Gendered Contexts: Examining the Variation of Suicidal Ideation for Female and Male Youth across U.S. States

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Abstract

We use data from the National Longitudinal Survey of Adolescent Health to develop a unique state-level measure of the gendered context 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 (age 13 to 22). The findings demonstrate the negative consequences for youth, especially females, who live in contexts defined by restrictive gender norms at both the ecological and individual level. This study makes significant theoretical, methodological, and applied contributions to the sociological study of suicide. Importantly, our measure of the gendered context can be applied to future studies examining other health behaviors and health outcomes.

Key Words: suicide, youth, gender, gender system

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BACKGROUND

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). However, more individuals survive suicide attempts than die from them. According to the CDC (2012), 157,000 youth between the ages of 10 and 24 receive medical care for self-inflicted injuries at emergency departments. 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, Han, Ortega, Parks, et al. 2011).

The bulk of existing research on adolescent suicide focuses on individual-level risk factors for suicide including mental health, substance use patterns, and exposure to traumatic life events such as sexual abuse (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 it provides very clear intervention strategies to address individual's unique path to suicidal ideation. However, this approach obfuscates some of the larger (and harder to assess) social factors that may be at the root of suicide risk across populations. This perspective was made very clear in Emile Durkheim's 1897 book *Suicide: A Study in Sociology* in which he characterized the relatively stable rates of suicide across societies as a "social fact."

A large body of work has examined the compositional and contextual factors unique to societies that may help to explain the social determinants of suicide but very little has focused on

the contextual nature of gender as an enabling or limiting factor that may enhance or suppress the rate of suicidal ideation. While some studies have examined the gender composition of U.S. states in relation to suicide mortality (Gunnell et al. 2003; Phillips 2013), no study has examined the link between broad macro-level features related to gender and individual-level differences in suicidal ideation among female and male youth in the United States. In this paper, we use the National Longitudinal Study of Adolescent Health (Add Health) to develop a unique state-level measure of gendered context that characterizes social differences in the controlling aspects of gender across the United 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. While the state-level influence is strongest for the suicidal ideation of female youth, stronger gendered contexts also result in higher suicidal ideation among male youth.

The Sociological Study of Suicide

In *Suicide: A Study in Sociology,* Durkheim points to the simple fact that suicide rates remain fairly constant within a society over long periods of time despite the fact that the members of that society are changing. Moreover, the rates of suicide 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 social context as a distinct concept from social composition.

Central to Durkheim's argument is the idea of a social collective that is comprised 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 societal self-sacrifice via altruistic suicide. Regulation is a mechanism that restrains individual beliefs and behaviors through various social institutions. When a society is unable to enact regulation it leads to a breakdown of standards and values that contributes to anomic suicide, while overregulation produces fatalistic suicide.

In the United States, state-level mortality data reveal variation in youth suicide rates (Figure 1). Suicide rates range from 5.7 to 30.9 per 100,000 for youth aged 15 to 24 during the 1995 to 1999 interval (the approximate years of the current study). Moreover, the youth suicide rate has been relatively stable within states over the past three decades, although, research has documented the spatial and temporal variation in overall suicide rates in the United States (Phillips 2013). Figure 2 presents mortality data from the CDC and shows the suicide rate per 100,000 for females and males aged 15 to 24 in five year intervals from 1980 to 2009 for eight of the most populous states. Although there is a general downward trend, 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, Figure 2 makes a strong case for the centrality of a social environmental focus on the risk of suicide in the population since the relative ranking of these eight states has remained remarkably consistent despite massive social and economic changes during this thirty year period.

[Figure 1]

[Figure 2]

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 about religious, familial, neighborhood, and school integration (Maimon and Kuhl 2008; Haynie, South, and Bose 2006; Bearman and Moody 2004) while a limited body of research has focused on state-level factors emphasizing institutional rather than social factors. 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 excise tax on beer are associated with a reduced number of male suicides. For males aged 20 to 24, suicide is positively related to the availability of alcohol and negatively related to a zero tolerance law for drunk driving and the presence of a 0.08 BAC (blood alcohol concentration) law. However, these laws have no effect for females, although, Sabia and Rees (2013) show that the adoption of parental involvement laws for abortion significantly decrease suicide among female youth.

The above research demonstrates that females and males respond differently to contextual factors, a possible byproduct of gender socialization and the larger gender system. However, no existing work has focused specifically on gendered contexts that may enable or limit individuals' behaviors because of their gender. In this paper, we examine gender

differences in suicidal ideation among youth by focusing on the Durkheimian hypothesis of regulation, specifically, the gendered context as a form of regulation.

Gendered Contexts and Regulation

There are distinct gender differences in suicide mortality and suicidality (i.e., ideation, attempt). Females report higher rates of attempting suicide, yet males are more likely to die from suicide. Among those aged 10 to 24, an overwhelming 81 percent of deaths attributed to suicide are from males (CDC 2012). Gender differences in individual risk factors also have been documented (Beautrais, Joyce, and Mulder 1998; Ferfusson, Woodward, and Horwood 2000; Gould, Fisher, Parides, et al. 1996; Sourander et al. 2009). While we acknowledge the differential patterns of suicide attempt and completion that emerge for female and male youth, possibly because males use more lethal means (CDC 2012), our use of suicidal ideation as the outcome of interest sidesteps these differing trajectories. While not all who ideate ultimately attempt or complete suicide, suicidal ideation is an important risk factor and predictor for suicide attempts and completions (McAuliffe 2002; Schneidman 1996).

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 function to bias the behaviors, performances, and evaluations of women and men in systematic ways. The gender system impacts both females and males but is ultimately a system that controls women by encouraging adherence to strict gender norms. There are many social consequences of gender nonconformity, including suicide. For example, Clements-Nolle et al. (2006) found that gender-based discrimination and gender-based

victimization were associated with suicide attempts among transgender persons. Additionally, Fitzpatrick et al. (2005) found that gender role accounts for more variation in suicide risk than sexual orientation.

Much of the regulation of gendered beliefs and behaviors stem from intentional and unintentional processes of gender socialization. Adolescence is a particularly critical stage in gender socialization and the development of gender identification. Research shows that early adolescence stimulates increased focus on the significance of gender and youth may be particularly likely to identify with female and male stereotypes (Hill and Lynch 1983; Peterson, Sarigiani, and Kennedy 1991). Indeed, research has identified gender-specific risk factors for depression among adolescent girls associated with gender norms such as increased importance of feminine sex role identification, pressures to be thin, and body dissatisfaction (Bearman, Presnell, Martinez, and Stice 2005; Stice and Bearman 2001; Wichstrom 1999).

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

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 one moves away from the social equilibriums of regulation and integration. We further expect that the impact will be most visible where regulation is high (and therefore more oppressive) and suicide fatalistic. While we anticipate that the regulatory nature of the gendered

context will be most aptly demonstrated by higher suicidal ideation for female youth, our findings show that it also matters, but to a lesser extent, for male youth.

DATA AND METHODS

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 12th 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. Respondents were removed from the sample if they were interviewed in a state containing less than 100 respondents and a listwise deletion dropped cases with missing values. The final sample includes 12,878 respondents in 30 states. Due to data restrictions, we do not know which 30 states are included in the sample.

Measures

All 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, gender, 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 as follows: 67 percent white, 16 percent black, 13 percent Hispanic, 4 percent Asian, and 4 percent other. Consistent with previous literature,

female youth (14.6%) report a higher level – almost twice as high - of suicidal ideation compared to male youth (8.5%).

[TABLE 1]

Gendered Context. The gendered context is the primary measure in this study. It is comprised of 16 variables previously identified by Cleveland, Udry, and Chantala (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. Cleveland and colleagues identified 21 questions that were useful in discriminating girls from boys in their preliminary analysis. Using stepwise logistic regression, the authors were able to select a subset of these questions that significantly contributed to predicting the log odds of being a boy. These items include 1) frequency of crying; 2) frequency of moodiness; 3) frequency of poor appetite; 4) honestly answered questions; 5) trouble paying attention; 6) 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 future planning; 14) sensitivity to others' feelings; 15) self-identification as a risk-taker; and 16) tendency to be upset by difficult problems.

We used a method similar to Cleveland, Udry, and Chantala (2001) to create an aggregate state-level gendered variable. We used logistic regression to predict the probability of being a female using the 16 previously identified items separately for each of the 30 states. A post hoc test identified the number of successful predictions made by the model and calculated a score for the percent of predictions correctly classified within each state. The higher a states' score the more indication that state has rigid gender roles. That is, in states where the model was able to

more accurately predict respondents' genders based on the 16 sex-typed questions the *greater* the conformity to normative gender behaviors and attitudes. Conversely, in states where the model was less able to accurately predict respondents' genders based on the 16 sex-typed questions the *less* the conformity to normative gender behaviors and attitudes. Thus, the state-level score represents the level of conformity to statistically normative sex-typed behaviors and attitudes – 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 some states, knowledge about the 16 questions would enable one to accurately predict gender 84 percent of the time but in other states, our ability to predict gender was as low as 72 percent. We characterize those states with the highest values as the most limiting and should be linked to fatalistic suicide ideation.

Analysis

An association between state-level youth suicidal ideation and gendered context is first established in a state-level bivariate analysis using Pearson's correlation across the 30 states. The results are graphed by gender in a scatter plot with a line describing the best linear fit in Figure 3. We then examine individual differences in the likelihood of expressing thoughts of suicide as a function of state-level gendered context using logistic regression. All analyses include sampling weights and adjust for the complex design features of the Add Health data (see Chantala and Tabor 1999 for more information). Robust standard errors are estimated in regression models to adjust for the clustered nature of the data.

RESULTS

Figure 3 presents the scatterplot and corresponding correlations for state-level gendered context by state-level prevalence of suicidal ideation. The results are in line with the notion of fatalistic suicide ideation. Briefly, the higher the conformity to normative gender behaviors and

attitudes, the higher the suicidal ideation rate. However, this association is stronger for females (R=0.47) than for males (R=0.28). These findings are important because they indicate that gendered contexts are best characterized as fatalistic rather than anomic in nature. For instance, 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. It is only within states with the highest levels of gender control (e.g., fatalistic) in which we observe this increased risk. The results are also important because they suggest that highly gendered contexts affect the suicide risk of both female and male youth albeit more strongly for females. This provides additional evidence for the fatalistic nature associated with highly gendered contexts.

[FIGURE 3]

The results presented in Figure 3 provide some tentative support for our hypothesis but they are limited because they only allow for ecological inferences rather than making any statement 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 gender and the gendered context have significant independent effects on suicidal ideation controlling for age and race. The odds of reporting suicidal ideation are 84 percent higher for female youth compared to male youth ($p<0.001$) and the gendered context is associated with a 4 percent increase in the odds of reporting suicidal ideation ($p<0.01$). Black youth are the only group to differ from whites. They have 34 percent reduced odds of reporting serious thoughts of suicide in the past year. Model 2 introduces an interaction term for gender by gendered context. The results of this model support those presented in Figure 3; gendered contexts are more detrimental for female youth suicidal ideation than male youth suicidal ideation (OR = 1.04, $p<0.05$). The results of this interaction are plotted in Figure 4 and they

indicate 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 order of their environments increases. Taken together, the ecological and individual-level analyses both support a fatalistic perspective of suicide as related to more (rather than less) control over individual's behaviors as a function of their gender.

[TABLE 2]

[FIGURE 4]

DISCUSSION

This study makes a significant contribution by demonstrating the negative consequences for youth who live in contexts defined by restrictive norms about gender attitudes and behaviors. Consistent with feminist literature, we find that restrictive gender norms are more detrimental for female youth than male youth. In Durkheim's framing of suicide, he argues that the regulation of behavior and beliefs is an integral part of social balance - a lack of regulation results in unrestrained aspirations and, in turn, dissatisfaction with life. Durkheim states, "So 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 via fatalistic suicide, he spends little time exploring this pathway. By contrast, we have shown that regulation produced by the gender system increases suicidal ideation, and by extension poor mental health, especially for female youth.

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. Second, this study focuses on suicidal ideation not suicide mortality as in Durkheim's study. While suicidal ideation is a strong predictor of suicide mortality, the majority of youth who experience suicidal thoughts do not complete suicide. Moreover, while female youth experience higher rates of suicidal ideation, male youth are more likely to die from suicide. Nonetheless, 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, Adams, Lehnert, and Brinkman 1995; Wilburn and Smith 2005) and mental illness including depression, PTSD, and substance use disorders (Kandel, Raveis, and Davies 1991; Kelly, Lynch, Donovan, and Clark 2001; Roberts and Chen 1995; Waldrop, Hanson, Resnick, et al. 2007).

Despite these limitations, this study contributes to the understanding of social regulation on rates of suicidal ideation by extending Durkheim's theory to include gender and youth. Consistent with feminist literature, we find that restrictive gender norms are more detrimental for female youth than male youth. This is not, in fact, at odds with Durkheim, but offers an opportunity to update his perspectives. It is within the realm of integration that Durkheim takes gender into consideration, although 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... Thus for every nation there is a collective force, of a definite level of energy, which drives men to kill themselves" ([1897] 2006, 331). 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 systematically unveiled that men benefitted from the institution of marriage, while women's suicide rates were lower with widowhood, he failed to consider the gendered context in which behavior outside of

the matrimonial relationship is also regulated. Our study shows that while higher levels of gender regulation are more harmful for females overall, it is also more harmful for males when compared with their counterparts in less gender-regulated contexts.

One mechanism that could account for this difference is internalized femininity and masculinity that occurs during the socialization process. For instance, parents and caregivers have been shown to respond differently to female and male displays of emotion, socializing girls and boys differently in the types and use of emotion beginning in infancy (Brody 2000; Cassano, Perry-Parrish, and Zeman 2007; 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 others, parental expectations of gender-role-based achievement (e.g. females are not expected to do well in math), media representations, components of educational curriculum, language and communication styles used by teachers, and even peer standards of popularity (Adler, Kless, and Adler 1992; Eccles, Jacobs, and Harold 1990; Gilbert 1992; Wright 1997). Furthermore, Witt and Wood (2010) point out the implications of gender socialization on young adults' self-esteem through a developed process of self-regulation. They found that one's ability to act in a manner consistent with their 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 issues.

Moreover, we update Durkheim's perspective by focusing on youth, a population discounted by Durkheim. In his study, he disregards all under the age of 16 because "suicidal tendencies are very rare," ([1897] 2006, 180). Those aged 16 and older are grouped with all other adults. While this strategy may reflect the limitations of Durkheim's data, it also overlooks the differential experiences and expectations of individuals at different stages in the life course – today as well as in the period of Durkheim's writing. By reclassifying "youth," contemporary public health officials acknowledge this time period as one that is distinct in the life course. Nonetheless, we find that Durkheim's demonstration of suicide as a social fact holds with the different age category.

We make a methodological contribution with respect to our contextual measure of norms about gender attitudes and behaviors as a system of regulation. This approach offers quantitative researchers an alternative and more comprehensive way to consider gender rather than just as an individual control or compositional feature. Future research will need to determine if 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 possible 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. Future research should consider the gendered system in the school environment.

Finally, this study offers to prevention and mental health professionals a broader understanding of the macro social risk factors that should be considered when identifying and

working with youth who are experiencing suicidal ideation and or who are at risk for suicide. Looking beyond the immediate and proximate circumstances of an individual at risk 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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Table 1. Descriptive Statistics for all 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

Data are from the National Longitudinal Study of Adolescent Health

Means and frequencies are weighted.

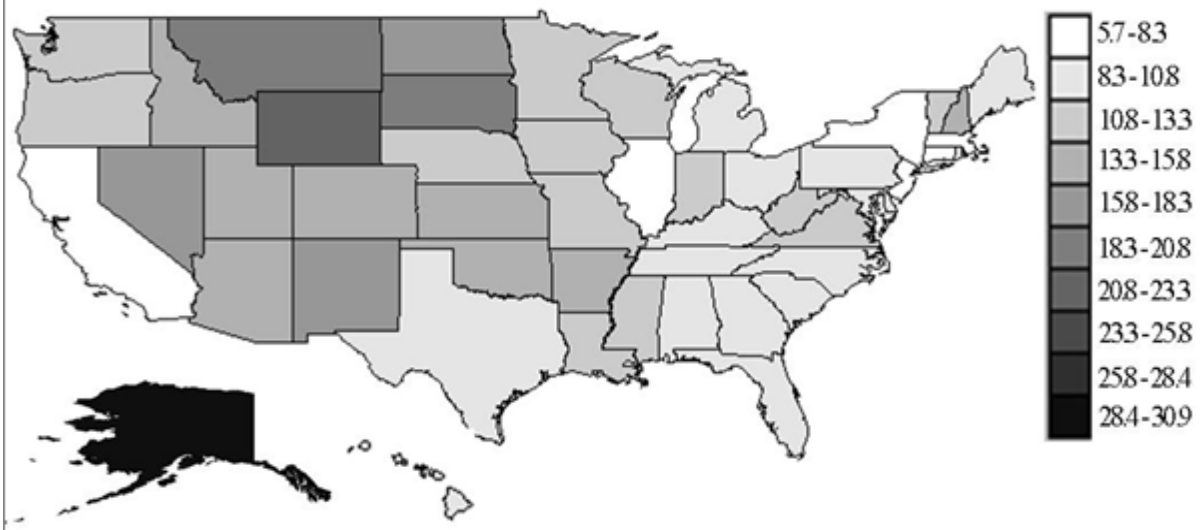
Table 2. The Influence of Gender and Gendered Contexts on Suicide Ideation for Youth (n=12,878, states=30)

	Model 1		Model 2	
	OR	p	OR	p
Female	1.84	***	0.08	
Age	0.99		0.99	
Race (White)				
Black	0.66	*	0.66	*
Hispanic	0.98		0.98	
Asian	1.07		1.06	
Other	1.28		1.28	
Gendered	1.04	**	1.01	
Female#Gendered			1.04	*
Log Likelihood	-4526.7		-4524.9	
Pseudo R2	0.02		0.02	

*p<0.05, **p<0.01, ***p<0.001

Data are from the National Longitudinal Study of Adolescent Health

Figure 1. Crude Suicide Mortality Rates for Individuals Aged 15-24, 1995-1999



Note: Data are from the CDC Compressed Mortality File 1979-1998 Archive and Multiple Cause of Death Files, 1999-2010

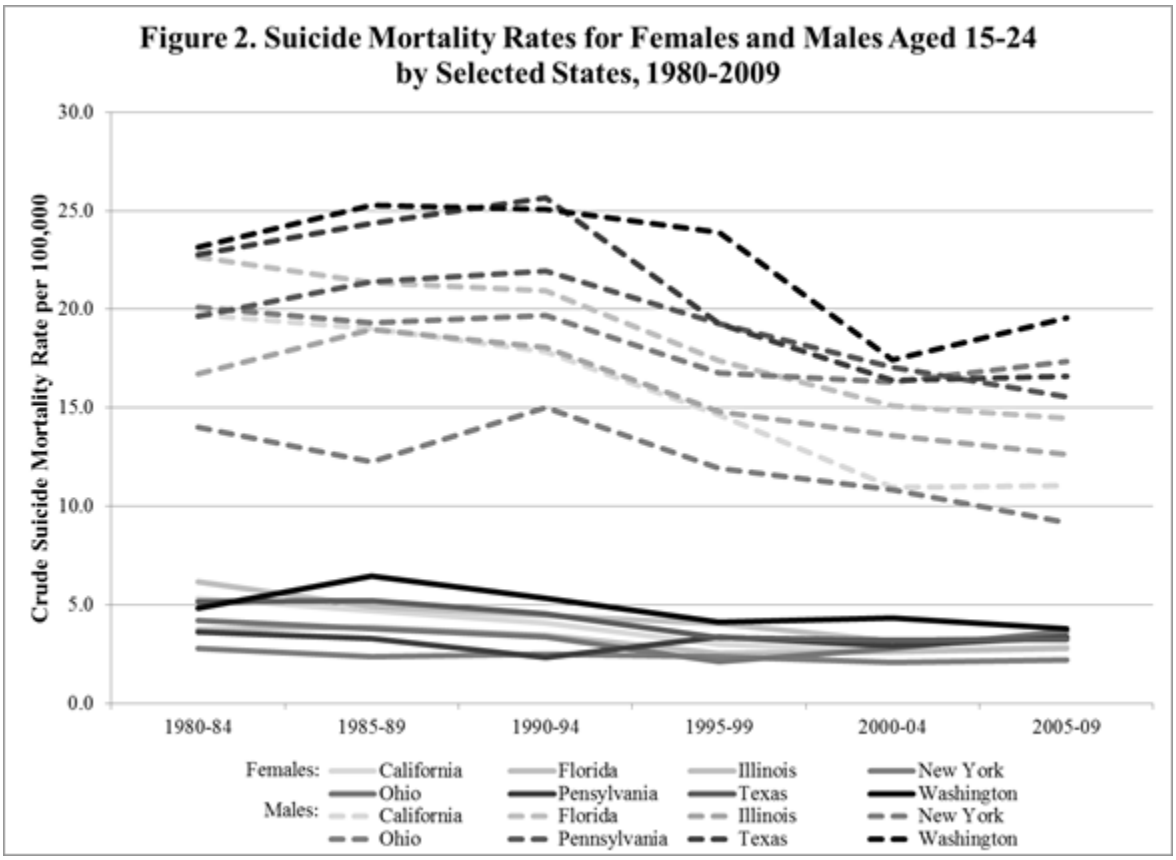


Figure 2. Suicide Mortality Rates for Females and Males Aged 15-24 by Selected States, 1980-2009
Crude Suicide Mortality Rate per 100,000
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1980-84
1985-89
1990-94
1995-99
2000-04
2005-09
Females: California Florida Illinois New York
Ohio Pensylvania Texas Washington
Males: California Florida Illinois New York
Ohio Pennsylvania Texas Washington

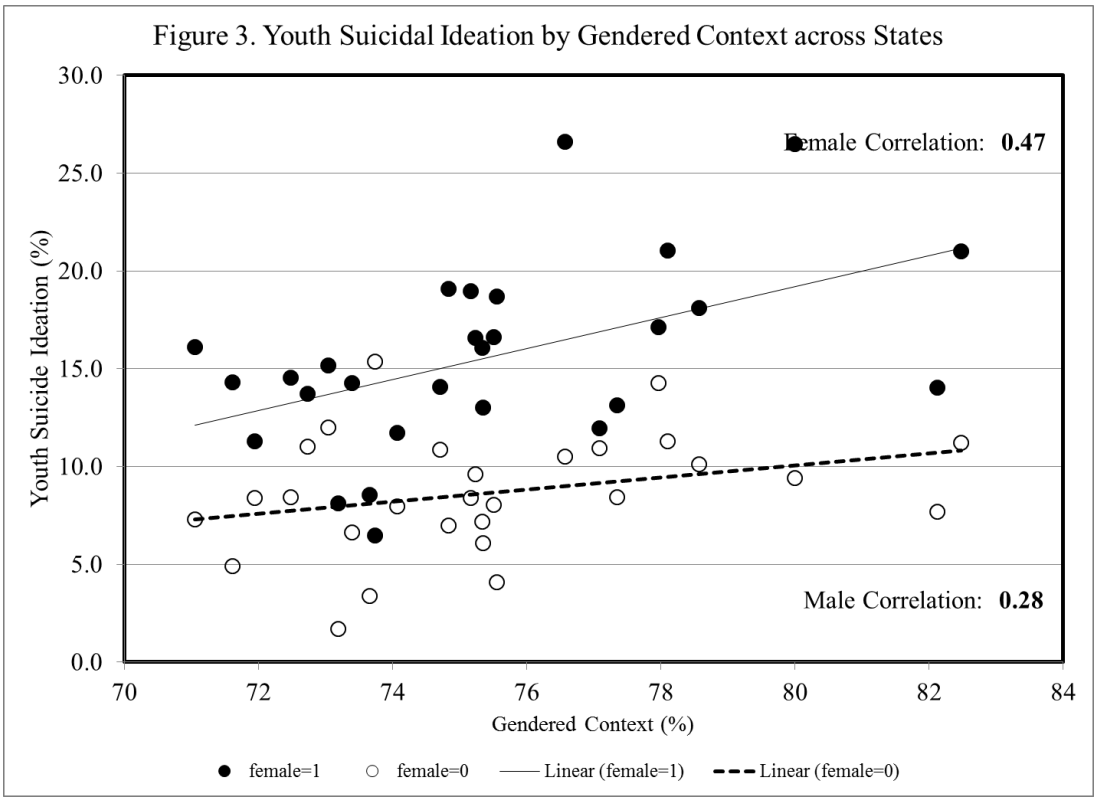


Figure 3. Youth Suicidal Ideation by Gendered Context across States
Youth Suicide Ideation (%)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
70
72
74
76
78
80
82
84
Gendered Context (%)
Female Correlation: 0.47
Male Correlation: 0.28
female=1
female=0
Linear (female=1)
Linear (female=0)

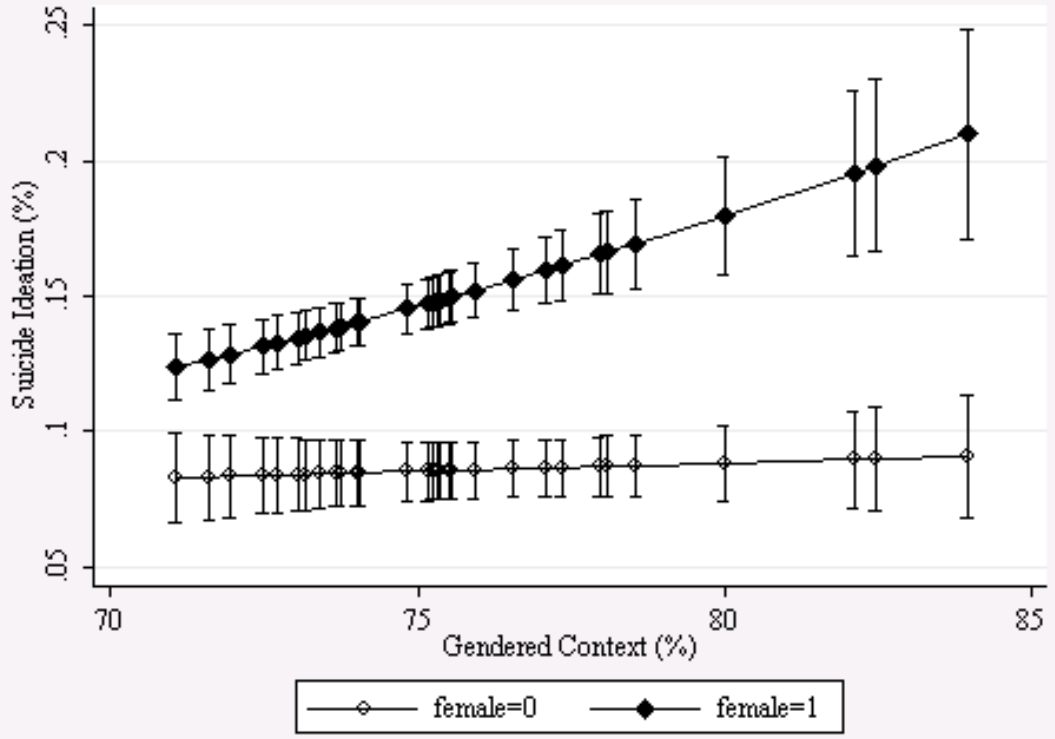



Figure 4. Predictive Margins for Female and Male Youth with 95% CIs