Archives of Suicide Research

ISSN: 1381-1118 (Print) 1543-6136 (Online) Journal homepage: http://www.tandfonline.com/loi/usui20

Traditional Masculinity as a Risk Factor for Suicidal Ideation: Cross-Sectional and Prospective Evidence from a Study of Young Adults

Daniel Coleman

To cite this article: Daniel Coleman (2015) Traditional Masculinity as a Risk Factor for Suicidal Ideation: Cross-Sectional and Prospective Evidence from a Study of Young Adults, Archives of Suicide Research, 19:3, 366-384, DOI: 10.1080/13811118.2014.957453

To link to this article: http://dx.doi.org/10.1080/13811118.2014.957453

Accepted author version posted online: 10 Nov 2014.
Published online: 10 Nov 2014.

Archives of Suicide Research, 19:366–384, 2015

ISSN: 1381-1118 print/1543-6136 online
DOI: 10.1080/13811118.2014.957453

Routledge
Taylor & Francis Group

Traditional Masculinity as a Risk Factor for Suicidal Ideation: Cross-Sectional and Prospective Evidence from a Study of Young Adults

Daniel Coleman

Traditional masculinity is hypothesized to be associated with suicidal ideation, and traditional masculinity is predicted to interact with stressors, intensifying suicidal ideation. Cross-sectional and prospective data from a study of 2,431 young adults was analyzed using hierarchical regression main effects and interaction models. Traditional masculinity was associated with suicidal ideation, second only in strength to depression, including when controlling for other risk factors. Prospective effects were substantially weaker. There was mixed evidence for traditional masculinity by stress interactions. The results provide preliminary support for the role of traditional masculinity in suicidal ideation, but the relationship should be tested in studies of suicide attempts and mortality. Implications for prevention and intervention are explored.

Keywords gender, masculinity, suicidal ideation, suicide

According to national mortality data released in 2011, suicide is the tenth most prevalent cause of death in the United States. The majority of these deaths are among men, with men four times more likely to end their life by suicide than women (CDC, 2011). This pattern of heightened risk for men exists in the majority of countries with reliable data (Joiner, 2005), but is not universal (Canetto, 2008). Understanding why so many more men than women end their lives by suicide may provide new opportunities for prevention and intervention.

In earlier work with colleagues, Dr. Coleman reviewed the research on gender and suicide and developed a theoretical model that centers on high traditional masculinity as a central explanatory variable of the high rate of male suicide. The article proposed that high traditional masculinity, with its emphasis on winning, independence, emotion-avoidance, and the acceptability of anger and violence, creates a context of cognitive rigidity that is associated with higher risk for suicide attempts and death. (Coleman, Kaplan, & Casey, 2011). This study tests some of

the key theorized relationships from that earlier study. The theoretical model is discussed following a brief review of the epidemiology of gender and suicide. Note that much of the existing research is on gender and suicidal behavior: it is examining differences between men and women (very few studies extend beyond the traditional binary categories of gender to transgender or other). The primary focus of this study is on gender role orientation, the degree to which participants see themselves as masculine or feminine, and endorse beliefs about masculinity and femininity.

Gender and Suicidal Behavior: Epidemiology

The male excess in suicide varies by country, indicating that nationality and race/ethnicity moderate the relationship of gender and suicide. Analysis of World Health Organization (WHO) data on 53 countries found a mean male to female ratio of 3.5 (SD = 1.3), varying from approximate 1 to 1 ratios in China, Kuwait, and India to ratios approaching 7 to 1 in former Soviet republics (WHO, 2003).

Within the United States, there are differences in suicide rates and male to female ratios across race/ethnic groups. In 2008 data from 16 states, suicide was most prevalent among American Indian/Alaska Natives (AI/AN) and Whites, but the greatest male to female ratio was among African-Americans (6.9 to 1) and the lowest ratio was among Asian/Pacific Islanders (Karch, Logan, & Patel, 2011).

If suicide death in most of the world is strikingly male, non-fatal suicidal behavior is predominantly female, though the gender difference is less dramatic. Nock and colleagues (2008) reported that across 17 countries studied, women were 1.7 times more likely to make a suicide attempt than men. Like with suicide death, the rate of attempts varies substantially by country, with lifetime prevalence estimates ranging from less than 1% for Italy and Nigeria, to nearly 5% for the United States and Colombia. In addition to non-fatal suicidal behavior, there is an increasing recognition of self-harming behavior without the intent to die or Non-Suicidal Self Injury (NSSI). While still an emerging area, epidemiological research indicates that NSSI is roughly equally prevalent in men and women and is associated with suicide attempts and death (Andover, Primack, Gibb et al., 2010).

In addition to men dying by suicide at higher rates than women, the characteristics of male and female suicide decedents differ in notable ways. In an analysis of the multi-state National Violent Death Reporting System (NVDRS), 62% of male decedents had no mental health history or diagnosis, in contrast to 42% of female decedents, and only half as many men (16%) as women (32%) had a previous suicide attempt. The typical male suicide decedent had no history of mental health treatment and was unlikely to have made previous suicide attempts. In contrast, the typical female decedent had received mental health treatment, and was more likely to have made a previous attempt. Male decedents used a firearm at almost twice the rate of female decedents. In the 2003–2006 NVDRS data, there were over 11,500 male firearm suicide decedents, 58% of all male suicides, contrasted with 1,740 female firearm suicide decedents, 31% of all female suicides (Kaplan, McFarland, & Huguet, 2009).

Among developed countries, the high prevalence of gun suicide among men is unique to the United States, with its loose gun laws and strong gun culture. In data from 16 European countries, overall suicide rates and the male excess in suicide were similar to the United States, but with men using hanging as the most frequent suicide method (Värnik, Kõlves, van der Feltz-Cornelis, Marusic et al., 2008).

Established Risk Factors for Suicidal Behavior

This study has a number of established risk factors for suicidal behavior as contextual variables, including depression, trauma, and substance use. These variables are included to test the incremental validity of traditional masculinity as a risk factor: does traditional masculinity account for additional variance in suicidality, controlling for other risk factors? In addition, it is theorized that traditional masculinity might interact with these variables. For example, high traditional masculinity individuals who are seriously depressed might have a multiplicative increase in suicidality. These theorized interactions are discussed further in the next section, following review of the contextual variables.

Depression is the most replicated and often the strongest correlate of suicidal behavior in risk factor research (Borges, Angst, Nock et al., 2008; Harris & Barraclough, 1997). As noted above, histories of serious depression are more common among female suicide decedents than males. Trauma that causes significant posttraumatic symptoms is a robust predictor of suicidal behavior (Wilcox, Storr, & Breslau, 2009), especially among women (Roy & Janal, 2005). Substance abuse is also one of the established risk factors for suicidal behavior (Borges, Angst, Nock et al., 2008; Harris & Barraclough, 1997). Though there are higher proportions of substance abusers among male suicide decedents (Kaplan, McFarland, & Huguetet al., 2009), the presence of substance abuse may be a stronger risk factor for suicide death among females (Ilgen, Bohnert, Ignacio et al., 2010).

Environmental stressors associated with suicide include unemployment, poverty, family, or friendship stressors such as relationship conflict or break-up, and illness or death of loved ones. Some stressors have differential effects for men and women, such as unemployment. Ying and Chang (2009) showed that unemployment had an impact on male suicide rates but mixed impacts on female suicide rates based on an analysis of panel data from G-7 industrial countries (Canada, France, Germany, Italy, Japan, UK, and United States). In a Swedish study involving the relationship of job loss on mortality risk, Eliason and Storrie (2009) found that the suicide mortality risk among men increased, while there was no impact on women.

Well-replicated evidence indicates that sexual minority populations are at greater risk for suicide attempts, but more preliminary results suggest this does not hold for suicide completion (Cochran & Mays, 2011). The heightened risk of attempt is also likely age dependent, with the majority of suicide attempts by gay or bisexual men occurring in their late teens or twenties (Paul, Catania, Pollack et al., 2002). Much of the difference in suicidal ideation and behavior for sexual minority youth is likely due to the stress of alienation from friends and family members related to continued homophobia. Safren and Heimberg (1999) found elevated rates of suicidal behavior for gay and lesbian youth, but when the increased psychosocial stress for these youth was controlled for, the group difference became much smaller.

Traditional Masculinity: A Proposed Mechanism of Gender Differences in Suicidal Behavior

There is an impressive difference in suicide prevalence by gender in most of the world, and the nature of suicide death and attempts differ sharply among men and women. Given these marked differences by gender, surprisingly little suicide research makes the dynamics of gender and suicide a central analytic focus. An exception is the work of Canetto, who has synthesized research and cultural

analysis in developing the cultural script model to explain gender differences in suicidal behavior (Canetto, 1997, 2008). Canetto (1997) stated: "Individuals whose gender identity is 'conventional' (e.g., 'masculine' males) may be more likely to follow the gendered scripts of suicidal behavior . . . " (p. 347) This current study is a quantitative test of some of the central themes that emerged in Canetto's interpretive framework.

As noted earlier, Coleman et al. (2011) developed a theoretical framework centering on traditional masculinity to explain gender differences in suicide. Traditional masculinity is a set of social norms that includes an emphasis on competition, strength, avoiding emotions and perceived femininity, an action-orientation, and the acceptability of anger and violence. This definition is consistent with the traditional masculinity construct represented in several measures, including trait masculinity (Helmreich, Spence, & Wilhelm, 1986) and masculinity ideology scales (Levant, Rankin, Williams et al., 2010; Mahalik, Locke, Ludlow et al., 2003; Pleck, Sonenstein, & Ku, 1993).

It is theorized that the dynamics of traditional masculinity-driven suicide risk follow Baumeister's (1990) escape theory: suicidal acts are more likely when an individual is emotionally distressed by a self-perception of failure leading to a narrowing cognitive state of limited emotion, attention, and lowered inhibition. The suicidal act is an effort to escape an intolerable view of self and the related negative affect. Gender role conflict models describe a similar pattern where men suffer a lowered sense of self from not meeting rigid expectations of traditional masculinity, triggering defensive and reactive efforts to assert masculinity (Pleck, Sonenstein, & Ku, 1993). In addition to the theorized link to the escape theory of suicide, traditional masculinity is associated with a reluctance to seek help, a relationship found to hold up across the major United States racial and ethnic groups in a recent large study (Vogel, Heimerdinger-Edwards, Hammer et al., 2011).

In Coleman and colleagues earlier paper, Pollack's (2006) concept of the masculinity "straitjacket" was extended to illustrate the relationship of traditional masculinity to suicide: " . . . the straitjacket metaphor is a male-specific example of Baumeister's theory, where cultural gender-role expectations limit males' options when faced with stress, crisis, or loss, thus increasing their risk for self-endangering or self-harming behaviors." (Coleman, Kaplan, & Casey, 2011, p. 247).

The few empirical investigations of gender role and suicide have been confounded by masculinity measures that capture positive features such as assertiveness and mastery as well as maladaptive dimensions such as limited emotionality, impulsiveness, and counter-dependence (Hunt, Sweeting, Keoghan et al., 2006; Mansdotter, Lundin, Falkstedt, & Hemmingsson, 2009). These two studies have found that positive dimensions of masculinity are protective against suicidal ideation and attempts. Research is needed to examine the relationship of traditional masculinity to suicide ideation and attempts, and also of both traditional and positive masculinity to suicide death.

A qualitative study of depressed men converges with the two quantitative studies in finding increased risk in certain dimensions of masculinity, and protection in others. Oliffe and colleagues (2012) interviewed 30 depressed men, with focused attention to suicide and masculinity. They found that men were drawn away from suicide by involvement in some masculine roles such as positive dimensions of fathering. Other men fled into masculine-associated pseudo-independence by pulling away from significant others and increasing alcohol and drug use, reporting increased suicidal thoughts. This echoes

the connection proposed between escape suicide dynamics and traditional masculinity, as well as the inter-relationship of gender role orientation, social isolation, substance use, and suicide.

The two quantitative and one qualitative study focusing on masculinity and suicide used samples of men. However, these studies grew in part out of gender role research that included measures of dimensions of both femininity and masculinity in men and women. Naturally, there is variation within both genders in masculinity and femininity, with moderate mean differences in the expected directions: men higher on average in masculinity dimensions, and women higher in femininity dimensions (Lippa, 2010). This study focuses primarily on the narrow dimension of rigid, traditional masculinity, but includes both men and women. This captures the variation in gender role orientation across gender, and allows examination of the influence of masculinity, controlling for gender itself. If traditional masculinity is an important factor in male suicidality, it should be a risk factor among women as well.

In the review of risk factors it was noted that LGBT youth have a higher risk of suicide attempt that is substantially related to the experience of homophobia related distancing, rejection and bullying. While there is no direct research evidence, it is theorized that higher traditional masculinity in gay men is associated with increased suicide risk, through internalized homophobia. There is extensive research evidence of the relationship of internalized homophobia to depression and anxiety (Newcomb & Mustanski, 2010), and internalized homophobia is correlated with higher traditional masculinity in gay men (Kimmel & Mahalik, 2005). Little research or theory was found to propose relationships between traditional masculinity and suicide risk in lesbian or bisexual women.

This investigation uses suicidal ideation, not suicide death, as the dependent variable. It is logical, of course, that suicidal ideation is a risk factor for suicide. However, a high proportion of suicide decedents do not have a history of previous suicidal behavior, and a majority of suicide ideators or attempters do not die by suicide (Moscicki, 1997). Using suicidal ideation or attempts as a proxy to understand suicide death has inherent limitations. However, given the methodological challenges of studying suicide decedents, and no previous studies of traditional masculinity and suicidal ideation, it is reasonable to study suicidal ideation as a step toward research on attempts and suicide death.

In summary, male suicide is a major public health problem. Coleman and colleagues developed a theoretical model that proposed that traditional masculinity increased the likelihood of suicidality through escape suicide dynamics, particularly under conditions of stress (Coleman, Kaplan, & Casey, 2011). This current study tests components of the theoretical model in a dataset retrieved from the University of Michigan Interuniversity Consortium for Political and Social Research (ICPSR) archive (http://www.icpsr.umich.edu). It was the only dataset identified that included a measure of traditional masculinity and of suicide related variables.

Research Questions and Hypotheses

What is the relationship of traditional masculinity and positive masculinity to suicidal ideation? Based in theory, it is hypothesized that traditional masculinity will be positively associated with suicidal ideation (risk factor), controlling for demographics and other risk factors. Based in theory and previous research, it is expected that positive masculinity will be negatively associated with suicidal ideation (protective

factor), controlling for demographics and other risk factors. These relationships will be tested in both cross-sectional and prospective analyses.

Further, the theoretical model predicts that traditional masculinity will interact with stress, producing higher suicidal ideation. The stressors measured at time one are diverse in nature and include past events (physical or sexual abuse), depression, and substance use. The stressors measured at time two are discrete events experienced since time-one such as job loss, family illness, and death of a friend or family member. Following the literature reviewed above, it was hypothesized LGBQ youth may experience higher suicidal ideation in reaction to family distancing and social stigma. Parallel with the above research questions and hypotheses, it was predicted that the associations of masculinity and suicidal ideation would be stronger in the male sample than the female sample.

METHODS

Design

This is an analysis of the archival dataset the Longitudinal Study of Violence against Women (LSVW) (White, Smith, & Humphrey, 2001). Male and female college students at a large, public university in the southern United States were followed for 5 years of data collection. This analysis makes use of the initial and 1 year follow-up data. The National Institute of Justice and the National Institute of Mental Health jointly funded the LSVW.

Sample. The male and female participants were sampled separately, and answered a core group of common items as well as some gender-specific items. Participation was offered to all 18- or 19-year-old incoming freshmen undergraduates at a large public university in the United States South, with 83% of female students participating and 65% of male students (Humphrey & White, 2000; White & Smith, 2009). The study was described to participants as the "Life Experiences Study" to minimize social desirability effects (J. White, personal communication, April 8, 2013). Retention of participants at year two was good, with 84% of year one participants completing a questionnaire. Participation rates fell more sharply by year three, so this analysis will use data from the first and second data collection to capitalize on temporal order while maximizing sample size and minimizing self-selection bias. The sample includes 1,580 women and 851 men at time one, and 1,391 women and 647 men at time two. A response option to identify as transgender or other was not offered. The sample is 72% White and 24% African-American. Respondents were asked if they identified as lesbian, gay, bisexual, or were exploring sexual orientation (questing). Since transgender, intersexual, asexual, or "other" response options were not provided; this variable was coded as LGBQ. The sample is 4.86% LGBQ ($\underline{n} = 109$).

There was no difference in race among dropouts versus completers at time-two. Men were 1.46 times more likely to drop-out at time-two than women (χ^2 (1, 2431) = 65.8, $p < .001$).

Measures

Suicidal Ideation. The dependent variable of suicidal ideation (SI) was measured with good reliability ($\alpha = .72$) with a scale of two items (thoughts of suicide and hopelessness). The two-item scale was selected to improve on the unknown error component in a one item measure, to capture more construct variance, and to mirror the breadth of established suicidal ideation measures such as the Scale for Suicidal

Ideation (Beck, Brown, & Steer, 1997) or the Suicide Probability Scale (Bagge & Osman, 1998) which include items that tap hopelessness and wish to die. SI scales were computed at time-one (T1SI) and time-two (T2SI). Using the item "thoughts of suicide," the prevalence of suicidal ideation in this sample (13%) was comparable to that found in other samples of college students (Garlow, Rosenberg, Moore et al., 2008; Wilcox, Arria, Caldeira et al., 2010).

Masculinity. Helmreich, Spence, and Wilhelm's (1981) Extended Personal Attributes Questionnaire (EPAQ) was used to assess gender role orientation. It includes subscales to measure positive dimensions of masculinity (M+) and femininity (F+), but also maladaptive traditional masculinity (M-), and two socially undesirable femininity scales (not included in this data collection). The EPAQ in its first form (the PAQ) had only the M+ and F+ scales. An unusual factor analytic strategy was used when expanding the measure, factoring the M+/F+ separately from the M- and negative femininity scales (Helmreich, Spence, & Wilhelm et al., 1981; Runge, Frey, Gollwitzer et al., 1981). Most investigators have used only the M+and F+scales (Ward, Thorn, Clements et al., 2006). As noted above, this dataset included the items of the M+, F+ and M- subscales.

Theoretical and statistical considerations were weighed in deciding on use of the EPAQ items. The M+ scale was retained with the original scoring, based on well demonstrated factor validity and reliability (Ward, Thorn, Clements et al., 2006) and previous research found positive, adaptive masculinity to be protective against suicidal behavior (Mansdotter, Lundin, Falkstedt et al., 2009). The M+ scale was also consistent with the theoretical framework for adaptive, positive dimensions of masculinity, with items tapping independence, decisiveness, and confidence.

The M-scale captured some of the theorized traditional masculinity construct (domineering, distrustful, self-centered, and competitive) but did not include important dimensions such as lack of empathy, emotional constriction, and lack of concern for others. It was noted that these latter traits were contained in the F+ items in positively worded items (empathic, emotional, and other-oriented). To capture these desired dimensions, it was explored to create a single scale of the M- and the F+ items. Factor analytic models were examined using principal factors extraction and varimax and promax rotations of 1, 2, and 3 factor solutions. The single factor solution accounted for 83% of the shared variance with M- items loading positively and F+ items loading negatively. A summative scale of the M- items and the reverse scored F+ items displayed very good reliability ($\alpha = .81$). This scale was named Traditional Masculinity (TM), with higher scores reflecting higher traditional masculinity.

Depression. The 4-item depression subscale from Veit and Ware's (1983) Mental Health Inventory were used to measure depression, constructing a scale with very good reliability ($\alpha = .83$). The items included: "Low or very low spirits," and "Felt downhearted and blue."

Childhood Sexual Abuse. A series of questions were asked about childhood sexual experiences. Finkelhor's (1979) criteria for coding sexual abuse were followed, adapted to the variables available. Participants who reported a sexual experience as a child were coded as child sexual abuse (CSA) if any of the following were endorsed: participation was forced or coerced; if the other person was a stranger; if the other person was perceived as "older" (in contrast to same age). This resulted in 21% ($\underline{n} = 487$) of the sample coded as CSA, 16% of men and 23% of women. The observed prevalence rate for

women was within the 95% confidence interval of the meta-analytic mean female rate from 65 studies of 19.7% (16.7–23.0, 95% CI), but the rate for men exceeded the meta-analytic mean rate of 7.9% (6.0–10.3, 95% CI), (Pereda, Guilera, Forns et al., 2009). One possible contributor to the higher rate may be the unclear age difference criteria, rather than an age difference specified in the item (5 years, for example).

Parental Violence. Participants were asked to rate the average monthly frequency of "...hitting, kicking, or throwing someone down..." committed by a parent or parent-figure in childhood. Over a quarter of the sample reported parental violence occurring once or more per month ($\underline{n} = 632$, 27%). The wording of the items captures slapping or spanking that might not be viewed as abusive under definitions of physical abuse that don't preclude corporal punishment, leading to a higher prevalence than found in studies that have a more fully defined construct of child physical abuse (Finkelhor, Turner, Ormrod et al., 2009).

Substance Use. A summary substance use variable was constructed combining frequency of alcohol intoxication and frequency of marijuana use with marginal reliability ($\alpha = .68$). Given that there was no guidance from previous research of an empirically derived cut-point to define substance abuse, the variable was not dichotomized.

Measurement of Stressors. Several variables collected at time-one are contextual stressors, including depression, substance use, and experiencing lifetime sexual abuse or parental violence. At the time of the second questionnaire, 1 year after the initial survey, participants were asked about stressors they had experienced since the first survey. Eight salient stressors were selected on the basis of theory and previous literature: death of a friend, death of a family member, serious illness of a family member, serious illness themselves, lost job, relationship break-up, and victim of a violent assault.

Analysis

Main effect and interaction *sequential* regression models were constructed, with all main effects in block one, the masculinity variables in block two, and interaction terms in block three. Cross-sectional models were run to take advantage of the largest sample size and greatest representativeness. Next, prospective models were run to establish temporal order of independent variables (IVs) and the dependent variable (DV) and eliminate state effects, but with the limitation of a smaller sample. These prospective analyses controlled for suicidal ideation at time-one, to partial out the effect of temporally prior suicidal ideation. Based on the results of this model, a *post hoc* model excluding time-one suicidal ideation was developed.

In the cross-sectional interaction model, ten interaction terms were tested: TM by each of the other main effects, depression by substance use, and white by female. Non-significant interaction terms were trimmed. Interaction terms that were non-significant in the full model with all IVs and interaction terms were tested in simple interaction models with the two main effects and single interaction term. The full interaction model with all IVs and significant interaction terms has the advantage of controlling for all the variables in the model, but has the potential drawback of many inter-correlated IVs reducing the power to detect an effect of any given IV. The simple interaction models provide a check against this latter limitation.

As noted in measures, participants were asked about stressors in the past year

at the second data administration. Main effects and interaction term models were constructed, testing the interaction of TM and eight stressors, and TM by suicidal ideation at time-one. These models included the main effects of the first regression models to maintain a complete model of salient independent variables. As before, the non-significant interaction terms were trimmed and were tested in simple interaction models.

RESULTS

Preliminary analyses include descriptive statistics and correlations of all continuous variables (Table 1). T1SI, T2SI, TM, and M+ all differed between men and women, with men having higher average scores. Effect sizes for the gender difference ranged from a medium size mean difference for M+ and TM to a small mean difference for T1SI and T2SI. The medium size male to female difference in masculinity variables (M+ and TM) falls within the range found in other studies (Levant, Rankin, Williams et al., 2010; Marusic & Bratko, 1998; Siegling, Saklofske, Vesely et al., 2012).

All of the correlation and regression analyses were run in the whole sample and separately in the male and female samples. It was predicted that the associations of TM and M+ would be stronger in the male subsample. This prediction was false. The separate male and female analyses had only trivial differences in strength of coefficients, so for parsimony only the analyses in the aggregated sample are reported.

Table 1 shows the bivariate associations of TM and M+ to suicidal ideation for cross-sectional and prospective relationships. TM was moderately positively associated with T1SI and a partially attenuated relationship persisted prospectively (time-one TM predicting T2SI). At the bivariate level, approximately 9% of the variance in T1SI is accounted for by TM, diminishing to 3.2% of the variance in T2SI. The partial correlation of TM to T2SI, controlling for T1SI was small (partial $r(2036) = .05$, $p < .05$). M+ was negatively associated with suicidal ideation: higher M+ is correlated with lower T1SI,

TABLE 1. **Correlations, Descriptive Statistics, and Mean Differences by Gender**

Measures	Time-one SI	Time-two SI	Depressed	Substance use	M+	TM
Time-one SI	–	0.45**	0.48**	0.15**	−0.20**	0.27**
Time-two SI	–	–	0.34**	0.11**	−0.18**	0.15**
Depressed	–	–	–	0.16**	−0.26**	0.22**
Substance use	–	–	–	–	−0.03	0.18**
M+	–	–	–	–	–	0.06*
Mean(SD) Total Sample	1.34 (0.71)	1.35 (0.72)	2.41 (1.00)	3.31 (1.80)	3.44 (0.59)	1.81 (0.50)
Mean(SD) males	1.45 (0.79)	1.45 (0.77)	2.50 (0.97)	3.48 (2.02)	3.63 (0.57)	1.98 (0.51)
Mean(SD) females	1.27 (0.66)	1.31 (0.69)	2.37 (1.02)	3.22 (1.65)	3.34 (0.58)	1.71 (0.46)
Male:female t-test						
t (df)	5.89**(2420)	4.22**(2043)	3.13*(2418)	3.37**(2377)	11.58**(2421)	13.18**(2421)
Cohen's *d*	0.25	0.19	0.13	0.14	0.50	0.56

Note. $^{*}p < 0.01$; $^{**}p < .001$; SI: suicidal ideation; M+: positive masculinity; TM: traditional masculinity; Time-one N = 2412; Time-two N = 2045. Scales are item average score (sum/ # of items) with range 1 to 5, except Substance Use with range 0 to 10.

with little attenuation when predicting T2SI.

The next analyses test if the relationship of TM and M+ to suicidal ideation accounts for unique variance in suicidal ideation controlling for other risk factors, and if the hypothesized relationship of an interaction between high TM and stress is associated with higher suicidal ideation. These hypotheses were first tested in the cross-sectional main effects and interaction models shown in Table 2 with time-one variables. The Block 1 model, with demographic variables and established risk factors, accounted for 26% of the variance in T1SI. Depression was by far the strongest main effect, followed by parental violence. Adding the masculinity variables in Block 2 increased R^2 to .29 (Δ in $R^2 = .03$, $F(2, 2117) = 42.55$, $p < .001$). TM was second only to depression as a risk for greater suicidal ideation, followed by M+ as a protective influence on suicidal ideation.

The addition of the interaction terms in Block 3 increased R^2 to .32 (Δ in $R^2 = .03$, $F(5, 2112) = 22.51$, $p < .001$). In the interaction model, the strongest main effects changed little: depression followed by TM and M+. The other significant main effects were a protective effect for female and risk effects for LGBQ and Parental Violence. The strongest interaction term was TM × depression, with higher suicidal ideation for those more traditionally masculine and more depressed, controlling for the increased risk of TM and depression by themselves. The next strongest was depression × substance use, indicating that

TABLE 2. **Sequential Regression Model of Suicidal Ideation at Time-One with Independent Variables of Risk Factors, Masculinity Variables, and Interaction Terms**

	Block 1		Block 2		Block 3	
	$R^2 = .26$		$R^2 = .29$		$R^2 = .32$	
Independent variable	**Beta**	**p-value**	**Beta**	**p-value**	**Beta**	**p-value**
Block 1						
Female	−.03	.09	−.07	.00	−.08	.00
White	−.07	.00	−.03	.13	−.02	.18
LGBQ	.07	.00	.06	.00	.06	.00
Parental violence	.08	.00	.06	.00	.06	.00
CSA	.02	.19	.03	.07	.04	.05
Depressed	.46	.00	.39	.00	.37	.00
Substance use	.06	.00	.04	.03	.03	.15
Block 2						
M+				−.12	−.11	.00
TM				.14	.17	.00
Block 3						
TM*Depressed					.13	.00
TM*M+					−.04	.02
TM*White					−.08	.02
TM*CSA					.05	.01
Depressed*Substance use					.08	.00

Note. N = 2126. CSA = childhood sexual abuse; M+ = positive masculinity; TM = traditional masculinity. Block 1 $F(7,2119) = 106.12$, $p < .001$; Block 2 $F(9,2117) = 95.23$, $p < .001$; Block 3 $F(14,2112) = 72.37$, $p < .001$.

those with both high depression and substance use had higher suicidal ideation, controlling for the independent influence of the main effects. The third strongest interaction term was TM × White, with high TM white participants having lower suicidal ideation, followed by TM × CSA that found high TM participants who reported CSA tended to have higher suicidal ideation. The final interaction was TM × M+ that found for high TM participants there was an additional protective effect of M+, on top of the general protective effect of M+.

In cross-sectional analysis, the masculinity variables contributed an additional 3% of variance in suicidal ideation, and TM by other variable interactions for another 3% of variance. Traditional masculinity and its interactions with other variables accounted for about 5% of variance in suicidal ideation (taking out effect of M+ and the depression × substance abuse interaction term).

As noted in analysis, the interaction terms that were trimmed from the full model were tested in simple interaction models with just the main effects. All of the trimmed interaction terms remained non-significant in simple models, with the exception of TM × LGBQ. The regression model accounted for 10% of the variance in SI, with significant main effects (TM beta = .28, $p < .001$; LGBQ beta = .08, $p < .001$) and a significant interaction term (TM × LGBQ beta = .05, $p < .05$). Those LGBQ and high traditional masculinity participants tended to have higher SI, even beyond the increased SI associated with LGBQ or TM alone. Since the literature found was primarily about gay men, a *post hoc* analysis examined the association of TM to T1SI in lesbian, bisexual, or questing women and it was similar in strength to the association found in the whole sample (r (43) = .30, $p < .05$), but the association was stronger in gay, bisexual, or questing men (r (69) = .41, $p < .01$).

A three-step sequential regression model, shown in Table 3, was constructed to test the multivariate prospective influence of the IVs on suicidal ideation measured 1 year later, and to test the interactive effect of eight stressors measured at time-two with TM. Suicidal ideation at time-one was included as a covariate. These models accounted for approximately two-thirds the variance of the cross-sectional models, but about half of it was due to the autocorrelation of T1SI to T2SI. Only 1 of the 8 stressors had either a significant main or interactive effect, the death of a friend.

The Block 1 model accounted for 22% of the variance in T2SI. By far the strongest IV was T1SI, followed by depression and a protective effect for white participants. The addition of the masculinity variables in Block 2 accounted for a modest amount of additional variance (Δ in $R^2 = .01$, $F(2, 1829) = 7.96$, $p < .001$) and only M+ reached statistical significance. In Block 3, there was a small interactive effect of TM × Friend Die, accounting for less than 1% additional R^2 ($F(1, 1828) = 4.39$, $p < .05$). Those high TM participants who experienced a death of a friend had lower suicidal ideation, controlling for the heightened suicidal ideation of TM alone.

The prospective final model followed much the same pattern of order of strength of IVs as the cross-sectional model, but M+ (protective) became stronger than TM (risk), TM fell to a non-significant trend-level IV ($p < .10$), and female and LGBQ became non-significant.

Controlling for T1SI in the prospective regression model limits the variance in the dependent variable of T2SI to any changes since the first wave of the study. The strength of this analysis is strict temporal order. Weaknesses of controlling for the same variable at an earlier timepoint are restriction of the variance available and concentration of error variance in the DV, reducing analytic power. Relaxing the

TABLE 3. **Sequential Regression Model of Suicidal Ideation at Time-Two with Independent Variables of Time-One Suicidal Ideation, Risk Factors, Masculinity Variables, and Interaction Terms**

	Block 1		Block 2		Block 3	
	$R^2 = .22$		$R^2 = .23$		$R^2 = .23$	
Independent variable	**Beta**	**p-value**	**Beta**	**p-value**	**Beta**	**p-value**
Block 1						
T1 SI	.36	.00	.34	.00	.34	.00
Female	.03	.16	.03	.18	.03	.19
White	−.05	.03	−.06	.01	−.06	.01
LGBQ	.02	.47	.02	.47	.02	.43
Parental violence	.03	.12	.03	.15	.03	.12
CSA	.03	.21	.03	.15	.03	.15
Depressed	.15	.00	.12	.00	.12	.00
Substance use	.02	.26	.02	.32	.02	.33
Friend die	−.00	.86	.00	.96	−.01	.63
Block 2						
M+			−.09	.00	−.09	.00
TM			.03	.20	.05	.05
Block 3						
TM*Friend die					−.04	.04

Note. N = 1840. T1 SI = time-one suicidal ideation; CSA = childhood sexual abuse; M+ = positive masculinity; TM = traditional masculinity. Block 1 $F(9,1831) = 57.48$, $p < .001$; Block 2 $F(11,1829) = 48.83$, $p < .001$; Block 3 $F(12,1828) = 45.21$, $p < .001$.

temporal constraint by not including T1SI accounted for less variance ($R^2 = .15$ of Block 3 model without T1SI) but 7 IVs were significant ($p < .05$) rather than 4 (model not shown for parsimony of presentation). Notably, TM had a beta coefficient twice as large as in the model with T1SI and was statistically significant ($\beta = .10$, $p < .001$).

DISCUSSION

This is the first study of gender role orientation and suicidality to include a measure of the traditional masculinity construct. TM was associated with suicidal ideation, a relationship that persisted when controlling for other risk factors. In the cross-sectional model, depression was the only other risk factor that had a stronger association with suicidal ideation than TM, but the effects of TM were weaker prospectively (non-significant trend-level in the most conservative model). In addition to a robust main effect, TM had significant interactive effects with five other variables.

As noted earlier, positive dimensions of masculinity are associated with psychological health. It is expectable that TM, with its emphasis on low emotionality and cognitive rigidity, would be associated with greater mental health problems. There was a moderate association of TM to depression. However, the multivariate models demonstrated that controlling for the influence of depression, a sizable association of TM to suicidal ideation remained. This demonstrates that the effects of TM are not solely due to shared variance with depression.

The interaction analyses indicated increased SI in high TM participants who also reported parental violence, depression, or substance use. These mental health related variables exacerbate the suicide risk present in high TM respondents, a pattern consistent with the theory that TM creates a context of rigid coping and self-esteem vulnerability associated with escape suicide dynamics when under stress. The negative sense of self associated with experiencing parental violence and depression may resonate with the social scripts of not meeting a masculine ideal. Similarly, substance use can both weaken inhibitions against suicidal behavior, and long-term substance abuse can lead to demoralization and helplessness, affronts to the ideals of traditional masculinity. Consistent with this interpretation, research using the Gender Role Conflict approach has found that men with traditional masculinity associated conflicts of power, competition, anger, and restricted emotionality had higher alcohol use and decreased help-seeking (Blazina & Watkins Jr, 1996).

Depression, of course, is a central risk factor for suicidal behavior. As noted, the analysis indicated that TM had independent influence on suicidal ideation, as well as that suicidal ideation spiked up for those both high in TM and acutely depressed. To understand the gender difference in suicide, research must move beyond a depression only focus. It is promising that TM might be one construct that will lead to understanding suicidal behavior that is less depression-driven, as well as providing a more nuanced understanding of how depression is related to suicide.

Running counter to the TM × stress hypothesis, no moderation effect was found for other stressors, including financial problems and self or family illness. This result contrasts with previous research that found these stressors were related with suicidality, particularly among men (Eliason & Storrie, 2009). It is plausible that college students may be buffered from the effects of certain stressors by having all basic needs met (food, housing, medical), the rich social environment of college, and being in a transitional phase between childhood and adulthood (Cohen & Wills, 1985). The interaction of TM with exposure to stressors deserves further study, including with different age cohorts.

Another notable issue with the prospective analysis is the markedly weaker effects of TM on suicidal ideation, particularly when controlling for time-one suicidal ideation. The most liberal estimate of the prospective relationship of TM to suicidal ideation is the bivariate correlation ($\underline{r} = .15$, $p < .001$) and the most conservative estimate is from the multivariate block 3 model that includes time-one suicidal ideation as an IV (semi-partial $\underline{r} = .04$, $p < .10$). Even the most liberal estimate is almost half the size of the association of TM to T1SI. In contrast, the association of depression to time-two suicidal ideation was 29% smaller than depression to T1SI. So, the influence of TM on suicidal ideation decays relatively rapidly. TM may serve as a sort of accelerant when other risks for suicide are present such as increased depression, but has weaker effects on its own. This is an important issue for future research. It is possible that the prospective model underestimated the influence of TM on suicidal ideation because of the greater drop out rate of men reducing a proportion of the sample more elevated in TM.

Empirical social science models reveal that many human behaviors have multiple determinants, causal factors overlap, and there are feedback loops between factors that transcend linear causation. Gender role orientation is one potential causal factor left out of earlier conceptual models of suicidal behavior. A model is emerging that traditional masculinity is not only directly linked with suicidal behavior, but also related to established predictors such as mood, substance use, and childhood

trauma. This study conceptualized the relationship between TM and other risk factors as a moderation relationship: the presence of both TM and the other risk factor would synergistically increase the risk of suicidal ideation. Future research can develop empirically based theoretical models of the interactions and pathways of influence of TM, other risk and protective factors, and suicidal behavior.

The *a priori* analysis plan expected differential effects of TM for men and women. It was surprising that strength, direction, and significance of beta coefficients had only trivial differences in models run separately in male and female samples. The dynamics of TM and suicidal ideation appear to be relatively consistent for both men and women, indicating the need for researching gender role orientation and suicidality in both men and women. The expected differential effects of TM by gender should be tested in research where the dependent variable is suicide death. Suicidal ideation is more equally distributed between men and women than the male dominant suicide death. Differential effects of TM by gender may be observable when the outcome is death by suicide. If further research finds that traditional masculinity has similar risk effects for males and females, prevention efforts aiming to target gender role orientation will have to consider how to reach both men and women. Gender role orientation may also have a role in the higher rate of attempts among women, another area for further study.

Based primarily on research and theory about gay men, it was hypothesized that TM may have heightened effects on suicidal ideation among LGBQ participants. This interaction effect was not found in the full model with all IVs and significant interaction terms, but did hold up in the simple interaction model. Follow-up correlations suggest the heightened association of TM to suicidal ideation was primarily among GBQ men. This result is consistent with the theorized relationship that internalized homophobia would be greater among LGBQ participants who endorsed higher TM, leading to greater suicidal behavior. It also fits with the escape suicide dynamic. Clearly, further study is needed that is focused on suicidal behavior in LGBQ youth and the common and unique risk factors. A limitation of this sample is being collected in a more conservative region of the United States, possibly leading to under-reporting of LGBQ status, but also greater homophobia. It does suggest that suicide prevention and mental health promotion efforts, both universal and those that target LGBQT youth, continue to maintain awareness of the heightened risk for LGBQT youth and the salience of gender role orientation and concerns about not conforming to perceived norms (Newcomb & Mustanski, 2010).

The robust relationships of TM to suicidal ideation support the hypothesis that gender disparities in suicide completion and attempts are partially attributable to gender role orientation. While further research on non-fatal suicidal behavior will contribute to the state of knowledge, the most needed contribution is studies of suicide decedents. A feasible and productive design would be a case-control study that collects friend and family member ratings of gender role orientation on suicide decedents, and parallel data in the controls. This would allow a test of the hypothesis that high TM is a risk for suicide death, and if TM mediates the relationship of male gender to suicide death. A case-control study including a measure of TM could also clarify the relationship of TM, use of a gun, and suicide death.

There are other promising new avenues of inquiry into understanding gender, gender role orientation, and suicide, including applications of Joiner's (2005) influential Interpersonal Theory of Suicide. Smith (2010) is currently conducting a study testing the relationship of male

gender role socialization and the Interpersonal model. He hypothesized that traditional male socialization is associated with a reduced fear of death and increased tolerance for pain, contributing to a greater acquired capability for suicide.

Hempstead, Nguyen, Rus, and Jacquemin (2013) synthesized literature from several perspectives, generating hypotheses about the relationships in the United States among masculinity, gun ownership, and suicide death by gun. Given the male excess in suicide deaths, and that the male use of firearms in suicide deaths is twice the proportion of female suicide deaths, it is crucial to study the relationships of masculinity, firearms, and suicide. Outside the United States, this may translate to study of the role of TM in a male preference for violent, lethal means such as hanging.

This study has strengths and limitations to consider in interpreting the results. In addition to limitations already noted, the sample is large and captures some ethnic diversity and variation in sexual orientation, but it is collected from one university, limiting geographical representativeness. The sample is composed solely of college students. There was strong response, and adequate retention of participants at the second data collection (less so among male participants). Well-validated measures were used, but since this was a secondary analysis, the measure of gender role orientation had to be adapted to fit the current study's theoretical framework. In addition, several of the measures only approximated the intended constructs: the survey included a measure of substance use rather than abuse or dependence; the item on parental violence fell short of measures of childhood physical abuse; finally, the child sexual abuse questions omitted a specific age difference between the respondent and the perpetrator. While not ideal, these measures likely capture the majority of the variance that would be expected of more full and specific measures.

It is a reality of prevention and intervention that practice cannot wait for suicide etiology to be fully understood: ideally, prevention and intervention strategies are continuously designed, implemented and updated, based on the best current knowledge. In this spirit, a number of prevention strategies have targeted men. To date there is little effectiveness or efficacy evidence for any of these interventions. Pitman, Krysinska, Osborn, and King (2012) provided a summary of nine male specific interventions from the UK, Australia, and the US, including efforts targeting construction workers in Australia, and UK efforts utilizing sports stars in media campaigns. Like with the United States military's "strength of a warrior" campaign (www.realwarriors.net), many of these primarily male-targeted interventions seek to work within traditional masculinity norms to make help seeking more acceptable. The majority of these interventions target suicidal behavior along with related risk factors of mental health and substance abuse.

As noted previously, there is a convergence of masculinity, guns, and suicide. Prevention of suicide must include discussion of gun control. Reviewing efforts at gun control around the world, Yip and colleagues (2012) reviewed research on means restriction, including gun control, and concluded that when there is a widely used, easily accessible method of suicide death, means restriction is effective in reducing suicide deaths. While comprehensive gun control has been elusive in the United States, even in the wake of repeat mass shootings, continued attention in suicide prevention to means restriction is a high priority. In the absence of universal reductions in the availability of guns, more small scale efforts are worthwhile such as mandatory weapons storage training with gun licensing, or recent efforts to educate gun store employees on indicators that a potential gun buyer is suicidal (Hemenway,

2013). Given the salience of traditional masculinity to both guns and suicide, these means restriction efforts should be informed by an understanding of gender and gender role orientation.

In suicide prevention, there has been renewed attention to upstream or primary prevention (Embry, 2011; Ritchie, Rodgers, & Embry, 2012). Upstream prevention aims for interventions early in life that influence a broad range of health, mental health, and social outcomes, including suicidality, over the lifespan. Given the sample sizes needed and longitudinal follow-up, there is little current evidence. The Good Behavior Game, an early school age classroom intervention targeting positive social interactions, showed reductions in suicidal ideation and attempts in young adulthood (Wilcox, Kellam, Brown et al., 2008). This and other preventive strategies have shown effects on later life mood and substance abuse, among other outcomes (Biglan, Flay, Embry et al., 2012). Given the highly gendered nature of suicidal behavior, consideration to gender dynamics in the design of upstream prevention is warranted.

While women are more likely to receive treatment for mental health problems (Wang, Lane, Olfson et al., 2005), the most prevalent and well-studied psychotherapies (Cognitive Behavioral and Interpersonal Therapy) appear to work equally well to reduce mental health symptoms for both men and women (Parker, Blanch, & Crawford, 2011). An area for possible development is therapies that target maladaptive attitudes related to traditional masculinity. In a preliminary study with relevance to masculinity, O'Riley and Fiske (2012) found that individuals higher on some dimensions of autonomy had higher suicidality. The authors speculated that therapies that increase flexibility of coping and cognitive style such as Acceptance and Commitment Therapy might have promise. It is important to explore the development of interventions, but only in concert with attention to the challenge of getting men at risk, especially high TM men, to seek and accept some form of treatment.

The results of this study are promising that TM may be an important risk factor driving male suicide and have a role in female suicidal behavior. These preliminary findings warrant further investigation with outcomes of both suicide death and non-fatal suicidal behavior. In the meantime, pilot prevention and treatment efforts should include evaluation designs to provide evidence of effectiveness.

AUTHOR NOTE

Daniel Coleman, Graduate School of Social Service, Fordham University, New York, New York, USA.

Correspondence regarding this article should be directed to Daniel Coleman, Graduate School of Social Service, Fordham University, 113 West 60th Street, 7th Floor, New York, NY 10023. E-mail: dcoleman11@fordham.edu

REFERENCES

Andover, M. S., Primack, J. M., Gibb, B. E., & Pepper, C. M. (2010). An examination of non-suicidal self-injury in men: Do men differ from women in basic NSSI characteristics? *Archives of Suicide Research*, *14*, 79–88.

Bagge, C., & Osman, A. (1998). The suicide probability scale: Norms and factor structure. *Psychological Reports*, *83*, 637–638.

Baumeister, Roy F. (1990). Suicide as escape from self. *Psychological Review*, *97*, 90–113.

Beck, A. T., Brown, G. K., & Steer, R. A. (1997). Psychometric characteristics of the Scale for Suicide Ideation with psychiatric outpatients. *Behaviour Research and Therapy*, *35*, 1039–1046.

Biglan, A., Flay, B. R., Embry, D. D., & Sandler, I. N. (2012). The critical role of nurturing environments for promoting human well-being. *The American Psychologist*, *67*, 257–271.

Blazina, C., & Watkins Jr., C. E. (1996). Masculine gender role conflict: Effects on college men's

psychological well-being, chemical substance usage, and attitudes towards help-seeking. *Journal of Counseling Psychology*, *43*, 461.

Borges, G., Angst, J., Nock, M. K., Ruscio, A. M., & Kessler, R. C. (2008). Risk factors for the incidence and persistence of suicide-related outcomes: A 10-year follow-up study using the National Comorbidity Surveys. *Journal of Affective Disorders*, *105*, 25–33.

Canetto, S. S. (1997). Meanings of gender and suicidal behavior during adolescence. *Suicide & Life-Threatening Behavior*, *27*, 339–351.

Canetto, S. S. (2008). Women and suicidal behavior: A cultural analysis. *American Journal of Orthopsychiatry*, *78*, 259–266.

CDC. (2011). *Fatal injury reports*. Retrieved October 10, 2011, from http://www.cdc.gov/ncipc/wisqars/

Cochran, S. D., & Mays, V. M. (2011). Sexual orientation and mortality among U.S. men aged 17 to 59 tears: Results from the National Health and Nutrition Examination Survey III. *American Journal of Public Health*, *101*, 1133–1138.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*, 310–357.

Coleman, D., Kaplan, M., & Casey, J. (2011). The social nature of male suicide: A new analytic model. *International Journal of Men's Health*, *10*, 240–252.

Eliason, M., & Storrie, D. (2009). Does job loss shorten life? *Journal of Human Resources*, *44*, 277–302.

Embry, D. D. (2011). Behavioral vaccines and evidence-based kernels: Nonpharmaceutical approaches for the prevention of mental, emotional, and behavioral disorders. *The Psychiatric Clinics of North America*, *34*, 1–34.

Finkelhor, D. (1979). *Sexually victimized children*. New York, NY: Free Press.

Finkelhor, D., Turner, H., Ormrod, R., & Hamby, S. L. (2009). Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics*, *124*, 1411–1423.

Garlow, S. J., Rosenberg, J., Moore, J. D., Haas, A. P., Koestner, B., Hendin, H., & Nemeroff, C. B. (2008). Depression, desperation, and suicidal ideation in college students: Results from the American Foundation for Suicide Prevention College Screening Project at Emory University. *Depression and Anxiety*, *25*, 482–488.

Harris, E. C., & Barraclough, B. (1997). Suicide as an outcome for mental disorders. A meta-analysis. *The British Journal of Psychiatry*, *170*, 205.

Helmreich, R. L., Spence, J. T., & Wilhelm, J. A. (1981). A psychometric analysis of the Personal Attributes Questionnaire. *Sex Roles*, *7*, 1097–1108.

Hemenway, D. (2013). Preventing gun violence by changing social norms. *JAMA Internal Medicine*, 1–2.

Hempstead, K., Nguyen, T., David-Rus, R., & Jacquemin, B. (2013). Health problems and male firearm suicide. *Suicide and Life-Threatening Behavior*, *43*, 1–16.

Humphrey, J. A., & White, J. (2000). Women's vulnerability to sexual assault from adolescence to young adulthood. *Journal of Adolescent Health*, *27*, 419–424.

Hunt, K., Sweeting, H., Keoghan, M., & Platt, S. (2006). Sex, gender role orientation, gender role attitudes and suicidal thoughts in three generations. *Social Psychiatry and Psychiatric Epidemiology*, *41*, 641–647.

Ilgen, M. A., Bohnert, A. S. B., Ignacio, R. V., McCarthy, J. F., Valenstein, M. M., Kim, H. M., & Blow, F. C. (2010). Psychiatric diagnoses and risk of suicide in veterans. *Archives of General Psychiatry*, *67*, 1152–1158.

Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard.

Kaplan, M. S., McFarland, B. H., & Huguet, N. (2009). Characteristics of adult male and female firearm suicide decedents: Findings from the National Violent Death Reporting System. *Injury Prevention*, *15*, 322–327. doi: 10.1136/ip.2008.021162

Karch, D. L., Logan, J., & Patel, N. (2011). Surveillance for violent deaths—National Violent Death Reporting System, 16 states, 2008. *CDC MMWR Surveillence Summary*, *60*, 1–50.

Kimmel, S. B., & Mahalik, J. R. (2005). Body image concerns of gay men: The roles of minority stress and conformity to masculine norms. *Journal of Consulting and Clinical Psychology*, *73*, 1185.

Levant, R. F., Rankin, T. J., Williams, C. M., Hasan, N. T., & Smalley, K. B. (2010). Evaluation of the factor structure and construct validity of scores on the Male Role Norms Inventory—Revised (MRNI-R). *Psychology of Men and Masculinity*, *11*, 25–37.

Lippa, R. A. (2010). Gender differences in personality and interests: When, where, and why? *Social and Personality Psychology Compass*, *4*, 1098–1110.

Mahalik, J. R., Locke, B. D., Ludlow, L. H., Diemer, M. A., Scott, R. P. J., Gottfried, M., & Freitas, G. (2003). Development of the Conformity to Masculine Norms Inventory. *Psychology of Men & Masculinity*, *4*, 3–25.

Mansdotter, A., Lundin, A., Falkstedt, D., & Hemmingsson, T. (2009). The association between masculinity rank and mortality patterns: A prospective study based on the Swedish 1969 conscript cohort. *Journal of Epidemiology and Community Health*, *63*, 408–413.

Marusic, I., & Bratko, D. (1998). Relations of masculinity and femininity with personality dimensions of the five-factor model. *Sex Roles*, *38*, 29–44.

Moscicki, E. K. (1997). Identification of suicide risk factors using epidemiologic studies. *Psychiatric Clinics of North America*, *20*(3), 499–517.

Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. *Clinical Psychology Review*, *30*, 1019–1029.

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., & Gluzman, S. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *The British Journal of Psychiatry*, *192*, 98–105.

Oliffe, J. L., Ogrodniczuk, J. S., Bottorff, J. L., Johnson, J. L., & Hoyak, K. (2012). "You feel like you can't live anymore": Suicide from the perspectives of Canadian men who experience depression. *Social Science & Medicine*, *74*, 506–514.

O'Riley, A. A., & Fiske, A. (2012). Emphasis on autonomy and propensity for suicidal behavior in younger and older adults. *Suicide & Life-Threatening Behavior*, *42*, 394–404.

Parker, G., Blanch, B., & Crawford, J. (2011). Does gender influence response to differing psychotherapies by those with unipolar depression? *Journal of Affective Disorders*, *130*, 17–20.

Paul, J. P., Catania, J., Pollack, L., Moskowitz, J., Canchola, J., Mills, T., & Stall, R. (2002). Suicide attempts among gay and bisexual men: Lifetime prevalence and antecedents. *American Journal of Public Health*, *92*, 1338–1345. doi: 10.2105/ajph.92.8.1338

Pereda, N., Guilera, G., Forns, M., & Gomez-Benito, J. (2009). The prevalence of child sexual abuse in community and student samples: A meta-analysis. *Clinical Psychology Review*, *29*, 328–338.

Pitman, A., Krysinska, K., Osborn, D., & King, M. (2012). Suicide in young men. *The Lancet*, *379*, 2383–2392.

Pleck, J. H., Sonenstein, F. L., & Ku, L. C. (1993). Masculinity ideology and its correlates. In B. Clinchy & J. Norem (Eds.), *Gender and psychology reader* (pp. 308–326). New York NY: New York University Press.

Pollack, W. S. (2006). The "war" *for boys: Hearing "real boys'" voices, healing their pain. Professional Research and Practice*, *37*, 190–195.

Ritchie, G., Rodgers, P., & Embry, D. (2012). *Expanding suicide prevention to include upstream approaches*. Retrieved October 30, 2012, from http://www.sprc.org/training-institute/r2p-webinars/expanding-suicide-prevention-include-upstream-approaches

Roy, A., & Janal, M. (2005). Family history of suicide, female sex, and childhood trauma: Separate or interacting risk factors for attempts at suicide? *Acta Psychiatrica Scandinavica*, *112*, 367–371.

Runge, T. E., Frey, D., Gollwitzer, P. M., Helmreich, R. L., & Spence, J. T. (1981). Masculine (instrumental) and feminine (expressive) traits. *Journal of Cross-Cultural Psychology*, *12*, 142–162.

Safren, S. A., & Heimberg, R. G. (1999). Depression, hopelessness, suicidality, and related factors in sexual minority and heterosexual adolescents. *Journal of Consulting & Clinical Psychology*, *67*, 859–866.

Siegling, A. B., Saklofske, D. H., Vesely, A. K., & Nordstokke, D. W. (2012). Relations of emotional intelligence with gender-linked personality: Implications for a refinement of EI constructs. *Personality and Individual Differences*, *52*, 776–781.

Smith, P. N. (2010). The acquired capability for suicide: A mechanism underlying the gender disparity in suicide rates. Young Investigator Research Grant. Retrieved from http://www.afsp.org

Värnik, A., Kõlves, K., van der Feltz-Cornelis, C. M., Marusic, A., Oskarsson, H., Palmer, A., & Giupponi, G. (2008). Suicide methods in Europe: A gender-specific analysis of countries participating in the "European Alliance Against Depression." *Journal of Epidemiology and Community Health*, *62*, 545–551.

Veit, C. T., & Ware, J. E. (1983). The structure of psychological distress and well-being in general populations. *Journal of Consulting and Clinical Psychology*, *51*, 730–742.

Vogel, D. L., Heimerdinger-Edwards, S. R., Hammer, J. H., & Hubbard, A. (2011). "Boys don't cry": Examination of the links between endorsement of masculine norms, self-stigma, and help-seeking attitudes for men from diverse

backgrounds. *Journal of Counseling Psychology*, *58*, 368–382.

Wang, P., Lane, M., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Twelve-month use of mental health services in the united states: Results from the national comorbidity survey replication. *Archives of General Psychiatry*, *62*, 629–640.

Ward, L. C., Thorn, B., Clements, K., Dixon, K., & Sanford, S. (2006). Measurement of agency, communion, and emotional vulnerability with the Personal Attributes Questionnaire. *Journal of Personality Assessment*, *86*, 206–216.

White, J., & Smith, P. H. (2009). Covariation in the use of physical and sexual intimate partner aggression among adolescent and college-age men A longitudinal analysis. *Violence Against Women*, *15*, 24–43.

White, J., Smith, P. H., & Humphrey, J. A. (2001). *Longitudinal study of violence against women: Victimization and perpetration among college students in a state-supported university in the United States, 1990–1995. [Data Files and Codebooks] ICPSR 03212-v1*.: Inter-university Consortium for Political and Social Research.

WHO. (2003). Suicide rates (per 100,000), by country, year, and gender. Retrieved from http://www.who.int/mental_health/prevention/suicide/suiciderates/en/

Wilcox, H. C., Arria, A. M., Caldeira, K. M., Vincent, K. B., Pinchevsky, G. M., & O'Grady, K. E. (2010). Prevalence and predictors of persistent suicide ideation, plans, and attempts during college. *Journal of Affective Disorders*, *127*, 287–294.

Wilcox, H. C., Kellam, S. G., Brown, C. H., Poduska, J. M., Ialongo, N. S., Wang, W., & Anthony, J. C. (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence*, *95*. S60–73.

Wilcox, H. C., Storr, C. L., & Breslau, N. (2009). Posttraumatic stress disorder and suicide attempts in a community sample of urban American young adults. *Archives of General Psychiatry*, *66*, 305–311.

Ying, Y., & Chang, K. (2009). A study of suicide and socioeconomic factors. *Suicide and Life-Threatening Behavior*, *39*, 214–226.

Yip, P. S., Caine, E., Yousuf, S., Chang, S., Wu, K. C., & Chen, Y. (2012). Means restriction for suicide prevention. *The Lancet*, *379*, 2393–2399.