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Too Pretty for Homework: The Academic Correlates of Sexualized Gender Stereotypes Among Adolescent Girls

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TOO PRETTY FOR HOMEWORK:
THE ACADEMIC CORRELATES OF SEXUALIZED GENDER STEREOTYPES
AMONG ADOLESCENT GIRLS

THESIS

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in Experimental Psychology
in the College of Arts and Sciences
at the University of Kentucky

By

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Lexington, Kentucky

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2017

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ABSTRACT OF THESIS

TOO PRETTY FOR HOMEWORK: THE ACADEMIC CORRELATES OF SEXUALIZED GENDER STEREOTYPES AMONG ADOLESCENT GIRLS

Girls grow up in a culture of ubiquitous female sexualization, and this culture propagates stereotypes that could interfere with their academic outcomes. The current study examined the academic correlates of these sexualized gender stereotypes (SGS) among early adolescent girls. Girls ($N = 99$) aged 11 to 14 ($M_{\text{age}} = 12.4$ years, $SD = .57$ years) completed a survey assessing their academic performance, attitudes, and beliefs. The survey also assessed the degree to which girls believed that boys and girls should act in accordance with these sexualized gender stereotypes. Results indicated that higher endorsement of sexualized gender stereotypes was associated with lower academic performance, more negative academic attitudes, and less adaptive approaches to learning. Implications for girls' academic trajectories are discussed.

KEYWORDS: gender stereotypes, sexualization, academic outcomes, adolescents, developmental psychology

Andrew Arthur Nelson

April 19th, 2017

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To good friends—
here, there, and everywhere.

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CHAPTER 1

Introduction

“Allergic to Algebra”

“I’m too pretty to do homework so my brother has to do it for me”

-- Text from adolescent girls’ T-shirt sold at JCPenney and Abercrombie and Fitch, respectively

As conveyed by the captions above, girls remain targeted by stereotypes that deride their academic identity and abilities. Although gender gaps are narrowing within science, technology, engineering, and mathematics (STEM), the assumption that girls innately lack high-level math ability continues to persist (AAUW, 2010). This assumption is often coupled with the message that girls should not enjoy or even value math; instead, they are (as indicated by the T-shirts) “allergic” to it. Indeed, both boys and girls still endorse this “math-gender stereotype” (e.g., Steffens, Jelenec, & Noack, 2010). As such, growing concerns about women’s underrepresentation in STEM have spurred a comprehensive body of work on the math-gender stereotype and its consequences (e.g., Cvencek, Meltzoff, & Greenwald, 2011).

Meanwhile, a broader—and equally pervasive—academic stereotype remains largely unexplored in the literature. Girls and women live in a culture of ubiquitous sexualization, where both the sexual objectification of women and the inappropriate sexualization of girls is commonplace (APA, 2007). This culture is built upon a constellation of “sexualized gender stereotypes” (Ward, 2002), which constrain the ways in which boys and girl should behave and interact with each other. Specifically, girls are taught that their value comes from their sexual appeal alone (Jewell & Brown, 2013;

Ward, 2002). More acutely, girls are confronted with the stereotype that they should (a) enhance their social status by prioritizing physical attractiveness (which necessitates being highly sexualized), and that (b) they should do so while downplaying other competing traits, like intelligence (Brown & Stone, 2016; Stone, Brown, & Jewell, 2015). In essence, this culture of sexualization encourages girls to be “too pretty for homework.” Simultaneously, boys are taught to objectify and singularly value girls for their sexual appeal, rather than their personality or intelligence, and to focus on the sexual pursuit of girls, rather than friendship (Brown & Stone, 2016; Ward, 2002). This reinforcement from boys further supplements the cultural messages to girls about the relative importance and value of sexualized attractiveness over intelligence.

Like the math-gender stereotype, these sexualized gender stereotypes may have ramifications for girls’ academic performance and self-concept. Investigations into these effects, however, remain sparse within the extant literature (for exceptions, see McKenney & Bigler, 2014 and Pacilli, Tamassetto, & Cadinu, 2016). In response to this dearth of research, the current study examined whether girls’ endorsement of sexualized gender stereotypes (SGS) might be related to more deleterious academic outcomes.

The Culture of Female Sexualization

The American Psychological Association’s Task Force on the Sexualization of Girls (2007) suggests that sexualization occurs when: (a) a person’s value is derived solely from his or her sexual appeal; (b) a person’s physical attractiveness is equated with being sexy; (c) a person is sexually objectified, meaning that they are made into an object for others’ sexual pleasure; or (d) when sexuality is inappropriately imposed onto someone (APA, 2007). Although instances of sexualization often involve several of these

conditions, each one of these conditions alone is sufficient to constitute sexualization (APA, 2007). For example, occasions of sexualization frequently include objectification (e.g., pornography), however objectification is not required for sexualization to occur. While both boys and girls can be sexualized, the sexualization of girls is far more pervasive than the sexualization of boys (APA, 2010). Female sexualization is also a critical foundation of contemporary sexism (e.g., Ward, 2016), so it is the focus of the current study.

This culture of female sexualization is predominantly circulated through media (Ward, 2016), while influences from family (e.g., Starr & Ferguson, 2012) and peers (e.g., Tiggemann & Slater, 2015) further reinforce these messages. Media depictions of sexualization are pervasive, as they simultaneously expose young girls to images of sexualized women while also depicting girls in a sexualized manner. For instance, half of all young adult female characters in prime time television are sexually objectified (Smith, Choueiti, Prescott, & Pieper, 2012), and nearly three-quarters of music videos released by female artists contain at least one component of sexualization (Frisby & Aubrey, 2012). Similar rates of sexualization can be found online (Lambiase, 2003), in magazines (Graff, Murnen, & Krause, 2013), and even in video games (Burgess, Stermer, & Burgess, 2007). Considering that the average adolescent spends about 53 hours each week engaged with entertainment media (Rideout, Foehr, & Roberts, 2010), the developmental consequences of sexualization are especially worthy of study.

Sexualized Gender Stereotypes and Their Academic Correlates

As noted earlier, media depictions rely on sexualized gender stereotypes (SGS) to communicate this culture of sexualization. These stereotypes are well-situated within

Kim et al.'s (2007) notion of a "heterosexual script." Using Simon and Gagnon's (1986) scripting theory, Kim and colleagues (2007) analyzed sexualized content in primetime television and subsequently identified a heterosexual dating script being transmitted to viewers. Most generally, this heterosexual script dictates what is considered normal and appropriate in heterosexual relationships. More specifically, the script frequently portrays male characters in the aggressive pursuit of sex, whereas female characters are often portrayed as eager for sexual attention and objectification.

These subscripts are at the core of sexualized gender stereotypes. Just as the heterosexual script regulates norms for men and women's sexual behavior (Kim et al., 2007), sexualized gender stereotypes are prescriptive and proscriptive messages about how boys and girls should behave and interact with one another (Jewell & Brown, 2013; Ward, 2002). Boys and men are taught to prioritize their sexual agency and pursuit of girls/women. Girl and women, on the other hand, are taught to prioritize their sexual attractiveness *for* boys/men. Because of their gendered content, each of these stereotypes reinforces the other. For example, the more girls believe that boys should be sex-focused, the more likely they are to accommodate this stereotype by prioritizing their own sexual appeal. Thus, while each sexualized gender stereotype offers specific guidelines for the behaviors of boys and girls, they function collectively to maintain a culture of sexualization of girls.

For girls, the implications of this particular sexualized gender stereotype are far-reaching (Stone et al., 2015). Girls learn that their self-worth is solely contingent upon their sexualized attractiveness to boys (Stone et al., 2015). By prioritizing a sexualized appearance, girls also learn to deprioritize other traits that seem incompatible with

sexiness. Consequently, traits such as intelligence are easily devalued, as the “pretty girl” prototype glorified by this sexualized culture is seen as incompatible with being a “smart girl” (Brown & Stone, 2016).

Consistent with this stereotype, research repeatedly finds that sexualized women and girls are perceived as less intelligent than their nonsexualized counterparts. Glick and colleagues (2005) originally discovered that a high-status woman presented in a sexualized way received lower competence and intelligence ratings by observers than those who were not sexualized. Additional work has replicated this finding with targets and perceivers of various ages. For instance, Stone, Brown, and Jewell (2015) found that many elementary school-aged girls perceived similarly-aged sexualized girls as either unintelligent or as deliberately downplaying their intelligence. When viewing a Facebook profile picture of a similarly-aged girl, adolescent girls rated sexualized peers as less competent than their nonsexualized peers (Daniels & Zurbriggen, 2014). Even adults judged early adolescent sexualized girls as less competent and less intelligent than nonsexualized girls (Graff, Murnen, & Smolak, 2012).

Despite this perceived association between being sexualized and having poor academic abilities, girls often aspire to be sexualized. One reason that girls maintain this aspiration is that media frequently depicts the social rewards bestowed upon sexualized women. For instance, self-sexualization is often presented as a legitimate way of attracting a romantic partner or cultivating peer acceptance (Murnen & Smolak, 2013). In other words, girls comprehend sexualization as a means to popularity, even though this popularity comes at the cost of lower perceived competence (Stone et al., 2015).

Furthermore, two existing studies suggest that these sexualized messages are related to girls' own academic underperformance. For example, McKenney and Bigler (2015) revealed that girls who reported high levels of internalized sexualization demonstrated lower academic performance in both their grades (in math, language arts, science, and social studies) and standardized test scores compared to girls with lower levels of internalized sexualization. Furthermore, in a lab-based procedure that asked girls to freely prepare before giving a mock newscast, those who scored high in internalized sexualization spent more time applying makeup and less time practicing before the newscast than girls who scored low in internalized sexualization (McKenney & Bigler, 2015). Further, a recent study conducted in Italy found that girls who saw pictures of sexualized girls subsequently performed worse on a math task and a test of working memory than girls who saw pictures of nonsexualized girls (Pacilli, Tomasetto, & Cadinu, 2016).

Taken together, the findings above suggest that (1) stereotypes about sexualized girls include the perception that sexualized girls are not intelligent, and (2) girls who endorse these sexualized gender stereotypes show worse academic performance than girls who do not endorse such stereotypes. These findings are consistent with other work indicating that the activation of gender stereotypes leads individuals to self-stereotype and behave in stereotype-consistent ways (Bem, 1981; Chiu et al., 1998; Hogg & Turner, 1987). In other words, individuals seem to think and behave in accordance with their stereotypes, even when those stereotypes apply to themselves.

Other Academic Costs: Values, Beliefs, Motivations, and Performance

Although research has shown that sexualized gender stereotypes can impact girls' immediate academic performance, research has yet to detail if these stereotypes might be more generally related to girls' academic values, beliefs, and motivations. We believe that examining these relationships is critical to completely understanding how sexualized gender messages might interfere with girls' academic self-concept.

Indeed, research situated within Wigfield and Eccles' expectancy-value model (Wigfield & Eccles, 2000) indicates that children's academic expectations and values are robust predictors of their performance, persistence, and choices within various domains (for a review, see Wigfield & Cambria, 2010). According to this model, academic expectations and values are continually shaped by domain-specific beliefs about competence, perceptions of difficulties, and feelings of enjoyment (Wigfield & Cambria, 2010). For example, if a child feels competent in a domain and also finds the domain enjoyable, they are more likely to value that domain and expect to do well in it. In turn, as the child develops more positive expectations and values about that domain, they are more likely to persist and achieve in the domain over time (e.g., in math; Marsh, Köller, Trautwein, Lüdtke, & Baumert, 2005).

These domain-specific beliefs are also linked to children's approaches to learning (i.e., achievement goal orientations; for a review, see Maehr & Zusho, 2009). Some students approach learning with a "mastery goal orientation," meaning that they are motivated by a desire to cultivate and master skills. This mastery goal orientation is consistently associated with numerous positive learning outcomes, including increased academic enjoyment (e.g., Ames & Archer, 1988). On the other hand, students can approach learning with a "performance orientation." Some of these students are

motivated to appear more competent than their peers (i.e., performance-approach orientation), while others are motivated to *not* appear incompetent in front of peers (i.e., performance-avoid orientation). An orientation toward performance goals is not about learning or mastering skills, but rather focused on performing well relative to others. Performance goal orientations are less frequently linked to positive academic outcomes, and some research even finds these orientations to be associated with maladaptive outcomes (e.g., lower perceptions of enjoyment and competence; Ames & Archer, 1988).

In light of these findings, any potential relationships between girls' endorsement of sexualized gender stereotype and negative academic beliefs could be especially worthy of concern. Girls who endorse these stereotypes may not only suffer immediate performance decrements, but they may be more likely to disengage from school and eventually opt out of rigorous academic trajectories. Furthermore, it seems possible that sexualized gender stereotypes may be associated with more problematic achievement goal orientations, particularly those that focus on public performance rather than mastery (as this values the public appearance rather than intrinsically-driven learning). Further, because sexualized gender stereotypes suggest that girls should be sexualized rather than intelligent (Stone et al., 2015), girls who endorse these stereotypes may try to downplay their interest in learning and academic achievement. These academic attitudes are important as they may affect girls' long-term academic choices. To begin evaluating these relationships, we assessed participants' domain-specific beliefs (in both math and language arts domains), as well as their domain-general beliefs about school and achievement goal orientations.

The Current Study

Using a survey methodology, the current study extended previous work by investigating the academic correlates of sexualized gender stereotypes (SGS) among early adolescent girls. While much of the existing research examined math outcomes specifically, we assessed domain-specific outcomes in both math *and* language arts. We also assessed girls' domain-general academic beliefs and approaches to learning. To measure girls' SGS endorsement, we assessed the degree to which girls believed that boys and girls should act in accordance with sexualized gender stereotypes. In particular, we examined girls' beliefs that girls should be primarily concerned with their sexual appeal and that they should expect boys to also primarily value them as sexualized objects.

Overall, we hypothesized that higher SGS endorsement would be associated with worse domain-specific *and* domain-general academic outcomes. Specifically, we hypothesized that higher SGS endorsement would be associated with: (1) lower domain-specific academic performance (as measured by scores on a math and language arts standardized test); (2) more negative domain-specific academic attitudes (i.e., lower perceived competence in, less enjoyment of, and more perceived difficulty of math and language arts); (3) more negative domain-general beliefs about school (i.e., more skeptical about the value of school, lower perceived efficacy about academic abilities, and a greater tendency to present oneself as a low academic achiever); and (4) less adaptive approaches to learning (i.e., lower desire to master skills and concepts).

We conducted the current study with early adolescent girls because they are at a particular risk of these sexualized gender messages. First, early adolescence marks the beginning of puberty, when sexuality becomes more salient for both boys and girls. As

such, girls may attempt to cultivate their own sexual attractiveness, and thus internalize these sexualized standards in an effort to appear attractive to others. Second, because adolescence represents a critical period for identity formation, early adolescent girls are prone to integrating aspects of female sexualization into their understanding of gender roles as well as their own self-concept (Else-Quest & Hyde, 2009). This may lead to early adolescent girls' internalization of these sexualized standards at higher rates than girls of other ages (McKenney & Bigler, 2014).

CHAPTER 2

Method

Participants

We collected data from seventh-grade girls ($N = 99$) attending four public middle schools in Central Kentucky. All participants reported being between the ages of 11 and 14 ($M_{\text{age}} = 12.4$ years, $SD = .57$ years), with 96% of students being between the ages of 12 and 13. Data collection was approved by the authors' university Institutional Review Board (IRB) and permitted by principals at each school. Across all four schools, average enrollment during the 2015-2016 school year was 662 students. An average of 110 seventh-grade girls was enrolled at each school during this time. To incentivize participants to return these forms, all students who returned signed consent forms—regardless of parental approval or disapproval of participation—were entered into a drawing for a \$50 Amazon gift card. Consent rates were low at some of the schools, ranging from 15-53% across schools. Importantly, consent rates were consistent with the expectations of the principals, who noted their own difficulties with getting forms signed

and returned. Very few parents actively declined participation (and low consent rates seemed to be driven by students failing to return signed forms).

Our sample demonstrated considerable ethnic and socioeconomic diversity. Although nearly half of all participants identified as White/European American (45%), sizable portions of our sample reported being Latina/Hispanic (22%), Black/African American (19%), and multiracial (most of which identified as Black/White and Latina/White; 13%). The remainder of our sample identified as Asian (1%). All middle schools also reported having at least half of their students on free or reduced lunch, with a range of 49-85% of students qualifying for assistance. The racial/ethnic composition of participants from each school was largely representative of the school's racial/ethnic composition as a whole.

Procedure

We distributed parental consent forms to students one week prior to data collection. The consent forms included a study description, sample survey items, and information about the study incentive. Once students returned signed parental consent forms, research assistants inquired about the students' own assent. Only students with parental consent and personal assent participated in the study.

Once the study session commenced, all participants received a study packet comprised of numerous self-report measures. Not all materials included in the packet were pertinent to the current study, so we only detail applicable measures below. The study was completed in participants' respective classrooms (when a majority of the class was participating) or in the school library/cafeteria (when only a few students from a class were participating). To ensure a quiet working environment, fellow classmates who

did not obtain parental consent or did not assent themselves worked quietly at their desks. Research assistants also monitored each classroom to ensure that participants stayed on task and did not share answers with one another. We treated all participants according to APA ethical standards.

Measures

We administered academic measures to participants first. The first set of academic measures was domain-specific, which focused on math and language arts outcomes. Specifically, this set of measures assessed participants' (a) performance on a math and language arts standardized test, and (b) their academic attitudes about math and language arts. The second set of academic measures assessed participants' domain-general academic beliefs and their approaches to learning. Following the academic measures, children completed the sexualized gender stereotypes measure.

Domain-Specific Measures: Performance. To assess domain-specific performance, the study packet began with 30-item multiple choice test adapted from the seventh grade Keystone National School placement exam (The Keystone School, 2013). Questions alternated between 15 math and 15 language arts items, with each math question being followed by a language arts question. Participants were given 12 minutes to complete as many items as they could. The assessment's instructions notified participants that they would receive one point for every correct answer and lose one-fourth of a point for any incorrect answers (to minimize guessing). The instructions also allowed participants to skip questions without penalty, as they could return to them later in the testing period. Based on these responses, scores were calculated for (1) the number

of math items each participant answered correctly (ranging from 0-15), and (2) the number of language arts items each participant answered correctly (ranging from 0-15).

Domain-Specific Measures: Attitudes. To assess attitudes about math and language arts, we used a selection of six items from Wigfield and Eccles' (2000) expectancy-value model. These items measured students' ability beliefs about certain academic domains. Specifically, participants reported how much they *enjoy* math/language arts, how *good* they are at math/language arts, and how *difficult* they find math/language arts. Responses ranged from 1 (*Not at all*) to 7 (*Extremely*).

Domain-General Measures: Academic Beliefs. To assess broadly assess participants' academic beliefs and strategies, we employed three different subscales (18 items total) from the Patterns of Adaptive Learning Scales (PALS; Midgley et al., 2000). One scale measured academic efficacy, particularly in terms of class work ($\alpha = .87$; e.g., "I'm certain I can figure out how to do the most difficult class work"). Another scale measured participants' self-presentation of low achievement. Specifically, it measured the degree to which students present their own academic achievement as lower than it actually is ($\alpha = .82$; e.g., "I would avoid participating in class if it meant that other students would think I know a lot"). The final subscale measured how skeptical students are about school's relevance to future success ($\alpha = .89$; e.g., "Even if I am successful in school, it won't help me fulfill my dreams). All responses ranged from 1 (*Strongly disagree*) to 4 (*Strongly agree*).

Domain-General Measures: Approaches to Learning. To further assess the ways in which participants approach learning, we employed three additional subscales (14 items total) from the PALS (Midgley et al., 2000). These subscales gauged different

achievement goal orientations among students (e.g., Maehr & Zusho, 2009). One scale measured the degree to which participants strive for mastery of class material ($\alpha = .92$; e.g., “One of my goals in class is to learn as much as I can”). Conversely, two scales measured the degree to which participants have adopted other, more “maladaptive” achievement orientations (Midgley et al, 2000). These scales measured participants’ performance-approach orientation to appear competent ($\alpha = .86$; e.g., “One of my goals is to show others that I’m good at my class work”) and their performance-avoid orientation to *not* appear incompetent ($\alpha = .78$; e.g., “It’s important to me that I don’t look stupid in class”). Responses ranged from 1 (*Strongly disagree*) to 4 (*Strongly agree*).

Sexualized Gender Stereotypes. To assess girls’ endorsement of sexualized gender stereotypes, participants completed the Attitudes about Dating and Sexual Relationships Scale (ADSR; Ward, 2002), as adapted by Jewell, Brown, and Perry (2015) for a younger sample. The original ADSR includes several items that explicitly ask about sex; the adapted version of the ADSR includes altered items that reference more age-relevant behaviors, such as “flirting” or “dating.” In particular, we employed two subscales (12 items total) that were most closely aligned with the primary themes of sexualized gender stereotypes. Participants rated the degree to which: (a) girls should prioritize their sexualized attractiveness over other traits (e.g. “Girls should spend a lot of time trying to be pretty, no one wants to date a girl who doesn’t try to look pretty.”; “Girls should be more concerned about their appearance than boys.”; “Using her body and looks is the best way for a girl to attract a boy.”), and (b) boys should primarily focus on girls’ sexual appeal (e.g. “It is natural for a boy to want to admire or look at girls and to comment on their bodies, even if he has a girlfriend”; “Boys are always thinking about

dating girls.”; “Boys who can date any girl are cool.”). As described above, we opted for the inclusion of both subscales, as girls’ beliefs about boys (e.g., “boys are sex-driven”) motivates and reinforces their beliefs about girls (e.g., “girls should prioritize their appearance”). Responses ranged from 1 (*Strongly disagree*) to 4 (*Strongly agree*), with higher scores indicating more stereotypic endorsement ($\alpha = .76$).

CHAPTER 3

Results

Bivariate correlations, along with means and standard deviations, for each variable are presented in Tables 3.1 and 3.2. These correlations indicated that, as hypothesized, girls’ higher endorsement of sexualized gender stereotypes was generally related to worse academic performance and attitudes.

Preliminary analyses also indicated that there were ethnic differences in academic outcomes and attitudes and sexualized gender stereotypes. Importantly, there were no significant interactions between SGS endorsement and ethnicity for any of our academic variables (i.e., it did not moderate the relationship between stereotypes and academics). Unfortunately, cell sizes would have been unacceptably small and unbalanced if ethnicity was included in the key analyses. In addition, we held no *a priori* hypothesis about ethnicity. Ethnicity was, therefore, excluded from the primary analyses, but the supplemental results involving ethnicity can be found in the Appendix. Because of these main effect differences, caution should be taken in generalizing our findings across all ethnic groups.

To evaluate our hypotheses, we used an analyses of covariance (ANCOVA) framework. For each test, girls’ endorsement of sexualized gender stereotypes was

treated as a continuous variable (i.e., a covariate). Mathematically similar to regression analyses, this statistical approach allowed us to preserve the continuous variable while comparing scores across domains (e.g., with a repeated-measures ANCOVA, with domain as the within-subjects variable) and to control for correlated dependent variables (e.g., with a MANCOVA for the domain-general measures).

Domain-Specific Performance. First, we predicted that girls' endorsement of sexualized gender stereotypes would be associated with worse math and language performance on the academic assessment. To examine this hypothesis, we conducted a repeated-measures ANCOVA, in which performance scores on the two domain-specific (i.e., math and language arts) academic assessments were entered as the repeated-measures dependent variables. Girls' endorsement of sexualized gender stereotypes was entered as the covariate. Results indicated a significant main effect of stereotype endorsement on academic performance, $F(1,97) = 24.25, p < .001, \eta^2 = .20$. There were no differences across domain. To further assess the nature of this main effect, we compared girls who more strongly endorsed sexualized gender stereotypes (i.e., ≥ 1 SD *above* the mean) to those who less strongly endorsed these stereotypes (i.e., ≥ 1 SD *below* the mean) (see Figure 3.1). Examination of means revealed that strong stereotype endorsers, relative to weak stereotype endorsers, reported lower math performance ($M = 3.71, 7.67$, respectively) and lower language arts performance ($M = 5.77, 8.44$, respectively). This effect supported our first hypothesis: girls who more strongly endorsed SGS showed lower performance on math and language arts performance relative to girls who less strongly endorsed SGS.

Domain-Specific Attitudes. Second, we predicted that girls' endorsement of sexualized gender stereotypes would be associated with more negative attitudes about math and language arts. To examine this hypothesis, we conducted a repeated-measures MANCOVA, in which ratings on all domain-specific attitudes (i.e., competence, difficulty, and enjoyment) were entered as dependent variables, with the domain being the within-subjects variable. Girls' endorsement of sexualized gender stereotypes was entered as a covariate. Results indicated a significant main effect of stereotype endorsement on domain-specific academic attitudes, $F(3,95) = 5.91, p < .01, \eta^2 = .16$. Univariate analyses further indicated that the effect of stereotype endorsement was significant for girls' ratings of competence, $F(1,97) = 5.40, p < .05, \eta^2 = .05$, ratings of difficulty, $F(1,97) = 15.78, p < .001, \eta^2 = .14$, and ratings of enjoyment, $F(1,97) = 7.26, p < .01, \eta^2 = .07$. Examination of means revealed that strong stereotype endorsers, relative to weak stereotype endorsers, reported lower competence ratings ($M = 4.53, 4.92$, respectively), greater difficulty ratings ($M = 3.91, 2.75$, respectively), and lower enjoyment ratings ($M = 4.21, 5.11$ respectively) across math and language arts (see Figure 3.2). This effect supported our second hypothesis: girls who more strongly endorsed SGS showed more negative academic attitudes about math and language arts relative to girls who less strongly endorsed SGS.

Domain-General Academic Beliefs. Third, we predicted that girls' endorsement of sexualized gender stereotypes would be associated with more negative domain-general beliefs about school and learning. To examine this hypothesis, we conducted a MANCOVA where ratings of academic efficacy, presentations of low achievement, and skepticism towards school were included as dependent variables. Girls' endorsement of

sexualized gender stereotypes was entered as a covariate. Results indicated a significant multivariate main effect of stereotype endorsement on domain-specific academic attitudes, $F(3,94) = 5.58, p < .01, \eta^2 = .15$. Univariate analyses further indicated that the effect of SGS was significant for presentations of low achievement, $F(1,96) = 15.68, p < .001, \eta^2 = .14$, and skepticism towards school $F(1,96) = 10.69, p < .01, \eta^2 = .10$. The main effect for academic efficacy was not significant. Examination of means revealed that strong stereotype endorsers, relative to weak stereotype endorsers, reported more skepticism towards school ($M = 2.25, 1.62$, respectively) and more presentations of low achievement ($M = 2.10, 1.51$, respectively) (see Figure 3.3). These effects largely supported our third hypothesis: girls who more strongly endorsed SGS showed more negative domain-general academic attitudes relative to girls who less strongly endorsed SGS.

Domain-General Approaches to Learning. Finally, we predicted that girls' endorsement of sexualized gender stereotypes would be associated with less adaptive approaches to learning. To examine this hypothesis, we conducted a MANCOVA where girls' achievement goal orientations—specifically, their mastery goal orientation, performance-approach goal orientation, and performance-avoid goal orientation—were entered as dependent variables. Girls' endorsement of sexualized gender stereotypes was entered as a covariate. Results indicated a significant multivariate main effect of stereotype endorsement on girls' approaches to learning, $F(3,94) = 3.06, p < .05, \eta^2 = .09$. Univariate analyses indicated that this effect of SGS was significant for girls' performance-approach orientation, $F(1,96) = 5.94, p < .05, \eta^2 = .06$. The main effects for girls' mastery goal orientation and performance-avoid orientation were not significant.

Examination of means revealed that strong stereotype endorsers, relative to weak stereotype endorsers, reported a higher performance-approach orientation ($M = 2.45$, 2.13 , respectively) (see Figure 3.4). Overall, these findings lend mixed support to our hypothesis. We expected that girls' stronger SGS endorsement would be associated with a lower mastery goal orientation; instead, girls' stronger SGS endorsement was associated a stronger performance-approach orientation.

Table 3.1. Correlations Between Sexualized Gender Stereotype Endorsement and Domain-Specific Academic Outcomes

Measure	M(SD)	1	2	3	4	5	6	7	8	9
1. SGS Endorsement	2.13(.50)	-	-.45**	-.23*	.28*	-.15	-.34*	-.12	.26*	-.20*
2. MA Performance	4.84(3.26)	-	-	.44**	-.33*	.24	.58**	.13	-.08	.14
3. MA Competence	4.51(1.18)	-	-	-	-.54**	.62**	.15	.17	-.06	-.01
4. MA Difficulty	3.66(1.55)	-	-	-	-	-.60**	.09	.13	.04	.12
5. MA Enjoyment	4.03(2.06)	-	-	-	-	-	-.20	-.28*	.15	-.12
6. LA Performance	6.98(2.80)	-	-	-	-	-	-	.38**	-.12	.23*
7. LA Competence	4.81(1.33)	-	-	-	-	-	-	-	-.48**	.66**
8. LA Difficulty	2.98(1.53)	-	-	-	-	-	-	-	-	-.42
9. LA Enjoyment	4.75(1.81)	-	-	-	-	-	-	-	-	-

Note. Abbreviations: SGS = Sexualized Gender Stereotypes; MA = Math; LA = Language Arts. * $p < .05$, ** $p < .001$.

Table 3.2. Correlations Between Sexualized Gender Stereotype Endorsement and Domain-General Academic Outcomes

Measure	M(SD)	1	2	3	4	5	6	7
1. SGS Endorsement	2.13(.50)	-	-.14	.24*	.17	-.04	.38**	.32*
2. Mastery Goal Orientation	3.56(.62)	-	-	.15	-.04	.45**	-.03	-.20
3. Performance Approach Orientation	2.38(.84)	-	-	-	.53**	-.12	.35*	.21*
4. Performance Avoid Orientation	2.46(.86)	-	-	-	-	-.12	.41**	.28*
5. Academic Self-Efficacy	3.26(.67)	-	-	-	-	-	.05	-.13
6. Presentations of Low Achievement	1.84(.71)	-	-	-	-	-	-	.65**
7. Skepticism Towards School	1.75(.84)	-	-	-	-	-	-	-

Note. Abbreviations: SGS = Sexualized Gender Stereotypes. * $p < .05$, ** $p < .001$.

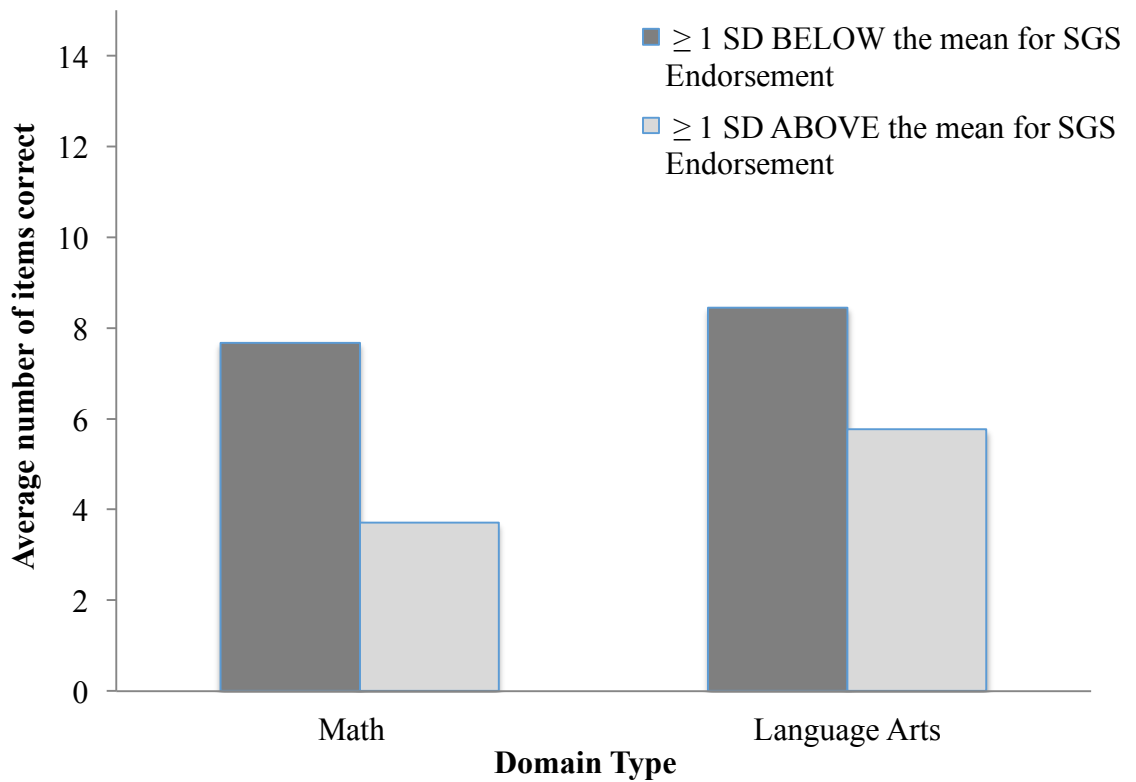


Figure 3.1. Mean differences in math and language arts performance as a function of girls' sexualized gender stereotype (SGS) endorsement.

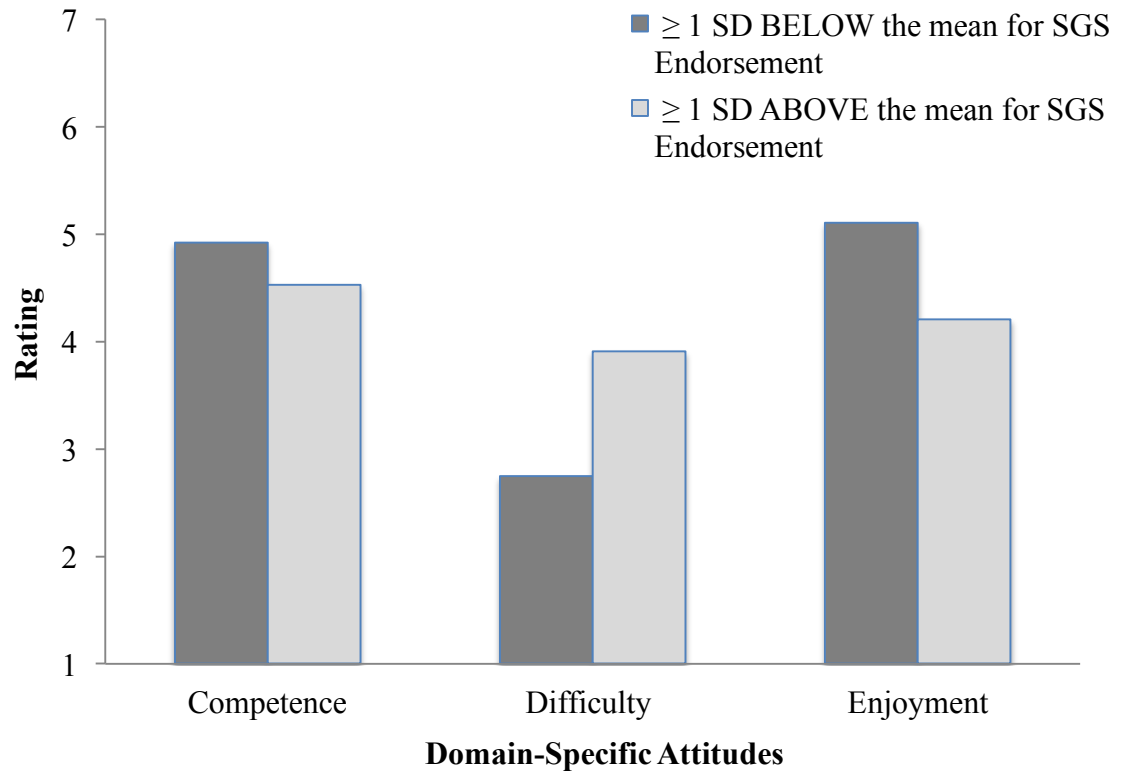


Figure 3.2. Mean differences in domain-specific attitudes as a function of girls' sexualized gender stereotype (SGS) endorsement.

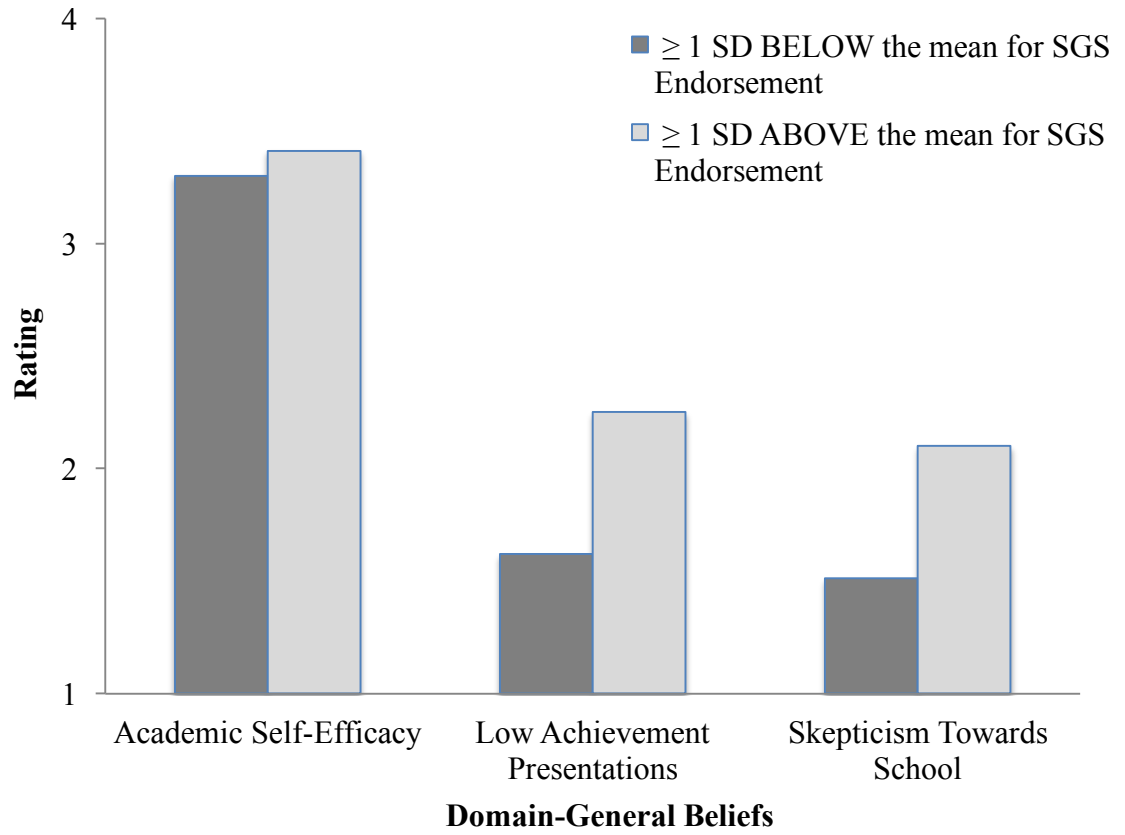


Figure 3.3. Mean differences in domain-general beliefs as a function of girls' sexualized gender stereotype (SGS) endorsement.

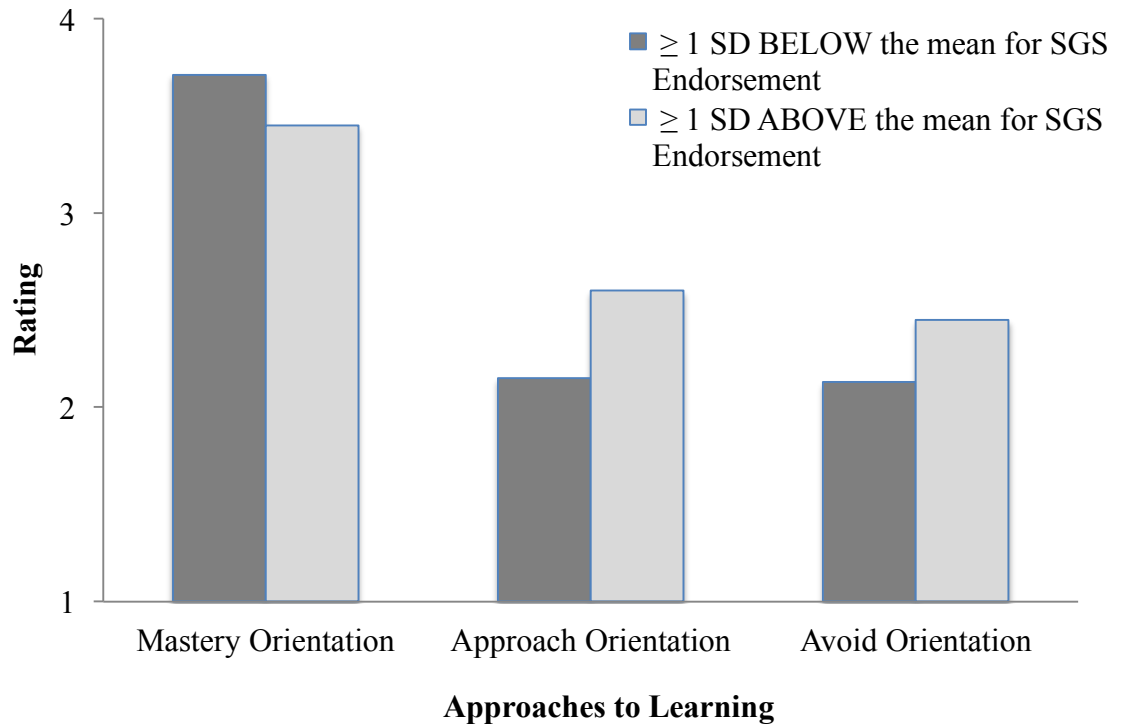


Figure 3.4. Mean differences in approaches to learning as a function of girls' sexualized gender stereotype (SGS) endorsement.

CHAPTER 4

Discussion

The current study investigated the academic correlates of sexualized gender stereotypes (SGS) among early adolescent girls. As predicted, our results broadly suggest that girls' endorsement of sexualized gender stereotypes is related to worse academic performance and attitudes. Specifically, findings from this study indicate that SGS endorsement was related to: (1) worse performance on a math and language arts standardized test, (2) more negative attitudes about math and language arts, (3) more skepticism about the utility of school and a greater inclination to avoid appearing smart, and (4) less adaptive approaches to learning.

First, results indicated that girls' endorsement of sexualized gender stereotypes was related to worse academic performance in both math and language arts. Girls who more strongly endorsed sexualized gender stereotypes (i.e., ≥ 1 SD *above* the mean) scored approximately 3.5 points worse on both tests compared to girls who less strongly endorsed these stereotypes (i.e., ≥ 1 SD *below* the mean). These differences translate to a 26% lower math score and 18% lower language arts score for high versus low stereotype endorsers. Said differently, these effects are equivalent to a difference of roughly two letter grades (e.g., from an A to a C) on an actual academic test.

These results confirm and extend past research linking sexualized gender stereotypes and academic performance. While previous studies have linked sexualized gender stereotypes with lower math performance (e.g., McKenney & Bigler, 2015; Pacilli et al., 2016), the current findings further indicate that girls who endorse these sexualized messages may also perform worse in language arts—a field that they are typically

depicted as excelling in (e.g., Schunk & Pajares, 2001). Thus, beyond the typical achievement gap in which girls underperform relative to boys in STEM domains (NCES, 2013), the current findings suggest that there may be a *within-gender* achievement gap among girls. Girls who believe that girls should be valued for their sexualized appeal to boys performed worse academically, regardless of the subject matter, than girls who eschew those stereotypes.

Moreover, we extend past research by also examining girls' *attitudes* about math and language arts. Consistent with their performance, girls' endorsement of sexualized gender stereotypes was also associated with more negative domain-specific academic attitudes. Specifically, as girls' more strongly endorsed sexualized gender stereotypes, the more difficult and less enjoyable they perceived math and language arts to be. In addition, as endorsement of sexualized gender stereotypes increased, girls' perceived competence in both domains also decreased. These lowered perceptions of abilities are aligned with girls' worse performance in both domains, and the congruence of these findings is consistent with Wigfield and Eccles' (2000) expectancy-value model. The expectancy-value model contends that students' academic performance is related to their expectations, ability-related beliefs, and task values (e.g., Marsh, Köller, Trautwein, Lüdtke, & Baumert, 2005). If children expect to succeed in an academic domain and also value that domain (i.e., they think it is important, useful, and enjoyable), they are more likely to persist and achieve in that domain over time. Reciprocally, performing well in that domain can boost ability-related beliefs and values (e.g., Marsh et al., 2005). In other words, these domain-related attitudes are critical components of a person's academic identity and trajectory. The current study suggests that sexualized gender stereotypes

(which incorporate the belief that girls should value a sexualized appearance over intelligence) may impact each component of the expectancy-value model of academic achievement.

Beyond these domain-specific effects, sexualized gender stereotypes were also associated with more negative domain-general academic attitudes. The more girls endorsed sexualized gender stereotypes, the more skeptical they were about education's importance in their lives. Stereotype endorsement was also positively related to girls' tendency to downplay their intelligence in class. In other words, these sexualized gender messages are associated with thinking and behavior that could disrupt girls' education. Not only might the endorsement of these messages interfere with girls' classroom participation (e.g., not raising their hand even when they know the answer to a question), but it may also contribute to girls' devaluation of schooling altogether.

Relatedly, there was an association between girls' sexualized gender stereotypes and their approaches to learning. Counter to our hypothesis, we did not detect a negative association between girls' endorsement of sexualized gender stereotypes and their desire to master new skills and concepts (i.e., a mastery orientation). However, sexualized gender stereotype endorsement *was* positively related to their performance-approach orientation. In other words, the more that girls endorsed these stereotypes, the more they reported approaching learning with a focus on how they appear to others. Indeed, past research demonstrates that a performance-approach orientation (rather than a mastery orientation) is generally associated with maladaptive learning outcomes (e.g., lower perceptions of competence; Ames & Archer, 1988). Correlational results from the current study uncovered similar, albeit counterintuitive, patterns. As an example, girls'

performance-approach orientation was positively associated with their skepticism towards school (see Table 2.1). Thus, sexualized gender stereotypes not only correlate with girls' academic performance and attitudes, but they also appear to be associated with more appearance-focused approaches to education.

Overall, the current study paints a consistent picture of how sexualized gender stereotypes relate to girls' academic outcomes, yet it is not without limitations. Due to the nature of our study design, we cannot specify a causal direction of effect. While we imply that sexualized gender stereotypes have academic consequences for girls, a reciprocal direction is possible, such that girls with low academic achievement and pessimistic attitudes towards school might be especially prone to adopting these sexualized gender standards. We, therefore, advocate for future research to clarify this direction of effect. In particular, both experimental and longitudinal examinations of how sexualized gender stereotypes influence academic outcomes would be helpful. We also acknowledge that our sample size was too small to fully explore how ethnic and socioeconomic diversity might moderate the findings. Future research should explore whether ethnicity moderates the relationships between sexualized gender stereotypes and academic outcomes.

Taken together, however, we assert that there are clear correlates of sexualized gender stereotypes that reach beyond domain-specific outcomes to domain-general beliefs and approaches to learning. These negative academic attitudes and beliefs may be particularly detrimental during adolescence, a time when girls are given more agency over their academic trajectory. During these years, adolescents make important decisions about their course-taking, academic interests, and the pursuit of higher education. Due to the content and pervasiveness of these sexualized gender stereotypes, the gravest danger

of these messages could be girls' disengagement from academics altogether (e.g., Steele, 1997).

APPENDIX

Supplemental Analyses

As noted before, we did not have sufficient statistical power to include ethnicity as an independent variable in our primary analyses. However, when ethnicity *is* included as an additional independent variable in these models, several notable effects emerge. We outline each analysis and any significant ethnicity-specific results below. We urge readers to exercise caution in generalizing these results, as our lack of statistical power limits their reliability.

Domain-Specific Performance. A 2 (domain: math, language arts) X 5 (ethnicity: White/European American, Black/African American, Latino/Hispanic, Asian, Multiracial) repeated-measures ANCOVA was conducted on performance scores on the academic assessment, in which domain was the within-subjects factor and sexualized gender stereotypes was the covariate. Multivariate tests revealed a significant main effect of ethnicity on math and language arts performance, $F(4,93) = 6.16, p < .001, \eta^2 = .21$. Pairwise comparisons revealed that girls who identified as White/European American ($M = 6.80, SE = .33$) or Multiracial ($M = 6.73, SE = .59$) had significantly higher academic performance across domains than girls who identified as Black/African American ($M = 4.94, SE = .53$) or Latino/Hispanic ($M = 4.28, SE = .48$). There were no other interactions involving ethnicity.

Domain-Specific Attitudes. A 2 (domain: math, language arts) X 5 (ethnicity: White/European American, Black/African American, Latino/Hispanic, Asian, Multiracial) repeated-measures MANCOVA was conducted on the competency, difficulty, and enjoyment measures, and in which domain was the within-subjects factor and sexualized gender stereotypes was the covariate. Multivariate tests yielded a

significant domain by ethnicity interaction on attitudes, $F(12,279) = 2.38, p < .01, \eta^2 = .03$. Univariate analyses further indicated that this effect of ethnicity was significant for ratings of competence, $F(4,93) = 4.90, p < .01, \eta^2 = .15$, and ratings of enjoyment, $F(4,93) = 6.86, p < .001, \eta^2 = .23$. We did not detect a significant effect for ratings of difficulty, $F(4,93) = 5.28, p = .053, \eta^2 = .10$. Pairwise comparisons revealed that White/European American girls differentiated between math and language arts for all measures (all t tests $p < .05$): they rated their competence in language arts ($M = 5.16, SE = .20$) as higher than their competence in math ($M = 4.26, SE = .17$); rated math ($M = 4.15, SE = .22$) as more difficult than language arts ($M = 2.90, SE = .23$); and rated math ($M = 3.10, SE = .29$) as less enjoyable than language arts ($M = 5.29, SE = .26$). Significant domain differences in academic attitudes did not emerge for any of the other racial/ethnic groups.

Domain-General Academic Beliefs. A MANCOVA, with ratings of academic efficacy, presentations of low achievement, and skepticism towards school included as dependent variables, ethnicity as the between-subjects factor, and endorsement of sexualized gender stereotypes as a covariate, was conducted. No main effects or interactions involving ethnicity were significant.

Domain-General Approaches to Learning. Finally, a MANCOVA, with ratings of a mastery goal orientation, performance-approach goal orientation, and performance-avoid goal orientation as dependent variables, ethnicity as the between-subjects factor, and endorsement of sexualized gender stereotypes as a covariate, was conducted. Multivariate tests revealed a significant main effect of ethnicity on girls' approaches to learning, $F(12,276) = 2.09, p < .05, \eta^2 = .08$. Univariate analyses indicated a significant

difference based on ethnicity for girls' performance-approach orientation, $F(4,92) = 2.60$, $p < .05$, $\eta^2 = .10$. Specifically, Black/African American ($M = 2.80$, $SE = .19$) and Multiracial ($M = 2.58$, $SE = .21$) girls reported higher performance-approach orientations than White/European American girls ($M = 2.11$, $SE = .12$).

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