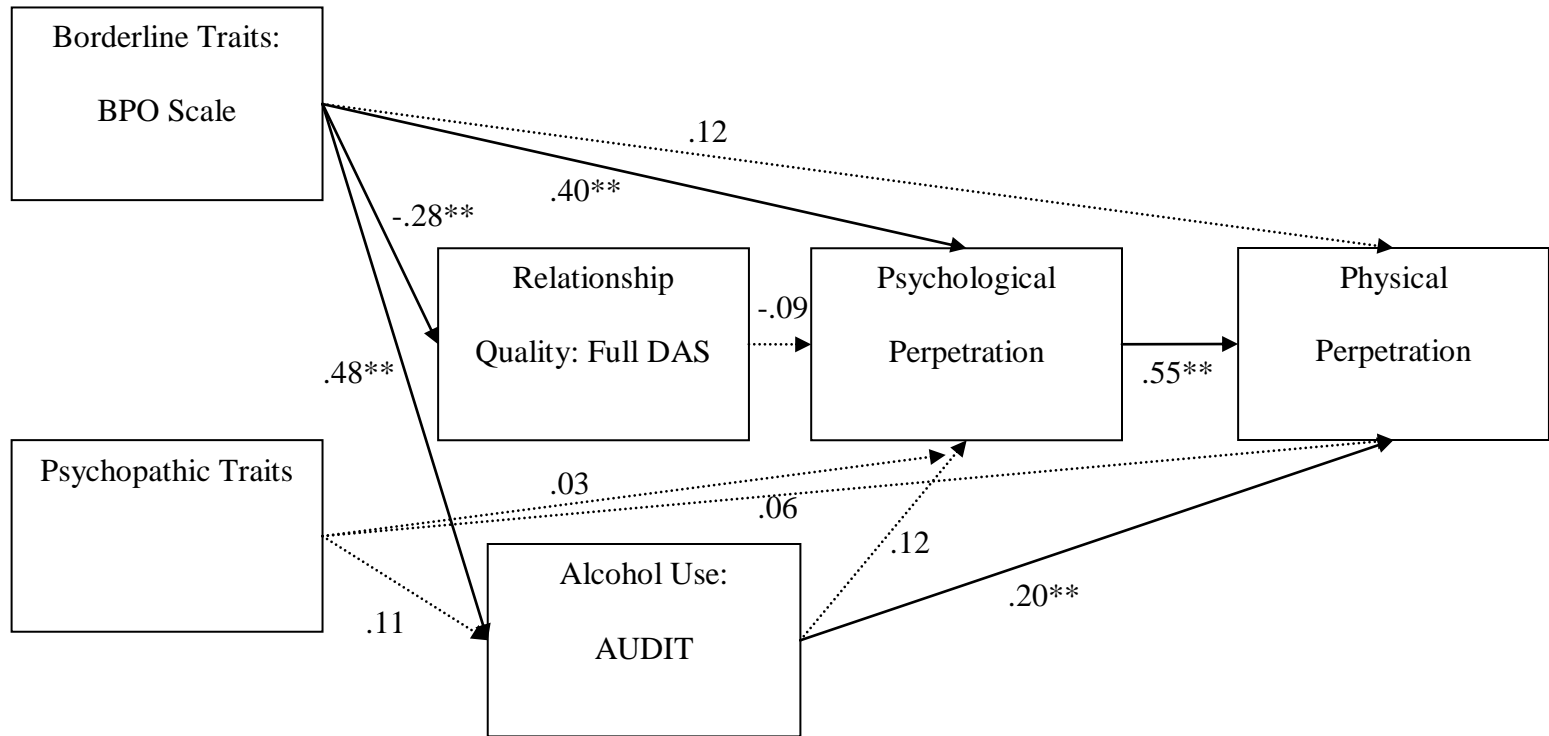


**C.25 Model 3c**

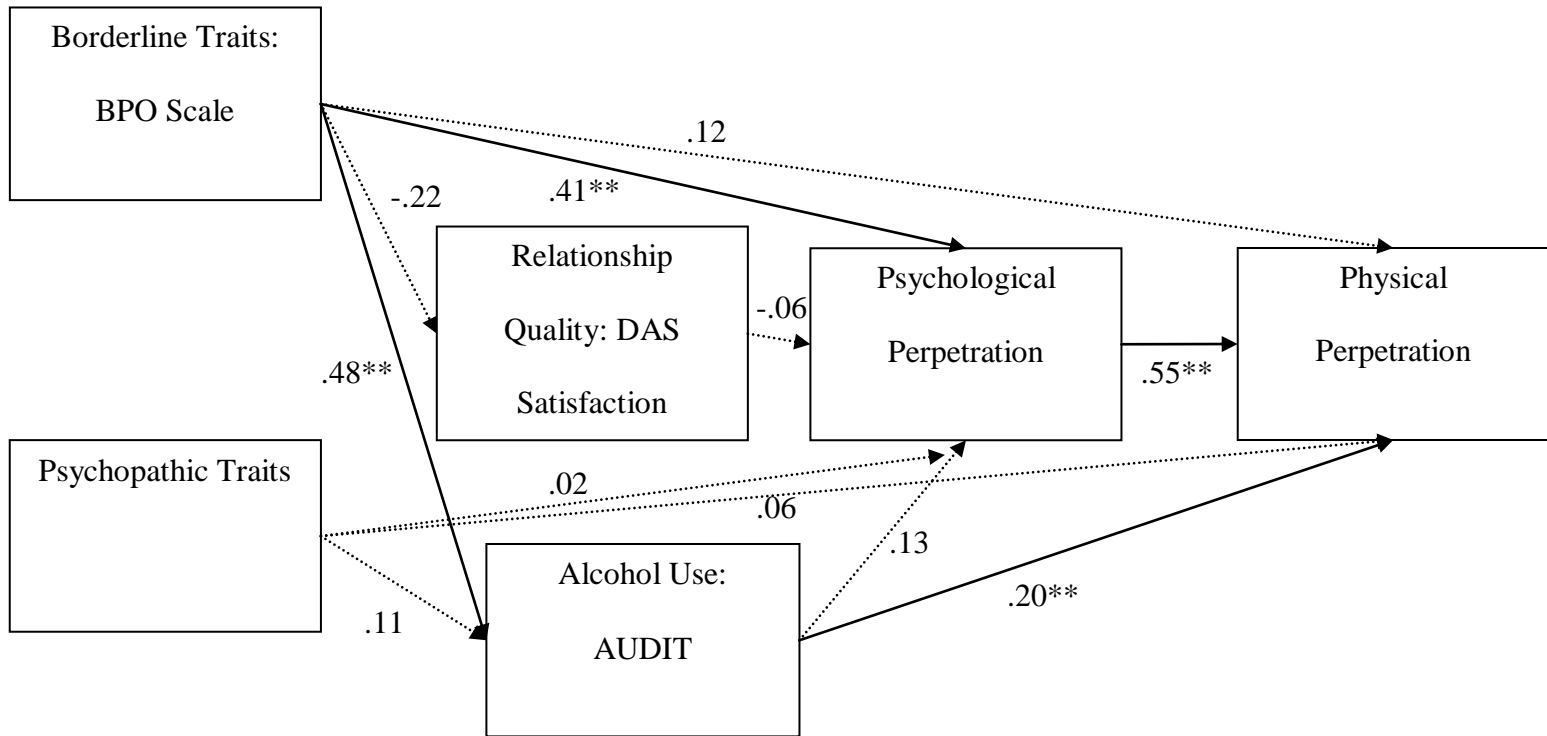




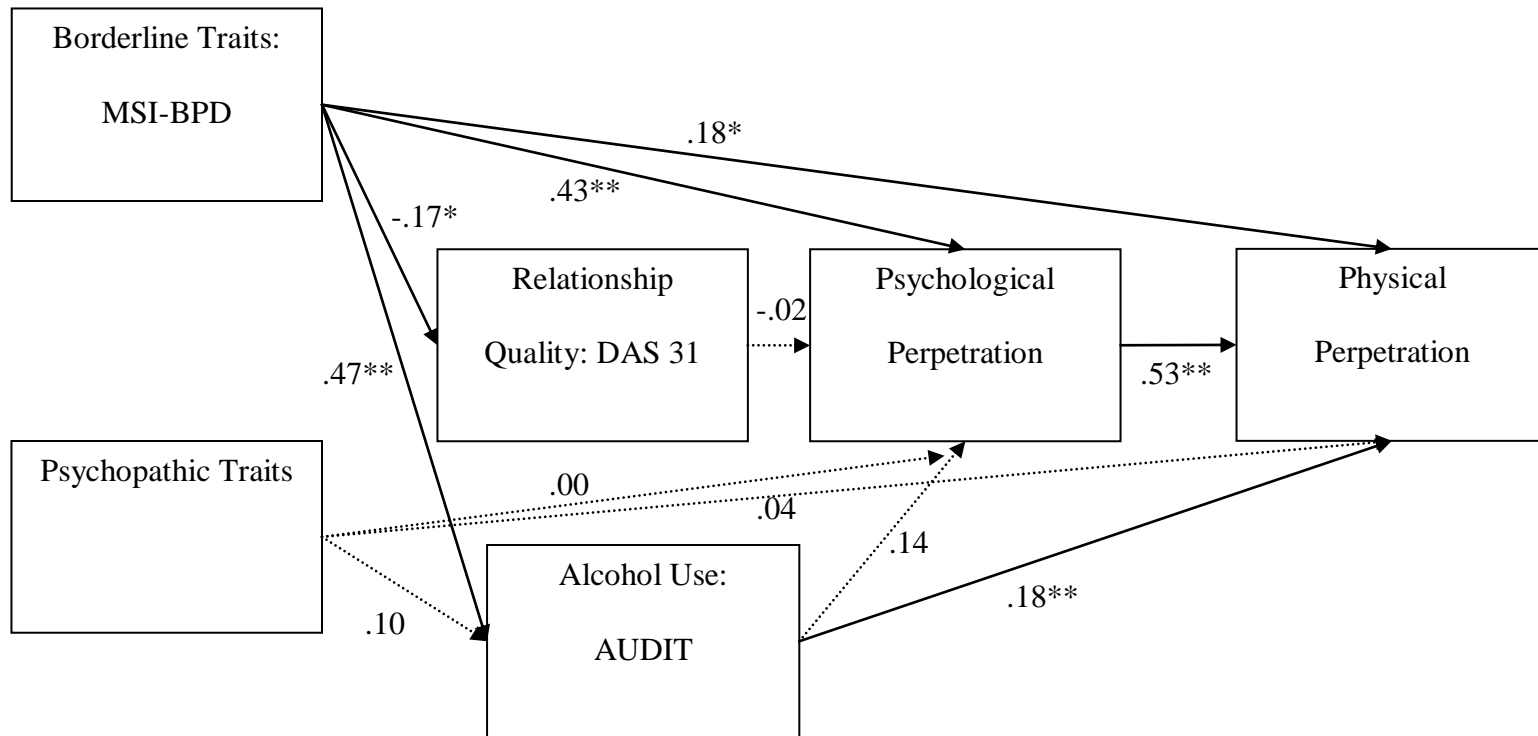
**C.26 Model 4c**



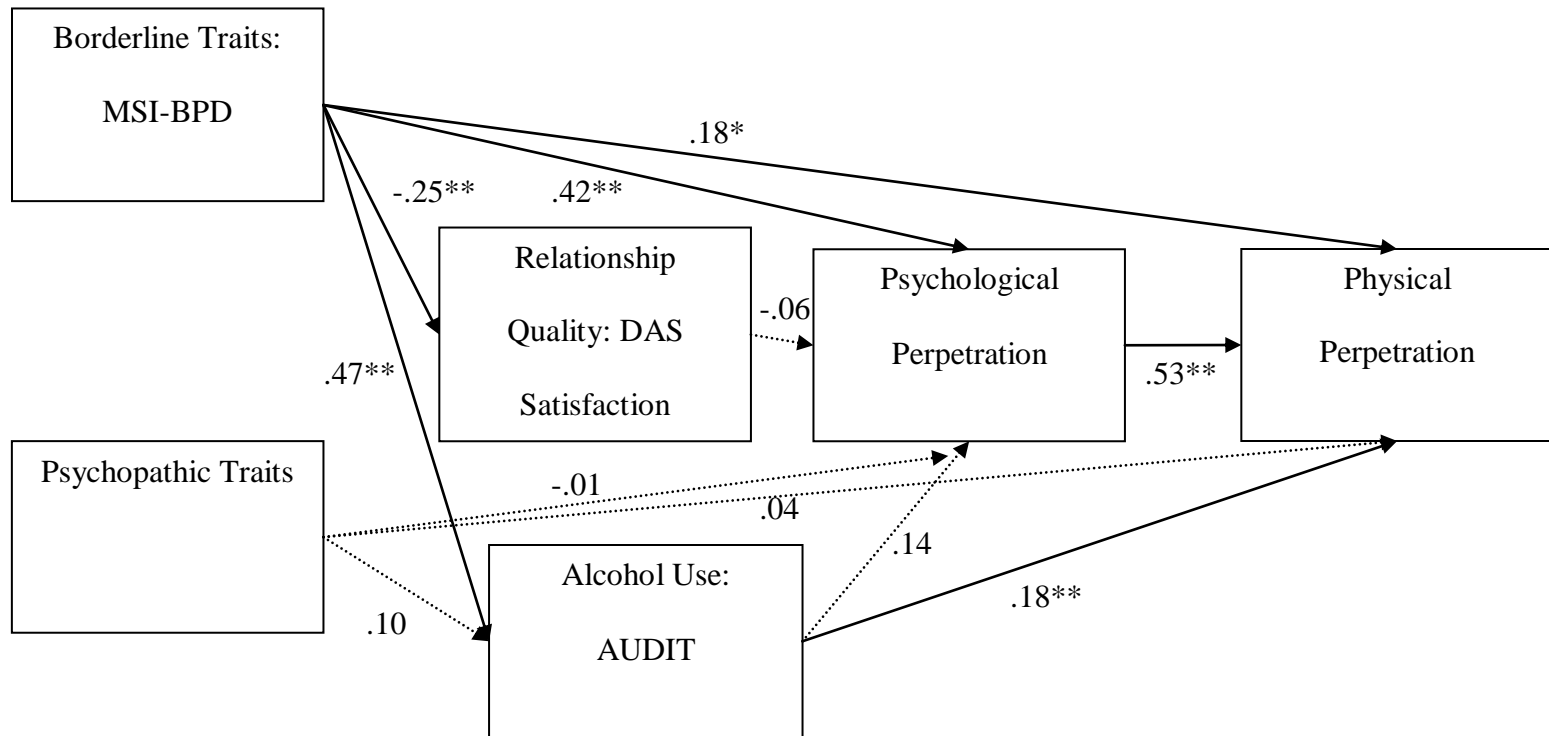
**C.27 Model 5c**



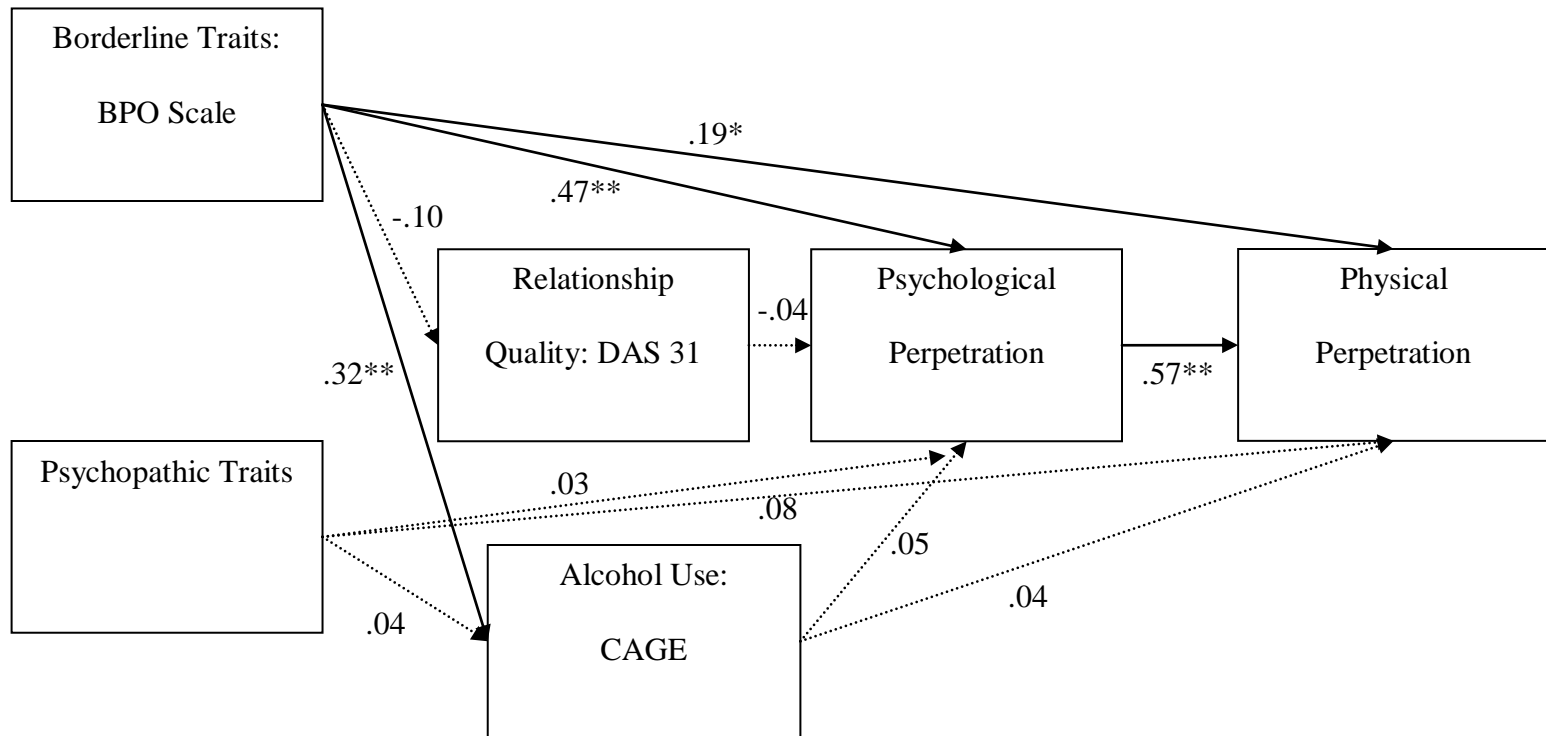
**C.28 Model 6c**



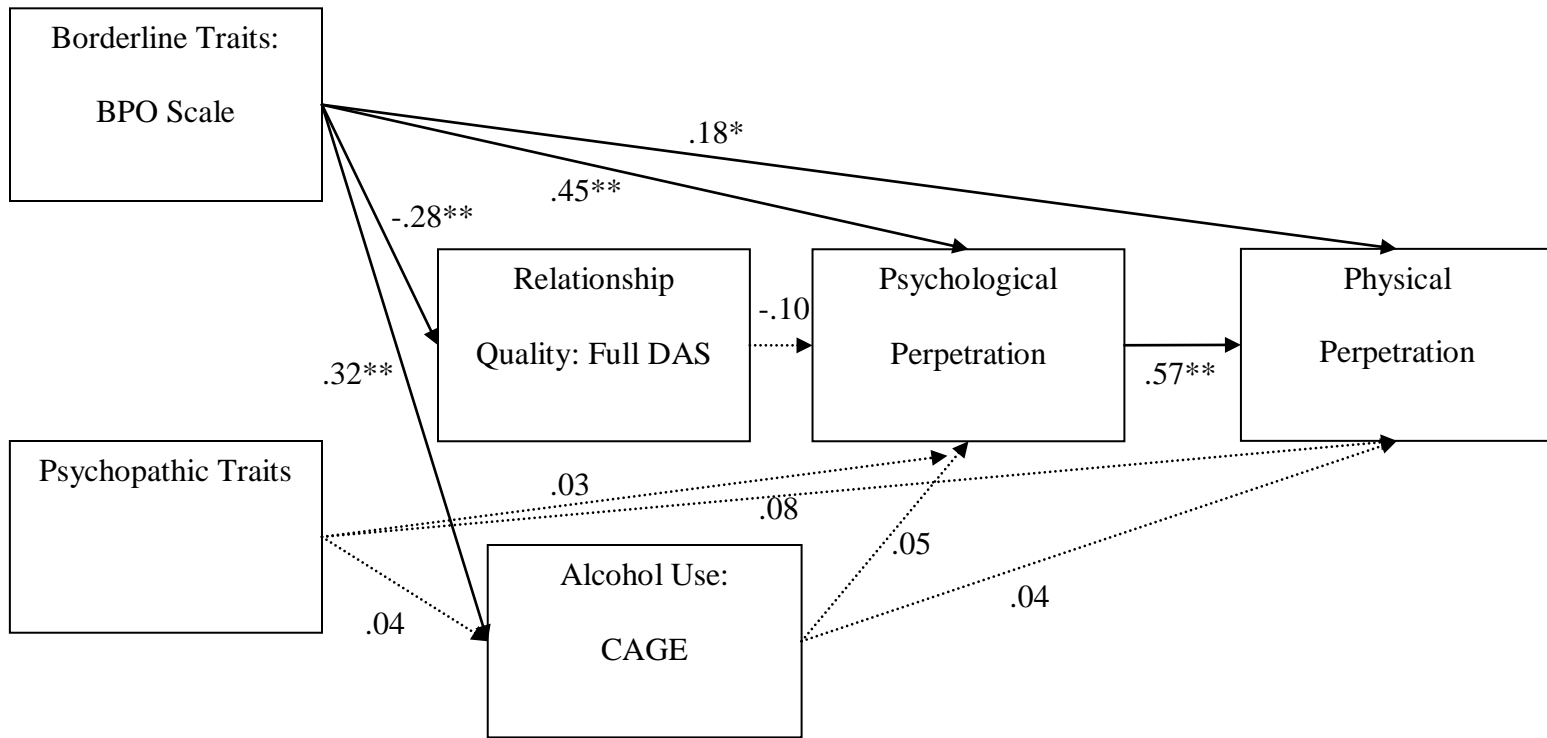
**C.29 Model 7c**



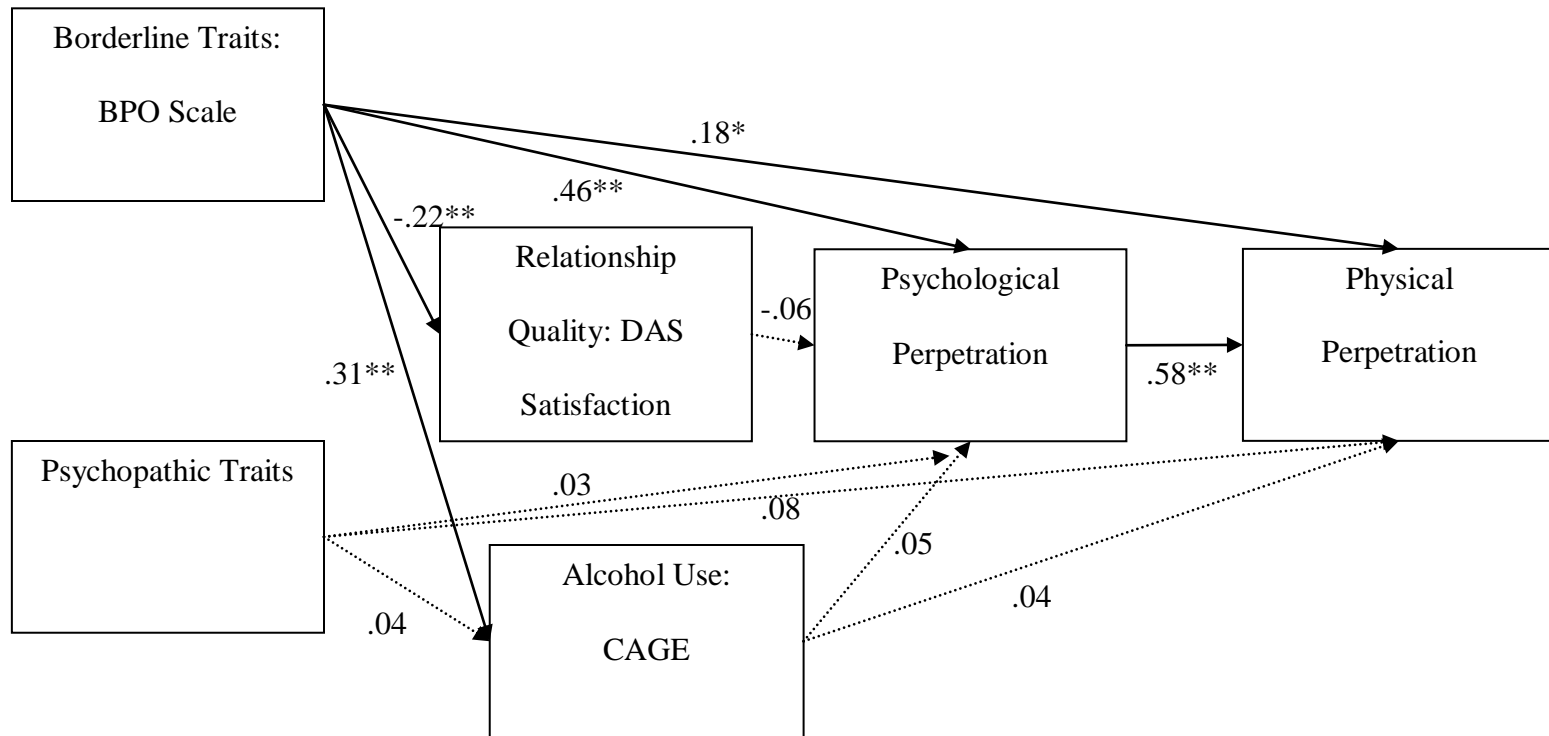
**C.30 Model 8c**



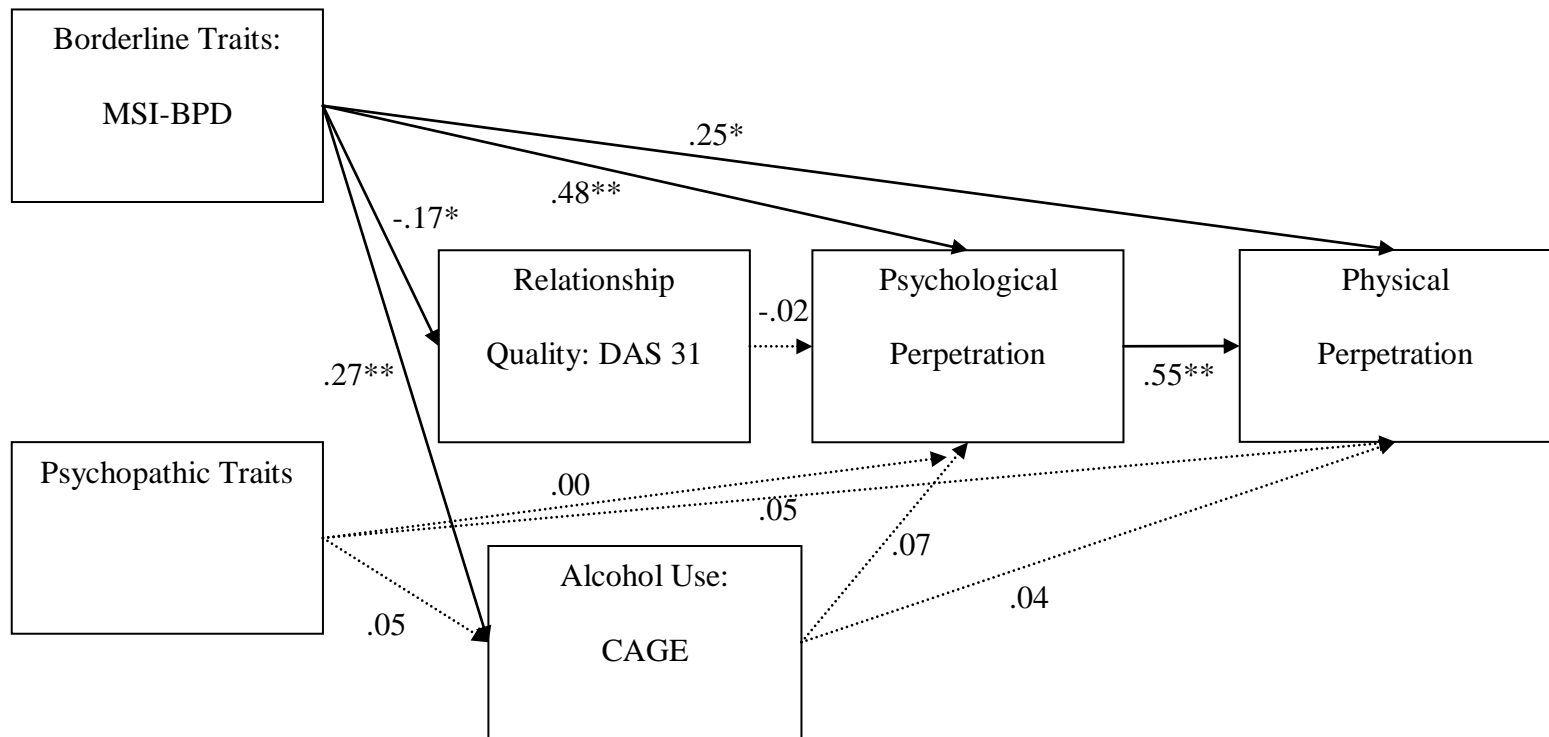
**C.31 Model 9c**



**C.32 Model 10c**

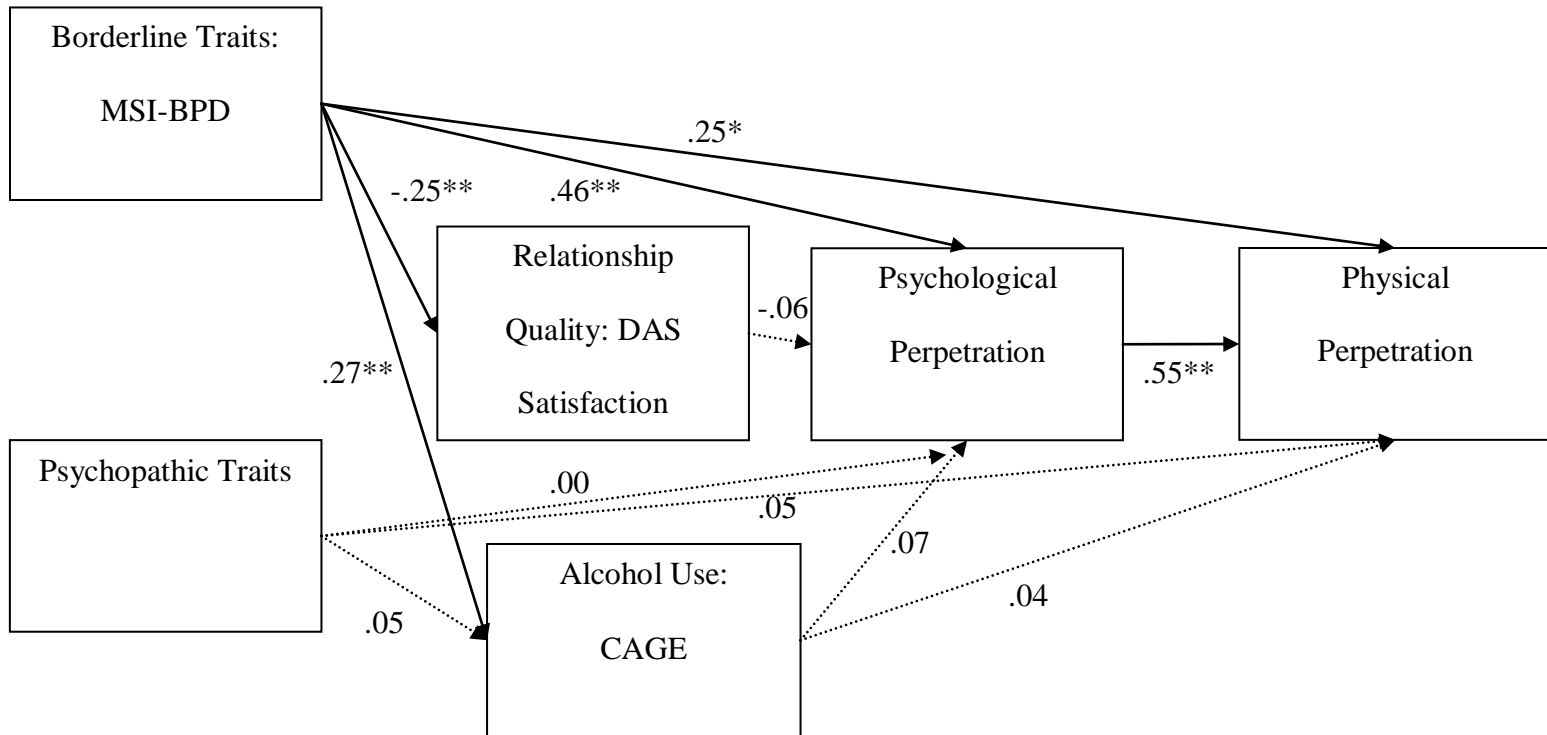


**C.33 Model 11c**

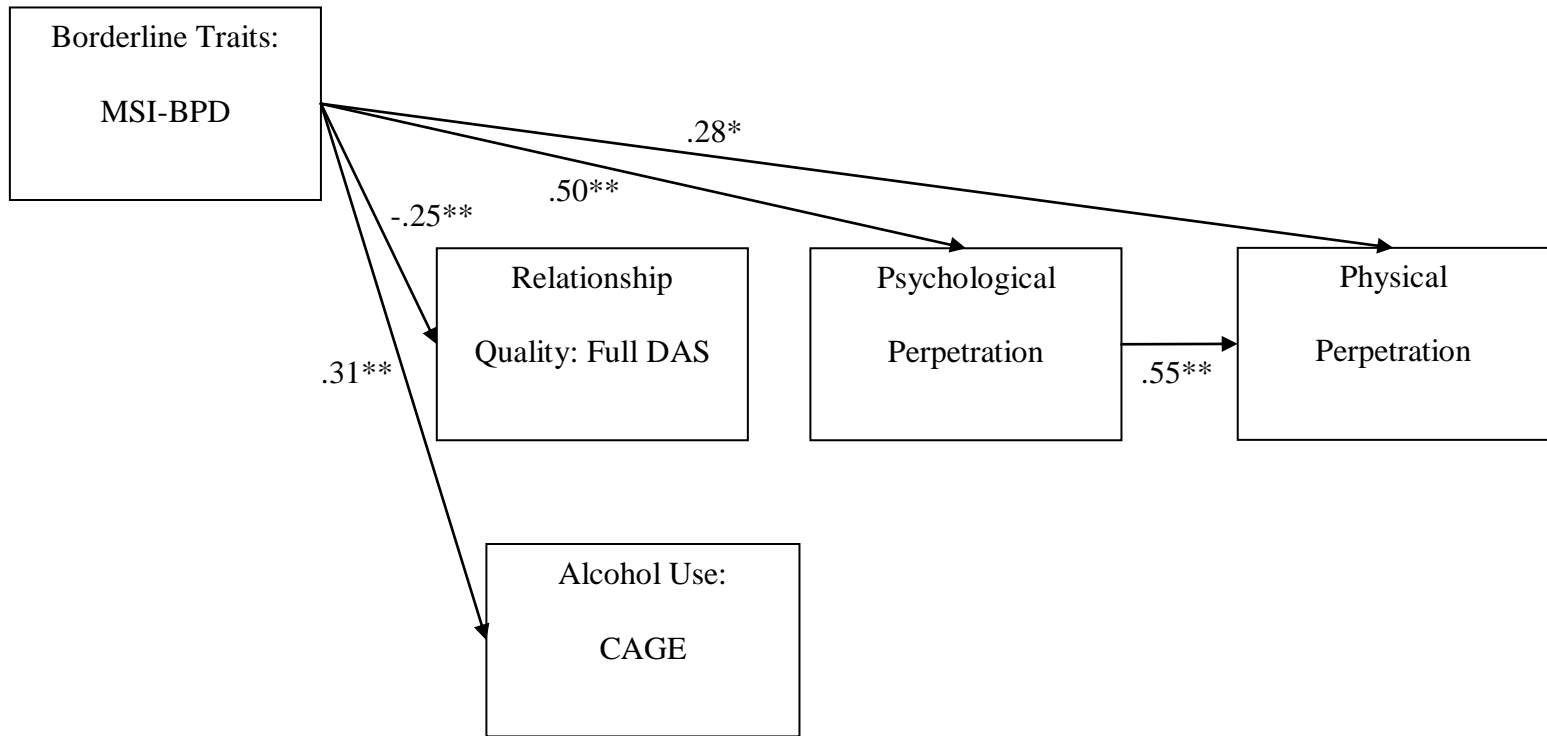




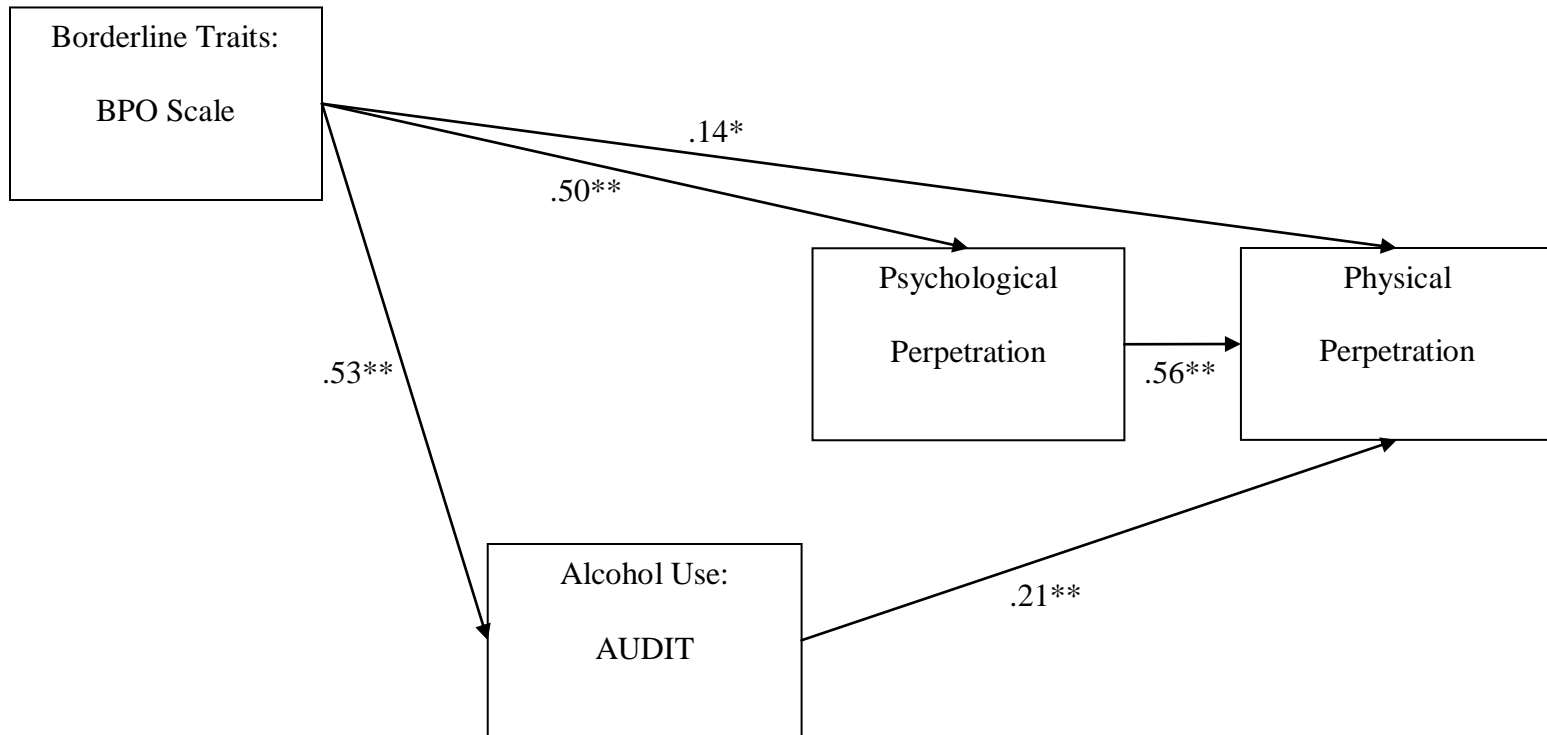
**C.34 Model 12c**



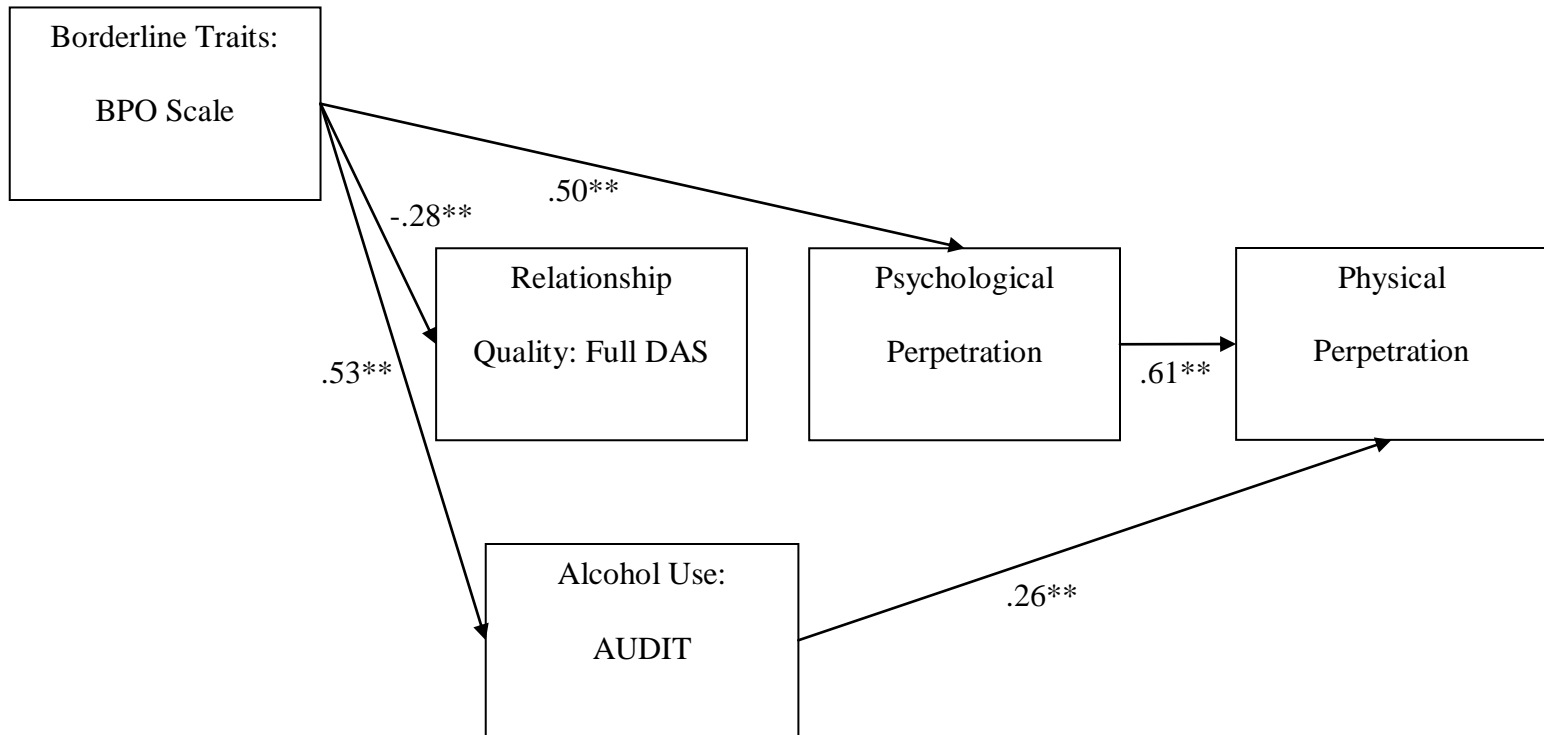
**C.35 Model 2d**



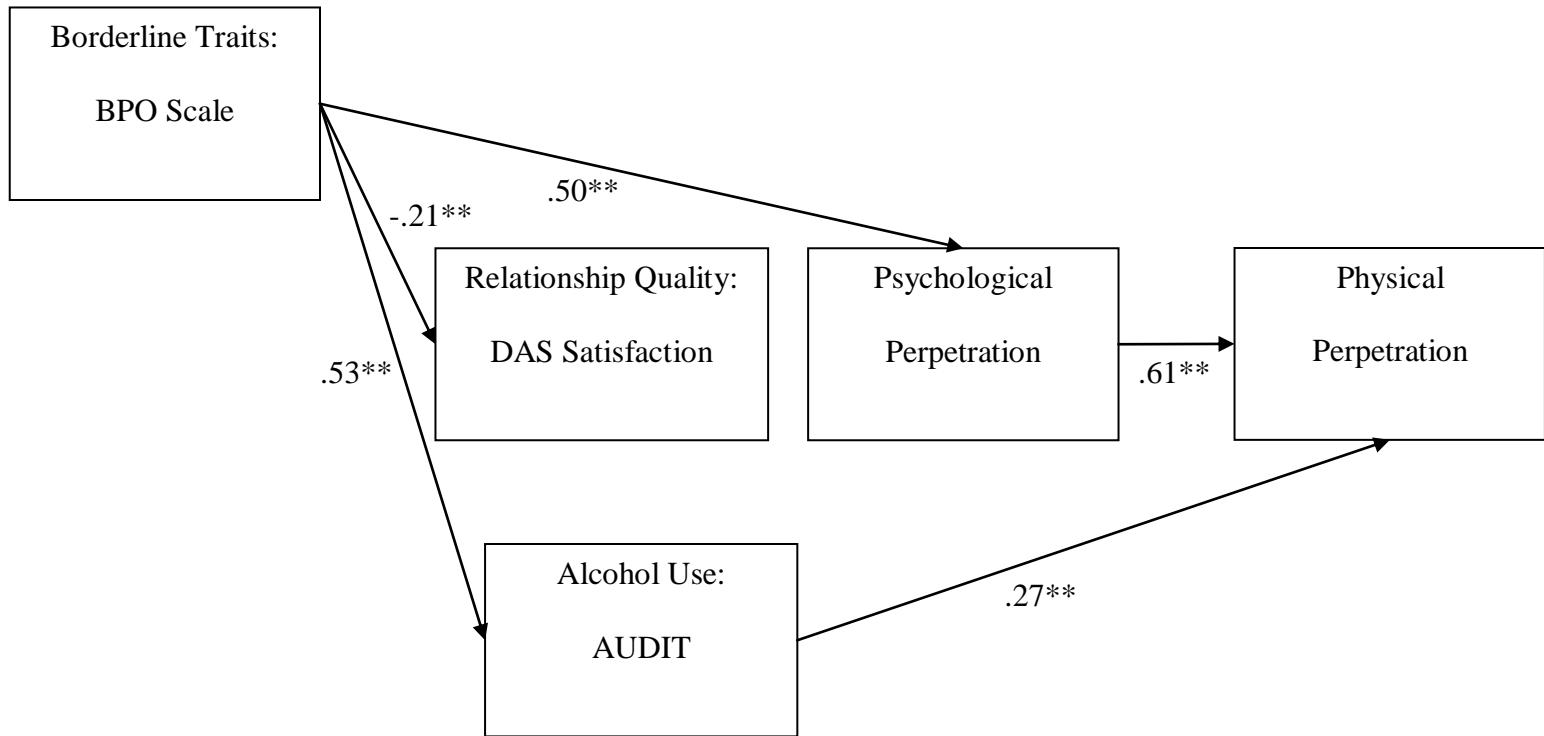
**C.36 Model 3d**



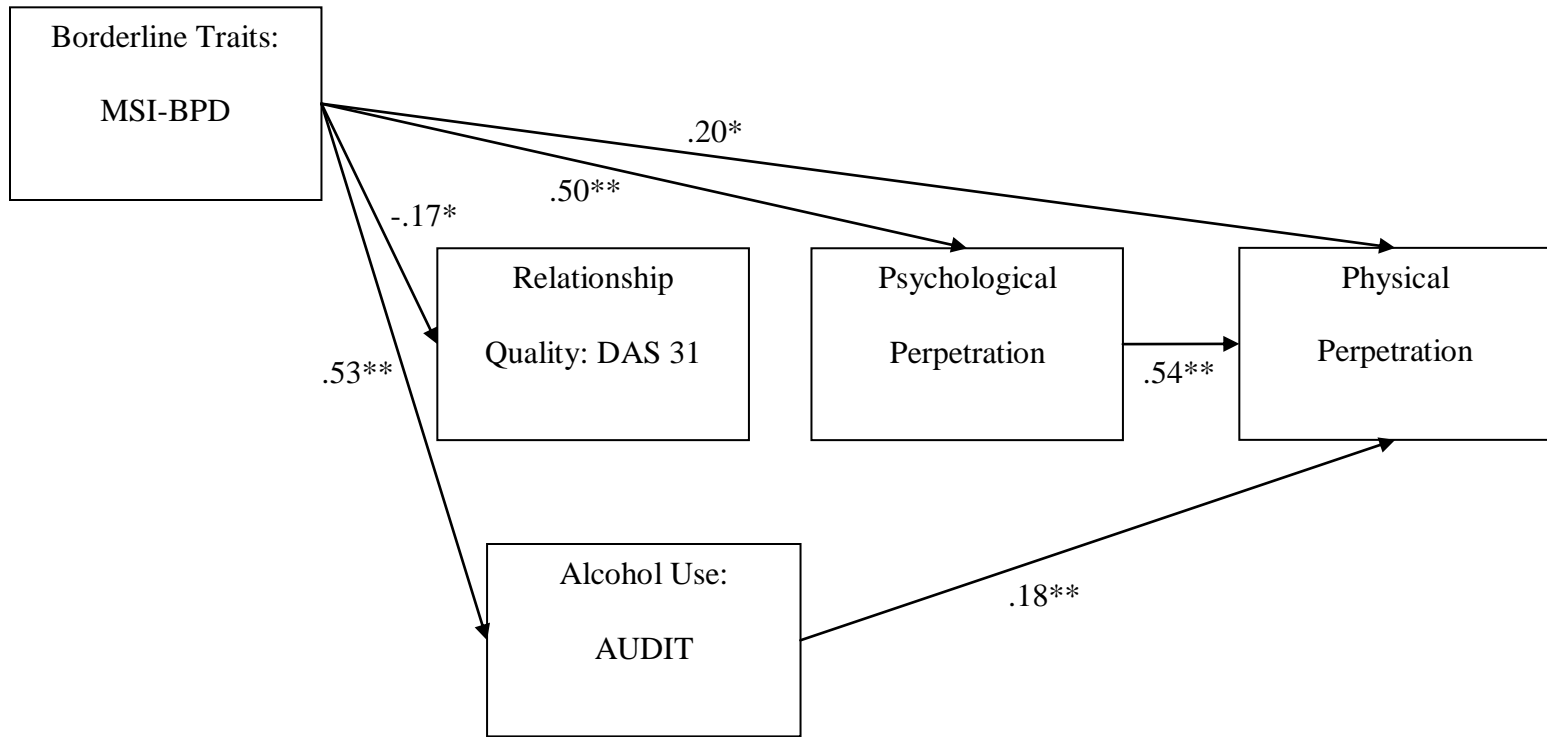
**C.37 Model 4d**



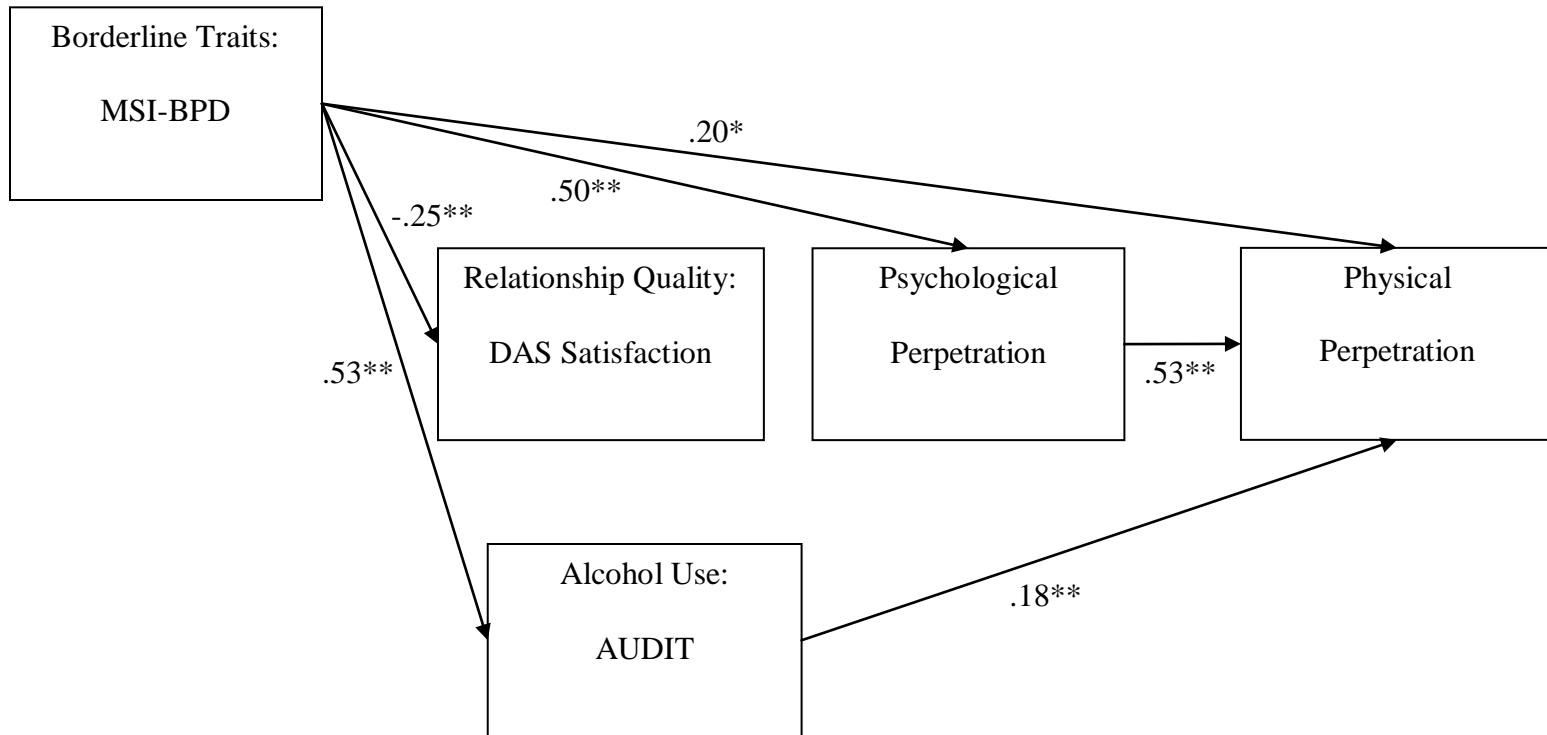
**C.38 Model 5d**



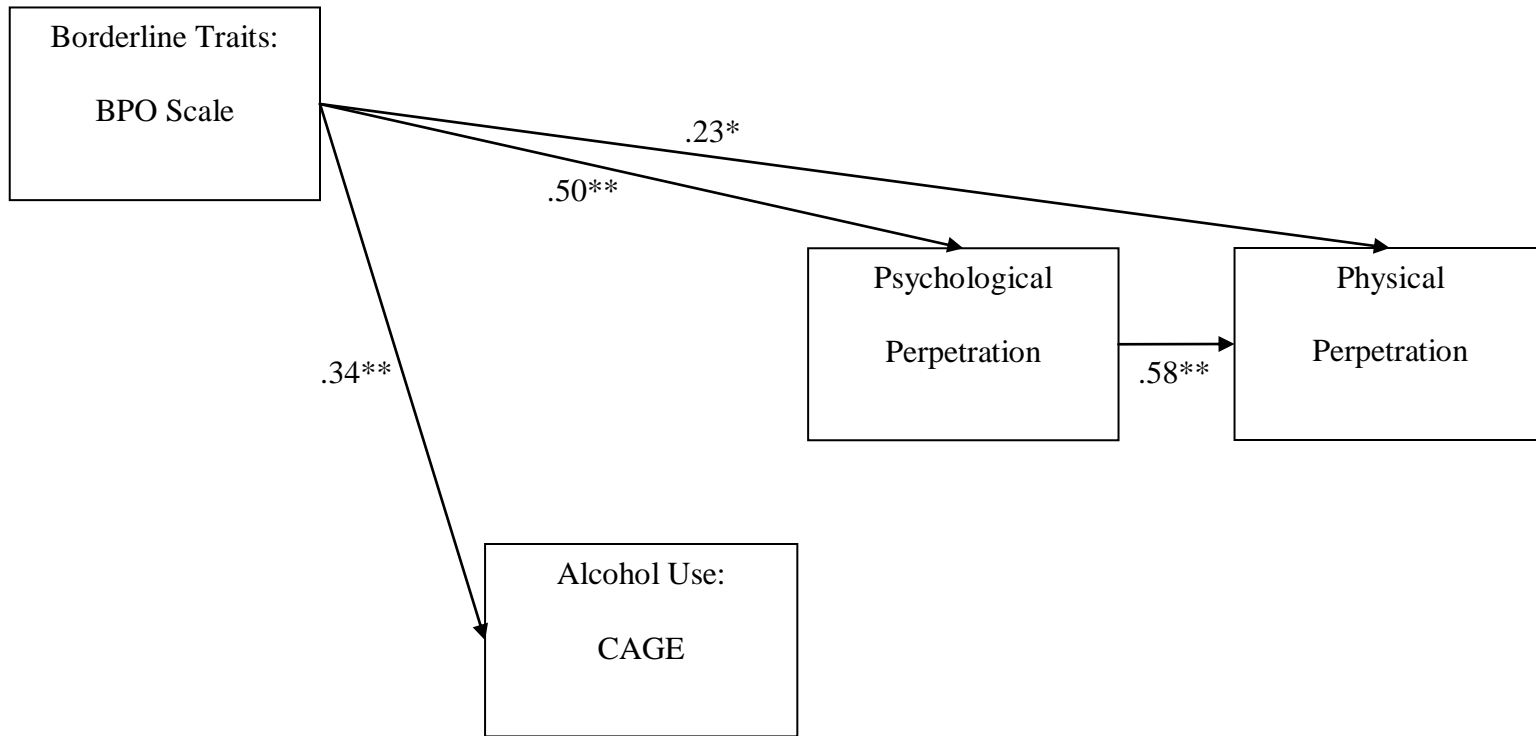
**C.39 Model 6d**



**C.40 Model 7d**

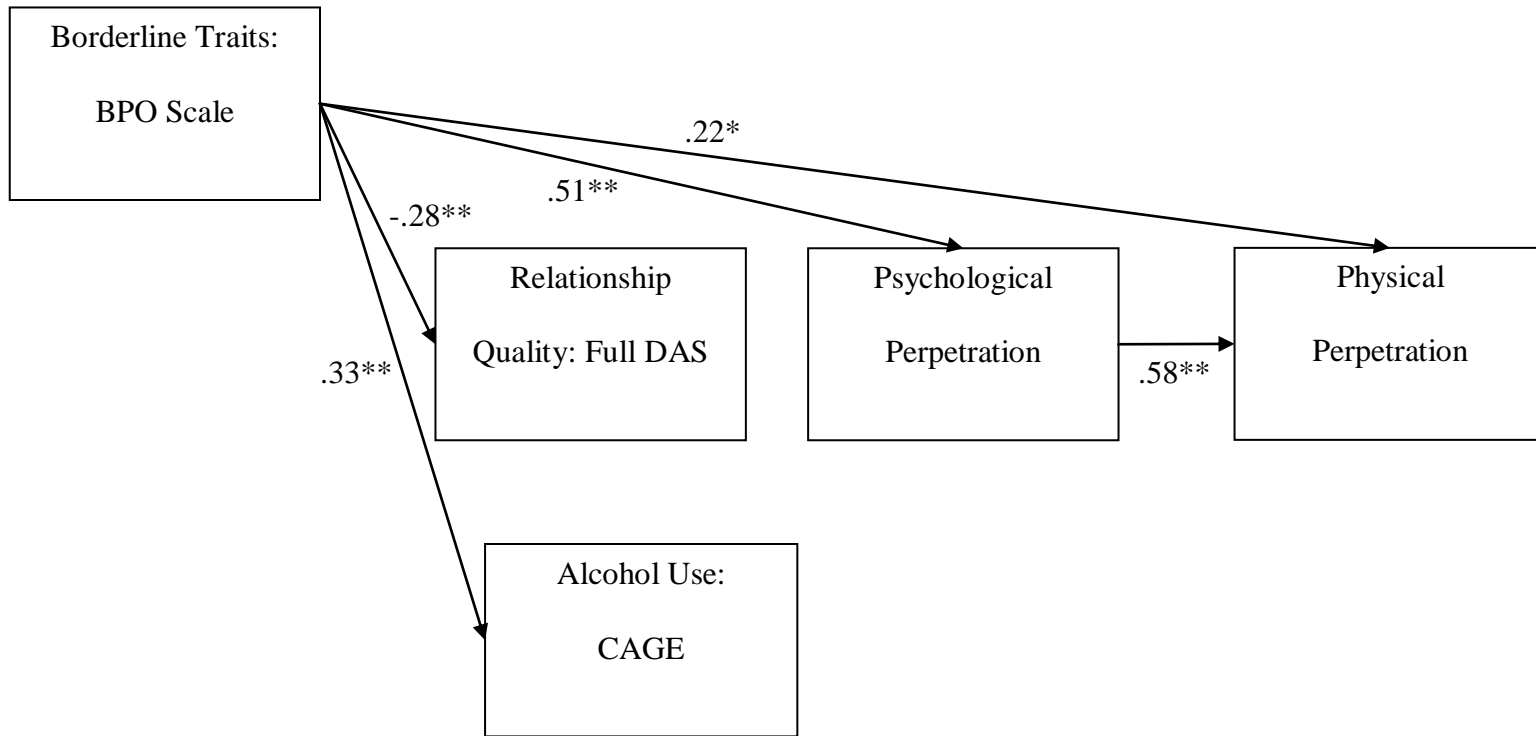


**C.41 Model 8d**

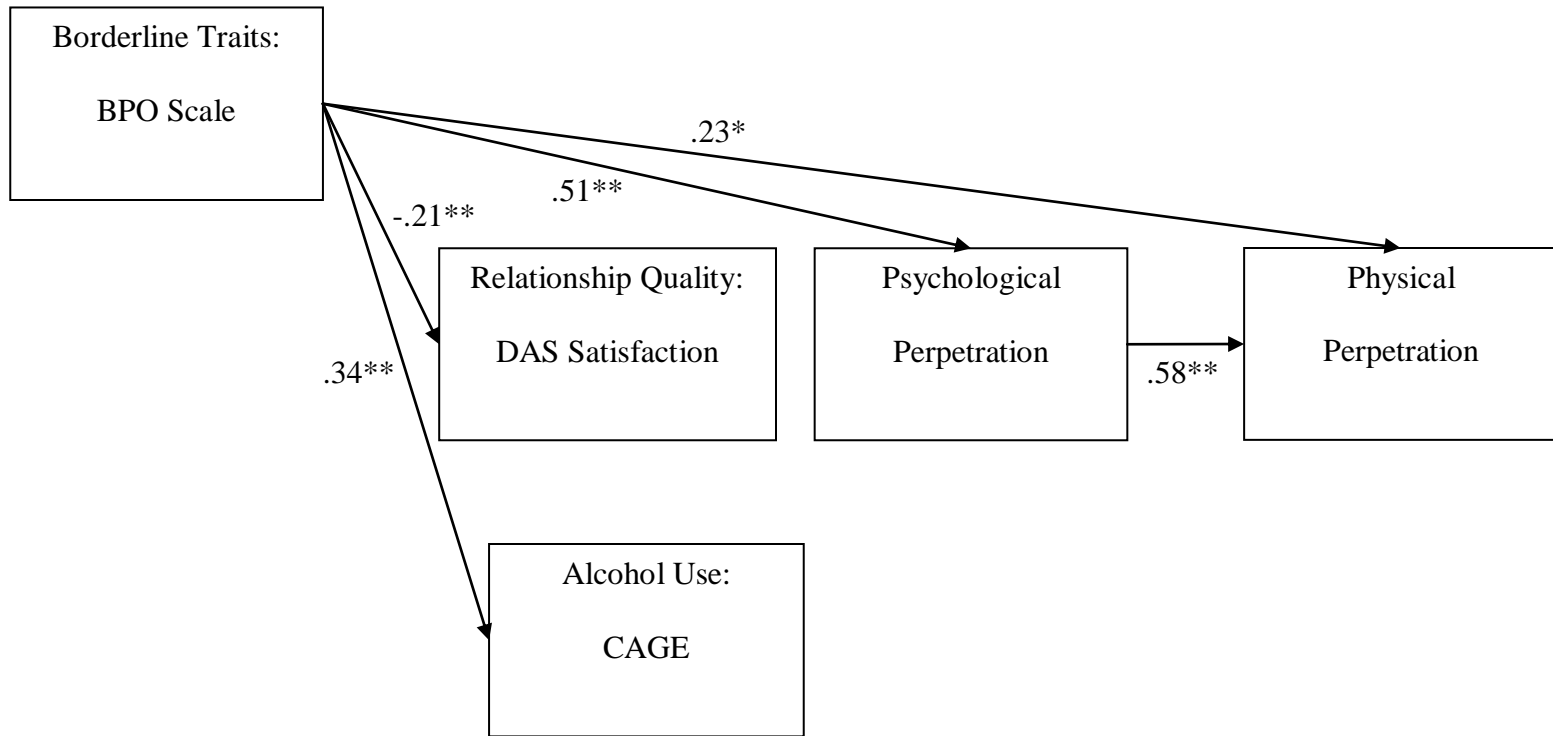




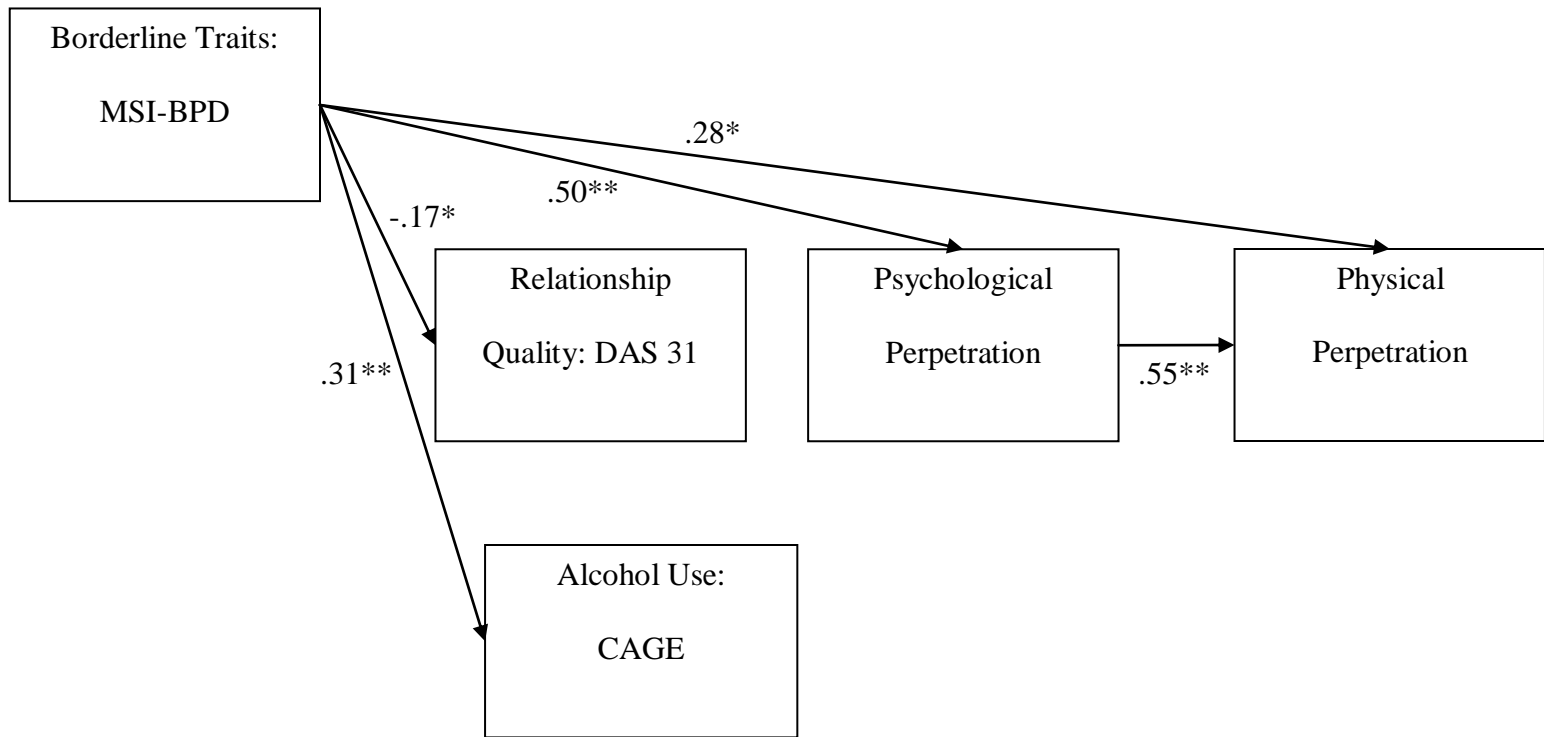
**C.42 Model 9d**



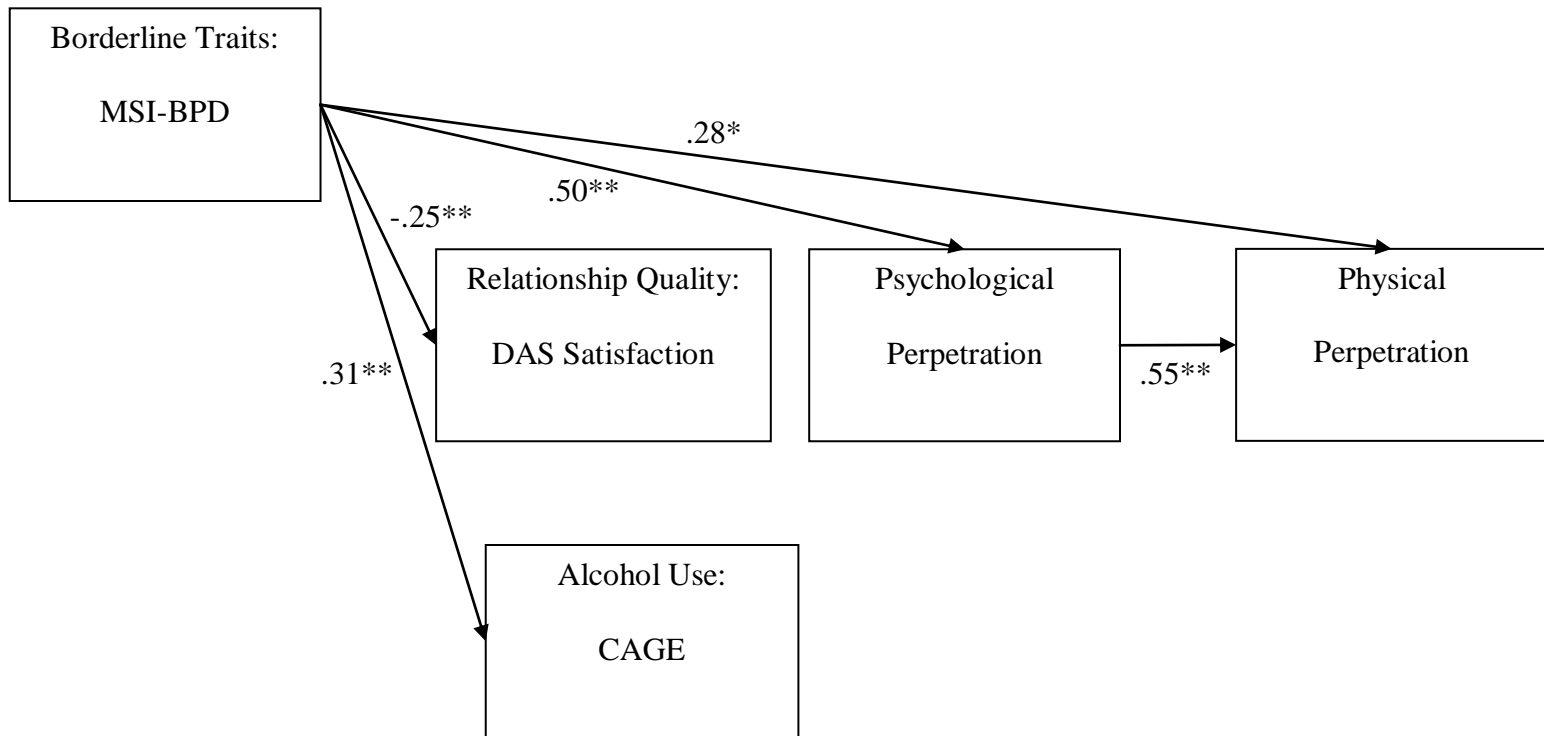
**C.43 Model 10d**



**C.44 Model 11d**



**C.45 Model 12d**



**D. Akaike Information Criteria for All Models**

Model	Perpetration/Victimization Hypothesized Models (A)	Perpetration/Victimization Final Models (B)	Perpetration-Only Hypothesized Models (C)	Perpetration-Only Final Models (D)
1	3611.88	3109.63	2837.64	2356.97
2	3682.01	3669.35	2906.66	2425.80
3	3660.46	3168.87	2887.86	2405.20
4	3730.61	3725.03	2957.05	2471.28
5	3653.19	2657.00	2884.53	1894.33
6	3601.06	3091.09	2830.65	2346.14
7	3635.93	3624.24	2866.77	2381.19
8	3643.78	3143.25	2870.55	2388.16
9	3721.86	2717.81	2954.80	1961.48
10	3669.59	3154.71	2900.41	2413.12
11	3704.39	3193.68	2936.84	2447.31
12	3714.09	3212.53	2939.86	2456.15

**E. Mediation Effects for All Final Models (B, D)**

Model	Psychological Aggression		Alcohol Problems		Sum of Indirect Effects	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
1b	.22 (.04)	.15 to .30	.08 (.03)	.02 to .14	.31 (.05)	.20 to .41
2b	.13 (.03)	.06 to .19	--	--	--	--
3b	.23 (.04)	.15 to .31	.08 (.03)	.02 to .14	.31 (.05)	.20 to .41
4b	.24 (.04)	.15 to .32	--	--	--	--
5b	.23 (.04)	.13 to .32	.09 (.03)	.03 to .16	.32 (.05)	.14 to .44
6b	.23 (.04)	.15 to .30	.09 (.03)	.03 to .15	.32 (.05)	.22 to .41
7b	.23 (.04)	.16 to .30	.09 (.03)	.03 to .15	.32 (.05)	.22 to .41
8b	.23 (.04)	.15 to .30	.08 (.03)	.02 to .14	.31 (.05)	.20 to .41
9b	.13 (.03)	.07 to .19	--	--	--	--
10b	.23 (.04)	.16 to .30	--	--	--	--
11b	.23 (.04)	.16 to .31	--	--	--	--

12b	.23 (.04)	.15 to .32	--	--	--	--
1d	.27 (.04)	.19 to .34	.10 (.04)	.03 to .16	.37 (.05)	.26 to .47
2d	.28 (.04)	.20 to .35	--	--	--	--
3d	.27 (.04)	.19 to .34	.10 (.03)	.03 to .16	.36 (.05)	.26 to .47
4d	.28 (.04)	.20 to .35	--	--	--	--
5d	.28 (.04)	.21 to .35	.11 (.04)	.04 to .18	.38 (.05)	.28 to .49
6d	--	--	--	--	--	--
7d	--	--	--	--	--	--
8d	.27 (.04)	.19 to .34	.10 (.04)	.03 to .16	.36 (.05)	.26 to .47
9d	.29 (.04)	.18 to .41	--	--	--	--
10d	.29 (.06)	.22 to .37	--	--	--	--
11d	.29 (.04)	.21 to .37	--	--	--	--
12d	.27 (.04)	.20 to .35	--	--	--	--

**F.1 Correlations, Means, and Standard Deviations (Impulsivity Analyses)**

	Full UPPS	UPPS Lack of Premeditation	UPPS Lack of Perseverance	UPPS Sensation Seeking	UPPS Urgency
LPSP	.14	-.08	-.08	.21**	.30**
BPO	.58**	.32**	.36**	.22**	.67**
MSI-BPD	.57**	.28**	.26**	.35**	.70**
AUDIT	.46**	.26**	.40**	.21**	.45**
CAGE	.26	.13	.15*	.12	.29**
Full DAS	-.17*	-.11	-.11	-.02	-.25**
DAS Satisfaction	-.08	.00	.02	-.05	-.20*
DAS Item 31	-.14	-.07	-.07	-.09	-.12
Psychological Perpetration	.42**	.32**	.25**	.13	.44**
Psychological Victimization	.16*	.15*	.09	.00	.20**
Physical Perpetration	.47**	.27**	.28**	.24**	.48**
Physical Victimization	.27**	.17*	.11	.11	.30**



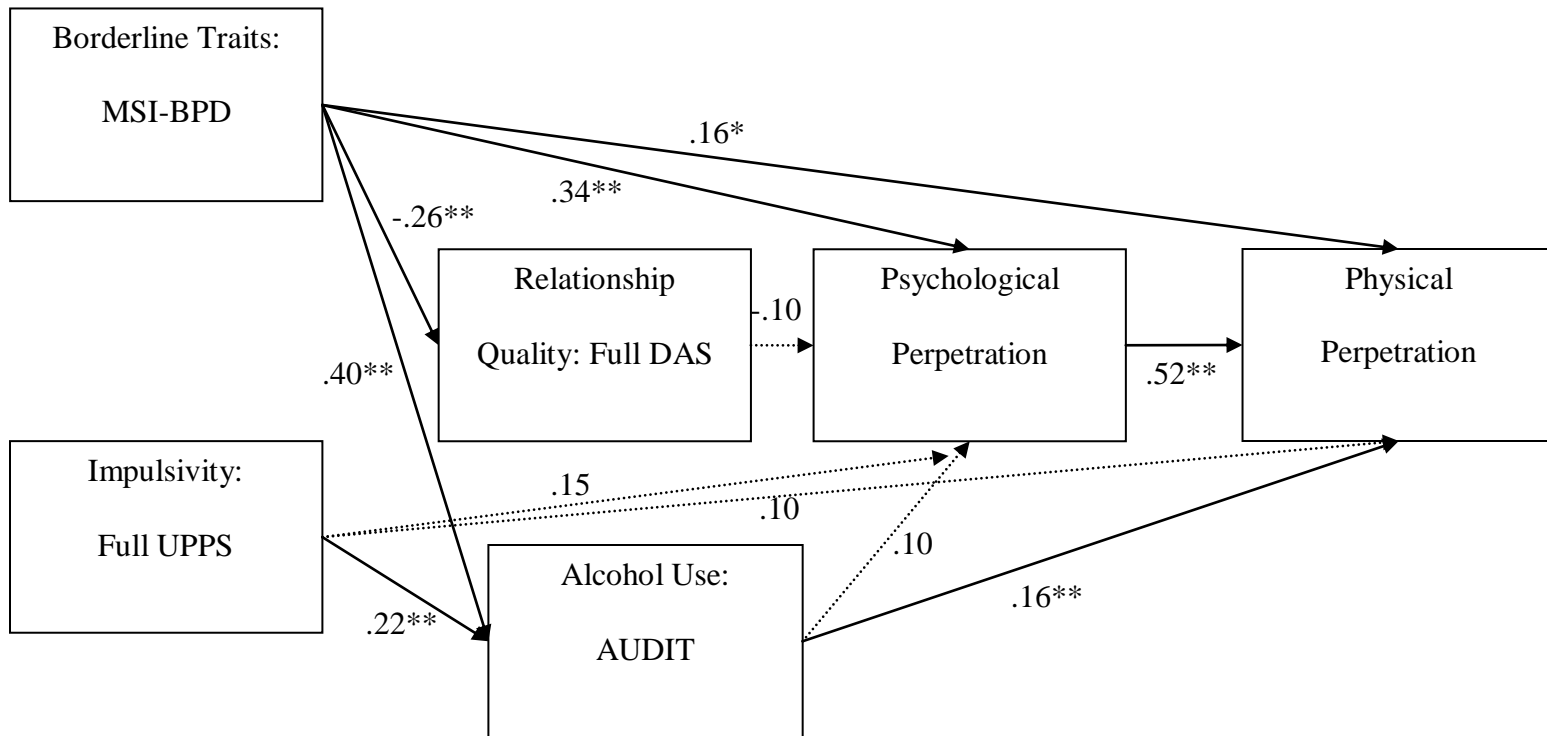
	Full UPPS	UPPS Lack of Premeditation	UPPS Lack of Perseverance	UPPS Sensation Seeking	UPPS Urgency
Full UPPS	86.45 (18.35)	.74**	.65**	.55**	.79**
UPPS Lack of Premeditation		22.88 (7.25)	.57**	.05	.44**
UPPS Lack of Perseverance			20.78 (5.63)	-.07	.39**
UPPS Sensation Seeking				22.78 (8.06)	.34**
UPPS Urgency					20.08 (6.32)

*Means (standard deviations) appear across the diagonal. For correlations: \*  $p < .05$ ; \*\*  $p < .01$*

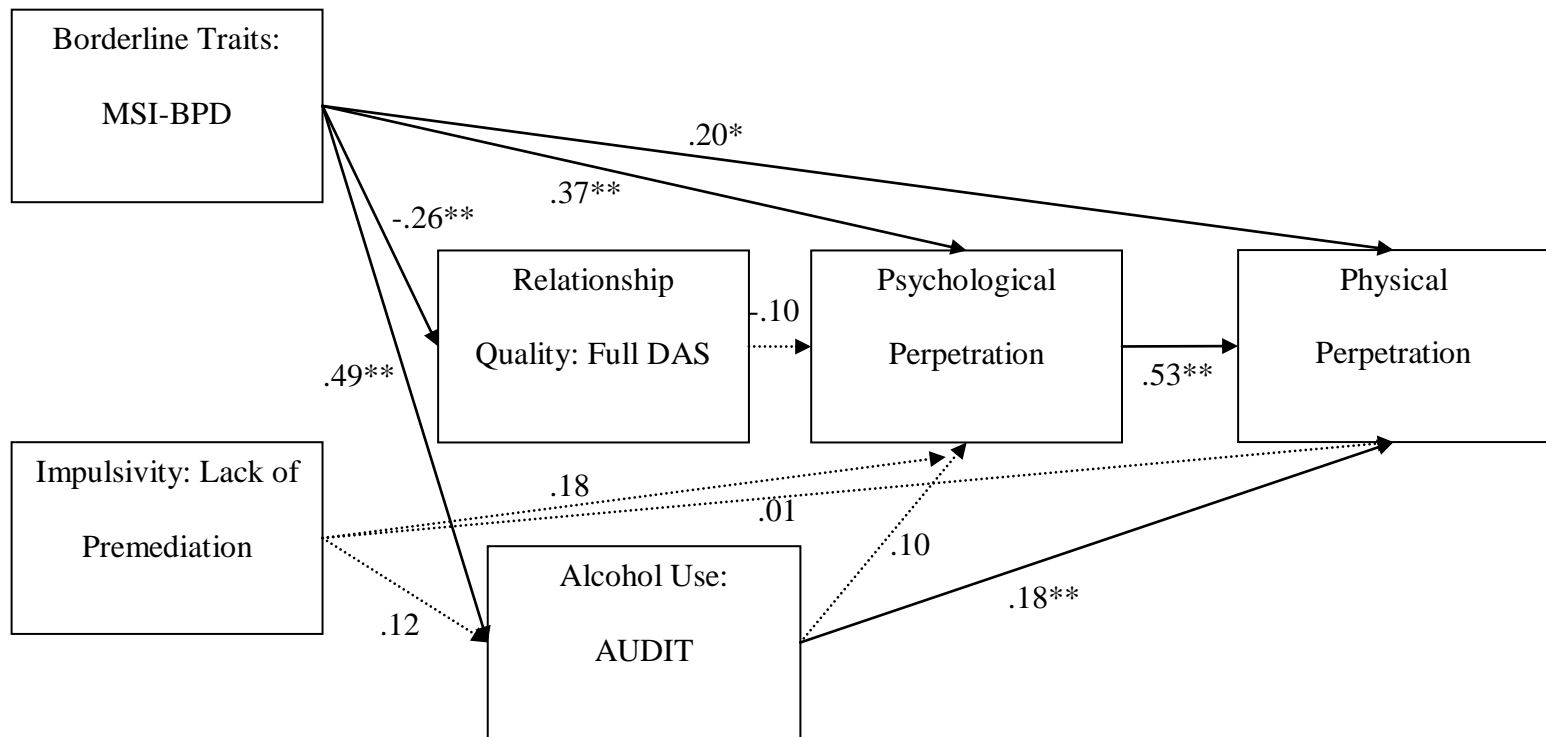
**F.2 Model Fit Indices for Post-Hoc (Impulsivity) Tests**

Model	F.3	F.4	F.5	F.6	F.7	F.8	F.9	F.10	F.11
Hypothesized/ Final	Hyp.	Hyp.	Hyp.	Hyp.	Hyp.	Final	Final	Final	Final
UPPS Variable	Full	Lack Premed.	Lack Persev.	Sens. Seeking	Urgency	Full	Lack Premed.	Lack Persev.	Sens. Seeking; Urgency
RMSEA	.00	.00	.00	.00	.00	.08	.05	.05	.08
RMSEA 90% CI	.00 - .09	.00 - .10	.00 - .09	.00 - .10	.00 - .12	.01 - .14	.00 - .11	.00 - .11	.00 - .16
CFI	1.00	1.00	1.00	1.00	1.00	.98	.99	.99	.99
TLI	1.03	1.02	1.03	1.02	1.00	.95	.98	.98	.96
SRMR	.02	.02	.02	.02	.02	.05	.04	.05	.04
Chi-Square ( <i>df</i> )	1.39 (3)	1.59 (3)	1.11 (3)	1.67 (3)	3.07 (3)	12.91 (6)	8.81 (6)	8.83 (6)	6.53 (3)
Chi-Square Significance	.71	.66	.77	.64	.38	.04	.18	.18	.09

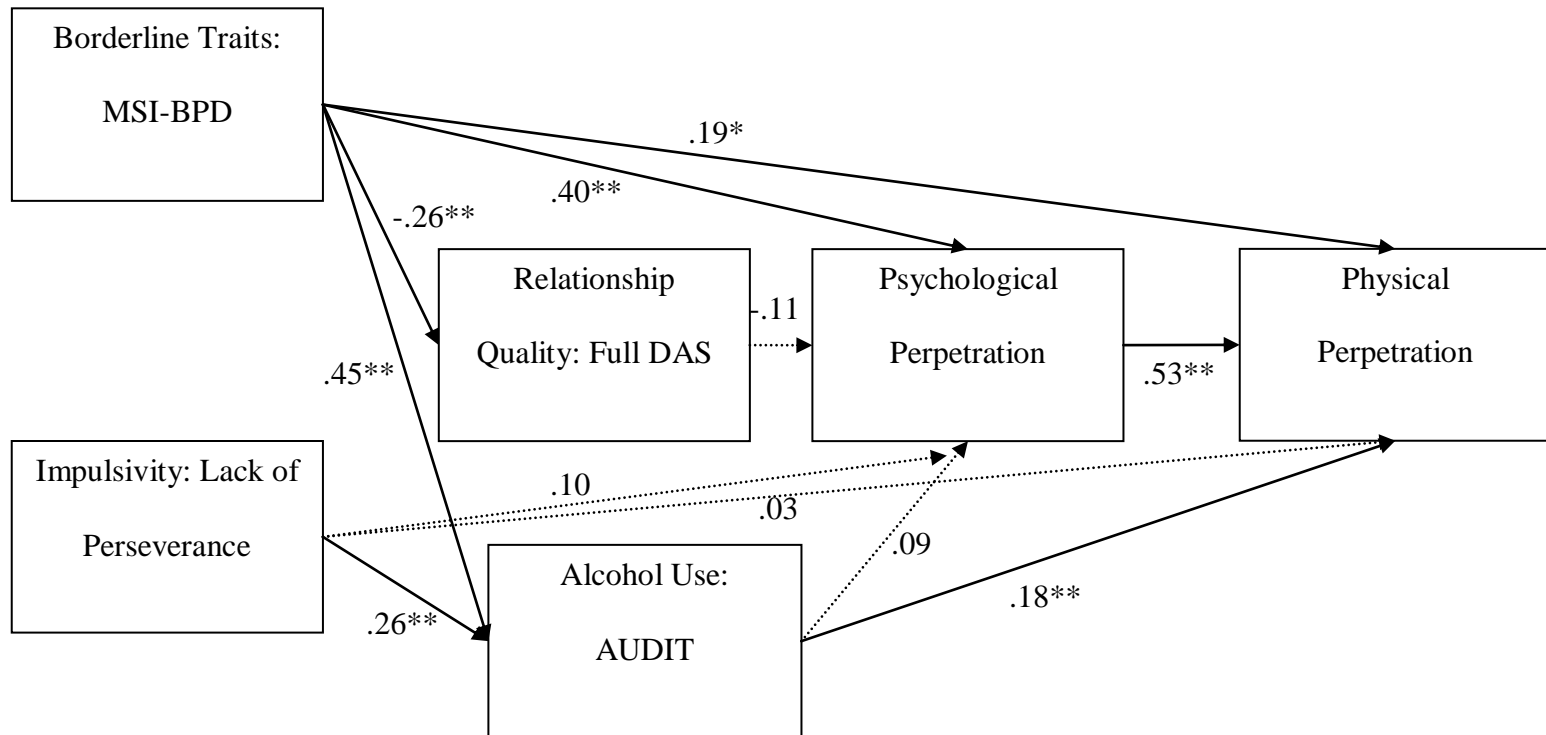
**F.3 Path analytic model: Original Perpetration-only Model, Full UPPS**



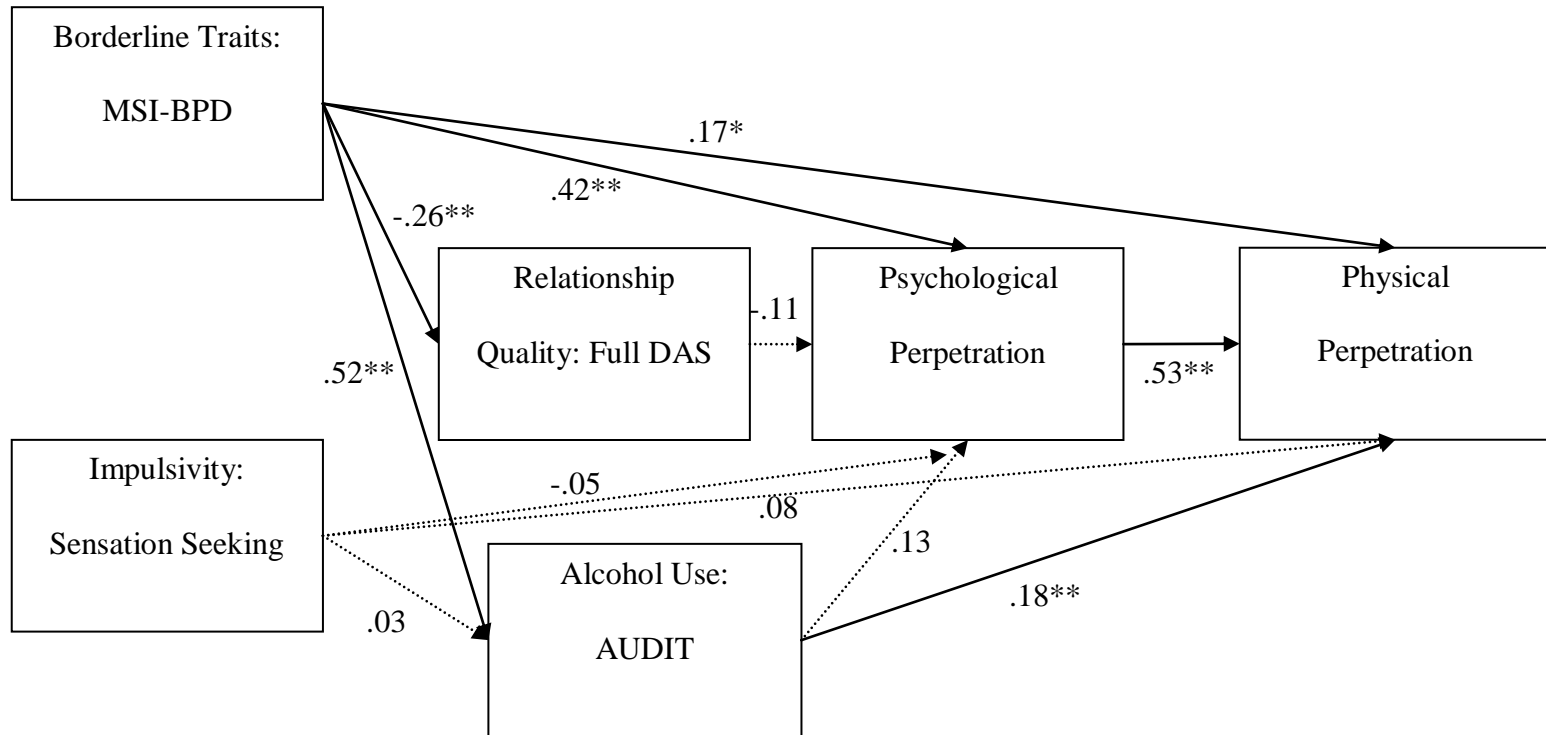
**F.4 Path analytic model: Original Perpetration-only Model, Lack of Premeditation**



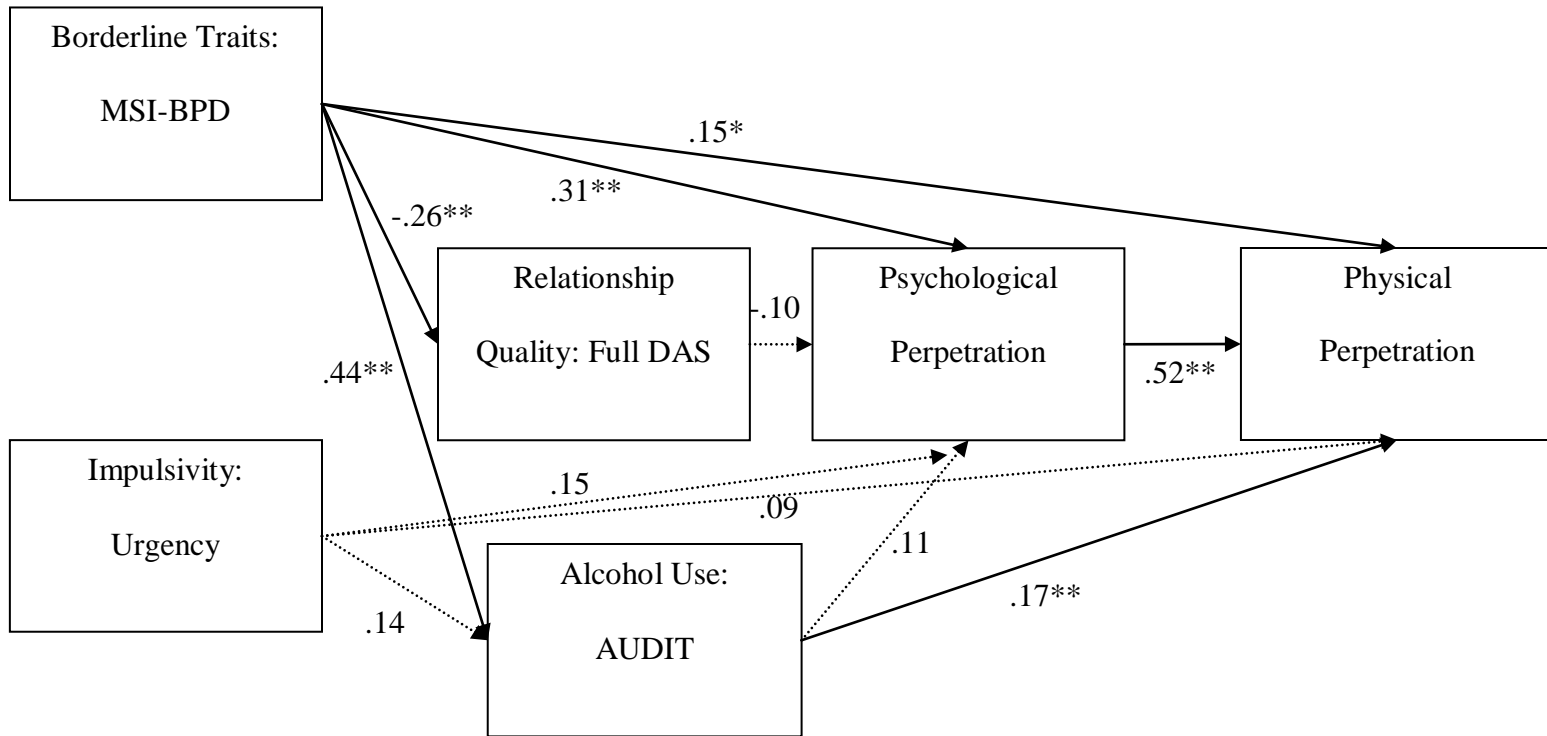
**F.5 Path analytic model: Original Perpetration-only Model, Lack of Perseverance**



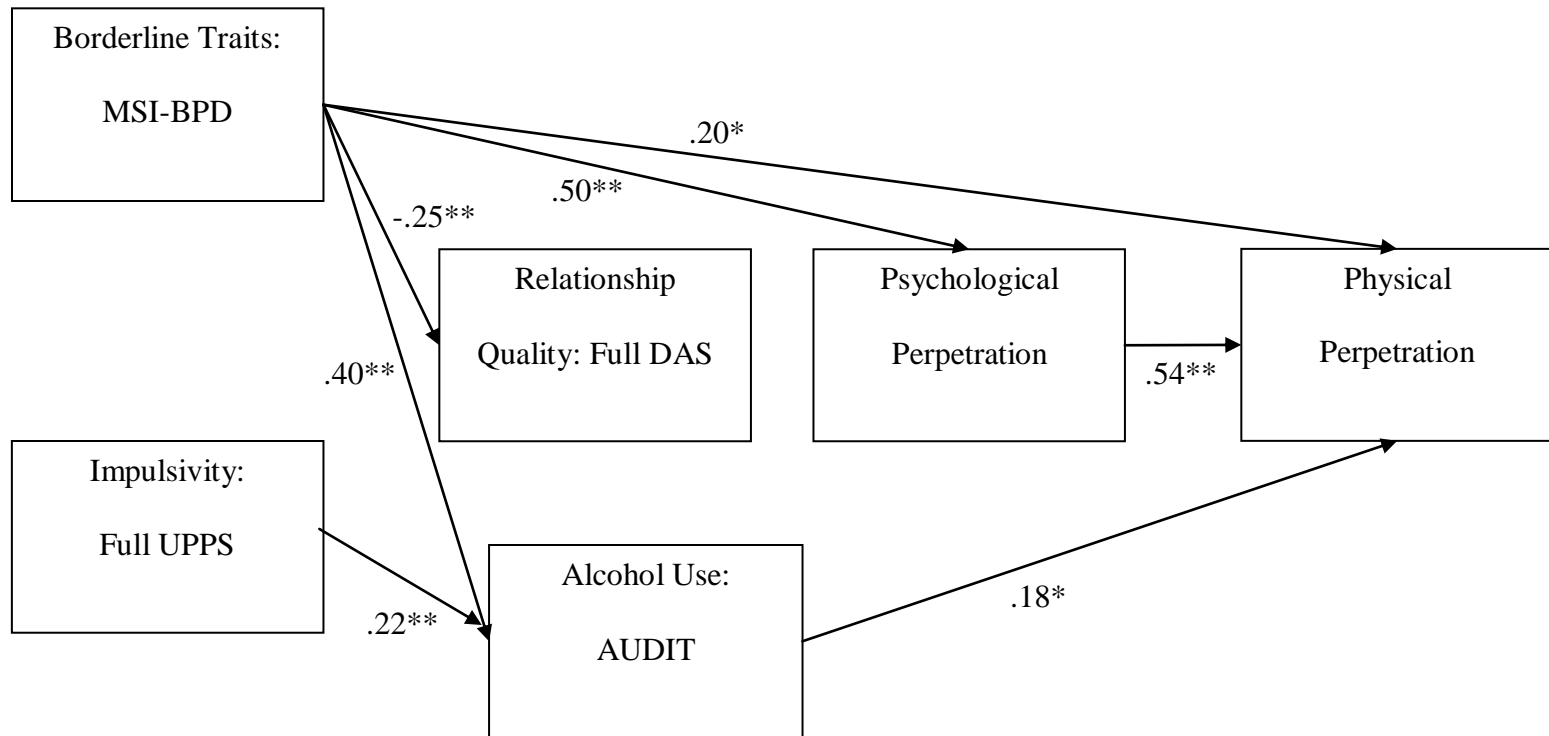
**F.6 Path analytic model: Original Perpetration-only Model, Sensation Seeking**



**F.7 Path analytic model: Original Perpetration-only Model, Urgency**

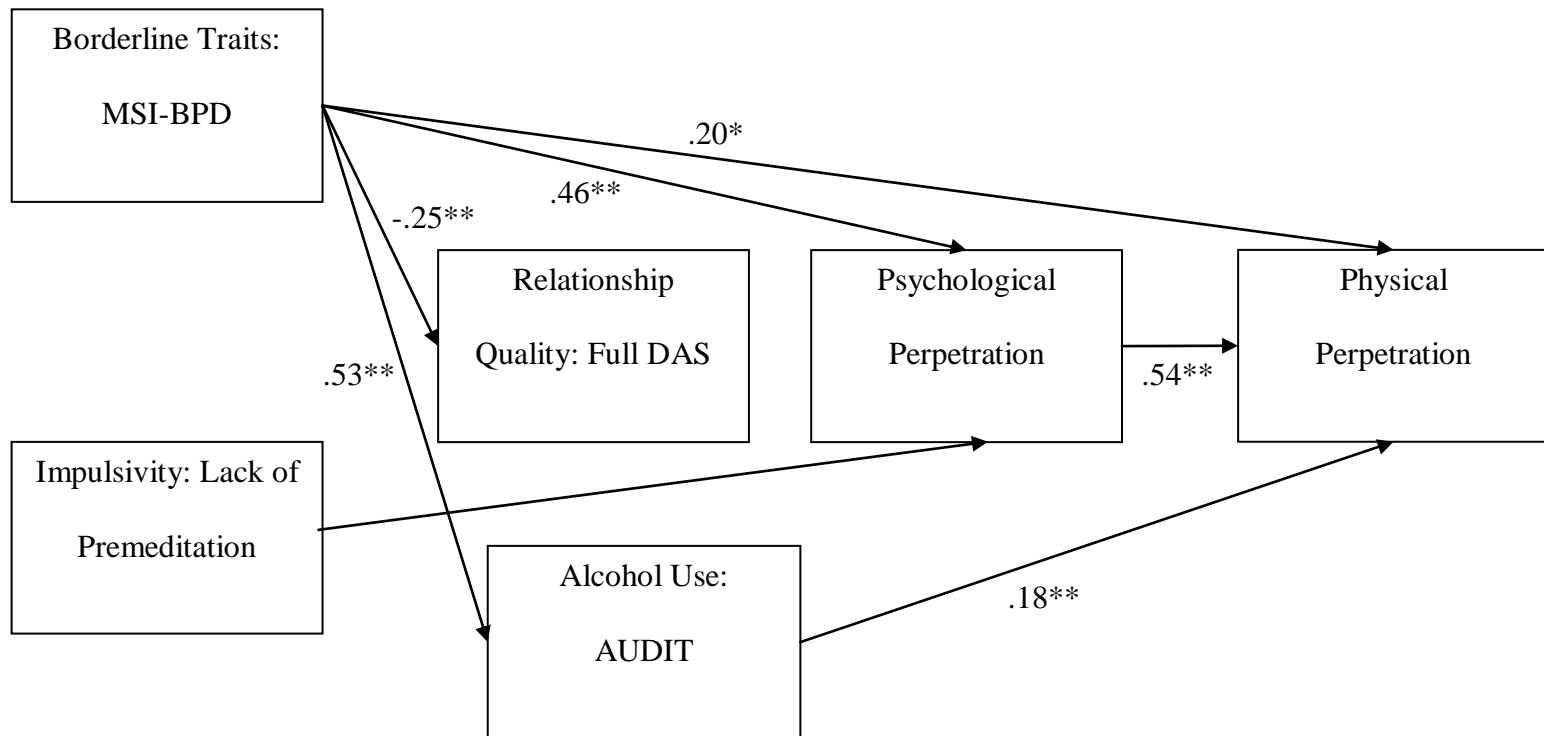


**F.8 Path analytic model: Final Perpetration-only Model, Full UPPS**

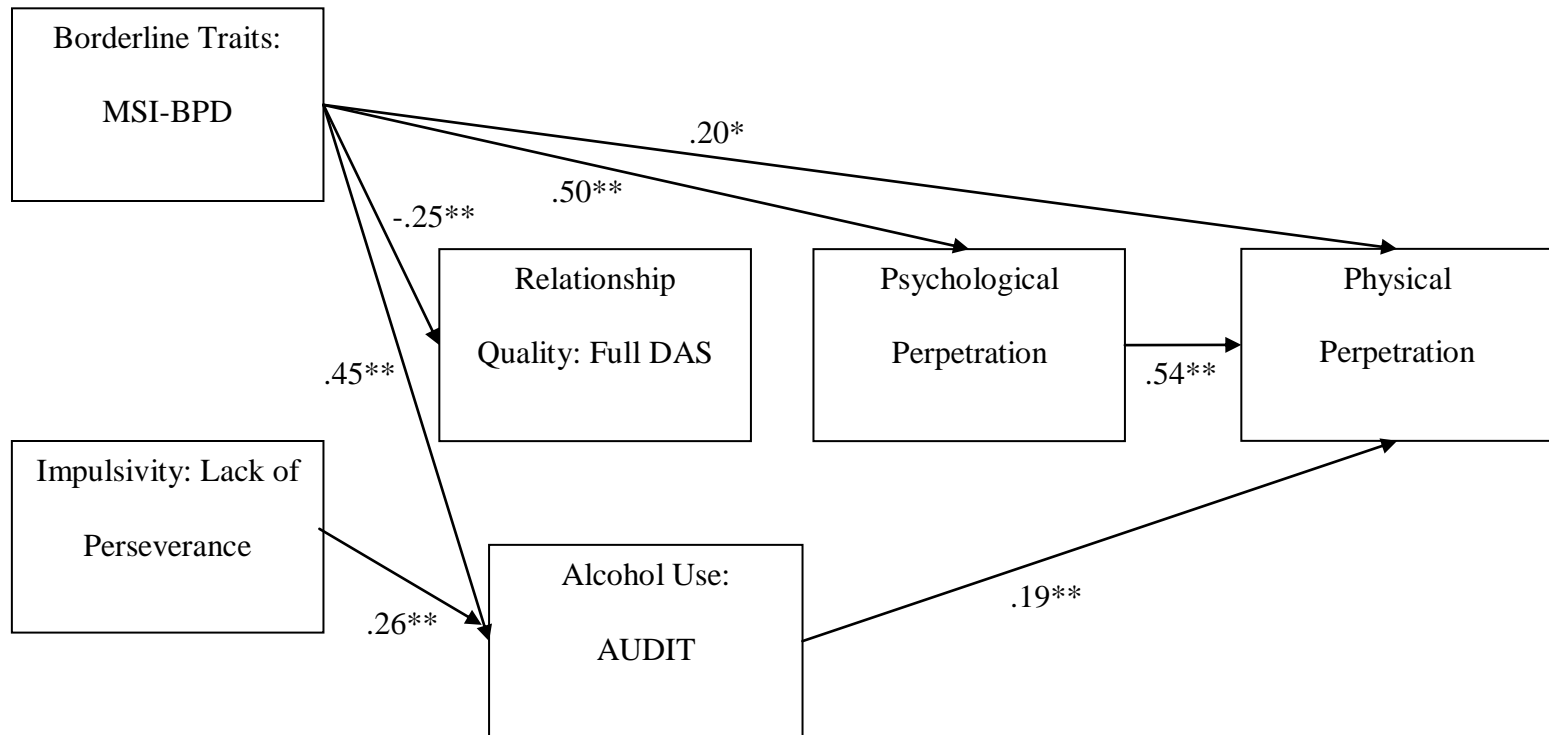




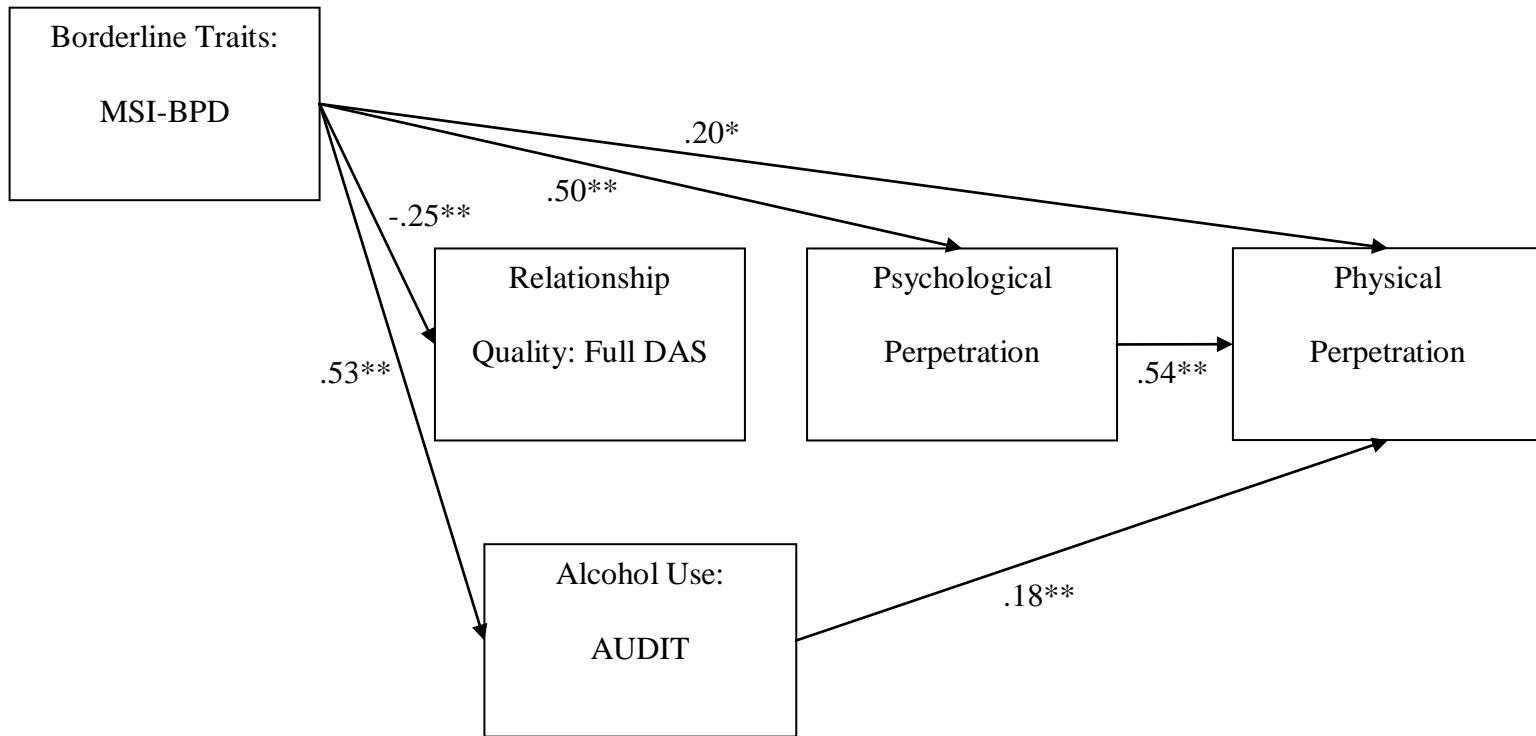
**F.9 Path analytic model: Final Perpetration-only Model, Lack of Premeditation**



**F.10 Path analytic model: Final Perpetration-only Model, Lack of Perseverance**



**F.11 Path analytic model: Final Perpetration-only Model, Sensation Seeking & Urgency**



**F.12 Mediation Effects for all Final Models (Impulsivity Analyses)**

Model	Psychological Aggression		Alcohol Problems		Sum of Indirect Effects	
	Estimate (SE)	95% CI	Estimate (SE)	95% CI	Estimate (SE)	95% CI
F.8 (Full)	.27 (.04)	.20 to .34	.07 (.03)	.01 to .13	.34 (.05)	.25 to .44
F.9 (Lack Premeditation)	.24 (.04)	.17 to .31	.10 (.03)	.03 to .16	.34 (.05)	.23 to .44
F.10 (Lack Perseverance)	.27 (.04)	.20 to .34	.08 (.03)	.03 to .14	.35 (.05)	.26 to .45
F.11 (Sensation Seeking & Urgency)	.27 (.04)	.20 to .34	.10 (.03)	.03 to .16	.37(.05)	.27 to .47

**G.1 Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993)**

**Instructions:** Please circle the answer that is correct for you.

1. How often do you have a drink containing alcohol?
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
3. How often do you have six or more drinks on one occasion?
4. How often during the last year have you found that you were not able to stop drinking once you had started?
5. How often during the last year have you failed to do what was normally expected from you because of drinking?
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
7. How often during the last year have you had a feeling of guilt or remorse after drinking?
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
9. How often during the last year have you or someone else been injured as a result of your drinking?
10. How often during the last year has a relative or friend, or a doctor or other health worker, been concerned about your drinking or suggested you cut down?

*\*\*For Item 1 and Items 3-10, response choices are:*

<i>Never or more</i>	<i>Monthly or less</i>	<i>Two to four times a month</i>	<i>Two to three times a week</i>	<i>Four times a</i>
--------------------------	----------------------------	--------------------------------------	--------------------------------------	-------------------------

*\*\*For Item 2, response choices are:*

<i>1 or 3</i>	<i>3 or 4</i>	<i>5 or 6</i>	<i>7 to 9</i>	<i>10 or more</i>
---------------	---------------	---------------	---------------	-------------------

## **G.2. Borderline Personality Organization Scale (Oldham et al., 1985)**

**Instructions:** For each of the statements below, please indicate how true it is about you by circling the most appropriate number beside each statement.

1	2	3	4
5			
Never True	Seldom True	Sometimes True	Often True
Always True			

1. I feel like a fake or an imposter, that other see me as quite different at times.
2. I feel almost as if I'm someone else, like a friend or relative or even someone I don't know
3. It is hard for me to trust people because they so often turn against me or betray me
4. People tend to respond to me by either overwhelming me with love or abandoning me
5. I see myself in totally different ways at different times
6. I act in ways that strike others as unpredictable and erratic
7. I find I do things which get other people upset, and I don't know why such things upset them
8. Uncontrollable events are the cause of my difficulties
9. I hear things that other people claim are not really there
10. I feel empty inside
11. I tend to feel things in a somewhat extreme way, experiencing either great joy or intense despair
12. It is hard for me to be sure about what others think of me, even people who have known me well
13. I'm afraid of losing myself when I get sexually involved
14. I feel that certain episodes of my life do not count and are better erased from my mind
15. I find it hard to describe myself
16. I've had relationships in which I couldn't feel whether I or the other person was thinking or feeling something
17. I don't feel like myself unless exciting things are going on around me
18. I feel people don't give me the respect I deserve unless I put pressure on them
19. People see me as being rude or inconsiderate and I don't know why
20. I can't tell whether certain physical sensations I'm having are real, or whether I am imagining them
21. Some of my friends would be surprised if they knew how differently I behave in different situations
22. I find myself doing things which feel okay while I am doing them but which I later find hard to believe I did

23. I believe that things will happen simply by thinking about them
24. When I want something from someone else, I can't ask for it directly
25. I feel I'm a different person at home as compared to how I am at work or school
26. I am not sure whether a voice I have heard, or something that I have seen, is my imagination or not
27. I have heard or seen things when there is no apparent reason for it
28. I feel I don't get what I want
29. I need to admire people in order to feel secure
30. Somehow, I never know quite how to conduct myself with people

### **G.3 CAGE Questionnaire (Ewing, 1984)**

**Instructions:** Please answer the following questions as honestly as possible. You may respond “NO” to questions that are not applicable.

- |   |     |    |
|---|-----|----|
| 1. Have you ever felt you should cut down on drinking?  | YES | NO |
| 2. Have people annoyed you by criticizing your drinking?                                      | YES | NO |
| 3. Have you ever felt guilty about your drinking?   | YES | NO |
| 4. Have you ever taken a drink in the morning to steady your nerves or get rid of a hangover? | YES | NO |



**G.4 Conflict Tactics Scale, Revised (CTS2; Straus et al., 1996)**

**Instructions:** No matter how well a couple gets along, there are times when they disagree, get annoyed with the other person, want different things from each other, or just have spats or fights because they are in bad moods, are tired, or for some other reason. Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you and your partner have differences. Please **CIRCLE** how many times you did each of these things in the **past year**, and how many times your partner did them in the past year.

[Scale: 1= 1 time; 2= 2 times; 3= 3-5 times; 4= 6-10 times; 5=11-20 times; 6=more than 20 times; 0= never]

How many times in the past year:

- |   |
|---|
| 1. Have you showed your partner you cared even though you disagreed?  |
| 2. Has your partner showed care for you even though you disagreed?  |
| 3. Have you explained your side of a disagreement to your partner?  |
| 4. Has your partner explained their side of a disagreement to you?  |
| 5. Have you thrown something at your partner that could hurt?   |
| 6. Has your partner thrown something at you that could hurt?  |
| 7. Have you insulted or sworn at your partner?  |
| 8. Has your partner insulted or sworn at you?   |
| 9. Have you twisted your partner's arm or hair?   |
| 10. Has your partner twisted your arm or hair?  |
| 11. Have you had a sprain, bruise or small cut because of a fight with your partner?                                |
| 12. Has your partner had a sprain, bruise or small cut because of a fight with you?                                 |
| 13. Have you shown respect for your partner's feeling about an issue?   |
| 14. Has your partner shown respect for your feelings about an issue?  |
| 15. Have you made your partner have sex without a condom?   |
| 16. Has your partner made you have sex without a condom?  |
| 17. Have you pushed or shoved your partner?   |
| 18. Has your partner pushed or shoved you?  |
| 19. Have you used force (like hitting, holding down, or using a weapon) to make your partner have oral or anal sex? |
| 20. Has your partner used force (like hitting, holding down, or using a weapon) to                                  |

make you have oral or anal sex?

21. Have you used a knife or gun on your partner?

22. Has your partner used a knife or gun on you?

23. Have you passed out from being hit on the head by your partner in a fight?

24. Has your partner passed out from being hit on the head by you in a fight?

25. Have you called your partner fat or ugly?

26. Has your partner called you fat or ugly?

27. Have you punched or hit your partner with something that could hurt?

28. Has your partner punched or hit you with something that could hurt?

29. Have you destroyed something belonging to your partner?

30. Has your partner destroyed something belonging to you?

31. Have you gone to the doctor because of a fight with your partner?

32. Has your partner gone to the doctor because of a fight with you?

33. Have you choked your partner?

34. Has your partner choked you?

35. Have you shouted or yelled at your partner?

36. Has your partner shouted or yelled at you?

37. Have you slammed your partner against a wall?

38. Has your partner slammed you against a wall?

39. Have you said you were sure that you and your partner could work out a problem?

40. Has your partner said that they were sure that you and your partner could work out a problem?

41. Have you needed to see a doctor because of a fight with your partner, but didn't?

42. Has your partner needed to see a doctor because of a fight with you, but didn't?

43. Have you beat up your partner?

44. Has your partner beat you up?

45. Have you grabbed your partner?

46. Has your partner grabbed you?

47. Have you used force (like hitting, holding down, or using a weapon) to make your

partner have sex?

48. Has your partner used force (like hitting, holding down, or using a weapon) to make you have sex?

49. Have you stomped out of the room or house or yard during a disagreement?

50. Has your partner stomped out of the room or house or yard during a disagreement?

51. Have you insisted on sex when your partner did not want to (but did not use physical force)?

52. Has your partner insisted on sex when you did not want to (but did not use physical force)?

53. Have you slapped your partner?

54. Has your partner slapped you?

55. Have you had a broken bone from a fight with your partner?

56. Has your partner had a broken bone from a fight with you?

57. Have you used threats to make your partner have oral or anal sex?

58. Has your partner used threats to make you have oral or anal sex?

59. Have you suggested a compromise to a disagreement?

60. Has your partner suggested a compromise to a disagreement?

61. Have you burned or scalded your partner on purpose?

62. Has your partner burned or scalded you on purpose?

63. Have you insisted on oral or anal sex when your partner did not want to (but did not use physical force)?

64. Has your partner insisted on oral or anal sex when you did not want to (but did not use physical force)?

65. Have you accused your partner of being a lousy lover?

66. Has your partner accused you of being a lousy lover?

67. Have you done something to spite your partner?

68. Has your partner done something to spite you?

69. Have you threatened to hit or throw something at your partner?

70. Has your partner threatened to hit or throw something at you?

71. Have you felt a physical pain that still hurt the next day because of a fight with your partner?

72. Has your partner felt a physical pain that still hurt the next day because of a fight with you?

73. Have you kicked your partner?

74. Has your partner kicked you?

75. Have you used threats to make your partner have sex?

76. Has your partner used threats to make you have sex?

77. Have you agreed to try a solution to a disagreement your partner suggested?

78. Has your partner agreed to a solution to a disagreement that you suggested?

### **G.5 Dyadic Adjustment Scale (DAS; Spanier, 1976)**

**Instructions:** Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list, by circling the appropriate number.

[5=Always agree; 4= Almost always agree; 3= Occasionally disagree; 2= Frequently disagree; 1= Almost always disagree; 0= Always disagree]

1. Handling family finances
2. Matters of recreation
3. Religious matters
4. Demonstrations of affection
5. Friends
6. Sexual relations
7. Conventionality (Correct or proper behavior)
8. Philosophy of life
9. Ways of dealing with parents or in-laws
10. Aims, goals, and things believed important
11. Amount of time spent together
12. Making major decisions
13. Household tasks
14. Leisure time interests and activities
15. Career decisions

[0=All the time; 1=Most of the time; 2=More often than not; 3=Occasionally; 4=Rarely; 5=Never]

16. How often do you discuss or have you considered divorce, separation, or terminating your relationship.
17. How often do you or your partner leave the house after a fight?

[0=Never, 1=Rarely, 2=Occasionally, 3=More often than not, 4=Most of the time, 5=All the time]

18. In general, how often do you think that things between you and your partner are going well?
19. Do you confide in your partner?

[0=All the time; 1=Most of the time; 2=More often than not; 3=Occasionally; 4=Rarely; 5=Never]

20. Do you ever regret that you married (or lived together)?
21. How often do you and your partner quarrel?
22. How often do you and your partner “get on each others’ nerves”?

[0=Never, 1=Rarely, 2=Occasionally, 3=Almost every day, 4=Every day]

23. Do you kiss your partner?

[0=None of them, 1=Very few of them, 2=Some of them, 3=Most of them, 4=All of them]

24. Do you and your partner engage in outside activities together?

[0=Never, 1=Less than once a month, 2=1-2 times a month, 3=1-2 times a week, 4=Once a day, 5=More than that]

How often would you say the following events occur between you and your partner?

25. Have a stimulating exchange of ideas

26. Laugh together

27. Calmly discuss something

28. Work together on a project

These are some of the things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship **during the past few weeks**. (CHECK yes or no).

29. Being too tired for sex

30. Not showing love

31. The numbers on the line represent different degrees of happiness in your relationship. The middle point, "happy", represents the degree of happiness of most relationships. Please **circle the one number** that best describes the degree of happiness, all things considered, of your relationship.

[0=Extremely unhappy; 1=Fairly unhappy; 2=A little unhappy; 3=Happy; 4=A little happy; 5=Extremely happy; 6=Perfectly happy]

32. Which of the following statements best describes how you feel about the future of your relationship? (Check only ONE box)

I want desperately for my relationship to succeed, and would go to almost any length to see it does [5]

I want very much for my relationship to succeed, and will do all I can to see that it does [4]

I want very much for my relationship to succeed, and will do my fair share to see that it does [3]

It would be very nice for my relationship to succeed, but I can't do much more than I am doing now to help it succeed [2]

It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going [1]

My relationship can never succeed, and there is no more that I can do to keep the relationship going [0]

**G.6 Levenson Primary and Secondary Psychopathy Scale (LPSP; Levenson, et al., 1995)**

[4-point Likert response: Disagree strongly; Disagree somewhat; Agree somewhat; Agree strongly; starred items are reverse scored]

1. Success is based on the survival of the fittest; I am not concerned about the losers
2. For me, what's right is whatever I can get away with
3. In today's world I feel justified in doing whatever I can get away with to succeed
4. My main purpose in life is getting as many goodies as I can
5. Making a lot of money is my most important goal
6. I let others worry about higher values; my main concern is with the bottom line
7. People who are stupid enough to get ripped off usually deserve it
8. Looking out for myself is my top priority
9. I tell other people what they want to hear so they will do what I want them to do
10. I would be upset if my success came at someone else's expense\*
11. I often admire a really clever scam
12. I make a point of not trying to hurt others in pursuit of my goals\*
13. I enjoy manipulating other people's feelings
14. I feel bad if my words or actions cause someone else to feel emotional pain\*
15. Even if I were trying very hard to sell something, I wouldn't lie about it\*
16. Cheating is not justified because it is unfair to others\*
17. I find myself in the same kinds of trouble, time after time
18. I am often bored
19. I find that I am able to pursue one goal for a long time\*
20. I don't plan anything very far in advance
21. I quickly lose interest in tasks I start
22. Most of my problems are due to the fact that other people just don't understand me
23. Before I do anything, I carefully consider the possible consequences\*
24. I have been in a lot of shouting matches with other people
25. When I get frustrated, I often let off steam by blowing my top
26. Love is overrated

**G.7 McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD; Zanarini et al., 2003)**

[1=yes; 2=no]

1. Have any of your closest relationships been troubled by a lot of arguments or repeated breakups?
2. Have you deliberately hurt yourself physically (e.g. punched yourself, cut yourself, burned yourself)? How about made a suicide attempt?
3. Have you had at least 2 other problems with impulsivity (e.g. eating binges and spending sprees, drinking too much and verbal outbursts)?
4. Have you been extremely moody?
5. Have you felt very angry a lot of the time? How about often acted in an angry or sarcastic manner?
6. Have you often been distrustful of other people?
7. Have you frequently felt unreal or as if things around you were unreal?
8. Have you chronically felt empty?
9. Have you often felt that you have no idea who you are or that you have no identity?
10. Have you made desperate efforts to avoid feeling abandoned or being abandoned (e.g. repeatedly calling someone to reassure yourself that he or she still cared, begged them not to leave you, clung to them physically)?

### **G.8 Self-report Conduct Disorder Screen**

- |  |     |    |
|--|-----|----|
| 1. Before you were 15, would you bully or threaten other kids?   | YES | NO |
| 2. Before you were 15, would you start fights?   | YES | NO |
| 3. Before you were 15, did you hurt or threaten someone with a weapon, like a bat, brick, broken bottle, a knife or a gun? | YES | NO |
| 4. Before you were 15, did you deliberately torture someone or cause someone physical pain and suffering?                  | YES | NO |
| 5. Before you were 15, did you torture or hurt animals on purpose?   | YES | NO |
| 6. Before you were 15, did you mug, rob, or forcibly take something from someone by threatening him or her.                | YES | NO |
| 7. Before you were 15, did you force someone to have sex with you, get undressed, or touch you sexually?                   | YES | NO |
| 8. Before you were 15, did you set fires?  | YES | NO |
| 9. Before you were 15, did you deliberately destroy things that weren't yours?   | YES | NO |
| 10. Before you were 15, did you break into houses, other buildings, or cars?   | YES | NO |
| 11. Before you were 15, did you lie a lot or con other people?   | YES | NO |
| 12. Before you were 15, did you sometimes steal or shoplift things or forge someone's signature?                           | YES | NO |
| 13. Before you were 15, did you run away and stay away overnight?  | YES | NO |
| 14. Before you were 13, did you often stay out very late, long after the time you were supposed to be home?                | YES | NO |
| 15. Before you were 13, did you often skip school?   | YES | NO |



### **G.9 UPPS Impulsive Behavior Scale (UPPS, Whitside & Lynam, 2001)**

Instructions: Please respond to the items using the scale below

Strongly Disagree (0)

Disagree (1)

Agree (2)

Strongly Agree (3)

1. I have a reserved and cautious attitude toward life
2. My thinking is usually careful and purposeful
3. I am not one of those people who blurt out things without thinking
4. I like to stop and think things over before I do them
5. I don't like to start a project until I know exactly how to proceed
6. I tend to value and follow a rational, "sensible" approach to things
7. I usually make up my mind through careful reasoning
8. I am a cautious person
9. Before I get into a new situation I like to find out what to expect from it
10. I usually think carefully before doing anything
11. Before making up my mind, I consider all the advantages and disadvantages
12. I have trouble controlling my impulses
13. I have trouble resisting my cravings (for food, cigarettes, etc.)
14. I often get involved in things I later wish I could get out of
15. When I feel bad, I will often do things I later regret in order to make myself feel better now
16. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse
17. When I am upset I often act without thinking
18. When I feel rejected, I will often say things I later regret
19. It is hard for me to resist acting on my feelings
20. I often make matters worse because I act without thinking when I am upset
21. In the heat of an argument, I will often say things that I later regret
22. I am always able to keep my feelings under control
23. Sometimes I do things on impulse that I later regret
24. I generally seek new and exciting experiences and sensations
25. I'll try anything once
26. I like sports and games in which you have to choose your next move very quickly
27. I would enjoy water skiing
28. I quite enjoy taking risks
29. I would enjoy parachute jumping
30. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional
31. I would like to learn to fly an airplane

32. I sometimes like doing things that are a bit frightening
33. I would enjoy the sensation of skiing very fast down a high mountain slope
34. I would like to go scuba diving
35. I would enjoy fast driving
36. I generally like to see things through to the end
37. I tend to give up easily
38. Unfinished tasks really bother me
39. Once I get going on something I hate to stop
40. I concentrate easily
41. I finish what I start
42. I'm pretty good about pacing myself so as to get things done on time
43. I am a productive person who always gets the job done
44. Once I start a project, I almost always finish it
45. There are so many little jobs that need to be done that I sometimes just ignore them all