Personality and Social Psychology Bulletin
37(12) 1611–1623

DOI: 10.1177/0146167211418529
http://pspb.sagepub.com

Culture of Honor and Violence Against the Self

Lindsey L. Osterman[1] and Ryan P. Brown[1]

Abstract

Cultures of honor facilitate certain forms of interpersonal violence. The authors suggest that these cultures might also promote values and expectations that could heighten suicide risk, such as strict gender-role standards and hypersensitivity to reputational threats, which could lead people living in such cultures to consider death as an option when failure occurs or reputation is threatened sufficiently. Study 1 shows that, controlling for a host of statewide covariates, honor states in the United States have significantly higher male and female suicide rates than do nonhonor states, particularly in nonmetropolitan areas among Whites. Study 2 shows that statewide levels of antidepressant prescriptions (an indicator of mental health resource utilization) are *lower* in honor states, whereas levels of major depression are *higher*, and statewide levels of depression are associated with suicide rates only among honor states. Finally, Study 3 shows that individual endorsement of honor ideology is positively associated with depression.

Keywords

honor, culture, suicide, depression, mental health

Received October 4, 2010; revision accepted May 22, 2011

In October 1944, Japan was rapidly losing its ability to wage war against the Allied forces. Rather than surrendering, however, Japan began to employ kamikaze tactics, or suicide bombings, against Allied ships. Thus, instead of firing torpedoes at enemy units, kamikaze pilots used their own planes as manned missiles by flying directly into Allied ships, which did extensive damage to their opponents but also killed the pilots in the process. These bombings demonstrate the high premium placed on honor in the Japanese culture: When faced with the option of surrendering in shame, or dying and taking enemy vessels down with them, Japanese troops preferred to die in the service of their country. The behavior of kamikaze pilots might seem to be an extreme manifestation of honor values, and it was almost certainly driven by a unique constellation of sociohistorical factors, but some research suggests that cultures of honor in many areas of the world, including the U.S. South and West, promote equally extreme forms of retaliatory violence (e.g., Brown, Osterman, & Barnes, 2009; Cohen, 1998; Lee, Bankston, Hayes, & Thomas, 2007).

Counterintuitively, perhaps, cultures that place a high premium on personal honor might foster not only *interpersonal* violence but also *intrapersonal* violence—specifically, suicide—although to date, evidence to this effect has been anecdotal rather than empirical. For example, "honor suicides" (i.e., suicides in the face of defeat or capture) were apparently common in Greek and Roman civilizations (Dublin, 1963). As another example, Japanese warriors who brought shame to their family name voluntarily committed a ritualized form of suicide known as seppuku to restore their honor (Iga & Tatai, 1975). Similarly, suicide in China was historically sanctioned following dishonor, insolvency, or defeat in battle (Iga & Tatai, 1975). To cite a current example, it is not uncommon in Middle Eastern countries (e.g., Jordan, Turkey) for female rape victims to commit suicide to ameliorate the shame that the rape brings on their families (see Aliverdinia & Pridemore, 2009; Peraino, 2007), although such suicides are not always completely voluntary. Thus, in many cultures, suicide has been (and in some cases still is) viewed as an appropriate response to sufficiently damaged honor, and even as a way of *restoring* personal and familial honor.

These historical examples, although anecdotal, lead us to question whether honor cultures might create a unique constellation of circumstances that increases the frequency of suicide. In the current investigation, we attempt to articulate a theoretical rationale linking suicide with honor-based norms and values, and to provide preliminary evidence that such a relationship does exist.

[1]University of Oklahoma, Norman, OK, USA

Corresponding Author:
Ryan P. Brown, University of Oklahoma, 455 W. Lindsey Street, Dale Hall Tower, Room 705, Norman, OK 73019-2007
Email: rpbrown@.ou.edu

The Culture of Honor: Definition and Background

According to Nisbett and Cohen (1996), cultures of honor place a unique emphasis on upholding and defending the reputation and person of oneself and one's family. In particular, it is of the utmost importance for men in cultures of honor to maintain reputations for being competent providers and strong protectors. Perhaps because of this emphasis on strong reputations, men in honor cultures perceive interpersonal threats more readily than do men in other cultures (Cohen, Nisbett, Bowdle, & Schwarz, 1996). Furthermore, they are obliged to respond to such threats vigorously, even violently, which can be both dangerous and difficult (i.e., it can and often does involve physical retaliation). Proper retaliation appears to be requisite for maintaining one's reputation as well as one's personal sense of masculinity (Bosson, Vandello, Burnaford, Weaver, & Wasti, 2009; Vandello, Bosson, Cohen, Burnaford, & Weaver, 2008; Weaver, Vandello, Bosson, & Burnaford, 2010). In other words, a man's sense that he is a "real man" (and also his *reputation* for being such) depends on his ability to successfully defend himself, his name, and his family against any and every threat.

The Culture of Honor and Psychological Well-Being

Because men in cultures of honor more often feel that they are under threat, and because defense against threat is both difficult and necessary, the psychological well-being of men in cultures of honor might be particularly tenuous. Specifically, failure in any particular instance to confirm oneself as a strong and fearless provider and defender can undermine both a man's private sense of self-worth (e.g., Bosson et al., 2009) and, just as importantly, his public reputation (Cohen & Vandello, 2001; Nisbett & Cohen, 1996). For this reason, culture-of-honor men could be more likely to experience psychological distress (e.g., anxiety, depression) as a result of honor-related failures. To make matters worse, they could also be less likely to solicit help in dealing with their distress, as doing so might further threaten their public reputation by highlighting their "neediness" and by drawing attention to their failures.

The combination of this heightened vigilance for and sensitivity to threat, the enhanced levels of distress in reaction to failure, and the feeling that one is unable to seek help to alleviate this distress could be disastrous. Interpersonally, the result of this combination seems to be higher rates of certain forms of interpersonal violence among men, such as argument-related aggression and homicide (Cohen, 1998; Lee et al., 2007) and school violence (Brown et al., 2009). *Intra*personally, we argue, the result could be quite comparable: The readiness to perceive threats and respond to them in an "honorable" fashion might facilitate violence against the self, just as it does for violence against others. Men in honor cultures might thus regard suicide as a reasonable recourse in response to lost honor.

Suicidality in the Culture of Honor

A recent interpersonal model of suicide posits that the most deadly form of suicidality is brought about by feeling socially isolated, burdensome to loved ones (particularly family), and inoculated to pain (Joiner, 2005). We hypothesize that cultures of honor can create a unique vulnerability for their inhabitants to experience these components of suicidality. Specifically, burdensomeness and isolation might be facilitated by the combination of hypervigilance to threat, strict gender-role expectations for successful responses to those threats (and the high costs for failing to fulfill those requirements), and reluctance to seek help for their failure-related distress. To illustrate, let us suppose that a husband and wife are mugged, and in the process, both sustain serious injuries. In a culture of honor, the husband is particularly likely to feel as though his wife's injury is a personal failing on his part. It might even prompt the idea that he is more of a burden to her and their family than a valued protector (especially if his own injuries suggest some kind of long-term debilitation). Furthermore, he is unlikely to seek help for any resultant distress he might feel, and this could in turn foster a sense of isolation by creating a wall between him and those close to him. These feelings of burdensomeness and isolation might increase the wish to die as a means of escape (Baumeister, 1990).

However, the desire to die is not sufficient to produce suicide. One must also have the ability to act on this inclination, which requires a certain amount of inoculation to pain (Joiner, 2005). Unfortunately, members of honor cultures are likely to experience just such an inoculation. They are, on average, more likely to be involved in physical altercations and argument-related homicides, to participate in aggressive or violent hobbies, to consume violent media, and to endorse and legalize certain forms of retaliatory aggression and violence (Cohen, 1998). Lab studies indicate that culture-of-honor males also exhibit more physiological stress (higher cortisol levels) and readiness for aggression (higher testosterone levels), as well as more actual aggression, in the face of honor threats (Cohen et al., 1996). Increased exposures to violence and aggression might thus contribute to physical and psychological inoculation against the natural aversiveness of self-harm (Joiner, 2005). Furthermore, the cultural endorsement of violence also increases access to guns (Nisbett & Cohen, 1996), which are the most preferred devices among males who commit suicide in the United States (Denning, Convell, King, & Cox, 2000; Kaplan & Geling, 1998). Finally, the act of suicide itself might, ironically, seem to serve as a form of social proof of a person's strength and fearlessness, if people reason that it takes courage to face and embrace one's own death.

Women in Cultures of Honor

Until now, we have focused on the unique suicide risks that the culture of honor might create for males, and this is not accidental. Cultures of honor have much to say about what constitutes the roles and responsibilities of a "real man" (Cohen & Vandello, 2001; Nisbett & Cohen, 1996), and this has been the primary focus of most culture-of-honor research. However, the culture of honor might increase female suicidality as well. First, women in cultures of honor also experience increased exposure to violence (though perhaps less than men), leading both to a potentially diminished aversion to self-harm and increased access to guns. Second, women are, like men, concerned with fulfilling culturally prescribed gender roles and protecting their personal and familial reputations. The expectations are different for women than for men, however, as women are expected to conform to the socially prescribed role of a "good" or "virtuous" woman, namely, being sexually chaste and loyal. Failure to do so harms not only their private sense of self-worth and their own reputation, but also the reputations of their family members, particularly their husbands (Vandello & Cohen, 2003; Vandello, Cohen, Grandon, & Franiuk, 2009). Recall, for example, the suicides of rape victims in some Middle Eastern countries, which presumably occur to restore familial honor, and perhaps also because the personal shame that typically accrues to rape victims may be seen as irreversible. Furthermore, as with men, women living in cultures of honor might feel unable to discuss or seek help for any distress caused by their failures to live up to the standards of virtue imposed by their culture. Seeking help could not only draw attention to the source of their shame but also imply that their family members were impotent to help them, thus heaping additional indirect dishonor on their families.

Hypotheses and Goals

In the current investigation, we hypothesize that the culture of honor can create heightened vulnerabilities for suicide. Vigilance for and sensitivity to reputational threats, combined with the exacting nature of social standards for being "real men" and "virtuous women" in cultures of honor, could enhance both the frequency and intensity of feelings of distress, whereas fear of reputational damage could create self-imposed barriers to discussing this distress with others and seeking professional help. These factors, in combination with greater inoculation to violence and pain and greater access to guns, might very well put people in cultures of honor at higher risk for suicide.

We have outlined the aspects of the culture of honor that we believe contribute to an enhanced risk for suicide. However, our goal in the current studies is not to test these mechanisms directly. Rather, we are making a first attempt to establish that an enhanced risk does exist and that it is not explained by other environmental variables that might also characterize culture-of-honor regions (e.g., economic deprivation, poor access to medical care). In Study 1, we examine whether a state's culture-of-honor status is related to its suicide rate, and whether this association is stronger in nonmetropolitan than in metropolitan areas. We propose the latter with the thought that in smaller communities, the behaviors and reputations of residents might be more widely known, and thus that honor-related concerns might be more salient there than in metropolitan areas. The same line of reasoning has previously been applied in culture-of-honor research on homicide by Nisbett and Cohen (1996), as well as on risk taking by Barnes, Brown, and Tamborski (in press). We also examine in Study 1 whether the association between suicide and culture-of-honor status is stronger among White than among Black residents. This possibility of racial differences is consistent with previous theory on the historical roots of the culture of honor in the United States among Scotch-Irish immigrants during the 18th century (for a detailed discussion, see Fischer, 1989) and with empirical evidence on interpersonal violence showing that *regional differences* in homicide rates connected with the culture of honor occur primarily among Whites (e.g., Nisbett & Cohen, 1996).

In Study 2, we attempt to extend the findings of Study 1 by examining whether statewide levels of major depression (as one indicator of psychological distress) might be higher in honor states, whereas levels of mental health resource utilization might be lower (as a result of the sociocultural barriers to help seeking discussed previously). In addition, we examine whether the *association* between depression and suicide might be stronger among honor states, which might be true if barriers to seeking help for distress are indeed greater for people living in culture-of-honor regions. Finally, in Study 3, we attempt to conceptually replicate these state-level findings with individual-level data by examining whether personal endorsement of honor-related beliefs and values predicts depression.

Study 1

In Study 1, we obtained total statewide suicide rates, as well as separate suicide rates for metropolitan or nonmetropolitan areas, for 1999 through 2007, along with statewide covariates for those same years (or as close to these as possible) to evaluate the hypotheses that (a) a state's culture-of-honor status is uniquely related to its suicide rate even when we control for other statewide variables, (b) this relationship is strongest in nonmetropolitan areas, and (c) these associations are stronger among Whites than Blacks, consistent with previous findings related to interpersonal violence.

Method

Culture of honor. For state culture-of-honor (CH) status, we coded states using Cohen's (1998) dichotomous designation, which categorizes western and southern states

(Census Regions 5–9) as CH states, with the exception of Hawaii and Alaska, which, along with all remaining states, are coded as non-CH states.

Temperature, collectivism and guns. We obtained mean state temperature data from the National Oceanic and Atmospheric Administration (2000). After examining the data, we discovered an outlier (Alaska) that was creating strong negative skew for this variable, and thus Winsorized this point (bringing it in from 25 degrees Fahrenheit to the next lowest temperature, 40.4 degrees). We obtained data on collectivism, which was assessed with Vandello and Cohen's (1999) statewide collectivism index, because it is likely to be regionally confounded with culture of honor and might affect suicidality through people's sense of social connectedness. We also obtained a measure of self-reported gun ownership via the Behavioral Risk Factor Surveillance System Survey (Centers for Disease Control and Prevention [CDC], 2001) because access to firearms is likely higher in CH areas (see Cohen, 1996) and is a likely contributor to suicide rates.

Economic variables and medical access. From the U.S. Census Bureau, we obtained poverty rates (U.S. Census Bureau, 2001b, 2006), unemployment rates (U.S. Bureau of Labor Statistics, 2005a, 2005b), median state income (U.S. Census Bureau, 2008), and the percentage of the state population that had obtained at least a high school diploma for 2000 (U.S. Census Bureau, 2001a) and 2004 (Cataldi, Laird, & Kewal, 2009). As an index of economic deprivation, we standardized poverty, unemployment rates, median income (reverse coded), and educational attainment (reverse coded), computed a mean of the four variables for each state for both 2000 and 2004, and then created a composite index by computing the mean across these 2 years. We also estimated access to medical care, which might be poorer in honor states and thus affect the likelihood of surviving a suicide attempt, thereby affecting suicide death rates. To assess this, we obtained data on the proportion of the state population living in areas designated by the Health Resources and Services Administration (HRSA) as a primary health professional shortage area (HPSA) for the years 2000 through 2004 (HRSA, 2005) and computed the mean proportion living in HPSAs across these years.

Suicide rates. We obtained state (metropolitan only, nonmetropolitan only, and total) age-adjusted suicide rates (per 100,000 residents) for 1999 through 2007 from the online resources maintained by the U.S. CDC (2010).[1] We collected rates separately for Black and White (non-Hispanic, in both cases) males and females. As noted already, prior research on the culture of honor in the United States has documented the distinct associations between regional CH status and interpersonal violence among White versus Black males (Nisbett & Cohen, 1996). Based on such previous findings, we assumed that similar unique associations might occur with respect to violence against the self. We thus examined the suicide rates of White males and females separately from those of Black males and females in CH and non-CH states.

Table 1. Study 1: Multiple Regression Analyses of Age-Adjusted Statewide Rates of Suicide per 100,000 (1999–2007)

	White		Black	
Predictor	β weight	*t* test	β weight	*t* test
Males				
Culture of honor	.59***	4.93	.46**	2.86
Mean temperature	.01	0.05	–.30	–1.30
Gun ownership	.37*	2.59	–.10	–0.54
Collectivism	–.10	–0.68	–.20	–1.01
Economic deprivation	–.12	–0.94	.17	0.95
HPSAs	.08	0.57	.19	0.33
Females				
Culture of honor	.60***	4.25	.22	1.18
Mean temperature	.22	1.06	–.24	–0.91
Gun ownership	.10	0.61	–.04	–0.16
Collectivism	–.03	–0.17	–.09	–0.41
Economic deprivation	–.21	–1.36	.15	0.71
HPSAs	.06	0.36	–.19	–0.83

HPSA = health professional shortage area. Male: R^2 White = .62, Black = .33; Female R^2: White = .47, Black = .09.
*$p \le .05$. **$p \le .01$. ***$p \le .001$.

Results

Male suicide rates: Total state rates. Age-adjusted White male suicide rates from 1999 to 2007 were higher in CH states ($M = 25.86$, $SD = 4.41$) than non-CH states ($M = 18.75$, $SD = 3.82$), $F(1, 48) = 36.47$, $p < .001$, $d = 1.74$. To determine whether the association with CH would be diminished by controlling for potential statewide confounds, we regressed male suicide rates onto CH status and all control variables: temperature, economic deprivation, collectivism, gun ownership, and medical access. The model was significant ($R^2 = .56$), and even controlling for the aforementioned covariates, suicide rates were higher in CH states ($M = 25.53$, $SE = 0.79$) than in non-CH states ($M = 19.15$, $SE = 0.87$), $F(1, 43) = 23.81$, $p < .001$, $d = 1.49$. Gun ownership was the only covariate to uniquely predict suicide (see Table 1).

Although the effect was not as strong as it was for Whites, contrary to our hypotheses, Black male suicide rates were also higher in CH states ($M = 11.86$, $SD = 3.42$) than in non-CH states ($M = 9.08$, $SD = 2.94$), $F(1, 48) = 9.31$, $p < .01$, $d = 0.88$, even when all covariates were included ($R^2 = .23$), with CH states ($M = 12.02$, $SE = 0.67$) still greater than non-CH states ($M = 8.90$, $SE = 0.74$), $F(1, 43) = 7.99$, $p < .01$, $d = 0.86$. None of the covariates was uniquely related to Black male suicides (see Table 1).

Male suicide rates: Metro versus nonmetro rates. In nonmetropolitan areas, White male suicide rates were significantly higher in CH states ($M = 36.91$, $SD = 6.27$) than in non-CH states ($M = 26.26$, $SD = 4.28$), $F(1, 48) = 44.40$, $p < .001$, $d = 1.92$. The association with CH status was similar but slightly weaker in metropolitan areas, with White male suicides higher in CH ($M = 31.62$, $SD = 5.49$) than in non-CH states ($M = 22.92$, $SD = 4.67$), $F(1, 48) = 35.64$, $p < .001$, $d = 1.72$.

A between-within ANCOVA (between: CH vs. non-CH; within: metro vs. nonmetro) including all covariates revealed main effects of both CH status, $F(1, 41) = 29.72$, $p < .001$, $d = 1.70$, and city size, $F(1, 41) = 82.80$, $p < .001$, $d = 2.84$, as well as an interaction, $F(1, 41) = 16.13$, $p < .001$, $d = 1.25$, indicating that the difference between suicide rates in CH and non-CH states was significantly larger in nonmetro than in metro areas.

In contrast, nonmetropolitan Black male suicide rates were not significantly different between CH and non-CH states, $F(1, 48) = 2.13$, $p > .10$, $d = 0.42$. This difference was reduced further when we controlled for statewide covariates, $F(1, 43) = 1.23$, $p > .20$, $d = 0.34$. In contrast, metropolitan Black male suicide rates were higher in CH states ($M = 15.33$, $SD = 6.32$) than in non-CH states ($M = 12.11$, $SD = 3.75$), $F(1, 48) = 4.59$, $p < .05$, $d = 0.62$. A between-within ANCOVA including all covariates revealed only a main effect of CH status, $F(1, 41) = 4.74$, $p < .05$, $d = 0.68$.

Thus, CH is a consistently significant predictor of nonmetropolitan and metropolitan rates of male suicide. Furthermore, as predicted, this association is strongest in nonmetropolitan areas and among White male residents, largely consistent with prior research on interpersonal violence (e.g., Nisbett & Cohen, 1996).

Female suicide rates: Total state rates. White female suicides from 1999 to 2007 were higher in CH ($M = 6.39$, $SD = 1.31$) than in non-CH states ($M = 4.29$, $SD = 1.08$), $F(1, 48) = 37.28$, $p < .001$, $d = 1.76$. When we regressed White female suicide rates on CH status and all controls, the model was significant ($R^2 = .38$), and female suicides remained higher in CH ($M = 6.31$, $SE = 0.27$) than in non-CH states ($M = 4.38$, $SE = 0.30$), $F(1, 43) = 17.95$, $p < .001$, $d = 1.29$. None of the covariates exhibited unique relationships with suicide (see Table 1). Black female suicide rates were not significantly different between CH and non-CH states, either without covariates, $F(1, 48) = 0.18$, $p > .60$, $d = 0.12$, or with covariates, $F(1, 43) = 1.38$, $p > .20$, $d = 0.36$. Thus, CH status is associated with female suicidality among White residents but not among Black residents (see Table 1).

Female suicide rates: Metro versus nonmetro rates. In nonmetropolitan areas, White female suicide rates were significantly higher in CH states ($M = 8.26$, $SD = 2.24$) than in non-CH states ($M = 4.99$, $SD = 0.89$), $F(1, 48) = 39.96$, $p < .001$, $d = 1.82$. The association with CH status was weaker but still present in metropolitan areas, with White female suicides higher in CH ($M = 8.04$ $SD = 1.59$) than in non-CH states ($M = 5.69$, $SD = 1.66$), $F(1, 48) = 25.89$, $p < .001$, $d = 1.47$. A between-within ANCOVA including all covariates showed a main effect of CH status, $F(1, 41) = 19.93$, $p < .001$, $d = 1.39$, and an interaction, $F(1, 41) = 16.00$, $p < .001$, $d = 1.25$, indicating that the difference in suicide rates between CH and non-CH states was larger in nonmetro than in metro areas.

Black female suicide rates were not significantly different between CH and non-CH states for either nonmetropolitan, $F(1, 48) = 1.49$, $p > .20$, $d = 0.35$, or metropolitan areas, $F(1, 48) = 0.11$, $p > .70$, $d = 0.10$. A between-within ANCOVA including all covariates revealed no significant main effects, and no interaction. Thus, as for men, both nonmetropolitan rates and metropolitan rates of female suicide are higher in CH than non-CH states. This association was particularly strong in nonmetropolitan areas, and it held only for White females.

Discussion

These results provide strong preliminary support for our hypotheses. First, suicide rates are elevated in CH areas, even controlling for a variety of variables that might be confounded with CH status. Second, the association between CH status and suicide rates is especially strong in nonmetropolitan areas, where certain CH dynamics—specifically those regarding reputational concerns—might be more salient because of a person's greater "visibility" in the smaller communities. In addition, this association could also be weaker in metropolitan areas because larger cities often attract more nonnatives than do smaller cities, meaning that the proportion of people who hold CH values in a city might be better predicted by statewide CH status in nonmetro than metro areas.

Furthermore, our results indicate that suicide risk in honor states is primarily elevated for White residents, and only inconsistently for Black residents. This demographic difference is consistent with previous research and theory suggesting that the Scotch-Irish historical roots of the U.S. culture of honor produce the largest regional differences among Whites (Nisbett & Cohen, 1996). This distinction does not mean that CH dynamics are not at work among non-Whites in the United States but merely that *region of residence* might not moderate honor-related outcomes among non-White groups. Indeed, Nisbett and Cohen (1996) have argued that life in poor urban areas is likely to lead to CH dynamics for reasons conceptually similar to those that originally created a culture of honor among the Scotch-Irish herders who immigrated to the southern and western U.S. during the 18th century—specifically, scarcity of resources and lack of reliable protection of one's interests by the state (Brown & Osterman, in press). To the extent that this is true, and to the extent that minority groups are disproportionately represented in poor urban areas, suicide rates among these groups might be influenced by honor-related forces across *all* states, whether in the North, the South, or the West.

Study 2

Using data from 2004 (or the closest year for which data were available) and 2005, we attempted to conceptually replicate and extend the results of Study 1. We tested three new hypotheses in Study 2: (a) that statewide levels of major depression (as an indicator of psychological distress) are higher in honor states than in nonhonor states,[2] (b) that these depression rates are more strongly related to suicide in honor states than in nonhonor states, possibly because of (c) a reluctance of residents in honor states to utilize professional

mental health resources when they experience psychological distress because of honor-based beliefs and values. We operationally defined mental health resource utilization tendencies using an indirect proxy, namely, the number of antidepressant prescriptions (ADPs) in each state per capita. ADPs make a reasonable proxy for resource utilization in light of the nature of our distress variable (depression rates). If residents of honor states are less prone to seek help for psychological distress, then ADPs ought to be lower in honor states, controlling for rates of depression, and this reticence to seek professional help might translate into stronger associations between depression levels and suicide in honor states compared to nonhonor states. Furthermore, if depression rates and ADPs interact in their associations with suicide, such that the highest suicide rates occur in states where depression levels are high and ADPs are low, then any one of the hypothesized links with CH status—depression levels, ADPs, or the association between depression and suicide—could potentially explain why CH status is a risk factor for suicide.

Method

Control variables and suicide rates were collected as before, but control variables were collected for 2004 only and suicide was collected for 2005 only, given that one of our outcome variables (depression rates) was collected only in 2004 and 2005. Thus, the proportion of the population in HPSA-designated areas for 2004 alone was used. Our economic variables—poverty (U.S. Census Bureau, 2006), unemployment (U.S. Bureau of Labor Statistics, 2005b), median income (U.S. Census Bureau, 2008), and education (Cataldi, Laird, & Kewal, 2009)—were collected for 2004, and once again were merged into a single index of economic deprivation. We used the same variables for temperature, gun access, and collectivism as in Study 1.

In addition to these variables, we obtained data from the National Survey on Drug Use and Health, conducted by the Substance Abuse and Mental Health Services Administration (2007), on the percentage of adults in each state who indicated on this survey (administered from 2004 to 2005) that in the past year they experienced at least five of nine primary symptoms of depression for at least a 2-week period, following the criteria in the fourth edition of the *Diagnostic and Statistical Manual for Mental Disorders* (American Psychiatric Association, 1994) for a major depressive episode. Because these statewide depression data do not include gender or race as modifiers, we collapsed suicide rates across these demographic categories and used total state suicide rates in our depression-related analyses. This caused us to lose the nuance of our previous analyses but also made the tests of our hypotheses more conservative. Finally, based on data reported by Mark, Shern, Bagalman, and Cao (2007),[3] we examined the number of ADPs per capita in each state from 2006 and 2007, which, as already noted, we used as a proxy measure of regional mental health resource utilization tendencies.

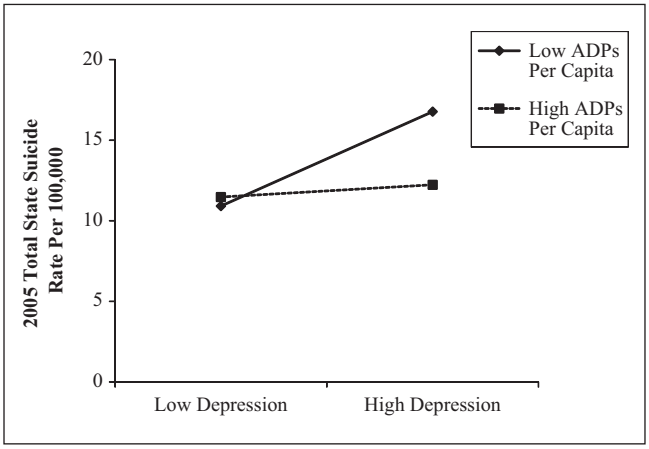

Figure 1. Total 2005 state suicide rates as a function of the percentage of adults who reported a major depressive episode in 2004–2005 and the number of antidepressants prescriptions (ADPs) per capita in each state

Results

Replication. To conceptually replicate Study 1, and for the sake of comparability with the depression analyses reported next, we first established that total state suicide rates (across all races and genders) are predicted by CH status. When the total 2005 suicide rate (across all social groups) was regressed onto CH and our controls, the model was significant ($R^2 = .64$). CH status, $\beta = .40$, $t(49) = 3.38$, $p < .01$, and gun ownership, $\beta = .46$, $t(49) = 3.45$, $p = .001$, were the only significant predictors of total state suicide rates.

Depression, resource utilization, and suicidality. Having shown that CH status is a significant predictor of aggregate suicide rates even collapsing across demographic groups, we next turned to an examination of the associations among suicide, depression rates, and mental health resource utilization (via ADPs). We regressed aggregate suicide rates on statewide depression levels, ADPs, and the interaction between depression and ADPs. This multiple regression analysis ($R^2 = .37$) revealed that depression rates were positively associated with suicide rates, $\beta = .47$, $t(49) = 3.93$, $p < .001$, whereas ADPs were negatively associated with suicide rates, $\beta = -.29$, $t(49) = -2.36$, $p < .05$. The depression × ADP interaction was also significant, $\beta = -.43$, $t(49) = -3.74$, $p = .001$, which we show in Figure 1 (plotted at +/– 1 *SD* from each variable mean). As this figure shows, depression rates were positively associated with suicide when ADPs were low, $\beta = .84$, $t(49) = 5.57$, $p < .001$. However, when ADPs were high, the positive association between depression and suicide virtually disappeared, $\beta = .11$, $t(49) = 0.68$, $p = .50$, consistent with the notion that where people are more likely to seek professional help for their depression, the influence of depression as a risk factor for suicide ought to be mitigated.

Table 2. Study 2: Multiple Regression Analyses of Suicides per 100,000 as a Function of Depression and Culture of Honor Status

Predictor	β weight	*t* test	*p* value	*d*
CH	.28	2.41	.02	0.75
Depression	.19	1.85	.07	0.58
CH × depression	.21	2.08	.04	0.65
Mean temperature	.07	0.43	.67	0.13
Gun ownership	.41	3.24	.00	1.01
Collectivism	–.21	–1.60	.12	–0.50
Economic deprivation	–.20	–1.63	.11	–0.51
HPSAs	.20	1.57	.12	0.49

CH = culture of honor; HPSA = health professional shortage area. R^2 = .70. CH status coded as –1 = *non-CH*, +1 = *CH*.

States in which depression rates are high and ADPs are low are most likely to exhibit high suicide rates. Thus, CH status *could* be associated with higher suicide rates because CH states have higher depression levels, because they have lower rates of ADPs, or because the association between depression and suicide is stronger in CH states than in non-CH states. To test these possibilities, we first examined whether CH status was related to depression rates in the presence of our statewide covariates. The model significantly predicted interstate depression rates (R^2 = .28), and depression was significantly higher in CH states (M = 8.34, SE = 0.18) than in non-CH states (M = 7.67, SE = 0.20), $F(1, 43) = 4.98$, $p < .05$, d = 0.68. In a second model, we examined whether ADPs were associated with CH status, controlling for all covariates and for baseline depression levels. The model significantly predicted interstate ADPs (R^2 = .34), and ADPs were indeed lower in CH states (M = 0.66 per 100,000 residents, SE = 0.04) than in non-CH states (M = 0.80 per 100,000 residents, SE = 0.04), $F(1, 42) = 4.93$, $p < .05$, d = 0.69. Thus, CH states were characterized by higher rates of major depression and lower levels of ADPs compared to non-CH states, the very combination that Figure 1 shows to be associated with the highest rates of suicide.

Finally, we regressed suicide rates onto CH status and our controls, along with depression rates and the interaction between depression and CH status. For this analysis, we effect coded CH status (CH states remained 1, non-CH states were coded as –1 rather than 0) to observe the main effect of CH status. The model was significant (R^2 = .70), and CH was a significant predictor, but depression was not (although it was marginal; see Table 2). However, the interaction between depression and CH status was also significant. The simple slope for depression in CH states was significant and positive, β = .40, $t(49) = 2.86$, $p < .01$, whereas the simple slope for depression in non-CH states was nonsignificant and negative, β = –.02, $t(49) = –0.16$, $p > .80$. Thus, depression levels and suicide rates are positively related across CH states but are not so across non-CH states (see Table 2 and Figure 2).

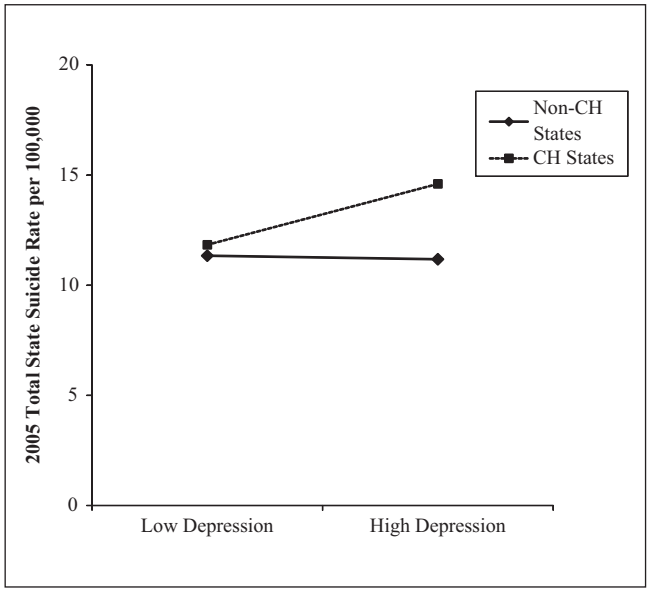

Figure 2. Total 2005 state suicide rates as a function of the percentage of adults who reported a major depressive episode in 2004–2005 in culture-of-honor and non-culture-of-honor states

Discussion

These results provide further support for our initial hypotheses. They also support our three additional hypotheses by showing not only that depression rates are higher in honor states than nonhonor states but also that depression is associated more strongly with suicide in honor than nonhonor states. Analyses of the interaction between depression and ADPs per capita (an indicator of mental health resource utilization) revealed that the highest suicide rates occurred where depression rates were high and ADP levels were low. This combination described CH states more so than non-CH states, controlling for a host of economic and social covariates. Indeed, only one association with CH status (higher depression levels, lower resource utilization levels, or a stronger association between depression and suicide) would potentially be sufficient to explain why suicide is higher in honor states. That not just one but *all* of these associations emerged in our analyses represents something of a "perfect storm" of suicide risk factors connected with CH status.

We should note that these data are limited in a variety of ways, not the least of which is that they are completely correlational. Although the data here cannot support firm *causal* conclusions, they are consistent with the hypothesis that members of honor states might not be seeking help to the same extent as members of nonhonor states in the face of severe distress, which might then create a higher risk for suicide because the impact of major depression (which itself appears to be more common in honor states) is less likely to be mitigated by medical interventions in these states.

Study 3

In Study 3, we examine whether or not the state-level relationship we observed between the culture of honor and depression holds up in individual-level data. This association was among the weakest found in Study 2, and although it is not crucial for such an association to exist (because the association between depression and suicide can still be significantly moderated by CH status even if the simple association between CH and depression is not itself significant), finding evidence of this association at the level of individual respondents would strengthen our argument, especially given that depression is the single strongest predictor of suicidal ideation and behavior (e.g., Bradvick, Mattisson, Bogren, & Nettelbladt, 2008; Cheng, Chen, Chen, & Jenkins, 2000). We tested the hypothesis that endorsing honor-related beliefs and values would predict scores on a depression inventory. To test this possibility, we obtained measures of honor ideology endorsement and a set of covariates, and we used these measures to predict depressive symptoms in a large, cross-sectional sample of undergraduates.

Method

Participants. Participants were 797 students (521 females, 276 males) at a large Midwestern university. Of these, 615 self-identified as "White, non-Hispanic," 55 as "Asian," 43 as "Black," 33 as "Hispanic or Latino/a," and the remaining 51 as other races. All were enrolled in introductory psychology classes and obtained partial credit toward a research exposure requirement in exchange for their participation.

Measures and procedure. All scales were administered as part of a mass testing conducted by the psychology department at the beginning of the semester. Honor ideology endorsement was assessed via the Honor Ideology for Manhood (HIM) scale (Barnes, Brown, & Osterman, 2011; Barnes et al., in press), which includes assertions that certain attributes characterize a "real man" (e.g., strength, toughness and independence) as well as assertions about situations in which men are justified in using physical violence (e.g., "A man has the right to act with physical aggression toward another man who slanders his family"). Participants are asked to rate the extent to which they agree with the 16 statements on the HIM and, crucially, *not* about the extent to which these statements are true of *themselves*, which makes it possible to administer the HIM scale to both men and women. Internal reliability for the 16-item HIM scale was quite strong ($\alpha = .87$).

Depression was assessed via the Beck Depression Inventory–II (Beck, Steer, Ball, & Ranieri, 1996), excluding 1 question that directly assessed suicidal ideation (this was omitted because of concerns by our institutional review board about assessing suicidal ideation without our having the expertise necessary for clinical evaluation and follow-up with respondents). Internal reliability of this 20-item depression scale was quite good ($\alpha = .90$). As control variables, we obtained measures of personality and response styles that we thought might be associated with both honor ideology endorsement and depression scores. We assessed the basic personality dimensions of extraversion, agreeableness, conscientiousness, openness, and neuroticism via the 44-item Big Five Inventory (John, Donahue, & Kentle, 1991), self-esteem with the 10-item Rosenberg Self-Esteem scale (RSE; Rosenberg, 1965; $\alpha = .89$), and impression management with the 20-item Impression Management (IM) subscale ($\alpha = .79$) of the Balanced Inventory of Desirable Responding (Paulhus, 1994).

As in Studies 1 and 2, we also examined both sex and race as potential moderators. Although we excluded Hispanics in our regional analyses because of the fact that there should be no *regionally* predicted variation in the extent to which Hispanics hold honor values, we saw no reason for precluding their inclusion in this *individual-level* analysis. Thus, we conducted one set of analyses including all races, one with only White (including Hispanic) participants and one including only non-White participants. Sex was included as a potential moderator in each analysis, and in addition, we included an interaction term between sex and honor ideology. Our intention in doing so was partially exploratory, but we thought that because the HIM scale specifically measures honor norms relating to masculinity, its relationship with depression might be more pronounced among males than among females.

Results

For each analysis, we regressed depression scores onto the HIM (mean centered), sex (coded as 0 for female and 1 for male), and all covariates (RSE, impression management, extraversion, conscientiousness, agreeableness, openness, and neuroticism), and an HIM × sex interaction term (entered on the second step). For the entire sample ($N = 797$), the model was significant ($R^2 = .47$), and HIM scores were uniquely related to depression scores, $\beta = .10$, $t(796) = 2.30$, $p < .001$. Sex was a significant predictor, indicating that depression is higher among females, and RSE, IM, and neuroticism were also unique predictors (see Table 3 for all relevant statistics). For White (including Hispanic) participants ($n = 648$), the results were very similar: The model was significant ($R^2 = .51$), and HIM scores were uniquely related to depression scores, $\beta = .09$, $t(647) = 2.67$, $p < .01$. Sex, RSE, IM, and neuroticism were also unique predictors (see Table 3).

For non-White participants ($n = 146$), the model was also significant ($R^2 = .37$), but neither HIM scores nor sex were unique predictors. However, the magnitude of the association between the HIM and depression was comparable to the magnitude among Whites and Hispanics, $\beta = .15$, $t(145) = 0.10$, $p > .20$, and the sex × HIM interaction was marginally significant, indicating that depression levels were more strongly associated with HIM scores among non-White

Table 3. Study 3: Multiple Regression Analyses of Depression as a Function of HIM and Sex

	All races		White or Hispanic		Non-White	
Predictor	β weight	*t* test	β weight	*t* test	β weight	*t* test
HIM	.10***	2.30	.09**	2.67	.15	0.10
Sex	–.13***	–4.32	–.14***	–4.49	–.11	–1.34
HIM × sex	.02	0.75	–.01	–0.43	.14	1.78
RSE	–.45***	–13.42	–.50***	–13.77	–.23*	–2.50
IM	–.13***	–4.12	–.12***	–3.48	–.19*	–2.57
Extraversion	–.02	–0.49	–.04	–1.25	.09	1.12
Agreeableness	.04	1.26	.04	1.25	.06	0.78
Conscientiousness	–.04	–1.32	–.03	–0.81	–.07	–0.85
Neuroticism	.23***	6.88	.21***	5.68	.34***	3.76
Openness	.03	0.96	.04	1.37	–.04	–0.56

HIM = Honor Ideology for Manhood scale; RSE = Rosenberg Self-Esteem scale; IM = Impression Management subscale. R^2 all races = .47, White or Hispanic = .51, non-White = .37. Sex coded as –1 = *female*, +1 = *male*.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

males than among non-White females. RSE, IM, and neuroticism also were unique predictors (see Table 3).

Discussion

Consistent with the statewide results from Study 2, honor ideology endorsement does predict depression at the individual level, and this effect is not moderated by sex, meaning that both males and females who endorse an ideology of honor are more likely to experience depression. This relationship between honor ideology and depression was present in both the analysis of the entire set of participants and the analysis of just White (including Hispanic) participants, but the analysis of non-White participants was not as clear.

These results, like those of Studies 1 and 2, are correlational in nature and do not justify causal interpretations. However, they do help to address one potential limitation in our first two studies, namely, the possibility that the relationship we observed at the level of the group did not reflect meaningful information about individuals (Robinson, 1950). The results of this final study suggest that the relationship between the culture of honor and depression (one of the primary risk factors for suicide) exists at the level of the individual as well as the level of the group.

General Discussion

The results of these three studies demonstrate that in addition to increasing interpersonal violence, as previous research has indicated, the culture of honor might also facilitate violence against the self. Even controlling for relevant covariates, CH status of a state (Studies 1 and 2) and personal endorsement of honor beliefs and values (Study 3) significantly predicted suicide rates (Study 1 and 2) and self-reported depression levels (Study 3). This investigation extends prior research on aggression and the culture of honor and also shows that other suicide risk factors previously conceptualized only at an individual level (e.g., social connectedness) might be assessed also at a more aggregate level of analysis (e.g., collectivism).

Again, the present findings do not allow us to make strong arguments about the mechanisms that might explain the relationship between the culture of honor and suicidality at the level of the individual. However, we explored in the introduction several characteristics of the culture of honor that can be framed in terms of previously identified risk factors for suicidality. First, the strong emphasis on and high expectations for personal conduct within cultures of honor might increase feelings of being burdensome to family, which is a major risk factor for suicide (Joiner, 2005). Members of cultures of honor have strict expectations for gender roles, and conforming to these expectations is central to gender identity. Males are expected to demonstrate their manhood via their abilities as strong providers and protectors (Bosson et al., 2009; Vandello et al., 2008). Females are expected to demonstrate their sexual purity and their loyalty to their families (especially their husbands; Vandello & Cohen, 2003). Crucially, moments in which people fail to live up to these expectations might not be perceived merely as *episodes of failure* but rather as evidence that *they are themselves failures*—and are so in one of the most important domains of personal identity. It is not difficult to imagine the level of shame and distress that these failures of identity might provoke (Wolf, Cohen, Panter, & Insko, 2010). Thus, in the shadow of such perceived failures, members of cultures of honor might have especially low thresholds for feeling as though they are a burden to their family.

Second, members of cultures of honor might be less likely to seek help for psychological distress, which among other problems could enhance feelings of isolation—another major suicide risk factor (Joiner, 2005). Help seeking can add to reputational concerns because it requires sharing sources of potentially intense and personal shame. It can also itself be

perceived as a reputational threat, making individuals from cultures of honor even more wary of reaching out. Seeking external help poses a direct risk to public image, and even seeking help from family might be avoided if one's identity as a "real man" or "good woman" could be questioned. For example, a man who has just lost his job might be reluctant to disclose this to his family out of fear that they will see him as an incompetent provider. Likewise, a woman who has been raped might avoid telling her family if she feared that they would thereafter view her as "impure" or "tainted." People dealing with depression might feel that admitting this would reveal a major weakness of character, preventing them from seeking out necessary professional help. In short, the fear of revealing one's failures, or that seeking help would itself threaten one's reputation, might make CH members reticent to seek help, thus enhancing feelings of isolation and preventing them from obtaining the assistance they need. Indirect support for the role of this mechanism was found in Study 2.

Third, an increased exposure to pain, violence, aggression, and symbols thereof (e.g., the greater prevalence of guns) has been shown to contribute to the ability to complete a suicidal act (Joiner, 2005). Men and women alike in honor cultures are exposed to aggression and violence more frequently than other people are, and thus they might be relatively more inoculated to pain and cognitively primed for violence (Anderson, Benjamin, & Bartholow, 1998; Berkowitz & LePage, 1967). Together, these aspects of the culture of honor, we believe, are most likely to translate into elevated suicide risks.

An important question for future research is whether members of honor cultures experience threats that are actually *unique* to this culture or threats that are common to everyone but that are perceived more frequently or more intensely in cultures of honor. It is possible, for instance, that the subjective threshold for perceiving threats against the self is relatively low for those in a culture of honor (see Cohen et al., 1996). This perceptual factor might lead to a greater risk of experiencing and failing to defend against honor threats, which, in turn, might create a vulnerability to suicidal thoughts and behaviors. Under this conceptualization, the suicide catalysts in cultures of honor are not unique but are rather experienced more frequently or more intensely than they are in other places.

Conversely, it might be that there are indeed special demands made of males and females within cultures of honor, along with unique cultural scripts that lead them to commit suicide. For example, a man in a culture of honor who fails to attain or uphold the masculine ideal might feel that the only way to reaffirm his identity as a "real man" (Bosson et al., 2009) is to commit suicide, thus proving that he is brave enough and strong enough to face and even accept death, in addition to bringing an end to his suffering. In contrast, a man outside of a culture of honor might not embrace the notion of being a "real man" to the same extent, and even if he does, committing suicide might not be part of his cultural script for proving his manhood.

Most studies on cultures of honor to date involve region-level analyses (typically between states or countries; see Leung & Cohen, 2011, for a recent exception). In keeping with this tradition, our first two studies were state-level analyses. We followed these with a third, individual-level analysis, and the results suggest that future studies of this sort might be very fruitful. Study 3 does not permit causal claims about the relationship between honor beliefs and suicide, but the results do suggest that it might be worthwhile to conduct further individual-level studies aimed at investigating causal mechanisms. For example, surveying both normal and clinical samples of people in honor and nonhonor states regarding their experiences of depression and suicidal thoughts (and in particular, the triggers they identify for both) would be useful in extending the current results and in specifying the role of this cultural variable in suicide, particularly with respect to the suicide risk factors discussed earlier (Joiner, 2005). It might also be useful to perform a content analysis of suicide notes written by people living in honor and nonhonor states, to explore whether gender identity and honor-related themes are more common in the former.

An additional question that content analyses of suicide notes might be able to address is how people who die by suicide in honor states conceptualize suicide. This might be important because in one sense the findings we have presented in this article might seem paradoxical: Why would individuals in a culture that values strength and toughness view suicide as "honorable" rather than as a sign of weakness or "taking the easy way out"? One possible resolution to this paradox is that members of cultures of honor view suicide as a genuinely strong, selfless, and even altruistic act. If they truly believe that their existence is a burden on their family, and that suicide alone can lift this burden, then they might view suicide as a brave and selfless act, rather than as a cowardly or selfish one. Such a construal would echo suicide traditions in other honor-based cultures that we mentioned previously—for example, seppuku in Japan. If CH members are engaging in such construals, statements acknowledging and attempting to make amends for honor-related transgressions, as well as claims of fearlessness and resolve in the face of death, might be more common in CH suicide notes.

Another important avenue for research might be to survey individuals who endorse honor-based ideologies about both predicted personal distress from and reluctance to talk to others about problems that either do or do not involve threats to reputation. Such a study might shed additional light on the findings of Studies 2 and 3 concerning depression, as well as our findings regarding mental health resource utilization. If individuals who endorse honor-based ideologies are more reluctant to seek help because of reputation-related concerns, and these are also the types of concerns that create the greatest psychological distress, this would

support and extend our current findings. Furthermore, such evidence might provide useful information for improving counseling services in CH regions by pointing to one of the sociocultural impediments to using and benefitting from such services.

Despite their limitations, one thing seems clear from these studies: Individuals (particularly Whites) living in honor states are at an especially high risk for committing suicide. Thus, it is important that these findings be extended in future studies and incorporated into both mental health outreach programs and approaches to counseling in areas characterized by a culture of honor. Previous research has indicated that both living in rural areas and being male are barriers to help seeking (Jackson et al., 2007; Mansfield, Courtenay, & Addis, 2005). However, our data suggest that even in metropolitan areas, CH status is strongly and uniquely associated with suicide rates among both men and women. Thus, outreach programs should consider the unique threats that both mental health problems and help seeking for those problems might pose for people living in honor states and take steps to ameliorate those threats. For example, if people who embrace honor-based ideologies feel that experiencing depression or suicidal thoughts reflects a personal weakness, and that seeking help for such problems is an additional indication of weakness with reputation-damaging repercussions, outreach programs should consider such concerns when framing messages advocating that people take advantage of counseling services.

Acknowledgments

We would like to thank Carolin Showers, Christopher Ditzfeld, Christopher Grundy, Michael Tamborski, and Mikiko Imura for their helpful comments and suggestions throughout the preparation of this article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. Age-adjusted rates rather than raw rates were used because suicide rates are not evenly distributed across age groups. Thus, for example, a higher proportion of elderly individuals in a given state would inflate the suicide rate for reasons having nothing to do with the variables being examined in this study.
2. We thank Christopher Ditzfeld for suggesting this analysis.
3. The data reported by Mark, Shern, Bagalman, and Cao (2007) were originally collected by IMS Health, a market intelligence company that monitors, among other things, 90% of all prescription drug sales in the United States.

References

Aliverdinia, A., & Pridemore, W. A. (2009). Women's fatalistic suicide in Iran: A partial test of Durkheim in an Islamic Republic. *Violence Against Women*, *15*, 307-320.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Anderson, C. A., Benjamin, A. J., Jr., & Bartholow, B. D. (1998). Does the gun pull the trigger? Automatic priming effects of weapon pictures and weapon names. *Psychological Science*, *9*, 308-314.

Barnes, C. D., Brown, R. P., & Osterman, L. L. (2011). *Don't tread on me: Culture of honor, honor ideology endorsement, and militant responses to terrorism*. Manuscript submitted for publication.

Barnes, C. D., Brown, R. P., & Tamborski, M. A. (in press). Living dangerously: Culture of honor, risk-taking, and the nonrandomness of fatal "accidents." *Social Psychological and Personality Science*.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review*, *97*(1), 90-113.

Beck, A. T., Steer, R. A., Ball, R., & Ranieri, W. (1996). Comparison of Beck Depression Inventories–IA and –II in psychiatric outpatients. *Journal of Personality Assessment*, *67*, 588-597.

Berkowitz, L., & LePage, A. (1967). Weapons as aggression-eliciting stimuli. *Journal of Personality and Social Psychology*, *7*, 202-207.

Bosson, J. K., Vandello, J. A., Burnaford, R. M., Weaver, J. R., & Wasti, S. A. (2009). Precarious manhood and displays of physical aggression. *Personality and Social Psychology Bulletin*, *35*, 623-634.

Bradvick, L., Mattisson, C., Bogren, M., & Nettelbladt, P. (2008). Long-term suicide risk of depression in the Lundby cohort 1947–1997: Severity and gender. *Acta Psychiatrica Scandinavica*, *117*, 185-191.

Brown, R. P., & Osterman, L. L. (in press). Culture of honor, violence, and homicide. In T. Shackelford & V. Weekes-Shackelford (Eds.), *The Oxford handbook of evolutionary perspectives on violence, homicide, and war*. New York, NY: Oxford University Press.

Brown, R. P., Osterman, L. L., & Barnes, C. D. (2009). School violence and the culture of honor. *Psychological Science*, *20*, 1400-1405.

Cataldi, E. F., Laird, J., & Kewal, R. A. (2009). *High school dropout and completion rates in the United States: 2007* (NCES 2009-064). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009064

Centers for Disease Control and Prevention. (2001). *Behavioral risk factor surveillance system survey data*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/BRFSS/technical_infodata/surveydata/2002.htm#survey

Centers for Disease Control and Prevention, National Center for Health Statistics. (2010). *Compressed mortality file 1999–2007* [Raw data]. Retrieved from CDC WONDER On-line Database: http://wonder.cdc.gov/cmf-icd10.html

Cheng, A. T. A., Chen, T. H. H., Chen, C.-C., & Jenkins, R. (2000). Psychosocial and psychiatric risk factors for suicide: Case-control psychological autopsy. *British Journal of Psychiatry*, *177*, 360-365.

Cohen, D. (1996). Law, social policy, and violence: The impact of regional cultures. *Journal of Personality and Social Psychology*, *70*, 961-978.

Cohen, D. (1998). Culture, social organization, and patterns of violence. *Journal of Personality and Social Psychology*, *75*, 408-419.

Cohen, D., Nisbett, R. E., Bowdle, B. F., & Schwarz, N. (1996). Insult, aggression, and the southern culture of honor: An "experimental ethnography." *Journal of Personality and Social Psychology*, *70*, 945-960.

Cohen, D., & Vandello, J. A. (2001). Honor and "faking" honorability. In R. Nesse (Ed.), *Evolution and the capacity for commitment* (pp. 163-185). New York, NY: Russell Sage.

Denning, D. G., Convell, Y., King, D., & Cox, C. (2000). Method choice, intent, and gender in completed suicide. *Suicide and Life-Threatening Behavior*, *30*, 282-288.

Dublin, L. (1963). *Suicide*. New York, NY: Ronald.

Fischer, D. H. (1989). *Albion's seed: Four British folkways in America*. New York, NY: Oxford University Press.

Health Resources and Services Administration. (2005). *Selected statistics on health professional shortage areas*, 2000–2004. Rockville, MD: Bureau of Health Professions, Health Resources and Services Administration.

Iga, M., & Tatai, K. (1975). Characteristics of suicides and attitudes toward suicide in Japan. In N. L. Farberow (Ed.), *Suicide in different cultures* (pp. 255-280). Baltimore, MD: University Park Press.

Jackson, H., Judd, F., Komiti, A., Fraser, C., Murray, G., Robins, G., . . . Wearing, A. (2007). Mental health problems in rural contexts: What are the barriers to seeking help from professional providers? *Australian Psychologist*, *42*, 147-160.

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory: Versions 4a and 54*. Berkeley: University of California, Berkeley, Institute of Personality and Social Research.

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

Kaplan, M. S., & Geling, O. (1998). Firearm suicides and homicides in the United States: Regional variations and patterns of gun ownership. *Social Science and Medicine*, *46*, 1227-1233.

Lee, M. R., Bankston, W. B., Hayes, T. C., & Thomas, S. A. (2007). Revisiting the southern culture of violence. *Sociological Quarterly*, *48*, 253-275.

Leung, A. K.-Y., & Cohen, D. (2011). Within- and between-culture variation: Individual differences and the cultural logics of honor, face, and dignity cultures. *Journal of Personality and Social Psychology*, *100*, 507-526.

Mansfield, A. K., Courtenay, W., & Addis, M. E. (2005). Measurement of men's help seeking: Development and evaluation of the barriers to help seeking scale. *Psychology of Men & Masculinity*, *6*(2), 95-108.

Mark, T. L., Shern, D. L., Bagalman, J. E., & Cao, Z. (2007). *Ranking America's mental health: An analysis of depression across the states*. Washington, DC: Mental Health America.

National Oceanic and Atmospheric Administration. (2000). *Average mean temperature index by month: 1971–2000*. Retrieved from http://www.cdc.noaa.gov/USclimate/tmp.state.19712000.climo

Nisbett, R. E., & Cohen, D. (1996). *Culture of honor: The psychology of violence in the South*. Boulder, CO: Westview.

Paulhus, D. L. (1994). *Balanced Inventory of Desirable Responding: Reference manual for BIDR Version 6*. Unpublished manuscript, University of British Columbia, Vancouver, Canada.

Peraino, K. (2007, September 18). Kurdistan's fatal flames: Why are a growing number of young women in this relatively safe corner of Iraq showing up in hospitals, dying of suspicious burns? *Newsweek*. Retrieved from http://www.newsweek.com/2007/09/17/kurdistan-s-fatal-flames.html

Robinson, W. S. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review, 15*, 351-357.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (2007). *The NSDUH report: State estimates of depression: 2004 and 2005*. Rockville, MD: Author.

U.S. Bureau of Labor Statistics. (2005a). *Unemployment rates for states, annual average rankings, year: 2000*. Retrieved from http://www.bls.gov/lau/lastrk00.htm

U.S. Bureau of Labor Statistics. (2005b). *Unemployment rates for states, annual average rankings, year: 2004*. Retrieved from http://www.bls.gov/lau/lastrk04.htm

U.S. Census Bureau. (2001a). *Census 2000 Summary File 3 (SF 3)—Sample data. Table P37: Sex by educational attainment for the population 25 years and over [35]*. Retrieved from http://www.census.gov/prod/cen2000/doc/sf3.pdf

U.S. Census Bureau. (2001b). *Table 25: Poverty status by state in 2000*. Retrieved from http://pubdb3.census.gov/macro/032001/pov/new25_001.htm

U.S. Census Bureau. (2006). *POV46: Poverty status by state: 2004*. Retrieved from http://pubdb3.census.gov/macro/032005/pov/new46_100125_01.htm

U.S. Census Bureau. (2008). *Table H-8: Median household income by state: 1984 to 2007*. Retrieved from http://www.census.gov/hhes/www/income/histinc/h08.html

Vandello, J. A., Bosson, J. K., Cohen, D., Burnaford, R. M., & Weaver, J. R. (2008). Precarious manhood. *Journal of Personality and Social Psychology*, *95*, 1325-1339.

Vandello, J. A., & Cohen, D. (1999). Patterns of individualism and collectivism across the United States. *Journal of Personality and Social Psychology*, *77*, 279-292.

Vandello, J. A., & Cohen, D. (2003). Male honor and female fidelity: Implicit cultural scripts that perpetuate domestic violence. *Journal of Personality and Social Psychology*, *84*, 997-1010.

Vandello, J. A., Cohen, D., Grandon, R., & Franiuk, R. (2009). Stand by your man: Indirect prescriptions for honorable violence and feminine loyalty in Canada, Chile, and the United States. *Journal of Cross-Cultural Psychology*, *40*, 81-104.

Weaver, J. R., Vandello, J. A., Bosson, J. K., & Burnaford, R. M. (2010). The proof is in the punch: Gender differences in perceptions of action and aggression as components of manhood. *Sex Roles*, *62*, 241-251.

Wolf, S. T., Cohen, T. R., Panter, A. T., & Insko, C. A. (2010). Shame proneness and guilt proneness: Toward the further understanding of reactions to public and private transgressions. *Self and Identity, 9*, 337-362.