# Toward a Better Understanding of Gender Differences in Psychopathology in Detained Adolescents: The Role of Maladaptive Personality Traits

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## Abstract

The present study investigates the often observed higher scores on psychopathology in detained girls compared to boys from a maladaptive trait perspective, as conceived by age-specific criterion B assessment of the Alternative Model of Personality Disorders. Participants were detained youth (*N* = 237; 122 boys; 115 girls, mean age = 15.8 years) from two youth detention centers in Belgium, who completed self-reports on maladaptive traits and psychopathology. Results confirm that the higher rates of psychopathology in incarcerated girls extend to the maladaptive trait level, with particularly higher levels of Emotional Instability and Oddity. In addition, a stronger co-occurrence of psychopathology with maladaptive traits was found for girls, especially for anxious-depressed, angry-irritable and post-traumatic symptoms. These findings suggest that mental health problems in detained girls appear to be much more related to personality difficulties compared to detained boys, and advocate the inclusion of comprehensive maladaptive trait assessment and gender-sensitive intervention programs for mental health problems in detained youth.

**Keywords** juvenile justice, adolescence, gender differences, mental health problems, maladaptive personality traits

**Towards a Better Understanding of Gender-Differences in Psychopathology in Detained Adolescents: The Role of Maladaptive Personality Traits**

High levels of mental health problems are common among adolescents in juvenile justice institutions (Fazel et al., 2008; Colins et al., 2010; Van Damme et al., 2014; Vermeiren et al., 2006). These mental disorders are mostly situated within the externalizing spectrum, including attention-deficit/hyperactivity, disruptive (conduct, oppositional defiant), and substance use disorders (Van Damme et al., 2014), although high rates of internalizing problem behavior such as anxiety and depression are also well-documented (e.g., Colins et al., 2010; Teplin et al., 2002; Van Damme et al., 2014; Vermeiren et al., 2006). Within this group of incarcerated youth, girls in particular exhibit overall higher levels of psychopathology than boys (Colins et al., 2010; Cauffman, 2004; Gretton & Clift, 2014; Teplin et al., 2002; Van Damme et al., 2014; Van Damme et al., 2016), indicating that they may constitute a vulnerable subgroup of justice-involved youth. Although some of these gender differences are also found in community samples (Crick & Zahn-Waxler, 2003), they appear to be even more pronounced in detained samples. Mean differences for anxious-depressive symptoms between detained girls and boys are for instance twice as large compared to community rates (Cauffman et al., 2007). Some studies also reported higher levels of externalizing problems in detained girls compared to detained boys (Cauffman et al., 2007; Van Damme et al., 2016), whereas the opposite is true in community and clinic-referred samples (e.g., Achenbach & Rescorla, 2001; Van Lier et al., 2007). Finally, community-residing girls generally display lower levels of substance use problems than boys (Nolen-Hoeksema, 2004; Isralowitz & Rawson, 2006), whereas no gender differences are observed in forensic samples (Cauffman et al., 2007; Van Damme et al., 2016). These findings all underscore that gender differences in psychopathology in detained youth are notably dissimilar to established gender differences in community youth, with incarcerated girls representing a larger vulnerability and presumably displaying unique or more explicit needs.

One potential explanation for these findings is that boys and girls are treated differently during legal decision-making processes and, hence, girls often escape prosecution (Hodgins, 2022) or are less likely to be incarcerated than boys (Cauffman et al., 2007; Bishop & Frazier, 1992; Lenssen et al., 2000). Hence, only girls with the most severe delinquent behavior are referred for secured confinement. From a theoretical perspective, these findings may be understood from the principle of 'relative deviance', implying that individuals who deviate more from their social norms, suffer from more severe psychopathology (Dembo et al., 1994; Dembo et al., 2009). As females are generally more likely to be compliant than males (Weisberg et al., 2011), incarcerated girls hence deviate relatively more from their social norms compared to boys, potentially indicating a more disturbed mental health. A second hypothesis explaining these gender differences may be understood from girl's greater sensitivity to traumatic events (Bowers, 1990; Espinosa et al., 2013), and a higher likelihood to develop mental health problems as a result of traumatic experiences (Cauffman et al., 1998) compared to boys, including posttraumatic stress disorder (Dierkhising et al., 2013), depressive symptoms (Wei et al., 2021) and delinquency (Bowers, 1990). Indeed, girls who are referred for secured confinement have often experienced substantial traumatic experiences (Chesney-Lind & Shelden, 2004; Vahl et al., 2016), with girls exhibiting significantly higher levels of trauma exposure compared to detained boys (Van Damme et al., 2016). As traumatic experiences in childhood also increase the risk of developing personality difficulties later in life (Bartlett et al., 2015), exploring these gender differences from a personality pathology perspective may be particularly interesting.

**Gender differences in psychopathology among detained youth from a maladaptive trait perspective**

Although consensus exists on the higher vulnerability of detained girls compared to boys, no studies have addressed these gender differences from a broader dispositional

framework, exploring how early personality pathology may account for the observed gender differences in mental health problems among justice-involved youth. Increasing our knowledge from this early personality pathology perspective is of pivotal importance, because a more stringent association of phenotypic manifestations of psychopathology with dispositional vulnerabilities may be indicative of a worse prognosis (De Young et al., 2022) or less treatment adherence (Andersen & Bienvenu, 2011), and needs to be differentiated from psychopathology as part of normative turbulence during adolescence (e.g., due to immature brain functioning; Guyer, 2020) or as reactive behavior due to a life event (Littleton et al., 2011). Prinzie and colleagues (2014) underscored this hypothesis, and empirically demonstrated that the traits shyness, irritability, and altruism at the age of 9 could distinguish between different developmental trajectories of internalizing problems up until the age of 15, with higher trait scores at early age being predictive of a more problematic course. Likewise, Martel et al. (2010) found evidence for different clinical ADHD subtypes based on personality, with the subtype characterized by the lowest levels of conscientiousness experiencing the most difficulties, including comorbid problems in both the internalizing and externalizing spectrum. Translating these findings toward the evidence on gender differences in mental health among detained youth, it can be hypothesized that psychopathology in detained girls is stronger associated with personality difficulties compared to detained boys, which corroborates on the established idea that 'female detained adolescents make up a qualitatively different group' (Cauffman et al., 2007).

A comprehensive framework for the assessment of these early personality difficulties or maladaptive traits was offered by De Clercq and colleagues (2006, 2014). In line with the conceptualization of adult personality pathology in DSM-5 (Krueger et al., 2012), this empirically-based framework delineates five higher-order domains of maladaptive traits in childhood and adolescence including Disagreeableness, Emotional Instability, Introversion,

Compulsivity, and Oddity. Each of these five domains structures a set of more narrow maladaptive trait facets and empirically connects with the established five factor model (FFM) of general personality.

Previous evidence indicated the significance of this age-specific maladaptive trait perspective for a better understanding of specific mental health problems in youth such as autism spectrum symptoms (De Clercq et al., 2010), obsessive-compulsive symptomatology (Aelterman et al., 2010), severe conduct problems (Frick et al., 2014) and relational aggression (Tackett et al., 2014). From this evidence, it can thus be hypothesized that such maladaptive trait perspective may also be valuable to gain a better understanding of individual differences in highly prevalent mental health problems in detained youth (Stathis et al., 2008), such as alcohol/drug use (Chassin, 2008), posttraumatic symptoms, anger/irritability, depression/anxiety, somatic complaints, and suicide ideation (Tapia et al., 2016; Wasserman et al., 2004).

**The current study**

The current study aims to examine differences in phenotypic expressions of psychopathology and maladaptive traits between detained boys and girls. Based on previous research, we expect to observe gender differences for both externalizing and internalizing forms of psychopathology, except for substance use (Caufmann, 2004; Cauffman et al., 2007; Van Damme et al., 2016). With regard to gender differences in maladaptive traits, we build upon the evidence on the dimensional nature of personality and psychopathology (Krueger et al., 2018; Wright et al., 2012), and expect that girls will display overall higher scores on the five broad basic maladaptive traits that are believed to represent trait precursors of adult personality pathology.

Second, we expect that the five broad basic maladaptive traits will be associated with both internalizing and externalizing forms of psychopathology, in line with previous evidence

(De Clercq et al., 2008; Verbeke & De Clercq, 2014). Overall, we hypothesize that these presumed associations will be stronger in girls relative to boys, hence reflecting a moderating effect of gender in the trait-psychopathology association.

## Method

### Participants and procedures

Participants ($N$=237) were recruited between 2012 and 2014 from two youth detention centers in Flanders, housing minor adolescents after referral by a juvenile judge. This outplacement represents the most severe legal measure a juvenile judge can impose in Belgium and is hence only applicable to youth demonstrating severe criminal and behavioral problems. Adolescents were eligible to participate if the following criteria were met: (i) being adjudicated to a juvenile justice institution for at least one month; (ii) mastery of the Dutch language; and (iii) having sufficient cognitive abilities. The latter criteria were verified by both the staff and the trained researcher, who screened the adolescent's ability to participate in Dutch conversations and to understand the informed assent form. All participants were addressed individually and received oral and written information about the aims, content, and duration of the study. They were assured that data would be treated confidentially and that refusal to participate would not affect their judicial status, stay, or treatment in the juvenile justice institution. Written informed consent was provided prior to the assessment, which took place in a private area in the juvenile justice institution. Parents also received a letter including information about the aims and practical aspects of the study and the possibility to refuse the participation of their child. This study was approved by the directors of participating institutions and by the ethical board of the Faculty of Psychology and Educational Sciences at Ghent University (protocol number 2013/19).

The sample consisted of 237 adolescents (51.5% male), with a mean age of 15.8 years (ranging from 13 to 18 years). Regarding ethnic descent, 62.9% was of Belgian (versus non-

Belgian) origin. Adolescents were placed in the detention center for various reasons, with the majority demonstrating more than one reason for placement. In boys, the most frequent reasons for placement were violence/aggression offenses (47.3%) and persistent rearing problems (47.2%), followed by offenses against property (34.2%) and drug-related offenses (32.6%). In girls, persistent runaway behavior ("status offenses") was the most prevalent reason for placement (45.6%), next to persistent rearing problems (34%), drug-related offenses (25.4%), and placement for purposes of self-protection (22.4%).

### Measures

**The Massachusetts Youth Screening Instrument-Second Version (MAYSI-2; Grisso et al., 2001).** The MAYSI-2 aims to identify juvenile justice-involved adolescents who display acute mental health problems, are in need of direct support, or are likely to have a mental disorder and may need psychiatric evaluation (Grisso et al., 2001). This self-report questionnaire consists of 52 yes/no items that are clustering together in six scales for both boys and girls: Alcohol/drug use (8 items), angry-irritable (9 items), depressed-anxious (9 items), somatic complaints (6 items), suicide ideation (5 items), and traumatic experiences (5 items). A seventh scale (i.e., thought disturbances) was not used in the current study, as previous research indicated that this scale can only be used in detained boys and not in girls (Grisso et al., 2001). The MAYSI-2 has no total score, as this test does not measure a broader construct (Grisso & Barnum, 2006).

In the current study, we used the official Dutch version of the MAYSI-2, which was created using translation back-translation processes (Markus et al., 2009). Internal consistencies of the five scales of the Dutch MAYSI-2 (Colins et al., 2015) were acceptable, with McDonald's Omega coefficients ranging between .64 (traumatic experiences and somatic complaints) and .90 (suicide ideation). Mean inter-item correlations (MIC) were also calculated, with adequate values ranging between .15 and .50 (Clark & Watson, 1995).

**Dimensional Personality Symptom Itempool (DIPSI; De Clercq et al., 2006; Verbeke & De Clercq, 2014).** The 194-item original Dutch version of the DIPSI was administered to all adolescents, providing an age-specific dimensional description of 31 maladaptive traits that are potential precursors of adult personality disorders. The original DIPSI facets (De Clercq et al., 2006) were hierarchically organized in a four-dimensional higher-order structure that was consistent with adult dimensional conceptualizations of personality pathology (O'Connor, 2005; Saulsman & Page, 2004; Widiger & Simonsen, 2005), including Disagreeableness, Emotional Instability, Introversion, and Compulsivity. More recently, the DIPSI was extended with the fifth higher-order factor Oddity (Verbeke & De Clercq, 2014) to describe maladaptive trait manifestations as comprehensive as possible, further aligning with the recent maladaptive trait models in adults (Krueger et al., 2012).

Disagreeableness comprises extreme low-end variants of Benevolence (e.g. Dominance/Egocentrism and Irritable/Aggressive Traits), high-end variants of Extraversion (e.g. Hyperexpressive Traits and Hyperactive Traits), and low-end variants of Conscientiousness (e.g. Distraction and Disorderliness). Emotional Instability includes a Dependency component and Anxious and Depressive Traits. Extreme low-end variants of Extraversion, such as Shyness and Withdrawn traits, are structured under Introversion. Compulsivity describes the high extremes of Conscientiousness traits (e.g. Perfectionism and Extreme Order) and Oddity includes Oversensitivity to feelings, Extreme fantasy, Daydreaming, and Odd thoughts and behavior (Verbeke & De Clercq, 2014).

Internal consistencies of the five higher-order DIPSI domains were excellent, with McDonald's Omega coefficients ranging between .86 (Compulsivity) and .97 (Disagreeableness). MIC values ranged between .27 (Disagreeableness) and .40 (Oddity). For the purpose of the present study, only the 5 basic domains of maladaptive traits were used in the analysis.

### Statistical analysis

First, measurement invariance across gender was explored for both instruments to examine whether the MAYSI-2 scales and DIPSI trait domains were measured in the same way for boys versus girls, using the *blavaan* package (Merkle & Rosseel, 2018) in R (R core team, 2022). All further analyses were conducted using SPSS version 28. Subsequently, we tested gender differences in the prevalence of self-reported psychopathology and maladaptive personality traits using the Mann Whitney U test, because of non-normality of the data. Finally, a series of moderated regression analysis for all MAYSI-2 scales was conducted to test whether the stringency of the relationship between maladaptive personality traits domains and various forms of psychopathology differ by gender. For each analysis, one of the maladaptive trait domains and gender were entered as predictors and one psychopathology scale as the outcome in a first step, followed by the inclusion of the interaction term between the same maladaptive trait domain and gender in a second step. All predictors were centered and simple slope tests of significant interactions were also calculated. P-values were adjusted according to the Bonferroni correction in order to correct for multiple testing in all analyses.

## Results

### Measurement invariance

To evaluate equivalency of the instruments across gender, we ran a series of Bayesian measurement invariance analyses. We preferred to gauge measurement invariance using a Bayesian approach for two reasons. First, the sample size of both subgroups was rather small for traditional measurement invariance analysis (Meade 2005). Conversely, Bayesian estimation is less affected by small sample sizes (Lee & Song, 2004; Hox et al., 2012). Second, it has been argued that the Bayesian framework conceptualizes measurement invariance in a more intuitive and naturalistic way (Cieciuch et al., 2014). Specifically, whereas frequentist analyses require *exact* measurement invariance – i.e., that loadings and/or intercepts are exactly

equal across groups –, the Bayesian measurement invariance approach merely expects *approximate* equality – i.e., it allows loadings and/or intercepts to slightly deviate across groups, as long as the mean of the differences between loadings (and/or intercepts) across groups are zero (Muthén & Asparouhov, 2013). Thus, this approach allows researchers to flexibly model small deviations between groups with negligible consequences for equivalence conclusions (Van de Schoot et al., 2013).

We tested measurement invariance at the configural, metric, and scalar level for the two measurement instruments. In the baseline (configural) model, the subscales of the DIPSI and the MAYSI-2 were taken as indicators for the respective latent constructs they were assumed to measure. Each indicator variable thus loaded on its respective latent factor, but these loadings were allowed to differ across groups. In the next two models in the sequence, (1) the factor loadings and (2) the factor loadings and the indicator intercepts were respectively constrained to be equal across groups.

The results showed that the model assuming approximately equal loadings and intercepts (DIC[1] = 7200; WAIC[2] = 7208, LOOIC[3] = 7208) outperformed the model merely assuming approximately equal loadings (DIC = 7175, WAIC = 7201, LOOIC = 7208) and the model assuming configural invariance (DIC = 7195, WAIC = 7214, LOOIC = 7214). That is, the Bayes factors comparing these models indicated that, given the data, the model assuming (approximately) equal loadings and intercepts (i.e., scalar invariance) was 51 times more likely than the model merely assuming (approximately) equal loadings (i.e., metric invariance), and 91 times more likely than the model merely assuming the same pattern of loadings (i.e., configural invariance). Likewise, the model assuming (approximate) metric invariance was shown to be 40 times more likely than the model assuming configural invariance. Thus,

[1] Deviance Information Criterion.
[2] Watanabe–Akaike information criterion.
[3] Leave-one-out cross-validation (LOO) information criterion.

(approximate) scalar invariance of both scales across genders could be assumed. In sum, our results provide evidence for gender measurement invariance in both instruments.

**Gender differences in self-reported psychopathology and maladaptive personality traits**

Table 1 shows descriptive statistics and gender differences for the MAYSI-2 scales and DIPSI trait domains. Our results indicate significant differences between boys and girls for all MAYSI-2 psychopathology scales (except for the alcohol-drug use scale), with girls reporting higher rates than boys. The largest differences were found for suicide ideation (*d*= .95), somatic complaints (*d*= .94), and depressed-anxious (*d*= .83), followed by moderate effects for angry-irritable (*d*= .66), and traumatic experiences (*d*= .60). Also for maladaptive traits, significant gender differences were observed, with girls scoring higher than boys for Emotional Instability (*d*= .73) and Oddity (*d*= .70).

**Moderation analyses**

A series of moderated regression analyses was conducted for all MAYSI-2 scales (see Table 2). Results indicate that all five DIPSI trait domains are significant predictors of all psychopathology scales, except for alcohol-drug use which appeared to be only related to the maladaptive trait domains of Disagreeableness and Oddity. In particular, Disagreeableness is strongly associated with alcohol/drug use and angry-irritable, whereas Emotional Instability and Oddity are highly associated with internalizing forms of psychopathology (i.e., depressed-anxious, somatic complaints, suicide ideation, and traumatic experiences). In addition, gender effects are observed for all psychopathology scales, except for the alcohol-drug use scale.

Furthermore, the results show significant moderator effects of gender. Three moderating effects (Disagreeableness x gender, Introversion x gender, Compulsivity x gender) are predictive of the angry-irritable scale, whereas two significant interactions (Disagreeableness x gender, Compulsivity x gender) for the depressed-anxious-scale are found. Finally, two

moderator effects are predictive of traumatic experiences, with significant Introversion x gender and Compulsivity x gender interactions.

Simple slope tests of the significant interactions were calculated to examine the meaning of effects for each group and are represented in Table 3 and Figure 1. Results revealed that the associations between maladaptive traits and psychopathology were overall substantially stronger in girls compared to the associations in boys. For both sexes, Disagreeableness and Compulsivity are significantly positively related with the depressed-anxious scale, although the slopes are stronger in girls ($\beta$= 2.60 and $\beta$= 2.38 respectively) compared to boys ($\beta$= 1.22 and $\beta$= 0.98 respectively). Furthermore, Disagreeableness, Introversion, and Compulsivity are significantly positively associated with the angry-irritability scale in girls, whereas, in boys, only Disagreeableness is significantly related to angry-irritability. Relatedly, all slopes are stronger in girls ($\beta$= 1.61 to 2.97) than in boys ($\beta$=0.08 to 1.34), representing an overall stronger association between each of these maladaptive traits and angry-irritability in girls. Finally, Introversion and Compulsivity are significantly positively related with traumatic experiences in girls, whereas in boys, none of these traits are related to this scale.

## Discussion

The current study explored gender differences in psychopathology and maladaptive personality traits, as well as their interrelationship, in a representative sample of detained adolescents in Flanders. Our results confirmed previous findings on the higher rates of psychopathology in juvenile justice girls compared to boys (Gretton & Clift, 2014; Teplin et al., 2002; Van Damme et al., 2014; Van Damme et al., 2016), spread across both internalizing and externalizing manifestations of psychopathology. As an exception to this and in line with previous research (Cauffman, 2007; Van Damme et al., 2016), similar levels of alcohol/drug use in girls and boys were observed.

Whereas previous studies were mostly limited to examining gender differences in psychopathology, the current study also took the maladaptive trait spectrum into account, using an age-specific and dimensional measure for personality pathology precursors. Also at this trait level, the vulnerable position of detained girls was confirmed, with significantly higher levels of Emotional Instability and Oddity compared to boys. A first main conclusion of the current study hence underscores the robustness of the gender effect in psychopathology in detained minors, which also appears to extend to measures that approach maladjustment from an early personality pathology perspective.

Furthermore, trait-psychopathology associations were explored in order to explore the role of underlying dispositional vulnerabilities in mental health problems of detained youngsters. Here, the results confirmed maladaptive trait-psychopathology associations from previous research (e.g. De Clercq et al., 2008), with Disagreeableness, Emotional Instability, Introversion, and Compulsivity being significant predictors of externalizing and internalizing psychopathology. Furthermore, our findings also revealed that Oddity is a significant predictor of all psychopathology scales, which underscores findings from previous work on the relevance of the association between Oddity and internalizing and externalizing psychopathology symptoms (Verbeke & De Clercq, 2014). Moreover, moderator effects were found and post-hoc analysis of the significant interactions revealed that gender significantly moderated the relationship between some maladaptive trait domains (i.e. Disagreeableness, Introversion, and Compulsivity) and some MAYSI-2 scales (i.e. Angry-irritable, depressed-anxious, and traumatic experiences). More and stronger trait-psychopathology associations were found in girls, indicating a higher involvement of personality difficulties in the expressions of angry-irritability, depressiveness-anxiousness, and traumatic experiences, which again underscores that detained girls make up a qualitatively different group (Cauffman et al., 2007). These

findings indicate that certain aspects of psychopathology (i.e. angry-irritability, depressed feelings, anxiousness, and traumatic experiences) require a gender-specific treatment approach.

**Limitations and future research**

The present study has some important strengths, including its sample size, the inclusion of an ethnically diverse sample, and the equal representation of boys and girls in the sample which allows us to examine gender differences. However, the current study has also several limitations that should be taken into account when interpreting the results. First, there may be common method variance, as both maladaptive traits and psychopathology were measured using self-report questionnaires, which can inflate correlations. Future research should control for common method variance by including a combination of parent and self-reports, even though parents of detained youth are often difficult to locate and unwilling or unable to provide information (e.g., Colins et al., 2008). Second, the study did not take control variables into account that may affect psychopathology scores, such as genetic factors, social support, and socioeconomic status. It would be valuable in further research to take control variables into account. A third limitation of the present study is the cross-sectional design, which makes it impossible to examine causal relationships between personality difficulties and psychopathology across gender.

**Clinical implications**

Our findings corroborate current knowledge on gender differences in detained youth, showing that girls have a more profound dispositional vulnerability relative to boys. These findings imply that a maladaptive trait assessment perspective in youth forensic contexts may be valuable in evaluating early mental health problems, as it may encourage a life-span perspective on personality pathology which may be particularly relevant in detained youth. Most important, the current study points to the relevance of gender-sensitive intervention

programs for mental health problems in detained youth instead of standard protocols, as similar phenotypic symptomatology in incarcerated boys and girls do not seem to reflect a similar personality vulnerability. In particular, clinicians should pay close attention to girls who exhibit anxious-depressive symptoms, angry-irritability symptoms, and symptoms related to traumatic experiences, as these symptoms have been found to be highly associated with personality vulnerabilities. Our findings may point towards different etiological mechanisms in the development of mental health problems in justice-involved boys and girls and may encourage future studies to more thoroughly explore the peculiarity of psychopathology in detained girls through the lens of early personality difficulties.

**Table 1**

*Descriptive Statistics and Gender Differences for MAYSI-2 Scales and DIPSI Maladaptive Traits*

| | Boys | | Girls | | Boys versus girls | |
|---|---|---|---|---|---|---|
| | *M* (sd) | Range | *M* (sd) | Range | *U* | Cohen's *d* |
| MAYSI-2 | | | | | | |
| Alcohol/Drug use | 2.38 (2.47) | 0-8 | 3.23 (2.67) | 0-8 | 5173.00 | .31 |
| Angry-irritable | 3.93 (2.56) | 0-10 | 5.67 (2.80) | 0-10 | 3983.50* | .66 |
| Depressed-anxious | 3.45 (2.51) | 0-9 | 6.01 (3.35) | 0-12 | 3497.50* | .83 |
| Somatic-complaints | 2.13 (1.72) | 0-6 | 3.69 (1.56) | 0-6 | 3194.50* | .94 |
| Suicide ideation | .89 (1.44) | 0-5 | 2.65 (2.08) | 0-5 | 3151.00* | .95 |
| Traumatic experiences | 2.00 (1.43) | 0-5 | 2.87 (1.53) | 0-5 | 4170.00* | .60 |
| DIPSI | | | | | | |
| Emotional Instability | 2.05 (.61) | 1.01-4.23 | 2.61 (.83) | 1.13-4.57 | 4048.50* | .73 |
| Disagreeableness | 2.23 (.60) | 1.12-3.96 | 2.41 (.68) | 1.01-4.42 | 5478.50 | .33 |
| Introversion | 2.05 (.71) | 1.00-3.98 | 2.26 (.78) | 1.00-4.45 | 5753.00 | .25 |
| Compulsivity | 2.42 (.71) | 1.00-4.09 | 2.32 (.77) | 1.00-4.78 | 6031.00 | .18 |
| Oddity | 2.01 (.70) | 1.00-4.75 | 2.58 (.89) | 1.04-4.88 | 4141.50* | .70 |

*Note*. *$p$< .01, according to the Bonferroni correction. *U*= Mann-Whitney *U* test statistic.

Cohen's *d*: 0.20 = small, 0.50 = medium, 0.80 = large (Cohen, 1988).

**Table 2**

*Moderating Regression Results*

| | Alcohol/drug use | | | Angry-Irritable | | | Depressed-Anxious | | | Somatic Complaints | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ΔF | $\Delta R^2$ | β | ΔF | $\Delta R^2$ | β | ΔF | $\Delta R^2$ | β | ΔF | $\Delta R^2$ | β |
| DIS, gender | 19.63* | .15* | .36*, .11 | 53.26* | .33* | .49*, .25* | 52.86* | .33* | .41*, .35* | 31.02* | .22* | .17*, .42* |
| DIS x gender | .66 | .00 | .08 | 7.72* | .02* | .23* | 6.27* | .02 | .21* | .41 | .00 | .06 |
| INS, gender | 5.87* | .05* | .17, .10 | 32.86* | .23* | .39*, .18* | 88.06* | .45* | .57*, .22* | 43.34* | .29* | .32*, .34* |
| INS x gender | 1.95 | .01 | .16 | 6.25 | .02 | .26* | 3.75 | .01 | .17 | .02 | .00 | .02 |
| ITR, gender | 5.52* | .05* | .15, .14 | 28.65* | .21* | .34*, .28* | 62.56* | .37* | .45*, .36* | 33.33* | .24* | .20*, .42* |
| ITR x gender | 2.71 | .01 | .17 | 13.34* | .05* | .33* | 5.95 | .02 | .20 | 4.29 | .02 | .19 |
| COMP, gender | 5.18* | .05* | .14, .17 | 20.33* | .16* | .25*, .34* | 53.13* | .33* | .41*, .44* | 30.83* | .22* | .16*, .46* |
| COMP x gender | .44 | .00 | .07 | 10.60* | .04* | .30* | 8.47* | .03* | .24* | 3.81 | .01 | .18 |
| ODD, gender | 6.73* | .06* | .20*, .09 | 39.87* | .27* | .44*, .17* | 85.73* | .44* | .56*, .23* | 45.06* | .30* | .34*, .33* |
| ODD x gender | .70 | .00 | .09 | 4.35 | .01 | .20 | 2.95 | .01 | .15 | .64 | .00 | -.08 |

*Note.* *$p$<.01 (Bonferroni corrected); DIS= Disagreeableness, INS= Emotional Instability, INT= Introversion, COMP= Compulsivity, ODD= Oddity.

**Table 2 Continued**

| | Suicide ideation | | | Traumatic experiences | | |
|---|---|---|---|---|---|---|
| | $\Delta F$ | $\Delta R^2$ | β | $\Delta F$ | $\Delta R^2$ | β |
| DIS, gender | 43.05* | .28* | .29*, .41* | 25.17* | .19* | .33*, .24* |
| DIS x gender | .24 | .00 | .04 | 5.20 | .02 | .21 |
| INS, gender | 69.01* | .39* | .46*, .29* | 28.66* | .21* | .38*, .16 |
| INS x gender | .76 | .00 | .08 | 2.23 | .01 | .16 |
| ITR, gender | 52.78* | .33* | .36*, .41* | 26.76* | .20* | .35*, .25* |
| ITR x gender | 2.03 | .01 | .12 | 8.33 | .03* | .26* |
| COMP, gender | 40.66* | .28* | .27*, .47* | 21.89* | .17* | .30*, .32* |
| COMP x gender | 1.29 | .00 | .10 | 7.56* | .03* | .26* |
| ODD, gender | 55.96* | .34* | .39*, .32* | 36.11* | .25* | .43*, .15 |
| ODD x gender | .00 | .00 | -.01 | .94 | .00 | .10 |

*Note.* *$p$<.01 (Bonferroni corrected); DIS= Disagreeableness, INS= Emotional Instability, INT= Introversion, COMP= Compulsivity, ODD= Oddity.

**Table 3**

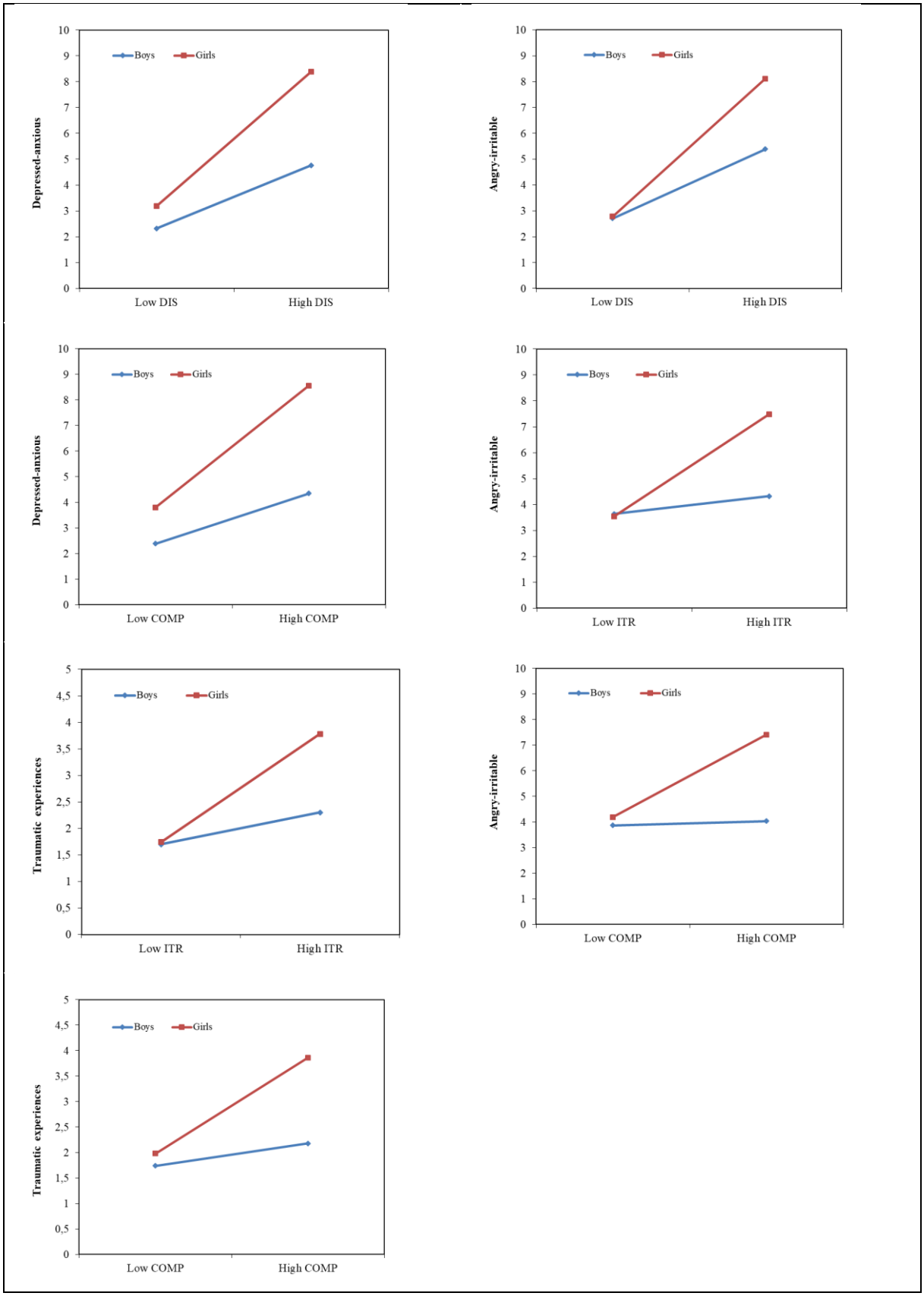
*Simple Slope Tests of Interactive Effects*

| | Boys | | Girls | |
|---|---|---|---|---|
| | β | *p* | β | *p* |
| Angry-irritable | | | | |
| DIS x SEX | 1.34 | .00* | 2.67 | .00* |
| ITR x SEX | 0.34 | .31 | 1.97 | .00* |
| COMP x SEX | 0.08 | .82 | 1.61 | .00* |
| Depressed-anxious | | | | |
| DIS x SEX | 1.22 | .00* | 2.60 | .00* |
| COMP x SEX | 0.98 | .01* | 2.38 | .00* |
| Traumatic experiences | | | | |
| ITR x SEX | 0.30 | 0.14 | 1.02 | .00* |
| COMP x SEX | 0.22 | 0.27 | 0.94 | .00* |

Note. *$p$< .01 (Bonferroni corrected); DIS= Disagreeableness; ITR= Introversion; COMP= Compulsivity.

**Figure 1**

*Graphic Representation of Significant Moderating Effects of Gender*



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