

Gender Role Discrepancy Stress, High-Risk Sexual Behavior, and Sexually Transmitted Disease

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Abstract Nearly 20 million new sexually transmitted infections occur every year in the United States. Traditionally, men have demonstrated much greater risk for contraction of and mortality from STDs perhaps because they tend to engage in a number of risky sexual activities. Research on masculinity suggests that gender roles influence males' sexual health by encouraging risk-taking behavior, discouraging access to health services, and narrowly defining their roles as partners. However, despite the propensity of highly masculine men to engage in high-risk sexual behavior, there is reason to suspect that men at the other end of the continuum may still be driven to engage in similar high-risk behaviors as a consequence of gender socialization. *Discrepancy stress* is a form of gender role stress that occurs when men fail to live up to the ideal manhood derived from societal prescriptions (i.e., *Gender Role Discrepancy*). In the present study, we surveyed a national sample of 600 men via Amazon Mechanical Turk to assess perceived gender role discrepancy, experience of discrepancy stress, and the associations with risky sexual behavior and potential contraction of STDs. Results indicated that men who believe they are less masculine than the typical man (i.e., gender role discrepancy) and experience distress stemming from this discrepancy (i.e., discrepancy stress) engage

in high-risk sexual behavior and are subsequently diagnosed with more STDs. Findings are discussed in relation to implications for primary prevention strategies.

Keywords Discrepancy stress · Masculinity · Risky sexual behavior · Sexually transmitted disease · Sexually transmitted infection

Introduction

STDs are a significant health challenge facing the United States: the Centers for Disease Control and Prevention (CDC) estimates that nearly 20 million new sexually transmitted infections occur every year in the U.S (CDC, 2012). Each of these infections is a potential threat to an individual's immediate and long-term health, including increasing the risk for HIV infection (Bolan, 2012; CDC, 2012). Gender role norms and expectations have the ability to serve as a major barrier to STD prevention, testing, and treatment. Gender roles are defined as the widely shared expectations and norms within a society about appropriate male and female behavior, characteristics, roles, and the culturally acceptable dynamics between and among males and females (Gupta, 2000; PEPFAR, 2011). Research indicates that such implicit and explicit gender rules may affect males' sexual health by encouraging risk-taking behavior, discouraging access to health services, and narrowly defining their roles as partners (e.g., CDC, 2010; PEPFAR, 2011). Prevailing norms of masculinity expect males to be more knowledgeable and experienced about sex, placing them at risk of infection because such norms prevent them from seeking information and may influence them to experiment with sex in unsafe ways (Heise & Elias, 1995; Mane, Gupta, & Weiss, 1994; UNAIDS, 1999). Relative to women, men tend to engage in sexual behavior at an earlier age, are more likely to have sex under the influence of drugs or alcohol, are less

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likely to use a condom during sex, and have more sexual partners (Courtenay, 2000; Mahalik et al., 2013).

However, despite this link between traditional norms of masculinity and high-risk health behaviors, there may be reason to suspect that some men at the opposite end of the continuum of gender role conformity may be as likely or more likely to engage in high-risk behavior. According to Pleck (1995), discrepancy stress is a form of gender role stress that occurs when one fails to live up to the ideal manhood derived from societal prescriptions. Simply put, discrepancy stress arises when a man believes that he is, or believes he is perceived to be insufficiently masculine. Research suggests that boys learn to expect that violation of masculine norms would result in negative social consequences (Fuchs & Thelen, 1988; Zeman & Garber, 1996). It follows that men experiencing a high degree of discrepancy stress would be more likely to act out in stereotypical masculine ways such as high-risk sexual behavior to demonstrate and validate their masculinity to self and/or others (e.g., Vandello & Bosson, 2013).

At present, there has been little to no empirical work examining the influence of discrepancy stress on health behaviors. From the public health perspective, identifying key risk and protective factors and creating awareness of how prevailing gender norms may influence long-term health outcomes are critical steps in the process of prevention. Understanding the influence of discrepancy stress on engaging in high-risk sexual behaviors may inform the development of efficacious strategies to prevent the contraction and spread of STDs. In the present study, we sought to examine whether men experiencing psychological stress because they believe others perceive them to be less masculine than the typical man are more likely to engage in risky sexual behaviors. We expected that men who endorse a perceived gender role discrepancy (i.e., less masculine than the “typical” male) and experience distress about this discrepancy would (1) report a history of engaging in sex at an earlier age, (2) report more instances of unprotected sex outside of committed relationships, (3) report a greater number of sexual partners, and consequently, (4) a greater risk of contracting STDs.

Method

Participants and Procedure

Six-hundred men (13 % Asian; 7 % Black or African–American; 72 % Caucasian; 7 % Hispanic or Latino) aged 18–50 ($M_{\text{age}} = 27.2$; $SD = 6.8$) completed survey measures. Forty-one men identified as not exclusively heterosexual (i.e., gay, bisexual, queer, transgender/sexual). Participants were recruited via Amazon’s Mechanical Turk (MTurk) web site. This site permits the collection of national data from individuals via an online

method that typically proffers greater diversity in samples than commonly used convenience samples (Buhrmester, Kwang, & Gosling, 2011). Because gender socialization is culturally driven and may differ by country we restricted our sample to men from the United States. Individuals were compensated \$2.00 for completion of the questionnaires. All materials and procedures were approved for this study by the University Institutional Review Board.

Measures

Demographics

Participants responded to a series of questions about age, ethnicity, marital status, relationship history, self-identified sexual orientation, and level of education.

Gender Role Discrepancy and Discrepancy Stress (Reidy, Berke, Gentile, & Zeichner, 2014)

To assess experience of gender role discrepancy stress, it was important for us to generate questions that distinguished between the perception or belief that one was less masculine than the traditional male and the experience of stress about this believed discrepancy because it is feasible (and highly likely) that men will endorse gender role discrepancy but not experience distress about it. Only when one experiences stress about the discrepancy is it likely to engender maladaptive behavior. Thus, we generated 8 questions pertaining to the experience of (1) perceived gender role discrepancy (e.g., “I am less masculine than the average guy,” “Most women I know would say that I’m not as masculine as my friends”) and 8 questions pertaining to the experience of (2) distress stemming from the discrepancy (e.g., “I wish I was more manly,” “I worry that women find me less attractive because I’m not as macho as other guys”). We intentionally avoided using terminology about specific behaviors, attributes, or cognitions related masculinity as we deemed this approach too directive and not accurately assessing subjective construction of masculinity. Thus, we used broad terminology such as “masculine,” “manly,” or “macho.” See [Appendix](#).

Sexual Behavior

Respondents answered four questions pertaining to sexual activity: (1) “How old were you when you first had intercourse (vaginal or anal)?” (2) “With how many partners have you had intercourse (vaginal or anal)?” (3) “How many times have you had unprotected sexual intercourse (vaginal or anal) with someone you were not in a relationship with?” and (4) “How many times have you been diagnosed with a sexually transmitted disease?”

Results

Data Reduction

It took respondents approximately 30 min to complete the online surveys ($M = 34.0$, $SD = 38.3$, range = 5.3–677.8). We removed all respondents who were more than 2.5 SDs from the mean time to complete the survey. This resulted in the exclusion of seven respondents' data from analysis. Additionally, 7 respondents reported their age of onset for sexual intercourse to be between 1 and 4 years old. We suspected these implausible responses to be key stroke errors on the part of respondents, and these respondents were excluded from analyses testing the age of initial sexual intercourse; however, they were included in all other analyses. Men who reported having never had a sexual partner were excluded when we examined age of first sexual intercourse.

We conducted an exploratory factor analysis of the 16 initially generated discrepancy stress questions using the maximum likelihood method with varimax rotation and Kaiser normalization. The Kaiser–Meyer–Olkin value was .91, which exceeds the suggested value of .6 (Field, 2013). Bartlett's test of sphericity was statistically significant, $\chi^2(120) = 4954.24$, $p < .001$, further supporting the factorability of the correlation matrix. Eigenvalue analysis indicated three factors with values greater than one explaining approximately 56% of the variance. The scree plot confirmed the presence of three factors. The first factor, $\lambda = 6.6$, labeled *Discrepancy Stress* explained 39% of the variance. The items on this factor pertained to *distress* about perceived gender role discrepancy (e.g., "I worry that people judge me because I'm not like the typical guy"). The second factor, $\lambda = 2.4$, labeled *Gender Role Discrepancy* explained 12% of the variance and comprised questions about perceived gender role discrepancy ("I am less masculine than the average guy"). All items loaded at .5 or higher onto their respective factors for discrepancy and stress. A third factor, $\lambda = 1.3$, comprising items that failed to load onto the two intended factors (e.g., "I am pretty masculine") explained only 5% of the variance. This factor was excluded from analyses, as it did not reflect gender role discrepancy or attendant discrepancy stress. Cronbach's alphas for the 5-item Discrepancy and 5-item Discrepancy Stress scales were .91 and .86, respectively. The two factors were significantly correlated ($r = .61$). Items retained in the Gender Role Discrepancy and Discrepancy Stress subscales are provided in the [Appendix](#).

Regression Analyses

For the first outcome variable, age at first sexual intercourse, we performed a linear regression. However, for the remaining outcomes, examination of the distributions revealed that they were positively skewed, violating normality assumptions (confirmed by significance testing), and their variances exceeded conditional means by more than 5–50 times the values, which is

Table 1 Correlations among predictor and control variables

Measure	1	2	3	4
1. Age	–	.02	–.08*	–.19**
2. Hetero/Non		–	.14**	.11**
3. Discrepancy			–	.61***
4. Stress				–

Hetero/Non = (0 = heterosexual; 1 = not heterosexual), discrepancy = gender role discrepancy, stress = discrepancy stress

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 2 Results of linear regression for age at first intercourse

Measure	<i>t</i>	<i>b</i>	<i>p</i>
Age	0.40	.02	ns
Hetero/Non	0.65	.03	ns
Discrepancy	3.17	.18	.00
Stress	–0.52	–.03	ns
Discrep × stress	2.43	0.11	.01

Hetero/Non = (0 = heterosexual; 1 = not heterosexual), discrepancy = gender role discrepancy, stress = discrepancy stress, discrep × stress = interaction term

ns non-significant, *IRR* incident rate ratio

typical of count data. For these reasons, we performed negative binomial regressions for the remaining three behavioral outcomes due to the nature of their distributions common to count data. All predictor variables were standardized to have a mean of zero and SD of one. This allowed for meaningful interpretation of results at the mean score of other variables in the regression equation and precluded the influence of multicollinearity in the moderation analysis (West, Aiken, & Krull, 1996). Tests of the simple slopes were conducted using procedures described by Aiken and West (1991). For all regression equations, sexual orientation (Heterosexual = 0, Not Heterosexual = 1) and respondent age were first entered into the model as a control variables. Correlations among predictor and control variables are presented in Table 1.

When computing the regression equation for age at first sexual intercourse, the results for full model proved to be significant, $F(5, 493) = 2.21$, $R^2 = 0.02$, $p = .05$ (see Table 2 for parameter estimates). Additionally, the interaction term for gender role discrepancy and discrepancy stress was significant ($b = .10$, $p < .05$). Simple slope analyses indicated that among men endorsing a high degree of gender role discrepancy, high discrepancy stress was associated with a significantly later onset of sexual intercourse ($b = .24$, $p = .05$). Conversely, men who endorsed low levels of gender role discrepancy, but a high degree of discrepancy stress, initiated sexual intercourse at significantly younger age ($b = -.28$, $p = .05$). In sum, low gender role discrepancy with high discrepancy stress resulted in younger age of onset for sexual intercourse, but high gender role discrepancy

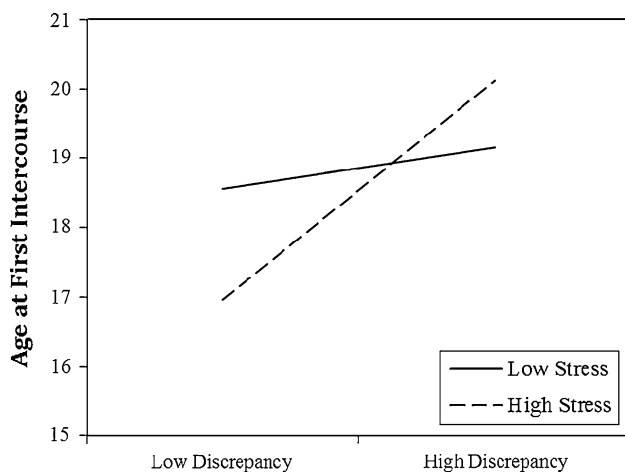


Fig. 1 Interaction between participants' perceived gender role discrepancy and discrepancy stress for age of onset for sexual intercourse

Table 3 Results of negative binomial regressions

Measure	Wald χ^2	IRR	<i>p</i>
<i>Number of sexual partners</i>			
Age	214.92	1.11	.000
Hetero/Non	27.18	2.47	.000
Discrepancy	7.24	0.84	.007
Stress	6.68	1.18	.010
Discrep \times stress	0.06	1.01	ns
<i>Unprotected sex</i>			
Age	87.28	1.07	.000
Hetero/Non	13.76	1.96	.000
Discrepancy	2.04	0.91	ns
Stress	0.97	0.93	ns
Discrep \times stress	16.79	1.24	.000
<i>Number of STDs</i>			
Age	17.27	1.07	.000
Hetero/Non	0.48	0.64	ns
Discrepancy	0.06	1.05	ns
Stress	1.01	0.81	ns
Discrep \times stress	20.46	1.55	.000

Hetero/Non = (0 = heterosexual; 1 = not heterosexual), discrepancy = gender role discrepancy, stress = discrepancy stress, discrep \times stress = interaction term

ns non-significant, IRR incident rate ratio

combined with high discrepancy stress resulted in later age of onset (see Fig. 1).

We next entered number of sexual partners as the outcome variable in a negative binomial regression. The omnibus test indicated that the model fit the data, LR $\chi^2(5) = 339.68, p < .001$. Contrary to expectation, parameter estimates for the interaction term were not significant, $\chi^2_{\text{Wald}}(1) = 0.06, p > .10, \text{IRR} = 1.01$ (see Table 3 for parameter estimates).

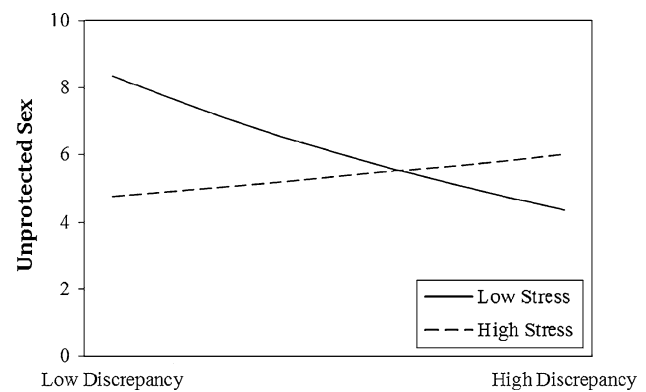


Fig. 2 Interaction between participants' perceived gender role discrepancy and discrepancy stress on the number of times men had unprotected sexual intercourse with someone with whom they were not in a relationship

However, there was a significant main effect of gender role discrepancy, $\chi^2_{\text{Wald}}(1) = 7.24, p < .01, \text{IRR} = 0.84$, indicating that men who endorsed more gender role discrepancy reported a lower number of sexual partners. Additionally, the main effect for discrepancy stress was significant in the opposite direction, $\chi^2_{\text{Wald}}(1) = 6.68, p = .01, \text{IRR} = 1.18$, indicating that men who endorsed higher levels of discrepancy stress reported a higher number of sexual partners.

We next entered instances of unprotected sexual intercourse with non-relationship partners as the outcome variable into the regression equation. The model proved to be significant LR $\chi^2(5) = 144.76, p < .001$, indicating a good fit to the data (see Table 3 for parameter estimates). Inspection of parameter estimates revealed a significant interaction between gender role discrepancy and discrepancy stress, $\chi^2_{\text{Wald}}(1) = 16.79, p < .001, \text{IRR} = 1.24$. We performed simple slope analyses to estimate the influence of discrepancy stress on unprotected sex for men above and below the mean of gender role discrepancy. Among men low on perceived gender role discrepancy, discrepancy stress was associated with fewer instances of unprotected sex, $\chi^2_{\text{Wald}}(1) = 8.44, p < .005, \text{IRR} = 0.76$. Conversely, among men who reported a high degree of gender role discrepancy, discrepancy stress was associated with a higher number of instances of unprotected sex, $\chi^2_{\text{Wald}}(1) = 4.03, p < .05, \text{IRR} = 1.18$ (see Fig. 2). Finally, we computed the regression equation with the number of diagnosed STDs entered as the outcome. Again, the full model proved to fit the data, LR $\chi^2(5) = 36.62, p < .001$, and the interaction term was significant, $\chi^2_{\text{Wald}}(1) = 20.46, p < .001, \text{IRR} = 1.55$ (see Table 3 for parameter estimates). Simple slope analysis indicated that for men low on perceived gender role discrepancy, discrepancy stress was inversely related to the number of diagnosed STDs, $\chi^2_{\text{Wald}}(1) = 5.67, p < .05, \text{IRR} = 0.54$. Conversely, men endorsing a high degree of gender role discrepancy and high discrepancy stress were diagnosed with significantly more STDs, $\chi^2_{\text{Wald}}(1) = 5.14, p < .05, \text{IRR} = 1.62$ (see Fig. 3).

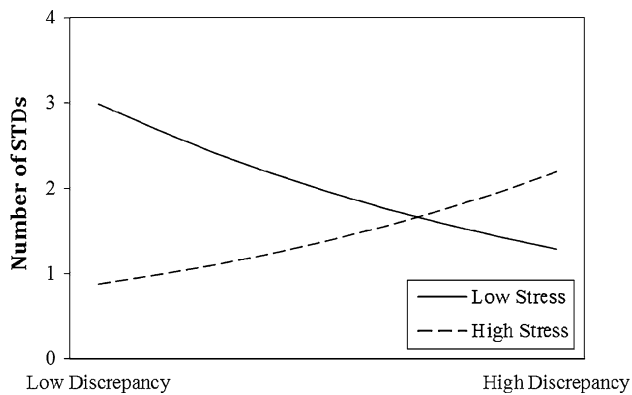


Fig. 3 Interaction between participants' perceived gender role discrepancy and discrepancy stress on the number of times they were diagnosed with a sexually transmitted disease

Discussion

The study examined the ways in which perceived gender norms may influence sexual risk-taking behavior for males. Specifically, we aimed to identify the influence of gender role discrepancy stress on high-risk sexual behavior and STDs. Results indicate that discrepancy stress does indeed play a role in sexual behavior and STD contraction; however, its influence is nuanced. Men who endorsed a high level of gender role discrepancy (i.e., being less masculine than average male) and experienced attendant distress about this discrepancy engaged in significantly more acts of unprotected sex with casual partners and were diagnosed with significantly more STDs than those who did not experience such stress. However, an additional sexual risk factor—the age of onset for sexual intercourse—was significantly later for men who endorsed gender role discrepancy and consequent discrepancy distress (see Fig. 1). The men who engaged in sexual intercourse at the earliest ages—those who reported low gender role discrepancy but high discrepancy stress—were actually the least likely to engage in unprotected sex with casual partners and had the lowest risk of being diagnosed with STDs (see Figs. 2, 3). For men who denied gender role discrepancy, an increase of one SD in discrepancy stress equated to a 46 % reduction in the rate of STD diagnoses. Conversely, for men endorsing gender role discrepancy, a one SD increase in discrepancy stress equated to 62 % increase in the incident rate of STD diagnoses. This pattern was the same for the number of times participants had unprotected sex with someone with whom they were not in a relationship. Additionally, although we did not find an interaction between gender role discrepancy and discrepancy stress, discrepancy stress was positively associated with the number of sexual partners, whereas discrepancy was inversely associated. Last, it should be noted that men who denied gender role discrepancy and attendant discrepancy stress (i.e., highly masculine men) were also at heightened risk to engage in unprotected sex with casual

partners and contract STDs. This further demonstrates the complex nature of gender socialization and its influence on health-related behaviors.

In the present sample, the men at greatest risk for STDs were those at both ends of the spectrum of gender role adherence. This has pertinent implications for primary and secondary prevention strategies. Interventions aimed at reducing the influence of gender socialization on health outcomes may not be effective if they employ a unilateral approach that attempts to move men from one extreme of the gender role spectrum to the other. Rather, effective approaches may be those that attempt to normalize the gender role experience and increase awareness of gender norms, the role they play in culture and society, and how they might influence sexual risk taking. Notably, the gender role discrepancy alone did not relate to the high-risk behavior, only in combination with stress did it translate to risk. This suggests that the mere self-perception of gender role discrepancy does not predispose one to the experience of distress. In fact, it is highly likely that there are men who consider themselves to be less masculine (i.e., nonconformist to masculine norms) than the typical man, but do not experience distress as a result. As such, gender role discrepancy does not, by itself, appear to influence sexual risk behaviors. Rather, men who place a high value on being perceived as masculine and experience attendant distress due to their perceived gender role discrepancy appear to be at greater risk for sexual risk taking and STDs.

In fact, considering the association of male gender role socialization with a number of deleterious health behaviors (e.g., Alfred, Hammer, & Good, 2013; Courtenay, 2000; Iwamoto & Smiler, 2013; Kulis, Marsiglia, & Hecht, 2002; Mahalik, Lagan, & Morrison, 2006; Mahalik, Levi-Minzi, & Walker, 2007; O'Neil, 2008; Pachankis, Westmaas, & Dougherty, 2011; Sanders, 2011), the present research may have implications for the prevention of numerous health outcomes. That is, it seems likely that men who experience discrepancy stress may be at risk to engage in a multitude of unsafe health-related behaviors (e.g., risky sexual behavior, fighting, substance use, binge drinking, risk taking, etc.) in attempt to demonstrate and equalize their perceived masculinity to that of other men. Moreover, it will likely be fruitful to investigate these factors in adolescent populations since the CDC estimates that half of all new sexually transmitted infections occur among young people aged 15–24 (CDC, 2012). It is likely that the effect of gender socialization and associated stress is greatest in the formative adolescent years and that the influence and effects sizes of discrepancy stress would be greater in this developing population. From a primary prevention perspective, the adolescent years are likely a crucial time to implement prevention strategies for health behaviors associated with gender socialization and facilitate acceptance of a balanced gender role identity. Future research might also examine discrepancy stress among African–American MSM,

as they are disproportionately affected by STDs and in consideration of the additional role of stigma, homophobia, and discrimination on this population (CDC, 2012, 2013).

The findings of the present study must be interpreted with caution for several reasons. First, the design of the present study does not allow for causal determinations about the role of discrepancy stress in high-risk sexual behavior and contraction of STDs. The current research would be augmented by future studies employing longitudinal designs in developing adolescents that would allow the assessment of temporal associations between gender role socialization, discrepancy stress, and the onset of adolescent sexual activity. Additionally, longitudinal data would preclude a number of the validity problems of retrospective recall data. Self-report measures may not accurately reflect real-world behaviors and their prevalence rates, especially in measuring STDs, as the self-reported infections have not been validated by clinical reports. Relatedly, we are unable to capture whether the STDs reported are re-infections as a result of non-adherence to treatment or new, distinct infections. Finally, a large proportion of the sample was homogenous both ethnically and in sexual orientation. It will be important to replicate these findings with at-risk and stigmatized populations.

Nevertheless, the present research adds to the extant literature and has pertinent implications for understanding and preventing men's risky sexual behavior and subsequent risk for STD. These data suggest that prevention efforts for men's contraction of STDs should, in part, focus on the role of masculine socialization, acceptance of these norms, and how they may engender distress in adolescent and adult males.

Appendix

Masculine Gender Role Discrepancy Stress

Directions: Please indicate your feelings about each statement by circling one number between **1** (Strongly Agree) and **7** (Strongly Disagree).

1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7
Strongly Agree Agree Neutral Disagree Strongly Disagree

1. I am less masculine than the average guy.
2. Compared to my guy friends, I am not very masculine.
3. I wish I was more "manly."
4. Most women I know would say that I am not as masculine as my friends.
5. I wish I was interested in things that other guys find interesting.
6. Most women would consider me to be less masculine than the typical guy.
7. I worry that people judge me because I am not like the typical man.

8. Most guys would think I am not very masculine compared to them.
9. Sometimes I worry about my masculinity.
10. I worry that women find me less attractive because I'm not as macho as other guys.

Gender Role Discrepancy Scale = items 1, 2, 4, 6, and 8
Discrepancy Stress Scale = items 3, 5, 7, 9, and 10

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