

**Promoting gender equity through schools:  
Three papers on schooling, gender attitudes, and interventions to  
promote gender equity in Egypt and India**

**by**

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For Tanish Nikalje, perhaps the most tangible outcome of the GEMS program,  
and for baby Ruti Waghmare, for the honor of sharing a name.

And especially for Hamid Jaan, the bravest man I know, who showed me most clearly that  
gender equity is so much more than ensuring rights for women.

May your lives be full of possibilities...

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## **ABSTRACT**

### **Promoting gender equity through schools: Three papers on schooling, gender attitudes, and interventions to promote gender equity in Egypt and India**

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Gender is an important social determinant of health. As such, addressing gender inequities is an important mechanism for reducing health disparities and promoting well-being. This dissertation focuses on schools, an important setting for the development of ideas and practices about gender and other social inequalities. It draws on literature on the reproduction and reinforcement of gender in schools, as well as on international development discourse that focuses on schools as agents of social change, to examine how schools shape children's ideas about gender, and how the Gender Equality Movement in Schools (GEMS) intervention creates opportunities for change.

Chapter II uses data from the Adolescence and Social Change in Egypt survey to examine the association between school characteristics and student attitudes about gender. School structure, school climate, and staff attitudes are all associated with student attitudes about gender. Girls' attitudes are more sensitive to these school characteristics, though they matter for boys for specific attitude domains as well.

Chapter III, using data from the GEMS Survey in Mumbai, India, focuses on violence in schools and its association with student attitudes about violence, and examines the impact of individual and school violence on the effect of the GEMS intervention. School violence is associated with student attitudes and moderates the effects of the GEMS intervention. Both individual experiences of violence and higher school levels of violence were associated with greater endorsement of violence. In addition, the intervention was generally less effective for children who experienced violence in school, and in schools with higher levels of violence.

Chapter IV explores teacher perspectives about gender equity in Mumbai public schools, describing how the discourse of gender equity is used strategically by teachers to accomplish their professional responsibilities given the gender inequities in their own and their students' lives, and highlighting the potential for programs like GEMS, which provide a space for critical reflection, to "undo" gender.

As a whole, these papers contribute to the literature at the intersection of public health, education, and gender studies, and suggest productive avenues for future research and intervention, as summarized in Chapter V.

## **Chapter I Introduction**

Gender inequity has become increasingly central in public health discourse as research suggests that gender plays a critical role across a broad range of health outcomes. The World Health Organization has in fact identified gender as a social determinant of health, emphasizing that working to improve attitudes and public endorsement of gender equity is "one of the most direct and potent ways to reduce health inequities" (Sen & Ostlin, 2007, p. 1). Gender affects health through multiple pathways, including differential exposure to risk and differential access to healthcare and other material resources, and by shaping expectations, roles, and power dynamics between men and women. The role of these gendered pathways has been explored across a range of health behaviors and outcomes, from infectious diseases like tuberculosis and HIV, to chronic and mental health conditions, to health behaviors as diverse as applying sunscreen and accessing health services (for reviews see: Courtenay, 2000; Sen & Ostlin, 2007; Snow, 2008). The role of rigid gender norms has received particular attention with regard to reproductive and sexual health and intimate partner violence, with evidence accumulating that inequitable gender attitudes and resources are associated with negative health outcomes for both men and women (Barker, Ricardo, & Nascimento, 2007; Dworkin, Dunbar, Krishnan, Hatcher, & Sawires, 2011; Pulerwitz, Barker, Segundo, & Nascimento, 2006).

Sociological theory contributes to our understanding of gender as more than simply an attribute of an individual, but rather as a multi-level system. That is, gender is not "primarily an identity or role that is taught in childhood and enacted in family relationships. Instead... gender

involves cultural beliefs and distribution of resources at the macro level, patterns of behavior and organizational practices at the interactional level, and selves and identities at the individual level" (Ridgeway & Correll, 2004, pp. 510-511). Contemporary theorists have also rejected the notion of passive gender "socialization" – where children are essentially seen as vessels to be filled with ideas about gender – in favor of a view that emphasizes individuals' agency in learning and enacting gender while at the same time recognizing the powerful structural constraints on the range of possible 'ways of being' men or women (Connell, 2002; Paechter, 2007). Gendered processes at the individual, interactional, and institutional levels work together to reproduce gender inequality, and, importantly, "without change in institutional arrangements, efforts to change cultural beliefs are undermined by the cultural commonsense generated by encounters with institutions" (Armstrong, Hamilton, & Sweeney, 2006, p. 496). To eliminate gender inequity and the health disparities that result from it, therefore, research and interventions must focus on both the individual and the structural levels simultaneously, paying particular attention to institutions where gender inequities are produced and reproduced.

This dissertation focuses on one such institution: middle schools (grades 6-8) in Egypt and India. It draws on a longstanding theoretical tradition in the social sciences that has focused on schools as principal agents in reproducing existing social hierarchies of class, race, and gender. Theoretical work and empirical studies have described schools as gendered environments that, through their organization and practices, reproduce inequitable attitudes, perpetuate unequal power relationships between men and women, and establish the acceptance of violence as normative (Connell, 1996; Leach, 2006; Stromquist, 2006).

The focus on middle schools is warranted for several reasons. From a developmental perspective, adolescence is a particularly important time for the development of gender-related attitudes and behaviors, though this process takes place throughout the life-time. Galambos

(2004) argues that given the physical, cognitive, and emotional changes experienced in adolescence, this time period should be viewed as "a primary transition point during which gendered behaviors may be enacted, questioned, changed or solidified" (p. 240). Since youth spend a significant portion of their time in school throughout childhood and adolescence, it is important to examine the school context.

The focus on schools is also warranted because schooling has long been seen as an integral mechanism to address gender inequality and has been given high priority in the international development community, as reflected in both the Dakar 'Education for All' goals and the Millennium Development goals (Subrahmanian, 2005).<sup>1</sup> These declarations represent international guidelines for governments, donors, and international agencies, and shape funding and operational priorities for schools in many countries. At this point, gender equality in education is an explicit goal of every government in the world (Connell, 2010). Finally, the focus on schools is important because schools provide a potential organized venue for intervention that has broad reach to youth in many communities and may be more cost-effective than individual or home-based interventions.

This dissertation explores schools as settings that can reproduce – or transform—ideas about gender. Chapters II and III examine the associations between gendered school characteristics and students' attitudes about gender and violence in Egypt and India, respectively. Chapter IV focuses on teachers in Mumbai public schools, exploring their perspectives on gender equity in school. The three papers are described in more detail at the

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<sup>1</sup> The Millennium Development Goals (MDGs), a set of eight goals with quantifiable targets and indicators to be achieved by 2015, were drawn from the Millennium Declaration on important development goals, actions, and commitments adopted by 189 nations in 2000. The goals are focused on reducing poverty, hunger, and disease, and on promoting education, gender equality, and environmental sustainability. The Dakar Framework for Action, also signed in 2000, is focused on achieving "Education for All."



end of this chapter, following an overview of the literature on the gendered dimensions of schooling, the measurement of gender attitudes, and interventions to transform gender norms.

## **Schools and the Social Reproduction of Gender**

### ***Theoretical Perspectives***

This dissertation adopts a social constructionist perspective in which schools are envisioned as complex gendered arenas where students observe, participate, and learn “how gender relations work and how to navigate among them” (Connell, 2002, p. 81). It draws on the literature on social reproduction and practice theory that emphasize schools as principal agents in reproducing existing social hierarchies of gender as well as race, caste, and class, as well as on contemporary scholarship in the sociology of gender that has similarly focused on how the performance or “doing” of gender “simultaneously sustain[s], reproduce[s], and render[s] legitimate the institutional arrangements that are based on sex category” (West & Zimmerman, 1987, p. 146). In the following sections, I describe some of the relevant literature on schools as gendered spaces.

A focus on the importance of schooling also emerges from a long tradition of research on the impact of school characteristics or inputs on student outcomes in developing countries. In a now classic paper, Heyneman and Loxley (1983) challenged the prevailing idea that children’s home and social backgrounds were the primary determinants of their academic outcomes by showing that in low income countries, the effect of school and teacher quality was comparatively greater. Periodic reviews of the literature have found significant effects of school factors such as teacher knowledge and availability of supplies on achievement, net of family background (for reviews see: Fuller & Clarke, 1994; Glewwe, Hanushek, Humpage, & Ravino, 2011). While the literature on school effects in low-income countries has largely focused on academic outcomes, research from high-income settings has also documented important

impacts of the school environment on health outcomes such as substance use, emotional distress, suicidal thoughts and behavior, violence, and early sexual initiation (Khoury-Kassabri, Benbenishty, Astor, & Zeira, 2004; McNeely & Falci, 2004; McNeely, Nonnemaker, & Blum, 2002; Resnick, et al., 1997). This dissertation explores whether "school effects" may also be found for gender-related attitudes.

While the question of what drives social transformation is of primary interest, much of the emphasis in this area has been on describing how gender inequality is reproduced, rather than on how it is reduced or transformed. In response to this, a diverse set of scholars (e.g., Bajaj, 2011a; Deutsch, 2007; McLeod, 2005; Ortner, 1996; Risman, 2004, 2009; Shah, 2011; Stromquist & Fischman, 2009) emphasizes that change can and is happening, and has called for an examination of where and how gender is "undone", a focus on "the slippages in reproduction, the erosions of long-standing patterns, the moments of disorder and of outright "resistance"" (Ortner, 1996, p. 17). This dissertation emerges from this theoretical perspective and aims to contribute to this effort.

### ***Gendered Aspects of Schooling***

#### *School Structures and Routines*

Scholars argue that the organizational structures and routines of the school may contribute to children's ideas about gendered norms for behavior and authority (Connell, 1996; Stromquist, 2006). The sex distribution of students and personnel are important features. One important debate has centered on the impacts of single-sex versus co-educational schooling on boys and girls. While most studies focus on academic outcomes, researchers have proposed positive impacts of single-sex schools on children's social development, including gender role attitudes, with the idea that single-sex environments, by their very nature, provide less opportunity for discrimination (Bigler & Signorella, 2011; Haag, 2002). In an early study, Lee and

Bryk (1986) found that girls who attended American Catholic single-sex schools had better academic outcomes, higher educational aspirations, and increasingly more egalitarian gender-role attitudes from grade 10 to 12 compared to girls attending mixed-sex schools. Boys in single-sex schools, on the other hand, had more stereotypical views compared to those in co-ed schools, though these differences disappeared by the 12<sup>th</sup> grade. In one of few such studies in a developing country, Nigeria, Lee and Lockheed (1998) found that girls in single-sex secondary schools had less stereotypic views of mathematics as a male domain; the opposite was true for boys in all-male schools. However, a 2002 review of the (primarily Western) literature concluded that beyond girls showing a stronger preference for less “traditional” subjects, there was no consistent relationship between school type and the degree of sex stereotyping (Haag, 2002). The author concludes that it is the context – the attitudes and behaviors of teachers, and policies on the equitable treatment of girls and boys— that makes a difference; the separation itself does not seem to change ideas about gender roles.

Gender segregation is also apparent in vocational school tracks such as home economics and social services (primarily girls) and manual, electrical, or building trades (primarily boys), offered in many countries. Studies have found that extreme segregation is found even in Nordic countries where there is a strong focus on gender equality. In fact, Charles & Bradley (2009) found that in countries where relative material security does not restrict curricular choices and where norms emphasize the importance of self-expression and actualization, gendered expectations and aspirations actually create higher sex-segregation in academic fields compared to many developing countries where either these norms, or the material security, are not present. At the same time, in some countries (e.g., Egypt), there are fewer choices – the mandatory curriculum varies by sex, with girls required to take home economics while boys are required to take agriculture/industrial studies (Lloyd, El Tawila, Clark, & Mensch, 2003).

The presence and position of female teachers in the school is another important feature of schools that has received attention. A UNESCO (2006) report highlighted the importance of female teachers as role models and advocates for girls. In addition, it is plausible that seeing women in their professional capacities as teachers might shape both boys' and girls' views on appropriate roles for women. At the same time, in countries where boys' enrollment and completion rates have declined (primarily in North America, Europe and Australia, and increasingly in Latin America and the Caribbean), debates have arisen about the feminization of the teaching profession and the role that may play in boys' educational outcomes (Carrington, et al., 2007; Drudy, 2008; Martino, 2008).

The interactions between men and women staff in the school, and their positions within the school, contribute to what Connell (2000) calls the "gender regime" of the school. The traditional gender distribution of personnel at the school with women holding less prestigious positions compared to men (e.g., female teachers and male principal, or female teachers at the primary level and male teachers at the secondary level) reinforces patriarchal patterns of power and authority. Stromquist (2006) explains: "Authority patterns foster the mindset that men are naturally endowed to control and lead . . . Numerous gender codes in school serve to recontextualize what is appropriate gender behavior in the family and community and translate it into appropriate gender academic and social practices in educational environments" (p.149). Thus, gendered patterns of authority may be reproduced and struggled over in the interactions between (and among) administrators and teachers (Ginsburg & Kamat, 2009).

The gendered aspects of various school practices and routines have also been highlighted. The routine behavior of adults in school, including labeling groups (e.g., a teacher starting the day by saying "good morning boys and girls") or segregating them (e.g., students grouped by sex to walk to the cafeteria), emphasizes the difference between boys and girls. In

her noted ethnography of two American elementary schools, Barrie Thorne (1993) observed numerous such instances, stating: "By frequently using gender labels when they interact with kids, adults make being a girl or a boy central to self-definition and to the ongoing life of schools" (p.35). As Eder (1995) carefully describes in her study of an American middle school, the types of school programs offered and the importance placed on them (e.g. contact sports for boys, cheerleading for girls) also contribute to the gendered environment of the school. Finally, in many settings, the types of chores assigned to boys and girls in school may also be gendered, where girls (and even female teachers) are routinely asked to sweep classrooms or serve food, while boys are given such tasks only as punishment, and/or are allocated higher status public tasks (Aikman & Unterhalter, 2007; Anderson-Levitt, Bloch, & Soumare, 1998; Leach & Humphreys, 2007). A study of the Umutende School in Zambia highlighted the requirement for all students to participate in cleaning the classrooms as an important feature of the school's deliberate effort to transform conventional attitudes about gender (Bajaj, 2009). The differentiation of tasks and responsibilities is often based on other social positions in addition to gender: in India, several studies have reported specific chores or duties assigned only to lower-caste students (Bajaj, 2011b; Desai & Kulkarni, 2008).

### *Textbooks and Curriculum*

The textbooks and other features of the curriculum can also serve to differentiate between males and females and reinforce ideas about their appropriate roles. Stromquist, Lee, and Brock-Utne (1998) reviewed the literature about the gendered messages transmitted to students through stories and illustrations in textbooks around the world. They found that the depictions of women as passive, self-sacrificing, and family oriented as well as seldom involved in economic or political activities were consistent across countries. The authors also emphasized the importance of training teachers, citing research from Latin America showing that teachers

are not aware of the discriminatory messages they transmit through their textbooks and teaching techniques. Similar findings about textbooks in India were summarized by Blumberg (2008): she argues that textbooks rarely accurately reflect the actual roles (and changes in roles) of men and women in society, and thus serve to reinforce more traditional, differentiated roles.

### *Teacher Attitudes and Behaviors*

Teacher characteristics, attitudes and behaviors are central to the school environment. Teachers can contribute to an oppressive, inequitable environment at school; they can also serve as role models and supports for marginalized students. Rawal and Kingdon (2010) found that Indian children taught by teachers of the same sex, caste, or religion have higher achievement than children taught by teachers different from themselves. Given male teachers' perceived views on differences in ability between boys and girls, especially in math, the authors argue that teachers may be discriminating and stereotyping in the classroom. Chudgar and Sankar (2008) also found that male and female teachers in India had different beliefs about student abilities, as well as different classroom management practices. Johnson-Hanks (2006) similarly observed differences in the classroom practices of Cameroonian teachers: male teachers were more likely to call on male students, while female teachers were more egalitarian in seeking responses to academic questions posed. She also observed that male teachers were more tolerant of male students' misbehavior in class.

Teachers may treat students differently based on the student's sex. This starts at a very young age: in a detailed observational study of preschool classrooms, Martin (1998) documented how teachers monitor and discipline boys' and girls' bodies differently, and how this contributes to: "the embodiment of gender in childhood, making gendered bodies appear and feel natural" (p.495). Several studies, as mentioned above, have found that teachers believe that boys and girls have different academic abilities, behaviors, and motivations (Anderson-

Levitt, et al., 1998; Chudgar & Sankar, 2008; Kirk, 2004; Lloyd, Mensch, & Clark, 2000; Rawal & Kingdon, 2010). In their interactions with students, teachers draw on normative gender practices. For example, in several contexts, male teachers were described as adopting an informal tone with male students, teasing them and challenging them; they did not interact with female students in the same way (Francis, 2008; Humphreys, 2008; Hurtig, 2008). In some cases, female teachers reported that they could not behave so informally with students, for fear of losing their respect or obedience, highlighting again the link between gender and perceived (or actual) authority (Hurtig, 2008). Finally, teachers may be very explicit about their attitudes about gender roles: Johnson-Hanks (2006) recounts how a female teacher emphasized that it is paramount that women cook for their husbands, regardless of their level of education.

In their interactions with students and with each other, teachers are "performing" gender in school, often emphasizing differences between the behavior of men and women in order to conform to dominant views of masculinity and femininity. An interview and focus group study in Australia found that the male teachers described their behaviors (e.g., in resolving student conflicts) as distinct from their female colleagues' – one teacher said: "I don't do the mothering role that lots of female teachers do" (Haase, 2008, p. 599). In a study of a school improvement project at an Egyptian preparatory school, the male teachers were concerned about students seeing them engaged in manual labor, work that is not considered appropriate for educated men, while female teachers more eagerly volunteered (Herrera, 2006). These behaviors contribute to how students (and school staff) perceive and interact with the teachers, and highlight that teachers – like all of us – are deeply enmeshed in the gender and class norms and systems of their particular context.

As with much of the literature on gender in schools, the studies described above focus on how teachers reproduce gender inequities. However, teachers can also support and inspire

students, and are instrumental to changing the school environment. Anderson-Levitt et al. (1998) write: "the teacher is still the single most powerful player in the classroom. The teacher's behavior, although it cannot make *all* the difference, does make an *important* difference" (p.125).

### *Peer interactions*

Schools are settings for gendered interactions with peers in addition to teachers, though research on gendered peer interactions in developing countries is sorely lacking. In general, the existing research suggests that boys tend to dominate the physical and verbal space in the classroom and school (Leach & Humphreys, 2007). In classroom interactions, Johnson-Hanks (2006) found that boys in a Cameroonian school were much more active than girls in terms of both relevant contributions and disruptions. The disruptions often consisted of teasing girls or other boys. In Guinea, boys restricted girls' movement in class, by, for example, physically blocking a path or not making space on the seating bench (Anderson-Levitt, et al., 1998). As discussed above, teachers were often tolerant of such behavior, implying that it was appropriate.

Peer group interactions often serve to separate boys and girls, or to enforce dominant versions of masculinity or femininity. Barrie Thorne (1993), for example, describes instances of boys and girls segregating and coming together on the playground, and other researchers describe peer "microcultures" that have their own versions of masculinity or femininity expressed, for example, through clothing (Connell, 2000; Paechter, 2007; Wilkins, 2008). Despite some flexibility, however, there is constant 'surveillance' of behavior by peers, which requires children to regulate their behaviors to conform to group norms of masculinity and femininity, often highlighting heterosexuality (Paechter, 2007; Pascoe, 2007). Eder (1995) skillfully demonstrates this point through the analysis of conversations and speech patterns, and argues



that these interactions and the school's response to them may have implications for future aggressive behavior. Those who deviate from group norms suffer serious consequences - for example, studies show high levels of harassment and bullying of boys who are perceived as gay or not stereotypically masculine (e.g., Gruber & Fineran, 2008; Hansen, 2007; Meyer, 2006). There may also be negative consequences for conformity. Wood et al. (1998) describe the pressure young South African women felt from their female peers to engage in sexual activity and to accept sexual violence from their partners as the norm. Costs of conformity to conventional roles might also include tempering one's interest in academic success, or in particular subjects or school activities.

### *Violence in Schools*

Much of the literature on the reproduction of gender inequality in schools in developing countries is focused on the issue of violence in and around the school. While many studies focus on sexual violence and harassment of girls by peers and teachers, broader conceptualizations emphasize the use of aggression to assert power and "prove" masculinity, or to police (and punish) the actions of students who deviate from rigid notions of appropriate gender roles and behaviors (Leach & Humphreys, 2007). Thus, experiences of violence in school may be linked not only to the endorsement of violence as an acceptable way to resolve conflict, but also to ways to assert dominance and control in the context of existing hierarchies and inequalities: between adults and children, and between men and women, or boys and girls.

In many settings, violence perpetrated by teachers is an important concern. Several studies, primarily from Africa, reveal a consistent pattern of sexual abuse in school, perpetrated mostly by other students but also by teachers or school staff (Dunne, 2007; Leach, 2006; Meyer, 2009; Pinheiro, 2006). In several settings, including Cameroon and the United States,

researchers describe how teachers and male students trade sexual banter in the classroom (Johnson-Hanks, 2006; Pascoe, 2007).

Morrell (2001) and Humphreys (2006, 2008) have examined the issue of corporal punishment in school, placing their analyses firmly in the context of theories of gender relations and gendered practice. In his study of corporal punishment in 16 schools in Durban, South Africa, Morrell argues that (racially divergent) violent hegemonic masculinities contribute to perpetuating the practice of corporal punishment, which in turn reinforces these notions of masculinity. Corporal punishment "both symbolized and secured hierarchical dominance (of adult over child, learned over learner, male over female) . . . bluntly put, it taught boys to be tough and uncomplaining, and it taught girls "their place"—to be submissive and unquestioning" (p.142). Humphreys, drawing on ethnographic work in four junior-secondary schools in Botswana, builds on Morrell's analysis to emphasize how corporal punishment involved the performance of masculine authority by both male and female teachers. Male teachers essentially had uncontested authority; they were often able to maintain discipline without using corporal punishment because male students respected and feared them and consequently behaved better in their classes. Female teachers, on the other hand, had to consistently "prove" their authority. Humphreys concludes that attempts to eliminate corporal punishment in schools need to take into account gendered power relations and should therefore provide opportunities for students and teachers to reflect on their beliefs, and how these related to the practice of corporal punishment.

School violence is generally most commonly perpetrated by peers. While it sometimes takes the form of what is commonly recognized as "gender-based violence," such as sexual harassment or assault of girls by boys, peer violence is often related to "proving" masculinity or "policing" the behavior of students who behave in non-gender-normative ways (Eder, 1995;

Meyer, 2009; Pascoe, 2007). Aggressive behavior is also often normalized as typical behavior for boys, as the 'boys will be boys' discourse, and is not taken seriously by school officials. How the school responds to instances of violence between students (as well as from staff) is considered critical: it directly affects levels of violence in school, as well as normalizes such behaviors (Klein, 2006; Leach, 2003). Thus, children's experiences of violence in school – as victims, perpetrators, or witnesses – may shape their attitudes about violence as appropriate and normative, as an effective way “for the strong and aggressive to get what they want from the comparatively weak, passive, or peaceful” (Pineiro, 2006, p. 111). When combined with deeply rooted inequalities between men and women, children's experiences and beliefs may contribute to continuing violence across the lifespan, particularly against women and girls.

The literature on the gendered organizational and interactional elements of schools, briefly reviewed above, highlights the important role that schools play in reproducing norms and ideas about gender, as well as opportunities for transformation. While described separately above, these various elements do not function in isolation, but interact with one another to create the gender regime or gendered environment of the school. For example, the structure of the school (e.g., co-ed compared to single sex) shapes interactions between teachers and students, and among peers; textbooks with stereotypical representations of men and women can be interpreted in different ways by different teachers.

Most of the studies reviewed above are highly contextualized; it is difficult to assess what conclusions can be drawn from the research cross-culturally. However, while the content of textbooks and teacher-student interactions, for example, may be different in different settings, the basic structures or elements (e.g., textbook representations, teacher-student interactions) are likely to be important across contexts. It is important to note that the papers in

this dissertation do not empirically consider all of these elements; they are presented here to provide an overview of the existing research.

### **Measuring gender attitudes**

Two chapters in this dissertation use attitude measures about gender and violence as outcomes; as such, a brief discussion about attitude measures is warranted. The study of attitudes is rooted in the discipline of social psychology, though attitude measures are widely used in survey research across disciplines. Though definitions of attitudes vary, several features of attitudes are consistently emphasized: 1) attitudes generally involve a process of evaluating an object or concept on a scale ranging from positive to negative; 2) attitudes are different from beliefs in that while beliefs are thought to be verifiable by objective criteria, attitudes are not classified as true or false; this makes them more difficult to change; and 3) attitudes are considered to be stable and enduring dispositions (Pease & Flood, 2008).

Numerous instruments to assess attitudes about gender roles, gender equity, and violence have been developed and used, primarily in Western contexts – Beere's 1990 "Gender Roles: A Handbook of Tests and Measures" specifies more than 50 scales (Gibbons, Hamby, & Dennis, 1997; Gibbons, Stiles, & Shkodriani, 1991). Within the context of sociological and demographic research on women's empowerment and gender inequality in developing countries, however, there is remarkable consistency in the domains measured by different scales. Malhotra and colleagues (2002) found that the most frequently used measures of gender-related attitudes were at the household or family level, and related to attitudes about who should make decisions on various domestic issues (e.g. large and small purchases, healthcare, and education of children), women's freedom of movement, and access to or control over resources (e.g. participation in paid employment, contribution and use of household income). In part due to their inclusion in Demographic and Health Surveys from

around the world, a set of questions assessing attitudes about the appropriateness of intimate partner violence in a range of situations (from neglecting the children to burning food) also appears frequently in the literature.

The use of attitude measures has been critiqued in the social science (and health behavior literature), emphasizing that attitudes “must be recognized as contingent, contextual, potentially contradictory, having a complex relationship to behavior, and constructed and meaningful only in social contexts” (Pease & Flood, 2008, p. 554). Nevertheless, attitude measures remain an important area of research: attitudes about violence against women play a role in the perpetration of violence, in victims’ responses to victimization, and in community responses to violence; attitudes about gender roles and relations provide an indicator of adherence to dominant discourses about gender (Flood & Pease, 2009; Shefer, et al., 2008).

### **Changing Gender Attitudes and Norms**

Interventions geared towards changing gender attitudes or norms have been implemented in various settings and have shown promising results in changing both attitudes and behaviors. These interventions generally emerged from the recognition that rigid gender norms have negative implications for men and women’s health particularly in the areas of reproductive and sexual health and gender-based violence (Dworkin, et al., 2011). In fact, explicitly challenging traditional gender norms as part of health interventions has been shown to increase their effectiveness. An analysis of nearly 60 intervention programs for men around sexual health, violence, and fatherhood found that 41% of programs that explicitly addressed gender norms were effective in achieving their respective goals, compared to only 29% of the programs as a whole (Barker, et al., 2007; Barker, Ricardo, Nascimento, Olukoya, & Santos, 2009).

One intervention that has received international attention and recognition is Program H/M, developed in Brazil and implemented and evaluated in multiple countries. Programs H (for men) and M (for women) aim to promote critical reflection on gender inequities and on the costs for both men and women of adhering to rigid norms. Quasi-experimental impact evaluations found increased support for gender equity, as well as reductions in self-reported intimate partner violence (India), sexual harassment of girls by boys (India), and rates of sexually transmitted diseases (Brazil), as well as increased condom use (Brazil and Chile) in participants compared to controls (Barker, et al., 2012; Pulerwitz, et al., 2006; Verma, et al., 2008). Stepping Stones, a rigorously evaluated program focused on gender equity, HIV prevention, and antiviolence work in South Africa, showed important changes in attitudes and perpetration of intimate partner violence, as well as substantial reductions in STI rates for men (but not women) (Jewkes, Nduna, & Levin, 2008; Welbourn, 2002). Other interventions have not been as rigorously evaluated, but have generally shown promising results (For reviews see: Dworkin, et al., 2011; Leach & Humphreys, 2007; MSI, 2008). These interventions provide important models for the types of interventions that could be implemented in schools; in fact, the GEMS intervention, analyzed in Chapters III and IV, is based on the Indian adaptation of Program H.

Recent gender scholarship might problematize or even dismiss these relatively short-term individual interventions focused on changing gender attitudes. Such interventions generally do little to address broader economic and social factors and opportunity structures. However, making these interventions the center of critical inquiry is significant for two main reasons. In practice, significant resources are dedicated to such trainings and programs. They are gaining international attention and recognition. Thus, focusing on the "state of the field" can advance both research and practice. In addition, evaluations of such programs are documenting positive changes in attitudes and behaviors. While the data are fraught with

methodological issues (self-report, social-desirability, imprecise measurement), some kind of change *is* happening, and deserves more careful attention.

### **Overview of the Dissertation**

This dissertation is comprised of three empirical papers, aiming to contribute to two specific gaps in the literature. First, as elaborated in the previous sections, scholars describe various structural and interactional elements of schools that promote the reproduction of gender inequality. These studies are primarily theoretical and qualitative, highlighting a space for quantitative studies that examine the gendered characteristics of school and how they produce or reproduce gendered norms and inequalities across multiple schools. Chapters II and III of this dissertation are designed to begin addressing this gap by using multi-level modeling to explore the associations between school characteristics and student attitudes about gender and violence in two different settings.

Specifically, the analyses in Chapter II use data from the Adolescence and Social Change in Egypt survey (ASCE) to examine the association between school staffs' gender attitudes, school climate, and structural characteristics like the type of school and proportion of female teachers, and the outcome: student attitudes about gender. The ASCE dataset includes linked responses from students, teachers, and school principals, and thus provides a uniquely rich picture of the gendered school environment. The analyses in Chapter III, using data from the Gender Equality Movement in Schools (GEMS) Survey in Mumbai, India, extend the analysis from Chapter II in two main ways: 1) focusing more closely on violence in schools, an important aspect of the school environment, and its association with student attitudes about violence; and 2) assessing the impact, if any, of individual and school violence on the effect of the GEMS program, an intervention aimed specifically at changing student attitudes about gender and

violence. Both chapters extend the literature's common focus on girls by highlighting and comparing the experiences of both boys and girls.

The social reproduction literature has been critiqued for its overly deterministic perspective, excluding the possibility of change (Collins, 2009; Deutsch, 2007). International development discourse and other theoretical traditions (e.g., Freire's critical pedagogy), on the other hand, have focused on the enormous potential of schools and teachers to act as agents of social change. This dissertation draws on the critiques of social reproduction and advances the literature in this area by focusing specifically on the GEMS program, a school-based intervention aimed at promoting gender equity, examining how the school context affects the impact of the intervention on students (Chapter III), and how the intervention, combined with the structural realities of teachers' lives, can create opportunities for change (Chapter IV). Chapter IV focuses on an interview study of teachers in Mumbai, exploring teachers' perspectives about gender inequities in their schools, and describing how the discourse of gender equity is used strategically by teachers to accomplish their professional responsibilities in a context of gender inequities in their own and their students' lives. As a whole, these papers contribute to the literature at the intersection of public health, education, and gender studies, and suggest productive avenues for intervention.

This dissertation presents data from two countries: Egypt and India. It is not strictly comparative, as the contexts of the countries and the data available differ in substantial ways. However, some important similarities exist between the two countries: both Egypt and India are characterized by highly differentiated gender roles (Desai & Andrist, 2010; Mensch, Ibrahim, Lee, & El-Gibaly, 2000) and large but diminishing gender gaps in literacy and school enrollment (UNESCO, 2009). In addition, both countries have high rates of violence against women (as well as endorsement of violence): over one third of women in India and nearly half of women in



Egypt reported experiencing physical or sexual violence at some point after their fifteenth birthday (DHS, 2005; NFHS, 2007). Analyzing data from both countries provides a broader understanding of the gendered context of schools in developing countries and illuminates differences between settings.

Wrigley (1992) states: “schools both reinforce [gender] subordination and create new possibilities for liberation...Schools are sites of pervasive gender socialization, but they offer girls a chance to use their brains and develop their skills. Education does far more than reproduce inequalities, sometimes spurring students to think beyond the ideological limits laid out for them” (p.395). This dissertation aims to contribute to our understanding of how schools might do more to expand the range of possibilities and promote equity for all their students.

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## **Chapter II**

### **Examining the associations between gendered school characteristics and student attitudes about gender in Egypt**

#### **Introduction and Research Questions**

Scholars describe various structural and interactional elements of schools that reinforce inequitable gender and other social, including school composition and personnel distribution, teacher attitudes and behaviors, peer interactions, curricular representations of gender, and the prevalence of, and disciplinary policies regarding, harassment and violence (Connell, 1996; Eder, 1995; Johnson-Hanks, 2006; Leach, 2003; Pascoe, 2007; Stromquist, 2006). These studies are primarily theoretical and qualitative, highlighting a space for quantitative studies that examine the gendered characteristics of schools and how they produce or reproduce gendered norms and inequalities across multiple schools. The quantitative studies that have examined gendered school characteristics, such as single-sex schooling and the presence of female teachers, generally focus only on educational achievement or retention (Chudgar & Sankar, 2008; Lee & Lockheed, 1998; Rawal & Kingdon, 2010). This paper quantitatively explores the associations between school characteristics and gendered attitudes among male and female middle school students in Egypt. It also focuses on understanding how schools differentially affect boys' and girls' attitudes. While attitudes about gender reflect only one dimension of gender inequality, they provide important insight into the social norms that shape children's future possibilities.

A focus on the importance of schooling emerges in part from a long tradition of research on the impact of school characteristics or inputs on student outcomes in developing countries. In a now classic paper, Heyneman and Loxley (1983) challenged the prevailing idea that

children's home and social backgrounds were the main determinants of their academic outcomes by showing that in low income countries, the effect of school and teacher quality was comparatively greater. They concluded that school and teacher quality are the primary influences on student learning. Periodic reviews of the literature have found significant effects of school factors (such as teacher knowledge and availability of supplies) on achievement, net of family background (for reviews see: Fuller & Clarke, 1994; Glewwe, et al., 2011). There is also some evidence that school characteristics affect students differentially by sex – for example, in Egypt, teacher in-service training and more time in school were significantly associated with lower likelihood of dropout for girls but not boys (Lloyd, et al., 2003). This paper will similarly explore whether “school effects” may also be found for gender-related attitudes, and whether these effects vary by the sex of the student.

While the reviews cited above focus on academic outcomes, researchers in the sociology of education and gender have identified various institutional elements of schools that may promote the reproduction of gender inequality. Through these structural and interactional aspects of the school, described below, children and youth learn and practice "appropriate" gender behavior and attitudes.

### ***School Characteristics and Organization***

Scholars argue that the basic organizational structures of the school contribute to children's ideas about gendered norms for behavior and authority, though the dynamics have not been fully explored (Connell, 1996; Stromquist, 2006). For example, one important debate, examined in the present study, has centered on the impacts of single-sex versus co-educational schooling on boys and girls. While the majority of the literature has focused on academic outcomes, researchers have proposed positive impacts of single-sex schools on children's social development, including gender role attitudes, with the idea that single-sex environments, by



their very nature, provide less opportunity for discrimination (Bigler & Signorella, 2011; Haag, 2002). In an early study, Lee and Bryk (1986) found that girls who attended American Catholic single-sex schools had better academic outcomes, higher educational aspirations, and increasingly more egalitarian gender-role attitudes from grade 10 to 12 compared to girls attending mixed-sex schools. Boys in single-sex schools, on the other hand, had more stereotypical views compared to those in co-ed schools, though these differences disappeared by the 12<sup>th</sup> grade. In one of few such studies in a developing country, Nigeria, Lee and Lockheed (1998) found that girls in single-sex secondary schools had less stereotypic views of mathematics as a male domain; the opposite was true for boys in all-male schools. However, a 2002 review of the (primarily Western) literature concluded that beyond girls showing a stronger preference for less “traditional” subjects, there was no consistent relationship between school type and the degree of sex stereotyping. The author concludes that it is the context – the attitudes and behaviors of teachers, and policies on the equitable treatment of girls and boys— that make a difference; otherwise: “the mere separation of girls and boys appears not to diminish the extent to which gender roles are reinforced” (Haag, 2002, p.655).

The presence and position of female teachers is another important feature of schools that has received attention. A UNESCO report highlighted the importance of female teachers as role models and advocates for girls (Kirk, 2006). In addition, it is plausible that seeing women in their professional capacities as teachers might shape both boys’ and girls’ views on appropriate roles for women. Women’s positions and interactions within the school likely matter as well: Connell (2000) argues that the traditional gender distribution of personnel at the school (primarily in the west, but increasingly elsewhere) with women holding less prestigious positions compared to men (e.g., female teachers and male principal, or female teachers at the primary level and male teachers at the secondary level) is part of the "gender regime" of the school.

Stromquist (2006) explains: "Authority patterns foster the mindset that men are naturally endowed to control and lead . . . Numerous gender codes in school serve to recontextualize what is appropriate gender behavior in the family and community and translate it into appropriate gender academic and social practices in educational environments" (p.149).

Features of the school and of school staff may thus reinforce traditional ideas about gender and authority.

### ***Teacher Attitudes and Behaviors***

Numerous studies have found that teachers and other school staff treat students differently based on their own or the student's sex. Chudgar and Sankar (2008) found that male and female teachers in India had different beliefs about students' abilities as well as different classroom management practices, with female teachers more likely to say that all children are capable of learning and less likely to say that fear is important to maintaining discipline and to emphasize the need for strict discipline. Also in India, Rawal and Kingdon (2010) found that male teachers had more stereotypical views about the abilities of boys and girls, and that children taught by teachers of their same sex, caste, or religion had higher achievement than children taught by teachers different from themselves. The authors attributed these findings to teachers' discriminatory practices in the classroom. Observational studies confirm different practices by male and female teachers. Johnson-Hanks (2006) found that male teachers in a Cameroonian high school were more likely to call on male students, while female teachers were more egalitarian in seeking responses to academic questions posed. She also observed that male teachers were more tolerant of male students' misbehavior in class. In Guinea, Anderson-Levitt, Bloch, and Soumare (1998) found more variation in terms of teacher interactions with students, but ultimately concluded that: "many teaching strategies highlighted differences between boys and girls . . . teachers attributed more academic competence to boys than girls, modeled

different attitudes toward boys than girls, and held stereotypical beliefs about girls' and boys' futures" (p.125). Teachers may also be very explicit about their attitudes regarding gender roles: Johnson-Hanks (2006) recounts how in her study in Cameroon, a female teacher emphasized that it is paramount that women cook for their husbands, regardless of their level of education.

In their interactions with students and with each other, teachers themselves are "performing" gender in school, possibly reinforcing students' stereotypes. A study of Australian teachers found that the men described their behaviors (e.g. in resolving student conflicts) as distinct from their female colleagues' - one teacher said: "I don't do the mothering role that lots of female teachers do" (Haase, 2008, p.599). In a study of a school improvement project at an Egyptian preparatory school, the male teachers were concerned about students seeing them engaged in manual labor, work that is not considered appropriate for educated men, while female teachers more eagerly volunteered (Herrera, 2006). These studies highlight that teachers – like all of us – are deeply enmeshed in the gender and class norms and systems of their particular context. Thus, while studies suggest that both the presence of female teachers and their attitudes and behaviors are significant for children's experiences in school, it is important to directly examine their impact on children's gender attitudes.

### ***School Climate***

The importance of a positive school environment for both academic and health outcomes has been highlighted in research, primarily from high-income countries. Using data from the National Longitudinal Study of Adolescent Health (AddHealth), a study of more than 12,000 adolescents in the United States, Resnick et al. (1997) found that student perceptions of connectedness with school – feeling that teachers treat students fairly, feeling close to people at school, and feeling part of school – were protective against all the negative health outcomes measured: substance use, emotional distress, suicidal thoughts and behavior, violence, and

early sexual initiation. A subsequent study using the same dataset found that positive classroom management climates,<sup>2</sup> higher rates of participation in extracurricular activities, tolerant disciplinary policies, and small school size were associated with higher school connectedness, while class size, teacher qualifications, and school type (e.g. private vs. public) were not (McNeely, et al., 2002). A study of adolescents in Israel found that school environment characteristics such as clear, consistent, and fair rules, positive relationships between teachers and students, and student participation in decision making were similarly associated with lower levels of student victimization in school (Khoury-Kassabri, et al., 2004).

In the literature on the reproduction of gender inequality in school, the school climate is described as important for shaping children's gendered school experiences. Much of the literature on the reproduction of gender inequality in schools is focused on the issue of harassment and violence in and around the school, perpetrated by both teachers and peers. Generally, studies emphasize the idea that violence in school perpetuates gender stereotypes that promote aggression in boys and submissiveness in girls (Brohi & Ajaib, 2006). The institutional response to violence is considered particularly important: when school staff-members do not intervene or when they apply harsh disciplinary policies to students, they contribute to establishing violence as normative (Humphreys, 2006; Leach, 2006; Meyer, 2008, 2009). Interestingly, the impact of harsh punishment may be more complex when examined through a gendered lens. In Botswana, Humphreys (2008) found that girls felt that where teachers were able to maintain authority through punishment, boys were less likely to misbehave and harass them.

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<sup>2</sup> Classroom climate was measured as the mean across students of the responses to 4 items: Since school started this year, how often have you had trouble: Getting along with your teachers? Paying attention in school? Getting your homework done? Getting along with other students?

A unique study from the Population Council in Kenya examined the association between gendered dimensions of the school environment and adolescents' academic outcomes. Specifically, the authors analyzed the impact of the differences in boys' and girls' experiences. They found that several school climate variables were associated with girls' (but not boys') school dropout, controlling for individual and family variables. For example, girls had a higher likelihood of dropping out of schools that were less "girl-friendly." In these less supportive schools, boys did not recognize girls' experiences of unequal treatment, teachers rated math as less important for girls than for boys, and there was a greater discrepancy between girls and boys in reported harassment (Lloyd, et al., 2000).

The literature on gendered school environments, briefly described above, suggests that various characteristics of the school and its staff may present and reinforce messages to students about appropriate gender roles and behaviors. While the importance of various gendered school characteristics has been elaborated on theoretically, additional empirical support is needed. Specifically, the literature, especially regarding developing countries, is either primarily qualitative or focused rather narrowly on academic outcomes. The current study is designed to bridge this gap in the literature by exploring whether *gendered characteristics of schools* are associated with Egyptian students' *attitudes about appropriate gender roles and behaviors*. Quantitatively assessing whether and which of these characteristics are associated with student attitudes is the main goal of this study. The specific research questions to address this broader goal are described below.

Research Question 1 assesses whether *gendered characteristics of the school* (specifically: school structure, school climate, and staff gender attitudes) are associated with students' *gender-related attitudes*, controlling for individual demographics and other school characteristics. Given the scarcity of quantitative studies on this topic, several possible

hypotheses can be formulated: for example, it may be that in schools characterized by lack of support, harassment, and gender-inequitable attitudes of the principal and teachers, students' less gender-equitable attitudes are reinforced; alternatively, such oppressive environments may promote resistance, and thus more equitable attitudes.

Research Question 2 compares whether the associations between *gendered school characteristics* and *student attitudes* differ for boys and girls, and by specific outcome. Research on both gender attitudes and on the impact of schooling on a variety of academic and social outcomes suggests differences by sex. In addition, the literature on women's empowerment has repeatedly demonstrated the multidimensionality of that construct. Given these findings, we hypothesize that the results will in fact vary by sex and specific dimension of gender attitudes measured.

In Egypt, and across the world, economic, political, and cultural change is underway, often shifting opportunities for men and women as well as attitudes and norms about gender. While women's participation in the recent social and political turmoil was emphasized in the media, the impact of the "Arab Spring" on gender equity is still unknown. It is important to note that the data used for this paper were collected significantly prior to these current events. Nevertheless, exploring how schools matter to the formation of gender attitudes – and how the process might differ for boys versus girls – holds value beyond the historical or contextual specificity of the current study. This initial analysis of the association of school characteristics and children's attitudes may suggest new avenues for research, policy, and intervention.

### **The Context of the Study**

With a population of more than 80 million, Egypt is one of the most populous countries in the Middle East and North Africa. Egypt is a relatively youthful country, with nearly a third of

the population under the age of 15. Approximately 40% of the population lives in urban areas. The vast majority of the population is Muslim, with a significant minority (9%) of Coptic Christians (CIA, 2012). While Egypt has experienced improvements and expansions in economic growth and the health and education sectors, significant gender inequalities remain. The adult literacy rate in 2005 was 83% for men and 59% for women; the rates have been increasing, particularly among young women, but the gender gap remains: 90% of males age 15-24 are literate compared to only 79% of females of the same age. Women's labor force participation was only 22% compared to 76% for men, and only 2% of national parliamentary seats were held by women (World Bank, 2010). In addition, national laws reinforce the dominant role of men, dictating that in order to marry, travel, or open a business, for example, a woman must obtain permission from a male relative (Yount, 2011).

In Egypt, adolescence is a particularly important time for gender socialization. As Egyptian youth move through adolescence, their roles become more highly differentiated by gender. For example, a study of Egyptian youth found that 50% of boys aged 10-12 reported participating in domestic work compared with only 20% of boys aged 16-19. In contrast, the domestic work participation rates for girls, higher to begin with, remain constant over time. As they mature, girls are also more restricted in their mobility and peer relations, while boys retain more freedom. Only 12% of 16 to 19 year old girls reported spending time with friends the previous day, compared to 55% of boys of the same age and 30% of girls ages 10 to 12 (Mensch, et al., 2000). This suggests that the middle school or preparatory school years (ages approximately 12-15) may be particularly important transition years to study gender-related attitudes and behaviors.

Basic schooling, made compulsory in Egypt in 1984, is divided into two phases – primary (grades 1-5) and preparatory (grades 6-8).<sup>3</sup> In 1996, around the time the data for this study were collected (1998-1999), the gross enrollment rate in preparatory school was 88% for boys and 79% for girls. Overall enrollment was lower, and gender disparities greater, in rural areas, and in Upper Egypt, the poorest region of the country (Dancer & Rammohan, 2007; Iqbal & Riad, 2004). A 1997 survey showed that more educated fathers were more likely to send both their sons and daughters to school, while mother’s education was important only for girls’ enrollment (Dancer & Rammohan, 2007). Nevertheless, the gender gap in education has been decreasing due to higher growth in girls’ school enrollment, and the dropout rates are similar for both girls and boys, particularly among the youngest cohorts (Lloyd, et al., 2003).

Parents have few options in terms of school selection within the public school system – children are expected to attend the public school nearest to their home (Lloyd, et al., 2003). The structure of schools varies by urban and rural location: due to lower enrollment, preparatory schools outside of urban areas are co-educational, while urban preparatory schools tend to be segregated by sex. This paper reflects the diversity in school types, including both co-ed and single-sex schools across the country. When the data for this study were collected in the late 1990s, the national curriculum was standardized and rigidly enforced in schools around the country. The curriculum was the same for both boys and girls in preparatory school with the exception that girls studied home-economics while boys took a course in agricultural/industrial studies. Ethnographic studies portray Egyptian schools as having a hierarchical and highly authoritarian climate, and while corporal punishment is illegal, it appears to still be used (Naguib, 2006).

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<sup>3</sup> Egypt's public school system includes two parallel structures: secular schools (attended by 88% of students at the time of the survey) and Muslim religious schools (attended by 7% of students). Only a small proportion attended private or experimental schools (5%).



## **Data and Methods**

The data used for this study are derived from the 1998-1999 schooling sub-study of the Adolescence and Social Change in Egypt survey (ASCE),<sup>4</sup> including responses from 2,495 8th grade students, 480 teachers, and 75 school principals from non-religious, public preparatory schools across Egypt. The selection of schools for the study was based on the distribution of schools attended (currently or in the past) by the interviewed adolescents from the 1997 ASCE National Survey, with the objective of focusing on schools that would capture the largest possible number of previously interviewed adolescents.<sup>5</sup> Within each school, the study team selected one 8th grade class to focus on, interviewing the teachers and students in the class. If the section contained fewer than 35 students, all students were interviewed; otherwise, half of the students were interviewed. In nine schools that had sex-segregated classrooms, both a boys' and a girls' classroom were selected. Using official statistics from the Ministry of Education (MOE), the original investigators constructed sample weights to restore the national distribution of public general preparatory schools by governorate and by urban/rural type of residence. It is important to note that only data from the schooling sub-study were used in this paper.

## **Measures**

### ***Dependent Variables***

Three binary measures of gender attitudes are used in this study: 1) Freedom of movement for women ( $\alpha=0.5$ , subsequently referred to as "mobility"), 2) Male participation

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<sup>4</sup> ASCE was conducted by the Population Council and in partnership with the Social Research Centre at the American University in Cairo, the High Institute of Public Affairs at Alexandria University, and the Faculty of Medicine at Assiut University.

<sup>5</sup> The 1997 ASCE National Survey included a nationally representative stratified probability cluster sample of more than 9,000 adolescents aged 10 to 19, in 101 Primary Sampling Units (PSUs) based on the country's census frame. For the schooling sub-study, used in this paper, fifty PSUs were randomly selected and an ordered list of the PSUs by the level of enrollment among 10-14 year girls was created. Initially, alternate PSUs in the ranking were selected, yielding 60 schools. Since the project budget allowed for a larger sample, an additional 12 PSUs were selected using a similar ranking procedure to yield the final sample of 75 schools (Lloyd, El-Tawila, Clark, and Mensch, 2003)

in household work (alpha = 0.6, referred to as “housework”) and 3) Gender rights and values (alpha = 0.5, referred to as “rights”). The mobility measure included three items: “a wife can go to the market alone,” “a wife can visit a friend along,” and “a wife can go to the doctor alone.” The housework measure included two items: “boys should do as much housework as girls” and “a husband should help his wife with housework.” Finally, the rights measure included five items: “girls should finish secondary school and work before getting married,” “a girl must choose her own husband,” “women can get as high-ranked jobs as men,” “a husband should help his wife with childcare,” and “if money is scarce, boys’ education is a priority.” The three measures were created using exploratory factor analysis on a set of 10 binary statements indicating respondents’ agreement with a variety of gender related items.<sup>6</sup> Items were re-coded so that “agree” represented the response in favor of gender equity. For each measure, a binary variable was created where a positive response (1= “agree”) represents agreement on all the items included in that measure. Thus, these measures focus on the students with the most equitable attitudes on each measure.

### ***Independent Variables***

#### ***Student Level (Level-1) variables***

Students' age and mother and father's levels of education were included in the analysis to capture students’ individual backgrounds. The education variables were collapsed into three categories: no schooling, primary through preparatory schooling, and secondary schooling or above, based on bivariate analyses with the outcome measures. Since mother and father’s education levels were highly correlated, only mother’s education was retained in the

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<sup>6</sup> Three items that were not specifically focused on gender, where the responses could not be easily defined as more or less egalitarian (“should a girl get married when she finds an appropriate groom, even if she is still in school?” and “a working wife spends less time at home and with her children”), or where there was little variation in responses (“should a girl finish school before thinking of marriage?”) were excluded from the factor analysis.

multivariate analyses. A substantial number of responses were missing for the parental education variables; in order not to lose cases in the analysis, a "missing" category was created.

*School level (level 2) variables:*

At the school level, three sets of variables of interest were included:

*School structure:* Two variables were included as measures of the gendered structure of the school: school type (co-ed with mixed classes, co-ed with sex-segregated classes, and single-sex), and the proportion of female teachers assigned to the 8th grade section.

*School climate:* To capture elements of the school climate, four variables were created as aggregates of individual students responses to whether: 1) there was an adult they felt comfortable talking with at school, 2) they were harassed at school in the last week, 3) they were punished in school yesterday or today, and 4) a teacher told them they were a failure. Each statement was coded 1 if the student reported having this experience and 0 if they did not. The responses were aggregated to the school level, where aggregates represent the proportion of students in each school who had these experiences. While comparing sex-specific school aggregates (e.g., the proportion of girls versus boys reporting harassment) would be theoretically relevant, this was not possible in this study given the large number of single-sex schools that would need to be dropped from the analysis.

*Gender attitudes of school staff:* Three measures capture school staff attitudes about: 1) Girls' schooling and marriage, 2) women's freedom of movement, and 3) sex-specific curriculum. These measures are included separately for principals and for teachers, resulting in a total of six variables representing school staff gender-related attitudes. To assess their support for girls' schooling, principals and teachers were asked whether girls should finish secondary school and work before getting married. Staff attitudes about women's mobility were assessed based on

the response to three items: a wife can go to the health unit or doctor on her own, a wife can visit a friend on her own, and a wife can go to the market on her own. Staff that agreed with all three statements were coded as “1” while all others were coded as “0”, thus distinguishing those with the most equitable attitudes. Finally, support for the sex-specific curriculum was assessed with one item, asking the staff whether they agreed with having home-economics classes for girls and agriculture classes for boys. All the individual items were originally measured on a 3-point scale: disagree=1, depends=2, or agree=3; however, given the small number of “depends” responses and the study’s focus on those with the most equitable attitudes, these responses were collapsed into dichotomous variables, with disagree/depends = 0 and agree= 1, and recoded so that “agree” represented the more equitable position. The three principal variables are binary. Teachers' responses were aggregated to the school level, indicating the proportion of interviewed teachers with equitable attitudes on each measure in each school. As with the school climate measures, comparing the impact of the attitudes of male and female teachers would be theoretically relevant; unfortunately this is not possible given the substantial number of schools that have only male or only female teachers.

*Background variables:* School-level control variables were included in the analysis to try to account for differences between schools and the communities they are located in. These included region, urban location, and community education rank. Region reflected the geographical area in which the school was located (Urban Governorates, Lower Egypt, and Upper Egypt). Region is included based on literature suggesting that some regions, such as Upper Egypt, are generally more conservative than others (Lloyd, et al., 2003). Within the region, urban location provides a distinction between urban and rural settings which often differ in attitudes. Finally, a community education index developed by the original investigators was included in the model. For each primary sampling unit, a continuous measure equal to  $0.5 * (1 -$

% of fathers with no education) + 0.5 \* (% of fathers with university degree) was computed. The PSUs were then ordered and grouped into three categories: low, medium and high. The original investigators report that though this measure is clearly confined only to the selective group of fathers whose children stayed in school until the 8th grade, it showed a high degree of variability between PSUs. Mothers' education, on the other hand, was not used in creating this index since there was less variability between PSUs.<sup>7</sup>

### **Analytic Strategy**

Of the 2,495 students in 75 schools, only students with non-missing responses on the variables of interest (N=2,421) in schools with complete information at the school level (N=74) were included in the analysis. Students with missing and complete information were compared to ensure the samples were similar (see Appendix Table B1.1). There were no statistically significant differences between the full sample and the analytic sample, except by region. The respondents excluded from the analysis were more likely to attend school in Upper Egypt compared to the analytic sample, and consequently less likely to attend schools in the Urban Governorates or Lower Egypt.

The literature on gender survey measures suggests that there are multiple dimensions of gender attitudes, and therefore, that correlates of different attitude measures may vary. To account for these multiple dimensions, the dependent variables were created based on exploratory factor analysis, which is used to determine the number of underlying dimensions in a set of observed variables and to empirically assign subsets of variables to each of the underlying dimensions. In the exploratory form of factor analysis, no pre-set structure is imposed on the model. To create the dependent variables, the factor analysis included 10 items

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<sup>7</sup> Though the control variables are not technically at the school level – there are multiple urban schools, for example – they are retained as level 2 variables as they are not the variables of interest, and the sample size is not sufficient for 3-level models.

and was run on the full sample of students using an oblique (geomin) rotation, using the MPlus software program, which allows for factor analysis of binary variables using a robust weighted least squares estimator (Muthen & Muthen, 2010). As described above, a clear and conceptually relevant factor solution emerged, with items related to women's freedom of movement, housework responsibilities, and rights and values grouped into three distinct factors with excellent fit statistics ( $\chi^2 = 24.16$ ,  $p=0.15$ , RMSEA = 0.012, CFI = .998). Interestingly, when the factor analysis was run on separate samples of boys and girls, the factor solution for boys was essentially the same as the full sample. For girls, however, the item "a husband should help his wife in child-care" loaded on the housework factor rather than the rights and values factor in the full sample analysis. It may be that boys conceptualize housework and childcare as different, while girls see both as part of domestic role-sharing. In order to maintain consistency, however, the factor solution for the full sample is used in the analyses.

Hierarchical generalized linear modeling (HGLM) for dichotomous outcomes was used for the analyses to account for the nesting of students in schools in HLM 7 software (Raudenbush & Bryk, 2002). A multilevel modeling approach is most appropriate for this study for both conceptual and statistical reasons (Luke, 2004). Conceptually, this study is multilevel by nature, as we are examining the association between group-level variables experienced by multiple individuals (school characteristics) and individual variables (students' gender-related attitudes); in other words, students are nested within schools. Statistically, HGLM allows for the simultaneous estimation of regression equations at two levels (individual and school), takes into account the violation of the assumption of independence of observations, and produces more accurate estimation of standard errors for non-continuous dependent variables (Raudenbush & Bryk, 2002).

To begin, I performed descriptive analyses at the student and school levels, with a particular focus on comparing boys and girls at the individual level. Next, I estimated bivariate associations in HLM. I then proceeded with the multivariate analyses in several stages. First, I ran a fully unconditional model (FUM), that is, a model without any predictors, in order to calculate the intraclass correlation coefficient (ICC) for each outcome. The ICC describes what proportion of the variance in attitudes can be ascribed to differences between the schools.<sup>8</sup> After establishing that there was significant variation in the outcome variables between schools, within-school models were estimated to examine the relationship between the individual demographics and each of the dependent variables. School-level variables were added to the model in a step-wise fashion, as described in the Results section below. Models were run separately for boys and girls, for each of the three dependent variables. All continuous variables were standardized, and all variables were grand-mean centered for the analyses; population-average results with robust standard errors for the bivariate (Table 1.5) and multivariate analyses (Tables 1.6-1.9) are reported below. Finally, I calculated the proportion of the between school variance explained by each model to assess whether the addition of school level explanatory variables led to a reduction in variance between schools.

## **Results**

### ***Sample Description***

Descriptive statistics for the weighted student sample are presented in Table 1.1. Girls were slightly overrepresented in the sample: 53% girls compared to 47% boys. Age ranged from 12 to 17 years, with a mean of 13.6 across the sample. Boys were slightly older than girls (13.7 compared to 13.4 years of age,  $p < .001$ ). In general, low levels of maternal education were observed in the sample: 40% of students reported that their mother had no schooling. Fathers

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<sup>8</sup> For dichotomous outcomes the ICC is typically calculated using the formula:  $ICC = \tau^2 / (\tau^2 + 3.29)$

had a higher level of education compared to mothers - only 25% of students reported that their father had no schooling, and 20% reported that their father had a secondary education or above, compared to 16% of mothers. Across levels of education, more girls had educated mothers compared to boys, while the differences in fathers' education between boys and girls were less stark. It is important to note that a large proportion of students were missing responses to the parental education variables: 28% for mother's education and 37% for father's education.

Students' gender-related attitudes are presented in Table 1.2. Girls had more equitable attitudes compared to boys on all three outcome measures, and on all individual items; all the differences were statistically significant. A similar proportion of students (by sex) endorsed equitable mobility and household attitudes (respectively, 10% and 13% for boys, and 28% and 27% for girls); however, half of the girls endorsed equitable attitudes on rights and values, while only 11% of boys did.

Weighted descriptive statistics at the school level show substantial variation across schools on the school characteristics of interest in this analysis, as well as important variations by region (Table 1.3) and school-type (Table 1.4). The school-level statistics represent the mean or proportion on each variable averaged across the schools in the sample. On average, 36% of the teachers assigned to the 8th grade class in each school were female, though the proportion ranged from 0 to 100%. In terms of school climate, similar proportions of students reported a supportive adult (39%, range: 13%-90%) and, in contrast, experiencing harassment in the past week (41%, range: 3% to 100%). A smaller proportion of students, on average, reported having been punished in school yesterday or today (20%, range: 0 to 96%) or being told they were a failure (19%, range: 0 to 82%).



The data also show important differences in attitudes between teachers and principals,<sup>9</sup> especially regarding women's freedom of movement, as well as differences across the three measures. For example, while 39% of principals, and an average of 34% of teachers across schools (range: 0 to 83%) agreed that girls should finish secondary school and work before getting married, only a quarter of principals but nearly two-thirds of teachers (64%, range: 33% to 100%) agreed that women should have freedom of movement in visiting friends, seeing a doctor, and going to the market. Finally, 60% of principals and 54% of teachers (range: 17% to 100%) disagreed with a sex-segregated curriculum of home-economics for girls and agriculture for boys.

School characteristics varied across the three regions represented in this study, as shown in the right panel of Table 1.3. Over half the schools in the sample were located in Lower Egypt, and only 10% in the Urban Governorates. The type of schools available varied by region: single-sex schools were more commonly found in the urban governorates, while co-ed schools were most common in Upper Egypt, a poorer and more rural area where enrollments are often too low to allow for separate schools for boys and girls. Upper Egypt had the lowest proportion of female teachers, 30% compared with 40% in Lower Egypt and 38% in the Urban Governorates, though these differences were not statistically significant at  $p < .10$ . Schools in the Urban Governorates had the highest levels on all four school climate variables. Comparing across regions, principals in the Urban Governorates generally had the most equitable attitudes. In contrast, teachers had the most equitable attitudes in Upper Egypt. Finally, the highest proportion of schools in the Urban Governorates were classified as high education rank; in

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<sup>9</sup> Note that the range for teacher attitudes represents the range of mean attitudes by school (that is, in one school 33% of teachers agreed with women's freedom of movement, in another school, 100% of teachers agreed with it. The average across the 74 schools in the sample was 64%). Since there is only one principal per school, the attitude measures for principals represent the (weighted) proportion of principals across schools who agree on each measure.

contrast, the highest proportion of schools in Upper Egypt were in low education rank communities.

School characteristics also varied by school type, as shown in Table 1.4. Overall, about 40% of schools were co-ed with mixed classrooms (under-represented in the unweighted sample), while another 13% were co-ed but had separate classes for boys and girls. The remaining schools were single-sex, with 28% girls' schools and 17% boys' schools. Girls' schools had the highest proportion of female teachers (54%), while boys' schools had the lowest (19%). In terms of school climate, boys' schools had the highest proportions of harassment, punishment, and insult, as well as support, while girls' schools had the lowest levels of support, punishment and insult. Co-ed mixed schools, on the other hand, had the lowest levels of harassment, nearly half of the levels in boys' schools. For the most part, principal and teacher attitudes did not vary significantly across school types.

Finally, boys' and girls' schools were under-represented in low-education communities, and over-represented in high education communities. In fact, there were no co-ed, segregated schools, and less than 10% of co-ed mixed schools, in high education communities. It is important to note that region and school type are not independent of one another, and are related to other variables: for example, single-sex schools are more common in the Urban Governorates, which also happen to have higher levels of education. Thus, the relationships described above should be approached with caution. All the multivariate analyses control for these important background variables in order to disentangle the complex relationships.

### ***Variance between Schools***

In the full analytic sample, the intraclass coefficient – that is, the proportion of the variance in attitudes that can be attributed to differences between schools – was statistically

significant and ranged from 10% for mobility to 17% for rights and values, indicating that the analysis of school characteristics using HGLM was warranted.

### ***Bivariate Analyses***

In the bivariate analyses, each variable was independently regressed on the three outcome variables using HGLM, estimating separate regressions for boys and girls. Table 1.5 presents the odds ratios for each association, with notations indicating whether the relationship between each predictor and the outcome is statistically significant at  $p \leq .10$ . The *school structure* variables, including the proportion of female teachers and school type, display a consistent pattern across outcomes but are statistically significant only for specific outcomes. For example, higher proportions of female teachers generally had positive odds ratios, but were only significantly associated with more equitable attitudes about mobility for girls and attitudes about rights and values for boys. The *school climate* and *staff attitudes* variables, on the other hand, highlight differences between boys and girls. For example, more school climate variables are significantly associated with boys' attitudes, where higher levels of school punishment and being insulted by a teacher are associated with higher odds of equitable attitudes about rights and a higher level of support is associated with lower odds of supporting women's mobility. Conversely, more teacher and principal attitude variables are significant for girls' attitudes, with support for equitable attitudes by school staff associated with more equitable attitudes among girls.

The background variables – parental education, location, and community education rank – are important correlates of student attitudes; in general, they display more consistent associations between boys and girls than the focal school characteristics. Higher levels of parental education, especially at the secondary level or above, were generally associated with more equitable attitudes for both boys and girls. The community level of education was also

positively associated with students' attitudes, and was significant for boys on all three outcomes, and for girls' housework attitudes: compared to students living in low education rank communities, students in high education rank communities had more equitable attitudes on all three measures. The attitude outcomes also varied significantly by school location: Consistent with previous literature, students in urban schools had more equitable attitudes compared to students in rural schools, and student in Lower Egypt and in the Upper Governorates generally had less equitable attitudes compared to students in the Urban Governorates. Overall, the bivariate results suggest that school characteristics are significantly associated with student attitudes, though the results vary by sex and by outcome.

### ***Multivariate Analyses***

The multivariate models examine the associations between three sets of school-level variables (school structure, school climate, and staff attitudes) and students' attitudes about mobility, housework, and rights, controlling for individual characteristics and school background/location. To maximize the power to detect significant effects given the large number of predictors and relatively small number of schools, I estimated 3 final models for each outcome, separately including: 1) school structure variables (Model 4), 2) staff attitudes (Model 5), and 3) school climate measures (Model 6) in the analysis. All final models include the background variables at the individual and school level; in addition, given significant differences by school type (see Table 1.4), the school structure variables are also included in all three models.

To keep the discussion of the multivariate analyses tractable, the results are presented in two sections: first, we focus on the final models to compare the results for boys and girls for each outcome (Tables 1.6-1.8). Then, we briefly compare how the determinants vary by outcome, as summarized in Table 1.9. In addition, an overview of the results as the school level

variables are sequentially introduced into the models is presented in Appendix A and Appendix Tables B1.2-B1.7.

With regard to *attitudes about women's freedom of movement*, the results presented in Table 1.6 show a greater number of significant associations of gendered school characteristics for boys' attitudes compared to girls. While for both boys and girls a higher proportion of female teachers was associated with substantially higher odds of supporting women's mobility (girls: OR=1.65,  $p<.001$ ; boys: OR=2.07,  $p<.01$ ), none of the other focal variables were significantly associated with girls' attitudes. In contrast, school type and school climate variables showed significant associations with boys' attitudes: compared to single-sex schools, boys in co-ed schools with either mixed (OR=0.55,  $p<.01$ ) or segregated classrooms (OR= 0.43,  $p<.01$ ) had lower odds of supporting women's mobility. In addition, a higher proportion of students punished in school was associated with greater odds of equitable mobility attitudes (OR=1.41,  $p<.05$ ), while both the proportion of students reporting a supportive adult (OR=0.76,  $p<.10$ ) and the proportion of students told they were a failure (OR=0.70,  $p<.10$ ) were associated with less equitable attitudes among boys. Staff attitudes were not significantly associated with either boys' or girls' mobility attitudes.

For students' *attitudes about housework* (Table 1.7), the school structure variables were only associated with girls' attitudes: girls in both mixed (OR=2.69,  $p<.001$ ) and segregated (OR=1.93,  $p<.05$ ) schools had more equitable attitudes about housework than girls in single-sex schools, though the associations were attenuated and became non-significant when the staff attitudes and school climate variables were introduced in Model 6. For the school climate and staff attitude measures, on the other hand, we observe significant relationships for both boys' and girls' attitudes, though there is no overlap in the specific items that are significant for boys and girls. Of the school climate variables, for example, girls in schools with higher levels of

*harassment* and boys in schools with a greater proportion of students reporting a *supportive adult* had greater odds of equitable housework attitudes (OR=1.62,  $p<.05$  and OR=1.34,  $p<.10$ , respectively). Three different staff attitudes items were significantly associated with housework attitudes: for girls, having a principal who rejects the sex-specific curriculum (OR= 1.71,  $p<.01$ ), and for boys, a higher proportion of teachers who support women's freedom of movement (OR=1.56,  $p<.10$ ) were associated with more equitable attitudes. In contrast, boys in schools where principals agreed that girls should finish secondary school and work before thinking of marriage had lower odds of supporting an equitable division of housework (OR =0.64,  $p<.10$ ).

Finally, for attitudes about *rights and values* (Table 1.8), more *school structure* and *school climate* variables were associated with boys' attitudes compared to girls. For boys, a higher proportion of female teachers and attending boys' only schools (compared to co-ed mixed or segregated schools) were associated with more equitable attitudes. In terms of the school climate variables, for boys, a greater proportion of students reporting harassment was associated with a lower likelihood of equitable attitudes (OR=0.53,  $p<.001$ ), while the proportion reporting a supportive adult (OR=1.44,  $p<.001$ ) and the proportion reporting punishment (OR=1.53,  $p<.01$ ) were associated with a greater likelihood of equitable responses. Only the proportion of students reporting harassment in schools was significantly associated with girls' attitudes, in the opposite direction than for boys: girls in schools with higher proportions of students reporting punishment were less likely to endorse equitable attitudes (OR=0.59,  $p<.05$ ). Principal attitudes, significant for both girls and boys, were generally associated with less equitable attitudes regarding rights and values. Specifically, having a principal who agrees that girls should finish secondary school and work before getting married (OR=0.61,  $p<.10$ , for girls), supports women's mobility (OR=0.75,  $P<.10$ , for boys), or rejects the sex-specific curriculum (OR=0.59,  $p<.05$ , for boys) were associated with lower odds of equitable attitudes. There was

one exception: having a principal who rejects the sex-segregated curriculum was associated with greater odds of having equitable attitudes for girls (OR= 1.78,  $p < .01$ ). As with the school punishment variable, we observe significant relationships in opposite directions for boys and girls. Teachers' attitudes were not significantly associated with the outcome variable.

Examining the associations between the background variables and the three attitudes measures, we find that only attending schools in Lower Egypt was consistently associated with less equitable attitudes for both boys and girls across outcomes. Other associations varied by sex: for example, compared to boys in low education rank communities, boys in high rank communities were substantially more likely to hold equitable attitudes across outcomes; for girls, associations with community education level, while positive, were only significant for attitudes about housework. Similarly, while age was negatively associated with equitable attitudes for girls, there was no significant association for boys. There was some variation by outcome as well: for both boys and girls, higher levels of mother's education were associated with greater odds of having equitable attitudes about housework, but not for the other outcome measures.

Table 1.9 summarizes the results across the three outcomes for each set of school characteristics. The school structure characteristics show a greater number and more consistent associations across outcomes for boys than for girls. For boys, higher proportions of female teachers and attending a boys' school were associated with more equitable attitudes about *mobility* and about *rights*. For girls, on the other hand, attending girls' only schools was associated with *less* equitable attitudes, about *housework*. The proportion of female teachers was only significant for attitudes about mobility. The structure variables show no significant associations for boys' attitudes about housework, and for girls' attitudes about rights.

For both boys and girls, school staff attitudes were not significantly associated with attitudes about mobility. For the other two outcomes, for boys, principal attitudes were negatively associated with equitable attitudes. For girls, the associations varied in direction: a principal's rejection of sex-segregated curriculum was positively associated with attitudes about housework and rights; on the other hand, a principal's support for delaying marriage was negatively associated with attitudes about rights and values. While teachers' support for women's freedom of movement was positively associated with boys' equitable attitudes about housework, none of the other measures of teachers' attitudes were associated with student attitudes.

In terms of the school climate, as with the school structure variables, the significant relationships were concentrated in the mobility and rights outcomes for boys, and in the housework and rights outcomes for girls. There are more significant associations between climate variables and boys' attitudes, compared to girls. The most consistent associations were found for levels of support and levels of punishment in school, where a higher proportion was associated with more equitable attitudes on two of the three outcomes. In schools with greater proportions of students who experienced harassment or were told they were a failure, boys' have less equitable attitudes, on different outcomes. The associations for girls, on the other hand, were in the opposite direction compared to boys: levels of harassment were associated with more equitable attitudes, while levels of punishment with less equitable attitudes, on different outcomes.

The results in Table 1.9 highlight important differences between boys and girls, as well as across outcomes. Examining the proportion of the between-school variance explained by each model (presented as the bottom row of the multivariate result tables) similarly highlights these differences. Importantly, the background variables (i.e., individual demographics,



community education, and location) explained two-thirds or more of the variance in boys' attitudes between schools (98% for mobility, 75% for housework, and 67% for rights). For girls, on the other hand, the proportion of variance explained by the background variables was substantially lower (24% for mobility, 63% for housework, and 26% for rights). The school structure variables increased the explanatory power of the models – for girls, approximately three-quarters of the variance in mobility and housework, and 29% of the variance in rights, is explained by the addition of the school structure variables. For boys, 78% of the variance in housework attitudes and nearly 100% of the variance in mobility and rights attitudes is explained by this model. Thus, while we see multiple significant associations between staff attitudes and school climate variables and boys' attitudes, there is little variance left between schools for these variables to explain. In terms of the variance explained by each set of variables, boys' and girls' attitudes about housework were the most similar. For girls, and for boys' attitudes about housework (where there was variance left to explain), the school staff attitude variables generally add to the explanatory value of the model more than the climate variables, though both substantially increase the proportion of variance explained beyond the school structure variables. Ultimately, with the exception of girls' attitudes about rights where a much lower proportion of the variance was accounted for, the staff attitudes and school climate models explained between 84% and 95% of the variance for girls, and between 89% and 100% of the variance for boys across outcomes. These results highlight the important role of school characteristics in explaining differences in attitudes, as well as the substantial differences in the dynamics of attitude formation between boys and girls.

## **Discussion and Conclusions**

The goals of this analysis were to assess the associations between gendered school-level characteristics and Egyptian middle-school students' attitudes about gender, paying close

attention to differences between boys and girls. In addition to (and controlling for) important differences by region and community level of education, we find that all three sets of variables of interest – school structure, school climate, and staff attitudes – are associated with student attitudes.

The central finding emerging from this analysis is the strong difference between boys and girls on multiple levels: in their support for gender equity, in which predictors are significant and in what direction, and finally, in the proportion of variance in attitudes that is explained by the school-level variables. Females – both students and school staff – have more equitable gender attitudes on all measures. In addition, though we observe a greater number of significant associations between school characteristics and boys' attitudes, these characteristics account for a greater proportion of the between-school variance for girls. This suggests that girls' attitudes are more sensitive to school characteristics compared to boys, consistent with findings from a similar study in Kenya that found that the gendered dimensions of schools were associated with academic outcomes for girls but not boys (Lloyd, Mensch, & Clark, 2000). It is important to consider a selection effect – it is likely that girls who remain in school at the 8<sup>th</sup> grade level are a more exclusive group than boys in school (as evidenced by lower national enrollment rates for girls, as well as higher levels of mother's education for girls compared to boys in this sample). Given their somewhat unique experience, girls may be more open to change compared to boys, who may be more representative of their communities. However, the multiple significant associations and the variance explained for housework attitudes suggest that gendered school characteristics matter for boys as well, particularly for specific attitude domains.

Exposure to a greater proportion of female teachers seems to be particularly important for boys' attitudes. It may be that interacting with adult women in their professional capacities

expands children's ideas about what roles and behaviors are acceptable for women. While the literature emphasizes the importance of female teachers for encouraging girls (e.g. Kirk, 2006), their impact on boys requires further attention.

The literature on social reproduction, with its focus on the multiple, dynamic effects of schooling, can be drawn on to understand the instances where the associations between specific variables and attitudes operate in opposite directions for boys and girls. For example, the results suggest that boys in single-sex schools had more equitable attitudes, while the opposite was true for girls: attending co-educational schools was associated with greater odds of girls holding equitable attitudes. It may be that for girls, observing and interacting with boys in the co-educational school setting highlights the inequalities they experience (for example, in access to leisure time, or freedom of movement, as described by Mensch et al. (2000)).

Similarly, the finding that in schools with higher levels of harassment boys have lower odds, and girls have higher odds, of equitable attitudes may reflect an environment where boys feel entitled to harass, bolstering negative messages about power and rights, and where girls, in response, become more invested in equity. Higher levels of punishment, on the other hand, may reflect high levels of teacher attention and intervention when boys are misbehaving – correcting boys for harassing girls, for example, as Humphreys (2008) describes, and contributing to more equitable attitudes among boys. For girls, high levels of punishment, associated with lower odds of equitable attitudes, may be reinforcing gendered notions of authority and obedience. Finally, while girls might see equitable principals as role models who support a broader range of roles for women, the negative association between principals' equitable attitudes and boys' attitudes might reflect a “backlash” or reaction against what is perceived of as favoring girls (Dworkin, Colvin, Hatcher, & Peacock, 2012; Humphreys, 2006; Morrell, 2002; Sideris, 2004). More research on classroom/school dynamics, with attention to how school staff and the school

climate may differentially affect boys and girls, would enhance our understanding of these findings.

This study also highlights the importance of further research about gender attitudes. The variations in level of support for equity across the various attitude items for both students and teachers, low correlations between attitude items (not shown), and the differences in significant predictors across outcomes support what feminist scholars have long argued: that the concept of women's empowerment or gender equity is contextual, complex and multi-dimensional (Desai & Andrist, 2010). Yet, current measures and analyses often do not capture this complexity. As a first step, cognitive interviewing and focus group discussions about survey items, as used by Schuler, Lenzi, and Yount (2011) could help illuminate the contextual meanings of specific attitude items used in this study. Such studies may explain, for example, the large differences in support for women visiting friends alone compared to going to the doctor alone (two items included in the mobility measure for both students and teachers), or to clarify why such a large proportion of principals reject the traditional sex-specific curriculum. In their detailed exploration of justification of violence attitudes in Bangladesh, Schuler and her colleagues found that, in addition to a substantial number of respondents who misunderstood the questions or answered differently when additional details were added to the question, a subset of respondents rejected justifications of violence against women not because they held equitable ideas about men and women's equal worth and rights, but rather because they believed that, for various reasons, beating one's wife was not advisable. Thus, studies of attitudes could enhance our understanding not only of the meanings of specific items, but also how these items relate to ideas about gender equity.

However, understanding the meanings of individual attitude items is not sufficient; additional research is needed to clarify the relationship between different dimensions of gender

attitudes. For example, in this study, why are school staff attitudes associated with children's attitudes about housework and rights, but not mobility? How are attitudes about mobility, housework, and rights related to one another, and more importantly, what do they mean for the roles, responsibilities, and freedoms of men and women? These questions – which apply to other studies with other measures of gender attitudes – remain unanswered. To begin to address them, we need more research both into the attitude measures, as well as into school dynamics in developing countries.

The analysis is limited in several ways. It is affected by the limited availability of individual level background variables and other contextual variables that may be important to the understanding of gender attitudes, including direct measures of individual socioeconomic status, family members' gender-related attitudes, community gender norms, and access to media. Thus, the study may be attributing to schools effects that are actually related to other developmental contexts. While controls for region, urbanicity, and community education were included, these measures may not sufficiently capture variations in community gender norms. In addition, while the range of school-level data collected is extensive, the gender-related attitude questions, particularly for teachers, as well as the gendered school dimensions are limited in scope, and may not capture more dynamic gendered experiences. The aggregation of teacher attitudes to the school level also results in some loss of nuance, which may have important effects.

The small sample size for co-ed schools and the large number of schools that have only male or only female teachers precludes an analysis of differential school experiences by sex of the student or teacher. For example, it is not possible to look at the impact of a difference in boys' and girls' experiences of support or harassment in the same school. Such analyses would

likely yield interesting findings and enrich our understanding of children's gendered experiences in school.

Finally, as mentioned earlier, the cross-sectional nature of the data also precludes making conclusive statements about the directionality of findings. For example, it may be that the explanation for the positive association between a greater proportion of female teachers and students' more equitable attitudes is not that female teachers inspire more equitable attitudes, but rather that communities that hold more equitable attitudes (reflected in the attitudes of the students) also allow or accept a greater proportion of female teachers in the school. Indicators of school location and community education were included to attempt to control for differences in community attitudes, but may not be sensitive enough to capture community differences.

Nevertheless, this study provides an important starting point for understanding the gendered dimensions of schooling. The major strength of this study is in its unique contribution to the literature – virtually none of the studies that explore the gendered dimensions of schools employ a large-scale, quantitative approach, and fewer still examine gender attitudes as the outcome. The importance of in-depth qualitative approaches in this field cannot be overstated – the variables measured and the research questions and hypotheses posed are derived from the rich ethnographic descriptions of gender and school systems. This study, using a unique dataset detailed in its measurement of school quality and gender-related characteristics of the school, allows for a comparison of multiple schools and settings, as well as of the strength of association between various variables and the outcome of interest. While the importance of gender norms in shaping health outcomes is now broadly accepted, there is a need for more research examining how school characteristics shape these norms. In the context of strong international emphasis on increasing school enrollment rates around the world, this study could draw

attention to the importance of focusing on the school as a context for understanding gender and health. More specifically, highlighting how different school characteristics are associated with individual attitudes could direct further research, resources, and intervention to specific components of the school that might promote gender equity.

**Table 1.1: Descriptive statistics for student-level variables, weighted (n: girls = 1,290, boys =1,131)**

|  | Boys  | Girls | Total |
|--|-------|-------|-------|
| Proportion of boys and girls in school       | 0.47  | 0.53  | 1.00  |
| Mean Age ***                                 | 13.74 | 13.37 | 13.55 |
| Mother's education                           |       |       |       |
| No school                                    | 0.43  | 0.38  | 0.40  |
| Primary through preparatory**                | 0.12  | 0.20  | 0.16  |
| Secondary and above                          | 0.14  | 0.17  | 0.16  |
| Missing                                      | 0.31  | 0.25  | 0.28  |
| Father's education                           |       |       |       |
| No school                                    | 0.29  | 0.22  | 0.25  |
| Primary through preparatory                  | 0.18  | 0.16  | 0.17  |
| Secondary and above                          | 0.18  | 0.22  | 0.20  |
| Missing                                      | 0.35  | 0.39  | 0.37  |
| <i>School Experiences:</i>                   |       |       |       |
| Has an adult s/he can talk to in school**    | 0.49  | 0.36  | 0.42  |
| Was harassed at school in the past week      | 0.52  | 0.47  | 0.49  |
| Was punished in school yesterday or today*** | 0.30  | 0.14  | 0.22  |
| Was told s/he was a failure by a teacher***  | 0.35  | 0.13  | 0.24  |

*Differences between boys and girls significant at: + p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001*

**Table 1.2: Gender-related attitudes by sex, weighted (n = 2,421; girls = 1,290, boys =1,131)**

| Proportion of students who agree with each statement:                 | Boys        | Girls       | Total       |
|---|-------------|-------------|-------------|
| <b><i>Freedom of Movement:</i></b>                                    |             |             |             |
| Wife can go to the market alone***                                    | 0.51        | 0.73        | 0.63        |
| Wife can visit a friend alone***                                      | 0.46        | 0.73        | 0.61        |
| Wife can go to the doctor alone***                                    | 0.22        | 0.38        | 0.31        |
| <b><i>Mobility: Agree to all ***</i></b>                              | <b>0.10</b> | <b>0.28</b> | <b>0.19</b> |
| <b><i>Housework:</i></b>  |             |             |             |
| Boys should do housework as girls***                                  | 0.23        | 0.42        | 0.33        |
| Husband should help wife in housework****                             | 0.23        | 0.38        | 0.31        |
| <b><i>Housework: Agree to all***</i></b>                              | <b>0.13</b> | <b>0.27</b> | <b>0.20</b> |
| <b><i>Rights and values behavior:</i></b>                             |             |             |             |
| Girls should finish secondary school & work before getting married*** | 0.34        | 0.75        | 0.55        |
| Girl must choose her husband**  | 0.81        | 0.89        | 0.86        |
| Women can get as high rank jobs as men***                             | 0.59        | 0.88        | 0.74        |
| Husband should help wife in child care*                               | 0.86        | 0.92        | 0.89        |
| If money is scarce, boys' education is a priority - reversed***       | 0.40        | 0.80        | 0.61        |
| <b><i>Rights: Agree to all***</i></b>                                 | <b>0.11</b> | <b>0.50</b> | <b>0.31</b> |

*Differences between boys and girls significant at: \*p<.05, \*\*p<.01, \*\*\*p<.001*



**Table 1.3: Weighted descriptive statistics for school-level variables (n = 74), total and by region**

|  | Mean (s.e.)<br>or<br>proportion | n or range    | Urban<br>Governorates<br>(n=15) | Lower<br>Egypt<br>(n=30) | Upper<br>Egypt<br>(n=29) |           |
|--|---------------------------------|---------------|---------------------------------|--------------------------|--------------------------|-----------|
| <b>School characteristics</b>  |                                 |               |                                 |                          |                          |           |
| Proportion of schools by region:                                     | --                              | --            | 0.10 (.05)                      | 0.52 (.09)               | 0.38 (.09)               |           |
| <b>Structure:</b>  |                                 |               |                                 |                          |                          |           |
| School type:   |                                 |               |                                 |                          |                          |           |
| Co-ed, segregated classrooms   | 0.13 (.05)                      | 9             | 0.10 (.11)                      | 0.10 (.06)               | 0.19 (.10)               |           |
| Co-ed, mixed classrooms  | 0.42 (.09)                      | 14            | 0.00                            | 0.44 (.13)               | 0.51 (.15)               | (a)(b)    |
| Boys only  | 0.17 (.05)                      | 23            | 0.37 (.13)                      | 0.13 (.06)               | 0.16 (.07)               |           |
| Girls only   | 0.28 (.07)                      | 28            | 0.53 (.13)                      | 0.32 (.11)               | 0.15 (.07)               | (b)       |
| Proportion of female teachers  | 0.36 (0.04)                     | Range: 0 to 1 | 0.38 (.13)                      | 0.40 (.06)               | 0.30 (.05)               |           |
| <b>School climate:</b>   |                                 |               |                                 |                          |                          |           |
| Proportion of students reporting:                                    |                                 |               |                                 |                          |                          |           |
| Having a supportive adult  | 0.39 (0.03)                     | 0.13 to 0.90  | 0.50 (.07)                      | 0.43 (.03)               | 0.30 (.03)               | (b)(c)    |
| Harassment in the last week  | 0.41 (0.04)                     | 0.03 to 1.00  | 0.63 (.04)                      | 0.46 (.04)               | 0.27 (.05)               | (a)(b)(c) |
| Punishment yesterday or today  | 0.20 (0.03)                     | 0.00 to 0.96  | 0.27 (.06)                      | 0.21 (.04)               | 0.16 (.04)               |           |
| Being told they were a failure                                       | 0.19 (0.02)                     | 0.00 to 0.82  | 0.26 (.05)                      | 0.22 (.03)               | 0.15 (.02)               | (b)(c)    |
| <b>School Staff Attitudes:</b>                                       |                                 |               |                                 |                          |                          |           |
| Principal agrees that:   |                                 |               |                                 |                          |                          |           |
| Girls should finish secondary school and work before getting married | 0.39 (.08)                      | 30            | 0.63 (.13)                      | 0.40 (.12)               | 0.31 (.12)               | (b)       |
| Women should have freedom of movement                                | 0.25 (.07)                      | 28            | 0.50 (.12)                      | 0.31 (.12)               | 0.11 (.06)               | (b)       |
| There should not be sex-specific curriculum                          | 0.60 (.09)                      | 45            | 0.62 (.23)                      | 0.53 (.14)               | 0.69 (.11)               |           |
| Teacher attitudes: (proportion that agree with:)                     |                                 |               |                                 |                          |                          |           |
| Girls should finish secondary school and work before getting married | 0.34 (0.03)                     | 0.00 to 0.83  | 0.39 (.05)                      | 0.28 (.04)               | 0.41 (.04)               | (a)(c)    |
| Women should have freedom of movement                                | 0.64 (0.02)                     | 0.33 to 1.00  | 0.35 (.09)                      | 0.38 (.04)               | 0.39 (.04)               |           |
| There should not be sex-specific curriculum                          | 0.54 (0.04)                     | 0.17 to 1.00  | 0.42 (.06)                      | 0.53 (.05)               | 0.58 (.06)               | (b)       |
| <b>Background variables:</b>   |                                 |               |                                 |                          |                          |           |
| Urban  | 0.36 (.09)                      | 47            | 1.00                            | 0.32 (.13)               | 0.24 (.12)               | (a)(b)    |
| Community Education Index:   |                                 |               |                                 |                          |                          |           |
| Low  | 0.41 (.09)                      | 25            | 0.10 (.11)                      | 0.30 (.12)               | 0.62 (.13)               | (b)(c)    |
| Medium   | 0.36 (.08)                      | 25            | 0.21 (.16)                      | 0.47 (.13)               | 0.26 (.12)               |           |
| High   | 0.23 (.07)                      | 24            | 0.69 (.18)                      | 0.23 (.11)               | 0.12 (.07)               | (a)(b)    |
| Statistically significant difference (p<.10) between:                |                                 |               |                                 |                          |                          |           |
| (a) Urban Governorates and Lower Egypt                               |                                 |               |                                 |                          |                          |           |
| (b) Urban Governorates and Upper Egypt                               |                                 |               |                                 |                          |                          |           |
| (c) Lower Egypt and Upper Egypt                                      |                                 |               |                                 |                          |                          |           |

**Table 1.4: Weighted descriptive statistics for school-level variables by school type (n = 74)**

|   | Co-ed,<br>segregated<br>classes (n=9) | Co-ed,<br>mixed<br>classes<br>(n=14) | Boys<br>(n=23) | Girls<br>(n=28) |              |
|---|---------------------------------------|--------------------------------------|----------------|-----------------|--------------|
| <b>School characteristics</b>                         |                                       |                                      |                |                 |              |
| <b>Structure:</b>                                     |                                       |                                      |                |                 |              |
| Proportion of schools by type:                        | 0.13 (.05)                            | 0.42 (.09)                           | 0.17 (.05)     | 0.28 (.07)      |              |
| Proportion of female teachers                         | 0.43 (.04)                            | 0.29 (.06)                           | 0.19 (.05)     | 0.54 (.05)      | (a)(b)(e)(f) |
| <b>School climate:</b>                                |                                       |                                      |                |                 |              |
| Proportion of students reporting:                     |                                       |                                      |                |                 |              |
| Having a supportive adult                             | 0.42 (.08)                            | 0.37 (.05)                           | 0.48 (.05)     | 0.34 (.03)      | (f)          |
| Harassment in the last week                           | 0.43 (.07)                            | 0.31 (.05)                           | 0.58 (.05)     | 0.44 (.07)      | (b)(d)       |
| Punishment yesterday or today                         | 0.14 (.03)                            | 0.17 (.03)                           | 0.41 (.07)     | 0.14 (.04)      | (b)(d)(f)    |
| Being told they were a failure                        | 0.18 (.04)                            | 0.19 (.03)                           | 0.31 (.05)     | 0.13 (.03)      | (b)(d)(f)    |
| <b>School Staff Attitudes:</b>                        |                                       |                                      |                |                 |              |
| Principal agrees that:                                |                                       |                                      |                |                 |              |
| Girls should finish secondary school and work         | 0.08 (.08)                            | 0.50 (.15)                           | 0.50 (.15)     | 0.30 (.15)      | (a)(b)       |
| Women should have freedom of movement                 | 0.41 (.19)                            | 0.13 (.09)                           | 0.43 (.16)     | 0.27 (.12)      |              |
| There should not be sex-specific curriculum           | 0.67 (.18)                            | 0.62 (.15)                           | 0.55 (.15)     | 0.57 (.15)      |              |
| Teacher attitudes: (proportion that agree with:)      |                                       |                                      |                |                 |              |
| Girls should finish secondary school and work         | 0.33 (.06)                            | 0.27 (.05)                           | 0.32 (.06)     | 0.46 (.06)      | (e)          |
| Women should have freedom of movement                 | 0.37 (.05)                            | 0.39 (.04)                           | 0.30 (.07)     | 0.42 (.05)      |              |
| There should not be sex-specific curriculum           | 0.53 (.08)                            | 0.56 (.07)                           | 0.53 (.06)     | 0.52 (.06)      |              |
| <b>Background variables:</b>                          |                                       |                                      |                |                 |              |
| Urban   | 0.10 (.09)                            | 0.00                                 | 0.70 (.15)     | 0.82 (.11)      | (b)(c)(d)(e) |
| Region  |                                       |                                      |                |                 |              |
| Urban governorates                                    | 0.08 (.08)                            | 0.00                                 | 0.22 (.14)     | 0.19 (.10)      | (e)          |
| Lower Egypt   | 0.40 (.19)                            | 0.54 (.15)                           | 0.42 (.16)     | 0.60 (.14)      |              |
| Upper Egypt   | 0.53 (.20)                            | 0.46 (.15)                           | 0.36 (.15)     | 0.20 (.10)      |              |
| Community Education Index:                            |                                       |                                      |                |                 |              |
| Low   | 0.76                                  | 0.59                                 | 0.21           | 0.08            | (b)(c)(d)(e) |
| Medium  | 0.24                                  | 0.32                                 | 0.39           | 0.46            |              |
| High  | 0.00                                  | 0.09                                 | 0.40           | 0.46            | (b)(c)(d)(e) |
| Statistically significant difference (p<.10) between: |                                       |                                      |                |                 |              |
| (a) Segregated and Mixed Schools                      |                                       |                                      |                |                 |              |
| (b) Segregated and Boys' Schools                      |                                       |                                      |                |                 |              |
| (c) Segregated and Girls' Schools                     |                                       |                                      |                |                 |              |
| (d) Mixed and Boys' Schools                           |                                       |                                      |                |                 |              |
| (e) Mixed and Girls' Schools                          |                                       |                                      |                |                 |              |
| (f) Girls' and Boys' Schools                          |                                       |                                      |                |                 |              |

**Table 1.5: Results of bivariate binomial logit regressions, presented as odds ratios  
(n: Girls=1,290 Boys=1, 131)**

|  | Girls    |           |         | Boys     |           |         |
|--|----------|-----------|---------|----------|-----------|---------|
|  | Mobility | Housework | Rights  | Mobility | Housework | Rights  |
| <b>Student level:</b>  |          |           |         |          |           |         |
| Age  | 0.82+    | 0.63***   | 0.65*** | 1.02     | 1.15      | 0.84    |
| Mother's Education: (reference = no education)                       |          |           |         |          |           |         |
| Primary & Prep   | 1.05     | 1.71*     | 1.13    | 0.94     | 2.07*     | 1.17    |
| Secondary & above  | 0.95     | 2.73**    | 1.74**  | 1.2      | 2.33+     | 2.4*    |
| Missing  | 0.98     | 1.58*     | 1.25    | 0.83     | 1.32      | 1.59    |
| Father's Education: (reference = no education)                       |          |           |         |          |           |         |
| Primary & Prep   | 1.07     | 1.22      | 1.24    | 0.58+    | 0.75      | 1.67    |
| Secondary & above  | 1.29     | 1.76*     | 1.97**  | 1.32     | 2.39**    | 2.55*   |
| Missing  | 0.84     | 1.63+     | 1.34    | 1.38     | 1.26      | 1.42    |
| <b>School Level:</b>   |          |           |         |          |           |         |
| Proportion of female teachers  | 1.59***  | 1.29      | 1.16    | 1.23     | 0.88      | 1.80*   |
| School type: (reference = single sex)                                |          |           |         |          |           |         |
| Co-ed, segregated classrooms   | 1.00     | 0.67      | 0.84    | 0.64     | 0.62      | 0.7     |
| Co-ed, mixed classrooms  | 0.75     | 0.48*     | 0.72    | 0.62     | 0.64      | 0.62    |
| <b>School climate:</b>   |          |           |         |          |           |         |
| Proportion of students reporting:                                    |          |           |         |          |           |         |
| Having a supportive adult  | 0.83     | 1.17      | 0.8     | 0.65**   | 1.03      | 1.10    |
| Harassment in the last week  | 1.14     | 1.66***   | 1.00    | 0.88     | 0.93      | 1.14    |
| Punishment yesterday or today  | 1.14     | 1.44      | 0.85    | 0.97     | 1.06      | 1.43*** |
| Being told they were a failure                                       | 0.97     | 1.12      | 0.90    | 0.80&    | 0.92      | 1.51*   |
| <b>School Staff Attitudes:</b>                                       |          |           |         |          |           |         |
| Principal agrees that:   |          |           |         |          |           |         |
| Girls should finish secondary school and work before getting married | 1.12     | 1.67+     | 0.81    | 1.20     | 1.00      | 1.33    |
| Women should have freedom of movement                                | 1.20+    | 1.01      | 0.92    | 0.95     | 1.03      | 1.14    |
| There should not be sex-specific curriculum                          | 0.87     | 1.43      | 1.45    | 0.96     | 0.91      | 0.49*   |
| Teacher attitudes: (proportion that agree with:)                     |          |           |         |          |           |         |
| work before getting married  | 1.11     | 1.15      | 1.24+   | 1.31+    | 1.23&     | 1.02    |
| Women should have freedom of movement                                | 1.21+    | 1.06      | 1.11    | 1.19     | 1.27&     | 1.32    |
| There should not be sex-specific curriculum                          | 0.87     | 0.8       | 1.02    | 0.93     | 1.00      | 0.77    |
| <b>Background variables:</b>   |          |           |         |          |           |         |
| Region (reference= urban governorates)                               |          |           |         |          |           |         |
| Lower Egypt  | 0.54+    | 0.26***   | 0.47**  | 0.46*    | 0.31***   | 1.13    |
| Upper Egypt  | 0.57     | 0.31***   | 0.76    | 1.15     | 0.66      | 0.83    |
| Urban  | 1.29     | 2.37*     | 1.41    | 1.72*    | 2.02**    | 1.27    |
| Community education index (reference= low rank)                      |          |           |         |          |           |         |
| Medium Rank  | 1.51     | 1.34      | 1.29    | 1.09     | 1.20      | 2.48**  |
| High Rank  | 1.58     | 3.16***   | 1.59    | 1.80*    | 2.12*     | 4.59*** |
| + p<.10, *p<.05, **p<.01, ***p<.001                                  |          |           |         |          |           |         |

**Table 1.6: Results of multivariate binomial logit regressions on women's freedom of movement attitudes, presented as odds ratios (n: Girls=1,290 Boys=1, 131)**

|   | Girls   |         |         | Boys    |         |         |
|---|---------|---------|---------|---------|---------|---------|
|   | Model 4 | Model 5 | Model 6 | Model 4 | Model 5 | Model 6 |
| <i>Intercept</i>  | 0.35*** | 0.36*** | 0.34*** | 0.09*** | 0.09*** | 0.08*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   | 1.65*** | 1.77**  | 1.57*** | 2.07**  | 2.56**  | 1.97*** |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  | 1.33    | 1.49    | 1.47    | 0.43**  | 0.32*   | 0.46*   |
| Co-ed, mixed classrooms   | 1.28    | 1.54    | 1.35    | 0.55**  | 0.44**  | 0.48**  |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         | 1.05    |         |         | 1.10    |         |
| Women should have freedom of movement   |         | 1.07    |         |         | 0.95    |         |
| There should not be sex-specific curriculum   |         | 1.06    |         |         | 1.42    |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         | 1.04    |         |         | 0.81    |         |
| Women should have freedom of movement   |         | 0.94    |         |         | 0.97    |         |
| There should not be sex-specific curriculum   |         | 1.10    |         |         | 1.13    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         | 0.84    |         |         | 0.76+   |
| Harassment in the last week   |         |         | 1.06    |         |         | 0.94    |
| Punishment yesterday or today   |         |         | 0.87    |         |         | 1.41*   |
| Being told they were a failure  |         |         | 1.08    |         |         | 0.70+   |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   | 0.64*   | 0.69+   | 0.60*   | 0.33*   | 0.20*   | 0.18*** |
| Upper Egypt   | 0.83    | 0.89    | 0.72    | 1.37    | 0.98    | 0.53    |
| Urban   | 0.99    | 1.15    | 1.00    | 0.98    | 0.78    | 0.72    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   | 1.07    | 1.09    | 1.16    | 1.04    | 0.97    | 1.02    |
| High Rank   | 1.37    | 1.37    | 1.38    | 2.64**  | 3.04*   | 3.07**  |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.82+   | 0.82+   | 0.81+   | 1.09    | 1.08    | 1.10    |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 0.94    | 0.94    | 0.94    | 0.87    | 0.85    | 0.84    |
| Secondary & above   | 0.74    | 0.74    | 0.74    | 1.08    | 1.03    | 1.03    |
| Missing   | 0.83    | 0.84    | 0.83    | 0.66    | 0.65    | 0.63    |
| <b>Tau</b>  | 0.05    | 0.04    | 0.03    | 0.00    | 0.00    | 0.00    |
| <b>Proportion of between school variance explained:</b>   | 0.78    | 0.84    | 0.87    | 1.00    | 1.00    | 1.00    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.22 for girls, 0.24 for boys</i>                      |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table 1.7: Results of multivariate binomial logit regressions on housework attitudes, presented as odds ratios (n: Girls=1,290 Boys=1, 131)**

|   | Girls   |         |         | Boys    |         |         |
|---|---------|---------|---------|---------|---------|---------|
|   | Model 4 | Model 5 | Model 6 | Model 4 | Model 5 | Model 6 |
| <i>Intercept</i>  | 0.29*** | 0.31*** | 0.30*** | 0.11*** | 0.10*** | 0.10*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   | 1.10    | 1.21    | 1.09    | 1.08    | 0.73    | 1.39    |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  | 2.69**  | 2.40**  | 1.30    | 1.21    | 1.61    | 1.00    |
| Co-ed, mixed classrooms   | 1.93*   | 1.62    | 1.33    | 1.20    | 1.50    | 1.14    |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         | 1.47    |         |         | 0.64+   |         |
| Women should have freedom of movement   |         | 1.05    |         |         | 1.10    |         |
| There should not be sex-specific curriculum   |         | 1.71**  |         |         | 0.77    |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         | 0.92    |         |         | 0.97    |         |
| Women should have freedom of movement   |         | 0.81    |         |         | 1.56+   |         |
| There should not be sex-specific curriculum   |         | 0.85    |         |         | 1.15    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         | 1.10    |         |         | 1.34+   |
| Harassment in the last week   |         |         | 1.62*   |         |         | 0.90    |
| Punishment yesterday or today   |         |         | 0.92    |         |         | 1.35    |
| Being told they were a failure  |         |         | 1.04    |         |         | 0.74    |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   | 0.45*   | 0.62    | 0.44**  | 0.41*   | 0.47    | 0.28*   |
| Upper Egypt   | 0.73    | 1.19    | 1.15    | 1.18    | 1.50    | 0.97    |
| Urban   | 2.09    | 2.23**  | 1.17    | 1.30    | 1.21    | 0.98    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   | 1.23    | 1.11    | 1.21    | 1.42    | 1.68    | 1.02    |
| High Rank   | 2.43*   | 2.33**  | 1.92*   | 2.43**  | 4.34*   | 2.66**  |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.66*** | 0.67**  | 0.67**  | 1.24    | 1.25    | 1.25+   |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 1.53+   | 1.52+   | 1.56+   | 2.08*   | 2.15*   | 2.19*   |
| Secondary & above   | 2.02+   | 2.18+   | 2.08+   | 2.46*   | 2.41*   | 2.61*   |
| Missing   | 1.29    | 1.30    | 1.31    | 1.19    | 1.20    | 1.20    |
| <b>Tau</b>  | 0.13    | 0.02    | 0.05    | 0.08    | 0.01    | 0.04    |
| <b>Proportion of between school variance explained:</b>   | 0.72    | 0.95    | 0.90    | 0.78    | 0.97    | 0.89    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.48 for girls, 0.36 for boys</i>                      |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table 1.8: Results of multivariate binomial logit regressions on attitudes about *rights and values*, presented as odds ratios (n: Girls=1,290 Boys=1, 131)**

|   | Girls   |         |         | Boys    |         |         |
|---|---------|---------|---------|---------|---------|---------|
|   | Model 4 | Model 5 | Model 6 | Model 4 | Model 5 | Model 6 |
| <i>Intercept</i>  | 1.07    | 1.00    | 0.99    | 0.09*** | 0.08*** | 0.09*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   | 1.10    | 1.27    | 1.01    | 2.36*** | 2.17*** | 3.31*** |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  | 1.26    | 1.74    | 1.39    | 0.51*   | 0.81    | 0.82    |
| Co-ed, mixed classrooms   | 1.09    | 1.82+   | 1.19    | 0.43*   | 0.41*   | 0.64    |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         | 0.61+   |         |         | 1.32    |         |
| Women should have freedom of movement   |         | 0.91    |         |         | 0.75+   |         |
| There should not be sex-specific curriculum   |         | 1.78**  |         |         | 0.57*   |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         | 1.05    |         |         | 1.10    |         |
| Women should have freedom of movement   |         | 1.03    |         |         | 0.93    |         |
| There should not be sex-specific curriculum   |         | 1.05    |         |         | 1.15    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         | 0.78    |         |         | 1.44*** |
| Harassment in the last week   |         |         | 1.23    |         |         | 0.53*** |
| Punishment yesterday or today   |         |         | 0.59*   |         |         | 1.53**  |
| Being told they were a failure  |         |         | 1.20    |         |         | 1.25    |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   | 0.50*   | 0.50*   | 0.41*   | 0.60    | 0.78    | 0.91    |
| Upper Egypt   | 1.05    | 0.84    | 0.86    | 0.90    | 0.98    | 1.43    |
| Urban   | 1.08    | 1.20    | 0.99    | 0.55    | 0.57    | 1.32    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   | 1.26    | 1.58    | 1.62    | 1.29    | 1.61    | 0.76    |
| High Rank   | 1.29    | 1.86+   | 1.37    | 4.23**  | 5.46**  | 3.14**  |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.65*** | 0.63*** | 0.65*** | 0.91    | 0.90    | 0.92    |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 1.00    | 1.00    | 0.99    | 0.97    | 0.98    | 1.03    |
| Secondary & above   | 1.41    | 1.37    | 1.43    | 1.62    | 1.63    | 1.80    |
| Missing   | 1.17    | 1.19    | 1.18    | 1.19    | 1.16    | 1.21    |
| <b>Tau</b>  | 0.26    | 0.15    | 0.20    | 0.00    | 0.00    | 0.00    |
| <b>Proportion of between school variance explained:</b>   | 0.29    | 0.60    | 0.45    | 0.99    | 1.00    | 1.00    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.37 for girls, 0.46 for boys</i>                      |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table 1.9: Summary of multivariate logit regression results, by school characteristics, presented as odds ratios (n: Girls=1,290 Boys=1, 131)**

|  | Girls    |           |        | Boys     |           |         |
|--|----------|-----------|--------|----------|-----------|---------|
| <i>School Structure (model 4)</i>                                    | Mobility | Housework | Rights | Mobility | Housework | Rights  |
| Proportion of female teachers  | 1.65***  | 1.1       | 1.1    | 2.07**   | 1.08      | 2.36*** |
| School type: (reference = single sex)                                |          |           |        |          |           |         |
| Co-ed, segregated classrooms   | 1.33     | 2.69***   | 1.26   | 0.43**   | 1.21      | 0.51*   |
| Co-ed, mixed classrooms  | 1.28     | 1.93*     | 1.09   | 0.55**   | 1.20      | 0.43*   |
|  |          |           |        |          |           |         |
|  | Girls    |           |        | Boys     |           |         |
| <i>School Staff Attitudes (model 5)</i>                              | Mobility | Housework | Rights | Mobility | Housework | Rights  |
| Principal agrees that:   |          |           |        |          |           |         |
| Girls should finish secondary school and work before getting married | 1.05     | 1.47      | 0.61+  | 1.1      | 0.64+     | 1.32    |
| Women should have freedom of movement                                | 1.07     | 1.05      | 0.91   | 0.95     | 1.1       | 0.75+   |
| There should not be sex-specific curriculum                          | 1.06     | 1.71**    | 1.78** | 1.42     | 0.77      | 0.57*   |
| Teacher attitudes: (proportion that agree with:)                     |          |           |        |          |           |         |
| Girls should finish secondary school and work before getting married | 1.04     | 0.92      | 1.05   | 0.81     | 0.97      | 1.1     |
| Women should have freedom of movement                                | 0.94     | 0.81      | 1.03   | 0.97     | 1.56+     | 0.93    |
| There should not be sex-specific curriculum                          | 1.1      | 0.85      | 1.05   | 1.13     | 1.15      | 1.15    |
|  |          |           |        |          |           |         |
|  | Girls    |           |        | Boys     |           |         |
| <i>School Climate (model 6)</i>                                      | Mobility | Housework | Rights | Mobility | Housework | Rights  |
| Proportion of students reporting:                                    |          |           |        |          |           |         |
| Having a supportive adult  | 0.84     | 1.1       | 0.78   | 0.76+    | 1.34+     | 1.44*** |
| Harassment in the last week  | 1.06     | 1.62*     | 1.23   | 0.94     | 0.9       | 0.53*** |
| Punishment yesterday or today  | 0.87     | 0.92      | 0.59*  | 1.41*    | 1.35      | 1.53**  |
| Being told they were a failure                                       | 1.08     | 1.04      | 1.2    | 0.70+    | 0.74      | 1.25    |
| + p<.10, *p<.05, **p<.01, ***p<.001                                  |          |           |        |          |           |         |

## **Appendix A: Overview of Multivariate Model Building Results**

The results of the model building process are presented in Appendix Tables B1.2-B1.7, separately by sex and outcome. Model 1 includes only age and mother's education. Generally, increasing levels of education were associated with more equitable attitudes, though the effects were not consistently statistically significant. In model 2, the community education variables are added. Generally, adding these in did not change the previous results, suggesting that parental education and community levels of education are closely linked and are both important in shaping children's attitudes. There was one exception: for the boys' values outcome, adding the community variables made mother's education lose significance. Next, in model 3, the urban location and regional controls were introduced. Generally, compared to students in urban governorates, those in Lower Egypt had less equitable attitudes; results for Upper Egypt and urban location varied and with few exceptions, were not statistically significant. For boys, introducing the controls for location resulted in an increase in the odds ratios for the community education variables.

The subsequent models, described in greater detail in the multivariate results section, introduce the variables of primary interest in this paper. The school structure variables including the proportion of female teachers and the school type were included in model 4. The proportion of female teachers is positively associated with equitable attitudes, though the results are not consistently statistically significant. The results for school type vary, but generally, for girls, attending a single sex school is associated with less equitable attitudes, while for boys the opposite is true. Including the school structure variables results in some changes in the location and community education rank estimates: for girls, for example, the effect of regional differences is somewhat attenuated (odds ratios move close to 1.00) when school structure is included. The structure variables also increase the explanatory power of the models



– at this point, approximately  $\frac{3}{4}$  or more of the variance between schools is explained for 5 of the 6 outcomes. In model 5, staff attitudes about gender are introduced,<sup>10</sup> resulting in changes in the magnitude and significance value of the level 2 variables from previous models. Most notably, the odds ratios for boys from high education rank schools increased substantially. Changes in other variables varied by outcome and sex of the student: for example, while the odds ratio for the proportion of female teachers increased between models 4 and 5 for the mobility outcome for boys and girls, it decreases for the rights and values outcome for boys. Attitude variables explain a substantial portion of the between school variance for girls, even in the case of the mobility outcome where none of the staff attitude measures are actually significant, as well as for boys' housework, where there was actually some variance left to explain.

Finally, in model 6, the school climate variables replace the staff attitudes.<sup>11</sup> Generally, the odds ratios become more extreme for region (specifically Lower Egypt) across outcomes. The impact of school type is attenuated for the outcomes for which it was significant in model 4. The change in estimates for school type and the proportion of female teachers varied by outcome. The school climate variables also accounted for a portion of the variance in attitudes between schools, primarily for girls.

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<sup>10</sup> Six staff attitude items were introduced simultaneously, as preliminary analyses showed surprisingly low correlations among the items.

<sup>11</sup> To maximize the power of the model to detect significant differences given the large number of variables, the school climate and staff attitudes variables were included in separate models.

## Appendix B: Additional Analysis Tables

**Table B1.1: Comparison of analytic and missing sample**

|                                       | Students included in analysis? |                 | Total |
|---------------------------------------|--------------------------------|-----------------|-------|
|                                       | No<br>(n=74)                   | Yes<br>(n=2421) |       |
| Proportion of respondents by sex      |                                |                 |       |
| Boys                                  | 0.38                           | 0.47            | 0.47  |
| Girls                                 | 0.62                           | 0.53            | 0.53  |
| Mean Age                              | 13.64                          | 13.54           | 13.55 |
| Mother's education:                   |                                |                 |       |
| No school                             | 0.31                           | 0.40            | 0.40  |
| Primary & Prep                        | 0.16                           | 0.16            | 0.16  |
| Secondary & above                     | 0.17                           | 0.16            | 0.16  |
| Missing                               | 0.36                           | 0.28            | 0.28  |
| Father's education:                   |                                |                 |       |
| No school                             | 0.23                           | 0.25            | 0.25  |
| Primary & Prep                        | 0.15                           | 0.17            | 0.17  |
| Secondary & above                     | 0.12                           | 0.20            | 0.20  |
| Missing                               | 0.49                           | 0.37            | 0.38  |
| Proportion of students by region*     |                                |                 |       |
| Urban governorate                     | 0.19                           | 0.22            | 0.22  |
| Lower Egypt                           | 0.27                           | 0.46            | 0.46  |
| Upper Egypt                           | 0.54                           | 0.32            | 0.33  |
| Proportion urban                      | 0.42                           | 0.45            | 0.45  |
| Proportion of students by school-type |                                |                 |       |
| Co-ed, segregated classrooms          | 0.17                           | 0.23            | 0.23  |
| Co-ed, mixed classrooms               | 0.40                           | 0.27            | 0.27  |
| Single-sex, boys                      | 0.21                           | 0.21            | 0.21  |
| Single-sex, girls                     | 0.22                           | 0.28            | 0.28  |

Differences between analytic and missing sample significant at: + p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001

**Table B1.2: Detailed results of multivariate binomial logit regressions for girls' attitudes on women's freedom of movement, presented as odds ratios (n=1,290)**

|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---------|---------|---------|---------|---------|---------|
| <i>Intercept</i>  | 0.33*** | 0.33*** | 0.35*** | 0.35*** | 0.36*** | 0.34*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   |         |         |         | 1.65*** | 1.77**  | 1.57*** |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  |         |         |         | 1.33    | 1.49    | 1.47    |
| Co-ed, mixed classrooms   |         |         |         | 1.28    | 1.54    | 1.35    |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.05    |         |
| Women should have freedom of movement   |         |         |         |         | 1.07    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.06    |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.04    |         |
| Women should have freedom of movement   |         |         |         |         | 0.94    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.10    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         |         |         |         | 0.84    |
| Harassment in the last week   |         |         |         |         |         | 1.06    |
| Punishment yesterday or today   |         |         |         |         |         | 0.87    |
| Being told they were a failure  |         |         |         |         |         | 1.08    |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   |         |         | 0.47*   | 0.64*   | 0.69+   | 0.60*   |
| Upper Egypt   |         |         | 0.57    | 0.83    | 0.89    | 0.72    |
| Urban   |         |         | 0.90    | 0.99    | 1.15    | 1.00    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   |         | 1.47    | 1.59+   | 1.07    | 1.09    | 1.16    |
| High Rank   |         | 1.59    | 1.46    | 1.37    | 1.37    | 1.38    |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.81+   | 0.83    | 0.82+   | 0.82+   | 0.82+   | 0.81+   |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 0.98    | 0.96    | 0.96    | 0.94    | 0.94    | 0.94    |
| Secondary & above   | 0.85    | 0.79    | 0.78    | 0.74    | 0.74    | 0.74    |
| Missing   | 0.93    | 0.86    | 0.86    | 0.83    | 0.84    | 0.83    |
| <b>Tau</b>  | 0.26    | 0.21    | 0.17    | 0.05    | 0.04    | 0.03    |
| <b>Chi-squared</b>  | 115.57  | 104.53  | 94.01   | 65.23   | 61.55   | 61.89   |
| <b>p-value (random effects)</b>   | <0.001  | <0.001  | <0.001  | 0.01    | 0.01    | 0.01    |
| <b>Proportion of between school variance explained</b>  | -0.16   | 0.03    | 0.24    | 0.78    | 0.84    | 0.87    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.22</i>   |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table B1.3: Detailed results of multivariate binomial logit regressions for girls' attitudes on housework, presented as odds ratios (n=1,290)**

|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---------|---------|---------|---------|---------|---------|
| <i>Intercept</i>  | 0.26*** | 0.27*** | 0.30*** | 0.29*** | 0.31*** | 0.30*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   |         |         |         | 1.10    | 1.21    | 1.09    |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  |         |         |         | 2.69**  | 2.40**  | 1.30    |
| Co-ed, mixed classrooms   |         |         |         | 1.93*   | 1.62    | 1.33    |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.47    |         |
| Women should have freedom of movement   |         |         |         |         | 1.05    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.71**  |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 0.92    |         |
| Women should have freedom of movement   |         |         |         |         | 0.81    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 0.85    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         |         |         |         | 1.10    |
| Harassment in the last week   |         |         |         |         |         | 1.62*   |
| Punishment yesterday or today   |         |         |         |         |         | 0.92    |
| Being told they were a failure  |         |         |         |         |         | 1.04    |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   |         |         | 0.37*   | 0.45*   | 0.62    | 0.44**  |
| Upper Egypt   |         |         | 0.59    | 0.73    | 1.19    | 1.15    |
| Urban   |         |         | 1.25    | 2.09    | 2.23**  | 1.17    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   |         | 1.12    | 1.15    | 1.23    | 1.11    | 1.21    |
| High Rank   |         | 2.28*   | 1.83+   | 2.43*   | 2.33**  | 1.92*   |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.68**  | 0.69**  | 0.67**  | 0.66*** | 0.67**  | 0.67**  |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 1.54+   | 1.50+   | 1.51    | 1.53+   | 1.52+   | 1.56+   |
| Secondary & above   | 2.26*   | 2.06*   | 1.99+   | 2.02+   | 2.18+   | 2.08+   |
| Missing   | 1.45    | 1.27    | 1.27    | 1.29    | 1.30    | 1.31    |
| <b>Tau</b>  | 0.43    | 0.31    | 0.18    | 0.13    | 0.02    | 0.05    |
| <b>Chi-squared</b>  | 151.00  | 120.39  | 93.46   | 83.77   | 56.22   | 66.36   |
| <b>p-value (random effects)</b>   | <0.001  | <0.001  | <0.001  | <0.001  | 0.02    | 0.00    |
| <b>Proportion of between school variance explained</b>  | 0.11    | 0.35    | 0.63    | 0.72    | 0.95    | 0.90    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.48</i>   |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table B1.4: Detailed results of multivariate binomial logit regressions for girls' attitudes on rights and values, presented as odds ratios (n=1,290)**

|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---------|---------|---------|---------|---------|---------|
| <i>Intercept</i>  | 0.96    | 0.97    | 1.06    | 1.07    | 1.00    | 0.99    |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   |         |         |         | 1.10    | 1.27    | 1.01    |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  |         |         |         | 1.26    | 1.74    | 1.39    |
| Co-ed, mixed classrooms   |         |         |         | 1.09    | 1.82+   | 1.19    |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 0.61+   |         |
| Women should have freedom of movement   |         |         |         |         | 0.91    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.78**  |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.05    |         |
| Women should have freedom of movement   |         |         |         |         | 1.03    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.05    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         |         |         |         | 0.78    |
| Harassment in the last week   |         |         |         |         |         | 1.23    |
| Punishment yesterday or today   |         |         |         |         |         | 0.59*   |
| Being told they were a failure  |         |         |         |         |         | 1.20    |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   |         |         | 0.46**  | 0.50*   | 0.50*   | 0.41*   |
| Upper Egypt   |         |         | 0.95    | 1.05    | 0.84    | 0.86    |
| Urban   |         |         | 1.03    | 1.08    | 1.20    | 0.99    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   |         | 1.11    | 1.33    | 1.26    | 1.58    | 1.62    |
| High Rank   |         | 1.19    | 1.25    | 1.29    | 1.86+   | 1.37    |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.67*** | 0.67*** | 0.65*** | 0.65*** | 0.63*** | 0.65*** |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 1.00    | 0.99    | 1.00    | 1.00    | 1.00    | 0.99    |
| Secondary & above   | 1.41    | 1.38    | 1.41    | 1.41    | 1.37    | 1.43    |
| Missing   | 1.16    | 1.13    | 1.16    | 1.17    | 1.19    | 1.18    |
| <b>Tau</b>  | 0.40    | 0.40    | 0.27    | 0.26    | 0.15    | 0.20    |
| <b>Chi-squared</b>  | 159.87  | 158.14  | 131.76  | 129.06  | 99.22   | 113.70  |
| <b>p-value (random effects)</b>   | <0.001  | <0.001  | <0.001  | <0.001  | <0.001  | <0.001  |
| <b>Proportion of between school variance explained</b>  | -0.09   | -0.07   | 0.26    | 0.29    | 0.60    | 0.45    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.37</i>   |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table B1.5: Detailed results of multivariate binomial logit regressions for boys' attitudes on women's freedom of movement, presented as odds ratios (n=1,131)**

|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---------|---------|---------|---------|---------|---------|
| <i>Intercept</i>  | 0.10*** | 0.10*** | 0.10*** | 0.09*** | 0.09*** | 0.08*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   |         |         |         | 2.07**  | 2.56**  | 1.97*** |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  |         |         |         | 0.43**  | 0.32*   | 0.46*   |
| Co-ed, mixed classrooms   |         |         |         | 0.55**  | 0.44**  | 0.48**  |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.10    |         |
| Women should have freedom of movement   |         |         |         |         | 0.95    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.42    |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 0.81    |         |
| Women should have freedom of movement   |         |         |         |         | 0.97    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.13    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         |         |         |         | 0.76+   |
| Harassment in the last week   |         |         |         |         |         | 0.94    |
| Punishment yesterday or today   |         |         |         |         |         | 1.41*   |
| Being told they were a failure  |         |         |         |         |         | 0.70+   |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   |         |         | 0.66    | 0.33*   | 0.20*   | 0.18*** |
| Upper Egypt   |         |         | 2.01*   | 1.37    | 0.98    | 0.53    |
| Urban   |         |         | 1.22    | 0.98    | 0.78    | 0.72    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   |         | 1.19    | 1.48    | 1.04    | 0.97    | 1.02    |
| High Rank   |         | 1.95*   | 2.69*   | 2.64**  | 3.04*   | 3.07**  |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 1.04    | 1.06    | 1.12    | 1.09    | 1.08    | 1.10    |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 0.94    | 0.90    | 0.96    | 0.87    | 0.85    | 0.84    |
| Secondary & above   | 1.22    | 1.03    | 1.18    | 1.08    | 1.03    | 1.03    |
| Missing   | 0.84    | 0.76    | 0.77    | 0.66    | 0.65    | 0.63    |
| <b>Tau</b>  | 0.25    | 0.20    | 0.00    | 0.00    | 0.00    | 0.00    |
| <b>Chi-squared</b>  | 76.87   | 74.29   | 57.40   | 54.89   | 52.36   | 50.62   |
| <b>p-value (random effects)</b>   | 0.00    | 0.00    | 0.04    | 0.03    | 0.01    | 0.03    |
| <b>Proportion of between school variance explained</b>  | -0.05   | 0.18    | 0.98    | 1.00    | 1.00    | 1.00    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.24</i>   |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |

**Table B1.6: Detailed results of multivariate binomial logit regressions for boys' attitudes on housework, presented as odds ratios (n=1,131)**

|   | <b>Model 1</b> | <b>Model 2</b> | <b>Model 3</b> | <b>Model 4</b> | <b>Model 5</b> | <b>Model 6</b> |
|---|----------------|----------------|----------------|----------------|----------------|----------------|
| <i>Intercept</i>  | 0.11***        | 0.11***        | 0.11***        | 0.11***        | 0.10***        | 0.10***        |
| <b>School Level:</b>  |                |                |                |                |                |                |
| <b>Structure:</b>   |                |                |                |                |                |                |
| Proportion of female teachers   |                |                |                | 1.08           | 0.73           | 1.39           |
| School type: (reference = single sex)   |                |                |                |                |                |                |
| Co-ed, segregated classrooms  |                |                |                | 1.21           | 1.61           | 1.00           |
| Co-ed, mixed classrooms   |                |                |                | 1.20           | 1.50           | 1.14           |
| <b>School Staff Attitudes:</b>  |                |                |                |                |                |                |
| Principal agrees that:  |                |                |                |                |                |                |
| Girls should finish secondary school and work before getting married                              |                |                |                |                | 0.64+          |                |
| Women should have freedom of movement   |                |                |                |                | 1.10           |                |
| There should not be sex-specific curriculum   |                |                |                |                | 0.77           |                |
| Teacher attitudes: (proportion that agree with:)  |                |                |                |                |                |                |
| Girls should finish secondary school and work before getting married                              |                |                |                |                | 0.97           |                |
| Women should have freedom of movement   |                |                |                |                | 1.56+          |                |
| There should not be sex-specific curriculum   |                |                |                |                | 1.15           |                |
| <b>School climate:</b>  |                |                |                |                |                |                |
| Proportion of students reporting:   |                |                |                |                |                |                |
| Having a supportive adult   |                |                |                |                |                | 1.34+          |
| Harassment in the last week   |                |                |                |                |                | 0.90           |
| Punishment yesterday or today   |                |                |                |                |                | 1.35           |
| Being told they were a failure  |                |                |                |                |                | 0.74           |
| <b>Control variables:</b>   |                |                |                |                |                |                |
| Region (reference= urban governorates)  |                |                |                |                |                |                |
| Lower Egypt   |                |                | 0.42*          | 0.41*          | 0.47           | 0.28*          |
| Upper Egypt   |                |                | 1.19           | 1.18           | 1.50           | 0.97           |
| Urban   |                |                | 1.08           | 1.30           | 1.21           | 0.98           |
| Community education index (reference= low rank)   |                |                |                |                |                |                |
| Medium Rank   |                | 1.15           | 1.43           | 1.42           | 1.68           | 1.02           |
| High Rank   |                | 1.88+          | 2.39*          | 2.43**         | 4.34*          | 2.66**         |
| <b>Student-Level</b>  |                |                |                |                |                |                |
| Age   | 1.23+          | 1.25+          | 1.25+          | 1.24           | 1.25           | 1.25+          |
| Mother's Education: (reference = no education)  |                |                |                |                |                |                |
| Primary & Prep  | 2.12*          | 2.05*          | 2.09*          | 2.08*          | 2.15*          | 2.19*          |
| Secondary & above   | 2.60*          | 2.29*          | 2.44*          | 2.46*          | 2.41*          | 2.61*          |
| Missing   | 1.33           | 1.22           | 1.20           | 1.19           | 1.20           | 1.20           |
| <b>Tau</b>  | 0.36           | 0.32           | 0.09           | 0.08           | 0.01           | 0.04           |
| <b>Chi-squared</b>  | 95.49          | 91.13          | 67.58          | 66.42          | 64.54          | 62.03          |
| <b>p-value (random effects)</b>   | <0.001         | <0.001         | 0.00           | 0.00           | <0.001         | 0.00           |
| <b>Proportion of between school variance explained</b>  | 0.00           | 0.10           | 0.75           | 0.78           | 0.97           | 0.89           |
| + p<.10, *p<.05, **p<.01, ***p<.001   |                |                |                |                |                |                |
| <i>Tau of fully unconditional model (FUM): 0.36</i>   |                |                |                |                |                |                |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |                |                |                |                |                |                |

**Table B1.7: Detailed results of multivariate binomial logit regressions for boys' attitudes on rights and values, presented as odds ratios (n=1,131)**

|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---------|---------|---------|---------|---------|---------|
| <i>Intercept</i>  | 0.11*** | 0.11*** | 0.10*** | 0.09*** | 0.08*** | 0.09*** |
| <b>School Level:</b>  |         |         |         |         |         |         |
| <b>Structure:</b>   |         |         |         |         |         |         |
| Proportion of female teachers   |         |         |         | 2.36*** | 2.17*** | 3.31*** |
| School type: (reference = single sex)   |         |         |         |         |         |         |
| Co-ed, segregated classrooms  |         |         |         | 0.51*   | 0.81    | 0.82    |
| Co-ed, mixed classrooms   |         |         |         | 0.43*   | 0.41*   | 0.64    |
| <b>School Staff Attitudes:</b>  |         |         |         |         |         |         |
| Principal agrees that:  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.32    |         |
| Women should have freedom of movement   |         |         |         |         | 0.75+   |         |
| There should not be sex-specific curriculum   |         |         |         |         | 0.57*   |         |
| Teacher attitudes: (proportion that agree with:)  |         |         |         |         |         |         |
| Girls should finish secondary school and work before getting married                              |         |         |         |         | 1.10    |         |
| Women should have freedom of movement   |         |         |         |         | 0.93    |         |
| There should not be sex-specific curriculum   |         |         |         |         | 1.15    |         |
| <b>School climate:</b>  |         |         |         |         |         |         |
| Proportion of students reporting:   |         |         |         |         |         |         |
| Having a supportive adult   |         |         |         |         |         | 1.44*** |
| Harassment in the last week   |         |         |         |         |         | 0.53*** |
| Punishment yesterday or today   |         |         |         |         |         | 1.53**  |
| Being told they were a failure  |         |         |         |         |         | 1.25    |
| <b>Control variables:</b>   |         |         |         |         |         |         |
| Region (reference= urban governorates)  |         |         |         |         |         |         |
| Lower Egypt   |         |         | 1.34    | 0.60    | 0.78    | 0.91    |
| Upper Egypt   |         |         | 1.44    | 0.90    | 0.98    | 1.43    |
| Urban   |         |         | 0.70    | 0.55    | 0.57    | 1.32    |
| Community education index (reference= low rank)   |         |         |         |         |         |         |
| Medium Rank   |         | 2.19**  | 2.20*   | 1.29    | 1.61    | 0.76    |
| High Rank   |         | 3.69*   | 4.70**  | 4.23**  | 5.46**  | 3.14**  |
| <b>Student-Level</b>  |         |         |         |         |         |         |
| Age   | 0.89    | 0.94    | 0.93    | 0.91    | 0.90    | 0.92    |
| Mother's Education: (reference = no education)  |         |         |         |         |         |         |
| Primary & Prep  | 1.15    | 1.04    | 1.08    | 0.97    | 0.98    | 1.03    |
| Secondary & above   | 2.24+   | 1.70    | 1.77    | 1.62    | 1.63    | 1.80    |
| Missing   | 1.58    | 1.27    | 1.34    | 1.19    | 1.16    | 1.21    |
| <b>Tau</b>  | 0.32    | 0.17    | 0.15    | 0.00    | 0.00    | 0.00    |
| <b>Chi-squared</b>  | 86.31   | 64.92   | 61.32   | 44.30   | 42.50   | 26.18   |
| <b>p-value (random effects)</b>   | <0.001  | 0.02    | 0.02    | 0.19    | 0.08    | >0.500  |
| <b>Proportion of between school variance explained</b>  | 0.31    | 0.63    | 0.67    | 0.99    | 1.00    | 1.00    |
| + p<.10, *p<.05, **p<.01, ***p<.001   |         |         |         |         |         |         |
| <i>Tau of fully unconditional model (FUM): 0.46</i>   |         |         |         |         |         |         |
| <i>Proportion of between school variance explained = (tau FUM - tau of current model)/tau FUM</i> |         |         |         |         |         |         |



**Table B1.8: Teacher descriptives (n=480)**

|   |      |      |      |
|---|------|------|------|
| Mean Age*   | 34.5 | 32.5 | 33.7 |
| Mean Years of Experience as a Teacher*                                | 10.7 | 9.4  | 10.2 |
| Percent Urban   | 58.2 | 63.6 | 60.4 |
| Percent of teachers by region   |      |      |      |
| Urban governorate   | 22.8 | 21.9 | 22.4 |
| Lower Egypt   | 45.4 | 58.9 | 50.8 |
| Upper Egypt   | 31.8 | 19.2 | 26.7 |
| Percent of teachers by school-type***                                 |      |      |      |
| Co-ed, sex segregated classrooms                                      | 11.7 | 13.7 | 12.5 |
| Co-ed, mixed classrooms   | 26.5 | 19.3 | 23.6 |
| Boys' schools   | 27.9 | 7.1  | 19.5 |
| Girls' schools  | 33.9 | 60.0 | 44.4 |
| <b>Percent of teachers who AGREE that:</b>                            |      |      |      |
| Girls should finish secondary school and work before getting married* | 32.2 | 40.1 | 35.4 |
| Freedom of Movement:  |      |      |      |
| Wife can go to market alone***  | 75.8 | 92.6 | 82.6 |
| Wife can visit friend alone*  | 44.7 | 67.1 | 53.7 |
| Wife can go to the doctor alone                                       | 59.4 | 59.1 | 59.3 |
| <b>Agree with all three:</b>  | 34.2 | 41.9 | 37.4 |
| There should not be a sex-segregated curriculum                       | 53.8 | 43.5 | 49.6 |
|   |      |      |      |

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**Chapter III**  
**Children's attitudes about violence in Mumbai, India: Associations with individual  
victimization, school violence and the GEMS intervention**

**Introduction and Background**

Violence against children has been recognized as a significant public health and human rights concern in India and worldwide. The United Nations Secretary-General's Study on Violence against Children – the first comprehensive, global report on the topic – concluded that it is a substantial and serious problem, occurring in every country, in multiple contexts, for both boys and girls. In India, a national study found that nearly 70% of children had experienced violence in one or more settings (Kacker, Varadan, & Kumar, 2007).

Numerous studies document the various short- and long-term consequences of violence, including negative physical, emotional, and academic outcomes (e.g., Aucoin, Frick, & Bodin, 2006; Gershoff, 2002; Gruber & Fineran, 2008; Meyer, 2009; Mweru, 2010; Pinheiro, 2006). One of the most consistent findings on the impact of exposure to violence in childhood is its long-term effects on experiences of violence in adulthood: exposure to violence as a child has been identified as a risk factor for perpetrating violence for men, and for re-victimization for women. While most of the early research on this topic was conducted in developed countries (primarily the United States), recent studies have found similar patterns in multiple developing countries (e.g. Abrahams & Jewkes, 2005; Barker, et al., 2011; Hindin, Kishor, & Ansara, 2008; Koenig, Stephenson, Ahmed, Jejeebhoy, & Campbell, 2006; S. L. Martin, et al., 2002; Yount & Carrera, 2006). For example, analysis of Demographic and Health Surveys in 6 countries<sup>12</sup> found

that women who reported violence between their parents were also more likely to report violence in their current relationship (Hindin, et al., 2008). Results from the International Men and Gender Equality (IMAGES) survey of adult men in seven countries,<sup>13</sup> including India, found a strong positive association between witnessing violence in the childhood home and adult perpetration of intimate partner violence both over the lifetime and in the past 12 months. In South Africa, Abrahams and Jewkes (2005) found that witnessing violence at home was also associated with greater likelihood of involvement in other forms of violence such as physical conflicts in the community or at work, as well as arrest for the possession of illegal firearms.

Witnessing or experiencing violence as a child has also been linked to attitudes condoning violence against women in adulthood (see review by Flood & Pease, 2009). In India, Martin et al. found that men who grew up in violent families were significantly more likely to perpetrate both physical and sexual violence against their wives, as well as more likely to endorse attitudes condoning a husband's right to control his wife. In addition, multiple studies document that attitudes endorsing violence against or control over women at both the individual and the community level are associated with higher rates of experiencing intimate partner violence for women, and perpetrating violence for men (Barker, et al., 2011; Gage & Hutchinson, 2006; Hindin, et al., 2008; Koenig, et al., 2006; S. L. Martin, et al., 2002). Thus, childhood violence may have both direct and indirect associations (through attitudes condoning violence) with adult violence (Flood & Pease, 2009).

The studies described above provide strong support that childhood exposure to violence is important in shaping adult attitudes and experiences of violence. However, they focus exclusively on violence in the childhood home, neglecting another important setting where

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<sup>12</sup> The DHS analyses included 10 countries, however, only 6 of these collected data on interparental violence: Dominican Republic, Haiti, Malawi, Moldova, Rwanda, and Zimbabwe.

<sup>13</sup> Countries in the IMAGES analyses include: Brazil, Chile, Croatia, India, Mexico, Rwanda and South Africa.

violence occurs – school. In recent years, violence in schools has received more attention, recognizing both the high levels of violence and the role of schools as important developmental contexts for children. Violence in school is perpetrated by both school staff and other students, and can take the form of corporal punishment, physical fights, bullying, harassment, or emotional abuse. In India, a large government sponsored study found that nearly two thirds of children reported experiencing violence at school (Kacker, et al., 2007). The gendered dimensions of school violence have also been highlighted; while much of the literature focuses on sexual violence and harassment of girls by peers and teachers, broader conceptualizations emphasize the use of aggression to assert power and “prove” masculinity and to police (or punish) the actions of students who deviate from rigid notions of appropriate gender roles or behaviors (Leach & Humphreys, 2007; Meyer, 2009). Thus, experiences of violence in school may be linked not only to the endorsement of violence as an acceptable way to resolve conflict, but also to ways to assert dominance and control in the context of existing hierarchies and inequalities: between adults and children, between men and women, and among or between boys and girls.

This paper addresses an important gap in the literature by examining the associations between children’s experiences of violence in school and their attitudes about violence, in the context of the Gender Equity Movement in Schools (GEMS) program, an intervention promoting non-violent and gender-equitable attitudes among middle-school students in Mumbai, India. The paper is organized as follows: We first present a brief overview of the literature on gender, violence, and schools, and describe the GEMS intervention and the context of the study. Next, we explain the specific research aims, data and measures, and analytic strategy. The results are then presented in two sections: the first is focused on the associations between experiences of violence and children’s attitudes at baseline, while the second examines how individual

experiences and aggregate levels of school violence impact the results of the GEMS intervention. The paper concludes with a discussion of the results and implications for future research and practice.

### **Gender, Violence, Schools**

Theoretical perspectives to explain the “intergenerational transmission” of violence-supportive attitudes or behaviors generally focus on social learning theories, arguing that children model the aggression they witness, and come to perceive violence as an acceptable and effective way to get others to behave as they want (Flood & Pease, 2009; Gershoff, 2002). Feminist researchers have expanded on this perspective, linking it to broader issues of men’s power and control over women, and to the reproduction of existing social hierarchies and inequalities – by sex, age, caste, etc. – in school. Schools are envisioned as gendered environments that reproduce inequitable attitudes, promote aggression in boys and submissiveness in girls, and establish the acceptance of violence as normative (Leach, 2006). They are complex settings where students observe, participate, and learn “how gender relations work and how to navigate among them” (Connell, 2002, p. 81).

How violence in schools shapes students' ideas about gender and violence has been conceptualized in several ways. First, in many countries, children experience violence from teachers and other school staff in the form of corporal punishment or other severe or humiliating forms of discipline. In India, a few studies (conducted primarily by NGOs) have focused on corporal punishment in school: in a large study in urban Andhra Pradesh, 59% of students reported being hit with a cane by a teacher and 22% reported witnessing corporal punishment that had caused bleeding (Devi-Prasad, 2006). An observational study of 41 schools across four states documented at least 5 beatings per day in each classroom (Saath, 2006). Since it is (in theory) administered in response to a student offense or misbehavior, corporal



punishment reinforces the idea that violence is appropriate when it is used to “correct” or “improve” behavior, and as such is often supported or considered necessary by teachers, parents, and even students (e.g., Feinstein & Mwachombela, 2010; Morrell, 2001; Mweru, 2010).

How students are physically disciplined by teachers in school also provides an important example of how violence in school is gendered, and how ideas about "what is expected of children and adults of each sex" may be conveyed (Pinheiro, 2006). In an ethnographic study of four junior secondary schools in Botswana, Humphreys (2006) describes how policies that specifically prohibit corporal punishment of girls by male teachers suggest an implicit recognition that corporal punishment is "sexually dangerous" and that it might be used "as a pretext for sexual harassment or abuse" (p.63). Teachers reported that male teachers used corporal punishment more often than female teachers, and generally equated the success of corporal punishment with masculine physical strength. Verbal reprimands were seen as "second best", to be used if physical punishment did not work or if female teachers were unable to administer it. Thus, using physical violence, equated with masculinity, was considered the best way to discipline students. In addition, students reported that some male students did not respect (female) teachers who did not beat them. In these ways, corporal punishment both reinforces stereotypes about masculinity and femininity, and legitimizes violence as a way to demonstrate authority and correct behavior.

School violence is also commonly perpetrated by peers. While it sometimes takes the form of what is commonly recognized as “gender-based violence,” such as sexual harassment or assault, peer violence is often related to “proving” masculinity or “policing” the behavior of students who behave in non-gender-normative ways (Eder, 1995; Meyer, 2009; Pascoe, 2007). Those who deviate from group norms suffer serious consequences - for example, studies show high levels of harassment and bullying of boys who are perceived as gay or not stereotypically

masculine (e.g., Gruber & Fineran, 2008; Hansen, 2007; Meyer, 2006). Aggressive behavior is also often normalized as typical behavior for boys, as the ‘boys will be boys’ discourse, and is not taken seriously by school officials. How the school responds to instances of violence between students (as well as from staff) is considered critical: it directly affects levels of violence in school, as well as normalizes such behaviors. The aggregate levels of school violence examined in the present study may, to some extent, capture the school staff’s response (or lack of response) to instances of peer violence.

Children's experiences of violence in school – as victims, perpetrators, or witnesses – may shape their attitudes about violence as appropriate and normative, as an effective way “for the strong and aggressive to get what they want from the comparatively weak, passive, or peaceful” (Pinheiro, 2006, p. 111). When combined with deeply rooted inequalities between men and women, children's experiences and beliefs may contribute to continuing violence across the lifespan, particularly against women and girls. Yet, as several recent studies of men’s activism against violence (Dworkin, et al., 2012; Sideris, 2004) and of an innovative anti-violence teacher training program (Chege, 2006a, 2006b) demonstrate, experiences of violence in childhood are not deterministic – some men and women, reflecting on their childhood, intentionally choose not to replicate their own experiences, and reject violence in their own lives. Intervention programs, like GEMS, may facilitate this process.

### **The GEMS Intervention**

The Gender Equity Movement in Schools (GEMS) intervention data provide a unique opportunity to explore the connections between school violence and children’s attitudes about gender and violence. The International Center for Research on Women (ICRW), in partnership with the Tata Institute for Social Sciences (TISS) and the Committee of Resource Organizations for Literacy (CORO), developed and implemented the GEMS intervention for 6th and 7th grade

students attending public schools in Mumbai, India. Mumbai (formerly Bombay) is the most densely populated city in India and the commercial and entertainment center of the country. Mumbai is the richest city in India; at the same time, over 50% of its population lives in slums with poor infrastructure, sanitation, and social services. The GEMS intervention targeted public schools in two of the most disadvantaged wards in the city, where between two-thirds and three-quarters of the population lives in slums, and where levels of health and education are below the city's average (MCGM, 2010). Within these wards, however, there are substantial differences between the schools in terms of the resources they have and the diverse local and migrant communities that they serve.

The intervention was implemented in 45 co-educational public schools, distributed across three groups: a full intervention group, a partial intervention group, and a control group. The goal of the intervention was to promote gender equality "by encouraging equal relationships between girls and boys, examining the social norms that define men's and women's roles, and questioning the use of violence" (ICRW, 2011). GEMS builds on other Indian programs which have been successful in fostering more gender equitable attitudes and behaviors among young adult men and women (Verma, et al., 2006) and was developed based on findings from formative research.

The intervention included two main components: ongoing group education sessions and a campaign. The group education sessions took place bi-weekly over the course of the 2008-2009 academic year<sup>14</sup> (approximately 10 sessions over 6 months) and covered three main topics: gender, the body, and violence. The sessions took place during the school day and lasted

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<sup>14</sup> This paper focuses on the first year of the GEMS intervention, 2008-2009. The program actually continued for a second year, with an enhanced group education program and campaign activities for 7th graders who participated the previous year and new 6th graders. This paper focuses on year 1 of the intervention for sample size considerations. It is also important to note that the GEMS program will be expanding to 250 schools by 2014.

about 45 minutes each. They were led by trained facilitators from CORO and TISS who used participatory methodologies such as role plays, games, and debates to promote critical reflection and discussion about gender and violence. The GEMS school campaign was a week-long series of events involving games, competitions, debates, and short plays, also aiming to foster reflection and discussion of the key issues. Students in the full intervention group (GEA+) participated in both group education sessions and the school-based campaign. The partial intervention group (Campaign) was exposed only to the campaign, while children in the control group received no intervention (Achyut, Bhatla, Khandekar, Maitra, & Verma, 2011).

Students in the selected schools completed a self-administered survey prior to the initiation of the intervention (pre-test) and after its completion (post-test). The survey was available in Hindi or Marathi (the language of instruction in these schools) and was pretested prior to administration. It included attitudinal questions about violence, gender roles, and discrimination against girls. Students were also asked to report on violence experienced and perpetrated in and out of school, and knowledge of HIV/AIDS.

An evaluation of the GEMS intervention by the International Center for Research on Women found promising results: Using a scale that captured children's attitudes about 1) gender roles, privileges, and restrictions, 2) attributes of boys and girls, and 3) gender-based violence,<sup>15</sup> the researchers categorized children into low, medium, and high equality groups. They found that after one round of the intervention, the proportion of both boys and girls in the high gender equality group more than doubled in both the GEA+ and Campaign arms; there was an increase in the control group as well, but it was significantly less substantial. Examining the individual attitude items, the authors conclude that there were fewer positive changes in the violence domain compared to gender roles and attributes, perhaps because children's responses

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<sup>15</sup> The violence items used by Achyut et al. in their scale are the same as the gender-based violence items used in this paper.

at baseline were more equitable with regards to violence. Still, after two rounds of the intervention<sup>16</sup>, students in the GEA+ arm were more than four times as likely to have high gender equality scores, and more than twice as likely to disagree with the statement “There are times when a boy needs to beat his girlfriend” compared to students in the control arm, controlling for baseline scores and children’s backgrounds. Children in the Campaign arm also had more equitable attitudes, though it was less effective than the GEA+. The current builds on Achyut et al.’s (2011) analyses by focusing more closely on attitudes on violence and the context of individual experiences and school levels of violence.

### **Research Aims**

This paper analyses the associations between children's experiences of violence at home and at school and their attitudes about violence, in the context of the GEMS intervention.

Specifically, the objectives of this paper are to:

- 1) Provide an overview of school violence in the sample, comparing boys' and girls' experiences of violence at home and at school and their attitudes about violence (Sample description).
- 2) Examine the associations between individual experiences, aggregate levels of school and home violence, and students’ attitudes about violence prior to the implementation of the GEMS intervention (Analysis 1).
- 3) Assess the effectiveness of the GEMS intervention in changing children's attitudes from pre-test to post-test, controlling for individual experiences and school levels of violence (Analysis 2), and
- 4) Analyze the moderating impact of individual experiences and school levels of violence on the association between the intervention and students’ attitudes (Analysis 2).

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<sup>16</sup> The analysis in this paper did not include data from the second year of the intervention due to the smaller sample size and missing data on the variables of interest.

Based on the literature, we hypothesize that both individual experiences of violence and higher levels of violence at school will be associated with greater endorsement of violence and a lesser impact of the intervention on changing attitudes.

### **Data and Measures**

This study is based on data from 1,706 students in 41 schools with complete data for both boys (n=894) and girls (n=812) on the variables of interest, both pre- and post-intervention. The analytic sample represents 84% of the sample who responded to both the pre- and post-intervention survey (n=2035), and 57% of the original sample surveyed pre-intervention (n=2896). Since the school-level variables were created as weighted aggregates of boys' and girls' individual responses (see description of measures, below), four schools that were missing data from either boys or girls pre-intervention were removed.

In addition, information on the proportion of male and female students in 6<sup>th</sup> and 7<sup>th</sup> grade in each school was obtained from the District Information System for Education (DISE) School Report Cards database ([www.schoolreportcards.in](http://www.schoolreportcards.in)), which includes detailed information on enrollment, personnel, and facilities for every school in India. Data from the implementation year (2008-2009) were available for 35 of the 41 schools. In addition, data from 2009-2010 and 2011-2012, respectively, were available for two additional schools. For the 4 schools where DISE data were not available, the mean proportion of boys and girls for schools in the sample was included as a proxy to weight the relevant school-level variables. The sample mean was compared with other data sources including the mean proportion across all DISE schools in specific regions of the city where the GEMS schools were located (i.e. North Mumbai Suburban and West Mumbai Suburban), and were found to be essentially equivalent.

## Measures

### *Dependent variables*

Three binary variables measure children's attitudes about violence both pre-intervention and post-intervention: 1) Rejects Gender-Based Violence, 2) Rejects Justifications of Violence against Girls, and 3) Rejects Justifications of Violence against Boys. As their names suggest, these variables were designed to capture children's rejection of violence; each outcome compares children who reject violence across multiple items with children who endorse violence in one or more situations.

The *Rejects Gender-Based Violence* variable is composed of 5 items related to violence and harassment against women and girls: It is a girl's fault if a male student or teacher sexually harasses her, a woman should tolerate violence in order to keep her family together, there are times when a woman deserves to be beaten, girls like to be teased by boys, and girls provoke boys with short dresses. The variable was coded "1" if a student disagreed with all 5 items, and "0" if he or she answered "agree" or "don't know" on one or more.

Students were also asked 10 questions about whether girls deserve to be beaten in a range of situations including: if they stay out late, don't obey their elders, talk to someone of the opposite sex, or don't help with their chores. The *Rejects Justification of Violence against Girls* variable was coded "0" if the student agreed that girls deserved to be beaten in one or more of the 10 scenarios, and "1" if they rejected all 10 justifications. Similarly, the *Rejects Justifications of Violence against Boys* variable was coded "0" if a student agreed that boys deserved to be beaten in one or more of 9 scenarios, and "1" if they rejected all 9 justifications. The 9 justification items for boys are the same as those for girls, with one exception: students were only asked if girls (but not boys) deserve to be beaten if they reply back when harassed by boys.

The items represent transgressions of normative behavior expected of children, including appropriate interactions with the opposite sex.

The pre-intervention measures are used as the outcomes for Analysis 1, while the post-intervention measures are used as the outcomes for Analysis 2, as described below.

### ***Independent Variables***

Independent variables include predictors at two levels: the individual level and the school level.

#### *Individual Level Variables*

In the survey, children were asked to report whether or not they had experienced any one of 10 different forms of violence (including being beaten up, slapped, hit with an object, insulted, yelled at, etc.) in the preceding 3 months, either at school or in their home or neighborhood.<sup>17</sup> In order to be able to examine specific experiences of violence, four dichotomous variables were created from the pre-intervention data to indicate whether or not a student experienced 1) *violence at home/neighborhood AND at school*, 2) *violence at school only*, 3) *violence at home only*, and 4) *no violence in the previous 3 months*. In addition, students' *age* (standardized) and a measure of *socioeconomic status* (standardized) were included in the analysis. The socioeconomic status (SES) variable was constructed from questions about household assets, including ownership of a bicycle, CD/DVD player, TV, or cell-phone for personal use. The variable represents the proportion of assets owned, ranging from 0 (none) to 1 (all). In the analyses, only pre-intervention values on these variables were used.

#### *School Level Variables*

The variables of interest at the school level include the school's assigned intervention arm and aggregates representing the proportion of students reporting violence at home or

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<sup>17</sup> Children were not asked to distinguish between violence experienced at home or in the neighborhood.



neighborhood, the proportion of students reporting violence at school, and the average socioeconomic status of students in the school.

The *Proportion of Students Reporting Violence at Home or Neighborhood* and *Proportion of Students Reporting Violence at School* variables were created using the responses of the full sample of children who completed the pre-intervention survey (n=2896) in accordance to the following procedures: students who reported experiencing any one of the 10 forms of violence described above in the past three months at school (or at home, for the home violence aggregate) were coded as “1”; the responses were then aggregated to the school level. Given significant differences in the levels of violence between boys and girls and in the number of respondents by sex per school, separate aggregate measures for boys and girls in each school were created, and then weighted by the actual proportion of boys and girls attending 6<sup>th</sup> & 7<sup>th</sup> grade in that school. The *School SES* variable was similarly aggregated and weighted. All three variables are standardized for the analyses.

Finally, the three outcome attitude measures were also aggregated to the school level and included in Analysis 2 as a conservative approach to control for differences in attitudes between schools pre-intervention (*School Pre-Test*). Three dichotomous variables represent the school's intervention arm - full intervention (GEA+), Campaign, or Control.

### **Analysis Strategy**

This paper includes both descriptive analyses and difference testing to compare the violence experiences and attitudes of boys and girls, as well as bivariate and multivariate analyses to examine the associations between individual experiences, school-level variables including the GEMS intervention, and students' attitudes about violence. To begin, descriptive tables and figures were generated and t-tests and  $\chi^2$ -tests used to compare the experiences, attitudes, and backgrounds of boys and girls.

Hierarchical generalized linear modeling (HGLM) for dichotomous outcomes was used for the bivariate and multivariate analyses to account for the nesting of students in schools, using HLM 7 software (Raudenbush & Bryk, 2002). A multilevel modeling approach is most appropriate for this study for both conceptual and statistical reasons (Luke, 2004). Conceptually, this study is multilevel by nature, as we are examining the association between group-level variables experienced by multiple individuals (school characteristics) and individual variables (students' gender-related attitudes); in other words, students are nested within schools. Statistically, HGLM allows for the simultaneous estimation of regression equations at two levels (individual and school), takes into account the violation of the assumption of independence of observations, allows for testing cross-level interactions between school-level and individual-level variables, and produces more accurate estimation of standard errors for non-continuous dependent variables (Raudenbush & Bryk, 2002).

This paper includes two sets of multivariate analyses: Analysis 1 explores the associations between experiences of violence and attitudes at baseline, prior to the intervention, while Analysis 2 examines how individual experiences and aggregate levels of school violence impact the results of the Gender Equity Movement in Schools (GEMS) program. Given significant differences in attitudes and experiences of violence by sex, separate analyses were conducted for boys (n= 812 in 39 schools) and girls (n=894 in 39 schools).<sup>18</sup> For the HLM analyses, all continuous measures were standardized and the individual- and school- level variables were entered into the model as uncentered. Population-average results with robust standard errors for the bivariate and multivariate analyses are presented in Tables 2.4-2.11, with p-values of 0.10 or less reported as significant. I describe the procedures for each analysis below:

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<sup>18</sup> While the full sample includes 41 schools, two schools were dropped from each sex-specific analysis because they did not include either boys or girls post-intervention.

*Analysis 1:* As a first step, fully unconditional models (which do not include any individual- or school-level variables) were examined for each pre-intervention outcome in order to calculate the intraclass correlation coefficient (ICC) and establish that there is significant variation in attitudes between schools. The ICC describes the proportion of the variance in the outcome that can be ascribed to differences between schools.<sup>19</sup> Next, bivariate analyses regressing each variable separately on the three outcome variables were conducted in HLM. Within-school models were then estimated to examine the relationship between students' individual experiences of violence and each of the dependent variables, controlling for age and socioeconomic status (Model 1). School-level variables (the proportion of students reporting violence in school, the proportion reporting violence at home or neighborhood, and the school SES) were added in Model 2.

*Analysis 2:* This analysis focused on the change in attitudes in the context of the GEMS intervention. First, descriptive tables highlighting pre- and post-intervention attitudes by intervention arm were created. Next, as in Analysis 1, significant variation in post-intervention attitudes between schools was confirmed by running fully unconditional models, and bivariate associations were estimated, controlling for pre-intervention attitudes at the individual- and school-level. The multivariate analyses proceeded in three steps: in Model 3, we examine the independent associations between individual- and school-level violence, and the intervention arms, on post-intervention attitudes, controlling for students' pre-intervention attitude, age and SES, and for school SES. As a conservative approach, the relevant aggregate attitude measure at the school level was included in all multivariate analyses to control for differences in pre-intervention attitudes between schools. In Model 4, the interactions between the proportion of students reporting violence in school and the intervention arms are estimated to assess whether

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<sup>19</sup> For dichotomous outcomes the ICC is typically calculated using the formula:  $ICC = \tau^2 / (\tau^2 + 3.29)$

baseline levels of school violence changed the association between the intervention and attitudes. Model 5 focuses on whether the relationship between the intervention and attitudes varies based on whether or not a child had experienced violence at school, at home, or in both settings. This question is addressed by including cross-level interactions between the intervention arms and the three individual experiences of violence variables. Finally, the cross-level interaction model (from Model 5) was re-estimated with different intervention arms as the reference group in order to compare respondents who did and did not experience violence in the GEA+ arm (Model 6) and the Campaign arm (Model 7).

## **Results**

### ***Sample Description and Experiences and Attitudes about Violence***

Table 2.1 presents descriptive statistics of the analytic sample, pre-intervention, testing for differences in each variable by sex. Slightly more than half of the sample was female (52%), with an average age of 12.0 years. The mean individual SES was 0.41, on a range from 0 to 1, indicating that on average, students owned fewer than 2 of the 4 assets included in the index. Violence was a common experience, especially for boys: only 18% of boys and 40% of girls reported experiencing no violence in the past three months ( $\chi^2=81.7$ ,  $p<.001$ ). More than half of the boys (58%) and a third of girls (38%) experienced violence both at home and at school ( $\chi^2=69.8$   $p<.001$ ). Nineteen percent of girls and seventeen percent of boys experienced violence at home or in the neighborhood only - this is the only category in which a slightly higher proportion of girls experienced violence compared to boys, though the difference between boys and girls was not statistically significant. A small proportion – 8% of boys and 5% of girls, reported violence only at school ( $\chi^2=3.6$ ,  $p<.06$ ). At the school level (Table 2.2), we see substantial variation in levels of violence across schools. The mean proportion of students reporting any school violence was 53%, but ranged from 11% to 78%. The mean proportion of

students reporting violence at home or in the neighborhood (45%) also varied across schools, ranging from 15% to 74%.

The bottom panel of Figures 2.1 through 2.3 presents the mean scores on each of the three outcomes, measuring the proportion of boys or girls who reject violence for each variable. Girls were significantly more likely than boys to reject violence for all three outcome measures: 14% of girls versus 7% of boys rejected gender-based violence ( $\chi^2=22.0$ ,  $p<.001$ ), 24% of girls versus 20% of boys rejected justifications of violence against girls ( $\chi^2=4.5$ ,  $p<.03$ ), and 26% of girls versus 17% of boys rejected justifications of violence against boys ( $\chi^2=20.1$ ,  $p<.001$ ). On all three measures, both boys and girls were less supportive of violence at the end of the intervention period than at pre-test: 18% of girls and 9% of boys rejected gender-based violence, 33% of girls and 26% of boys rejected all justifications of violence against girls, and 31% of girls and 26% of boys rejected justifications of violence against boys. The difference between boys and girls was statistically significant at  $p<.001$  for all three measures post-intervention. The post-intervention levels mask important differences by intervention arm – these are discussed as part of Analysis 2.

When examining the specific items included in each measure (top panels of Figures 2.1-2.3) we find that with few exceptions, approximately half or more of the students rejected specific justifications of violence against boys or girls. Similar proportions of boys and girls generally agreed on reasons that justify beatings, particularly at post-test. On the few items where the difference between boys and girls was statistically significant, girls were more likely to reject violence. At both pre- and post-test, students were least likely to justify violence when girls or boys go out to play without asking permission, when boys and girls talk to each other, and when girls respond to harassment. They were most likely to justify violence in the case that boys or girls do not obey their elders.

On the gender-based violence items, the differences between boys and girls were significant for most items at both pre- and post-test, with girls more likely to reject violence than boys. However, boys and girls justified violence for the same reasons: both were most likely to agree that “girls provoke boys with short dresses” and that “a woman should tolerate violence to keep her family together,” and most likely to disagree that “girls like to be teased by boys.”

### ***Analysis 1***

#### ***Variance between schools***

The results from the fully unconditional model for each of the pre-intervention outcomes confirm significant between-school variance. For girls, 4.5% of the variance in gender-based violence attitudes, 19.9% of the variance in justification of violence against girls, and 14.4% of the variance in justification of violence against boys is explained by school differences. While the between-school variance was highly significant for the justification of violence measures ( $p < .001$ ), it was only significant for the rejection of gender-based violence measure at  $p = 0.06$ . For boys, the between-school variance was significant at  $p < .05$  for all three outcomes: 13.0% of the variance in gender-based violence attitudes, 14.3% of the variance in justification of violence against girls, and 19.0% of the variance in justification of violence against boys can be attributed to differences between school.

#### ***Bivariate Analyses***

Bivariate association results for both individual- and school-level variables, by sex, are presented in Table 2.4. For both boys and girls, individual experiences of violence were generally associated with lower odds of rejecting violence. In terms of the demographic variables, older boys were more likely to reject justifications of violence. Age was not significantly associated with girls' attitudes; neither was individual SES for either boys or girls. At the school-level, the

results for boys and girls were the same: for both, greater proportions of students reporting school or home violence were significantly associated with lower odds of rejecting justifications of violence against boys and against girls. Higher mean school SES was associated with lower odds of rejecting justifications of violence against boys.

### Multivariate Analyses

The results are presented in Tables 2.6 (boys) and 2.7 (girls). Only the Model 2 results, which include both individual-level and school-level variables, are described in this section, as they remain stable from Model 1. The relationships between the individual-level variables and the outcomes in the multivariate analyses remained essentially the same as the bivariate results: individual experiences of violence were generally associated with lower odds of rejecting violence, controlling for a student's age and SES at the individual level, and the proportions of students reporting violence at school or at home, and SES at the school-level. Compared to students who did not experience violence, those who experienced violence both at home and at school were significantly less likely to reject violence across the three outcomes (girls), and to reject justifications of violence (boys). In addition, experiencing violence at home only (for girls) and at school only (for boys) was also associated with endorsing the justification of violence against girls and against boys. Interestingly, for boys, attitudes about the justification of violence against boys were most sensitive to individual experiences of violence: compared to boys with no experience of violence, boys who had experienced violence in any setting had significantly lower odds of rejecting the justification of violence against boys, with odds ratios ranging from 0.20 to 0.44.

At the school level, higher levels of school violence were associated with lower odds of rejecting justifications of violence against boys and girls, but surprisingly, for boys, with higher odds of rejecting gender-based violence. For girls, a higher proportion of students reporting

violence at school is associated with lower odds of rejecting justifications of violence against girls, while a higher proportion of students reporting violence at home is associated with lower odds of justifying violence against boys. These results suggest that while individual experiences of violence are important for both boys and girls, the overall level of violence at the school may be more important for boys.

## ***Analysis 2***

Analysis 2 focuses on student attitudes post-intervention, examining their association with the GEMS intervention, and exploring how the relationship between the intervention and attitudes is shaped by violence at both the individual and the school level.

### ***Comparison of Attitudes and Experiences of Violence across Intervention Arms***

To begin, we compare how experiences of violence and student attitudes vary across intervention arms. At the school-level, the proportion of students who experienced violence did not vary significantly by intervention arm (Table 2.2); however, individual experiences of violence pre-intervention did vary somewhat across intervention arms, as did individual SES (Table 2.1). For example, a greater proportion of boys in the control arm experienced both school and home violence (64%) compared to boys in the intervention arms (54%), while the opposite was true for girls in the control arm (30% in control vs. 41% in GEA+ and 44% in Campaign).

There were also some significant variations in attitudes across intervention arms both pre- and post-intervention (Table 2.3). Pre-intervention, the proportion of students rejecting justifications of violence against girls was significantly higher in the campaign arm compared to the control arm for both boys and girls. In addition, the proportion of boys rejecting gender-based violence was significantly higher in the control arm compared to the full intervention



(GEA+) arm. Post-intervention, the proportion of both boys and girls rejecting justifications of violence increased across all three intervention arms, while the proportion rejecting gender-based violence increased for the GEA+ and Campaign arms, but decreased for the control arm. There were significant differences across intervention arms on all three outcomes for girls, but only on justification of violence against girls, for boys. It is important to note that Table 2.3 cannot be used to test the impact of the intervention – this is done in the multivariate models, adjusting for differences across intervention arms by controlling for both individual pre-intervention scores and school pre-intervention attitude means for each outcome, as well as other covariates such as individual and school SES and experiences of violence.

#### Variance between Schools

The results from the fully unconditional model for the post-intervention attitude measures, controlling for the schools' pre-intervention attitude measures, indicate that between-school variance in post-intervention attitudes is significant. For girls, 39.4% of the variance in gender-based violence attitudes, 5.3% of the variance in justification of violence against boys, and 12.1% of the variance in justification of violence against girls is explained by differences between schools. For boys, these intra-class correlation values are: 8.1%, 10.7%, and 11.9%, respectively.

#### Bivariate Results

In bivariate analyses, controlling for both individual and school-level pre-intervention measures (Table 2.5), participating in the GEMS intervention was generally not significantly associated with rejection of violence, with two exceptions: girls in the GEA+ arm had higher odds of rejecting gender-based violence, and boys in the Campaign arm had higher odds of rejecting justifications of violence against girls, compared to students of the same sex in the

control group. As in Analysis 1, individual experiences of violence pre-intervention were generally associated with lower odds of rejecting violence post-intervention. Aggregate school and home levels of violence, on the other hand, were generally not significantly associated with the outcomes post-intervention. Finally, for girls, individual SES was associated with lower odds of rejecting justifications of violence, as was school-level SES, for boys.

### Multivariate results

The multivariate results are presented in Table 2.8 for boys and 2.9 for girls. In Model 3 we examine the associations between the GEMS intervention, violence, and student attitudes, with no interaction terms. We find that for both boys and girls, being in the GEA+ arm was associated with substantially greater odds of rejecting gender-based violence, while being in the Campaign arm was similarly associated with rejecting justifications of violence against girls (for both boys and girls) and against boys (for girls only). Individual experiences of violence were generally associated with lower odds of rejecting violence, consistent with the bivariate results and findings from Analysis 1. Some interesting patterns by sex emerge: for girls, individual experiences of violence at home only, at school only, and both at home and at school are all negative and significant for the justification of violence against girls and the justification of violence against boys. For boys, on the other hand, a significant negative association was found across all three outcomes but only for those who experienced violence both at school and at home. School level of violence was only important for one outcome: for both boys and girls, higher levels of school violence were associated with lower odds of rejecting violence against girls.

The next set of analyses (Models 4-7) examine whether the relationship between the GEMS intervention and student attitudes vary by level or experience of violence. First, in Model 4, interaction terms between the intervention arms and the proportion of students reporting

violence in school are introduced in order to assess whether the impact of the intervention varies by levels of school violence. For boys (Table 2.8) higher levels of school violence reduced the effect of the GEA+ intervention by more than half for the justification of violence against girls and the justification of violence against boys measures. For girls (Table 2.9) in the Campaign arm, on the other hand, higher levels of school violence were associated with greater odds of rejecting violence against boys, compared to girls in the control arm; there was no significant association for girls between level of violence and the impact of the intervention for rejecting violence against girls and rejecting gender-based violence.

Next, we examine the cross-level interactions between intervention arms and the individual experiences of violence. Since these are all categorical variables, in these models (5-7), the “main effect” odds ratio for variable X included in the interaction term X\*Y represents the ratio of students who have a “1” for variable X with those who have a “0”, and where both have a “0” for variable Y. For example, the main effect for GEA+ compares the odds of students in the GEA+ arm who did not experience violence to the odds of students in the control group who did not experience violence, that is, students who have a “0” on the experience of violence variable. The interaction terms, on the other hand, compare students who experienced violence in the GEA+ arm, for example (“1” on GEA+, “1” on violence) to those who experienced violence in the control arm (“0” on GEA+, “1” on violence).<sup>20</sup>

In Model 5, we examine the interaction terms between intervention arms and individual experiences to assess the effect of the intervention on children who had experienced violence. While the main effects of the intervention were generally not significant, boys (Table 2.8) who participated in the intervention and who experienced violence only at school had

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<sup>20</sup> The model including all the cross-level interaction terms could not be successfully estimated for girls for the “reject gender-based violence” outcome measure due to small sample sizes for some combinations of student and school-level variables. The interaction terms for school violence only with the intervention arms are therefore not included in models 5-7 for this particular outcome.

higher odds of rejecting violence compared to boys with similar experiences of violence in the control group, suggesting that the intervention was effective for boys who experienced violence at school. There was one important exception: boys in the Campaign arm who experienced violence both at home and at school had lower odds of rejecting violence compared to boys who had experienced violence in the Control group. For girls, most of the interaction terms were not significant, suggesting that the association between the intervention and girls' attitudes did not vary significantly based on girls' experiences of violence. There was only one exception: girls in the GEA+ arm who experienced violence in school only had lower odds of rejecting violence against boys compared to girls in the control arm who experienced violence. It is important to note that given the large number of interactions, it is likely that this model is underpowered to detect significant differences.

To compare the experiences of children within the intervention arm who did and did not experience violence, we estimated Model 5, including the same student- and school- level predictors and cross-level interaction terms two more times, each with a different intervention arm as the reference group. As described above, the "main effect" coefficient for school only violence, for example, gives us the odds ratio for rejecting violence for boys who experience violence and those who did not experience violence in the intervention arm used as a reference for the model. Thus, Model 6 (Table 2.10) compares students within the GEA+ arm, and Model 7 (Table 2.11) compares students in the Campaign arm. In the results, we focus primarily on the "main effects" to address the question of interest: does the intervention affect children's attitudes in the same way if they have or have not experienced violence?

The results from Models 6 and 7 show significant differences between students who experienced violence (at school only and both at home and at school) and students who experienced no violence within each intervention arm: generally, students who had experienced

violence were less likely to reject violence, suggesting that the intervention was less effective for children who had experienced violence. This was particularly evident for girls. For example, within the GEA+ arm (Table 2.10), girls who experienced violence at school only were less likely to reject justifications of violence against girls and justifications of violence against boys compared to girls who had experienced no violence; girls who experienced violence both at home and at school were also less likely to reject justifications of violence against girls. The findings were similar for girls in the Campaign arm (Table 2.11), with some variation in the specific outcomes.

For boys, there was no difference in the effect of GEA+ for boys who experienced violence compared to those who did not (Table 2.10). Within the Campaign arm (Table 2.11), on the other hand, boys who experienced violence at home and at school had lower odds of rejecting justifications of violence against boys and rejecting gender-based violence, while boys who experienced violence at school only or at home only also had lower odd of rejecting gender-based violence. These findings suggest that while the effect of the GEA+ intervention did not vary based on boys' individual experiences of violence, the Campaign only intervention was less effective for boys who had experienced violence.

## **Discussion and Conclusions**

The GEMS data provide a unique opportunity to examine children's attitudes and experiences of violence in the context of a school-based intervention that is explicitly aiming to promote rejection of violence. Overall, we find that violence in school is associated both with children's attitudes about violence and with the effectiveness of the GEMS intervention. Violence in school (and outside school) is a common experience for children in this sample, consistent with other estimates of violence against children in India (e.g. Kacker, et al., 2007). The GEMS data also show that outside the home, it is boys that more commonly experience

violence rather than girls. Since students were only asked about violence in the 3 months prior to the study, it is likely that the levels of violence are actually underestimated.

Attitudes supporting violence were also common among the respondents: Figures 2.1-2.3 demonstrate that while a large proportion of both boys and girls reject violence in specific circumstances, a much smaller proportion rejects violence in all circumstances. Interestingly, the proportion of students that rejected justifications of violence against children was substantially higher than the proportion that rejected gender-based violence. It may be that the justification of violence against girls and the justification of violence against boys items are more directly connected to the respondents' own experiences of violence, or the "rules" that their own behavior is subjected to. The gender-based violence items may be somewhat more abstract and less directly relevant to their day-to-day experiences. The gender-based violence items are also more explicitly gendered, possibly tapping into children's understanding and beliefs about gender roles.

The GEMS dataset is unique in including questions about justifications of violence both against girls and against boys. The findings draw attention to important similarities in the proportions of boys and girls that reject these justifications, as well as in the patterns of associations between experiences of violence and justifications of violence. That is, the students did not specifically endorse violence against girls; similar proportions generally felt that boys and girls "deserved to be beaten" for the same misbehaviors. While much of the literature focuses on the endorsement of violence against girls and women and its association with gender-based violence, these findings highlight that, as Pinheiro (2006) points out, other hierarchies – primarily between adults and children – also legitimate the use of violence to "correct" behavior. Links between attitudes about violence against children, attitudes about violence against women, and adult experiences of violence require more empirical examination,

particularly in developing countries. Given the high levels of violence among boys, exploring whether and how violence in school is related to the performance of aggressive masculinity is particularly important. As the literatures on social reproduction in schools and on the inter-generational transmission of violence suggest, the idea that violence can and should be used by those who have power and authority to modify the behavior of the comparatively less powerful contributes to violence against women and children, particularly in contexts where men are considered normatively more powerful.

Consistent with the literature, we find that children who experience violence are more likely to hold attitudes endorsing its use (e.g. Flood & Pease, 2009; S. L. Martin, et al., 2002). Experiencing both home and school violence was most consistently associated with lower odds of rejecting violence, both pre-intervention and post-intervention for both boys and girls. Experiencing violence at school only or at home only was also significant in some models, with home only violence showing significant associations primarily for girls. It may be that cumulative experiences of violence – both at home/neighborhood and at school (the most common category for children in this study) – reinforce messages about the appropriateness of violence. In addition, higher aggregate levels of school violence were also associated with lower odds of rejecting justifications of violence, while levels of home violence were not significant for any of the outcomes. These findings emphasize the importance of considering school violence in research that explores childhood experiences of violence, and highlights the important role of school violence – at both the individual- and the school-level, and especially in addition to home violence – in shaping children’s attitudes.

The GEMS intervention’s quasi-experimental design and detailed measures of attitudes about and experiences of violence allow for a rigorous evaluation and provide a unique opportunity to examine the impact of and interactions between school violence, the

intervention, and student attitudes. Similar to Achyut et al.'s (2011) findings, this analysis also shows promising results for GEMS. Participants in the GEA+ and Campaign intervention arms generally had higher odds of rejecting violence compared to students in the Control arm, adjusting for pre-intervention attitudes, though the associations were statistically significant only for rejecting gender-based violence (GEA+), and for rejecting justifications of violence against girls (Campaign). These results are consistent to a large extent with the emphasis on gender equality and reducing discrimination against girls and women, primarily in the GEA+ arm. That the effects of the Campaign were significant where those for GEA+ were not, and vice versa, is puzzling. It may be that students in the GEA+ arm, which included multiple modules on gender and allowed for more in-depth and sustained discussions over time, were more attuned to gendered dimensions of violence, while students (particularly girls) in the Campaign arm received a more direct, clear message to reject violence. It is particularly encouraging that the Campaign had significant effects, given that it is less resource intensive to implement compared to the GEA+ intervention. Still, this is a surprising finding that requires further research. It is also important to note that the focus on respondents who reject violence in all circumstances may not be capturing more subtle shifts in attitudes as a result of the intervention.

Another important finding demonstrates differential effects of the intervention based on individual experiences and school levels of violence. Higher levels of school violence drastically reduced the impact of the GEA+ intervention for boys. In addition, the intervention was less effective for children (especially girls) who experienced violence compared to those who did not. Thus, both individual experiences and the school context play an important role in the effectiveness of the intervention.

In the models examining the interactions between intervention arms and individual experiences of violence, significant effects were most commonly found for the school-only



violence variable. While the separation of the individual experience of violence into 4 categories was purposeful in enabling a comparison across these groups and isolating the experience of school violence from home violence in Analysis 1, it creates some conceptual and statistical issues for the analysis and interpretation of the interaction models (5-7). These models are likely underpowered, and it is difficult to explain why the interaction is important for the school-only category but not the school & home in some cases. There may be important differences between children who experience violence at school only compared to those who experience violence both at school and at home that cannot be explored in this dataset. Nevertheless, the findings suggest that violence in school is an important factor for the success of the intervention. Further analyses may look at violence in school as a singular variable to clarify these findings.

This study is limited in several ways. First, the dataset includes few detailed demographic variables that have been linked in the literature to attitudes about or experiences of violence. These include religion, caste, and area of origin (NFHS, 2007). In addition, the available SES variable is based on a limited number of household assets and may not accurately capture differences in families' economic status. Variables capturing parental attitudes about violence would also enhance the analysis. In addition, the school-level variables are aggregates based on student responses rather than data collected through observational studies that might more accurately capture levels of violence in school, as well as other important differences (in school SES, for example) between schools. Another important concern is the relatively limited number of schools, and large number of predictors for the HLM models, which are likely underpowered to detect some significant effects. An evaluation of the recent expansion of the GEMS program to 250 schools may provide an opportunity to examine these associations in a larger sample of schools. Finally, these data and analyses are not able to provide sufficient

context for the experiences of violence, and to explain the directionality of effects. While these analyses suggest that experiences of violence shape attitudes, it may be that an unmeasured variable (e.g. personal trait such as aggression) drives both attitudes and experiences of violence attitudes, or that attitudes supportive of violence lead to more engagement in violence. The latter explanations seem less plausible, however, given the specific measures of attitudes used in this study that focus on violence to correct behavior or adhere to normative gender roles.

Nevertheless, this study makes a contribution in demonstrating the important role of school violence both in its associations with attitudes rejecting violence and in moderating the effects of the GEMS intervention. The findings highlight several avenues for further research and intervention. First, the differences in the descriptive and analytic results between the justifications of violence and the gender-based violence attitude measures suggest that these types of measures are capturing different dimensions of attitudes about gender and violence. Further research to examine the contextual meanings of the attitude questions would broaden our understanding of norms about violence, and about gender roles/behaviors. This is particularly important since many studies only use justification of violence (against women) measures to represent attitudes about violence, as these measures are included in many Demographic and Health Surveys. A recent study using cognitive interviewing to explore Bangladeshi men and women's interpretations of the justification of violence measures used in the DHS concluded that these measures likely underestimate the proportion of people who condone violence (specifically intimate-partner violence), and at the same time fail to capture the rejection of violence when it goes beyond socially sanctioned circumstances (Schuler, et al., 2011). Similarly detailed qualitative and cognitive studies may help develop better measures as well as suggest possible areas for intervention.

A deeper understanding of children's experiences of violence is also needed, in general and to clarify the associations between experiences of violence and attitudes about violence. Some questions such as the differential impact of physical versus emotional violence, or the impact of the frequency of violence, could be explored in future analyses of the GEMS data that are beyond the scope of this paper. However, new studies are needed to explore the dynamics of violence in school (between teachers and students and especially among peers) and the ways in which school staff cope with or address violence in school. In addition, studies focusing on what aspects of school environment may exacerbate or buffer victimization, as Astor, Benbenishty, and Estrada (2009) call for, would also expand the scope of the literature on school violence in the developing world, and enable appropriate interventions at the school level.

Finally, the findings from this study draw attention to the importance of exploring heterogeneous treatment effects in intervention research; that is, assessing how the impact of an intervention varies by individual or contextual variables. Such analyses are important not only for explaining evaluation results but also for tailoring future interventions to the specific circumstances, experiences, or contexts of the participants. That interventions like GEMS can promote more equitable and less violent attitudes is encouraging; broadening the scope of such interventions to enable changes in the contexts, such as schools, that shape children's lives may bring us closer to the goal of a more equitable and less violent world.

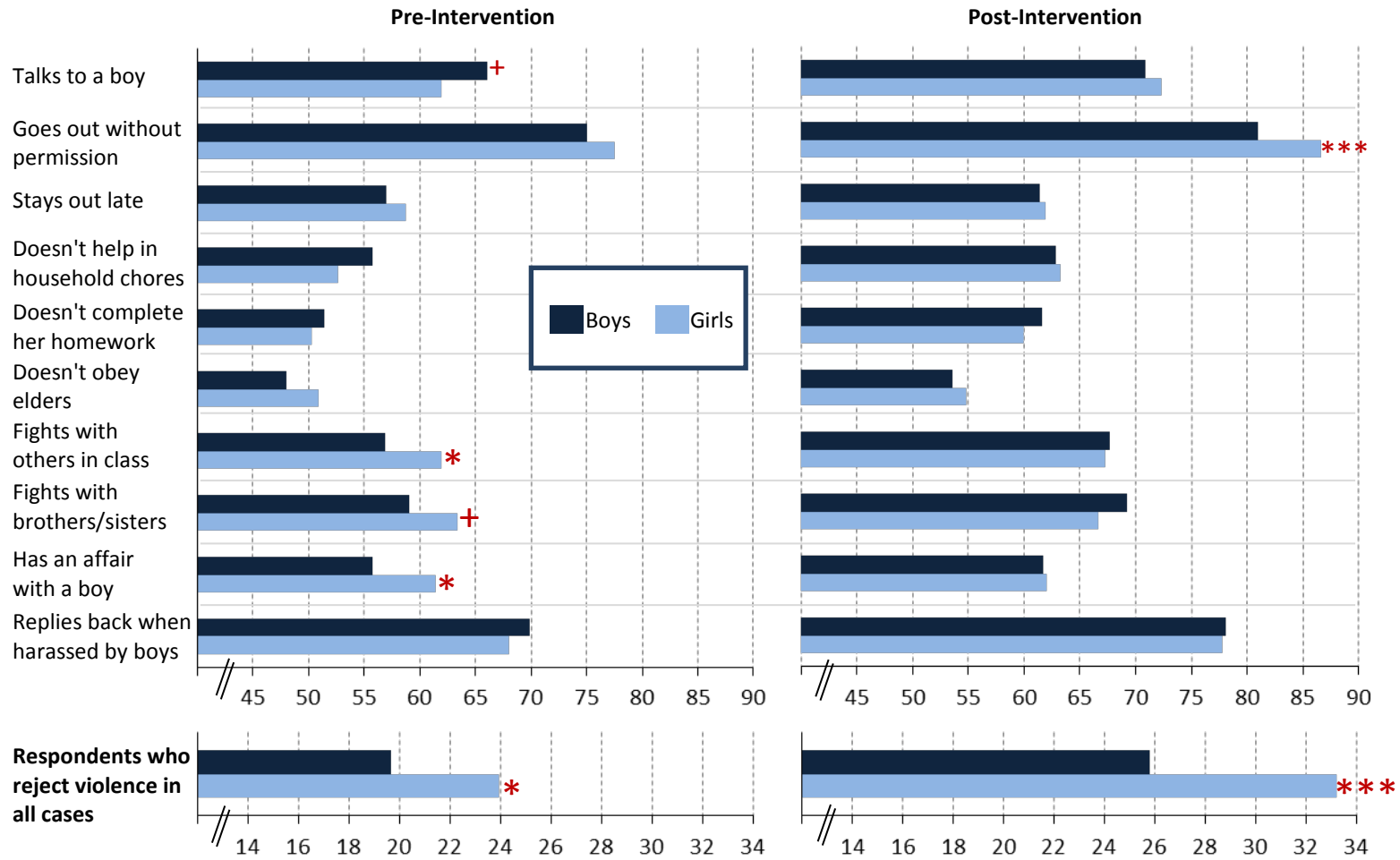
**Table 2.1: Descriptive statistics for student-level variables, by sex and by intervention arm (n = 1,706; girls = 894, boys =812)**

|  | Boys       | Girls      | Total         | By GEMS Intervention Arm |            |            |        |             |             |             |        |  |
|--|------------|------------|---------------|--------------------------|------------|------------|--------|-------------|-------------|-------------|--------|--|
|  |            |            |               | Boys                     |            |            |        | Girls       |             |             |        |  |
|  |            |            |               | GEA+                     | Campaign   | Control    |        | GEA+        | Campaign    | Control     |        |  |
| Proportion of boys and girls   | 47.6       | 52.4       | 100.0         |                          |            |            |        |             |             |             |        |  |
| Mean Age (s.e)   | 12.2 (.04) | 11.8 (.04) | 12.0 (.03)*** | 12.4 (.07)               | 12.2 (.08) | 12.0 (.07) | (a)    | 11.90 (.06) | 11.64 (.07) | 11.71 (.07) | (b)(c) |  |
| Mean SES (s.e)   | 0.41 (.01) | 0.41 (.01) | 0.41 (.01)    | 0.47 (.02)               | 0.39 (.02) | 0.37 (.01) | (b)(c) | 0.43 (.02)  | 0.38 (.02)  | 0.40 (.01)  | (b)    |  |
| Experiences of violence:   |            |            |               |                          |            |            |        |             |             |             |        |  |
| No violence  | 18.2       | 37.9       | 28.5***       | 0.19                     | 0.21       | 0.16       |        | 0.36        | 0.31        | 0.44        | (c)(d) |  |
| School violence only   | 7.5        | 5.3        | 6.3+          | 0.09                     | 0.06       | 0.07       |        | 0.04        | 0.06        | 0.06        |        |  |
| Home violence only   | 16.6       | 19.4       | 18.0          | 0.18                     | 0.20       | 0.13       | (d)    | 0.19        | 0.19        | 0.20        |        |  |
| School & home violence   | 57.7       | 37.5       | 47.1***       | 0.54                     | 0.54       | 0.64       | (c)(d) | 0.41        | 0.44        | 0.30        | (c)(d) |  |
| Differences between boys and girls significant at: + p<.10, *p<.05, **p<.01, ***p<.001 |            |            |               |                          |            |            |        |             |             |             |        |  |
| (a) Significant differences between all intervention arms.                             |            |            |               |                          |            |            |        |             |             |             |        |  |
| (b) GEA+ significantly different from Campaign   |            |            |               |                          |            |            |        |             |             |             |        |  |
| (c) GEA+ significantly different from Control  |            |            |               |                          |            |            |        |             |             |             |        |  |
| (d) Campaign significantly different from Control                                      |            |            |               |                          |            |            |        |             |             |             |        |  |

**Table 2.2: Descriptive statistics for school-level variables, by intervention arm (n=41)**

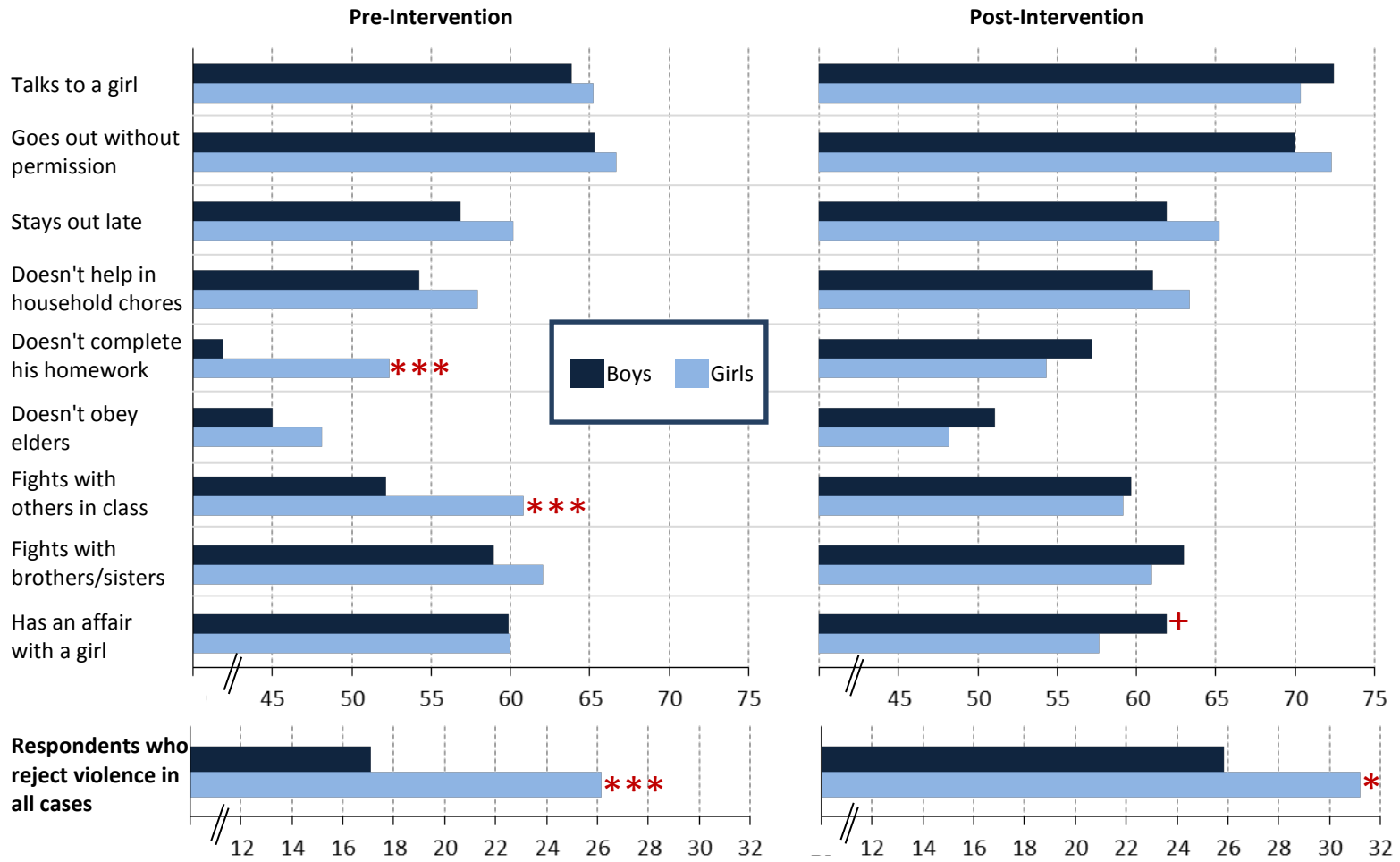
|   | All Schools | Range     | By GEMS Intervention Arm |                |                |        |
|---|-------------|-----------|--------------------------|----------------|----------------|--------|
|   |             |           | GEA+                     | Campaign       | Control        |        |
|   |             |           |                          |                |                |        |
| Proportion of schools, by intervention arm                          |             |           | 0.37<br>(n=15)           | 0.29<br>(n=12) | 0.34<br>(n=14) |        |
| Mean school SES   | 0.41        | 0.30-0.63 | 0.44                     | 0.39           | 0.39           | (b)(c) |
| Mean proportion of students reporting home or neighborhood violence | 0.45        | 0.15-0.74 | 0.46                     | 0.44           | 0.46           |        |
| Mean proportion of students reporting violence in school            | 0.53        | 0.11-0.78 | 0.52                     | 0.52           | 0.54           |        |
| (a) Significant differences between all intervention arms.          |             |           |                          |                |                |        |
| (b) GEA+ significantly different from Campaign                      |             |           |                          |                |                |        |
| (c) GEA+ significantly different from Control                       |             |           |                          |                |                |        |
| (d) Campaign significantly different from Control                   |             |           |                          |                |                |        |

Figure 2.1: Percentage of respondents who disagree that a girl deserves to be beaten when she...



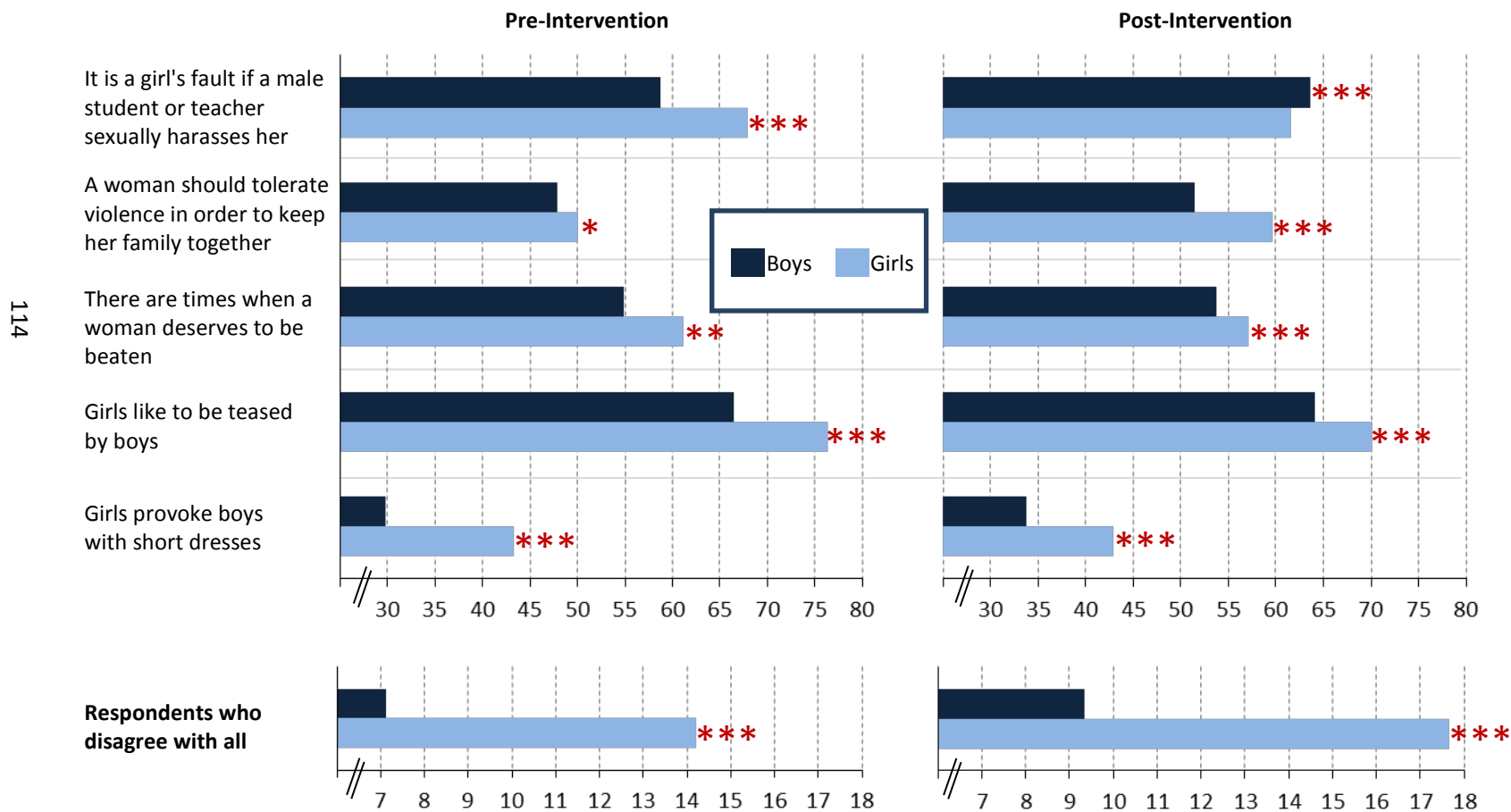
Differences between boys and girls significant at : + p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001

Figure 2.2: Percentage of respondents who disagree that a boy deserves to be beaten when he...



Differences between boys and girls significant at : + p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001

Figure 2.3: Percentage of respondents that DISAGREED that:



Differences between boys and girls significant at : + p<.10, \*p<.05, \*\*p<.01, \*\*\*p<.001

**Table 2.3: Attitudes about violence, by intervention arm and sex**

| Pre-Intervention Attitudes:   |      |          |         |        |       |          |         |        |
|---|------|----------|---------|--------|-------|----------|---------|--------|
| Proportion of students that:  | Boys |          |         |        | Girls |          |         |        |
|   | GEA+ | Campaign | Control |        | GEA+  | Campaign | Control |        |
| Rejects justifications of violence against girls                                | 0.19 | 0.24     | 0.17    | (d)    | 0.25  | 0.28     | 0.20    | (d)    |
| Rejects justifications of violence against boys                                 | 0.19 | 0.18     | 0.15    |        | 0.27  | 0.29     | 0.24    |        |
| Rejects gender-based violence   | 0.05 | 0.06     | 0.09    | (c)    | 0.13  | 0.13     | 0.16    |        |
|   |      |          |         |        |       |          |         |        |
| Post-Intervention Attitudes:  |      |          |         |        |       |          |         |        |
| Proportion of students that:  | Boys |          |         |        | Girls |          |         |        |
|   | GEA+ | Campaign | Control |        | GEA+  | Campaign | Control |        |
| Rejects justifications of violence against girls                                | 0.23 | 0.32     | 0.24    | (b)(d) | 0.34  | 0.38     | 0.29    | (d)    |
| Rejects justifications of violence against boys                                 | 0.23 | 0.28     | 0.27    |        | 0.29  | 0.38     | 0.28    | (b)(d) |
| Rejects gender-based violence   | 0.11 | 0.09     | 0.08    |        | 0.30  | 0.11     | 0.11    | (b)(c) |
|   |      |          |         |        |       |          |         |        |
| (a) Significant differences at $p < .10$ or less between all intervention arms. |      |          |         |        |       |          |         |        |
| (b) GEA+ significantly different from Campaign                                  |      |          |         |        |       |          |         |        |
| (c) GEA+ significantly different from Control                                   |      |          |         |        |       |          |         |        |
| (d) Campaign significantly different from Control                               |      |          |         |        |       |          |         |        |



**Table 2.4: Results of pre-intervention bivariate binomial logit regressions, by sex, presented as odds ratios**

|   | BOYS  |  |                              | GIRLS   |  |                              |
|---|---|--|------------------------------|---|--|------------------------------|
|   | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence |
| <b>Individual Level</b>                                     |   |  |                              |   |  |                              |
| Age   | 1.22**  | 1.16*  | 0.84                         | 0.96  | 0.92   | 0.89                         |
| SES   | 1.06  | 0.97   | 0.91                         | 1.05  | 0.95   | 0.85                         |
| Experiences of violence: (ref= no violence)                 |   |  |                              |   |  |                              |
| School violence only  | 0.49+   | 0.31**   | 1.22                         | 0.60  | 0.86   | 0.61                         |
| Home violence only  | 0.69  | 0.45**   | 0.76                         | 0.46**  | 0.51*  | 0.93                         |
| School & home violence                                      | 0.30***   | 0.19***  | 0.80                         | 0.45***   | 0.42***  | 0.66*                        |
| <b>School Level</b>   |   |  |                              |   |  |                              |
| School SES  | 0.95  | 0.78+  | 0.87                         | 1.03  | 1.05   | 0.92                         |
| Proportion of students reporting home/neighborhood violence | 0.69**  | 0.67**   | 0.93                         | 0.68**  | 0.73*  | 0.93                         |
| Proportion of students reporting violence in school         | 0.53***   | 0.58***  | 1.30                         | 0.61**  | 0.72*  | 1.04                         |
| + p<.10, *p<.05, **p<.01, ***p<.001                         |   |  |                              |   |  |                              |

**Table 2.5: Results of post-intervention bivariate binomial logit regressions, by sex, presented as odds ratios**

|   | BOYS  |  |                              | GIRLS   |  |                              |
|---|---|--|------------------------------|---|--|------------------------------|
|   | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence |
| <b>Individual Level</b>   |   |  |                              |   |  |                              |
| Age   | 1.16+   | 1.13   | 0.90                         | 0.91  | 0.86+  | 1.08                         |
| SES   | 1.07  | 0.92   | 0.94                         | 0.79**  | 0.86*  | 1.09                         |
| Experiences of violence: (ref= no violence)                       |   |  |                              |   |  |                              |
| School violence only  | 0.77  | 0.92   | 0.78                         | 0.45*   | 0.33**   | 0.44                         |
| Home violence only  | 0.93  | 1.01   | 0.72                         | 0.68**  | 0.74   | 1.06                         |
| School & home violence  | 0.64*   | 0.62*  | 0.58*                        | 0.55***   | 0.62**   | 0.93                         |
| <b>School Level</b>   |   |  |                              |   |  |                              |
| Intervention arm (ref= control):                                  |   |  |                              |   |  |                              |
| GEA+  | 0.95  | 0.69   | 1.85                         | 1.21  | 1.02   | 2.93*                        |
| Campaign  | 1.57  | 0.98   | 1.26                         | 1.45  | 1.36   | 1.24                         |
| School SES  | 0.71**  | 0.74**   | 0.90                         | 0.83  | 0.82   | 1.09                         |
| Proportion of students in reporting home or neighborhood violence | 0.87  | 0.95   | 1.11                         | 0.88  | 1.02   | 1.57+                        |
| Proportion of students reporting violence in school               | 0.68+   | 0.89   | 1.10                         | 0.77  | 0.92   | 1.25                         |
| + p<.10, *p<.05, **p<.01, ***p<.001                               |   |  |                              |   |  |                              |

**Table 2.6: Results of multivariate binomial logit regressions on boys' pre-intervention attitudes, presented as odds ratios**

|  | Reject Justifications of<br>Violence against Girls |         | Reject Justifications of<br>Violence against Boys |         | Reject Gender-Based<br>Violence |         |
|--|--|---------|---|---------|---------------------------------|---------|
|  | Model 1  | Model 2 | Model 1   | Model 2 | Model 1                         | Model 2 |
| <b>Individual Level</b>  |  |         |   |         |                                 |         |
| Intercept  | 0.49**   | 0.43*** | 0.56**  | 0.49**  | 0.09***                         | 0.09*** |
| Age  | 1.22**   | 1.22**  | 1.17*   | 1.19**  | 0.85                            | 0.85    |
| SES  | 1.06   | 1.04    | 0.96  | 0.96    | 0.93                            | 0.94    |
| Experiences of violence: (ref= no violence)                          |  |         |   |         |                                 |         |
| School violence only   | 0.48+  | 0.49+   | 0.30*   | 0.30*   | 1.22                            | 1.10    |
| Home violence only   | 0.68   | 0.65    | 0.44**  | 0.41*** | 0.77                            | 0.74    |
| School & home violence   | 0.30***  | 0.32*** | 0.20***   | 0.20*** | 0.79                            | 0.71    |
| <b>School Level</b>  |  |         |   |         |                                 |         |
| School SES   |  | 0.91    |   | 0.75*   |                                 | 0.96    |
| Proportion of students in reporting home<br>or neighborhood violence |  | 0.93    |   | 0.84    |                                 | 0.78    |
| Proportion of students reporting violence<br>in school               |  | 0.60*** |   | 0.70**  |                                 | 1.53*   |
| + p<.10, *p<.05, **p<.01, ***p<.001                                  |  |         |   |         |                                 |         |

**Table 2.7: Results of multivariate binomial logit regressions on girls' pre-intervention attitudes, presented as odds ratios**

|  | Reject Justifications of Violence against Girls |         | Reject Justifications of Violence against Boys |         | Reject Gender-Based Violence |         |
|--|---|---------|--|---------|------------------------------|---------|
|  | Model 1   | Model 2 | Model 1  | Model 2 | Model 1                      | Model 2 |
| <b>Individual Level</b>  |   |         |  |         |                              |         |
| Intercept  | 0.48***   | 0.46*** | 0.52**   | 0.51**  | 0.19***                      | 0.19*** |
| Age  | 0.96  | 0.96    | 0.93   | 0.93    | 0.92                         | 0.92    |
| SES  | 1.06  | 1.05    | 0.96   | 0.94    | 0.86                         | 0.87    |
| Experiences of violence: (ref= no violence)                    |   |         |  |         |                              |         |
| School violence only   | 0.59  | 0.64    | 0.87   | 0.96    | 0.64                         | 0.61    |
| Home violence only   | 0.46**  | 0.48*   | 0.51*  | 0.53*   | 0.94                         | 0.92    |
| School & home violence   | 0.45***   | 0.49*** | 0.42***  | 0.45*** | 0.66*                        | 0.63*   |
| <b>School Level</b>  |   |         |  |         |                              |         |
| School SES   |   | 1.08    |  | 1.15    |                              | 0.98    |
| Proportion of students reporting home or neighborhood violence |   | 0.82    |  | 0.79    |                              | 0.92    |
| Proportion of students reporting violence in school            |   | 0.73+   |  | 0.88    |                              | 1.15    |
| + p<.10, *p<.05, **p<.01, ***p<.001                            |   |         |  |         |                              |         |

**Table 2.8: Results of multivariate binomial logit regressions on boys' post-intervention attitudes, presented as odds ratios**

|  | Reject Justifications of Violence<br>against Girls |         |         | Reject Justifications of Violence<br>against Boys |         |         | Reject Gender-Based Violence |         |         |
|--|--|---------|---------|---|---------|---------|------------------------------|---------|---------|
|  | Model 3  | Model 4 | Model 5 | Model 3   | Model 4 | Model 5 | Model 3                      | Model 4 | Model 5 |
| <b>Individual Level</b>  |  |         |         |   |         |         |                              |         |         |
| Intercept  | 0.25***  | 0.25*** | 0.32**  | 0.40***   | 0.41**  | 0.46*   | 0.10***                      | 0.10*** | 0.10*** |
| Pre-intervention score   | 2.87***  | 2.92*** | 2.74*** | 2.43***   | 2.49*** | 2.43*** | 2.04+                        | 2.02+   | 1.90*   |
| Age  | 1.15+  | 1.14+   | 1.16*   | 1.15+   | 1.15    | 1.15+   | 0.87                         | 0.88    | 0.89    |
| SES  | 1.09   | 1.09    | 1.08    | 0.94  | 0.93    | 0.93    | 0.94                         | 0.94    | 0.96    |
| Experiences of violence: (ref= no violence)                          |  |         |         |   |         |         |                              |         |         |
| School violence only   | 0.79   | 0.79    | 0.28*   | 0.91  | 0.89    | 0.50    | 0.73                         | 0.73    | 0.65    |
| X GEA+   |  |         | 4.77*   |   |         | 2.05    |                              |         | 2.22+   |
| X Campaign   |  |         | 5.02*   |   |         | 4.68*   |                              |         | 0.78    |
| Home violence only   | 0.95   | 0.90    | 0.69    | 0.98  | 0.92    | 0.75    | 0.68                         | 0.69    | 1.09    |
| X GEA+   |  |         | 1.80    |   |         | 1.67    |                              |         | 0.50    |
| X Campaign   |  |         | 1.57    |   |         | 1.41    |                              |         | 0.54    |
| School & home violence   | 0.69+  | 0.67+   | 0.58    | 0.62*   | 0.60*   | 0.56+   | 0.55**                       | 0.56**  | 0.61    |
| X GEA+   |  |         | 1.65    |   |         | 1.75    |                              |         | 1.11    |
| X Campaign   |  |         | 1.21    |   |         | 0.90    |                              |         | 0.38+   |
| <b>School Level</b>  |  |         |         |   |         |         |                              |         |         |
| School pre-intervention attitude score                               | 0.60**   | 0.58*** | 0.57*** | 0.97  | 1.00    | 0.95    | 1.55*                        | 1.63*   | 1.49*   |
| Intervention arm (ref= control)                                      |  |         |         |   |         |         |                              |         |         |
| GEA+   | 1.11   | 0.95    | 0.71    | 0.78  | 0.67    | 0.52    | 2.16+                        | 2.21+   | 1.92    |
| Campaign   | 1.76*  | 1.86*   | 1.33    | 0.94  | 0.96    | 0.82    | 1.21                         | 1.23    | 2.03+   |
| School SES   | 0.70**   | 0.73**  | 0.71**  | 0.76*   | 0.80*   | 0.77*   | 0.84                         | 0.82    | 0.81*   |
| Proportion of students in reporting home<br>or neighborhood violence | 1.01   | 1.12    | 1.04    | 1.02  | 1.16    | 1.03    | 1.07                         | 1.06    | 1.08    |
| Proportion of students reporting violence<br>in school               | 0.64**   | 0.85    | 0.59**  | 0.88  | 1.12    | 0.84    | 1.12                         | 0.98    | 1.17    |
| School violence X GEA+   |  | 0.38**  |         |   | 0.44**  |         |                              | 1.29    |         |
| School violence X Campaign   |  | 0.84    |         |   | 0.97    |         |                              | 1.08    |         |
| + p<.10, *p<.05, **p<.01, ***p<.001                                  |  |         |         |   |         |         |                              |         |         |

**Table 2.9: Results of multivariate binomial logit regressions on girls' post-intervention attitudes, presented as odds ratios**

|  | Reject Justifications of Violence<br>against Girls |         |         | Reject Justifications of Violence<br>against Boys |         |         | Reject Gender-Based Violence |         |         |
|--|--|---------|---------|---|---------|---------|------------------------------|---------|---------|
|  | Model 3  | Model 4 | Model 5 | Model 3   | Model 4 | Model 5 | Model 3                      | Model 4 | Model 5 |
| <b>Individual Level</b>  |  |         |         |   |         |         |                              |         |         |
| Intercept  | 0.44***  | 0.46*** | 0.49**  | 0.39***   | 0.41*** | 0.42*** | 0.11***                      | 0.11*** | 0.16*** |
| Pre-intervention score   | 1.72**   | 1.71**  | 1.69**  | 2.14***   | 2.14*** | 2.17*** | 1.78**                       | 1.78**  | 1.68**  |
| Age  | 0.95   | 0.95    | 0.96    | 0.88  | 0.88    | 0.90    | 1.07                         | 1.07    | 1.05    |
| SES  | 0.81*  | 0.81*   | 0.82*   | 0.91  | 0.91    | 0.93    | 1.12*                        | 1.12*   | 1.09*   |
| Experiences of violence: (ref= no violence)                          |  |         |         |   |         |         |                              |         |         |
| School violence only   | 0.46*  | 0.45*   | 0.52    | 0.31**  | 0.31**  | 0.63    | 0.34                         | 0.32    | 0.39**  |
| X GEA+   |  |         | 0.84    |   |         | 0.43+   |                              |         |         |
| X Campaign   |  |         | 1.24    |   |         | 0.47    |                              |         |         |
| Home violence only   | 0.68**   | 0.68**  | 0.54**  | 0.74  | 0.75    | 0.63    | 1.06                         | 1.06    | 0.96    |
| X GEA+   |  |         | 1.40    |   |         | 1.46    |                              |         | 1.24    |
| X Campaign   |  |         | 1.60    |   |         | 1.17    |                              |         | 0.96    |
| School & home violence   | 0.54***  | 0.54*** | 0.52*   | 0.60**  | 0.59**  | 0.55*   | 0.89                         | 0.89    | 0.88    |
| X GEA+   |  |         | 1.12    |   |         | 1.57    |                              |         | 0.89    |
| X Campaign   |  |         | 1.02    |   |         | 0.76    |                              |         | 1.47    |
| <b>School Level</b>  |  |         |         |   |         |         |                              |         |         |
| School pre-intervention attitude score                               | 0.86   | 0.96    | 0.89    | 1.13  | 1.25+   | 1.11    | 1.26                         | 1.34+   | 1.13    |
| Intervention arm (ref= control)                                      |  |         |         |   |         |         |                              |         |         |
| GEA+   | 1.52   | 1.46    | 1.33    | 1.26  | 1.20    | 1.02    | 2.87*                        | 2.90+   | 2.40*   |
| Campaign   | 1.80+  | 1.69    | 1.61    | 1.52+   | 1.46+   | 1.73+   | 1.44                         | 1.51    | 1.16    |
| School SES   | 0.84   | 0.87    | 0.85    | 0.79+   | 0.82    | 0.76*   | 0.82                         | 0.81    | 0.83    |
| Proportion of students in reporting home<br>or neighborhood violence | 1.02   | 1.09    | 1.12    | 1.18  | 1.26*   | 1.29*   | 1.54*                        | 1.51*   | 1.44*   |
| Proportion of students reporting violence<br>in school               | 0.77+  | 0.75    | 0.73*   | 0.88  | 0.78    | 0.83    | 1.05                         | 1.05    | 1.01    |
| School violence X GEA+   |  | 0.85    |         |   | 0.96    |         |                              | 1.12    |         |
| School violence X Campaign   |  | 1.33    |         |   | 1.54*   |         |                              | 0.85    |         |
| + p<.10, *p<.05, **p<.01, ***p<.001                                  |  |         |         |   |         |         |                              |         |         |

**Table 2.10: Results of multivariate binomial logit regressions on post-intervention attitudes, with GEA+ as the reference intervention arm, presented as odds ratios**

|   | BOYS  |  |                              | GIRLS   |  |                              |
|---|---|--|------------------------------|---|--|------------------------------|
|   | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence |
| <b>Individual Level</b>   |   |  |                              |   |  |                              |
| Intercept   | 0.23***   | 0.24***  | 0.19***                      | 0.65*   | 0.42***  | 0.37**                       |
| Pre-intervention score  | 2.74***   | 2.43***  | 1.90*                        | 1.69**  | 2.17***  | 1.68**                       |
| Age   | 1.16*   | 1.15+  | 0.89                         | 0.96  | 0.90   | 1.05                         |
| SES   | 1.08  | 0.93   | 0.96                         | 0.82*   | 0.93   | 1.09*                        |
| Experiences of violence: (ref= no violence)                       |   |  |                              |   |  |                              |
| School violence only  | 1.35  | 1.02   | 1.44                         | 0.43*   | 0.27***  | 0.39**                       |
| X Campaign  | 1.05  | 2.28   | 0.35*                        | 1.47  | 1.09   | NA                           |
| X Control   | 0.21*   | 0.49   | 0.45+                        | 1.19  | 2.30+  |                              |
| Home violence only  | 1.24  | 1.25   | 0.54                         | 0.75  | 0.91   | 1.19                         |
| X Campaign  | 0.88  | 0.84   | 1.09                         | 1.14  | 0.80   | 0.77                         |
| X Control   | 0.56  | 0.60   | 2.00                         | 0.71  | 0.69   | 0.80                         |
| School & home violence  | 0.96  | 0.98   | 0.67                         | 0.58**  | 0.86   | 0.78                         |
| X Campaign  | 0.73  | 0.52   | 0.35*                        | 0.91  | 0.48*  | 1.65                         |
| X Control   | 0.61  | 0.57   | 0.90                         | 0.90  | 0.64   | 1.13                         |
| <b>School Level</b>   |   |  |                              |   |  |                              |
| School pre-intervention attitude score                            | 0.57***   | 0.95   | 1.49*                        | 0.89  | 1.11   | 1.13                         |
| Intervention arm (ref= GEA+)                                      |   |  |                              |   |  |                              |
| Campaign  | 1.88  | 1.58   | 1.06                         | 1.21  | 1.71+  | 0.48+                        |
| Control   | 1.41  | 1.93   | 0.52                         | 0.75  | 0.98   | 0.42*                        |
| School SES  | 0.71**  | 0.77*  | 0.81*                        | 0.85  | 0.76*  | 0.83                         |
| Proportion of students in reporting home or neighborhood violence | 1.04  | 1.03   | 1.08                         | 1.12  | 1.29*  | 1.44*                        |
| Proportion of students reporting violence in school               | 0.59**  | 0.84   | 1.17                         | 0.73*   | 0.83   | 1.01                         |
| + p<.10, *p<.05, **p<.01, ***p<.001                               |   |  |                              |   |  |                              |

**Table 2.11: Results of multivariate binomial logit regressions on post-intervention attitudes, with Campaign as the reference intervention arm, presented as odds ratios**

|   | BOYS  |  |                              | GIRLS   |  |                              |
|---|---|--|------------------------------|---|--|------------------------------|
|   | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence | Reject Justifications of Violence against Girls | Reject Justifications of Violence against Boys | Reject Gender-Based Violence |
| <b>Individual Level</b>   |   |  |                              |   |  |                              |
| Intercept   | 0.43**  | 0.38**   | 0.20***                      | 0.78  | 0.72   | 0.18***                      |
| Pre-intervention score  | 2.74***   | 2.43***  | 1.90*                        | 1.69**  | 2.17***  | 1.68**                       |
| Age   | 1.16*   | 1.15+  | 0.89                         | 0.96  | 0.90   | 1.05                         |
| SES   | 1.08  | 0.93   | 0.96                         | 0.82*   | 0.93   | 1.09*                        |
| Experiences of violence: (ref= no violence)                       |   |  |                              |   |  |                              |
| School violence only  | 1.42  | 2.33++   | 0.50*                        | 0.64  | 0.30**   | 0.39**                       |
| X GEA+  | 0.95  | 0.44   | 2.86*                        | 0.68  | 0.92   |                              |
| X Control   | 0.20*   | 0.21*  | 1.29                         | 0.81  | 2.11   |                              |
| Home violence only  | 1.08  | 1.06   | 0.59**                       | 0.86  | 0.73   | 0.92                         |
| X GEA+  | 1.14  | 1.19   | 0.92                         | 0.87  | 1.24   | 1.30                         |
| X Control   | 0.64  | 0.71   | 1.84                         | 0.62  | 0.85   | 1.05                         |
| School & home violence  | 0.70  | 0.51**   | 0.23**                       | 0.53**  | 0.41***  | 1.29                         |
| X GEA+  | 1.36  | 1.94   | 2.89*                        | 1.10  | 2.08*  | 0.60                         |
| X Control   | 0.83  | 1.11   | 2.60+                        | 0.98  | 1.32   | 0.68                         |
| <b>School Level</b>   |   |  |                              |   |  |                              |
| School pre-intervention attitude score                            | 0.57***   | 0.95   | 1.49*                        | 0.89  | 1.11   | 1.13                         |
| Intervention arm (ref= Campaign)                                  |   |  |                              |   |  |                              |
| GEA+  | 0.53  | 0.63   | 0.94                         | 0.83  | 0.59+  | 2.07+                        |
| Control   | 0.75  | 1.22   | 0.49+                        | 0.62  | 0.58+  | 0.86                         |
| School SES  | 0.71**  | 0.77*  | 0.81*                        | 0.85  | 0.76*  | 0.83                         |
| Proportion of students in reporting home or neighborhood violence | 1.04  | 1.03   | 1.08                         | 1.12  | 1.29*  | 1.44*                        |
| Proportion of students reporting violence in school               | 0.59**  | 0.84   | 1.17                         | 0.73*   | 0.83   | 1.01                         |
| + p<.10, *p<.05, **p<.01, ***p<.001                               |   |  |                              |   |  |                              |

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**Chapter IV**  
**"In school they forget about the gender burdens they carry":**  
**Mumbai teachers talking about gender equity**

**Introduction**

In the context of international development, schools are touted as instrumental to the empowerment of women and the transformation of society. In contrast, critical narratives describe schools as gendered environments that reproduce and perpetuate unequal power relationships between men and women (Connell, 1996; Leach, 2006; Stromquist, 2006). For researchers and activists for whom social transformation is a passionate goal, the focus on reproduction is unsatisfactory and frustrating: it negates both the possibility and the historical reality of change. Scholars have thus called for an examination of where and how gender is “undone”, a focus on “the slippages in reproduction, the erosions of long-standing patterns, the moments of disorder and of outright “resistance”” (Ortner, 1996, p. 17).

This study, drawing on interviews with public primary school teachers in Mumbai, India, was originally designed to examine the role of the Gender Equity Movement in Schools intervention (GEMS) in disrupting the reproduction of gender norms. However, in comparing the perspectives and reported practices of teachers who participated in the intervention and those who did not, a pervasive discourse of gender equity, rather than differences between these groups, emerged. In considering what might be driving this pervasive discourse among teachers, I argue that teachers adopt a discourse of gender equity that is driven by their structural realities more than by their actual ideological commitment to equity. These teachers have specific objectives and tasks that they need to attend to in their professional role— throughout

this paper I refer to these objectives and tasks as “projects.” Through the example of two of the teachers' main projects – ensuring attendance and maintaining discipline – I demonstrate how gender both constrains teacher actions and is used strategically by them to achieve their goals.

While the discourse of equity is often used in service of teachers' professional projects, the endorsement of gender equity is not always superficial, nor is it uniform. For a subset of teachers, primarily women, it reflects a deep commitment to equity, while for others it suggests discomfort about possible changes in the roles and status of men and women. I argue that programs (like GEMS) that encourage critical reflection about gender, in the context of structural realities that force teachers to consider gender in their day to day activities, can contribute to building teachers' commitment to gender equity, transforming it into an issue that they consider a personal goal.

### **Social Reproduction and Social Transformation: Theoretical Perspectives**

Theoretical work and empirical studies have described schools as complex gendered environments where students observe, participate, and learn “how gender relations work and how to navigate among them” (Connell, 2002, p. 81). Researchers describe various elements of schools that promote the reproduction of gender inequities, including teacher attitudes and behaviors, peer interactions, school organization, curricular representations of gender, school harassment or violence, and disciplinary policies (Bajaj, 2010; Connell, 1996; Leach, 2003). Through their organization and practices, schools may reproduce and perpetuate existing social hierarchies of gender as well as of race, caste, and class (Connell, 1996; Leach, 2006; Stromquist, 2006). At the same time, schools may also disrupt or transform traditional hierarchies (Bajaj, 2009; Leach, 2003; Stromquist & Fischman, 2009). Within the school context, the role of teachers is central. Through their interactions with children, parents, and administrators, teachers play a pivotal role in “either perpetuating or transforming the school culture” (Meyer,

2009, p. 38). And yet, teachers themselves are not neutral actors; they are active agents who are embedded in their specific community, and their own personal and professional lives are also gendered (Kirk, 2004).

This perspective on schools as settings for social reproduction draws on practice theory, rooted in the works of Bourdieu, Giddens, and others (Ortner, 1984). Practice theory is concerned with the interplay between agency, structure, and culture, generally concluding that while structure (and/or culture) constrains and enables individual action, action *makes* structure, by recreating or transforming it (Ortner, 1984, 1996, 2006). According to Ortner (1989):

The central problem for practice theory is, as all its practitioners seem to agree, precisely the question of how actors who are so much products of their own social and cultural context can ever come to transform the conditions of their own existence, except by accident. (p.14)

Gender scholars have similarly focused on this question, examining how the “doing” of gender “simultaneously sustain[s], reproduce[s], and render[s] legitimate the institutional arrangements that are based on sex category” (West & Zimmerman, 1987, p. 146). However, while the question of what drives social transformation is of primary interest, much of the emphasis in these fields has been on describing how gender inequality is reproduced, rather than on how it changes (Deutsch, 2007; McLeod, 2005; Ortner, 1996; Risman, 2004; Stromquist & Fischman, 2009).

Scholars that have engaged with the question of what drives social change have come up with a variety of explanations. In this paper, I build on a theoretical perspective put forth by Swidler (2001) and elaborated on in the Indian context by Derné (2005), that highlights the primacy of social structures in shaping (and changing) ideologies. In *Talk of Love*, Swidler (2001) argues that it is not ideas of love that structure the institution of marriage in the United States; rather, it is the structure of marriage (based on individual choice) that shapes Americans' ideas

about love. Applying this conceptualization to India, Derné demonstrates that despite extensive exposure to new cultural models of "love marriage" and women's autonomy in the media, non-elite men reject these ideas because the realities that shape their life and marriage options (namely, the economic dependence on extended family) have not changed. On the other hand, affluent Indians' access to new opportunities for economic independence is driving the changes in their family and gender arrangements towards more autonomy for women and greater individual choice in selecting marriage partners. Thus, Derné argues that new cultural meanings are only accepted when they are consistent with institutional realities. In this paper, I show how the (new) institutional realities of teachers' work in Mumbai public schools shape their acceptance of public calls for gender equity in school. These institutional realities thus provide opportunities for social change (Ortner, 1989).

At the same time, as scholars concerned with the seemingly intractable nature of gender inequality have argued, structural or institutional changes are not enough - social transformation requires change at the individual and interactional levels in addition to the structural level (Risman, 2004; West & Zimmerman, 1987). Through the example of the GEMS program, I conclude the paper by arguing that in situations where teachers are "primed" to accept the discourse of gender equity by the structural realities they face, programs that foster critical reflection about gender may contribute to a deeper engagement with and commitment to change.

The paper is organized as follows: first, I provide an overview of the context of the study, the GEMS intervention around which the study was designed, and the methods for data collection and analysis. The results are then presented in four sections. The first two sections explore how teachers' practices regarding attendance and discipline are shaped by structural realities of gender differences or inequality in their communities and government mandates to

ensure school participation, particularly for girls. These sections also examine how teachers strategically use gender to achieve their practical, day-to-day objectives. Next, I explore in more depth teachers' explicit talk about gender equity in schools, as well as the skepticism about and resistance to gender equity efforts that some teachers describe. Finally, I present teachers' experiences of the GEMS workshop, highlighting opportunities for reflection and change. I conclude with a discussion of the findings and their implications.

## **Context of the Study**

### ***Gender and Schooling in India***

India is the second most populous country in the world with an estimated population of nearly 1.2 billion, and has experienced remarkable economic growth over the last few decades. It contains enormous geographical, cultural, and linguistic diversity, as well as stark gender, class, and caste inequalities. Despite constitutional guarantees and fifty years of policies and programs to promote their status, women remain highly disadvantaged on all measures of development and well-being, including education, health, economic participation, and political representation (Shah, 2011). While measures of inequality indicate some improvement, India still ranked 129th out of 187 countries on the Gender Inequality Index<sup>21</sup> (UNDP, 2011).

This study was conducted in the city of Mumbai (formerly Bombay), the most densely populated city in India and the commercial and entertainment center of the country. It is a city of great contrasts. Mumbai is the richest city in India; at the same time, over 50% of its population lives in slums with poor infrastructure, sanitation, and social services. The teachers in this study teach in schools in two of the most disadvantaged wards in the city, where between

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<sup>21</sup> The Gender Inequality Index (GII) represents women's disadvantage in three dimensions: reproductive health (indicated by the adolescent fertility and maternal mortality rates), empowerment (indicated by secondary education attainment and parliamentary representation rate) and labor market participation. The GII was designed to "reveal the extent to which national achievements in these aspects of human development are eroded by gender inequality" (UNDP, 2011).

two-thirds and three-quarters of the population lives in slums, and where levels of health and education are below the city's average (MCGM, 2010).

As an important strategy to improve economic and human development and to promote the global agenda of Education for All, the government of India has implemented several large-scale initiatives to improve access to and the quality of primary education, particularly for girls (e.g., District Primary Education Program, Sarva Shiksha Abhiyan, Right to Education Act of 2009). Importantly, the landmark Right to Education Act (Government of India, 2009) asserts the responsibility of the government (rather than parents) to not only provide primary education, but to ensure enrollment, attendance, and completion.

In addition to building more schools, government initiatives included measures such as hiring women teachers and providing free textbooks, uniforms, supplies, and midday meals, as well as scholarships and financial incentives for regular attendance (Desai & Kulkarni, 2008; Iyengar & Surianarain, 2010; Kingdon, 2007). In Mumbai, for example, girls earn a small allowance for every day that they attend school in a given academic year (Iyengar & Surianarain, 2010). They also included efforts to train teachers on the importance of the impartial treatment of all students, especially girls and Dalit and tribal students (Clarke, 2003). Spurred in part by these initiatives, school enrollment in India has increased dramatically. Just between 2000 and 2008, the net primary enrollment rate increased from 79 to 92, and the gender parity index increased from 0.84 to 0.96 (UNESCO, 2012). In Mumbai, primary school enrollment is now nearly universal (Dasra & Godrej, 2010).

Despite these major initiatives, however, the public education system is plagued by critiques of low quality, teacher absenteeism, and rote memory forms of teaching and learning, as well as persistent gender, caste, and religious discrimination (Bandyopadhyay & Subrahmanian, 2008; Desai & Kulkarni, 2008; Human Rights Watch, 2007; Kremer, Chaudhury,

Rogers, Muralidharan, & Hammer, 2005; Rawal & Kingdon, 2010). These critiques have resulted in "a rather teacher-unfriendly public discourse that puts large parts of the blame for the malaise in government schooling on teachers" (Majumdar & Mooij, 2011, p. 66). These perceptions, combined with the desire for English-medium education, have also contributed to the rapid growth of (relatively low-cost) private schooling in India, particularly in urban areas - approximately 40% of children in Mumbai attend private schools (Dasra & Godrej, 2010). The exodus from local language public schools is particularly dramatic. In Mumbai, admissions to Hindi-medium schools dropped by 2.8% and admissions to Marathi-medium schools dropped by 20% between 2007-2008 and 2010-2011 (Tatke, 2011). The changes in enrollment (and consequent school or class closures) are causing insecurity for teachers: while they are not likely to lose their jobs, they may be transferred to less convenient or less desirable schools, or assigned to non-teaching duties (Shukla & Naik, 2008). In fact, the rules attached to the Right to Education law specifically state that local education authorities should transfer teachers in schools where the ratio of teachers to students is higher than sanctioned (Government of India, 2010, section 22).

The migration to private and/or English-medium schools also effectively means that the children currently attending public schools are, for the most part, from the lowest-income households, households that were previously excluded from the educational system (Dasra & Godrej, 2010; Majumdar & Mooij, 2011; Ramachandran, 2009). The increased gap in social class between students and teachers (who have moved into the middle class in the past few decades due to generous salary increases and job stability) presents new and unique challenges for teachers and schools, especially since teachers are endowed with a large part of the responsibility for achieving the country's Education for All goals (Majumdar & Mooij, 2011). Given their central role in implementing and promoting the government's goals, understanding



teachers' ideas about gender equity and how it is manifest and addressed in school, is particularly important.

### ***The GEMS Intervention***

The GEMS intervention aimed to promote gender-equitable and non-violent attitudes among students and teachers in public schools.<sup>22</sup> The first phase of the program targeted 6th and 7th grade students and consisted of ongoing group education sessions and a school-based campaign (for more information see: Achyut, et al., 2011). The second phase of the intervention was aimed at promoting change at a more structural level by engaging closely with teachers to create allies who would support the children and promote equity in the school. Teachers from the participating schools were invited to attend a series of 3 half-day teacher workshops conducted between December and March 2011, focused on promoting critical reflection about gender and violence in Indian society, in schools, and in their own lives. The teachers were selected by their school principal, generally based on practical reasons rather than the teacher's interest in the topic – their assignment to the relevant grades (6<sup>th</sup> or 7<sup>th</sup>), the proximity from their home to the workshop location, and how occupied they were with other administrative assignments.

The workshop content focused on understanding gender and gender roles as social constructions, examining how discrimination against girls and women extends across the lifespan (e.g., female infanticide, early marriage, etc.) and in multiple sectors (education, health, traditions and rituals, etc.), and reflecting on how both men and women are complicit in perpetuating the patriarchal system. The workshop's other main area of focus was violence: defining it, identifying different forms of violence (physical, emotional, sexual, etc.) and relating

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<sup>22</sup> GEMS was conceptualized and implemented through a collaboration of three prominent Indian institutions: the International Center for Research on Women, a research institution; the Tata Institute for Social Sciences, a university; and Coro for Literacy, a community development organization.

it to issues of power and gender. During the workshops, the facilitators repeatedly emphasized the important role that teachers play in shaping the lives of many students, and the opportunity they have in their professional roles to promote social transformation.

### **Data and Methods**

This paper is based on semi-structured interviews with 30 primary and middle school teachers in Mumbai, India (16 female, 14 male) conducted by trained local interviewers between February and April 2011. We interviewed eighteen teachers (10 female, 8 male) who participated in at least one of the three GEMS Teacher Workshops. In addition, 12 teachers (6 female, 6 male) who did not attend the workshop were selected from (some of) the same schools and interviewed for comparison purposes.<sup>23</sup> The recruitment of participants proceeded in two stages. At the first stage, I concentrated on the workshop participants. I was introduced to the teachers at the second workshop and developed a list of teachers to approach based on the attendance rosters. My interviewers and I then contacted these teachers by phone or in person to schedule a convenient interview time. In a few cases, the program facilitators spoke to the teachers to encourage them to participate. Eighteen of the 22 teachers contacted agreed to participate; four teachers (2 male, 2 female) refused to participate citing lack of time, and in two cases, interest. In the second stage, I recruited a convenience sample of 12 teachers who did not participate in the teacher workshops. These teachers were identified by asking the workshop participants we interviewed to suggest other teachers from their school, preferably those teaching 6th or 7th grade. Given that they had allowed their colleagues to refer them to us, nearly all the non-workshop teachers we contacted agreed to be interviewed; the handful

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<sup>23</sup> One of the 12 teachers was a female teacher from a private school for low-income children not affiliated with GEMS. She was interviewed for two main reasons: her school was located in the same slum community as other schools in the sample and could provide a contrast, and I was able to personally interview her in English.

that refused – generally teachers that we approached directly while visiting a school – cited lack of time.

The teachers ranged in age from 21 to 57 (average: 39 years), and had been teaching anywhere from 3 months to 36 years (average: 17 years). The vast majority of the teachers were married - only one teacher reported being divorced, and the 5 other single teachers were all in their early twenties. Most were currently teaching students from 5th through 7th standard, though 8 were teaching younger students. All but one of the teachers had a D.Ed (a one year teaching certificate which can be obtained after secondary school) or Bachelor's degree. In addition, ten of the teachers had Masters' degrees in education or in other fields.

The interviews focused on several topics. To explore teachers' perceptions of gender differences among teachers and students, we asked teachers to describe how, if at all, being a female teacher was different from being a male teacher in their school, and how the needs and behavior of female students were different from those of male students. With regard to discipline, we asked what types of disciplinary issues teachers faced, whether these varied by the sex of the student, and how, if at all, male and female teachers differed in their disciplinary approaches. Towards the end of the interview we asked teachers' their opinion on how, if at all, the issue of gender equity applied to their school, and what role teachers have in promoting gender equity. Finally, teachers who participated in the GEMS workshops were asked about their opinion about the workshops, specific topics or discussions they agreed or disagreed with, and the relevance or impact, if any, on their professional and personal lives.

The interviews lasted between 30 minutes and 2.5 hours (average: 75 minutes), and were for the most part conducted on the school premises, in empty classrooms or in the principal's office. In a few cases, other teachers or students or the teacher's own children were in the room. Generally, the additional people in the room were not actively engaged in the

interview. In two or three instances, however, they interjected comments or questions. The impact of the presence of others varied - for example, in one case, the daughter of one teacher prompted her mother to share some views that she had clearly discussed with her family but had not (yet) expressed during the interview. In another situation, the teacher referred to the issue of unintended pregnancy, but did not want to discuss it openly due to the presence of her young daughter.

The interviews were conducted in the local languages (Hindi or Marathi) entirely by three trained interviewers. The majority of the teacher interviews (21) were conducted by Deepa, an experienced and skilled interviewer in her early 40s. Towards the end of the project, I hired two graduate students from the Tata Institute of Social Sciences to assist with the interviews. Raj interviewed six teachers while Vasudha interviewed two. I conducted one interview myself, in English. Gender matching of the interviewer to the interviewee was focused mostly on female teachers, as the interviewers suggested that women would be less comfortable (or would fear perceptions of impropriety) being interviewed by a man. Thus, all female teachers were interviewed by a female interviewer, while 6 of the 14 men were interviewed by a man. While each interviewer had a distinct style, I did not observe systematic differences in content across the interviews.

I attended all but three of the interviews, as well as two of the three teacher workshops. I generally sat quietly throughout the interview; on rare occasions the interviewer would refer back to me with an interesting comment, or I'd suggest another question or topic for discussion. I found it very valuable to observe the interviews, commenting later in my fieldnotes about the setting, the teacher's demeanor, any interruptions, and the interviewer's approach. In addition, after each interview, the interviewer and I discussed the content of the interview as well as the participant's response to us, the structure of the interview itself, and any particularly

problematic questions. Interviews were recorded and subsequently translated and transcribed into English by another group of translators. To ensure completeness and consistency across translators, my primary interviewer carefully reviewed all the audio files and transcripts.

My position as a foreign, white woman seemed to help in recruiting participants and creating rapport - many of the teachers were curious about who I was, what I was doing in India, and my impressions of their city and country. For example, before I was introduced at the workshop, some of the teachers approached my interpreter when I was out of the room to ask about me. Some of the teachers were particularly eager to participate - they invited us into their homes for the interviews, asked that I return for a meal or outing, and helped recruit additional teachers. I made an effort to greet the teachers I interviewed whenever I returned to their school for additional interviews with other teachers, and stopped by the various schools before my departure. At the same time, I found that my presence during the interview was not at all disruptive: without exception, the teachers were fully engaged with the interviewer and rarely looked at or much less addressed me.

Interview transcripts were analyzed using the qualitative software Weft QDA, roughly following procedures outlined in Emerson, Fretz, & Shaw (1995). After reading through all the transcripts, I began an inductive process of careful line-by-line reading and note-taking on a substantial portion of the interviews, writing an initial memo on emerging observations and themes, and developing a set of categories to code for. Next, I used open, in-vivo coding within code categories to discover additional themes and nuances. I wrote memos about themes, unique interview excerpts, and relationships with the literature that form the base of this paper. The importance of attendance and discipline emerged early in the analysis. It is important to note that we did not include questions about attendance, and that teachers frequently brought

up discipline issues before we specifically asked about them. The names of the teachers, students, and schools were changed for this paper to ensure anonymity.

## **Results**

### ***The Attendance Project***

Ensuring children's attendance in school was one of the main projects for teachers in this study. As discussed above, in recent years, concern with the poor quality of public schools and an interest in English-medium education have resulted in a rapid population shift towards private and/or English medium schooling. These changes, and the continued government focus on enrollment and retention, meant that ensuring students' attendance was an important responsibility and concern for teachers. As Amit (male, age 55) explained:

We have to make [parents] understand about the importance of education for their girls and sometimes we have to force them [to send the children to school] because this school is a municipal corporation school<sup>24</sup> and it should not close down. The municipal corporation somehow has to run the school. We also have to answer [to] our senior officials. The senior officials get upset and angry if we have low attendance.

Amit's comments highlight the perceived responsibility (and pressure) placed on public school teachers to maintain adequate levels of student enrollment in their schools. Moreover, the contours of the enrollment and attendance issue are shaped by gender inequality in the community.

Teachers described how discrimination against girls impacted the sex composition of the students in the schools. Teachers reported that boys were favored at home, and parents who could afford it sent their sons to private or higher status English medium schools, while leaving the girls in the public schools. This created a unique mix of students in the public school classrooms, characterized by higher numbers of girls compared to boys (at least as perceived by

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<sup>24</sup> Public government schools in Mumbai are managed by the Brihanmumbai Municipal Corporation and are commonly referred to as municipal corporation schools or BMC schools.

the teachers), and specifically with few boys from economically secure households. Amrita, a 41 year old female teacher, explained: "From the good households only the girls are sent to this school, the parents from these households send their boys to English medium schools." These changes mean that the boys in the school come from the least privileged backgrounds, and that the public schools continue to lose status.

Discrimination and poverty at home also meant that girls were more likely to miss school due to the burden of household chores - cleaning, cooking, and caring for siblings. Both male and female teachers described the ways in which the confluence of poverty and girls' responsibilities resulted in a gendered pattern of attendance:

When there is a water shortage in the slums where the students live, girls do not come to school (because they are supposed to fetch water for their families) [...] If the younger sibling is unwell, the girl is stopped from going to the school and asked to stay back and look after the sibling. It is expected generally of the girls out of other siblings. We have children coming from the same family, always the elder girl sibling shoulders lot of responsibility even if the boy is not as smart in studies.

(Dipika, female, age 40)

Now even we know that the girls have to do all the work at home. At least girls in BMC<sup>3</sup> [schools]. Because both their mother and father go to work. All household chores... from filling water... they have to do. Washing their own clothes, their brother's clothes. And boys... only try to act as naughty as they can [...] They'll never offer a helping hand for filling water.

(Mahendra, male, age 22)

As the teachers describe above, families' low economic status often required both parents to work, making (some) children's household labor essential. At the same time, boys were generally not required to work at home or miss school. Girls were also sometimes withdrawn from school in order to be married. While generally sympathetic to economic realities of the students, teachers also felt that parents from low economic and educational backgrounds did not understand the importance of education and did not monitor or encourage their children's attendance; consequently, teachers had to work hard to ensure that children, particularly girls, did not miss school.

Another factor that influenced girls' attendance, according to the teachers, was their (or their parents') fear of harassment. Amit (male, age 55) explained how the harassment of girls on their way to school "plays a big role in the number of students who remain enrolled in the school. The girls must stay and that is crucial." Meera, a female teacher in her early 20s, talked about helping a female student deal with harassment from a boy outside of school. To ensure that the girl remained in school, Meera confronted the boy on her own rather than involving the girl's parents, as is customary, since: "[the parents] might not allow the girl to come to school, but this cannot be a solution." Both Meera and Amit are concerned about the harassment itself, but more importantly, about its' consequences for their students' attendance. The concern about harassment or inappropriate relationships extended to the behavior of male teachers. For example, Prema (female, age 48) reported that parents would not send their daughters on school outings if a female teacher was not present. Thus, the sex of both the student and the teacher had implications for children's attendance. In order to comply with their responsibilities to maintain high attendance, teachers had to confront the factors they perceived to affect it, namely, the discrimination against girls at home and the perceived threat of harassment or inappropriate relationships with adult men outside the home.

Teachers described themselves as active agents, taking action in their classrooms and beyond to ensure student attendance. While their actions take into account or explicitly address gender inequality, the teachers' behavior was generally oriented towards the goal of ensuring attendance. For example, teachers reported adapting their discipline practices to keep children in school. Karan (male, age 22) explained that the fear of being harshly punished caused students to miss school: "Next day when the student is on the way to school he realizes that he has forgotten to complete his homework and that the teacher will punish him for this. So the student decides to remain absent." To avoid such absences, Karan recommended a more gentle



approach to disciplining the students. Dipika (female, age 40) also recommended being less strict, citing children's household work burdens:

Then if a student comes at 8:30 am instead of 7:30 am, I don't punish them, even if they are late, I understand that the student must have been involved with some work at home, must have gone to fetch water for his/her home. So if I punish him/her, they might stop coming for next 5 days just because they get scared of punishment.

(Dipika, female, age 40)

Teachers' concerns and strategies around discipline are discussed in more detail in the next section.

A few teachers also reported addressing issues of harassment of girls in and around school. Some, like Meera, intervened directly. Deepti (female, age 37) and Mahendra (male, age 22), on the other hand, reported losing their temper and harshly punishing boys who harassed girls. A few teachers reported helping girls cope with harassment by a variety of means, from avoiding boys altogether, to traveling in groups of girls, and even fighting back.

Finally, engaging with parents was a strategy that teachers frequently cited to ensure students' attendance. Nearly half of the teachers reported that they did (or would like to) call or visit children's homes to inquire about their absences, and talk to their parents about the importance of schooling and/or of delaying marriage so children can complete their schooling. For example, Madhav (male, age 55) said: "I think efforts should be put in to reduce the absentee rate of students in the school [...]sometimes students remain absent but we visit the homes of such students and speak to their parents and make them send the students to the school." Divya (female, age 47) described her approach with the parents:

As soon as the girls come in the 5th standard [the parents] say that they have to get them married off quickly. They say that then they will get rid of their responsibility, and then I tell [them] that they shouldn't do this. I ask them to think of her age and what are they going to do to her life by doing this [...] I make the parents understand that they should think about their daughters a little. And let them make her future.

Both Madhav and Divya emphasize their own assertive role in the interactions with parents: both refer to "making" the parents understand the importance of schooling and sending their children to school. While teachers generally acknowledged the economic constraints that often keep girls out of school, in their descriptions of interactions with parents they focused on the parents' individual choices, rather than structural barriers. At the same time, teachers sometimes assisted students and families in more concrete ways: Amrita (female, age 41) purchased medication for a sick child whose family could not afford the treatment, and others similarly provided financial assistance to students in difficult situations, as Lata (female, age 24) described:

Sometimes I personally help students. For example, there is a student in class 3 who is very bright, but is very poor. His father has passed away and his mother used to work, but recently she fell ill. So, I help him financially.

While a couple of teachers recounted their efforts to remove particularly disruptive and frequently absent students from the school roster (so the child is no longer counted as a student at the school), others seem genuinely concerned about the welfare of the students, and made considerable efforts, as described above, to support them and their families. Moreover, they often associated their actions with reducing discrimination against girls. Yet, it is unclear whether teachers would be as concerned about student attendance – and the gendered circumstances that keep them out of school – in the absence of government pressure. My argument is not that teachers are cynically following government mandates, rather, it is that the institutional realities shape teachers' concerns and interest in the challenges facing their students, including the gendered aspects of these challenges.

### ***The Discipline Project***

Maintaining discipline in the classroom, a major part of their professional responsibilities, emerged as the primary concern and frustration for teachers. Teachers

described both teachers' discipline practices and children's behavior as highly gendered - that is, as with the attendance project, they used gendered frameworks as they described the discipline project. In addition, teachers actively used the discourse of gender equity (and gender difference) to justify or accomplish their discipline goals/projects. Here their perspectives and actions were not driven by specific policies, but rather by the deeply gendered and rigid behavioral norms for both teachers and students.

Nearly half the teachers talked about disciplining boys and girls differently. Both male and female teachers reported being more strict and harsh with boys than with girls. This was partly due to girls' overall better behavior - nearly all the teachers mentioned that the girls in their classes were less disruptive and more obedient than the boys, and about half reported that girls were more committed to their studies. A few teachers explained these differences as related to children's roles and responsibilities at home: girls, who are used to working at home, are more obedient, while boys, who are given freedom to spend time outside the home, neglect their studies, experiment with alcohol or tobacco, and use abusive/foul language. Other teachers explained that male teachers rarely physically punished female students. Amrita's recently graduated daughter, listening in on the interview, exclaimed: "When I was in school, one of the male teachers used to punish the boys differently than the girls. He used to ask the girls to raise their hands in the air and stand, while he used to hit the boy students with a scale."<sup>25</sup> The punishment for boys was [more] severe than that for the girls."

More than half of the male teachers reported limiting their interactions with female students (for disciplinary purposes and otherwise) so that they would not be perceived as inappropriate. Kailash (male, age 37) explained this most directly:

In my profession, the character of a teacher is very important. As far as possible I do not let the girl students come near my table. I maintain my distance [...] as much as possible,

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<sup>25</sup> A scale is a ruler.

as is expected by the society. I do not get close with girl students in the way I get close with boy students... I feel that this is a kind of limitation. This is because I, as a man, in this society of ours, am likely to be misunderstood, however pure and innocent my intentions may be.

Mahendra (male, age 22) described how the fear of being perceived as behaving inappropriately meant that he did not physically punish the girls even if they were at fault. He also explained how teachers were sometimes more lenient with girls because of their home responsibilities: typically, children are punished if they arrive to school late; however, girls are sometimes spared, since it is assumed that they were completing tasks at home. Taking into account how their interactions with girls were perceived resulted in teachers having to adjust their disciplinary practices, and demonstrates how teachers act strategically within gendered constraints.

At the same time, teachers actively used gendered frameworks to accomplish their discipline goals. Neha (female, age 22) made sure that all the project groups in her class included girls, as they helped keep the boys on track. Several other teachers also reported changing seating arrangements in their classrooms so that girls and boys were mixed, with the primary goal of improving classroom control.<sup>26</sup> Teachers used gender differences in other ways as well: in a particularly illustrative episode, Priya (female, age 57), explained that she attempted to discipline girls by pointing out the consequences of their bad behavior once they get married. She recounted:

There was a girl in that [7th] class who would act very smart and arrogant. So I used to constantly scold her [...] I used to tell her: "don't do this, don't do that. Tomorrow you will have to go to your husband's place. You have to adjust, you have to compromise. You should learn all this right from now. Otherwise your mother in law will shout at you and will inflict pain unto you." So she said: "teacher, I won't stay at my mother in law's place."

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<sup>26</sup> Classrooms in public school in Mumbai are co-educational; however, boys and girls typically sit on separate benches, sometimes on different sides of the classroom.

This anecdote exemplifies how teachers use common understandings of gender roles and traditions to operate in their classrooms. Teacher practices within the context of the discipline project can serve to reinforce and reproduce gendered frameworks: Priya encourages her female students to be obedient and compromising, and Neha, referring to the boys as easily distracted and unruly, essentially makes her girls responsible for making the boys behave better. At the same time, these actions, used because they helped teachers deal with the day-to-day struggles of maintaining classroom discipline, also create "cracks" in the gendered frameworks that open opportunities for change. As Priya draws on very traditional notions of a woman's role, her student is able to publicly resist this vision. Having boys and girls sit or work together challenges traditional norms for interaction between the sexes and requires teachers to consider the dynamics of these interactions and to convince administrators, parents, and even students that such interactions are appropriate. Neha, for example, reported making sure that the girls were not being bullied in their groups, and reassuring parents that she was looking after their daughters. At the same time, teachers still faced resistance from parents and school administrators. Karan (male, age 22) was particularly frustrated that the school principal gave in to pressure from parents and did not support his new seating initiative:

The parents came from a social background which was very conservative and so I cannot blame them for their rigid mind set [...] Had the headmistress taken a stern stand and explained to the parents that the seating arrangement is made only to facilitate the teacher to teach better and that the students learn better in that manner, the parents would have understood. This incidence was a setback to me, it de-motivated to an extent.

This incident illuminates how gender shapes teachers' practices in school, simultaneously constraining their behavior and creating a need (and opportunity) for new strategies.

### ***The Gender Equity Project***

In the previous sections I presented examples of how gender both shapes and is used by teachers in their professional projects. However, teachers often described their actions within these projects in terms of a third project - that of promoting gender equity. Clearly, their focus on gender equity was in part a response to my particular study: the subject of my research was presented to them as centered on understanding teachers' views and experiences of gender issues in schools, and my questions reflected this interest. However, the focus on equity was also reflective of the broader education policy discourse that for decades emphasized the importance of schooling for girls, and has put in place programs and initiatives towards this end.

Teachers occasionally spoke about these initiatives. Divya (female, age 47) explained that in addition to girls receiving a stipend for maintaining good attendance, teachers were asked to call out girls' names first when checking daily attendance "so as to bring in gender equality element." It is important to note that many teachers equated gender equity with a lack of discrimination against girls, or with special attention given to girls. Manisha (female, age 40) also described specific directives that focus on girls: "Only the girls are selected when special orders are received from the ward office for a particular program. Otherwise the boys and the girls both are made to participate according to their capacities". These comments suggest that in addition to broader, formal initiatives like incentive programs, teachers are occasionally tasked with directives that specifically target girls. Regardless of their own interest in gender equity, teachers are "forced" by government mandates and discourse to at least consider the issue of gender in schooling.

However, the majority of teachers appear to be very invested in the image of the school as an equitable space. More than three quarters of the teachers (approximately the same proportion among men and women) talked about the school as a place that was free from

gender discrimination, as a safe and important space for children. For example, Jayashri (female, age 40), said: "in school everyone... male female... everyone is [the] same." The most frequently cited description of equity in school was equal treatment: boys and girls were seen as "the same," given equal opportunities to participate in class, and judged on the same criteria, as Rajiv (male, age 42) described:

We ensure equal participation of boys and girls. We make sure they work in pairs in games as well as in competitions. The numbers of boys and girls are equal. Exams also create equal feelings among both. The exams are indicative of equality as they assume that the genders are equal. Both get the same chance and are evaluated with the same way.

In talking about the school as an equitable space, the teachers distinguished the school from other environments in which they perceive gender discrimination to be more common, namely the children's homes. Kailash, a male teacher in his late 30s, acknowledged that: "The picture at home is very different, unlike in the school where the girl students are not taught differently than the boy students." The school was seen as a refuge, particularly for girls. Kamala (female, age 57) emphasized: "[They] might be facing inequality individually, but not at least in school. They have faced lot of problems, so for them it's safe to be in school." Dipika (female, age 40) described: "in the school they forget about the gender burdens they carry, they relax here." In this respect, the school is seen as more equitable and different from other environments.

Adopting a discourse about the school as an equitable space helps to set the school as special and brings recognition and importance to their own work as teachers. Dipika described that her female students complained about the school vacations, wanting to spend more time at school:

Obviously if they have to work so hard at home, they feel much better at school. So at least I am happy that students love to be at our school [more] than anywhere else. That also tells us we must be working hard to make them feel better.

At a time when government schools have been widely critiqued (Gupta, 2007; Majumdar & Mooij, 2011), teachers like Dipika appear to be deriving professional and personal satisfaction in framing the school as a special place or refuge for their students. The pervasiveness of the "school is equitable" discourse demonstrates a strong buy-in to government efforts to reduce inequality in education, perhaps because it allows teachers to demonstrate their compliance with government mandates as well as reinforce their historic role as leaders in the community (Majumdar & Mooij, 2011). This is a discourse they are clearly invested in maintaining.

Teachers described themselves, as a professional group, as already sensitive to gender issues, as Manisha (female, age 40) explained: "a teacher always has that gender sensitivity within. Therefore if a teacher doesn't have this sensitivity then it will be an injustice to the students." They reported a variety of practices to promote equity. These practices included ensuring equal opportunities and participation of boys and girls in all school activities, actively talking to children and parents about gender equity (including the importance of education, avoiding early marriage, and the gendered division of household labor), and giving girls extra attention or encouragement.

Importantly, teachers framed their efforts to maintain high attendance and discipline – talking to parents, focusing on girls, and changing seating arrangements – as actions to promote gender equity. For example, Akhil (male, age 23), said: "I will tell all schools that boys and girls shouldn't be made to sit separately. They shouldn't feel that they have been made to sit in a particular place because of their gender. This will definitely promote gender equity." While it is likely that the primary purpose of these actions was related to teachers' other school projects (attendance and discipline), it is significant that teachers choose to primarily use the discourse of equity in describing them. Even if this focus was due to my own research interests, it



demonstrates that teachers can recognize the transformative potential of their professional role in changing social norms around gender.

Teachers' descriptions of actions to promote gender equity were often aspirational – describing practices they *should* use rather than ones they were already using – or rather vague, stating that they treat children equally but not elaborating on how they do this. In the absence of detailed observational data about teachers' practices and interactions with students, these statements do not provide convincing evidence that schools are in fact equitable spaces, or that teachers are in fact strong advocates for gender equity. Yet, a subset of teachers (primarily women) described actions that go beyond a superficial discussion of equal participation. For some, these actions stem from personal experience of discrimination which fostered a deep commitment to equity. Prema (female, age 48), for example, who overcame discrimination in her small village and was able to obtain two Master's degrees while raising a family, explained her vision for her role as a teacher:

I take teaching more as a tool of social change rather than just a way to introduce different subjects. It is through teaching the younger generation about gender equality [that] we can stop the discrimination against women. We need to ingrain it in the children's mind that men and women are equal. The women will gain their lost self-esteem through spreading awareness about these issues.

Amrita (female, age 41) used her own struggles as a way to encourage girls:

I narrate my personal experiences of being discriminated [against based] on gender to the girl students. Sometimes it inspires them and gives them hope to achieve their dreams. They can see that one of them has achieved success after facing gender discrimination.

Several teachers also made efforts to actively transform gender stereotypes. Kailash (male, age 37) and Neha (female, age 22) for example, talked about alternately assigning school chores to boys and girls so that children do not perceive these as gendered. Ankita (female, age 42) described how she tried to dispel children's notions that certain occupations, such as potter, scientist, or astronaut, are only for men. Meera (female, age 22), recalling her own experiences

as a student, made a concerted effort to consider each child's interest, rather than making assumptions based on gender stereotypes:

When I was a student, [...] boys used to be asked to collect pictures of sports, etc. while girls used to be asked to bring designs on handkerchief, etc. But as a teacher now I feel that this different role for both genders shouldn't be there. Girls are also interested in sports [...] while some boys are interested in designing [...] So, in my class I gave three-four projects asking students to do what they liked and not based on gender roles.

One female teacher, noticing that the girls in her class could not comfortably participate in physical education lessons in their school uniforms, obtained a grant to purchase slacks for all the girls, so that they could, in her words, "play freely." By allowing (or encouraging) children to express their interests and abilities, these teachers' actions provide the opportunity to disrupt gender stereotypes, to expand possibilities of being for their students.

In sum, a majority of teachers are invested in the gender equity discourse that is promoted through government programs and directives. In fact, they often frame actions that serve the purposes of other major projects – maintaining attendance and discipline – as strategies to promote gender equity. In addition to complying with government mandates, the broad endorsement of the equity project serves the purpose of establishing the school as a special place, distinct from the children's home environment, and emphasizing the important role of teachers in shaping children and society. While the dedication to equity seems rather superficial or aspirational for some of the teachers, for others it reflects a deep commitment, often emerging from their own experiences of discrimination. These teachers describe practices (and a strong desire) that have the potential to disrupt gender stereotypes and expand the range of possibilities for students. Regardless of their current actions, however, the widespread endorsement of the gender equity discourse demonstrates that teachers recognize the role that schools can play in transforming social norms and structures.

### ***Skepticism about the Equity Project***

Despite the widespread endorsement of the gender equity discourse, a substantial number of teachers expressed skepticism about both the feasibility of and the need for promoting gender equity. This skepticism emerged in two ways: first, doubts about the ability of schools to promote equity, and second, doubts about the *need* for schools to promote equity or about how far efforts to support girls should go. While the first suggests recognition on the part of teachers of the complexity of transforming ideas about gender, the second reflects a deep-rooted anxiety about the changing roles of men and women in society, and is consistent with descriptions of backlash against gender equity efforts in other countries (Dworkin, et al., 2012; Faludi, 1991; Kimmel, 1987; Morrell, 2002; Sideris, 2004; Walker, 2005).

A few teachers explicitly commented on the difficulty of trying to promote equity in school given the broader social context. Pradeep (male, age 47) explained that children get their values at home (and through religious institutions) so that whenever the teachers' words conflict with these values, the children discount or disbelieve the teacher: "there is a system inside them already. What we tell them will contrast with what they have learned at home. They then might feel that what we taught in comparison was not right." Ankita (female, age 42), describing families' preference for sons, stated with some frustration:

In some families there are five, six... six girl children are there [...] girl understands that she has five sisters, and still, for a brother her mother is pregnant again. She knows it. And here, we tell with pride that male[s] and female[s] are equal.

In these two cases, the teachers are skeptical of the possibility of change, recognizing the powerful social norms that shape the lives of children outside the school.

Skepticism of a different sort emerged among a substantial proportion of the teachers who, while simultaneously endorsing the importance of gender equity, reported that discrimination against women had lessened substantially, or was only a concern among specific

groups - for example, people living in rural areas, or members of tribal groups.<sup>27</sup> These responses came from more than 2/3 of the men but only two women. For example, Amar, a 54 year old male teacher said:

Both are equal. Right? There shouldn't be any discrimination. Both are equally intelligent. And nobody does that. Now if somebody has two girls, then it is fine and nobody expects or waits for a boy to arrive. Earlier one used to wish to have a boy but nowadays nobody discriminates in that manner [...] now [discrimination] is not there. Earlier it used to be there. Maybe some 40 years ago. Nowadays, nobody even bothers. Whether a boy or a girl, it is the same.

Amit, a 55 year old male teacher questioned the prevalence of some of the discriminatory practices discussed at the GEMS workshop, such as female infanticide and violence against women. For example, he stated:

It is not very believable that women get so much of violence on them, and at times women also make false allegations so as to make a point. I think it is the women who inflict violence on the men. I don't think men are as violent as women [...] Maybe in certain sections of the society it may be happening. Maybe in the very high and very low economic sections of the society but in the middle class, the women are the ones who perpetrate violence. Maybe the man is drunk and then behaves badly. At such times, the woman must keep quiet and not speak out, but she doesn't keep quiet, and then of course she will get beaten. She could prevent it if she just keeps silent.

Amit was minimizing these inequities, and, in the case of violence, placing the blame on women's behavior, rather than men's. Rather than explicitly supporting gendered roles or power differentials (perhaps pointing the inherent nature of men and women), Amit embraced the concept of equality but rejected examples of inequality.

The skeptical teachers, particularly the men, seemed concerned that efforts to promote gender equity eroded the achievements or status of boys and men. Like Amit, a handful of the male teachers suggested that trends have reversed - that women are now actually oppressing or taking advantage of men. Nikhil, age 40, described how men are more considerate, vacating seats on public buses that are reserved for women, while women did not reciprocate. He

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<sup>27</sup> It is interesting to note that we did not specifically ask teachers about the past, or about how discrimination had changed over time - these comparisons arose spontaneously from the respondents.

concluded: "I think that whatever is reserved for them [women], that they should get. But they also want the share from the gents." Dipika (female, age 40) also felt that women have to be careful not to take advantage of their position: "we must not use our being women as a stick to lean on or like a card for our own gains." These anecdotes expose concerns or anxiety about the effects on men's lives of the changing roles and opportunities for women.

Concerns about the erosion in the status of men also emerged in the context of the school. While the differences in teacher responsibilities (both at home and in school) were generally described simply as "how things are", Nishant, a male teacher in his early 40s, expressed his frustration with what he perceived as favoring of female teachers at his school:

Here female teachers are given more consideration in terms of the facilities provided to the teachers as a whole. For example, our Head Mistress is also a female. So if any lady teacher wants to go home early or comes late to school, they are excused considering that they have the responsibilities of their families, have to cook food, look after the children in the family... And it is also that in the afternoon, once the classes of the children are over, we are expected to stay back, whereas, if a female teacher wants to go home, not necessarily always, but sometimes, she is allowed to go.

Such comments highlight the importance of carefully considering the impact of real or perceived accommodations for female teachers that might not only foster backlash or resentment but reinforce stereotypes about teachers' abilities and competencies (Anderson & Mendoza, 2000). Also, whereas some women might perceive a lack of opportunity for women (for example, in handling administrative tasks outside the school), men may see it as a privilege or accommodation for women.

Teachers also reported concern about male students, as well as resentment from them, with regards to efforts to promote girls' participation. A majority of teachers felt that girls were more committed to their studies, and a couple talked specifically about how girls were performing better in school: "scoring far better than boys and boys are regressing in a way" (Rajiv, male, age 42). While emphasizing that schools should provide equal opportunities for

participation for girls, Karan (male, age 22) felt that female teachers gave preferential treatment to girls: "Sometimes the lady teachers favor only the girls, this eliminates the boy students and so they start to trouble the lady teacher. This needs to be changed. The teachers should consider the students as equals. This will bring about the gender equality." Divya (female, age 47) also reported some resentment on the part of male students:

[The boys] think that the girls are pampered and catered to a lot. [...] They feel that they have taken a backseat now and that the girls are helped to come ahead and in the front in everything. They say this to me, that why only the girls were given the iron and the protein tablets and why not to them? I mean till the last year only the girls were given these tablets but now they give to both of them. They also complained that why are there not any sessions for them like there are for the girls on their monthly periods and all that.

Divya's comments highlight the complex gender dynamics in schools, and the nuances of implementing policies and practices that focus on girls, particularly in the context of public schools where the majority of children come from marginalized backgrounds. Teachers, as part of their job, are immersed in a discourse about gender equity and tasked with implementing various initiatives focused on girls in the school. As discussed above, teachers also use this gender equity discourse to frame their practices in maintaining attendance and discipline. At the same time, teachers struggle with their own ambivalence about gender equity, as well as resistance from students and parents.

### ***Reinforcing the Gender Equity Project: The GEMS Teacher Workshops***

Both teachers who participated in the GEMS workshops and those who did not described similar perspectives, experiences, and actions related to gender equity in schools. As such, the sections above focus on the pervasive discourse across these two groups and the structural realities that drive it. However, the experiences of (some) of the teachers who participated in the workshop highlights the important role that interventions that promote critical reflection about gender can play: they allow for a personal connection to issues of equity

as well as open debate about the changing roles of men and women, and deepen teachers' commitment to gender equity.

In both the interviews and the workshops, teachers reported that the workshops made them more attentive to their students' needs and home backgrounds. A few teachers described a conscious effort to reduce or eliminate their use of corporal punishment, to encourage (but not force) girls to participate, and to be more attuned to the children's emotions and home concerns. One teacher reported that she began to conduct home visits to better understand student absenteeism. Male teachers also reported more interactions with female students, as Sandeep (male, age 25) noted: "In the beginning of the year, I didn't use to interact much with the girls. But now I do interact the same with them. I treat them equally."

For several teachers, the workshops prompted deep reflection about gender inequality in their lives and about their own role in perpetuating inequality or acting against it:

After attending the GEMS workshop I realized that I should consciously work towards gender equality, though I am sensitized about it. Me and my husband act like equals but our male relatives do not accept it. I feel like reaching out to the men in the family... I have become alert now. (Amrita, female, age 41)

Personally I am a progressive woman but after attending the session I realized that I have myself unconsciously put restrictions upon myself and believe that I need to break them and change the track. We ourselves as women tend to restrict ourselves. My husband and I are equally educated and take all the decisions together. Earlier I never used to voice my thoughts if I felt like doing something but now I discuss with my husband about how I feel. One day my husband called me from his office and told me that he is going to go with his friends to Shirdi (religious place), he was not taking my permission but just informing me about his decision. I asked him if he would like it if I would do the same thing, he honestly replied that he would not like it and said that whenever I go out he starts to feel insecure. My husband does not stop me from going anywhere but continuously asks me about when I will return and calls me again and again. I have started to share the knowledge from the seminars with the girl students of my class. I believe that if I start to tell them about these issues right from this age only, then will they start understanding them.

(Deepti, female, age 37)

When I first attended the workshop I realized that my perspective about my wife being a woman needed to change and improve. I wanted to give her the freedom that she deserves as [...] an independent human being. I have started to act consciously with

regards to my wife, sister and mother and also my girl students. I think about my actions with regards to women. The program made me see a different point of view. The relationships with the women relatives and now the students have changed. One keeps doing the same routine and repetitive things. After attending the program I felt that even I can do my bit to improve the society.

(Kailash, male, age 37)

Both Deepti and Amrita considered themselves to be "progressive" and defined their own relationships as equitable. Still, attending the workshops made them more aware of the perhaps more subtle inequalities in their own lives. Kailash, on the other hand, talked about a deep transformation in his personal relationships. It is important to note how gender inequality shapes the ways in which the teacher can act: Kailash *grants* his wife freedom and humanity; Amrita and Deepti have to negotiate for theirs. Still, the workshops encouraged all three (and other participants) to take action in raising awareness about gender equity with students, parents, and other teachers. The workshops provide a space for teachers to reflect and debate the complex issues of gender, power, and violence, beyond the discourse and practices that teachers already embrace as part of their professional responsibilities. Moreover, by emphasizing the importance of teachers and supporting their critical reflection, they can encourage teachers to take on the role of advocates, deepening their commitment to the gender equity project.

Though the workshops originally drew on a program that targeted men, helping them think about how patriarchy affects their lives (see Verma, et al., 2006), the GEMS teacher workshops were in practice much more focused on discrimination against women. The women teachers frequently and emotionally recounted their own (and others') experiences of discrimination and harassment, participating more frequently than the men. However, the participatory nature and relaxed tone of the workshops did provide a space for more skeptical teachers (primarily men) to voice and discuss their opinions. For example, at the end of a workshop that focused primarily on violence against girls and women, a few men raised the



question of violence against men - did it not occur? The facilitator, while reiterating that women had a subordinate position in Indian society and explaining that the incidence of violence by women against men in India was quite low, took the opportunity to discuss how traditional notions of gender are also very constraining for men. He explained that men are restricted in how they express their emotions:

[The facilitator] responded by saying: "I've become the man that society wants me to become, I've been molded into the man that I am, and even if I want to cry I can't because society doesn't allow men to cry - when they see a man that is crying they say: why are you crying like a woman?" (fieldnotes March 8, 2011)

While relatively little time had been spent in the workshops on specifically addressing the negative impacts of patriarchy in the lives of men, it was clear that there was room (and desire) for such discussion and reflection in the context of the workshops. These types of discussions may be particularly effective in engaging the more skeptical teachers, and in promoting a deep dialogue about equity.

### **Discussion and Conclusion**

This study contributes to the rich and growing literature on schools as gendered spaces, and to the somewhat less abundant subset of this literature that is focused on the gendered perceptions and experiences of both male and female teachers. The teachers in this study describe the ways in which gender shapes their day to day experiences, from the sex of the students enrolled in their school and their attendance patterns, to the differences in behavior between male and female students, to the different disciplinary practices and the division of tasks and responsibilities between male and female teachers. Attributing these differences primarily to inequalities outside of the school (and not generally recognizing the role of the school in perpetuating inequalities), teachers report a variety of ways in which they promote gender equity. While not the primary focus of this paper, it is important to emphasize the

intersections between gender and class that are evident in the teachers' comments. In describing their students' lives, teachers generally link poverty and gender discrimination.

In a literature where teachers' behaviors are generally described in the context of how they reproduce inequality, these narratives, while admittedly not confirmed through observational studies of the teachers' actual behavior, give us a glimpse into the ways in which teachers are attempting to address gender equity through strategic actions. While some of these practices may indeed actually reproduce inequalities, the teachers construct their actions as ways to promote equality. Thus, this study also contributes to calls to examine the "undoing" of gender in the school setting (Deutsch, 2007; Ortner, 1996; Stromquist & Fischman, 2009).

That teachers widely endorsed the importance of gender equity and engaged in activities to promote it serves as the central question for this paper: why do teachers, embedded in the deeply patriarchal Indian context, so enthusiastically embrace this discourse? Drawing on Derné (2005) and Swidler (2001) and using the examples of ensuring attendance and discipline, my main argument is that structural realities of the school context make it so that embracing the idea of gender equity makes "good sense" (Gramsci, 1971) for teachers. Rather than being primarily driven by an ideological commitment, adopting the discourse (and practices that go along with it) of gender equity allows teachers to cope with how gender inequality structures their day-to-day activities while complying with government mandates and accomplishing their professional responsibilities. In the context of frequent critiques of the public school system and few rewards for their efforts (Gupta, 2007; Majumdar & Mooij, 2011), working towards gender equity (discursively, at least) allows teachers to re-imagine themselves as "shapers" of society and the school as a special, equal space. Thus, the inequalities teachers encounter in school, the government mandates they are required to comply with, and their emotional needs for recognition all orient teachers towards adopting gender equity as a

discourse, if not practice. Armstrong, Hamilton, and Sweeney (2006) (also drawing on Swidler) argue that: "without change in institutional arrangements, efforts to change cultural beliefs are undermined by the cultural commonsense generated by encounters with institutions" (p.496) Conversely, as I demonstrate here, changes in the institutional arrangements of schooling in Mumbai bolster a more gender equitable discourse among teachers. Yet, the extent to which this ideology was embraced, and the actions that teachers were able to take was influenced in part by their own position as gendered beings in a patriarchal context.

Two recent studies on special programs to promote transformation in gender norms and relations in Indian schools have also emphasized the role of institutional realities in shaping social change. In her ethnography of a public residential school for marginalized girls in the state of Gujarat, Shah (2011) found that the unique organization of the school as residential and its specialized curriculum provided an alternative institutional space that fostered critical reflection and empowerment in both the students and the teachers, confronting "the socio-cultural, historical, and political practices that are at the root of girls' marginalization" (p.328). In a multi-pronged, multi-state study of the Institute for Human Rights Education (IHRE) program which trains teachers to facilitate weekly sessions on human rights (with a strong emphasis on gender) for middle school students, Bajaj (2011), develops the term "persuasive pragmatism" to describe IHRE's ability to secure participation by and buy-in from a variety of stakeholders for a rather radical program. The program is deliberately designed and marketed to appeal to teachers' needs and concerns: opportunities for recognition, travel, networking, political participation, and so on, rather than relying on their dedication to the cause of human rights. While Bajaj does not frame her argument in terms of how structure influences cultural ideas, we both emphasize that it is rarely a purely ideological commitment that is driving teachers' interest in gender equity.

By focusing on how institutional realities shape the endorsement of gender equity I do not mean to ignore the existence of a "genuine" interest in and commitment to gender equity on the part of some teachers. These teachers (primarily but not exclusively women) describe a deep desire (and a variety of activities they engage in) to improve the lives of their girl students, often stemming from their own experiences of discrimination. At the same time, for a substantial number of teachers (nearly all men), the discourse about the importance of promoting gender equity occurs simultaneously with one that rejects the existence of gender inequality in Mumbai. These teachers explain that gender inequality no longer exists, or that women and girls are actually privileged in the school and other settings. These narratives are very similar to those echoed by men interviewed by Sideris (2004), Shefer (2008), and Dworkin et al. (2012) in South Africa. These authors argue that this resistance (or backlash) to gender equity efforts reflects an uneasiness with changing dynamics of gender relations and public discourses about gender equity. Shefer's participants, similar to the Mumbai teachers, viewed power as a zero-sum game, where women's increased position is seen as "disempowering and marginalizing men" (p.174). This finding, particularly as articulated in terms of "special treatment" within the school, highlights the complexity of how programs and policies to promote equity or accommodate the needs of female teachers are ultimately interpreted by teachers and students at the school. The resentment that such policies seem to foster may alienate (primarily) men from the project of gender equity and further reinforce the idea that expanding opportunities for girls and women necessarily means a loss for boys and men.

The different responses among teachers to the concept of gender equity highlights the important role for critical reflection (or "consciousness raising") programs like GEMS. Though overall there were few differences between teachers who participated in the workshop and those who did not in how they talked about gender equity, and both groups included both

passionate advocates and skeptics, some teachers who participated in the workshop reported a deeper commitment and desire to take more direct action to act against discrimination, both in their own lives and in the lives of the students even after a relatively limited exposure to the program. For others, the workshops provided a comfortable enough space to raise their concerns or ambivalence about gender equity. At the same time, the lack of focus on the "costs" or consequences of the patriarchal system for men missed the opportunity to more deeply engage the more ambivalent men. As Shefer (2008) argues, theorists and practitioners must "recognize that gender roles and relations are grounded in shared ideology. Because gender roles and relations are reciprocal and mutually agreed upon, attempts to change the knowledge, attitudes, motivation or practices of only one group may disrupt familiar gender-linked interaction patterns without offering viable alternatives" (p.175). Support for critical reflection programs stems from the tradition of critical consciousness and liberatory pedagogy (e.g. Freire, bell hooks) and the consensus among feminist writers that such reflection is a powerful tool for change at the individual level and as a way to mobilize for collective action. Bolstered by changing institutional realities (sometimes as a result of policies to promote equity), programs like GEMS have enormous potential to "undo" gender.

This study is limited in several ways. It focuses on a relatively small group of teachers in urban, public schools – the experiences of teachers in more affluent schools, in private schools, and in other areas of India is likely quite different. It may also be that given the long-term involvement of their schools in the GEMS program, teachers in these schools were particularly attuned to issues of gender equity. Similarly, there may be a selection bias where teachers who are more interested in gender equity were more likely to attend the GEMS workshop and to agree to participate in the study. The assignment of teachers to the workshop based primarily on practical considerations, and the diversity of opinions both among workshop participants and

across the sample alleviate these concerns to some extent. Nevertheless, additional research would enhance the conclusions from this study.

Several implications for practitioners interested in gender equity emerge from this study. The first is the importance of attending to the institutional realities that affect the work and lives of teachers<sup>28</sup> in order to create interest, motivation, and incentives to engage with the concept of gender equity, and change teachers' practices. Policies that encourage equal participation in schooling, or require the monitoring of attendance, for example, may play an important role beyond their direct goals. A second implication is the need to focus, within programs that promote critical reflection, on how gender inequality affects men, and the benefits they might draw from a more equitable sharing of power. Finally, observational studies of teacher practices and longer-term evaluations of teachers' experiences of participation in programs like GEMS will provide considerable insight into whether teachers' discourse, supported as it is by the institutional conditions described in this paper, actually change teachers' day-to-day practices in the school.

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<sup>28</sup> Or other actors: health professionals, youth, etc.

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## **Chapter V Conclusion**

Promoting gender equity and expanding the range of freedoms and opportunities for both men and women is an important goal and a core objective in its own right. In addition, addressing rigid and inequitable gender norms has emerged as an important area for research and intervention in public health, as evidence accumulates that gender inequities shape health outcomes for both men and women (Courtenay, 2000; Dworkin, et al., 2011; Sen & Ostlin, 2007; Snow, 2008). The World Health Organization has in fact identified gender as a fundamental social determinant of health.

Schooling has long been seen as an important mechanism to promote equity and women's empowerment. While the literature on social reproduction has described the many ways by which schools reinforce and reproduce social hierarchies, education, even in deeply unjust systems, often does expand the range of possibilities for women and men (Connell, 2010). My interest in schooling stems from a belief – shared by many – in the transformative potential of education. The goal of this dissertation was to delve into how schools shape children's ideas about gender, and to understand what might be required to make schools themselves more equitable, as well as to enhance their role in promoting broader social change.

### **Summary of Key Findings**

The analyses in Chapters II and III of this dissertation suggest that school characteristics and experiences are in fact associated with children's attitudes about gender and violence. In Chapter II we find that all three sets of variables of interest – school structure, school climate,

and staff attitudes – are associated with student attitudes about gender in Egyptian middle-schools, albeit in complex ways. There were important difference between boys and girls on multiple levels: in their support for gender equity, in which predictors are significant and in what direction, and finally, in the proportion of variance in attitudes that is explained by the school-level variables. The findings suggest that girls' attitudes are more sensitive to the measured school characteristics, compared to boys. However, the multiple significant associations and the substantial variance between schools that is explained for housework attitudes suggest that gendered school characteristics matter for boys as well, particularly for specific attitude domains.

The findings from Chapter III, focused on children in public middle-schools in Mumbai, demonstrate the important role of school violence both in its associations with attitudes on rejecting violence and in moderating the effects of the GEMS intervention, a program aiming to promote gender-equitable attitudes and non-violence. Both individual experiences of violence and higher school levels of violence were associated with greater endorsement of violence. The analysis of the GEMS intervention showed promising results: participants in the intervention generally had higher odds of rejecting violence compared to students in the control arm. However, the effects of the intervention varied based on individual experiences and school levels of violence: the intervention was generally less effective for children who experienced violence and in schools with higher levels of violence.

Finally, Chapter IV explored teachers' perspectives about gender equity issues in public schools in Mumbai. The teachers overwhelmingly embraced a discourse of gender equity, and framed many of their actions in terms of promoting it. Rather than being primarily driven by an ideological commitment, however, I argue that adopting the discourse of gender equity (and practices that go along with it) allows teachers to cope with how gender inequality structures

their day-to-day activities while accomplishing their professional responsibilities of ensuring attendance and maintaining discipline. Some teachers, primarily women, had a deep commitment to equity; others, primarily men, reveal ambivalence about and even resentment of the focus on discrimination against women and girls. Nevertheless, bolstered by changing institutional realities (sometimes as a result of policies to promote equity), programs like GEMS, which provide a space for both sets of teachers to critically reflect on gender and its impact on their lives, have enormous potential to "undo" gender.

Several themes emerge across the three papers. Importantly, these analyses show that schools matter in shaping children's idea about gender, in complex ways. Broadly, boys and girls have different experiences in school (e.g., in terms of the violence or support they experience), and school characteristics or features affect boys and girls, and men and women, in different ways. In addition, these papers suggest that gender is never experienced as separate from other social identities and positions. In Chapter IV, teachers' descriptions of their students are not just gendered but also classed – their perceptions of their students' lives are shaped by both poverty and gender inequality. In Chapter III, the similarity in the proportion of students who endorse justifications of violence against girls and justifications of violence against boys highlights the importance of age (and the authority it bestows), in addition to gender. In Chapter II, though not explored statistically, we see clear differences in attitudes both by gender and by community education level. In my analyses, I emphasize gender differences; in truth, neither people nor schools are only "gendered." Finally, in Chapters III and IV, we see that interventions like GEMS can have a positive effect on promoting gender equitable attitudes. However, the context in which they are implemented matters a great deal – their effectiveness is influenced in part by the school environment, the personal histories of the participants, and the policies and (gendered) institutional realities that shape children's and teachers' lives.

## **Implications for Future Research and Practice**

The three papers highlight important areas for further research. First, as the findings in Chapters II and III suggest, current gender-related attitude measures do not sufficiently capture the contextual and complex nature of gender norms and gender equity. Detailed studies of attitude measures (like the cognitive interviews conducted by Schuler et al. (2011)) could lead to the development of better measures, and enhance our understanding not only of the meanings of specific items, but also of how different attitude domains relate to one another, and to the realization of gender equity.

Second, additional ethnographic and observational studies exploring gendered dynamics in schools in the developing world are sorely needed. In particular, studies that examine the dynamics of peer violence and the ways in which school staff cope with or address violence in school would enhance our understanding of this widespread and damaging phenomenon. In addition, there is a strong need for studies, like those by Pascoe (2007), Eder (1995), and Meyer (2008, 2009) in North America, that explore the policing of heterosexual masculinities and femininities in schools in developing countries.

Finally, the findings from Chapters III and IV draw attention to the importance of exploring heterogeneous treatment effects in intervention research; that is, assessing how the impact of an intervention varies by individual or contextual variables. Recognizing that not all schools (or other intervention contexts) are the same, such analyses are important not only for explaining evaluation results but also for tailoring future interventions to the specific circumstances, experiences, or contexts of the participants. For example, as a first step, interventionists might collaborate with school stakeholders – administrators, teachers, students, and families – to assess the climate of the school including levels of violence, and include components to address specific concerns with each group of stakeholders.

These papers also suggest some implications for intervention. First, within critical reflection/consciousness raising programs, the emphasis on the costs for both men and women of adhering to rigid norms is important for engaging more participants, and providing a safe space to discuss and challenge ideas. In addition, encouraging teachers to reflect specifically about policies and practices in school, to share their strategies, and to experiment with new ideas, may help teachers to more effectively apply the personal insights they gain to the school context.

More generally, interventions to promote gender equity that have received attention and recognition seem to have emerged from the field of public health, and are now moving into schools (e.g., Barker, et al., 2012) The long-standing separation – in funding streams, staff expertise, and programming – between health and education in international development work has to some extent served as a barrier to the design, effectiveness, and expansion of these programs. For example, impacts on the health outcomes for which interventions with adults have shown promising results (e.g., reduced STIs and intimate partner violence) may be difficult to detect in school-aged children; at the same time, current program evaluations generally do not consider outcomes that are important to education researchers and professionals, such as learning, achievement, and retention. Making schools more equitable might serve multiple goals, with improved outcomes in both health and education.

Finally, there is a need for interventions to promote gender equity that engage the whole school, and the larger educational system, in addition to working with students or teachers. Programs that support changes on multiple levels – in school and curriculum structures and policies, in interactions between and among staff, students, and parents, and in individual attitudes and behaviors – are likely to be more effective in creating social transformation. In fact, the GEMS program has been moving in this direction: it is expanding its

reach into 250 schools in Mumbai, and is working with the state government of Maharashtra to mainstream content on gender equity into the curriculum and teacher training. The recent international focus on school quality provides an opportunity to work with schools and school systems on multiple levels, but will require a recognition and commitment to examining the gendered aspects of schooling, and the different ways that boys and girls experience the same schools.

This dissertation's focus on schools does not mean to suggest that other contexts – the family, community, religion, media, etc. – are not important. These contexts clearly shape the development of gender related attitudes and behaviors. Moreover, schools cannot be seen as separate from the contexts in which they exist. Local context (including everything from national policy to community norms) shapes, for example, the meaning given to education, access to education, teachers' attitudes and behaviors, what is taught in school, and how the school is organized. As well, families may make decisions about if and where to send their children to school, and may be involved in decisions about activities or funding at their local school. Attempts to study or intervene in schools will thus need to take into account the interrelated contexts in which they are situated.

Importantly, this dissertation is generally focused on attitudes, ideologies, and discourse around gender equity, rather than on changes in observed behaviors, practices, and actual opportunity structures. My analyses do not provide insight into whether children's attitudes and teachers' discourse have any implications for their lived experiences and life possibilities. Nevertheless, attitudes are an important starting place, and the critical reflection promoted by programs like GEMS can (and does) create a recognition of oppressive and unjust social structures, and spark individual or collective action. Still, efforts to change structural arrangements – labor markets, laws and policies, domestic divisions of labor – are necessary to

achieve equity. In fact, as Derné (2005) and Swidler (2001) argue, such structural changes would likely contribute to changing attitudes and norms.



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