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Examining Masculine Discrepancy Stress and Health Behavior Outcomes

Genna Jacobs

Georgia State University

ABSTRACT

Examining Masculine Discrepancy Stress and Health Behavior Outcomes

By

Genna Michelle Jacobs

4/24/19

INTRODUCTION:

Research suggests men feel a high demand to uphold masculine gender norms and masculine discrepancy stress (MDS), is the strain a man feels when he believes he is or thinks he is perceived to be inadequately masculine. It is reasonable to suspect men with MDS would be more likely to act in the stereotypical masculine ways, to confirm masculinity and avoid social repercussions.

AIMs:

(a) Examine if the latent constructs demonstrate significant and moderately large correlations reflecting an underlying psychosocial adjustment factor.

(b) Assess if utilizing structural equation modeling methods, in place of univariate methods, demonstrate significant correlations between MDS, GRD, and the superordinate factor psychosocial adjustment.

(c) Assess if utilizing MDS as a mediator rather than a moderator in a structural equation model demonstrate a significant positive direct effect on psychosocial adjustment, while demonstrating a negative direct effect on psychosocial maladjustment.

METHODS:

A three phased plan was conducted; (a) assessing measurement models, (b) assessing the measurement model for the superordinate factor psychosocial adjustment, (c) and assessing a full model. The fit of the measurement models will determine which full model will be examined, the superordinate factor model or a model that does not include superordinate factor, which allows for all outcomes to be regressed independently on each predictor.

RESULTS:

No statistically significant results were found.

DISCUSSION:

Possible explanations for results are; misrepresentation of the latent, absence of statistical methodologies needed to assess the latent variables, deficiency in necessary power to detect effects, and measuring GRD and MDS independently of each other does not predispose one to experience maladaptive behavior. Thusly, indicating that future research should focus on a model that utilizes MDS as a mediator and a moderator.

EXAMINING MASCULINE DISCREPANCY STRESS AND HEALTH BEHAVIOR OUTCOMES

by

Genna Jacobs

A Thesis Submitted to the Graduate Faculty

of Georgia State University in Partial Fulfillment

of the

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APPROVAL PAGE

EXAMINING MASCULINE DISCREPANCY STRESS AND HEALTH BEHAVIOR OUTCOMES

by

Genna Jacobs

Approved:

Dennis Reidy, PhD

Committee Chair

Dominic Parrott, PhD

Committee Member

Kevin Swartout, PhD

Committee Member

4/24/19

Date

Author's Statement Page

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Genna Jacobs

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INTRODUCTION

In many cultures, men generally appreciate more opportunities, freedoms, and powers compared to women. These advantages do not appear to translate into better health outcomes for men relative to their social benefits. According to the WHO European Region's review of the social determinants of health (2013), the gender disparity in men's survival rates, reflect several factors; higher levels of occupational exposure to hazards, negative behaviors associated with male norms of risk-taking, and health behavior models related to masculinity. For example, men are less likely to visit a doctor when they are ill and are less likely to report on the symptoms of disease or illness (Galdes, 2009). Therefore, women's higher rates of help-seeking behavior cannot alone be explained by psychosocial differences but could be related to women's greater readiness to communicate distress and discomfort (Galdes, 2009). Health behaviors that involve risk also show very strong gender patterning (WHO,2013).

Taking into consideration the propensity for greater risk-taking behavior and health behavior influenced by masculinity, it is no surprise that globally, health outcomes for men are worse than women. This gender-driven disparity in health has received little regional, national, or global attention from policymakers or health-care professionals (Baker et al., 2014). The Global Burden of Disease study examines the widespread impact of women having a higher life expectancy, compared to men (Wang et al., 2012). Wang and colleagues (2012), looked at the mortality rate for children ages 0-4 years and the probability of adult death for ages 15-59 years, for 187 countries, that had publicly accessible data. Globally from 1970 to 2010, the male life expectancy at birth increased from 56.4 years to 67.5 years and the female life expectancy at birth increased from 61.2 years 73.3 years (Wang et al., 2012). These statistics indicated that

the gap in life expectancy at birth widened between the sexes to men's disadvantage over those 40 years. Notably, though gender-based mortality disparity remains, a substantial reduction in the overall global mortality rate has occurred. In 2010, proportionally more deaths occurred at age 70 and older (42.8% in 2010 vs. 33.1% in 1990), and 22.9% occurred at 80 or older (Wang et al., 2012). Deaths in children younger than five declined by almost 60% since 1970 (16.4 million in 1970 vs. 6.8 million in 2010), especially at ages 1-59 months (10.8 million in 1970 vs. 4.0 million in 2010) (Wang et al., 2012). Indicating that international intervention and prevention techniques utilized to tackle overall mortality rates are not the same procedures needed to combat the gender-based differences in mortality rates.

Furthermore, the United States is no less impervious to the gender-based health gap. In the US, men suffer from more severe chronic ailments and die years younger than women (Courtenay, 2000). According to the National Center for Health Statistics (2017), men suffer a greater risk of death by drug overdose, heart disease, cancer, chronic lower respiratory disease, diabetes, and stroke, than compared to women. Between the years of 2006 to 2016, life expectancy at birth in the U.S. for the total population increased 0.8 years (77.8 years of age to 78.6 years of age) (US Statistics, NCHS, 2017). However, reminiscent to the global gender-based health gap, life expectancy in the US was noted to be higher for females than for males; with males averaging between 75.2 to 76.1 years of life and females averaging from 80.3 to 81.1 years of life. (US Statistics, NCHS, 2017).

Many researchers suggest that these disparities in health-related outcomes are influenced by social and cultural expectations about how men and women are supposed to behave (Creighton & Oliffe, 2010; Courtenay, 1999; Eisler, Skidmore, & Ward, 1988; Hunt,

1990;). Specifically, men who adhere to the socially prescribed ideals of masculinity often do so by engaging in unhealthy behaviors (e.g. substance abuse, sexual risk behavior, fighting, reckless driving, etc.) to demonstrate their masculinity (Brown & McCreedy, 1986; Mechanic & Cleary, 1980; Scott-Samuel, Crawshaw, & Oakley 2015). It is important to recognize that the relationship between masculinity and health requires a clear understanding that accounts for both individual agency in making health choices and the social expectations(constructs)that shape health behaviors (Creighton & Oliffe, 2010; Smiler, 2004). In assessing how masculinity affects health behavior in males, it is essential to determine the driving forces that fuel one's ability to make health choices. Therefore, it is critical to examine socially-defined constructs that influence men's health choices

REVIEW of LITERATURE

Overview of Masculinity Within a Societal Context

To better understand how social constructs, affect and or possibly drive the health of men, it is imperative to understand how the concept of masculinity works within our society. Masculinity is a set of socially constructed expectations for how men and boys should behave, look, experience and express emotion (Mahalik et al., 2003). Despite strong consistency, masculinity is not a single universal set of norms but can vary across cultures, persons, and time (Courtenay, 2000). Moreover, conformity to these socially prescribed norms exists on a continuum with some men adhering more firmly to some standards versus others (Mahalik et al., 2003). Hence, men within each culture interpret their meaning of what it is to be a "man." Despite varying conceptions or norms of masculinity, there have been several persistent traits, attitudes, and interests' men are expected to show in contemporary society (Pleck, 1976). For

example, physical strength, intellect, interpersonal capabilities, and achievements are dominant

images of masculine attainment (Pleck, 1976). Dahl, Vescio, and Weaver (2015) argue that

three universally accepted attributes are fundamental to masculinity. The first attribute,

"toughness," requires boys and men to demonstrate immunity to pain and suffering within

physical, emotional, and mental domains. Second, men should reject behaving in all ways

feminine. Finally, men should act in ways that demonstrate power, status, and dominance over

other domains. In masculine domination, men are not only expected to establish supremacy

over other men, but authority is extended over females (Connell & Messerschmidt, 2005).

Hegemonic masculinity is connected to the institutionalization of men's dominance over

women (Demetriou, 2001). Connell and colleagues initially developed the concept of

hegemonic masculinity in the late 1970s (Carrigan, Connell & Lee, 1985; Connell,1983). On

some occasions, it is related to the power attained by specific groups of men and explains how

they have occupied a hierarchical position in society to the detriment of women (Hearn &

Morrell, 2012). At other times, it is referred to as a collective set of social processes, to which all

or almost all men aspire, as in the patriarchal dividend (Hearn & Morrell, 2012). Hegemonic

masculinity has been conceptualized in many ways, but perhaps most usually as a set of values

established by men, that function to organize society unequally by gender. These values are

maintained or perpetuated by men and women (Coltra, 1994; Connell, 1987). The complexity is

that it is a historical convention imbued by the construct of masculinity and has endured

because it has become embedded in the way our society is organized. Like this, for hegemonic

masculinity to exist, one must prescribe to the definition of masculinity.

Furthermore, confirmation of and adherence to masculine attributes likely explain the

universal association between masculinity and a myriad of maladaptive behaviors (Courtenay, 2000). Research suggests men feel a high demand to uphold these masculine gender norms, because role violators risk penalties (Moore et al., 2008; Pleck, 1995; Reidy et al., 2014). That is, others often mistreat gender norm violators by way of social and economic consequences and backlash (Rudman, 1998; Rudman et al., 2012a 2012b; Rudman & Glick, 1999, 2001). Backlash often consists of prejudice (social penalties), which in turn can lead to discrimination (economic penalties) (Burgess & Borgida, 1999; Heilman, 2001; Rudman et al., 2012a). Within a work or educational setting, prejudice may manifest as social ostracism, lack of access to mentoring, loss of social capital, and bullying; discrimination can take the form of not being hired, advancement failure, inequitable pay, and wrongful termination (Moss-Racusin et al., 2012; Rudman & Phelan, 2008). In these ways, backlash can serve to limit individuals' freedom of expression, by the threat of prejudice and discrimination. (Rudman et al., 2012a 2012b; Rudman & Fairchild, 2004). Furthermore, men who fear these social penalties frequently have internal conflict or stress over the need to adhere to the socially prescribed norms of masculinity and report higher rates of internal or emotional struggle (Good & Mintz, 1990; Good & Wood 1995; Jakupcak, Lisak & Roemer, 2002; Lash, Eisler & Schulnian 1990; Sharpe & Heppner, 1991).

Frameworks

<u>Theoretical Approaches to Masculinity and Corresponding Measures</u>

The literature on masculinity is quite extensive. Therefore, at the most general level, there are four broad theoretical approaches used to define masculinity: First, the trait perspective, which is exemplified by the "male sex role identity" model (Pleck, 1981). This

perspective discussed the concepts of gender ambiguity and theorized the consequences of

males acquiring the personality traits and behaviors culturally defined as masculine and or

feminine. In short, a "traditional male "has culturally defined masculine characteristics.

Basically, the trait approach attempted to directly measure men's degree of masculine

orientation through self-identification (e.g., "I am assertive, tough, etc."), often utilizing

measures such as the Bem Sex Role Inventory (BSRI; Bem, 1984), the Personal Attributes

Questionnaire (PAQ; Spence, Helmreich, & Holahan, 1979), and the Hypermasculinity Inventory

(HMI; Mosher & Sirkin, 1984). The second model is called the normative perspective, which

viewed masculinity as an ideology rather than a psychologically (or biologically) based

characteristic (Pleck, 1981). Thus, a "traditional male," is one who approves the ideology that

men should have these characteristics and women should not. The normative approach asserts

that masculinity is a cultural, ideological scripting of gender relations, attitudes, and societal

beliefs, (e.g., "men should be assertive, tough, etc."), often measured by the Male Role Norms

Scale (MRNS; Thompson & Pleck, 1986), the Attitudes Toward Women Scale (ATW; Spence &

Helmreich, 1972), or the Sex-Role Egalitarianism Scale (SRE; Beere, King, Beere, & King, 1984)

scales. The third approach is the gender role stress or conflict approach. This approach is based

on the gender role conflict/strain paradigm originally formulated by Pleck (1981, 1995). This

approach assumes that gender roles are fluid and often breached by men, resulting in negative

consequences, where the attitudes thought to stem from masculinity are being measured (e.g.,

making less money than your female partner) (Moore & Stuart, 2005). Measures assessing this

approach include the Gender Role Conflict Scale (GRCS; O'Neil et al., 1986) and the Masculine

Gender Role Stress Scale (MGRS; Eisler & Skidmore, 1987). Lastly, the indirect approach

involves using indirect methods, such as positive attitudes toward violence, a high need for power, and control in relationships (Moore & Stuart, 2005). Examples of measures that have been used in this approach include the Acceptance of Interpersonal Violence Scale (AIV; Burt, 1980), the Marital Power and Decision-Making Scale (DMS; Blood & Wolfe, 1960), and the Inventory of Beliefs about Wife Beating (IBWB; Saunders et al. 1987).

Gender Role Strain Paradigm

For purposes of this paper, it is relevant to explore the gender role stress/conflict approach and from a theoretical point of view, Pleck's (1981) book, The Myth of Masculinity, was pivotal to the research community. This book produced several major research programs that shaped important data and deepened our understanding of the strain men experience when they attempt to live up to the impossibility of the male role. Pleck examined the pervasive theory at the time, the Gender Role Identity Paradigm (GRIP), which assumed that people had an inner psychological need to have a gender role identity and that their personality development hinged on its formation (Pleck, 1981). In this model, the development of appropriate gender role identity is viewed as a "failure-prone process," and a failure for men to achieve a masculine gender role identity is thought to result in homosexuality, negative attitudes toward women, or hypermasculinity (Pleck, 1981). Pleck (1981) then demonstrated that GRIP, which had dominated the research on masculinity since 1930, not only had poorly accounted for the observed data, but also promoted the patriarchal division of society based on stereotyped gender roles. In its place, Pleck (1981) proposed a new paradigm, the Gender Role Strain Paradigm (GRSP).

The Gender Role Strain Paradigm states that gender roles are contradictory and inconsistent (Pleck, 1981). In that the proportion of persons who violate gender roles is high and that violation of gender roles leads to condemnation, and negative psychological consequences and that fear of consequence leads to over conformity (Pleck 1981,1995; Levant,1995). This paradigm builds on an important distinction made between sex and gender (Sherif, 1979; Unger, 1979), with sex referring to biological attributes, and gender relating to the attitudes, feelings, and behaviors that a given society associates with a person's biological sex. This distinction allowed these scholars to break from the former central academic view of masculinity as an integral universal expression of biological maleness and view masculinity as a social role shaped by stereotypes and norms and even as a social performance that could be enacted by inhabitants of either gender; male or female (Levant, 2011). Even though GRSP is not sex specific, it is more often associated with men than women, using such instruments as the Bem Sex-Role Inventory (BSRI; Bem, 1974) and the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978).

In an update of the GRSP, Pleck (1995) pointed out that his original formulation of the paradigm stimulated research on three varieties of male gender role strain; termed discrepancy strain, dysfunction strain, and trauma strain. These propositions are three distinct routes through which masculine socialization may create problems for boys and men. First, the process by which masculinity is taught may be traumatic (Pleck, 1995). For example, a boy may be told by his peers to "man up" rather than back down from a fight. Pleck (1995) described this as, trauma strain. Second, a psychological strain may result from maintaining normative masculine expectations, a process termed as dysfunction strain (Pleck, 1995). For

example, men who adhere to prevailing masculine norms that prescribe dominance in interpersonal interactions may experience significant difficulties maintaining healthy intimate relationships. Third, discrepancy strain may result when one fails to meet external or internalized masculine expectations (Pleck, 1995); this occurs when violations are made to traditional masculine norms.

Essentially, discrepancy strain occurs when one fails to live up to one's internalized manhood ideal, which may closely approximate traditional norms (Pleck,1995). Dysfunction strain results when one fulfills the requirements of the masculine norms because many of the characteristics viewed as desirable in men can have negative side effects on the men themselves and on others, including those close to them (Pleck, 1995). Lastly, the concept of trauma strain is usually applied to certain groups of men whose experiences with gender role strain are thought to be particularly harsh (Pleck,1995). As for current applications of trauma strain, researchers seek to explore the strain that men experience who are marginalized, such as; African Americans, men who identify as gay or bisexual, veterans, and survivors of child abuse (Brooks, 1990; Harrison, 1995; Lazur & Majors, 1995; Lisak, 1995; Sa´nchez, Westefeld, Liu, & Vilain, 2010). Therefore, because of the novelty and specific nature of trauma strain, research into that modality is less extensive compared to the realms of discrepancy strain and dysfunction strain.

Exploring Gender Role Discrepancy Strain and Gender Role Dysfunction Strain/Stress

Gender role discrepancy strain is based on the more general construct of discrepancy strain, which refers to the strain resulting from a person's behavior being inconsistent with socially prescribed norms (Garnets & Pleck, 1979; Kaplan, 2003; Komarovsky,

1976; Pleck, 1981, 1995). Gender role discrepancy strain or gender role discrepancy (GRDS or GRD) is thought to occur when a man fails to live up to his own internalized or ideal gender role norms, which produces a discrepancy between how he thinks men ought to be and how he perceives himself to be (Pleck, 1981, 1995). According to Pleck (1995), a full and valid assessment of discrepancy strain requires a methodology with the capacity to capture the meaning of what it is to be a man, in an ever-changing society. Therefore, accessing an appropriate measure of this construct has proved to be quite difficult.

Dysfunction strain or stress describes the idea that fulfilling the requirements of the traditional male role may lead to negative outcomes for men (Pleck, 1981). For example, men are socialized to compete and to value winning at all costs, whereas women are socialized to value the romantic relationship and seek harmony and intimacy within it (Jones & Dembo, 1989; Ruble & Scheer, 1994). Men are also expected to be "tough" and are socialized to withhold their feelings. Emotional expressiveness and self-disclosure are also identified as feminine qualities and, are to be avoided (Burn, 1996; O'Neil, 1981). Measurement scales for this tenet, comes from two lines of investigation, one involving traditional masculinity ideology and the other the gender role conflict (GRC) construct (Levant, 2011).

Measurements for Dysfunction Strain

In exploring the two lines of measurement, the first is the traditional masculinity ideology. Levant & Richmond (2007) conducted an extensive review of the literature which endorsed traditional masculinity ideals and its central measurement tool, the male role norms inventory (MRNI; Levant et al., 1992). MRNI scale is known to evaluate the endorsement of traditional masculinity ideology and Levant & Richmond (2007) determined that this tool was

associated with a range of problematic individual and relational variables. However, mixed results were found on the relationship between endorsement and social support among gay men (Levant & Richmond, 2007).

The second line of investigation involved the gender role conflict (GRC) construct, the development of which was stimulated by the GRSP (O'Neil, 2008). Gender-role conflict is a psychological state where gender roles have negative consequences for the individual or others (O'Neil, 2008). The ultimate outcome of this conflict is the restriction of the person's ability to actualize their human potential or the restriction of some else's potential (O'Neil, Helms, Gable, Davis, & Wrightsman, 1986). O'Neil (2008) indicated that GRC construct is related to all three types of gender role strain, but most definitively to dysfunction strain. Dysfunction strain has the most theoretical relevance to GRC, because it speaks to negative outcomes from endorsing restrictive gender role norms. The centerpiece of the GRC research program is the Gender Role Conflict Scale I (O'Neil, Helms, Gable, Davis, & Wrightsman, 1986), which assesses four domains of GRC in men: (a) success, power, and competition; (b) restrictive emotionality; (c) restrictive affectionate behavior between men; and (d) conflict between work and family relations). Thusly, indicating the GRCS as an appropriate evaluator of dysfunction strain (O'Neil et al., 1986,). Unlike discrepancy strain, dysfunction strain proved to be an easier construct to measure.

Measurements for Discrepancy Strain

Recently, researchers attempted to use Pleck's (1995) guidelines to address the lack of sound measurement for discrepancy strain. The first method used a comparison between

ratings of the self-ideal and the self-concept test; it was not very useful (Pleck, 1995). Also, there was the work of Eisler and Skidmore (1987), who developed a scale measuring Masculine Gender Role Stress (MGRS). This approach inquired to what degree participants would experience situations that were discrepant with male role norms as stressful. The scale specifically asks men to rate the degree of stress they would anticipate experiencing in domains of physical inadequacy, expression of tender emotions, subordination to women, a threat to intellectual control, and failure in work and sexual behavior. Therefore, the MGRS could be considered a measure of stress reactivity not specific to gender role strain and perhaps more likely a measure of dysfunction strain rather than discrepancy strain.

Continuing to search for an appropriate measure for discrepancy strain, Nabavi (2004) developed the Masculine Attitudes, Stress, and Conformity Questionnaire (MASC). This new instrument was designed to assess various aspects of the masculine ideology and gender role conflict; which included attitudes about what men should be like and how their behavior corresponds to those attitudes, and the level of distress resulting from male role expectations (Nabavi, 2004). The results of this study suggested that the MASC was a reliable and valid measure of masculinity attitudes, stress, conformity, and attitude/conformity discrepancy. Although, it required further modifications. In response to the work of Nabavi (2004), Rummell and Levant (2010), continued to examine the lack of psychometrically sound ways to measure GRDS. The authors used a two-pronged study to explore the relationship between GRDS and self-esteem (Rummell and Levant, 2010). The GRSP predicted that GRDS would be negatively related to self-esteem (Rummell & Levant, 2010). However, after two successive studies that tested this relationship, the results failed to support the above hypothesis (Rummell & Levant,

2010). This study provided researchers with a new understanding of both GRDS and GRSP (Rummell & Levant, 2010). These authors suggested future theory building should focus on redefining GRSP, for a world where traditional masculine norms may be changing. Therefore, paying greater attention to the construct of rejecting male gender norms (Rummell and Levant, 2010). In further exploration into GRD, Reidy and colleagues (2014) developed a measure to assess the experience of masculine discrepancy stress (MDS), by distinguishing self-perceptions of deficient masculinity (gender role discrepancy) from the experience of stress owing to this discrepancy (discrepancy stress (DS) or masculine discrepancy stress (MDS)). The respondents answered five questions about discrepancy stress (i.e., "I wish I were manlier." "I wish I was interested in things that other guys find interesting." "I worry that people judge me because I am not like the typical man." "Sometimes I worry about my masculinity." 'I worry that women find me less attractive because I'm not as macho as other guys"). Results indicated that MDS significantly predicted men's historical perpetration of IPV, independent of other masculinity related variables. Essentially, Reidy and colleagues (2014), created a scale that appropriately parsed gender discrepancy and the masculine discrepancy stress, which is a very important measure, in terms of this study.

Exploring Gender Role Discrepancy and Masculine Discrepancy Stress

For purposes of this paper, it is important to examine the relationship between gender role descrepancy and masculine discrepancy stress. Research indicates that GRD by itself does not predispose one to the experience of distress and consequent maladaptive behavior (Reidy, 2018b). It is quite likely that there are men who consider themselves to be non-conformant or less masculine than the typical man, but who do not experience attendant distress regarding

the lack of conformity (Reidy et al., 2018b). As such, perceived gender role discrepancy does not, by itself, reflect a dysfunctional state (Reidy et al., 2018b). However, men who place a high value on appearing masculine and who experience distress about being perceived as gender role discrepant may be at risk for behavioral and mental health problems (Reidy et al., 2018b). Therefore, Reidy and colleagues (2018b) gathered that there was reason to believe that the association between GRD and negative psychosocial functioning in males, may be attributable to MDS. It follows that men who experience high levels of MDS, would be at risk to engage in a number of unsafe behaviors in attempt to demonstrate and equalize their perceived masculinity to that of other men (Alfred, Hammer, & Good, 2014; Mahalik, Lagan, & Morrison, 2006; Mahalik, Levi-Minzi, & Walker, 2007; O'Neil, 2008; Sanders, 2011). In examining MDS, Pleck (1995) detailed that this type of stress arises when one fails to live up to the socially mandated role of masculinity. As stated, MDS occurs when a man feels stressed about the belief that he is, or the perceived belief to be, insufficiently masculine (Reidy,2014). It is reasonable to suspect men with MDS would be more likely to act in the stereotypical masculine ways, to confirm masculinity and avoid social repercussions (Vandello & Bosson, 2013). Notably, it is very important not to conflate GRD and MDS, because they are two distinct ideas, measuring two discrete constructs. However, it is conceptually and methodologically useful to recognize MDS is a consequence of GRD and likely a driver of adverse health consequences for men.

Health Behavior Outcomes for Gender Role Discrepancy

Gender roles and their strict application play a significant role in the manifestation of health-related behaviors and outcomes. From an early age, socially prescribed gender roles

dictate how boys should physically and emotionally behave in society (Reidy et al., 2018b). Generally, males are expected to be confident, assertive, hide vulnerable emotions, engage in risk-taking behavior, engage in risky sexual behavior, and establish dominance through violence (Bowleg et al., 2011; Mahalik et al., 2003; Mosher & Sirkin, 1984; Reidy et al., 2016; Vandello & Bosson, 2013). Given these expectations, it is not surprising that research shows gender role adherent males have far greater risks for adverse health outcomes than compared to women. (Courtenay, 2000; Erol & Karpyak, 2015; Mahalik, Lagan, & Morrison, 2006; Mahalik, Levi-Minzi, & Walker, 2007; Sanders, 2011).

It is important to address that despite evidence indicating that conforming to masculine gender roles has deleterious behavioral, physical, and mental health consequences, there is likewise evidence to suggest, that experiencing GRD, 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). Notably, there is a reason to believe the association between males' GRD and poor psychosocial functioning may be due to MDS.

Health Behavior Outcomes for Masculine Discrepancy Stress

In exploring MDS and heath behavior outcomes, it is important to note that previous research by Reidy and colleagues reported mixed support for masculine discrepant men and direct effects on health outcome behaviors. For example, Reidy et al. (2014), found main effects for MDS on the perpetration of psychological, physical, and sexual intimate partner violence against women by heterosexual men. Conversely, when looking at dating and sexual violence among adolescent boys, MDS was unrelated to all forms of dating violence. It was, however, associated with a heightened risk of perpetrating sexual violence against a non-dating partner (Reidy et al., 2015). Additionally, Reidy and colleagues examined the impact of MDS on sexual risk behavior, substance use, and general violence among adult males (Reidy et al., 2016a & 2016b). While they found an effect of MDS on some violent and sexual risk behaviors, there was no association to substance use. (Reidy et al., 2016a & 2016b). Reidy and colleagues (2018b), examined the potential effect of MDS on adolescent boys, who may be more malleable and susceptible to the influence and pressures of gender socialization. Structural equation modeling was utilized to test the effects of GRD and MDS on psychosocial maladjustment measured via sexual behavior, substance use, violence, mood disorder symptoms, and hopelessness. The findings indicated that MDS was associated with greater maladjustment, while self-identified gender role nonconformity was associated with less maladjustment, after the effect of MDS was removed (Reidy et al., 2018b). Overall, these results showed that discrepancy stressed boys are more likely to engage in health risk behavior, as a means of speculatively demonstrating gender role conformity (Reidy et al., 2018b).

Previous Studies Pertaining to MDS

Several studies by Reidy and colleagues, (2014, 2015, 2016a, & 2018b) showed varied results about the connection between MDS and health outcomes. Limitations in these studies could explain the disparity in results. First, univariate regression was utilized instead of structural equation modeling (Reidy et al., 2014, 2015, & 2016a). In that, univariate regression is an inferior statistical methodology that can attenuate possible associations because of measurement error (Reidy et al., 2014 & 2015). Utilizing a Structural equation modeling method allows analysis of complex relationships between one or more variables while removing the effect of measurement error. Another notable limitation was that the behavioral health outcomes associated with MDS were evaluated independently of one another. Many of the health-related issues co-occur, therefore analyzing them together would allow for greater control of covariances and would hold greater statistic validity.

Additionally, MDS was utilized as a moderator of the relationships between self-identified gender role nonconformity and behavior, instead of as a mediator. In this situation, a moderation model of MDS is conceptually invalid, as it suggests causal independence between gender role discrepancy (i.e., nonconformity) and discrepancy stress. A moderation model would also indicate that an individual could be low on the discrepancy continuum (i.e., high gender role conforming) yet experience a significant degree of MDS. Within the context of this study, MDS is expected to be a consequence of GRD. Like this, a mediation model is a more accurate model. This model has been tested and supported most recently in the youth samples (Reidy et al., 2016a & 2018b).

Objective

The objective of this study is to employ methods that will examine how MDS affects health behavior outcomes for men. The specific health outcomes assessed include substance use, violence, sexual risk behavior, pathological gambling, and presence of psychiatric history.

Research Questions

1. Given the well-established associations among substance use, violence, sexual risk behavior, pathological gambling, and presence of psychiatric history (Ford et al., 2010; Oquendo et al., 2003; Reidy et al., 2018a 2018b), will the expected latent constructs to demonstrate significant and moderately large correlations reflecting an underlying psychosocial adjustment factor?

2. Given previous research (Reidy et al., 2018b), will utilizing structural equation modeling methods, in place of univariate methods, demonstrate significant correlations the GRD, MDS, and the superordinate factor psychosocial adjustment?

3. Given previous research (Reidy et al., 2018b) will utilizing MDS as a mediator rather than a moderator in a structural equation model, demonstrate that MDS has a significant positive direct effect on psychosocial adjustment, while GRD will demonstrate a negative direct effect on psychosocial maladjustment

Hypotheses

1. Given the well-established associations among substance use, violence, sexual risk behavior, pathological gambling, and presence of psychiatric history (Ford et al., 2010; Oquendo et al., 2003; Reidy et al., 2018a 2018b), we expected these latent constructs to demonstrate significant and moderately large correlations reflecting an underlying psychosocial adjustment factor.

2. Given previous research (Reidy et al., 2018b), we expect that by utilizing structural equation modeling methods, in place of univariate methods, MDS and GRD will demonstrate significant correlations the superordinate factor psychosocial adjustment.

3. Given previous research (Reidy et al., 2018b) we expect utilizing MDS as a mediator rather than a moderator in a structural equation model, MDS will demonstrate a significant positive direct effect on psychosocial adjustment, while GRD will demonstrate a negative direct effect on psychosocial maladjustment

METHODS

Participants and Procedure

.   Six-hundred men (13% Asian; 7% Black or African-American; 72% Caucasian; 7% Hispanic

or Latino) ages 18–50 (M_{age} = 27.2; SD = 6.8) were recruited via Amazon's Mechanical Turk

(MTurk) web site. Table 1 provides demographic information. This site permits the online

collection of data and typically offers greater sample diversity than typical convenience samples

(Buhrmester, Kwang, & Gosling, 2011). The sample was restricted to men from the U.S. only

because gender socialization is culturally driven and may differ by country. The U.S. Individuals

who participated were compensated $2.00 each for completion of the questionnaires. This

data set was previously utilized. Therefore, there was no need for IRB approval and consent

statements for the current study. The study population of interest was adult males in the

United States.

Demographic Questionnaire

Participants responded to a series of questions about age, ethnicity, marital status,

relationship history, self-identified sexual orientation, and level of education.

Measures

Predictor variables

Gender role discrepancy and discrepancy stress

GRD and DS/MDS (Reidy et al., 2014) scale, respondents answered 5 Likert-type

questions (1 "Strongly Agree" to 7 "Strongly Disagree") pertaining to the experience of

perceived gender role discrepancy (i.e., "I am less masculine than the average guy," "compared

to my guy friends I am not very masculine," "most women I know would say that I'm not as

masculine as my friends," "most guys would say I'm not very masculine compared to them,"

"most women would consider me to be less masculine than the typical guy") and 5 Likert-type questions about discrepancy stress (i.e., "I wish I was more manly," "I wish I were interested in things that other guys find interesting," "I worry that people judge me because I'm not like the typical man," "sometimes I worry about my masculinity," "I worry that women find me less attractive because I'm not as macho as other guys").

Abbreviated Masculine Gender Role Stress Scale

The abbreviated MGRS (Swartout, Parrott, & Cohn, 2015), utilizes the 15 items with the highest item-to-total scale correlations. Psychometric properties of each of the 15 items were examined with item response theory (IRT) analysis (Swartout et al., 2015). Item response theory results showed that the abbreviated scale might hold promise at capturing the same amount of information as the full 40-item scale (Swartout et al., 2015). The abbreviated MGRS scale assessed men's experience of stress associated with events related to the male gender role, including physical inadequacy, expressing tender emotions, subordination to women, intellectual inferiority, and failure at work or sex (Eisler & Skidmore, 1987). Respondents rate situations according to how stressful they feel, if involved in each situation. Scoring is done by using a 6-point Likert scale (0 "not at all stressful" to 5 "extremely stressful"), with higher scores indicating greater masculine role stress, (i.e., "Being outperformed at work by a woman" (Subordination to Women), "Being perceived by someone as gay" (Physical Inadequacy), "Admitting that you are afraid of something" (Emotional Inexpressiveness), "Having people say that you are indecisive" (Intellectual Inferiority), " Getting passed over for a promotion" (Performance Failure).

Male Role Norms Sub-Scale

In examining MRNS (MRNS; Thompson & Pleck, 1986), according to Moore and Stuart (2005), the MRNS adheres to the normative approach of measuring masculinity in that "rather than examining how men describe themselves, this approach examines masculinity in terms of men's beliefs about how men and women should think, feel, and behave, as well as their rights and roles in society". Scores on the MRNS correlate with men and women's attitudes toward men and are inversely related to attitudes of gender equality (Thompson & Pleck, 1995). This scale is a 26-item Likert-type scale (1 "strongly disagree" to 7 "strongly agree") that measures traditional Western masculine ideology relating to status, toughness, and antifemininity.

Outcome Variables

Psychiatric History

Each participant's psychiatric history was measured via one indicator. Participants indicated (a) have you been diagnosed with a mental illness? Participants answered using 1 for "yes" and 2 for "no."

Pathological Gambling

Participants indicated how many times they had "lost more money than you can afford." Participants answered using a discrete (count) response.

Substance Use

Each participant's substance use disorder was measured via six indicators taken from the Crime and Analogous Behavior scales (CAB; Miller & Lynam, 2003). Participants indicated how many times per month they had (a)"consumed alcohol, until intoxicated" and (b) "used illegal

drugs, (marijuana, hashish, cocaine, ecstasy, mushrooms, heroin, speed, pills, etc.).” Participants

answered how old when you first (c) “got “buzzed” or drunk” and (d)” used illegal drugs.” Participants

answered how many times you have (e) driven while “buzzed”, drunk or high and (f) “How many times

have been arrested for driving under the influence of drugs or alcohol in your lifetime.” Participants

answered using discrete (count) responses for items; a, b, e, and f and answered using continuous

responses for; c and d.

Violence

Each participant’s violence was measured via four indicators taken from the CAB scale

(Miller & Lynam, 2003). Participants indicated how many times have you (a) "been in a physical

fight with another", (b) "attacked someone with the intent to cause harm, injure, rape, or kill,"

(c) "attacked someone with a weapon with intent to harm, injure, rape, or kill" and (d)

“intentionally hurt someone to a degree that he/she needed bandages or a doctor.” Participants

answered using discrete (count) responses.

Sexual Risk Behavior

Each participant’s sexual risk behavior was measured via four indicators taken from the

CAB scale (Miller & Lynam, 2003). Participants indicated how old were you when you first (a)

“intercourse (vaginal or anal)”. Participants indicated how many (b)” partners have you had sexual

intercourse with,” (c) “times have you had unprotected intercourse, with someone you were not

in a relationship with” and (d) “times have you been diagnosed with a sexually transmitted disease.”

Participants answered using discrete (count) responses on items; b, c, and d and used continuous

responses for item a.

Data Analysis

All analyses employed structural equation modeling (SEM) in Mplus version 8.0. Structural equation modeling takes factor analysis one step further by relating the constructs to each other and to covariates in a system of linear regressions thereby purging the biasing effects of measurement error. All robust estimation and missing data were handled using maximum likelihood parameter estimates (MLR) for nonbinary data. Maximum likelihood parameter estimates were utilized because this estimator leads to better standard errors, due to utilization of weights.

Phase One: Assessing Measurement Models

During the first phase measurement models were tested through confirmatory factor analysis. This is done to describe the relationship between observed variables (e.g., instruments) and the construct or constructs those variables are hypothesized to measure and ultimately determine a best fitting model. Models were deemed to fit the underlying data adequately when the root mean square error of approximation (RMSEA) reached 0.08 and the Comparative Fit Index (CFI)/Tucker Lewis Index (TLI) reached .90. For those measurement models that could not achieve adequate fit, exploratory factor analysis (EFA) would be conducted, utilizing the chi square difference test, to identify the best fitting factor structure.

Phase Two: Assessing the Superordinate Measurement Model

During the second phase, we tested the existence of the superordinate model. This is an aggregate or a second order latent variable composed of the outcomes, psychiatric history, pathological gambling, substance use, violence, and sexual risk behavior. See Figure 1 below for conceptual Superordinate Measurement Model that was tested.
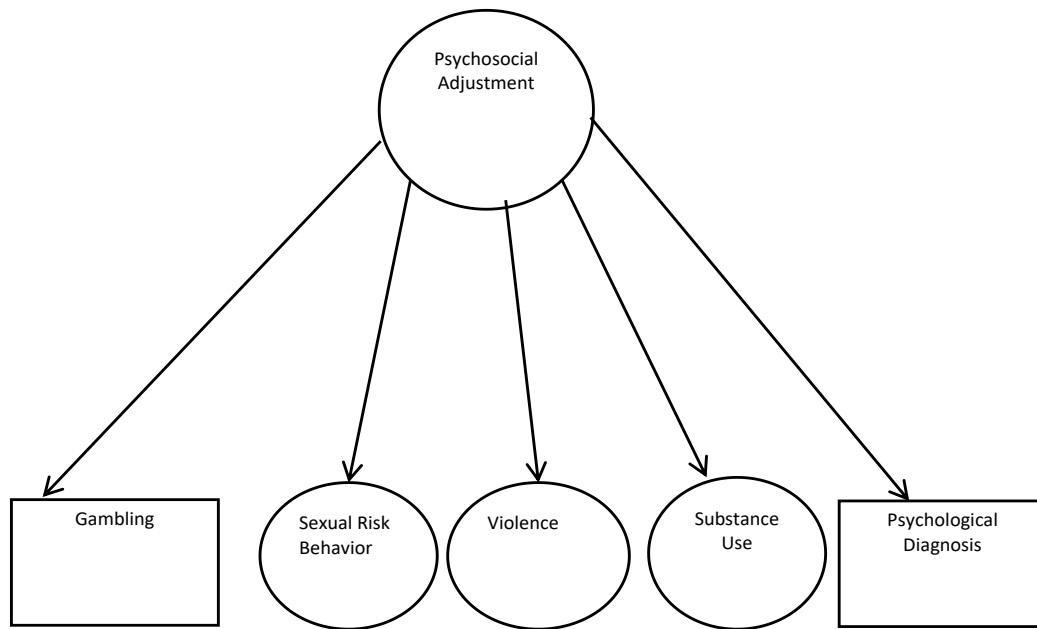
The presence of a superordinate model would be confirmed when adequate measure is achieved with root means square error of approximation (RMSEA) reaching 0.08 and the Comparative Fit Index (CFI)/Tucker Lewis Index (TLI) reaches .90.

Phase 3: The Full Model(s)

If an adequate superordinate measurement model is obtained, the next step is regressing the higher order psychosocial adjustment factor on our predictor constructs, demonstrating their associations to the shared variance of the five first order outcomes. See Figure 2 below for the conceptual Superordinate SEM that will be tested.
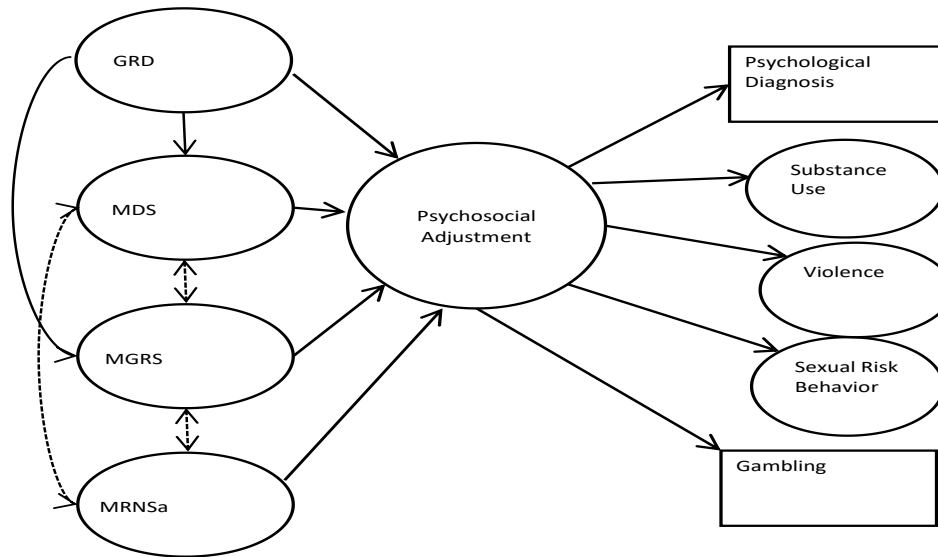
If the superordinate measurement model is unidentified, we will eliminate the superordinate factor and measure the influence of four predictors GRD, MDS, MGRS, and MRNS (antifemininity) on seven independent outcomes, delinquency onset, substance use, sexual risk behavior, violence, STD, pathologic gambling, and psychiatric diagnosis. This model aimed to regress each outcome on each predictor, creating a multivariate multiple regression SEM. See Figure 3 below for the conceptual Full SEM that was tested.
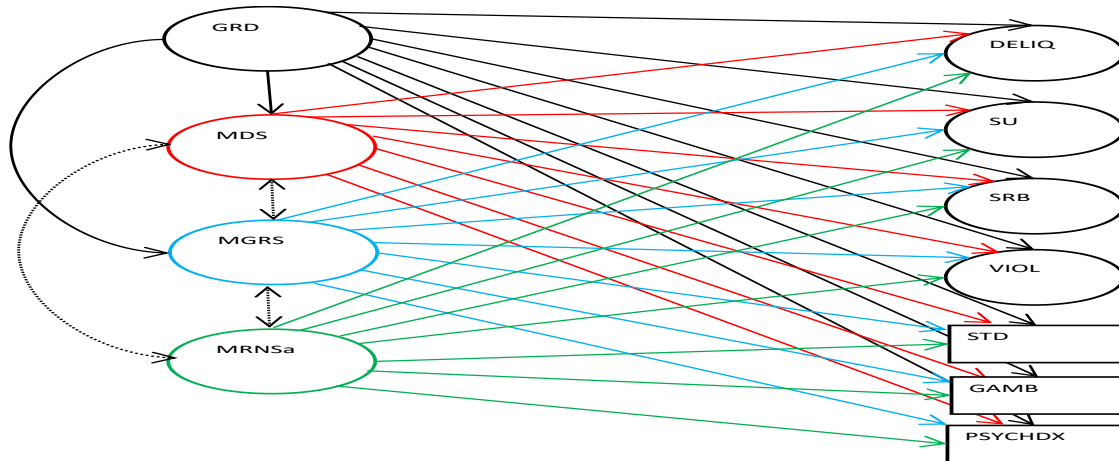
RESULTS

Phase One: Assessing Measurement Models

Predictors

Table 2 indicated below provides results of confirmatory factor analyses assessing the

measurement models

Latent Construct	Indicators	Correlated Residuals	RMSEA	90% CI	CFI	TLI	$\chi^2_{(df)}$	p	Loadings
GRD	5	1	.060	.023-.101	.995	.988	12.2 (4)	.02	$\geq$ .78
MDS	5	0	.070	.038-.105	.990	.980	18.8(5)	.00	$\geq$ .54
MGRS	15	6	.078	.070-.087	.927	.908	372.8 (84)	.00	$\geq$ .43
MRNS(a)	8	1	.071	.054-.088	.972	.959	71.8 (19)	.00	$\geq$ .62
SU	6	1	.013	.000-.052	.996	.992	8.8(8)	.36	$\geq$.20
SRB	4	1	.000	.000 -.110	1.0	1.005	0.916(1)	.34	$\geq$ .12
Viol	4	0	.000	.000 -.000	1.0	1.0	0.0 (0)	.00	$\geq$ .06

Adequate model fit for the construct MDS was obtained without modification. However, model

fit for the constructs GRD required one correlated residual and the abbreviated MGRS scale

required 6 correlated residuals. When evaluating the male role norms scale, tests of

measurement fit indicated that original factor structure presented by Thompson & Pleck (1995)

did not adequately represent the data. Therefore, an exploratory factor analysis (EFA) was

conducted by means of a chi-square difference test. This test indicated that a four-factor model

had the best fit, with a chi-square test of 687.577, degrees of freedom of 227, with a RMSEA of

0.060, CFI of 0.933, and a TLI of 0.904. This new subscale was composed of eight questions,

measuring a latent construct was labeled "Antifemininity", as it is most consistent with the original antifemininity subscale identified by Thompson & Pleck (1995). Additionally, the new MRNS subscale required modification, through one correlated residual.

Outcomes

Adequate model fit was identified for the latent variable, substance use. However, one factor loadings for four indicators small (< .4) albeit significant. Given that the most liberal recommendations for factor analysis suggest you should only retain indicators that load at $\geq$ .4, we determined that these items were not sufficiently measuring a single latent construct. We therefore were unable to obtain valid measurement model for substance use. Fit indices for sexual risk behavior suggested adequate fit. However, two of the four indicators loadings were at .20 and lower, suggesting these items were not validly tapping a sexual risk latent construct. The measurement model for the violence construct achieved adequate fit with four indicators. However, one indicator loaded below .10, removing that item produced a just identified model that perfectly fit the data.

Given our inability to obtain adequately fitting models for our latent outcomes, we conducted an exploratory factor analysis of items across constructs, utilizing the chi square difference test, to identify the best fitting factor structure for each outcome. An EFA was conducted to secure that the outcome variables; substance use, violence, and sexual risk behavior, were evaluating the latent variable they were intended to measure. It was determined that the six substance use indicators, four violence indicators, and four sexual risk behavior indicators would be more acceptable as five latent constructs: delinquency onset (four indicators; how old were you the first time you, (a) got buzzed or drunk, (b) " used illegal

drugs", (c) were arrested, and (d)had intercourse .), substance use (2 indicators; how many times per month do, (a) drink alcohol, until intoxicated, (b) use illegal drugs (marijuana, hashish, cocaine, ecstasy, mushrooms, heroin, speed, pills, etc.), sexual risk behavior (two indicators; (a) How many times have you had unprotected intercourse, with someone you were not in a relationship with" and (b) With how many partners have you had sexual intercourse (vaginal or anal.), std (one indicator; (a) How many times have you been diagnosed with a sexually transmitted disease.), and violence (three indicators; How many times have you, (a) been in a physical fight with another individual, (b) attacked someone with the intent to harm, injure, rape or kill, and (c) attacked someone with a weapon, intending to harm, injure, rape or kill.) Therefore, creating seven outcomes assessed in this model; delinquency onset, sexual risk behavior, substance use violence, STD, psychiatric diagnosis, and pathologic gambling

Phase Two: Assessing the Superordinate Model

In this phase we tested the first hypothesis, demonstrating significant and moderately large correlations reflecting an underlying psychosocial adjustment factor. After examining several incarnations, which consisted of correlating residuals, fixing residuals to zero, and removing items, it was determined that the model was not adequate due to negative residuals and standardized estimates above one. A decision was made to change the theoretical model and eliminate the superordinate factor.

Phase Three: Assessing the Full Model

Due to the inability to obtain an identified model utilizing a superordinate factor, a second model we refer to here as the full SEM see figure 3 was examined. In this model each of

the seven outcomes identified in our EFA was simultaneously regressed on all predictors.
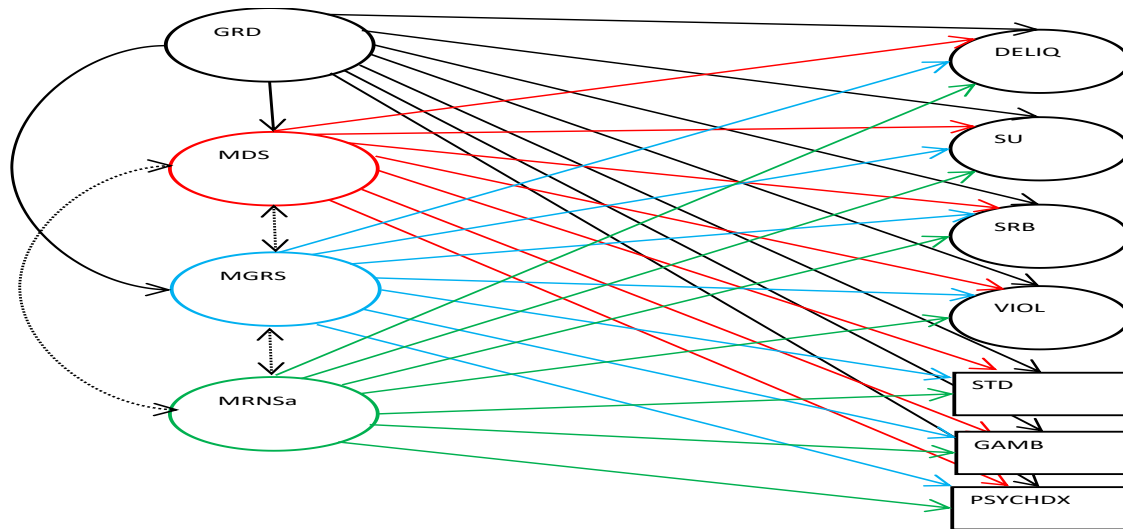
Results model estimation yielded a series of problematic item functioning that precluded interpretation. Several items produced Heywood cases with negative residuals and standardized loading values greater than 1.0. In the measurement models to be above 1; violence had an estimate of 1.546 with a negative residual of -1.391, STD had an estimate of 1.266 with a negative residual variance of-0.60 3, and psychiatric history had an estimate of 3.021 with a negative residual of -8.129. In order to remedy a negative variance, either model reconsideration is in order or item modification. Our efforts consisted of removing items and or fixing variances to zero. After exhausting all efforts, a decision was made to change the theoretical model and assess the outcomes in solely in individual SEMs

Phase Four (Post Hoc): Assessing the Reduced Models

Due to the inability to obtain an interpretable model utilizing the full SEM including all outcomes in a single model, a series of exploratory reduced SEMs examining each outcome

individually were estimated (Figures 4-8).
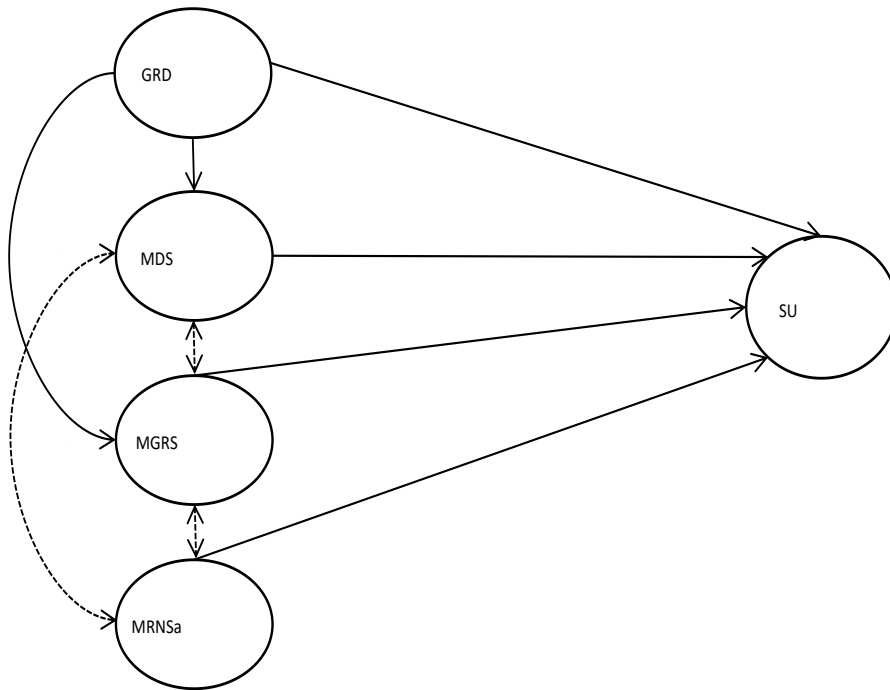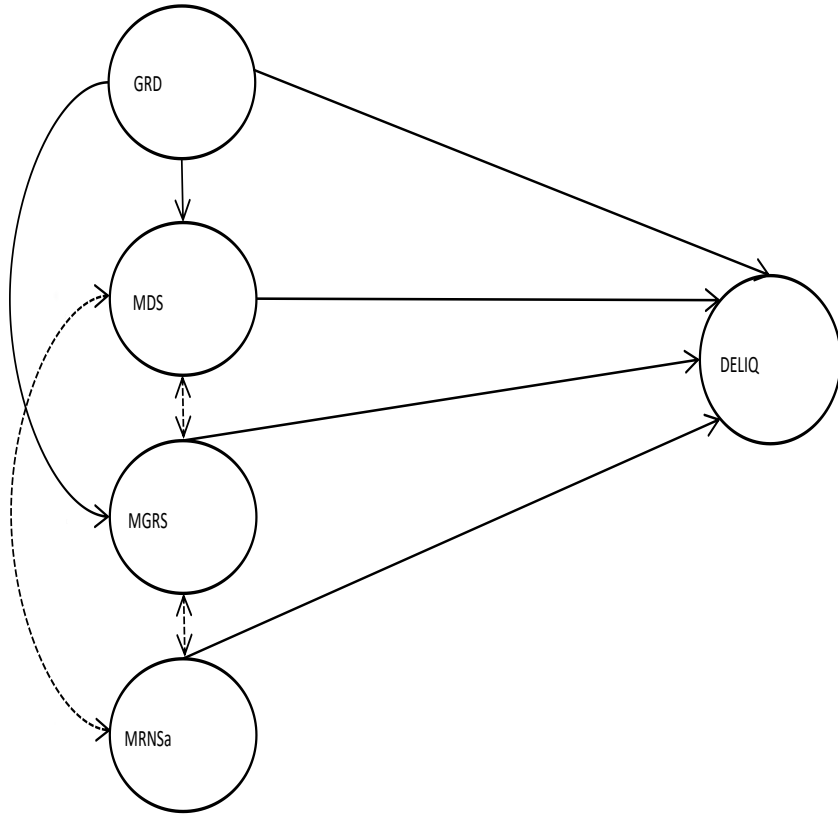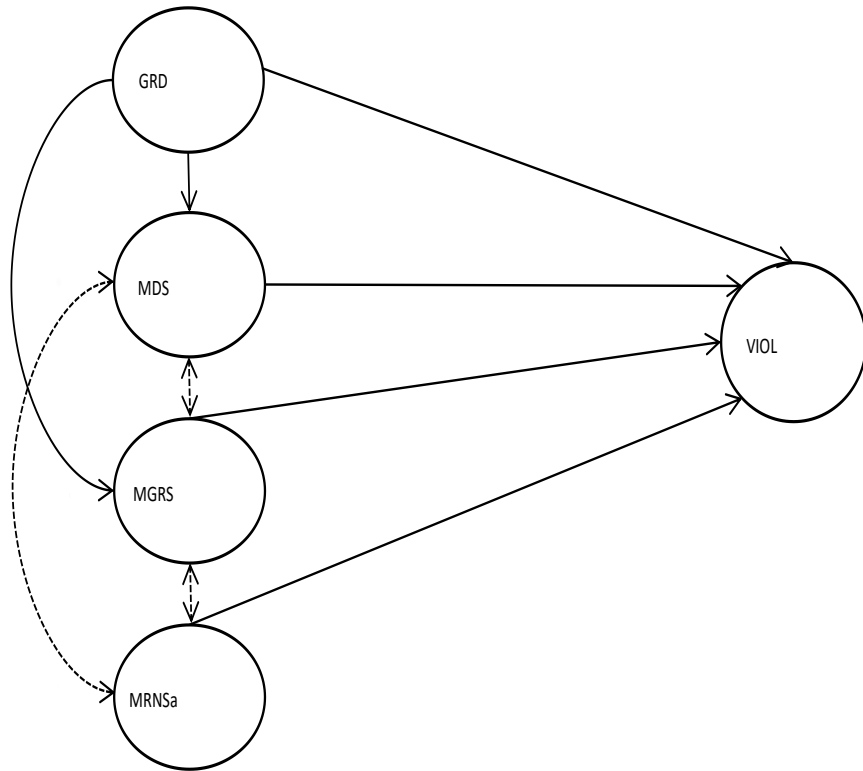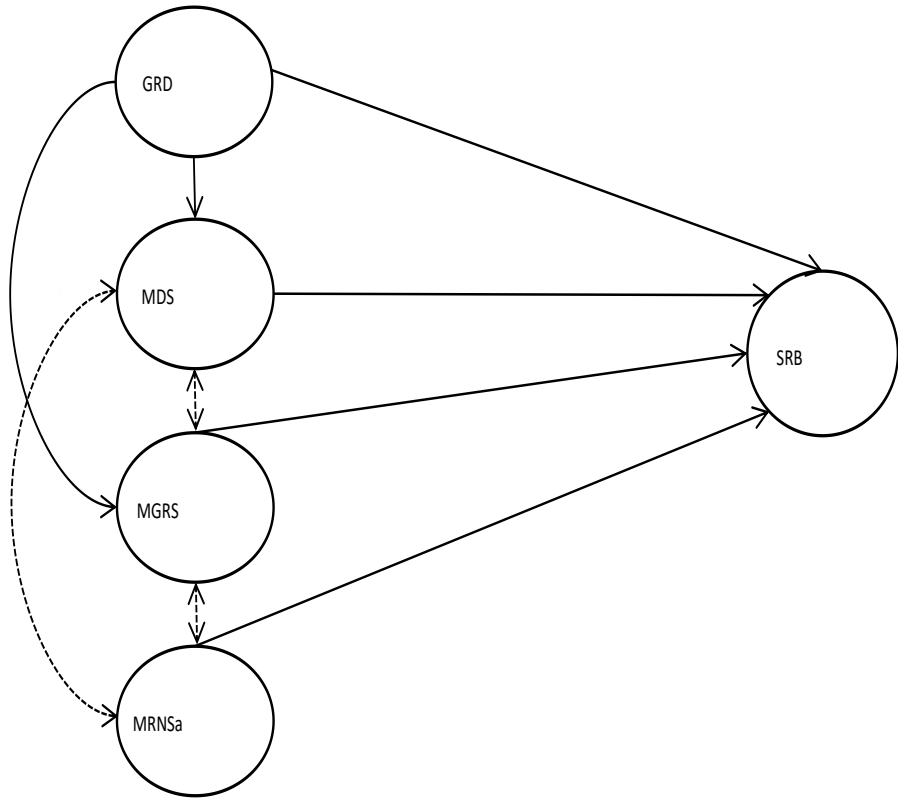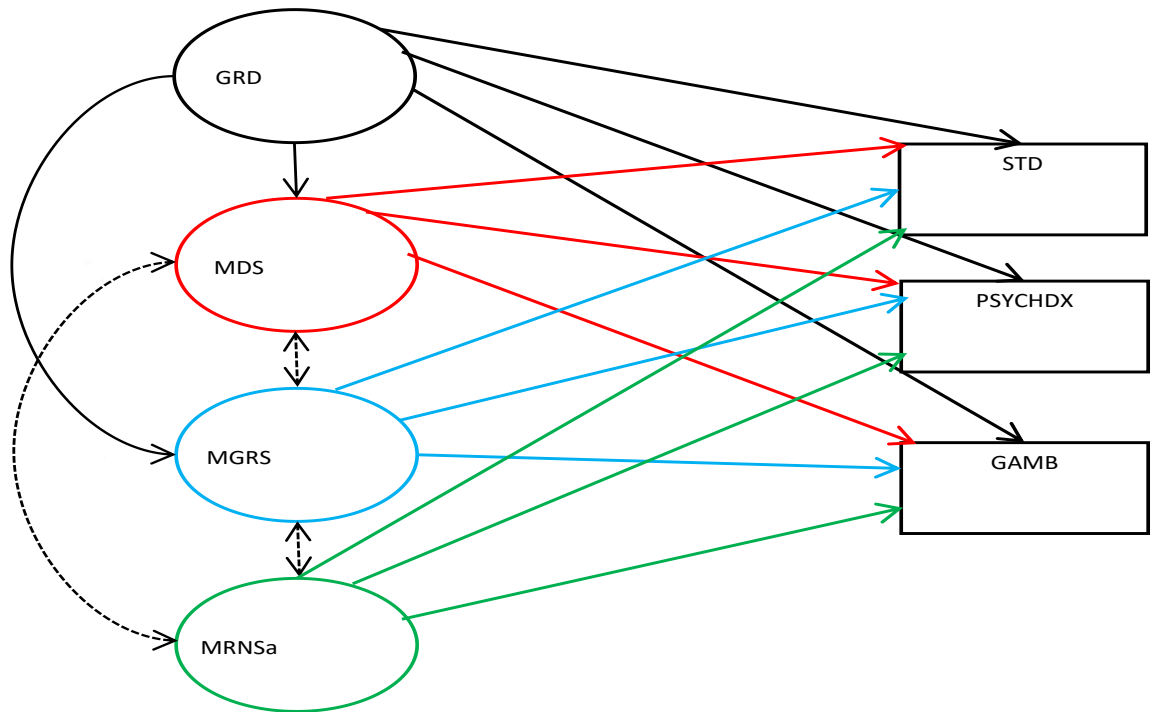
Regarding model fit, the reduced SEMs with the outcomes of; delinquency onset, substance use, sexual risk behavior, and violence (figures 4-7), all had adequate fitting models. However, the reduced SEM containing combined outcomes of STD, psychiatric diagnosis, and pathologic gambling proved to be unidentified (figure 8). This SEM had negative residuals and standardized loading values greater than 1.0; STD had an estimate of 1.264, with a negative residual of-0.598 and psychiatric history had an estimate of 3.021, with a negative residual of - 8.125.   Furthermore, the standardized models indicated no statistically significant results. Even though, psychiatric history appears to have established significance negative direct effect, when regressed on MDS, (individual SEM b-0.054, SE 0.025, p 0.031); as previously stated, this model had both negative variances and standardized loadings above 1.0.

After exhausting all efforts, it was determined that adequate model fit would not be rendered.

DISCUSSION

The goal of the present research was threefold: (a) Examining latent constructs to demonstrate significant and moderately large correlations reflecting an underlying psychosocial adjustment factor (b) Utilization of structural equation modeling methods, in place of univariate methods, MDS and GRD will demonstrate significant correlations the superordinate factor psychosocial adjustment, and (c) Utilization of MDS as a mediator rather than a moderator in a structural equation model, MDS will demonstrate a significant positive direct effect on psychosocial adjustment, while GRD will demonstrate a negative direct effect on psychosocial maladjustment.

Due to lack of interpretable results, with regards to our subordinate construct, the outcomes were measured independently. The results from this model yet again yielded uninterpretable results. As a final effort, a post hoc analysis was done, yielding four models with statistically insignificant results and one model with uninterpretable results. Concluding that we do not have enough information to the support the study's aims. Notably, our findings were inconsistent with previous studies by Reidy and colleagues that showed main effects for MDS on sexual risk behavior, and general violence and that discrepancy stressed boys were more likely to engage in health risk behavior, as a means of hypothetically demonstrating gender role conformity (Reidy et al., 2016 & 2018).

The study findings are suggestive of several scenarios. First, a lack of understanding of the exact definition(s) of the latent constructs; since latent constructs are theoretical and cannot be observed directly, only measured indirectly through indicators. There is no way of

knowing whether the underlying latent construct has been captured reliably or accurately

(Bollen, 2002). Another possible reason for lack of results could be due to the absence of

statistical methodologies needed to assess the latent variables. In essence, perhaps the

intended latent construct was captured, but the correct statistical methods were not employed

to examine the latent variable(s). An additional explanation could be, the results may reflect a

deficit in the necessary power to detect effects owing to the number of predictors in this study.

Otherwise, it may indicate that measuring GRD and MDS, independently of each other, does

not predispose one to experience maladaptive behavior. Furthermore, indicating that perhaps

utilizing MDS in a mediation model alone is insufficient.

Limitations

These findings must be interpreted with caution for several reasons. These data are

cross-sectional, and these SEM analyses are correlational. There SEM can impede our ability to

make causal determinations about masculine discrepancy stress. Expectedly, we cannot

manipulate or randomly assign MDS, because of the nature of the study; for this reason, we will

never be able to make true causal statements. In relation, 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, Reidy et al., 2018).

Furthermore, these models are indistinguishable per fit statistics, only through

meaningfulness, theory, and parsimony can one determine appropriate model choice

(MacCallum et al., 1993). Therefore, there is potential for competing models. Also, another way

that SEM models are approximated is by omitting variables that are implicated in the causal

processes or other features of a model (Tomarken, 2005). Such omissions can present a misleading picture of the measurement and causal structure and can result in biased parameter estimates and inaccurate estimates of standard errors (e.g., Kaplan 1989, Mauro 1990, Reichardt 2002).

Additionally, self-reported measures may not accurately reflect real-world behaviors and their prevalence rates. It is reasonable to suspect that some men may have underreported delinquency onset, substance use disorder, and sexual risk behavior, and violence, prevalence of STD, pathological gambling tendencies, and mental health status. Finally, although this sample was arguably more diverse than many typical convenience samples used in psychological-social research, a large proportion of the sample was ethnically homogenous. It remains essential to replicate these findings in alternative samples to determine whether they replicate in samples drawn from other cultures.

Lastly, underlying all mediation methodology is a temporal component (Kazdin, 2007). The theoretical framework in which X operates before M, which then operates before Y, this underlies the conceptualization of a temporal design-based mediation (Winer et al., 2016). Therefore, it is important to be aware of the predictive limitations of cross-sectional studies. A primary limitation of the cross-sectional study design is that the independent and dependent variables are simultaneously assessed, there is generally no evidence of a temporal relationship between the two variables. Essentially, a cross-sectional study is not used to analyze behavior over a period of time.

Future Directions

Despite this study's limitations and lack of significant findings, the present research adds to the existing literature in that it clarifies the need for a deeper understanding of how GRD and MDS function within our society. Ultimately, the goal was to target multiple health risk behaviors for men, through a higher-order construct. Reidy and colleagues (2018) mentioned that traditional prevention strategies are singularly focused, targeting one health outcome. Even though, the findings did not show significant associations; it is likely that MDS may still be that higher-order construct that can treat across fields of public health. Perhaps indicating MDS as both a mediator and a moderator, would proffer results that were more significant. Notably, a mediator focuses on the intervening mechanism that produces the outcome, while a moderator focuses on factors that affect the magnitude of the outcome (Muller, Judd., & Yzerbyt, 2005). According to Muller and colleagues, (2005), mediation and moderation may be combined in informative ways, such that moderation is mediated, or mediation is moderated. Papers by Muller, Judd, and Yzerbyt (2005) and Edwards and Lambert (2007) discuss mediated moderation and moderated mediation and examples of each.

Conclusion

Albeit, there were no meaningful or significant results found in this study, that does not mean that there are is not a second order factor that is associated with MDS and GRD. Ultimately, findings suggest a need for a more in-depth understanding of the latent constructs (MDS and GRD) and methodologies used to assess those factors. Research in this field is critical and continually evolving. Hopefully, this study will add to the growing literature in this field and will aid future studies in the development of prevention strategies that can treat a higher order factor that encompasses multiple outcomes that cut across fields of public health.

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TABLES and FIGURES

Table 1. Demographics.

|	N	%[a]
Race		
Caucasian/White	432	72.0
Other	168	28.0
Sexual Orientation		
Straight	36	83.7
Gay	4	9.3
Bisexual	2	4.7
Trans	0	0.0
Queer	1	2.3
Income		
< than $5,000	43	7.2
$5,000-$9,999	22	3.7
$10,000-$14,999	48	8.0
$15,000-$19,999	46	7.7
$20,000-$24,999	50	8.3
$25,000-$29,999	33	5.5
$30,000- $34,999	43	7.2
$35,000-$39,999	37	6.2
$40,000-$49,999	54	9.0
$50,000-$59,000	74	12.3
$60,000-$74,999	41	6.8
$75,000-$99,999	45	7.5
≥$100,000	63	10.5
Marriages		
0	403	67.2
1	123	20.5
2	14	2.3
3+	7	1.2

Note. Based on a sample of 600 Men.

Table 2. Fit Indices for the Measurement Models of the Eight Latent Constructs.

Latent Construct	Indicators	Correlated Residuals	RMSEA	90% CI	CFI	TLI	$\chi^2_{(df)}$	p	Loadings
GRD	5	1	.060	.023-.101	.995	.988	12.2 (4)	.02	$\geq .78$
MDS	5	0	.070	.038-.105	.990	.980	18.8(5)	.00	$\geq .54$
MGRS	15	6	.078	.070-.087	.927	.908	372.8 (84)	.00	$\geq .43$
MRNS(a)	8	1	.071	.054-.088	.972	.959	71.8 (19)	.00	$\geq .62$
SU	6	1	.013	.000-.052	.996	.992	8.8(8)	.36	$\geq .20$
SRB	4	1	.000	.000 -.110	1.0	1.005	0.916(1)	.34	$\geq .12$
Viol	4	0	.000	.000 -.000	1.0	1.0	0.0 (0)	.00	$\geq .06$

Note. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); SU = Substance Use ; SRB = Sexual Risk Behavior; viol = Violence; 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 = Chi-square value with degrees of freedom in parentheses; p = significance value; Loadings = Factor Loadings

**FIGURE 1.** Conceptual superordinate measurement model.
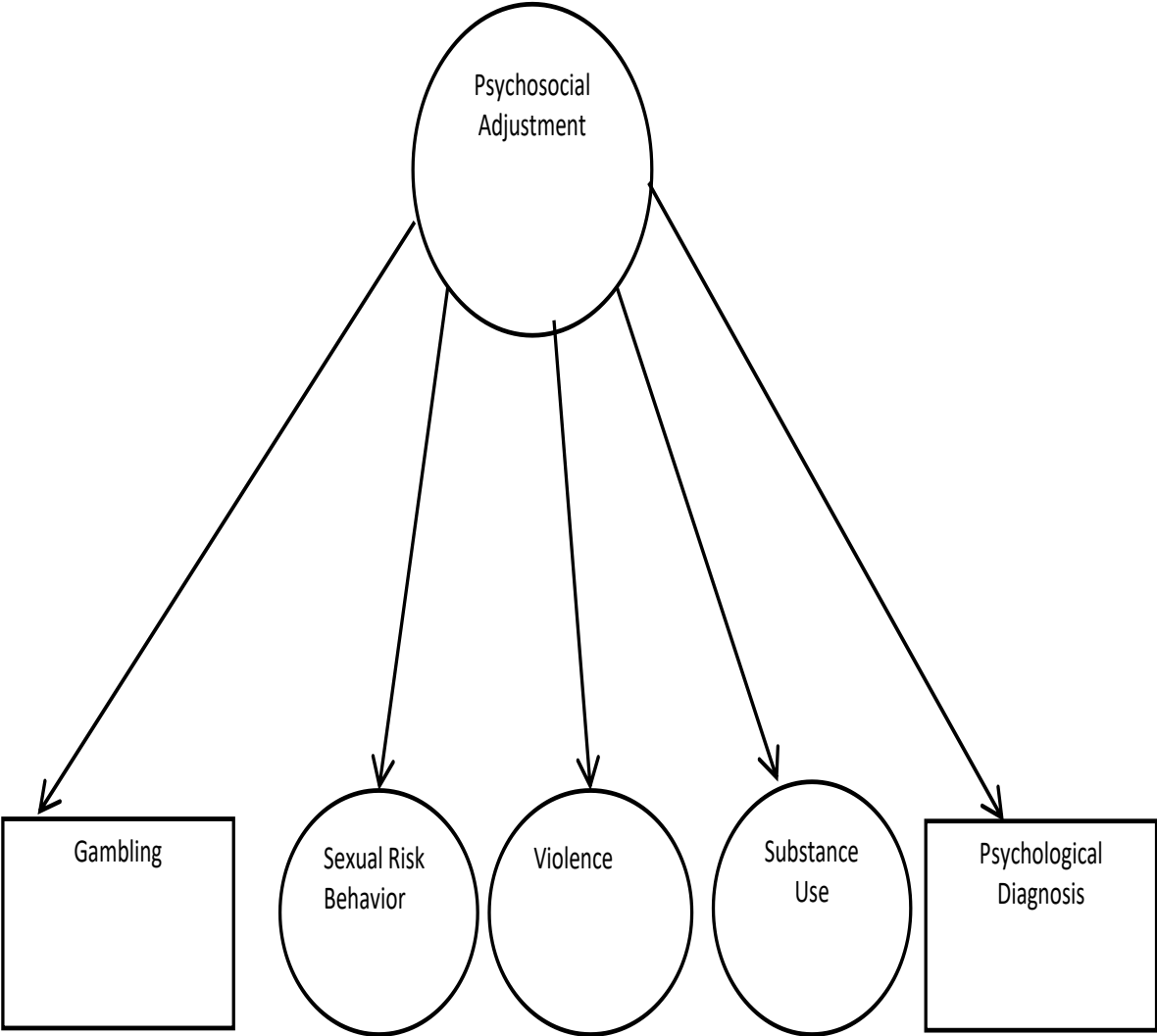
NOTE. No Parameter estimates for these variables are presented.

FIGURE 2. Conceptual superordinate model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on super ordinate model psychosocial adjustment.
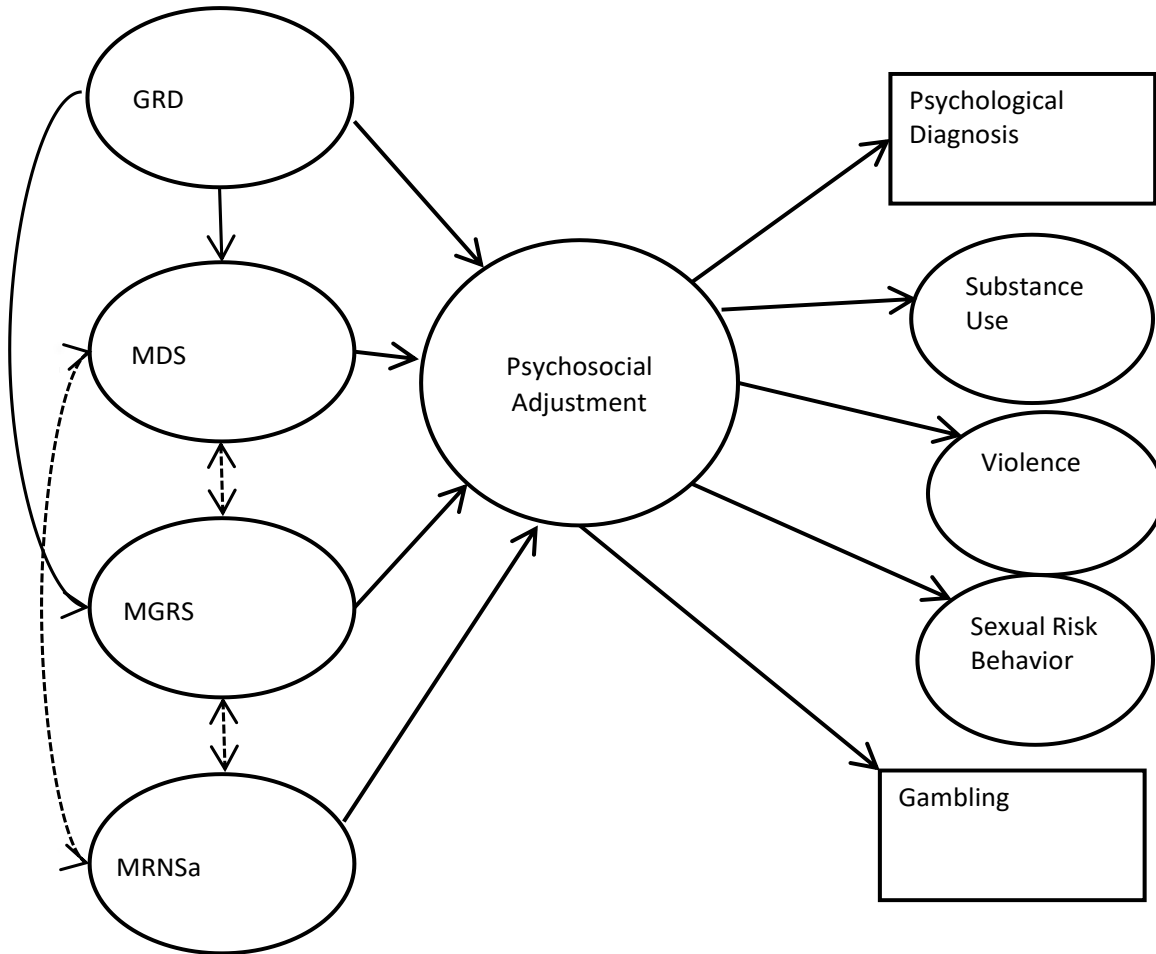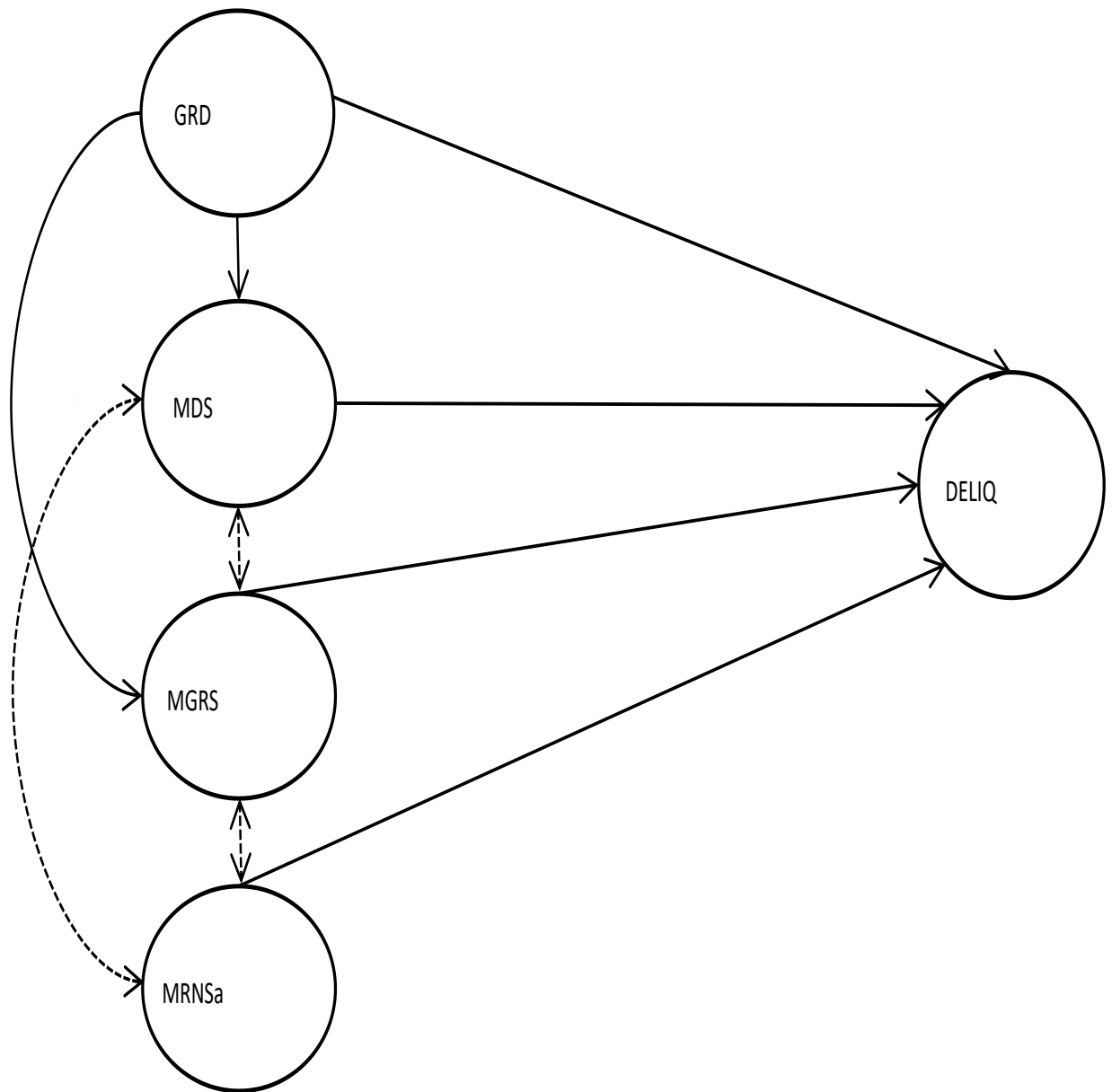

NOTE. No Parameter estimates for these variables are presented. MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); Deliq = Delinquency Onset; SUD = Substance Use; SRB = Sexual Risk Behavior; viol = Violence; gam= pathologic gambling; std=sexually transmitted disease; psydx=psychiatric diagnosis. Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model.

FIGURE 3. Conceptual full model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on outcomes.
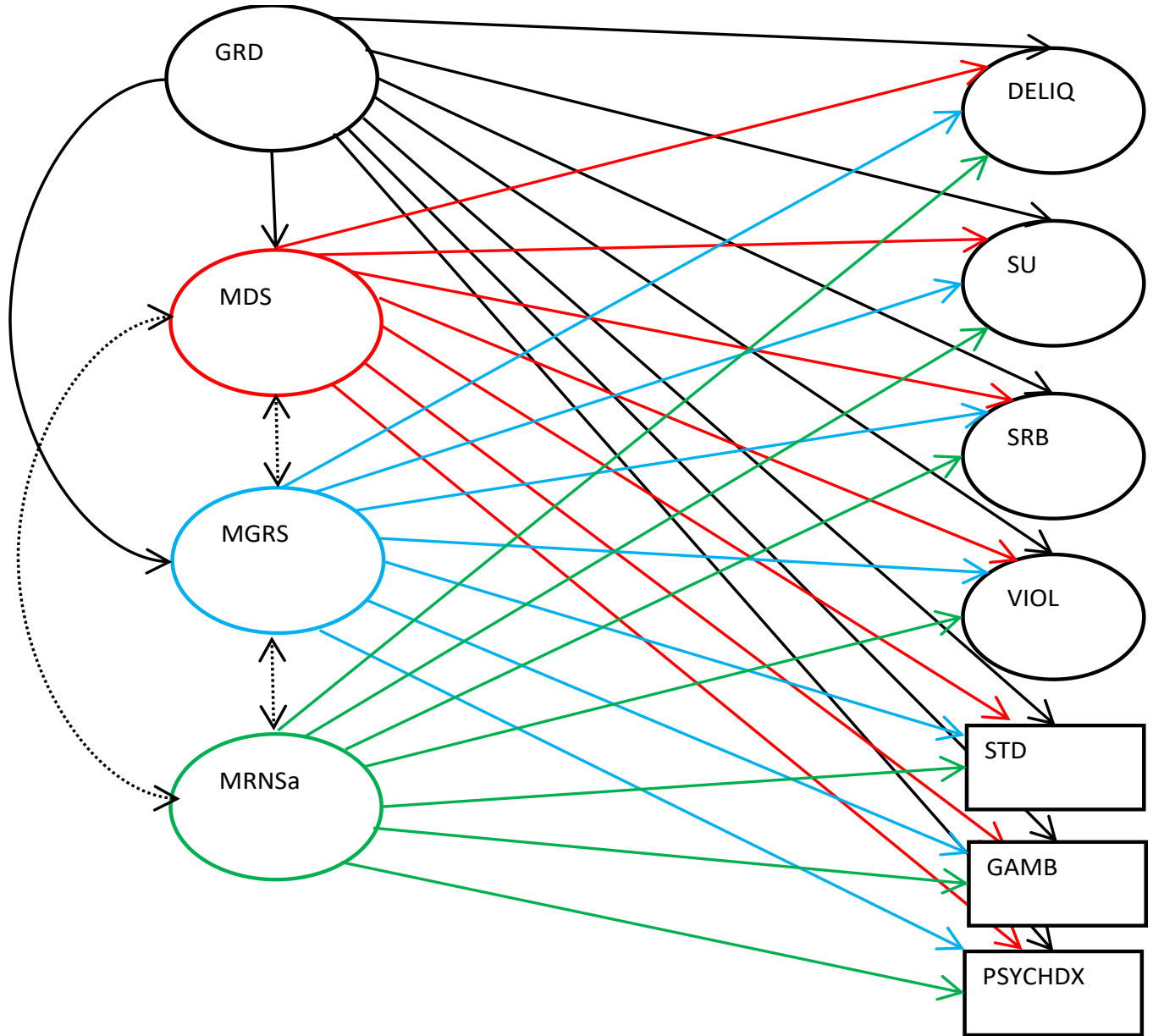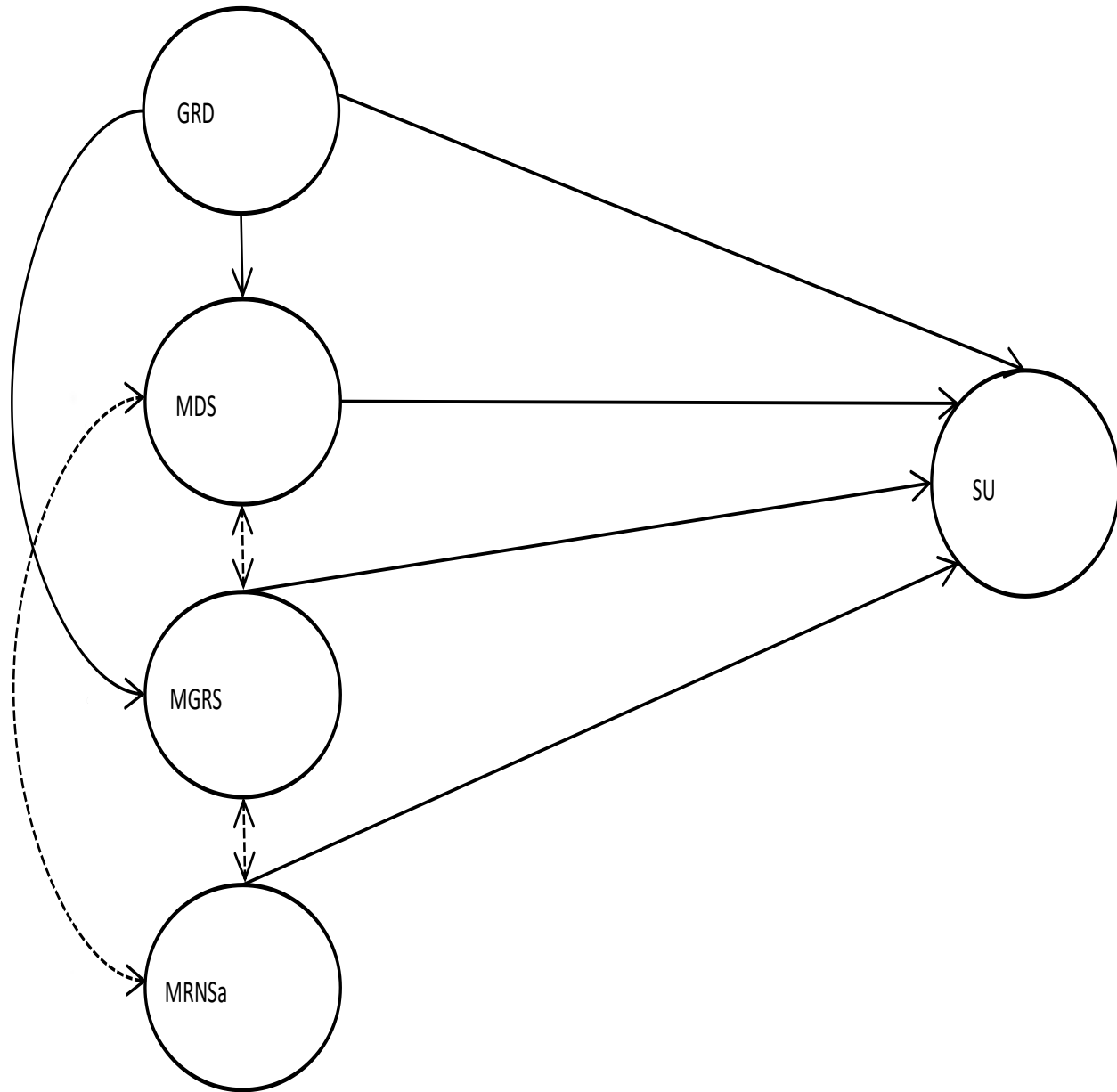

NOTE. Parameter estimates for these variables are presented in Table 3. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); Deliq = Delinquency Onset; SUD = Substance Use; SRB = Sexual Risk Behavior; viol = Violence; gam= pathologic gambling; std=sexually transmitted disease; psydx=psychiatric diagnosis. Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model

FIGURE 4. Conceptual individual model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on Delinquency onset
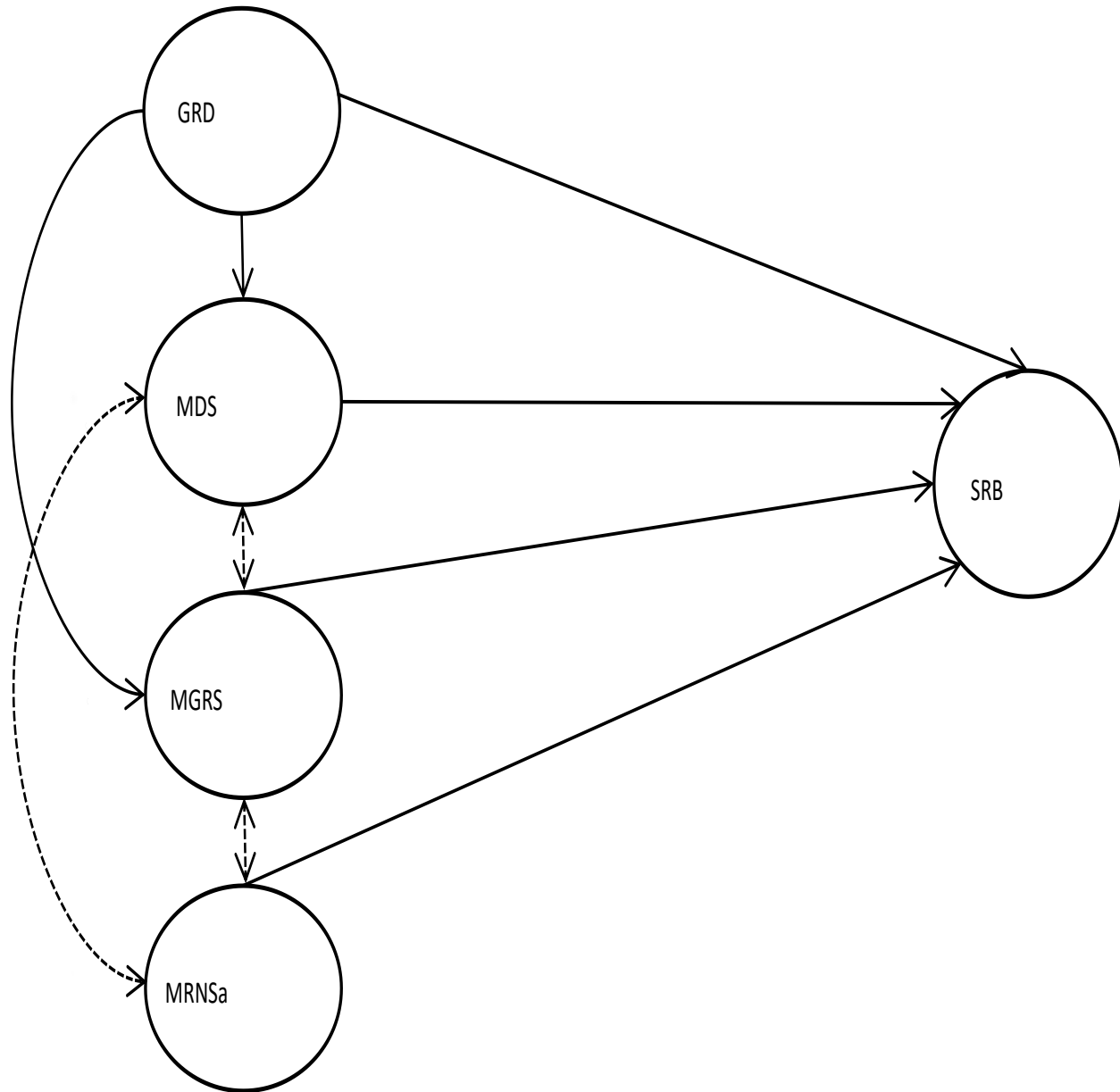

NOTE. Parameter estimates for these variables are presented in Table 4. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); Deliq = Delinquency Onset; Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model.

FIGURE 5. Conceptual individual model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on Stress on Substance Use

NOTE. Parameter estimates for these variables are presented in Table 4. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); SU = Substance Use. Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model
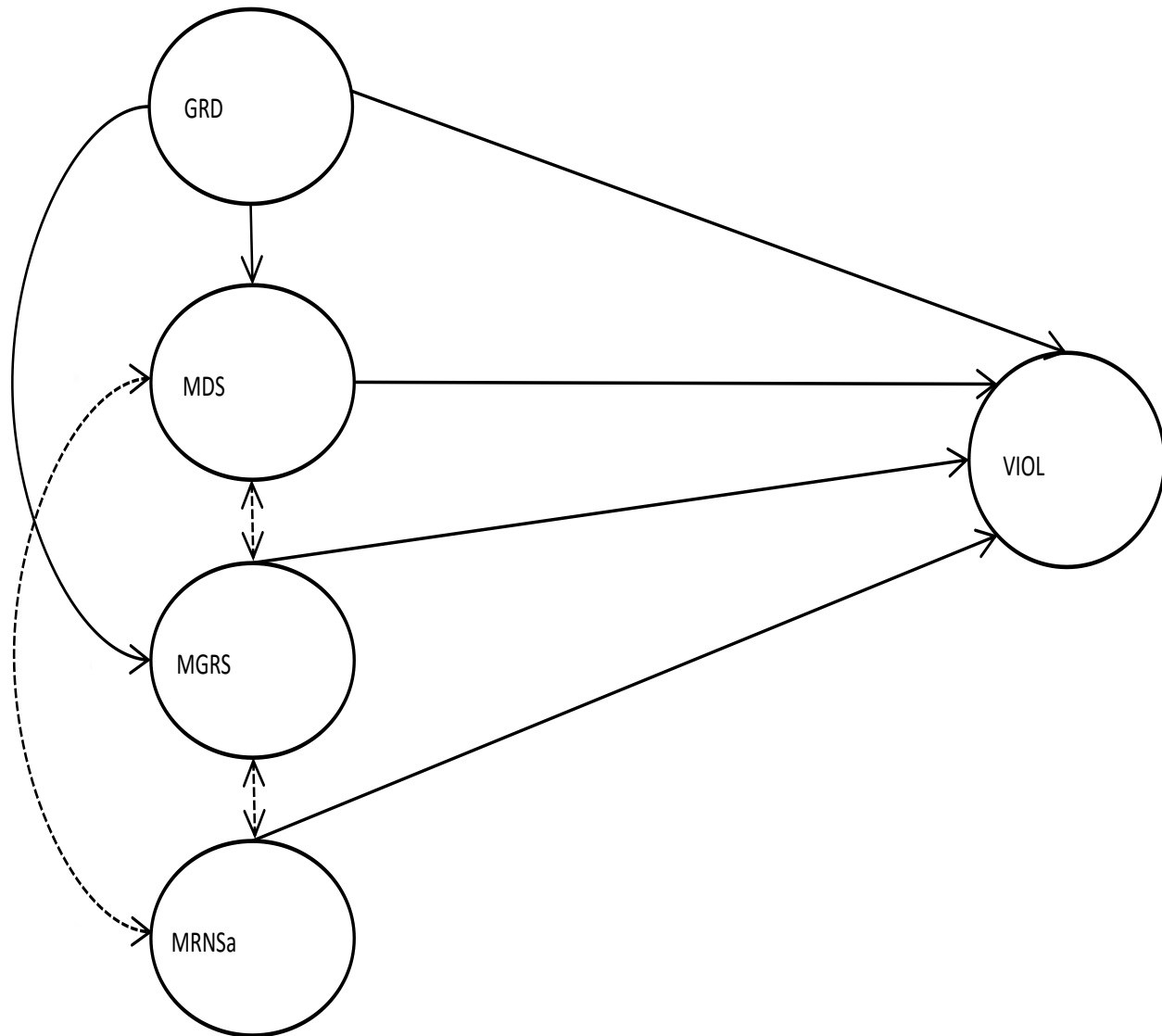
FIGURE 6. Conceptual individual model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on Sexual Risk Behavior.

NOTE. Parameter estimates for these variables are presented in Table 4. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); SRB=Sexual Risk Behavior. Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural mode
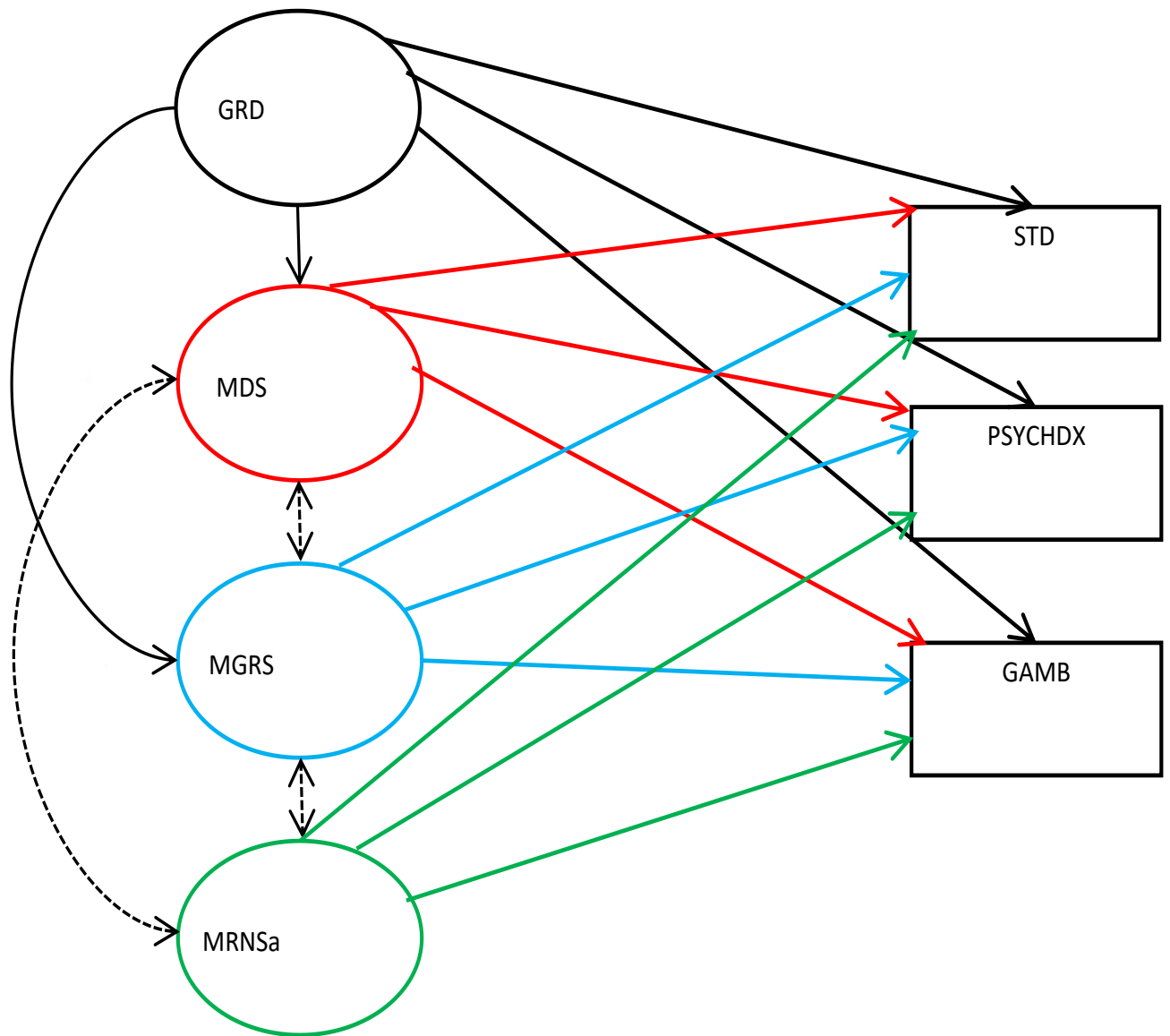
FIGURE 7. Conceptual individual l model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on Violence.

NOTE. Parameter estimates for these variables are presented in Table 4. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); Viol= Violence; Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model.

FIGURE 8. Conceptual individual model testing the effects of Gender Role Discrepancy and Masculine Discrepancy Stress on STD, Pathological Gambling, and Psychiatric History.

NOTE. Parameter estimates for these variables are presented in Table 4. GRD = Gender Role Discrepancy; MDS = Masculine Discrepancy Stress; MGRS= Masculine Gender Role Stress Scale; MRNSa = Male Role Norms Sub-scale (antifemininity); STD=Sexually Transmitted Disease; PSYCHDX=Psychiatric Diagnosis; GAMB=Gambling. Dashed lines represent bidirectional controlled paths estimated as part of the fully saturated structural model.