



HHS Public Access

Author manuscript

Psychol Men Masc. Author manuscript; available in PMC 2019 October 01.

Published in final edited form as:

Psychol Men Masc. 2018 October ; 19(4): 560–569. doi:10.1037/men0000132.

Masculine Discrepancy Stress and Psychosocial Maladjustment: Implications for Behavioral and Mental Health of Adolescent Boys

Dennis E. Reidy,

Division of Violence Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia

Joanne P. Smith-Darden,

School of Social Work, Wayne State University

Alana M. Vivolo-Kantor,

Division of Violence Prevention, Centers for Disease Control and Prevention

Carolyn A. Malone, and

School of Public Health, Georgia State University

Poco D. Kernsmith

School of Social Work, Wayne State University

Abstract

Gender role discrepancy (GRD), or nonconformity to socially prescribed gender roles, has been linked to a multitude of adverse mental and behavioral health outcomes. Masculine discrepancy stress (MDS), stress about being perceived not to conform to one's gender role, may explain the relationship between GRD and deleterious health outcomes. However, research on MDS has primarily been restricted to adult males. This leaves a critical gap pertaining to the potential effect of MDS on adolescent boys, who may be more malleable and susceptible to the influence and pressures of gender socialization. In the current study, data are drawn from a sample of adolescent male students ($N = 592$) who completed self-report questionnaires. We employed structural equation modeling to test the effects of GRD and MDS on psychosocial maladjustment measured via sexual behavior, substance use, violence, mood disorder symptoms, and hopelessness. In addition, we controlled for critical risk factors including sociodemographic characteristics, adverse childhood experiences, trauma symptoms, and neighborhood disorganization. Findings indicate significant potentiating effects of MDS on maladjustment while there were direct protective effects of GRD. These data suggest that developing prevention strategies that incorporate social norms pertaining to gender socialization may have an impact on multiple behavioral and mental health problems.

Correspondence concerning this article should be addressed to Dennis E. Reidy, Division of Violence Prevention, Centers for Disease Control and Prevention, Atlanta, GA 30341. dreidy@cdc.gov.

The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Keywords

masculine discrepancy stress; substance use; violence; mental health; risky sexual behavior

In most cultures, there is a commonly recognized set of mores governing the actions of boys and men (Berke & Zeichner, 2016). From an early age, these socially prescribed rules, known as gender roles, dictate how boys should behave, what emotions they should experience, and how they should express such emotions. Generally, the male sex is expected to be confident and assertive, hide vulnerable emotions and demonstrate fearlessness through risk-taking behavior, demonstrate sexual prowess and promiscuity, and establish dominance through aggression and violence (Berke & Zeichner, 2016; Bowleg et al., 2011; Mahalik et al., 2003; Mosher & Sirkin, 1984; Vandello & Bosson, 2013). Given these hazardous and emotionally isolating requirements, it is not surprising that gender role adherent males have far more adverse health outcomes than their female counterparts and gender role nonconforming males (Courtenay, 2000; Erol & Karpyak, 2015; Mahalik, Lagan, & Morrison, 2006; Mahalik, Levi-Minzi, & Walker, 2007; Sanders, 2011). Yet, despite evidence indicating that conforming to masculine gender roles has deleterious behavioral, physical, and mental health consequences, there is likewise evidence to suggest that gender role discrepancy (GRD)—that is, not conforming to one's gender role—may have similar adverse health consequences. For example, GRD youth are more likely to be depressed, attempt suicide, abuse drugs and alcohol, initiate substance use before age 13, be sexually active, initiate sexual intercourse before the age of 13, report less satisfaction with life, and endorse lower ratings of their overall psychological well-being (Goldbach, Tanner-Smith, Bagwell, & Dunlap, 2014; Kann et al., 2016; Reisner et al., 2015; Rieger & Savin-Williams, 2012; Savin-Williams & Ream, 2003; Toomey, Ryan, Diaz, Card, & Russell, 2010). Of note, the negative association of GRD with psychosocial adjustment (i.e., behavioral and mental health) appears to be more robust for males relative to females (D'Augelli, Grossman, & Starks, 2006; Rieger & Savin-Williams, 2012).

Importantly, there is reason to believe the association between males' GRD and poor psychosocial functioning may be attributable to masculine discrepancy stress (MDS). Discrepancy stress is a form of gender role stress stemming from the fear of being perceived to be gender role discrepant (Pleck, 1995; Reidy, Brookmeyer et al., 2016). For GRD boys, there are potential physical and social reprisals. For example, boys demonstrating feminine behaviors experience withdrawal of parental attention or punishment, rejection, and bullying from peers and may even be victims of aggression and violence (Bosson, Prewitt-Freilino, & Taylor, 2005; Bosson, Taylor, & Prewitt-Freilino, 2006; D'Augelli et al., 2006; Fagot, 1977; Fuchs, & Thelen, 1988; Kann et al., 2016; Langlois, & Downs, 1980; Reisner et al., 2015; Toomey et al., 2010; Zeman, & Garber, 1996). Given these potential penalties for GRD, it would not be unexpected that boys and men would develop anxiety (i.e., MDS) about the resulting consequences and attempt to act out in ways that demonstrate to others, and potentially themselves, that they are, in fact, masculine (Reidy, Berke, Gentile, & Zeichner, 2014; Reidy, Brookmeyer et al., 2016; Vandello & Bosson, 2013). That is, GRD does not by itself constitute a maladaptive state conferring risk: only when one experiences associated MDS does this harbor potential for maladaptive behavior and/or psychopathology (Reidy,

Berke, Gentile, & Zeichner, 2014; Reidy, Brookmeyer et al., 2016; Reidy, Berke et al., 2016).

The sum of the limited research on MDS suggests men experiencing this distress do indeed act out in stereotypical masculine behaviors. Namely, MDS men engage in riskier sexual behavior with more casual partners (resulting in higher rates of sexually transmitted disease), perpetrate more physical assaults with weapons, more assaults that result in injury, and commit more physical and sexual violence against an intimate partner (Reidy et al., 2014; Reidy, Berke et al., 2016; Reidy, Brookmeyer et al., 2016). Yet, the research on MDS has primarily been restricted to adult men. This is a critical gap as adolescent boys are likely even more susceptible to the pressures of gender socialization. Moreover, adolescence is the critical period for gender socialization during which many of these deleterious behaviors onset and become entrenched (Arnett, 1999; Guyer, Silk, & Nelson, 2016; Maccoby, 2002; Reidy, Brookmeyer et al., 2016; Sanders, 2011) and evidence indicates that GRD in adolescence predicts psychosocial adjustment in adulthood (Toomey et al., 2010). Thus, from a primary prevention perspective, the adolescent years are likely a crucial time to implement prevention strategies for health behaviors associated with gender socialization.

The Present Study

The goal of the present study was to fill this gap in the literature by assessing the impact of MDS on the psychosocial adjustment of adolescent boys. To this end, we computed a structural equation model demonstrating the effects of GRD and MDS on substance use, sexual behavior, violence, mood disorder symptoms, and hopelessness (a proxy for suicidality). There are empirical and theoretical reasons to expect that boys experiencing MDS would be more likely to demonstrate maladjustment in these domains of behavioral and mental health. Evidence verifies that extreme conformity to masculine gender roles is associated with frequent and dangerous substance use, promiscuous sex, and aggressive behavior (Bowleg et al., 2011; Mosher & Sirkin, 1984; Sanders, 2011; Vandello & Bosson, 2013). These behaviors in particular can be salient ways of demonstrating masculinity to others (e.g., Bowleg et al., 2011; Sanders, 2011; Vandello & Bosson, 2013). Thus, boys fearing that they may be perceived as GRD would be more likely to engage in these “masculine-salient” behaviors. Additionally, pressures and anxiety about constantly maintaining and presenting masculine status would likely contribute to the deterioration of psychiatric health (Pleck, 1995; Vandello & Bosson, 2013). And, of course, all of these outcomes occur in tandem (Ford, Elhai, Connor, & Frueh, 2010; Lammers, Ireland, Resnick, & Blum, 2000; Oquendo et al., 2003; Prince et al., 2007; RachBeisel, Scott, & Dixon, 1999; Shrier, Harris, Sternberg, & Beardslee, 2001) suggesting they reflect a shared etiological maladjustment factor. Thus, if MDS boys are at risk for one of these outcomes, they are likely at risk of all of them.

Pertinently, prior research with men indicates that when MDS is accounted for, the positive associations of GRD with violence and risky sexual behavior dissipate (Reidy et al., 2014; Reidy, Berke et al., 2016; Reidy, Brookmeyer et al., 2016). Relatedly, a recent study on GRD and discrepancy stress in adolescent girls (Reidy, Kernsmith, Malone, Vivolo-Kantor, & Smith-Darden, 2017) revealed that the association between GRD and maladjustment was nil

when discrepancy stress was controlled. Thus, we expect in the present study that once the effect of MDS is controlled, GRD would be unassociated with psychosocial adjustment. In addition, given the evidence that GRD is associated with both social and physical victimization (Bosson et al., 2005, 2006; Fagot, 1977; Fuchs, & Thelen, 1988; Goldbach et al., 2014; Kann et al., 2016; Langlois, & Downs, 1980; Reisner et al., 2015; Toomey et al., 2010; Zeman, & Garber, 1996), we expected GRD to directly impact trauma symptomology, which in turn, would directly influence MDS. Further, given the well documented evidence of the effect of trauma on the psychosocial outcomes we measure here (Butcher, Galanek, Kretschmar, & Flannery, 2015; Ford et al., 2010; Lammers et al., 2000; Oquendo et al., 2003) we likewise expected a direct effect of trauma on psychosocial adjustment.

Finally, because these behavioral and mental health factors are influenced by a number of community and experiential factors we attempt to orient the impact of MDS in a larger social ecology. To this end, we control for the influences of neighborhood disorganization and adverse childhood experiences (ACEs) on psychosocial adjustment. A growing literature demonstrates that these factors have substantial impact on adjustment (Butcher et al., 2015; Dube et al., 2003; Fang & Corso, 2007; Felitti et al., 1998; Leventhal & Brooks-Gunn, 2003; Norman et al., 2012; Sampson, Morenoff, & Gannon-Rowley, 2002). Figure 1 lays out the tested structural equation model with all estimated paths.

Method

Participants

Participants were 592 adolescent boys ($M_{\text{age}} = 13.1$; $SD = 1.6$; Range = 11–16 years) from 13 Michigan middle and high schools. The sample was stratified by grade (sixth grade and ninth grade) and community risk-level (i.e., low-, moderate-, and high-risk schools) with random sampling in each stratum. Community risk was assessed using publicly available data to develop an index comprising rates of poverty, unemployment, percent minority, percent rental housing, percent female-headed households, and community violence. The sample was representative of the participating schools in terms of race with 33% of the sample identifying as a racial/ethnic minority (see Table 1 for sample characteristics).

Procedure

Students completed self-administered paper and pencil questionnaires in schools. Passive consent procedures were used in accordance with recommended ethical guidelines: Parents had the opportunity to refuse consent for their child's participation by returning a written form or by calling a toll-free telephone number. Before survey administration, all students provided written assent and were informed of their right to withdraw from the study at any time. A social worker was present at each data administration in case a participant was distressed by a question or disclosed imminent harm to self or others. All procedures were approved by Institutional Review Board at Wayne State University.

Measures

Predictor variables

Gender Role discrepancy and masculine discrepancy stress: Gender role discrepancy and MDS were measured using the Masculine Discrepancy Stress Scale (Reidy, Brookmeyer et al., 2016). Respondents answered five Likert-type questions pertaining to the experience of (a) GRD (e.g., “I am less masculine than the average guy,” “Most girls I know would say that I’m not as masculine as my friends”); and five Likert-type questions pertaining to the experience of (b) MDS: distress stemming from the GRD (e.g., “I wish I was more manly,” “I worry that people find me less attractive because I’m not as macho as other guys”). Response options were on a 5-point scale ranging from *strongly disagree* to *strongly agree*. Terminology about specific behaviors, attributes, or cognitions related to masculinity was avoided as this language was deemed too directive and not accurately assessing subjective constructions of masculinity. Thus, this measure uses broad terminology such as “masculine,” “manly,” or “macho.”

Control variables

Demographics: Boys' age and ethnic minority status (0 = Caucasian, 1 = racial/ethnic minority) were entered as control variables in structural analyses.

Trauma symptoms: Trauma was measured via 17 indicators from the Child Posttraumatic Stress Disorder Symptom Scale (Foa, Johnson, Feeny, & Treadwell, 2001). Respondents rated how often symptoms related to “experiencing an upsetting event” had occurred in the past 2 weeks. Response options ranging from *not at all* to *5 or more times a week*. Examples of the types of situations inquired about include “Having upsetting thoughts or images about the event that came into your head when you didn’t want them to,” “Trying to avoid activities, people/places that remind you of the traumatic event,” “Having much less interest or not doing things you used to do,” and “Feeling irritable or having fits of anger.”

Neighborhood disorganization: Neighborhood disorganization was measured using the 17 indicators from the Rochester Youth Development Study scale (Thornberry, Krohn, Lizotte, Smith, & Tobin, 2003). Students were asked to respond to the question stem “Thinking of your neighborhood, how much of a problem is ...” rating 17 community factors from 0 (*not a problem*) to 2 (*a big problem*). Examples of items included “assaults and muggings,” “street gangs or delinquent gangs,” “drug use or drug dealing in the open,” “abandoned houses or buildings,” “vandalism,” and “homeless street people.”

Adverse childhood experiences (ACEs): ACEs were measured via 18 indicators derived from Dube et al. (2003) and Felitti et al. (1998). The 18 indicators tapped household dysfunction (“Did you live with a household member who was depressed or mentally ill?” “Did a household member go to prison?”), neglect (“Did you often feel that no one in your family loved you or thought you were important or special?”), physical (“Did a parent or other adult in the household ever hit you so hard that you had marks or were injured?”), emotional (“Did a parent or other adult in the household often swear at you, insult you, put you down, or humiliate you?”), and sexual abuse (“Did an adult or person at least 5 years older than you ever try to or actually have oral, anal, or vaginal sex with you?”). Students

indicated with a dichotomous response (“yes,” “no”) whether they had experience each of the adversities.

Outcome variables: Psychosocial maladjustment—We measured psychosocial maladjustment by creating a second-order factor from five latent first order factors pertaining to substance use, sexual behavior, violence perpetration, mood disorder symptoms, and hopelessness. The five first order factors served as latent indicators of the superordinate adjustment factor.

Substance use: Each participant's substance use was measured with five indicators. Students indicated how many times “IN THE PAST YEAR” they had (a) “Used alcoholic beverages,” (b) “Drank more than five alcoholic beverages on one occasion,” (c) “Been drunk in a public place,” (d) “Used marijuana (pot/grass),” and (e) “Used other illegal drugs (acid/speed/coke/smack).” Students responded using a 5-point scale ranging from *never* to *10 or more times*.

Sexual behavior: Each participant's sexual behavior was measured via three indicators asking students to indicate “Have you ever” (a) “Sexted (sent sexual messages or pictures),” (b) “Had oral sex,” and (c) “Had sexual intercourse.” Students indicated with a dichotomous response (“yes,” “no”) whether they had engaged in each of the activities.

Mood disorder symptoms: Mood disorder symptoms were measured using the K6. The K6 has been shown to discriminate individuals meeting *DSM-IV* diagnostic criteria for a mood disorder well from nonclinical levels of mood dysfunction (Kessler et al., 2002, 2003). Respondents were asked to indicate how often “IN THE LAST 4 WEEKS” they felt “nervous,” “hopeless,” “restless or fidgety,” “so depressed nothing could cheer you up,” “that everything was an effort,” “worthless,” or “angry” on a 5-point scale ranging from none of the time to *all of the time*.

Hopelessness: Hopelessness was measured as a proxy for suicidality (Hawton, Casañas I Comabella, Haw, & Saunders, 2013) using 13 indicators from the Hopelessness Scale for Children (Kazdin et al., 1983). Participants were given response options of “yes” or “no” to reflect their personal attitudes regarding whether each of the 10 statements described them (e.g., “I might as well give up because I can't make things better for myself,” “I never get what I want, so it's dumb to want anything,” and “Tomorrow seems unclear and confusing to me.”)

Violence: Violent delinquency was measured via seven indicators taken from the National Youth Survey (Elliot, Huizinga, & Ageton, 1985). The question stem for all items stated “About how many times did you do the following IN THE PAST YEAR?” Response options ranged from *never* to *10 or more times*. Specific items pertained to (a) violence against peers, (b) violence against parents, (c) violence against teachers, (d) physical assault “with the idea of seriously hurting or killing” someone, (e) sexual assault, (f) gang violence, and (g) weapon carrying.

Data Analysis

All analyses utilized structural equation modeling (SEM) in Mplus version 7.3 controlling for the clustering of data within schools via robust standard errors (i.e., sandwich estimator) using weighted least squares with mean and variance adjustment (WLSMV) for ordinal data. Covariance coverage indicated the missing data was less than 5%; by default, Mplus uses pairwise present analysis for missing data with the WLSMV estimator. Confirmatory factor analyses were first tested to determine the best fitting measurement model for each of the latent variables independently. Model identification was derived by fixing the variance of all latent constructs to 1 with a mean of zero. Models were deemed to fit the underlying data adequately when the root mean square error of approximation (RMSEA) $\leq .08$ and the Comparative Fit Index (CFI)/Tucker Lewis Index (TLI) $\geq .95$. All indicators of latent constructs loaded onto their respective latent construct at $\geq .45$ or higher. Table 2 provides fit indices for the measurement models of all latent constructs. We then tested the fit of the full structural equation model. Our structural model examined the influence of GRD and MDS on the superordinate psychosocial maladjustment (comprising the latent constructs of mood disorder symptoms, hopelessness, substance use, sexual behavior, and violence) while controlling for ACEs, trauma, and neighborhood disorganization. Additionally, the manifest variables of age and ethnicity/racial minority status were controlled for in the model. We fit a saturated structural model and retained nonsignificant paths because failure to account for these paths (even when nonsignificant) can bias estimates in the model (Katherine Masyn, personal communication, November 1, 2016). Figure 1 depicts the conceptual SEM that we tested.

Results

Table 3 provides variances, covariances, and correlations among all manifest and latent variables. When we fit the full structural model, the goodness of fit test was significant, $\chi^2(4724) = 5168.38, p < .001$; however, fit indices suggested an adequate fit to the data: RMSEA = .013, 90% CI [.010, .015]; CFI = .959; TLI = .958. As expected, trauma ($\beta = .43, SE = .06, p < .001$), ACEs ($\beta = .30, SE = .06, p < .001$), and neighborhood disorganization ($\beta = .26, SE = .03, p < .001$) all demonstrated significant direct effects on psychosocial maladjustment. Additionally, GRD was positively associated with higher rates of trauma symptoms ($\beta = .16, SE = .05, p < .001$) and trauma symptoms, in turn, were positively associated with MDS ($\beta = .13, SE = .04, p < .001$).

The main purpose of the study was to test the effect of MDS on psychosocial maladjustment and to determine if GRD was no longer associated with maladjustment after the variance of MDS was controlled. The model indicated a strong positive association between GRD and MDS ($\beta = .78, SE = .02, p < .001$) as expected. Additionally, the direct path from MDS to psychosocial maladjustment indicated boys reporting more stress demonstrated more maladjustment ($\beta = .24, SE = .09, p < .01$). Moreover, when MDS was controlled, GRD was protective against psychosocial maladjustment ($\beta = -.22, SE = .08, p < .01$). Figure 2 presents all significant path estimates for latent constructs in standardized form. Regression paths for age and racial/ethnic minority are not depicted in the figures. Table 4 provides regression parameters for these control variables.

Discussion

The goal of the present research was twofold: (a) to demonstrate the direct effect of MDS on psychosocial adjustment as measured by substance use, sexual behavior, violence, and mental health of adolescent boys; and (b) to demonstrate that gender role nonconformity (i.e., GRD) was unrelated to psychosocial maladjustment when the effects of MDS were taken into account. Our hypotheses were generally supported: MDS was associated with greater maladjustment whereas GRD was actually associated with less maladjustment. Overall, these findings are generally consistent with data from adult men indicating that discrepancy stressed men are more likely to engage in risky sexual behavior and more likely to be violent (Reidy et al., 2014; Reidy, Brookmeyer et al., 2016; Reidy, Berke et al., 2016).

Our findings suggest that boys' nonconformity to prescribed gender norms is *not* associated with adverse behavioral and mental health outcomes. In fact, GRD was protective against psychosocial maladjustment after the variance of MDS was controlled. In other words, boys that were gender role discrepant and were distressed about this, were more likely to engage in risky behavior and report poor psychiatric health. But, gender role discrepant boys that were *not* distressed by their nonconformity were less likely to engage in risky health behaviors. Thus, not conforming to masculine gender roles seems to be protective against adverse health outcomes when youth do not feel pressure or stress about the need to conform. And these findings were true even after controlling for the complex network of effects contributed by youths' demographic characteristics, deleterious neighborhood environment, ACEs, and trauma symptomology. This would seem to suggest that programs incorporating challenges to traditional masculine gender roles may be advantageous in improving adolescent boys' psychosocial adjustment.

Our findings may help to explicate prior research demonstrating associations between nonconformity and poor adjustment in adolescence and early adulthood (Goldbach et al., 2014; Kann et al., 2016; Toomey et al., 2010). This association may arise in part from potential victimization likely elicited because of their nonconformity, and not from the GRD itself. Evidence indicates that GRD youth are significantly more likely to be socially ostracized, ridiculed, or punished by peers and parents, and physically or sexually assaulted (D'Augelli et al., 2006; Goldbach et al., 2014; Kann et al., 2016; Reidy, Shirk, Sloan, & Zeichner, 2009; Reidy, Sloan, & Zeichner, 2009; Toomey et al., 2010). D'Augelli and colleagues (2006) showed that physical and sexual attacks against GRD youth began as young as 8-years-old and the frequency of such attacks was directly associated with level of PTSD. The traumatic stress stemming from victimization and the chronic fear of repeated victimizations would likely mediate the relationship between victimization and health risk behaviors demonstrated in these populations. This would be consistent with our finding that GRD was negatively related to maladjustment after controlling for trauma symptoms (and MDS). Indeed, trauma was the strongest driver of psychosocial maladjustment in our model.

The present findings have significant implications for the prevention of numerous health adversities for youth and adults. Adolescence is a critical period of development during which many risk behaviors onset and become entrenched influencing health practices and outcomes well into adulthood (Arnett, 1999; Guyer et al., 2016; Maccoby, 2002). For

example, depression and anxiety experienced in adolescence are associated with a host of negative mental and physical illnesses and poor social functioning as adults (Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003; Moussavi et al., 2007). Substance use at this early age impedes academic achievement and educational attainment, slows brain maturation, and can alter brain function and structure leading to the development of addiction, psychopathology, social and occupational deficits, and ultimately a shortened life span (Brooks, Harris, Thrall, & Woods, 2002; Friedman, Terras, & Zhu, 2004; Gasper, 2011; Kandel, & Kandel, 2015; Kelly et al., 2015; Schleider & Weisz, 2016; Squeglia, Jacobus, & Tapert, 2009; Squeglia et al., 2015; Townsend, Flisher, & King, 2007; Wagner, & Anthony, 2002; Wu et al., 2004). Early sexual debut is associated with increased sexual risk behavior and contraction of sexually transmitted infections (Kaestle, Halpern, Miller, & Ford, 2005; Sandfort, Orr, Hirsch, & Santelli, 2008). In fact, half of all new sexually transmitted infections occur among young people aged 15–24 (Satterwhite et al., 2013). Youth who commit violence tend to have lower educational attainment, worse criminal justice outcomes, and unstable employment status (Apel, & Sweeten, 2010; Tanner, Davies, & O'Grady, 1999). Notably, all of these factors are pertinent to key determinants of health as adults (CDC, 2013). As such, preventing MDS may influence social determinants of health and improve long-term health outcomes by preventing a myriad of risk behaviors and adverse health conditions in adolescence.

Traditionally, prevention strategies have a singular focus on one health outcome. For example, in violence prevention we have historically developed strategies focused on preventing a particular form of violence (e.g., child maltreatment, teen dating violence, sexual violence, etc.); however, recently the Division of Violence Prevention at CDC has shifted focus to a cross-cutting approach to develop prevention strategies that affect multiple forms of violence (CDC, 2016). And yet, developing prevention strategies focused on a single health domain (e.g., violence, substance use, teen pregnancy, etc.) may still reflect a singular perspective. Rather, we may be able to develop strategies that are cross-cutting in the field of public health instead of focusing on a single domain of public health. Our findings suggest MDS (like the other constructs measured here) is a cross-cutting risk factor for multiple health domains and thus may provide fodder for the development of prevention strategies that cut across the field of public health.

In a related vein, our model also suggests prevention strategies cannot focus on a singular etiology. In fact, the strongest precipitating factor in the present data was the presence of trauma symptoms while ACEs, neighborhood disorganization, and discrepancy stress all had relatively comparable contributions to maladjustment. Thus, to truly be effective in improving adolescent boys' health, we are likely best served by developing prevention strategies that are multifactorial considering community factors, home life, personal experiences, in addition to gender socialization. Developing comprehensive strategies such as this would admittedly require a high resource investment. However, several studies substantiate that the return on even the most costly interventions far exceeds the investment (Caldwell, Vitacco, & Van Rybroek, 2006; Cohen, 1998; Fagan & Catalano, 2013).

Limitations

It bears mentioning that these data are cross-sectional and these SEM analyses are correlational. This precludes our ability to make causal determinations about discrepancy stress. Naturally, we cannot manipulate or randomly assign MDS for obvious reasons and as such we will never be able to make true causal statements. Nevertheless, collecting longitudinal data will allow us to demonstrate temporal sequence, which can strengthen our speculation about the role of discrepancy stress in the onset and maintenance of a number of health outcomes. In a related vein, any model in SEM analysis will have multiple (potentially even thousands) alternative models that are indistinguishable from the proposed model in terms of goodness of fit to the data (MacCallum, Wegener, Uchino, & Fabrigar, 1993). Because these models cannot be distinguished by their fit to their data, only the substantive meaningfulness, parsimony, and theory can inform which model is the most appropriate (MacCallum et al., 1993). Of course, we have applied theory to derive what we believe to be the most parsimonious and substantive model to be presented in the present research. However, we acknowledge the potential for competing models.

It is also worth noting a distinction between our sample and other samples that have examined GRD. Whereas the other studies have typically used sexual minority status as a measure of GRD (D'Augelli et al., 2006; Rieger & Savin-Williams, 2012; Toomey et al., 2010), we have measured GRD in a sample of heterosexual boys. Sexual minority status may be considered an extreme form of GRD (Reidy et al., 2009) but we must be careful not to equate sexuality and gender roles as sexuality is just a single component of one's gender role. Indeed, we have previously found that GRD correlates only weakly ($r = .11$) with sexuality measured on the Kinsey rating scale (Reidy et al., 2014). It may be important to parse the operation of GRD and MDS in heterosexual versus nonheterosexual populations in future research.

Nevertheless, this research contributes to the literature in that it is the first of its kind to examine the complex influence of boys' gender socialization on multiple interrelated health factors. These data combined with future longitudinal studies may point to an opportunity for intervention on multiple health outcomes via a single access point.

Acknowledgments

This work was funded by the Centers for Disease Control and Prevention, Grant 1U01CE002115-01.

References

- Apel R, Sweeten G. The impact of incarceration on employment during the transition to adulthood. *Social Problems*. 2010; 57:448–479. DOI: 10.1525/sp.2010.57.3.448
- Arnett JJ. Adolescent storm and stress, reconsidered. *American Psychologist*. 1999; 54:317–326. DOI: 10.1037/0003-066X.54.5.317 [PubMed: 10354802]
- Berke DS, Zeichner A. Man's heaviest burden: A review of contemporary paradigms and new directions for preventing men's masculine aggression. *Social and Personality Psychology Compass*. 2016; 10:83–91. DOI: 10.1111/spc3.12238
- Bosson JK, Prewitt-Freilino JL, Taylor JN. Role rigidity: A problem of identity misclassification? *Journal of Personality and Social Psychology*. 2005; 89:552–565. DOI: 10.1037/0022-3514.89.4.552 [PubMed: 16287418]

- Bosson JK, Taylor JN, Prewitt-Freilino JL. Gender role violations and identity misclassification: The roles of audience and actor variables. *Sex Roles*. 2006; 55:13–24. DOI: 10.1007/s11199-006-9056-5
- Bowleg L, Teti M, Massie JS, Patel A, Malebranche DJ, Tschann JM. “What does it take to be a man? What is a real man?:” Ideologies of masculinity and HIV sexual risk among Black heterosexual men. *Culture, Health & Sexuality*. 2011; 13:545–559. DOI: 10.1080/13691058.2011.556201
- Brooks TL, Harris SK, Thrall JS, Woods ER. Association of adolescent risk behaviors with mental health symptoms in high school students. *The Journal of Adolescent Health*. 2002; 31:240–246. DOI: 10.1016/S1054-139X(02)00385-3
- Butcher F, Galanek JD, Kretschmar JM, Flannery DJ. The impact of neighborhood disorganization on neighborhood exposure to violence, trauma symptoms, and social relationships among at-risk youth. *Social Science & Medicine*. 2015; 146:300–306. DOI: 10.1016/j.socscimed.2015.10.013 [PubMed: 26477854]
- Caldwell MF, Vitacco M, Van Rybroek G. Are violent delinquents worth treating? A cost–Effectiveness study. *Journal of Research in Crime and Delinquency*. 2006; 43:148–168. DOI: 10.1177/0022427805280053
- Centers for Disease Control and Prevention. CDC health disparities and inequalities report—United States, 2013. *MMWR*. 2013; 62(Suppl 3):1–186.
- Centers for Disease Control and Prevention. Preventing multiple forms of violence: A strategic vision for connecting the dots. Atlanta, GA: Division of Violence Prevention, National Center for Injury Prevention & Control, Centers for Disease Control & Prevention; 2016.
- Cohen MA. The monetary value of saving a high-risk youth. *Journal of Quantitative Criminology*. 1998; 14:5–33. DOI: 10.1023/A:1023092324459
- Courtenay WH. Behavioral factors associated with disease, injury, and death among men: Evidence and implications for prevention. *Journal of Men's Studies*. 2000; 9:81–142. DOI: 10.3149/jms.0901.81
- D'Augelli AR, Grossman AH, Starks MT. Childhood gender atypicality, victimization, and PTSD among lesbian, gay, and bisexual youth. *Journal of Interpersonal Violence*. 2006; 21:1462–1482. DOI: 10.1177/0886260506293482 [PubMed: 17057162]
- Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF. Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: The adverse childhood experiences study. *Pediatrics*. 2003; 111:564–572. DOI: 10.1542/peds.111.3.564 [PubMed: 12612237]
- Elliot DS, Huizinga D, Ageton SS. Explaining delinquency and drug use. New York, NY: Sage; 1985.
- Erol A, Karpyak VM. Sex and gender-related differences in alcohol use and its consequences: contemporary knowledge and future research considerations. *Drug and Alcohol Dependence*. 2015; 156:1–13. DOI: 10.1016/j.drugalcdep.2015.08.023 [PubMed: 26371405]
- Fagan AA, Catalano RF. What works in youth violence prevention a review of the literature. *Research on Social Work Practice*. 2013; 23:141–156. DOI: 10.1177/1049731512465899
- Fagot BI. Consequences of moderate cross-gender behavior in preschool children. *Child Development*. 1977; 48:902–907. DOI: 10.2307/1128339
- Fang X, Corso PS. Child maltreatment, youth violence, and intimate partner violence: Developmental relationships. *American Journal of Preventive Medicine*. 2007; 33:281–290. DOI: 10.1016/j.amepre.2007.06.003 [PubMed: 17888854]
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, et al. Marks JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*. 1998; 14:245–258. DOI: 10.1016/S0749-3797(98)00017-8 [PubMed: 9635069]
- Foa EB, Johnson KM, Feeny NC, Treadwell KR. The child PTSD Symptom Scale: A preliminary examination of its psychometric properties. *Journal of Clinical Child Psychology*. 2001; 30:376–384. DOI: 10.1207/S15374424JCCP3003_9 [PubMed: 11501254]
- Ford JD, Elhai JD, Connor DF, Frueh BC. Poly-victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents. *The Journal of Adolescent Health*. 2010; 46:545–552. DOI: 10.1016/j.jadohealth.2009.11.212 [PubMed: 20472211]

- Friedman AS, Terras A, Zhu W. Early adolescence substance use/abuse as predictor to employment in adulthood: Gender differences. *Journal of Child & Adolescent Substance Abuse*. 2004; 13:49–60. DOI: 10.1300/J029v13n04_04
- Fuchs D, Thelen MH. Children's expected interpersonal consequences of communicating their affective state and reported likelihood of expression. *Child Development*. 1988; 59:1314–1322. DOI: 10.2307/1130494 [PubMed: 3168642]
- Gasper J. Revisiting the relationship between adolescent drug use and high school dropout. *Journal of Drug Issues*. 2011; 41:587–618. DOI: 10.1177/002204261104100407
- Goldbach JT, Tanner-Smith EE, Bagwell M, Dunlap S. Minority stress and substance use in sexual minority adolescents: A meta-analysis. *Prevention Science*. 2014; 15:350–363. DOI: 10.1007/s11121-013-0393-7 [PubMed: 23605479]
- Guyer AE, Silk JS, Nelson EE. The neurobiology of the emotional adolescent: From the inside out. *Neuroscience and Biobehavioral Reviews*. 2016; 70:74–85. DOI: 10.1016/j.neubiorev.2016.07.037 [PubMed: 27506384]
- Hawton K, Casañas I Comabella C, Haw C, Saunders K. Risk factors for suicide in individuals with depression: A systematic review. *Journal of Affective Disorders*. 2013; 147:17–28. DOI: 10.1016/j.jad.2013.01.004 [PubMed: 23411024]
- Kaestle CE, Halpern CT, Miller WC, Ford CA. Young age at first sexual intercourse and sexually transmitted infections in adolescents and young adults. *American Journal of Epidemiology*. 2005; 161:774–780. DOI: 10.1093/aje/kwi095 [PubMed: 15800270]
- Kandel D, Kandel E. The Gateway Hypothesis of substance abuse: Developmental, biological and societal perspectives. *Acta Paediatrica*. 2015; 104:130–137. DOI: 10.1111/apa.12851 [PubMed: 25377988]
- Kann L, Olsen EO, McManus T, Harris WA, Shanklin SL, Flint KH, et al. Zaza S. Sexual identity, sex of sexual contacts, and health-related behaviors among students in grades 9–12 — United States and selected sites, 2015. *MMWR Surveillance Summaries*. 2016; 65:1–202. <http://dx.doi.org/10.15585/mmwr.ss6509a1>.
- Kazdin AE, French NH, Unis AS, Esveltd-Dawson K, Sherick RB. Hopelessness, depression, and suicidal intent among psychiatrically disturbed inpatient children. *Journal of Consulting and Clinical Psychology*. 1983; 51:504–510. DOI: 10.1037/0022-006X.51.4.504 [PubMed: 6619356]
- Kelly AB, Evans-Whipp TJ, Smith R, Chan GC, Toumbourou JW, Patton GC, et al. Catalano RF. A longitudinal study of the association of adolescent polydrug use, alcohol use and high school non-completion. *Addiction*. 2015; 110:627–635. DOI: 10.1111/add.12829 [PubMed: 25510264]
- Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand SL, et al. Zaslavsky AM. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*. 2002; 32:959–976. DOI: 10.1017/S0033291702006074 [PubMed: 12214795]
- Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, et al. Zaslavsky AM. Screening for serious mental illness in the general population. *Archives of General Psychiatry*. 2003; 60:184–189. DOI: 10.1001/archpsyc.60.2.184 [PubMed: 12578436]
- Lammers C, Ireland M, Resnick M, Blum R. Influences on adolescents' decision to postpone onset of sexual intercourse: A survival analysis of virginity among youths aged 13 to 18 years. *The Journal of Adolescent Health*. 2000; 26:42–48. DOI: 10.1016/S1054-139X(99)00041-5 [PubMed: 10638717]
- Langlois JH, Downs AC. Mothers, fathers, and peers as socialization agents of sex-typed play behaviors in young children. *Child Development*. 1980; 51:1237–1247. DOI: 10.2307/1129566
- Leventhal T, Brooks-Gunn J. Children and youth in neighborhood contexts. *Current Directions in Psychological Science*. 2003; 12:27–31. DOI: 10.1111/1467-8721.01216
- Lewinsohn PM, Rohde P, Seeley JR, Klein DN, Gotlib IH. Psychosocial functioning of young adults who have experienced and recovered from major depressive disorder during adolescence. *Journal of Abnormal Psychology*. 2003; 112:353–363. DOI: 10.1037/0021-843X.112.3.353 [PubMed: 12943014]

- MacCallum RC, Wegener DT, Uchino BN, Fabrigar LR. The problem of equivalent models in applications of covariance structure analysis. *Psychological Bulletin*. 1993; 114:185–199. DOI: 10.1037/0033-2909.114.1.185 [PubMed: 8346326]
- Maccoby EE. Gender and group process: A developmental perspective. *Current Directions in Psychological Science*. 2002; 11:54–58. DOI: 10.1111/1467-8721.00167
- Mahalik JR, Lagan HD, Morrison JA. Health behaviors and masculinity in Kenyan and U.S. male college students. *Psychology of Men & Masculinity*. 2006; 7:191–202. DOI: 10.1037/1524-9220.7.4.191
- Mahalik JR, Levi-Minzi M, Walker G. Masculinity and health behaviors in Australian men. *Psychology of Men & Masculinity*. 2007; 8:240–249. DOI: 10.1037/1524-9220.8.4.240
- Mahalik JR, Locke BD, Ludlow LH, Diemer MA, Scott RP, Gottfried M, Freitas G. Development of the conformity to masculine norms inventory. *Psychology of Men & Masculinity*. 2003; 4:3–25. DOI: 10.1037/1524-9220.4.1.3
- Mosher DL, Sirkin M. Measuring a macho personality constellation. *Journal of Research in Personality*. 1984; 18:150–163. DOI: 10.1016/0092-6566(84)90026-6
- Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *Lancet*. 2007; 370:851–858. DOI: 10.1016/S0140-6736(07)61415-9 [PubMed: 17826170]
- Norman RE, Byambaa M, De R, Butchart A, Scott J, Vos T. The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis. *PLoS Medicine*. 2012; 9:e1001349.doi: 10.1371/journal.pmed.1001349 [PubMed: 23209385]
- Oquendo MA, Friend JM, Halberstam B, Brodsky BS, Burke AK, Grunebaum MF, et al. Mann JJ. Association of comorbid posttraumatic stress disorder and major depression with greater risk for suicidal behavior. *The American Journal of Psychiatry*. 2003; 160:580–582. DOI: 10.1176/appi.ajp.160.3.580 [PubMed: 12611845]
- Pleck JH. The gender role strain paradigm: An update. In: Levant RF, Pollack WS, editors *A new psychology of men*. New York, NY: Basic Books; 1995. 11–32.
- Prince M, Patel V, Saxena S, Maj M, Maselko J, Phillips MR, Rahman A. No health without mental health. *Lancet*. 2007; 370:859–877. DOI: 10.1016/S0140-6736(07)61238-0 [PubMed: 17804063]
- RachBeisel J, Scott J, Dixon L. Co-occurring severe mental illness and substance use disorders: A review of recent research. *Psychiatric Services*. 1999; 50:1427–1434. DOI: 10.1176/ps.50.11.1427 [PubMed: 10543851]
- Reidy DE, Berke DS, Gentile B, Zeichner A. Man enough? Masculine discrepancy stress and intimate partner violence. *Personality and Individual Differences*. 2014; 68:160–164. DOI: 10.1016/j.paid.2014.04.021 [PubMed: 29593368]
- Reidy DE, Berke DS, Gentile B, Zeichner A. Masculine discrepancy stress, substance use, assault and injury in a survey of U.S. men. *Injury Prevention*. 2016; 22:370–374. DOI: 10.1136/injuryprev-2015-041599 [PubMed: 26303670]
- Reidy DE, Brookmeyer KA, Gentile B, Berke DS, Zeichner A. Gender role discrepancy stress, high-risk sexual behavior, and sexually transmitted disease. *Archives of Sexual Behavior*. 2016; 45:459–465. DOI: 10.1007/s10508-014-0413-0 [PubMed: 25564036]
- Reidy DE, Kernsmith PD, Malone CA, Vivolo-Kantor AM, Smith-Darden JP. Feminine discrepancy stress and psychosocial maladjustment in adolescent girls. *Child Psychiatry and Human Development*. 2017. Advance online publication.
- Reidy DE, Shirk SD, Sloan CA, Zeichner A. Men who aggress against women: Effects of feminine gender role violation on physical aggression in hypermasculine men. *Psychology of Men & Masculinity*. 2009; 10:1–12. DOI: 10.1037/a0014794
- Reidy DE, Sloan CA, Zeichner A. Gender role conformity and aggression: Influence of perpetrator and victim conformity on direct physical aggression in women. *Personality and Individual Differences*. 2009; 46:231–235. DOI: 10.1016/j.paid.2008.10.008
- Reisner SL, Greytak EA, Parsons JT, Ybarra ML. Gender minority social stress in adolescence: Disparities in adolescent bullying and substance use by gender identity. *Journal of Sex Research*. 2015; 52:243–256. DOI: 10.1080/00224499.2014.886321 [PubMed: 24742006]

- Rieger G, Savin-Williams RC. Gender nonconformity, sexual orientation, and psychological well-being. *Archives of Sexual Behavior*. 2012; 41:611–621. DOI: 10.1007/s10508-011-9738-0 [PubMed: 21350914]
- Sampson RJ, Morenoff JD, Gannon-Rowley T. Assessing “neighborhood effects”: Social processes and new directions in research. *Annual Review of Sociology*. 2002; 28:443–478. DOI: 10.1146/annurev.soc.28.110601.141114
- Sanders JM. Coming of age: How adolescent boys construct masculinities via substance use, juvenile delinquency, and recreation. *Journal of Ethnicity in Substance Abuse*. 2011; 10:48–70. DOI: 10.1080/15332640.2011.547798 [PubMed: 21409704]
- Sandfort TG, Orr M, Hirsch JS, Santelli J. Long-term health correlates of timing of sexual debut: Results from a national U.S. study. *American Journal of Public Health*. 2008; 98:155–161. DOI: 10.2105/AJPH.2006.097444 [PubMed: 18048793]
- Satterwhite CL, Torrone E, Meites E, Dunne EF, Mahajan R, Ocfemia MCB, et al. Weinstock H. Sexually transmitted infections among U.S. women and men: Prevalence and incidence estimates, 2008. *Sexually Transmitted Diseases*. 2013; 40:187–193. DOI: 10.1097/OLQ.0b013e318286bb53 [PubMed: 23403598]
- Savin-Williams RC, Ream GL. Suicide attempts among sexual-minority male youth. *Journal of Clinical Child and Adolescent Psychology*. 2003; 32:509–522. DOI: 10.1207/S15374424JCCP3204_3 [PubMed: 14710459]
- Schleider JL, Weisz JR. Mental health and implicit theories of thoughts, feelings, and behavior in early adolescents: Are girls at greater risk? *Journal of Social and Clinical Psychology*. 2016; 35:130–151. DOI: 10.1521/jscp.2016.35.2.130
- Shrier LA, Harris SK, Sternberg M, Beardslee WR. Associations of depression, self-esteem, and substance use with sexual risk among adolescents. *Preventive Medicine*. 2001; 33:179–189. DOI: 10.1006/pmed.2001.0869 [PubMed: 11522159]
- Squeglia LM, Jacobus J, Tapert SF. The influence of substance use on adolescent brain development. *Clinical EEG and Neuroscience*. 2009; 40:31–38. DOI: 10.1177/155005940904000110 [PubMed: 19278130]
- Squeglia LM, Tapert SF, Sullivan EV, Jacobus J, Meloy MJ, Rohlfing T, Pfefferbaum A. Brain development in heavy-drinking adolescents. *The American Journal of Psychiatry*. 2015; 172:531–542. DOI: 10.1176/appi.ajp.2015.14101249 [PubMed: 25982660]
- Tanner J, Davies S, O'Grady B. Whatever happened to yesterday's rebels? Longitudinal effects of youth delinquency on education and employment. *Social Problems*. 1999; 46:250–274. DOI: 10.2307/3097255
- Thornberry TP, Krohn MD, Lizotte AJ, Smith CA, Tobin K. *Gangs and delinquency in developmental perspective*. New York, NY: Cambridge University Press; 2003.
- Toomey RB, Ryan C, Diaz RM, Card NA, Russell ST. Gender-nonconforming lesbian, gay, bisexual, and transgender youth: School victimization and young adult psychosocial adjustment. *Developmental Psychology*. 2010; 46:1580–1589. DOI: 10.1037/a0020705 [PubMed: 20822214]
- Townsend L, Flisher AJ, King G. A systematic review of the relationship between high school dropout and substance use. *Clinical Child and Family Psychology Review*. 2007; 10:295–317. DOI: 10.1007/s10567-007-0023-7 [PubMed: 17636403]
- Vandello JA, Bosson JK. Hard won and easily lost: A review and synthesis of theory and research on precarious manhood. *Psychology of Men & Masculinity*. 2013; 14:101–113. DOI: 10.1037/a0029826
- Wagner FA, Anthony JC. From first drug use to drug dependence; developmental periods of risk for dependence upon marijuana, cocaine, and alcohol. *Neuropsychopharmacology*. 2002; 26:479–488. DOI: 10.1016/S0893-133X(01)00367-0 [PubMed: 11927172]
- Wu P, Hoven CW, Liu X, Cohen P, Fuller CJ, Shaffer D. Substance use, suicidal ideation and attempts in children and adolescents. *Suicide & Life-Threatening Behavior*. 2004; 34:408–420. DOI: 10.1521/suli.34.4.408.53733 [PubMed: 15585462]
- Zeman J, Garber J. Display rules for anger, sadness, and pain: It depends on who is watching. *Child Development*. 1996; 67:957–973. DOI: 10.2307/1131873 [PubMed: 8706538]

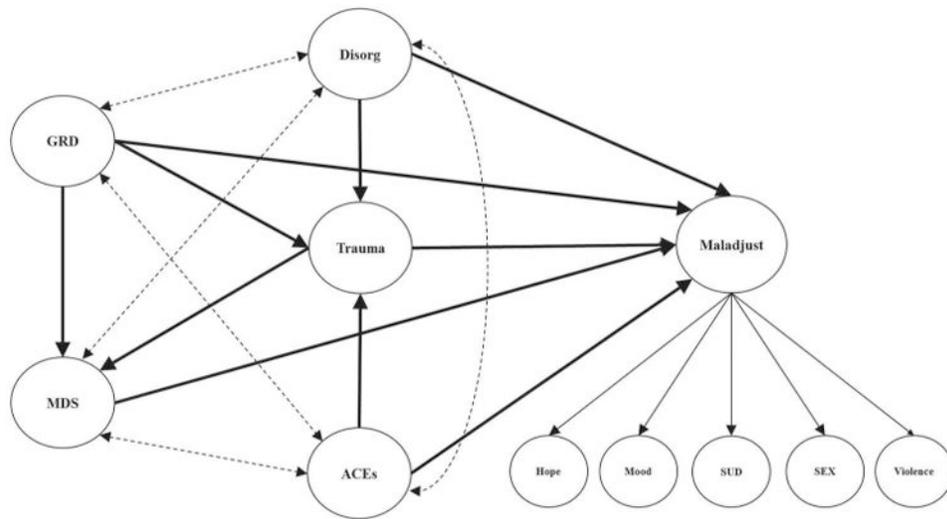


Figure 1. Conceptual model testing the effects of gender role discrepancy and masculine discrepancy stress on psychosocial maladjustment while controlling for trauma, childhood maltreatment, neighborhood disorganization, as well as the manifest variables age, and ethnic minority status. For visual clarity purposes, age and racial/ethnic minority status are not depicted here; however, all latent constructs were regressed on both variables. We estimated the fully saturated structural model to avoid any potential undetected bias in parameter estimates. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; Trauma = PTSD symptoms; ACEs = Adverse Childhood Experiences; Disorg = Neighborhood Disorganization; Maladjust = Psychosocial Maladjustment; Mood = Mood Disorder symptoms; Hope = Hopelessness; SUD = Substance Use; Sex = Sexual Behavior. Dashed lines represent paths that are modeled as bidirectional control paths.

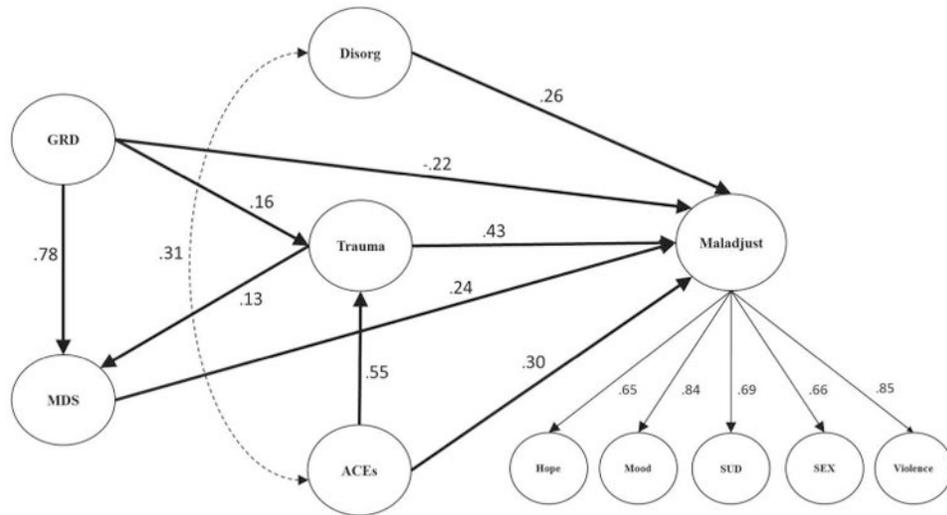


Figure 2. Conceptual model testing the effects of gender role discrepancy and masculine discrepancy stress on psychosocial maladjustment while controlling for trauma, childhood maltreatment, neighborhood disorganization, as well as the manifest variables age, and ethnic minority status. For visual clarity purposes, age and racial/ethnic minority status are not depicted here; however, parameter estimates for these variables are presented in Table 3. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; Trauma = PTSD symptoms; ACEs = Adverse Childhood Experiences; Disorg = Neighborhood Disorganization; Maladjust = Psychosocial Maladjustment; Mood = Mood Disorder symptoms; Hope = Hopelessness; SUD = Substance Use; Sex = Sexual Behavior. Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model. Only significant paths are shown and all paths are significant at $p < .01$. Standardized coefficients are displayed.

Table 1**Demographics**

	<i>N</i>	%
Caucasian/White	385	65.2
Black/African American	125	21.1
Hispanic	41	6.8
Native American	24	3.9
Asian American	9	1.4
Arab American	8	1.2
6th grade	284	48.0
9th grade	308	52.0
Low-risk community	196	33.1
Moderate-risk community	170	28.7
High-risk community	226	38.2

Note. Based on a sample of 592 adolescents.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2
Fit Indices for the Measurement Models of the Seven Latent Constructs

Latent construct	Indicators	Correlated residuals	RMSEA	90% CI	CFI	TLI	χ^2 (df)	p	Loadings
GRD	5	1	.068	[.033, .107]	0.995	0.986	14.63 (4)	.00	.66
MDS	5	2	.013	[.000, .073]	1.0	1.0	3.31 (3)	.34	.56
Trauma	17	0	.046	[.038, .053]	0.991	0.990	264.28 (119)	.00	.58
ACEs	18	0	.039	[.031, .046]	0.966	0.961	252.49 (135)	.00	.73
Disorg	16	0	.035	[.026, .044]	0.993	0.992	178.31 (104)	.00	.72
Mood	7	0	.062	[.043, .083]	0.989	0.984	45.83 (14)	.00	.46
Hope	13	0	.031	[.018, .042]	0.975	0.970	101.16 (65)	.00	.49
Sex	3	0	.070	[.000, .151]	1.0	0.999	3.69 (1)	.05	.83
SUD	5	0	.009	[.000, .055]	1.0	1.0	6.27 (6)	.39	.85
Violence	7	0	.034	[.000, .057]	0.982	0.973	23.55 (14)	.05	.61

Note. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; Trauma = PTSD Symptoms; ACEs = Adverse Childhood Experiences; Disorg = Neighborhood Disorganization; Mood = Mood Disorder Symptoms; Hope = Hopelessness; Sex = Sexual Behavior; SUD = Substance Use; Items = the number of indicators for each construct; Correlated Residuals = the number of pairs of error terms allowed to correlate; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker Lewis Index; χ^2 = χ -square value with degrees of freedom in parentheses; p = significance value; Loadings = Factor Loadings.

Table 3
Variances, Covariances, and Polychoric Correlations Among Latent Constructs and Manifest Control Variables

	GRD	MDS	ACEs	Trauma	Disorg	SUD	Sex	Violence	Hope	Mood	Maladjust	Age	Minority
GRD	1	.81**	.11**	.22**	-.06**	.08**	.08**	.10**	.07**	.09**	.11**	.13**	-.07*
MDS	1.408	1	.14**	.29**	-.02**	.17**	.16**	.21**	.15**	.20**	.25**	.10**	-.04*
ACEs	.114	.246	1	.57**	.32**	.48**	.46**	.58**	.41**	.57**	.69**	.12**	.16**
Trauma	.270	.610	.725	1	.19**	.49**	.47**	.59**	.42**	.58**	.70**	.08**	.10 [†]
Disorg	-.066	-.031	.330	.235	1	.31**	.30**	.38**	.29**	.38**	.45**	-.03	.18**
SUD	.113	.419	.694	.859	.430	1	.47**	.60**	.43**	.58**	.70**	.23**	.15**
Sex	.101	.377	.624	.772	.397	.883	1	.56**	.40**	.55**	.67**	.21**	.14**
Violence	.181	.673	1.116	1.380	.727	1.578	1.419	1	.51**	.70**	.85**	.27**	.18**
Hope	.086	.321	.532	.658	.386	.752	.676	1.208	1	.50**	.60**	.19**	.13**
Mood	.167	.622	1.030	1.274	.704	1.457	1.310	2.341	1.115	1	.83**	.26**	.17**
Maladjust	.208	.773	1.282	1.585	.914	1.812	1.630	2.913	1.388	2.689	1	.32**	.21**
Age	.216	.262	.201	.158	-.053	.507	.456	.815	.388	.752	.936	2.57	-.06
Minority	-.035	-.031	.078*	.056*	.088	.097*	.087*	.156*	.074*	.144*	.179*	-.046	-.22

Note. Values above the diagonal are correlations; values below the diagonal are covariances; values on the diagonal are variances. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; ACEs = Adverse Childhood Experiences; Trauma = PTSD Symptoms; Disorg = Neighborhood Disorganization; SUD = Substance Use; Sex = Sexual Behavior; Hope = Hopelessness; Mood = Mood Disorder Symptoms; Maladjust = Psychosocial Maladjustment; Minority = Race/Ethnicity.

[†] $p < .10$.

* $p < .05$.

** $p < .01$.

Table 4
Estimated Regression Coefficients for Age and Racial/Ethnic Minority Status on All Latent Constructs

Outcome	Age			Racial/Ethnic Minority		
	β	SE	p	β	SE	p
GRD	.13	.02	.001	-.06	.03	.070
MDS	-.02	.03	.510	.00	.03	.880
Trauma	-.01	.05	.890	.02	.03	.580
ACEs	.14	.05	.005	.17	.05	.001
Disorg	-.01	.06	.850	.12	.04	.003
Adjustment	.27	.04	.001	.10	.05	.050

Note. Bold values are significant. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; Trauma = PTSD symptoms; ACEs = Adverse Childhood Experiences; Disorg = Neighborhood Disorganization; Adjustment = Psychosocial Maladjustment.