Gendered Contexts: Variation in Suicidal Ideation by Female and Male Youth across U.S. States

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Abstract

We use data from the National Longitudinal Survey of Adolescent Health (13,186 respondents in 30 states) to develop a unique state-level measure of the gendered context, in order to examine the influence of gender normative attitudes and behaviors on state rates of suicidal ideation and individual-level suicidal ideation for female and male youth (aged 13 to 22). The findings demonstrate the negative consequences for youth, especially females who report feminine-typical traits, who live in contexts defined by restrictive gender norms at both the ecological and individual levels. This study points to the importance of fatalistic suicide for female youth and suggests possible mechanisms to explain this association.

Keywords

suicide; youth; gender; gender system

Suicide is the third leading cause of death among adolescents in the United States, accounting for 11 percent of all deaths to youth aged 12 to 19 between 1999 and 2006 (Minino 2010), and rates of attempting suicide and of suicidal ideation are higher than those of completed suicide. According to the Center for Disease Control and Prevention (CDC 2014), each year 157,000 youth between the ages of 10 and 24 receive medical care at emergency departments for self-inflicted injuries. Data from the 2011 National Youth Risk Behavior Survey show that 16 percent of youth reported seriously considering suicide, 13 percent reported creating a plan, and 8 percent reported trying to take their own life in the 12 months preceding the survey (Crosby et al. 2011).

The bulk of existing research on adolescent suicide focuses on psychological explanations and on individual-level risk factors for suicide, including mental health, substance use patterns, and exposure to traumatic life events such as sexual abuse (e.g., Cash and Bridge 2009; Epstein and Spirito 2010; Hansen and Lang 2011; Molina and Duarte 2006). This work is critical because it identifies individuals who may be at the greatest risk of suicide and provides clear intervention strategies to address individuals' unique paths to suicidal ideation. However, this approach obfuscates some of the larger (and harder to assess) social

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factors that may be at the root of suicide risk across populations. Social and cultural forces play an enormous role in suicide behaviors (IOM 2002)—a perspective dating back to Emile Durkheim's 1897 book *Suicide: A Study in Sociology,* which characterized the relatively stable rates of suicide within societies as a "social fact," and identified some of the social mechanisms that lead to higher or lower suicide rates across societies. In other words, it is important to recognize that suicide is not only an individual but a societal problem (Stack 2000; Wray, Colen, and Pescosolido 2011).

A large body of sociological work has examined compositional and cultural factors unique to particular societies that may help to explain the social determinants of suicide, but few studies have examined how the gendered social context may enhance or suppress suicidal ideation among adolescents. We aim to build on previous work that documents the influence on suicide mortality of gender composition (Gunnell et al. 2003; Phillips 2013) and the gendered context as a form of social integration (Krull and Travato 1994; Pampel 1998; Stockard and O'Brien 2002), and in particular on work that considers the impact of the gendered context as a form of social regulation that affects suicide (Aliverdinia and Pridemore 2009; Zhang 2010). In this paper, we use the National Longitudinal Study of Adolescent Health (Add Health) to develop a measure of gendered context that characterizes social differences in the regulating aspects of gender in different U.S. states. We compare this state-level measure to state-level indicators of suicidal ideation among female and male youth and then examine the differential influence of that context on youth suicidal ideation at the individual level. We find that the most highly gendered states are also those that have the highest rates of suicidal ideation. This suggests a link between overregulation and suicidal ideation, and potentially extends Durkheim's thesis beyond enacted behavior to emotional states.

BACKGROUND

The Sociological Study of Suicide

Durkheim demonstrates that suicide rates remain fairly constant within a society over long periods of time, despite the fact that individual members of that society are changing. But these rates vary *between* societies and are related to the nature of societies themselves. In other words, "the rate of suicide constitutes a unified, set order of things, as is shown both by its permanence and its variability" (Durkheim [1897] 2006:27). His reference to this permanence as a "social fact" highlights the social context as a concept distinct from social composition.

Central to Durkheim's argument is the idea of a social collective that is composed of, yet distinct from, its individual members. Therefore, a society has the capacity to impose external pressure and constraints on its members, a process Durkheim articulates through the concepts of integration and regulation. An extreme of either high or low integration or regulation, Durkheim argues, will result in higher rates of suicide. Integration is the intensity of collective life. The more active and constant the relations among members, the more unified the social integration. Low levels of social integration encourage individualism, weakening social ties, and lead to higher rates of egoistic suicide, while high levels limit individualism, producing cases of self-sacrifice via altruistic suicide. Regulation restrains

individual behaviors through various formal and informal social institutions. When a society underregulates, a breakdown of standards and values contributes to anomic suicide, while overregulation produces fatalistic suicide.

Within the United States, youth suicide rates vary by state. Suicide rates ranged from 5.7 to 30.9 per 100,000 for youth aged 15 to 24 during the 1995 to 1999 interval, the approximate years covered by our study (CDC 2001, 2012). Some sociologists studying suicide have treated states as distinct social and cultural contexts; for example, Huff-Corzine and colleagues (1991) compare the structural and cultural influence of U.S. states on rates of lethal violence including homicide and suicide. Moreover, within states the U.S. youth suicide rate has been relatively stable over the past three decades (CDC 2001, 2012), although overall suicide rates in the United States have varied spatially and temporally (Phillips 2013). The suicide rate per 100,000 for females and males aged 15 to 24 from 1980 to 2009 shows that suicide rates are relatively stable given the disparate political and social environments during these decades in U.S. history. Inasmuch as states can be considered discrete social environments, this trend makes an especially strong case for the centrality of social environment to the risk of suicide in the population.

Several studies on suicide in the United States have tested Durkheim's integration-regulation hypothesis (Burr, Hartman, and Matteson 1999; Minagawa 2013; Stockard and O'Brien 2002), while others have focused exclusively on integration or regulation. Research on integration has sought to test Durkheim's assumption with respect to religious, familial, neighborhood, and school integration (Bearman and Moody 2004; Haynie, South, and Bose 2006; Maimon and Kuhl 2008), while a limited body of research has focused at the state level, emphasizing institutional rather than social regulation. For example, Carpenter (2004) demonstrated a link between the enactment of zero tolerance alcohol laws, which revoke the driver's licenses of individuals under 21 if any alcohol is found in their blood, and decreased rates of suicide among young males. Similarly, Markowitz, Chatterji, and Kaestner (2003) examined suicide rates for each state from 1976 to 1999. They found that increases in the excise tax on beer are associated with decreases in male suicides. For males aged 20 to 24, suicide is positively related to the availability of alcohol and negatively related to laws imposing either zero tolerance or a 0.08 BAC (blood alcohol concentration) definition for drunk driving. However, these laws have no effect for females, although Sabia and Rees (2013) show that parental involvement laws regulating abortion significantly decrease suicide among female youth.

Other research has attempted to identify aspects of the gendered context that differentially influence suicide. In a review of 130 sociological studies on completed suicide, Stack (2000) documents that differences in gender role socialization and changes over time are associated with changes in the male-to-female ratio of suicide mortality. Pampel (1998) examines whether social movements toward equality for women reduce disparities in suicide by sex. He finds that as women's labor force participation increases and marital stability decreases, women experience an increase in suicide, so that the sex differential in suicide rates drops; but then, as female workforce participation continues to escalate, women's rates of suicide begin to decline. Krull and Travato (1994) examine changes in suicide in Quebec and find that changes in divorce, childlessness, irreligiosity, and unemployment affect suicide rates

for men, while only divorce affects suicide rates for women. Rahav and colleagues (2006) use a similar approach to examine gender differences in alcohol use across countries. They find that gender differences in drinking are largely a function of the differentiation of men's and women's positions in society, including women's integration into the labor force, higher education, and government.

In general, these studies find evidence that contexts are gendered and suggest that gender role expectations are an important cultural explanation for suicidal behavior (Stack 2000). And in general, the gendered context is conceptualized as operating through processes of social integration. Although Durkheim argued that women have a biological protection from suicide, more recent sociological research has emphasized the protective effects of social integration, including closer ties to friends and families as well as a lower emphasis on occupational attainment (Wray et al. 2011). Instead, we conceptualize the gendered context as a form of social regulation, specifically as variation in the enforcement of or adherence to gender norms. Recent research provides evidence for the association of gender and fatalistic suicide. A study of Chinese rural women found that being married is not a factor protecting against suicide, as it is in the West, and that fertility events are not related to suicide risk (Zhang 2010). The findings suggest that "excessive regulation" of women in rural China, by imposing specific forms of strain on women's daily lives, may increase suicide risk. Similarly, a study of female suicide in Iran reveals that hyper-regulation is associated with higher suicide rates (Aliverdinia and Pridemore 2009). The study found that provinces with lower levels of female education, female labor force participation, and urbanization have higher female suicide rates. While China, Iran, and the United States are distinct social and cultural contexts with varying levels of regulation, we argue that overregulation through gender norms in the West should also increase suicidality for women.

In sum, research demonstrates that females and males respond differently to contextual factors—a possible byproduct of gender socialization and the larger gender system. However, not much work has focused specifically on gendered regulatory contexts that may enable or limit suicidal ideation and other behaviors. While Durkheim spoke of women's "natural immunity" to suicide, we agree with Kushner and Sterk (2005:1141) that "by any measure, most women's lives actually more closely fit [Durkheim's] definition of fatalism, that is, an excessively regulated existence." In this paper, we examine sex differences in suicidal ideation among youth, focusing on the gendered context as a form of regulation. Youth may feel a sense of duty or obligation to conform to a set of expectations (Durkheim 1897; Falci and McNeely 2009) such as gender norms. When youth in rigidly gendered contexts do not exhibit sex-typical traits, the sense of failure engendered by overregulation may lead them to suicidal ideation and increase their risk of completed fatalistic suicide.

Gendered Contexts and Regulation

There are distinct sex differences in suicide mortality and suicidality (i.e., ideation and/or attempt). Females report higher rates of attempting suicide, yet males are more likely to die from suicide, possibly because males use more lethal means (CDC 2014). Among those aged 10 to 24, an overwhelming 81 percent of deaths attributed to suicide involve males (CDC 2014). Sex differences in individual risk factors also have been documented

(Beautrais, Joyce, and Mulder 1998; Fergusson, Woodward, and Horwood 2000; Gould et al. 1996; Sourander et al. 2009). It may therefore be asked, why investigate suicidality per se, apart from completed suicide? First, while not all who ideate ultimately attempt or complete suicide, suicidal ideation is an important risk factor and predictor for both attempts and completions (McAuliffe 2002; Schneidman 1996). Second, suicidologists who study only completed suicides effectively eliminate more than half of suicidal behavior from their analyses (Kushner and Sterk 2005). In fact, Kushner and Sterk (2005:1141) argue that "the primary reason that female suicidal behaviors have been undervalued is that explanations of the causes of suicide are almost always based on completed suicides," which are likely to include high numbers of men. Cultural narratives of gender and suicidal behavior influence how U.S. adolescents perceive nonfatal and fatal suicidal behavior (Canetto 1997), perceptions that become self-fulfilling prophecies leading to greater suicidality among females and more completed suicides among males (Canetto and Lester 1998). The high rate of attempted suicide by women suggests that suicidality may be a common way for women to express profound unhappiness (Kushner and Sterk 2005). Thus, we argue that it is a useful endeavor to examine social and cultural factors contributing to suicidality, especially for women.

According to Ridgeway and Correll (2004), hegemonic cultural beliefs about gender and their impact on social relations are among the core components that maintain the gender system. The gender system includes social processes that define females and males as different and justifies inequality on the basis of that difference (Ridgeway and Smith-Lovin 1999). When gender is salient, cultural beliefs about gender bias the behaviors and evaluations of women and men in systematic ways. The gender system affects both females and males; though the effects of gender-based regulation may have a greater negative impact on women because of historical and ongoing gender inequalities, the social contexts that youth operate in may not be beneficial for boys, either. There may be more pressure on boys to conform to group masculinity norms to avoid ridicule for nonconformity, so that an adolescent male will act in a manner consistent with gender norms even if those norms do not represent him personally (Chu 2005; Falci and McNeely 2009). Gender nonconformity has many social consequences, including suicide. For example, Clements-Nolle and colleagues (2006) found that gender-based discrimination and gender-based victimization were associated with suicide attempts among transgender persons, and Fitzpatrick and colleagues (2005) found that gender roles account for more variation in suicide risk than sexual orientation does.

Much of the regulation of gendered beliefs and behaviors stems from intentional and unintentional processes of gender socialization, in which adolescence is a particularly critical stage. Research shows that early adolescence makes gender more salient, and youth may be particularly likely to identify with female and male stereotypes (Hill and Lynch 1983; Peterson, Sarigiani, and Kennedy 1991). Indeed, studies have identified gender-specific risk factors for depression among adolescent girls, such as increased importance of feminine sex role identification, pressures to be thin, and body dissatisfaction (Bearman et al. 2005; Stice and Bearman 2001; Wichstrom 1999).

Everyday gendered interactions "construct very different social realities and learning environments" for women and men (Wright 1997:69). As West and Zimmerman (1987:137) note, "while it is individuals who do gender, the enterprise is fundamentally interactional and institutional in character." The reflexive process of gender socialization therefore reinforces macro-social gendered contexts and systems of regulation, with consequences for individual behavior and emotional states.

In our integration of Durkheim's ecological perspective on suicide and the feminist perspective on the gender system, we anticipate that suicidal ideation, like completed suicide, will increase as a society moves away from a middle [an equilibrium] level of regulation. We further expect that the impact will be most visible in the form of fatalistic suicides in states where regulation is more oppressive. It is also possible that underregulation of gender will lead to anomic suicidal ideation. Given the history of gender in the United States, however, it is unlikely that any of the states in our study will have low enough levels of regulation. We anticipate that high regulation from the gendered context will increase suicidal ideation for both female and male youth. We also test the hypothesis that the gendered context matters differently for female and male youth and for feminine and masculine youth.

DATA AND METHODS

Sample

Data for this study come from Wave II of the National Longitudinal Study of Adolescent Health (Add Health). Add Health examines health and health-related behaviors including personal traits, families, friendships, romantic relationships, peer groups, schools, neighborhoods, and communities among a nationally representative sample of adolescents in seventh through twelfth grade. In 1994, 90,000 adolescents from 134 schools completed questionnaires. A subset of respondents later participated in four in-home interviews at Wave I (1994–1995), Wave II (1996), Wave III (2001–2002), and Wave IV (2007–2008). A total of 14,738 adolescents participated in the Wave II in-home interview, which we use in this study, first because it captures the age-range of adolescence, for which the suicide rate is among the highest in the U.S. population. Second, as we note above, adolescent youth may be especially susceptible to rigid gender environments. Most importantly, however, we want to be as consistent as possible with the gender analysis conducted by Cleveland, Udry, and Chantala (2001) (see below).

Respondents were removed from the sample if they were interviewed in a state containing fewer than 100 respondents, and a listwise deletion dropped cases with missing values. The simulated data described below give us confidence that 100 observations per state is a reasonable threshold. We did not use imputation because most of the missing values are on the main variables of interest, including the outcome and the measures making up the gendered context. The final sample includes 13,186 respondents in 30 states. Because of data restrictions, we do not know which 30 states are included in the sample.

Measures

Study measures are presented in Table 1. Suicidal ideation is assessed using a single yes/no question. Participants were asked, "During the past 12 months, did you ever seriously think about committing suicide?" Individual-level control variables include age, sex, and self-reported race/ethnicity. The sample mean age is 16.6 years (range 13 to 22), with about 50 percent females. The racial/ethnic composition is 65 percent white, 15 percent black, 12 percent Hispanic, 4 percent Asian, and 4 percent other. As previous studies have found, female youth (14.6%) are almost twice as likely to report suicidal ideation as male youth (8.5%).

The gendered context is the primary measure in this study. It comprises 16 variables previously identified by Cleveland and colleagues (2001) as a measure of sex typicality of behaviors and attitudes. Their approach was to construct a sex-typed behaviors and attitudes score from the probability that an adolescent is female (or male) on the basis of the participants' responses to a set of questions. In their preliminary analysis Cleveland and colleagues identified 21 questions that were useful in discriminating girls from boys. Using stepwise logistic regression, the authors then selected a subset of 16 questions that significantly contributed to predicting the log odds of being a boy: (1) frequency of crying; (2) frequency of moodiness; (3) frequency of poor appetite; (4) honestly answered questions; (5) trouble paying attention; (6) being bothered by things; (7) physical fitness; (8) serious fighting in past 12 months; (9) frequency of exercising; (10) frequency of rollerblading/cycling; (11) degree of emotional affect; (12) positive self-perception; (13) lack of planning for the future; (14) sensitivity to others' feelings; (15) self-identification as a risk-taker; and (16) tendency to be upset by difficult problems. Other items are not included since these 16 traits are statistically the most discriminating for girls and boys.

The face validity of these 16 traits may appear low. For example, for the item "frequency of crying," a more accurate translation of the construct of interest into our operationalization of sex-typicality would be "being encouraged to cry or punished for crying." We are limited, however, by the data that are available. Additionally, the use of these 16 traits is supported by the fact that our measure performs as our theory predicts. Using these 16 traits, we are able to predict a respondent's sex and distinguish between female and male youth with a known level of confidence, as we show below. In a logistic regression model, all 16 items are highly statistically significant, and the pseudo R^2 is relatively large, with 24 percent of the variation in female sex being accounted for (see Table A1). These 16 traits are statistically sex-typical for girls or boys and the underlying sex differences in these traits create gender normative contexts for youth because underlying differences in the average attitudes and behaviors of females and males help to create the context for children's understanding of gender norms and support compliance with sex-typical behaviors (Bem 1979, 1981). See Cleveland and colleagues (2001) for a more detailed discussion on the acquisition and measurement of sex-typed behaviors and attitudes.

We used these 16 sex-typical traits to create a contextual measure of the gendered environment. First, logistic regression predicts the probability of being a female, using the 16 sex-typical traits in separate models for each of the 30 states. A post hoc test (the "estat classification" command in Stata) identifies the number of successful predictions made by

the model and calculates the percent of correct predictions within each state. The gendered context percentage score is not a simple mean aggregation of items indicating whether contexts are more feminine or masculine. Instead, it is a measure of the ability to accurately predict one's sex based on the 16 sex-typical traits. In some states, the 16 sex-typical traits are better able to predict the individual sex of each person in the state sample than in others. The state-level percentage of correct predictions can be conceptualized as the rigidity of gender norms for that state: the higher the percentage, the more indication that that state has rigid gender norms. That is, the more accurate the predictions of respondents' sex, the *greater* the conformity of respondents in that state to normative gender behaviors and attitudes, and the less accurate the predictions, the *less* the conformity to gender norms. Thus, the state-level percentage score represents the level of conformity to statistically normative sex-typical traits – what we term the gendered context. This measure has a mean of 74.6, a minimum of 71.5, and a maximum of 84.0. These values suggest that in State A, knowledge about the 16 sex-typical traits enable us to accurately predict sex 84 percent of the time but in State B, our ability to predict sex is lower at 71 percent. The fact that there is variability in the accuracy of the model across states indicates that in some states youth are more likely to report attitudes and behaviors that are normative and typical for their sex, on average, than in other states. We suggest that this is an indicator of the normative environment that these youth are living in and represents the level of rigidity of gender norms. We characterize the states with the highest percentage scores as the most limiting, and these states should be linked to fatalistic suicidal ideation.

It is possible that those who experience the most difficulties and thus the highest level of suicidal ideation are those whose own gender identity is at odds with their context: females with more masculine-typical traits and males with more feminine-typical traits in a highly sex-typed environment. We therefore also utilize the individual-level predictions of sex-typicality in order to test for interactions between sex-atypical youth and highly sex-typical environments. First, logistic regression predicts the probability of being female using the 16 sex-typical traits. A post-hoc command estimates the predicted probability of being female for each person in the sample, with probabilities close to one indicating feminine-typical traits and probabilities close to zero indicating masculine-typical traits. This measure views femininity and masculinity as existing along a continuum (see Bem 1979; Lippa 1995). Female and male youth can have individual-level scores anywhere on the continuum. Since this variable is measuring a construct distinct from the gendered context, the correlation between these two variables is very low ($R = .007$). When then use this measure to create a categorical variable identifying four groups: (1) youth who report their sex as male who are predicted to be male; (2) youth who report their sex as male who are predicted to be female; (3) youth who report their sex as female who are predicted to be female; and (4) youth who report their sex as female who are predicted to be male. "Feminine" and "masculine" is defined using a .5 cutoff on the individual-level sex-typicality measure.[1] The categorical

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[1] For example, for Person A our model predicts a .85 probability that this person is a female while for Person B our model predicts a .25 probability that this person is a female. If Person A reports their sex as female and Person B reports their sex as male, then these two individuals are sex-*typical*. They report attitudes and behaviors that are consistent with the average responses of their sex. If Person A reports their sex as male and Person B reports their sex as female, then these two individuals are sex-*atypical*. They report attitudes and behaviors that are not consistent with the average responses of their sex.

measure of sex-typical and sex-atypical youth allows us to examine not only sex differences in the influence of the gendered context but gender differences as well.

It is important to note that our measure differs in use from that of Cleveland and colleagues (2001). In their study, the authors examine sex-typicality among sibling pairs as an outcome of genetic influences, shared environmental influences, and nonshared environmental influences. They fit behavioral genetics models across different biological relationships (i.e., identical twins, fraternal twins, full siblings, and half-siblings) and find that for boys, 25 percent of the variation in sex-typed behaviors and attitudes is accounted for by genetic influences and 75 percent by nonshared environmental influences. Among girls, 38 percent of the variance is accounted for by genetic influences and 62 percent by nonshared environmental influences. We extend the use of the authors' sex-typed scale to conceptualize sex-typicality as a predictor of suicidal ideation. The contextual-level measure of sex-typicality then becomes a construct assessing the level of rigidity or adherence to gender normative behaviors and attitudes to which adolescents are exposed in their everyday lives. Even though genetic influences have been documented for both sex-typicality and suicidality, examining these influences is beyond the scope of our study.

This measure has two important limitations. First, the goal of the original assessment was to determine an individual's adherence to traditionally gendered behaviors, ideas, and activities. Comparing this value to an individual's biological sex was not the authors' intent, nor was creating a contextual-level measure the theoretical or methodological purpose of their study. Therefore, our methodological and substantive use of this measure is quite distinct from the original use. Second, there is no existing work that has examined comparable indicators of gendered contexts. We therefore performed a detailed simulation in which we generated a population of men and women in which the odds-ratios for the 16 characteristics (see Table A1) matched our gender prediction model. We estimated a similar average level of gender misclassification (e.g., roughly 20%), and then sampled from this population and determined the gender misclassification rates for increasing sample sizes. The results (not shown but available upon request) demonstrate dramatic improvement in prediction accuracy as the sample approached 100 observations, and very little improvement after 200 observations. In order to maximize the number of states in our analyses, we dropped 11 states with values that fell below 100. The mean sample size for these 11 states is 20, with eight of the states having sample sizes less than 10.

Analysis

We first establish an association between the prevalence of state-level youth suicidal ideation and the state-level gendered context in a state-level bivariate analysis using Pearson's correlation across the 30 states. In Figure 1, the results are graphed by sex in a scatter plot with a line describing the best linear fit. Using logistic regression, we then examine individual-level differences in the likelihood of reporting thoughts of suicide as a function of the state-level gendered context percentage score. Models are estimated using a multilevel framework (Stata command *gllamm*) using the logit family and a binomial distribution. A log-likelihood ratio test indicates that for the baseline model a multilevel model (MLM) fits no better than a simple one-level logistic regression model ($x^2 = 1.56$, $p = .106$).

Nonetheless, because the data are clearly hierarchical we apply an MLM framework. All analyses include sampling weights to adjust for the complex design features of the Add Health data (see Chantala and Tabor 1999 for more information). State level sampling weights are derived from the individual-level weights using the *PWIGLS* macro in Stata (Chantala, Blanchette, and Suchindran 2011). A number of robustness checks are reported in the results and are available upon request.

RESULTS

Figure 1 presents the scatterplot and corresponding correlations for state-level gendered context percentage score by state-level prevalence of suicidal ideation. On average, females have a suicidal ideation rate 6.8 percent higher than that of their male counterparts within states. Males have higher rates of suicidal ideation than females in only two out of 30 states. In six states the rate for females is at least 10 percentage points higher. Rates of female suicidal ideation also vary more across states than rates for males. The prevalence rate for females ranges from 1.5 percent to 26.6 percent across states, while the prevalence rate for males ranges from 1.7 percent to 15.4 percent. Unfortunately, data limitations make it impossible to identify states.

In general, the results presented in Figure 1 are in line with the notion that this suicidal ideation is essentially fatalistic. Briefly, the higher the rigidity of normative gender behaviors and attitudes, the higher the suicidal ideation rate. This association is stronger for females (*r* = .47) than for males (*r* = .28). These findings are important because they indicate that gendered contexts are best characterized as fatalistic (overregulated) rather than anomic (underregulated). That is, there is no measurable uptick in the rate of suicidal ideation among either female or male youth living in states with the weakest control over gender identity. The results are also important because they suggest that highly gendered contexts affect the suicide risk of both female and male youth, but more strongly for females. This provides additional evidence that women living in highly gendered contexts are vulnerable to fatalistic suicide.

The results presented in Figure 1 provide some tentative support for our hypothesis, but they allow only for ecological inferences rather than for inferences about the association between gendered contexts and individual-level suicidal ideation. Table 2 presents the results from a series of multivariate logistic regression models. Model 1 shows that sex and the gendered context have significant independent effects on suicidal ideation when age and race are controlled. The odds of reporting suicidal ideation are 93 percent higher for female youth than for male youth (*p* .001), and a one percent increase correctly classifying biological sex at the state level is associated with a 3 percent increase in the odds of reporting suicidal ideation (*p* .01). Black youth are the only racial/ethnic group to differ from whites. They have 35 percent lower odds of reporting serious thoughts of suicide in the past year (*p* .01). When male youth are examined separately, the gendered context does not influence suicidal ideation (Model 2). Among female youth (Model 3), the gendered context is associated with a 4 percent increase in the odds of suicidal ideation (*p* .001). This interaction is presented graphically in Figure 2. This figure indicates that individual-level suicidal ideation among males is not affected by the gender environment of the state in which they live. It is only

female youth who show a notable increase in thoughts of suicide as the gendered regulation of their environment increases. These results support the conclusions drawn from the ecological results shown in Figure 1.

As a robustness check, we estimated fixed effects models, which are considered the most conservative test of our measure (results not shown). The fixed effects models includes a cross-level interaction term for sex by gendered context but no direct effect of the gendered context. The findings show marginal significance ($p = .090$) in a two-tailed test for the interaction term, with the coefficient in the expected direction ($OR = 1.04$). Taken together, the ecological and individual-level analyses both support a view that suicide is related to more (rather than less) control over individuals' emotional states as a function of their sex.

Finally, we examine the influence of the gendered context on suicidal ideation for sex-typical and sex-atypical youth. Youth who report feminine-typical traits have higher rates of suicidal ideation compared to youth you report masculine-typical traits regardless of biological sex. Males and females reporting feminine-typical traits have suicidal ideation prevalence rates of 13 percent and 17 percent, respectively, while males and females reporting masculine-typical traits each have suicidal ideation prevalence rates of 7 percent. The gendered context significantly increases the odds of suicidal ideation only for females reporting feminine-typical traits ($OR = 1.05$; p .01) which is in line with our hypotheses especially when compared to the estimate among male-masculine respondents which is essentially equal to zero among a well powered sample size (OR = .99, n= 4885). Importantly, we also show that gendered context is positively linked to suicide ideation among the two sex-atypical groups with odds ratios that are equivalent to the effect among female-feminine respondents but the smaller sample sizes reduce precision and the effects fall outside of traditional statistical significance (although the effect is significant at the p . 10 level for the male-feminine group). Additional models were estimated that included an interaction term for each of the groups and the gendered context using state fixed effects and similar results were found (results not shown but are available upon request).

DISCUSSION

This study demonstrates the negative consequences for youth who live under restrictive gender norms. In accord with feminist literature, we find that restrictive gender norms are more detrimental for female youth than for male youth, and specifically for female youth reporting more feminine-typical traits. Durkheim argues that the regulation of behavior and beliefs is an integral part of social balance; a lack of regulation results in unrestrained aspirations, and "to pursue a goal that is hypothetically unattainable is to condemn oneself to a perpetual sense of dissatisfaction" ([1897] 2006:271). However, we have demonstrated that social regulation is not always beneficial. Although Durkheim acknowledges this possibility in establishing the category of fatalistic suicide, he spends little time exploring it and views it as a product of pre-modern societies (Wray et al. 2011). Our findings modernize this perspective by providing empirical support for the regulation component of Durkheim's theory and by demonstrating that regulation produced by the gender system increases suicidal ideation, especially for female youth. Pescosolido (1994), in addressing unresolved issues in the sociology of suicide, uses a social network approach to illustrate how excessive

regulation in communities (e.g., Reverend Jim Jones's People's Temple) and families (e.g., sexual abuse and incest) fits Durkheim's ideas about fatalistic social structures. We argue that causes of fatalistic suicide can be found not only in these "extreme" examples but in contemporary U.S. social *norms* about gender. Fatalistic suicide has been invisible because gender norms, and women, have been invisible. This argument is bolstered by the above-mentioned research on gender regulation and female suicide in China (Zhang 2010) and Iran (Aliverdinia and Pridemore 2009).

This study has several limitations. First, state and region identifiers are not available in the Add Health dataset. Additionally, appropriate data are available for only 30 out of 50 states. This limits our ability to make more substantive observations about the gendered context and suicidal ideation. Therefore, the study's findings should be interpreted with caution. Additional research is needed to replicate our findings with truly representative data that include additional theoretically relevant covariates such as religiosity and depression. Future research should also consider period effects on the gendered context, since what is considered sex-typical may vary over time and—given the diffusion of innovations from elites downwards—by socioeconomic status. Finally, a longitudinal design that takes advantage of the genetic markers in the Add Health data set could produce a more nuanced understanding of the influence of the gendered context and individual-level sex-typicality on fatalistic suicide.

A second limitation is that this study focuses on suicidal ideation, not suicide mortality as in Durkheim's study. Nevertheless, suicidal ideation is a strong predictor of suicide attempts and completed suicide, as well as a valid indicator of poor mental health status since it is related to low self-esteem (Overholser et al. 1995; Wilburn and Smith 2005) and mental illness including depression, post-traumatic stress disorder, and substance use disorders (Kandel, Raveis, and Davies 1991; Kelly et al. 2001; Roberts and Chen 1995; Waldrop et al. 2007). Recent research has begun to differentiate suicide ideators from suicide attempters (Stack 2014). Notably, gender and U.S. region of residence are significant predictors of suicide attempts among ideators; women and those living in the Northeast (compared to the South and Midwest) are more apt to attempt suicide. In any case, multilevel analyses of suicide mortality are difficult at levels below the nation state given the wide geographic dispersion of suicide (Wray et al. 2011), and the construction of suicide as a cause of death can be problematic (Pescosolido 1994).

This study has several strengths that are worth noting as well. First, we employ a macro-micro approach examining suicide not just as something that happens within groups or societies but also as something that happens to the individuals within those groups and societies (Wray et al. 2011). Pescosolido (1994) points out that Durkheim's theory aims at the level of social facts, specifically, the societal quota of suicide. This level of analysis cannot speak to individual-level explanations of suicide without committing the ecological fallacy. In the current study, we address two key questions: "Are there larger contextual influences on suicide rates?" and "Do individual and contextual characteristics interact to produce lower or higher aggregate suicide rates?" (Pescosolido 1994:268). We believe that this study refines sociological theorizing on suicide by illuminating the effect of social

regulation on rates of suicidal ideation and underscoring the importance of gender expectations as a cultural explanation for suicide.

In accord with feminist literature, we find that restrictive gender environments are more detrimental for female youth than male youth at the ecological level. Durkheim takes gender into consideration only within the realm of integration, and his analysis is primarily limited to the institution of marriage. Durkheim states that women are not as influenced by broader social context, because "she is much less involved than he is in collective life" ([1897] 2006:331); and many sociological studies have focused on societal integration through marriage for women (e.g., Krul and Travato 1994; Pampel 1998). However, we contend that for Durkheim's larger argument to hold, the sociological study of suicide must consider gender *sui generis* as a regulating system in society. Although Durkheim showed that men's suicide rates were lowered by marriage, while women's were lower in widowhood, he failed to consider that the gendered context also regulates behavior outside the matrimonial relationship. Our study shows that while higher gender regulation is more harmful for females in general, it is also harmful for males when compared with their counterparts in less gender-regulated contexts.

Durkheim was unclear about how individuals are linked to social structural contexts and how to conceptualize the underlying mechanisms or processes through which the two levels influence each other (Pescosolido 1994). One possible mechanism is strain. The strain theory of suicide proposes that suicide is usually preceded by psychological strains (Zhang et al. 2011). These psychological strains can be a consequence of any two of four internal conflicts: differential cultural values, aspiration and reality, relative deprivation, and crisis and coping ability. It is possible that female youth in the United States experience strain from differential cultural values, since they are told that women are equal to men but at the same time that they must perform subservience to attract men. Female youth may also experience aspiration strain when they realize that women, on average, make less money and occupy fewer executive positions than men even of equal education and experience. It is also possible that female youth are more likely to experience coping strain because they are more likely to experience traumatic events such as childhood sexual assault. Any of these strains could lead to increased suicidality. Future research should attempt to examine strain as a possible mechanism for fatalistic suicide in American female youth.

Another mechanism that could account for the differences found this this study is the internalization of femininity and masculinity during socialization. For instance, parents and caregivers have been shown to respond differently to female and male displays of emotion beginning in infancy (Brody 2000; Cassano, Perry-Parrish, and Zeman 2007; Chaplin, Cole, and Zahn-Waxler 2005; Garside and Klimes-Dougan 2002). Among school-aged children, the notions of "femininity" and "masculinity" are further developed through, among other influences, parental expectations of gender-role-based achievement (e.g., females are not expected to do well in math), media representations, components of the educational curriculum, language and communication styles used by teachers, and peer standards of popularity (Adler et al. 1992; Eccles, Jacobs, and Harold 1990; Gilbert 1992; Wright 1997). Witt and Wood (2010) found that one's ability to act in a manner consistent with her/his internalized notions of gender-appropriate behavior was associated with increased self-

esteem, even though individuals fluctuated in how they defined feminine or masculine behavior. The self-esteem of individuals with weak notions of gender-appropriate behavior, by contrast, was not determined by their ability to enact those behaviors. Thus, living in environments with strong norms about gender-appropriate attitudes and behaviors can create internal conflict and stress, leading to higher rates of suicidal ideation and other mental health problems, perhaps especially for sex-atypical or gender nonconforming youth. Further research is needed to unpack the influence of gendered contexts for sex-atypical youth.

Our contextual measure of gender norms as a system of regulation offers a methodological contribution, although additional research to replicate this measure using more representative data is greatly needed before this contribution can be fully assessed. This approach offers quantitative researchers an alternative and more comprehensive way to consider gender rather than just as an individual control or compositional feature, and a way to examine the influence of gender on suicide as a social construct. Future research will need to determine whether the negative consequences of the gendered context extend to other poor health behaviors (e.g., smoking, drinking) as well as mental health and subjective health status. It is also likely that the gendered context varies across race/ethnic groups. Therefore, the racialized context as a system of regulation also needs to be explored. In sum, our study joins a number of other recent studies that examine the contextual effects of social norms on health and health behaviors (Eitle 2007; Eisenberg and Forster 2003; Eisenberg et al. 2005). In particular, the school normative environment has been found to influence adolescent health behaviors; therefore, future research should consider the gender system in the school environment.

Finally, for prevention and mental health professionals, this study offers a broader understanding of the cultural influences and macro social risk factors that they need to consider when identifying and working with youth who are experiencing suicidal ideation or are at risk for suicide. Looking beyond the individual's immediate and proximate circumstances to distal social causes such as gendered contexts may help increase identification of individuals at risk and more aptly address the underlying sources of risk factors, resulting in improved suicide prevention strategies.

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Figure 1.

Youth Suicidal Ideation by Gendered Context across States for Males and Females.

Note: Data are from Wave II of the National Longitudinal Study of Adolescent Health.
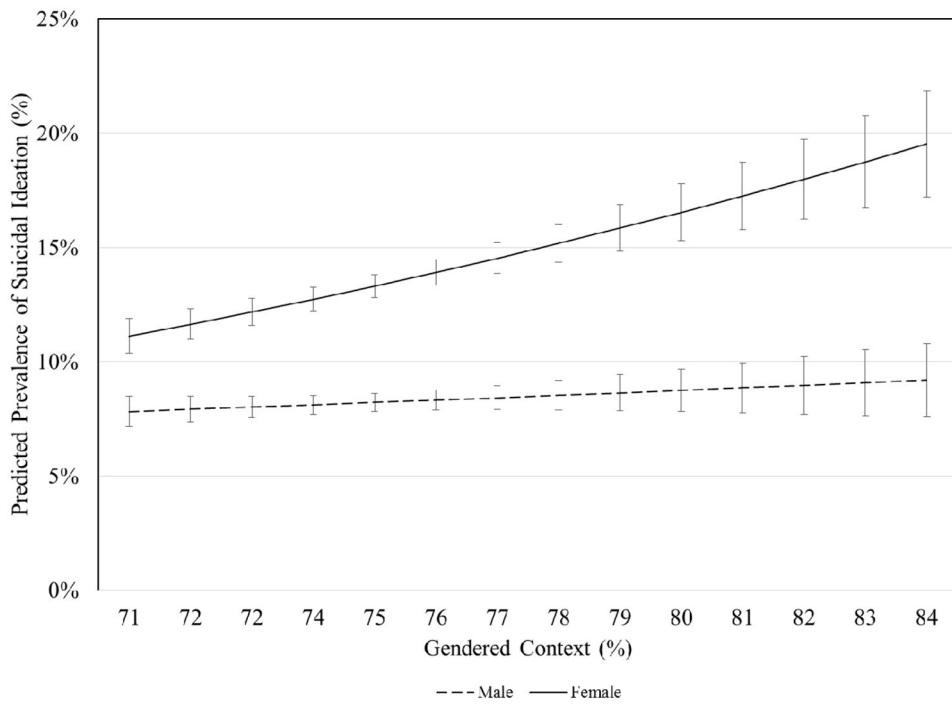
Figure 2.
Predicted Prevalence of Suicidal Ideation by Gendered Context for Female and Male Youth with 95% Confidence Intervals.

Notes: Data are from Wave II of the National Longitudinal Study of Adolescent Health. Results from fixed portion only of hierarchical linear model regressing suicidal ideation on sex and gendered context, controlling for age and race.

Table 1

Descriptive Statistics for Study Variables.

	N	Mean/Percent
Female suicide ideation	921	14.6
Male suicide ideation	539	8.5
Female	6,955	49.2
Age		16.6
Race		
White	7,011	66.7
Black	2,759	16.4
Hispanic	2,298	12.8
Asian	945	4.1
Other	491	3.7
Gendered context	30	74.6

Notes: Data are from Wave II of the National Longitudinal Study of Adolescent Health. Means and frequencies are weighted.

Table 2

The Influence of Gendered Contexts on Suicidal Ideation for Youth by Sex.

	Total			Males			Females		
	OR	p	CI	OR	p	CI	OR	p	CI
Female	1.93	***	(1.68, 2.22)						
Age	.98		(.92, 1.05)	1.11	**	(1.03, 1.21)	.90	***	(.84, .96)
Race (White)									
Black	.65	**	(.48, .88)	.62	***	(.49, .80)	.66	*	(.44, .99)
Hispanic	.96		(.78, 1.19)	.95		(.64, 1.40)	.96		(.71, 1.29)
Asian	1.02		(.79, 1.32)	.87		(.50, 1.50)	1.15		(.73, 1.80)
Other	1.29		(.93, 1.78)	1.26		(.67, 2.36)	1.31		(.83, 2.06)
Gendered context	1.03	***	(1.02, 1.05)	1.01		(.99, 1.04)	1.04	***	(1.02, 1.07)
Log likelihood	−1665.8			−680.0			−978.3		
Sample size	13186			6403			6783		

*
p .05,

**
p .01,

***
p .001; two-tailed

OR = Odds Ratio; CI = 95% Confidence Interval

Note: Data are from Wave II of the National Longitudinal Study of Adolescent Health.

Table 3

The Influence of Gendered Contexts on Suicidal Ideation for Sex-Typical and Sex-Atypical Youth.

	Male-Masculine[a]			Male-Feminine[b]			Female-Feminine[c]			Female-Masculine[d]		
	OR	p	CI	OR	p	CI	OR	p	CI	OR	p	CI
Age	1.15	**	(1.04, 1.27)	.98		(.84, 1.15)	.86	***	(.81, .92)	.91		(.81, 1.01)
Race (White)												
Black	.59	**	(.43, .82)	.80		(.48, 1.34)	.77		(.52, 1.13)	.63		(.30, 1.34)
Hispanic	.96		(.63, 1.47)	.83		(.47, 1.47)	1.02		(.77, 1.33)	.90		(.41, 1.97)
Asian	.78		(.44, 1.39)	.92		(.33, 2.52)	1.14		(.67, 1.95)	1.50		(.80, 2.79)
Other	.98		(.34, 2.78)	1.48		(.62, 3.51)	1.55		(.87, 2.74)	.46		(.17, 1.27)
Gendered context	.99		(.95, 1.04)	1.06		(.99, 1.14)	1.05	**	(1.02, 1.08)	1.05		(.97, 1.12)
Log likelihood	−449.5			−218.6			−767.5			−187.4		
Sample size	4885			1518			4749			2034		
Suicidal ideation[e]	6.6%	ref		13.0%	***		16.9%	***		7.2%		

*
p .05,

**
p .01,

***
p .001; two-tailed

OR = Odds Ratio; CI = 95% Confidence Interval

Note: Data are from Wave II of the National Longitudinal Study of Adolescent Health.

[a]Youth who reported their sex as male who are predicted to be male.

[b]Youth who reported their sex as male who are predicted to be female.

[c]Youth who reported their sex as female who are predicted to be female.

[d]Youth who reported their sex as female who are predicted to be male.

[e]Predicted prevalence of suicidal ideation adjusting for age, race, gendered context, and sampling weights.

Table A1

Analysis of 16 Sex-Typical Items by Sex

	Variable	Min, Max, and Direction of Response	Unweighted Means		Results from Multivariate Logistic Regression		
			Males	Females	OR	p	CI
1	Frequency of crying	0 to 4; 4 = every day	.20	.74	3.50	***	(3.11, 3.93)
2	Frequency of moodiness	0 to 4; 4 = every day	1.12	1.51	1.15	***	(1.07, 1.24)
3	Frequency of poor appetite	0 to 4; 4 = every day	.58	.84	1.18	***	(1.10, 1.27)
4	Honestly answered questions	0 to 3; 3 = completely honestly	2.28	2.49	1.28	***	(1.19, 1.38)
5	Trouble paying attention	0 to 3; 3 = most or all of the time	.79	.87	.87	***	(.80, .94)
6	Bothered by things	0 to 3; 3 = most or all of the time	.46	.65	1.15	**	(1.05, 1.26)
7	How physically fit	0 to 4; 4 = strongly disagree	.89	1.28	1.46	***	(1.36, 1.58)
8	Serious fighting in past 12 months	0 to 3; 3 = 5 or more times	.33	.16	.48	***	(.42, .54)
9	Frequency of exercising	0 to 3; 3 = 5 or more times	1.57	1.63	1.15	***	(1.09, 1.21)
10	Frequency of rollerblading/cycling	0 to 3; 3 = 5 or more times	.70	.43	.73	***	(.69, .78)
11	How emotional are you	0 to 4; 4 = strongly disagree	1.56	1.14	.84	***	(.78, .89)
12	Do you like yourself as you are	0 to 4; 4 = strongly disagree	.75	1.09	1.23	***	(1.14, 1.32)
13	Live without thought for the future	0 to 4; 4 = strongly disagree	2.44	2.70	1.21	***	(1.15, 1.28)
14	How sensitive to others' feelings	0 to 4; 4 = strongly disagree	1.06	.82	.72	***	(.66, .78)
15	Do you like to take risks	0 to 4; 4 = strongly disagree	1.31	1.63	1.23	***	(1.16, 1.30)
16	Upset by difficult problems	0 to 4; 4 = strongly disagree	1.52	1.61	1.06	*	(1.01, 1.12)

*
p .05,

**
p .01,

***
p .001; two-tailed

OR = Odds Ratio; CI = 95% Confidence Interval

Note. Data are from Wave II of the National Longitudinal Study of Adolescent Health.