Title: Who Benefits from a Higher Share of Girls at School? Gender and Racial Differences in Mental Health

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Abstract:

Adolescent mental health poses a serious public health concern in the U.S., with 29% of high school students reporting experiencing poor mental health in the past 30 days and 20% reporting seriously considering suicide in the past year (CDC, 2023). This study sheds light on the role of adolescents' peer environments in affecting mental health. Specifically, we look at the effects of peer gender composition. While previous research has assessed the effects of peer gender ratios on academic achievement, this study provides novel information on the effect of school gender composition on self-reported mental health and well-being at school, as well as mechanisms driving these results. Previous literature documents that being exposed to a higher share of female peers has a detrimental effect on self-image (Cillesen and Mayeux, 2004; Sullivan et al, 2006; Belfi et al, 2012), and places a ceiling on potential friendships and potential social networks for boys. This in turn could affect their school experience negatively (Getik and Meier, 2022), which could ultimately affect mental health.

The goal of this study is twofold. First, this study examines the extent to which exposure to a higher share of female friends in school affects respondents' measures of overall mental health, as well as measures of well-being at school. Second, this is the first study to evaluate the extent to which peer gender compostion affects White and Black. We address these research questions using data from the National Longitudinal Study of Adolescent Health (Add Health). We measure school well-being using six different indicator variables for whether students strongly agree with the following statements: (a) were happy to be at their school, (b) felt like they were part of their school, (c) felt close to people at their school, (d) teachers at their school treat students fairly, (e) students at their school are not prejudiced, and (f) felt safe at school. We measure overall mental health using seven different indicator variables for whether students report rarely (defined as never or just a few times) experiencing the following in the past 12 months: (a) feeling very tired for no reason, (b) poor appetite, (c) trouble falling asleep or staying asleep, (d) trouble relaxing, (e) moodiness, (f) frequent crying, and (g) fearfulness. We aggregate these measures separately into an index for school well-being and overall mental health, respectively.

Using the Add Health data, and we exploit the idiosyncratic nature of variation in gender composition across cohorts within a school, an approach first developed by Hoxby

(2000). The key identifying assumption underlying this approach is that while families may sort across schools based on the demographic composition of the school, they are unlikely to sort on the demographic composition of the child's cohort, conditional on the school. We use method to measure the causal effect of exposure to a higher share of female peers on students' mental health and well-being.

Our findings can be summarized as follows. First, we find that a 5 percentage point increase in the share of female peers increases the index of school well-being among boys by 6.8%, and this effect is particularly driven by White boys (7.89%). Second, a 5 percentage point increase in the share of female peers increases the index for mental health among boys by 1.4%, and this effect is driven also by White boys. We do not find that girls benefit from a higher share of female peers, although they are not worse off either. Third, these improvements in mental health and school well-being are particularly high among boys with lower socioeconomic status and lower parental education. Our findings of school well-being among boys are in line with studies in the United States where a higher share of female peers leads to a better classroom environment and better academic achievement among boys and girls. A remaining question is why the benefits of exposure to a higher share of female peers are unique to White boys and not spread evenly across racial groups. We find that a higher share of female peers leads to improved relationships between White boys and their parents, particularly their mothers, as well as a higher number of female friends, and lower probability of getting in trouble with their teachers. We do not see this effect of peer gender share for any other demographic groups

Our results are robust to alternative specifications that allow for nonlinear effects of peer gender ratios. In addition, we find no evidence of a second-order effect, as defined by using the share of female students in the cohort above and below. Finally, results are robust to placebo tests and leave-one-out analyses, suggesting that the estimated treatment effects are not a reflection of unobserved confounder variables within school, nor are they driven by a small subset of schools in the sample.