

Asian/Pacific Islander Adolescent Sexual Orientation and Suicide Risk in Guam

Thomas K. Pinhey, PhD, and Sara R. Millman, PhD

Adolescent suicide rates for the Micronesian region of the Western Pacific are particularly high, especially among Micronesian boys.¹ Although previous studies have examined adolescent suicides in Micronesia,^{2,3} they did not consider the effects of sexual orientation. Recent national and state research has documented associations between suicide risk and being gay, lesbian, or bisexual.⁴⁻⁹ However, a literature search reveals no studies documenting the effects of sexual orientation on adolescent suicidality in Guam, an island in the Western Pacific with high rates of adolescent suicides.¹ We examined the effects of sexual orientation, race/ethnicity, binge alcohol consumption, hopelessness, and relationship physical abuse (i.e., physical abuse by a boyfriend or girlfriend) on suicidal ideation and suicide attempts among Guam's Asian/Pacific Islander adolescents, an understudied and underserved population. Our analysis is the first to consider such relationships in an Asian/Pacific Islander context.

METHODS

We used data from Guam's Youth Risk Behavior Survey, which was a high school student survey (grades 9 through 12) conducted during the 2001 spring semester. The sampling frame consisted of the 4 public high schools and the 3 Catholic high schools in Guam. These 7 schools account for approximately 95% of the island's high school students. For the total number of high schools in the sampling frame, we calculated the percentage of students at each grade level and then randomly selected classes ($n=95$) within each school at each grade level to approximate these proportions. Small amounts of absenteeism on data collection days, parental consent refusals, and exclusions for erroneous response patterns reduced the actual number of completed surveys to 1381, yielding a response rate of 96.6%.

Objectives. We examined the effects of same-sex orientation on suicide risks for Guam's Asian/Pacific Islander adolescents.

Methods. We used a probability sample and logistic regression analysis to identify suicide risk factors.

Results. Same-sex orientation was associated with a greater risk of suicide attempt, especially for boys. Adolescents who reported suffering physical abuse in the context of a romantic relationship, engaging in binge drinking, and experiencing feelings of hopelessness were at greater risk for suicidal ideation and attempts. Race/ethnicity was associated with suicide risk for both boys and girls, and patterns suggest that membership in the same racial/ethnic group decreased suicide risk for girls and increased risk of suicide for boys.

Conclusions. Gay, lesbian, and bisexual Asian/Pacific Islander adolescents in Guam deserve intervention and counseling programs to reduce suicide risk. (*Am J Public Health.* 2004;94:1204-1206)

Dependent variables were self-reported measures of suicidal ideation and suicide attempts. All of the variables for the analysis were dichotomous measures. We assessed suicidal ideation by asking respondents the following question: "During the past 12 months, did you ever seriously consider attempting suicide?" Girls were more likely than boys to indicate that they had considered committing suicide (42.0% vs 25.6%, respectively). We measured actual suicide attempts by asking respondents, "During the past 12 months, how many times did you actually attempt suicide?" All nonzero responses were recoded as 1. Girls were more likely than boys to indicate that they had attempted suicide (28.2% vs 14.5%, respectively).

The key independent variable for the analysis was sexual orientation. This measure was binary and was coded 1 for gay, lesbian, and bisexual adolescents (heterosexual, not sure, and don't know responses were coded as 0). We asked respondents, "Which of the following best describes you? Are you (1) gay, (2) lesbian, (3) bisexual, (4) heterosexual, (5) not sure, (6) don't know?" Rates of reporting same-sex orientation were 3.5% for both boys and girls.

Independent variables also included measures of hopelessness, relationship physical

abuse, and binge alcohol use. We measured hopelessness by asking respondents a single question: "During the past 12 months, did you ever feel so sad or hopeless almost every day for 2 weeks that you stopped activities?" More girls than boys indicated that they had experienced hopelessness (45.7% vs 36.4%, respectively). We measured relationship physical abuse by asking respondents a single question: "During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?" Girls were less likely than boys to indicate that they had experienced physical abuse (7.0% vs 9.1%, respectively). Our measure of alcohol abuse was a single item reflecting binge alcohol consumption. We asked respondents, "During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within an hour?" All nonzero responses were recoded as 1. Female students were less likely than male students to report binge drinking (19% vs 33.8%, respectively).

The logistic regression models also included self-reported race/ethnicity. Racial/ethnic categories were Chamorros (the largest ethnic group in Guam and the excluded comparison category in the logistic regressions), Filipinos, Asians (Chinese, Japanese, Korean, Vietnamese), Micronesians (Chuukese, Yapese,

TABLE 1—Asian/Pacific Islander Adolescent Sexual Orientation and Odds of Suicidality After Control for Ethnicity, Relationship Physical Abuse, Alcohol Abuse, and Hopelessness

	Odds Ratio (95% Confidence Interval)			
	Suicide Ideation		Suicide Attempts	
	Model 1	Model 2	Model 1	Model 2
Boys (n = 674)				
Same sex	1.905 (.809, 4.484)	1.356 (.471, 3.910)	5.005* (2.127, 11.773)	5.057* (1.645, 15.546)
Filipino		.843 (.511, 1.390)		1.089 (.585, 2.026)
Asian		1.335 (.591, 3.017)		1.387 (.416, 3.384)
Micronesian		1.890 (.873, 4.094)		2.259 (.905, 5.636)
White		1.560 (.523, 4.648)		2.251 (.642, 7.889)
Other		.770 (.289, 2.050)		1.150 (.359, 3.690)
Relationship physical abuse		3.127* (1.670, 5.857)		2.222* (1.096, 4.505)
Alcohol abuse		1.877* (1.243, 2.837)		3.539* (2.123, 5.899)
Hopelessness		6.743* (4.475, 10.161)		7.303* (4.213, 12.659)
Girls (n = 707)				
Same sex	1.999 (.875, 4.565)	1.462 (.556, 3.842)	2.645* (1.167, 5.995)	2.173 (.841, 5.619)
Filipino		.750 (.495, 1.135)		1.145 (.734, 1.786)
Asian		.864 (.382, 1.951)		.600 (.224, 1.612)
Micronesian		.401* (.200, .806)		.818 (.399, 1.675)
White		.298* (.097, .914)		.213* (.046, .986)
Other		1.061 (.478, 2.358)		1.767 (.797, 3.916)
Relationship physical abuse		2.414* (1.181, 4.935)		1.278 (.649, 2.517)
Alcohol abuse		1.626* (1.043, 2.536)		1.881* (1.203, 2.942)
Hopelessness		6.956* (4.885, 9.069)		6.846* (4.584, 10.223)

**P* < .05.

Kosraean, Pohnpeian, Palauan), Whites, and other races/ethnicities (i.e., Hispanic, African American, other Pacific Islanders).

We began by examining the effects of sexual orientation on suicidal ideation and suicide attempts (model 1). We then added race/ethnicity, relationship physical abuse, binge alcohol consumption, and hopelessness to the equation (model 2). Because previous research has shown that Micronesian young men are at greater risk for suicide than are young men of other races/ethnicities,^{1–3} we anticipated that male adolescent Micronesians' odds of a suicide attempt would be especially high.

RESULTS

As shown in Table 1, the increase in risk for suicidal ideation associated with same-sex orientation without control for other variables is virtually identical for boys and girls (odds ratio [OR] for suicidal thoughts = 1.999 for

girls and 1.905 for boys) and is statistically nonsignificant (model 1). In sharp contrast, the increased risk for suicide attempt associated with same-sex orientation without control for other variables is substantially greater for boys than for girls (OR for suicide attempt = 5.005 for boys and 2.645 for girls) and statistically significant for both boys and girls.

The second model added race/ethnicity and additional suicide risk factors to the sexual orientation measure. Consistent with previous findings,⁴ our results showed that among Asian/Pacific Islander adolescents, those who reported hopelessness, relationship physical abuse, or binge drinking were significantly more likely than those who did not endorse these factors to report suicidal thoughts. For boys, these factors also significantly increased suicide attempts. For girls, alcohol abuse and hopelessness significantly increased the risk of suicide attempts, but the effect of relationship physical abuse was not

statistically significant. Regarding the effects of race/ethnicity for boys, odds ratios close to 1 (implying little difference from the suppressed category, Chamorros) for both suicidal ideation and suicide attempts dictate a cautious interpretation of these results. Among girls, both White and Micronesian races/ethnicities were associated with decreased risk of suicidal ideation, and White race/ethnicity was associated with decreased risk for suicide attempts. Beyond these findings, a comparison of statistically nonsignificant odds ratios by race/ethnicity between boys and girls raised the intriguing possibility that membership in certain racial/ethnic groups may decrease risks for girls or increase risks for boys. Despite the broad confidence intervals, the pattern of odds ratios of less than 1 (implying decreased risk) for girls and greater than 1 (implying increased risk) for boys holds for both dependent variables (suicidal ideation and suicide attempts) and to Asian, Micronesian, and White race/ethnicity.

DISCUSSION

Early studies examining suicide and sexual orientation used convenience samples,¹⁰ which resulted in outcomes that could not be generalized to larger populations. Our study used a probability sample of Guam's Asian/Pacific Islander youth, an approach that may provide answers to various questions concerning racial/ethnic differences in suicidality.⁶ Consistent with conclusions of previous studies, our results suggest robust links between sexual orientation and adolescent suicidal thoughts and suicide attempts.⁴ This analysis is the first to document suicidal thoughts and attempts in this Asian/Pacific Islander context with a probability sample. To be sure, our results indicate that same-sex orientation of Asian/Pacific Islander adolescents in Guam presents significant risk for suicide attempts. The risk for suicidal ideation also is higher for adolescents with a same-sex orientation, although not significantly so. Race/ethnicity is related to suicide risk in this Asian/Pacific Islander adolescent community. Although risk for suicidal ideation is not statistically significant among boys, it is higher for Micronesians than for members of all other races/ethnicities. Among girls, the risk of suicidal ideation is reduced both for Whites and for other races/ethnicities (i.e., Hispanic, African American, other Pacific Islanders), whereas the risk of suicide attempt is reduced only for other races/ethnicities. These results may actually understate the effect of Micronesian race/ethnicity for boys, given that other sources have reported that completed suicide attempts are more common among Micronesian boys.^{2,3} All suicide attempts reported in this survey were incomplete owing to the self-reported nature of the data.

Relationship physical abuse, binge drinking, and hopelessness were associated with increased risk of suicidal ideation for both boys and girls and with increased risk of suicide attempts for boys. For suicide attempts by girls, the elevation of risk associated with physical abuse was nonsignificant, whereas the associations with binge drinking and hopelessness were significant. The changes in odds ratios for same-sex orientation observed when those risk factors were added to the equation sug-

gest that the adverse effects of same-sex orientation are partially mediated by relationship physical abuse, binge drinking, and hopelessness. This mediating effect applies to suicidal ideation for both sexes and to suicide attempts for girls but not for boys.

Recent research⁴ suggests that adolescent girls who identify themselves as lesbian may derive benefit from their sexual identity through the social support they receive from other gay, lesbian, and bisexual individuals or from similar sources. Because our findings indicate that in this setting, female adolescents with same-sex orientation are at greater risk for suicidality compared with their heterosexual peers, it appears that corresponding supportive communities might not exist in Guam or that the effects of such support may not be sufficient to counterbalance the potential detrimental effects of same-sex orientation. Indeed, our findings strongly suggest that both male and female Asian/Pacific Islander adolescents in Guam deserve intervention and counseling programs to reduce suicidal risks. Recent research shows that gay-sensitive HIV programs in schools decrease sexual risks for gay, lesbian, and bisexual adolescents. Similarly, gay-sensitive interventions targeting relationship physical abuse, binge drinking, and feelings of hopelessness might help reduce risks of suicide.

Finally, these patterns of possible gender differences in the effects of race/ethnicity on suicide deserve further investigation, preferably with larger data sets. ■

About the Authors

Thomas K. Pinhey and Sara R. Millman are with the Department of Sociology, University of Hawaii at Hilo.

Requests for reprints should be sent to Thomas K. Pinhey, Department of Sociology, University of Hawaii at Hilo, 200 W. Kawili St, Hilo, HI 96720-4091 (e-mail pinhey@hawaii.edu).

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Contributors

T.K. Pinhey supervised all aspects of the study and led the writing of the article. S.R. Millman assisted with the study and in the writing and reviewing of all parts of the study. Both authors assisted in the data analysis and interpretations of the findings and reviewing the article.

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Human Participant Protection

No protocol approval was needed for this study.

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