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Predicting the Suicide Attempts of Lesbian, Gay, and Bisexual Youth

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In this study predictors of serious suicide attempts among lesbian, gay, and bisexual (LGB) youth were examined. Three groups were compared: youth who reported no attempts, youth who reported attempts unrelated to their sexual orientation, and youth whose attempts were considered related to their sexual orientation. About one third of respondents reported at least one suicide attempt; however, only half of the attempts were judged serious based on potential lethality. About half of all attempts were related to youths' sexual orientation. Factors that differentiated youth reporting suicide attempts and those not reporting attempts were greater childhood parental psychological abuse and more childhood gender-atypical behavior. Gay-related suicide attempts were associated with identifiability as LGB, especially by parents. Early openness about sexual orientation, being considered gender atypical in childhood by parents, and parental efforts to discourage gender atypical behavior were associated with gay-related suicide attempts, especially for males. Assessment of past parental psychological abuse, parental reactions to childhood gender atypical behavior, youths' openness about sexual orientation with family members, and lifetime gay-related verbal abuse can assist in the prediction of suicide attempts in this population.

The increasing research on sexual orientation and mental health requires more conceptual and methodological precision as can be seen in the research on suicidality among lesbian, gay, and bisexual (LGB) youth (Russell, 2003; Savin-Williams, 2001a). Until the mid-1990s, only one research strategy was viable: the use of convenience samples of youth who attended social, educational, recreational, or counseling settings (e.g., Rosario, Hunter, & Gwadz, 1997). Such studies have been complemented by population-based survey studies in which high school students were asked about health and mental health topics (e.g., Bontempo & D'Augelli, 2002; Russell & Joyner, 2001). These studies included questions about sexual identity (i.e., "Are you gay, lesbian, bisexual, heterosexual, unsure?") and/or questions about same-sex sexual experience (e.g., "Have you had sex with males, females, or both?"). From such studies estimates of population parameters were possible, whereas with convenience-sample based research, the repre-

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sentativeness of the results remained uncertain. The findings from this research support the hypothesis of a higher prevalence of suicide attempts among identified LGB youth (McDaniels, Purcell, & D'Augelli, 2001; Russell, 2003). Caution is warranted, however, in making conclusions based on the available research because of sampling and measurement problems (Savin-Williams, 2001). One of these issues is measurement precision about suicide attempts—both their seriousness and their relationship to youths' sexual orientation.

This report is an extension of prior research on suicidality patterns found among LGB youth by the first author and his colleagues (D'Augelli & Hershberger, 1993; D'Augelli, Hershberger, & Pilkington, 2001; Hershberger & D'Augelli, 1995; Hershberger, Pilkington, & D'Augelli, 1997). These previous studies showed that LGB youth who reported past suicide attempts were aware of their same-sex attractions at earlier ages than youth not reporting attempts, were more open about their sexual orientation with others, and evidenced lower self-esteem and more mental health problems. More specific correlates of suicide emerged when distinctions were made between reports of suicide attempts attributed to sexual orientation and other attempts. In this report, we focus on suicide attempts that LGB youth reported being related to their sexual orientation, extending the earlier research in order to identify more precise predictors. Although no overall difference in suicide attempt rates occurred between males and females in the earlier studies (D'Augelli, 2002), sex differences emerged when gay-related suicide attempts were examined. D'Augelli et al. (2001) reported that one third of the youth surveyed reported at least one suicide attempt and about half were related to their sexual orientation. Males reported gay-related suicide attempts significantly more often than females. This sex difference may reflect males' earlier awareness of their same-sex attractions as well as the greater lifetime victimization based on their sexual orientation that males experience.

In an effort to gain greater clarity on the gay-related suicide attempts, the researchers of the current study examined factors that chronologically preceded youths' reported suicide attempts in order to distinguish three groups of LGB youth: (1) youth who reported no suicide attempts, (2) youth who reported suicide attempts attributed to issues related to their sexual orientation, and (3) youth who reported suicide attempts not considered related to their sexual orientation. Information was obtained about the ages at which youth arrived at different milestones in the development of their sexual orientation, including the disclosure of their sexual orientation to others, with the expectation that youth who did so at earlier ages would be at greater risk for making suicide attempts related to sexual orientation. LGB youths' childhood gender atypicality and parents' reactions were also assessed. Childhood gender atypicality has been associated with earlier LGB sexual orientation identification; it may also increase parents' attention to youths' emergent sexual identity (D'Augelli, Grossman, & Starks, in press). Another variable relevant to suicide attempt histories is past victimization based on youths' sexual orientation. Earlier analyses (Hershberger & D'Augelli, 1995) did not find direct linkages between past victimization and suicidality, but that report did not differentiate types of suicide attempts. In this study, we expected that youth who experienced more victimization based on their sexual orientation would report more suicide attempts related to their sexual orientation.

In addition to focusing on distinctions between suicide attempts, the analyses reported here used a more stringent definition of suicide attempt than has been used in other LGB youth research. In prior studies (D'Augelli & Hershberger, 1993), single items were used ("Have you ever attempted suicide?") and detailed inquiry about attempts was not conducted so that the seriousness of attempts was indeterminate. In a notable exception, Savin-Williams (2001b) studied 83 young women aged 18 through 25, finding that many reported suicide attempts were "false" attempts—attempts that involved suicidal ideation only or attempts in which nei-

ther plans nor specific methods were implemented. With this in mind, we retained for analyses only youth whose reported suicide attempts were serious: attempts in which their intent to die was high and the action taken was potentially life-threatening.

METHOD

Data used in this report were from the first phase of a longitudinal study of victimization of LGB youth aged 15 to 19 who were interviewed three times over a 2-year period. The assessment consisted of an interview on a broad range of challenges faced by LGB youth, and included standard measures of mental health problems and psychosocial resources. Detailed questioning about suicide attempts was incorporated into the interview.

Participants

The complete sample contained 528 youth attending programs in three community-based organizations in New York City and two of its surrounding suburbs. Youth were offered $30 to participate. Because seeking parental consent from LGB youth could put them at risk of exposure of their sexual orientation and could lead to verbal or physical harm, a waiver of the requirement of parental consent was obtained from our IRBs. A youth advocate was present at each site to ensure that the youth understood the nature of their participation in the project and to answer questions youth might have about the project and their participation in it. The importance of these protections in LGB youth research are described by Elze (2003).

Because of criteria used to determine serious suicide attempts (see below) and because of missing data for the variables under study, the original sample of 528 youth was reduced to 361 for these analyses. No differences were found on the characteristics of the youth who were retained in the sample and youth who were not. Of the 361 youth, 56% were males and 44% were females. Males and females did not differ in age, t (359) = .49, and were, on average, about 17 years old. As to ethnic and racial characteristics, 41% (n = 147) were African American/Black, 29% (n = 104) were of Hispanic origin, and 27% (n = 123) were White. Youths' self-reported sexual orientations were: (a) gay or lesbian: 28% (n = 102); (b) bisexual, but almost totally gay or lesbian: 20% (n = 73); (c) bisexual, but mostly gay or lesbian: 21% (n = 75); (d) bisexual, but equally gay/lesbian and heterosexual: 15% (n = 53); (e) bisexual, but mostly heterosexual: 16% (n = 56); and (f) uncertain or questioning: 2 youth.

Family socioeconomic status was calculated using a modified version of Entwisle and Astone's (1994) method of categorizing the occupations of the two adults who raised the youth or one such person's occupation if only one adult was present. Last occupations were used for unemployed people. The sixteen categories in the original rating system were collapsed into six. Of the sample, 5% (n = 17) of the youths' families were in the "Executive" category; 12% (n = 56) were in the "Professional" category; 17% (n = 67) were in the "Sales Occupations" category; 25% (n = 90) were in the "Technical/Administrative Support" category; 26% (n = 94) were in the "Service Occupations" category; and 12% (n = 43) were in the "Manual Labor" category.

Assessment

Youth were interviewed by a master's-level clinician of the same sex in private rooms at the agencies after youth were advised about and gave their consent to participate.

Sexual Orientation Development. Youth were asked about important ages related to the development of their sexual orientation. These questions are standard questions used in research on sexual orientation for the last decade. Although self-reported, most investigators consider such responses generally accurate, with the understanding that these are events distinct to becoming LGB. It is likely that youths' recollections of such milestones is more accurate than recollections by LGB

adults because less time has transpired since the events. Respondents were asked when they were first aware of their same-sex attractions, when they first self-identified as LGB, and when they first disclosed their sexual orientation to another person. They were asked about "outness" about their sexual orientation with family members, with response options 1 (*out to no one in family*), 2 (*out to a few people*), 3 (*out to some people*), 4 (*out to most people*), and 5 (*out to everyone in the family*). They were asked at what age they first disclosed their sexual orientation to a parent.

Some additional indicators of early sexual orientation experience were calculated, consistent with other LGB youth research (D'Augelli, 2002, 2003). Years of awareness of same-sex attraction were computed by subtracting youths' age at first awareness of their same-sex attractions from their current age. Years before first disclosure were calculated by subtracting the age at self-identification as LGB from the age of first disclosure to anyone. They were asked how "out" they were with friends with responses options 1 (*out to no friends*), 2 (*out to a few friends*), 3 (*out to some friends*), 4 (*out to most friends*), and 5 (*out to all friends*). Youth were asked about their openness about their sexual orientation in junior high school or middle school, answered as 0 (*not at all open*), 1 (*not very open*), 2 (*somewhat open*), 3 (*mostly open*) and 4 (*completely open*).

Childhood Gender Atypicality. Youth were asked if anyone had called them "sissy" or "tomboy" in childhood (under 13 years of age), and if their parents had called them "sissies" or "tomboys." They were asked if parents had discouraged childhood gender-atypical behavior. They were also asked if their parents inquired about their sexual orientation or suggested that they were LGB.

Youth completed the 16-item version of the Gender Conformity Scale (Hockenberry & Billingham, 1987), previously used in other LGB youth (D'Augelli et al., 2002). Hockenberry and Billingham present strong evidence of test-retest reliability ($r = .89$) as well as validity data showing the measure is significantly correlated with two other measures of childhood gender nonconformity ($r > .57$). Each item reflects how often during childhood the respondent acted or thought in a manner typically associated with the other sex (e.g., for males: "I preferred girls' games;" for females: "I felt like a boy"). Youth indicated how much each item described them when they were under 13 years old; response options ranged from 0 (*never*) to 6 (*always*). A factor analysis determined that an eight-item version of the scale was the more parsimonious for our data, so this was used for analysis. Cronbach's alphas were .79 for males and .88 for females.

Victimization Experiences. Because parents' earlier treatment of youth has an impact on their mental health, parental mistreatment was assessed. Parental psychological abuse was measured by items from the Child and Adolescent Psychological and Physical Abuse Measure (Briere & Runtz, 1988, 1990). Youth were asked about the frequency of seven kinds of psychological abuse when they were growing up (e.g., "yelled at," "made you feel like a bad person"). Youth answered separately for mothers and for fathers, using four options: 0 (*never*), 1 (*rarely*), 2 (*sometimes*), and 3 (*often*). An overall parental childhood psychological abuse score was constructed by averaging parents' scores. When only one parent was discussed, that score was used. Cronbach's alpha was .88.

Gay-related lifetime verbal abuse was estimated with questions about 12 perpetrators: roommates, other students, school teachers or faculty, coaches or gym teachers, school or guidance personnel, coworkers, bosses or supervisors, doctors or nurses, religious authorities, police, parents or stepparents, and siblings. The frequency of verbal abuse based on sexual orientation was rated with four categories: 0 (*never*), 1 (*once*), 2 (*twice*), and 3 (*more than twice*). Responses were summed to create an index of lifetime gay-related verbal abuse. Cronbach's alpha was .75.

Suicide Attempts. Past suicide attempts were assessed based on questions used in two earlier studies of LGB youth suicide (D'Augelli & Hershberger, 1993; D'Augelli et al., 2001),

supplemented by questions allowing the determination of the seriousness of reported sucide attempts as recommended by O'Carroll et al. (1996). Youth were asked, "Have you ever actually tried to kill yourself?" and "Was this attempt related to you're being LGB?" All participants were then categorized as having made: (1) no suicide attempt, (2) a non-gay related suicide attempt, or (3) a gay-related suicide attempt. Because many reported multiple suicide attempts and detailed questioning about each would have been prohibitive, focused inquiry was conducted about the suicide attempt during which youth said they were most intent on taking their own lives. They were asked what they actually did during this attempt, and other details about the attempt such as the presence of someone else during the attempt, notification of others after the attempt, and writing a suicide note, which would assist in judging the seriousness of youths' intent to die. Youth were asked if the suicide attempts needed medical attention, with this question, "What kind of medical attention did you need?" Response options were (1) *None needed*, (2) *Some medical care needed, but not emergency care*, and (3) *Emergency care needed.*

The lethality of the reported suicide attempt was evaluated during the interview by the interviewer using the lethality rating scale developed by Cairns, Peterson, and Neckerman (1988). The lethality rating is a 7-point scale that takes into account the nature of the attempt and the need for medical attention. The ratings are: 1 = verbal threat or ideation with no actual attempt, 2 = action leading to minor injury with suicidal intent, 3 = act with potentially serious physical consequences but not life-threatening, 4 = potentially life-threatening act, 5 = seriously life-threatening, needing medical care, 6 = critical life-threatening event requiring emergency medical care, and 7 = very close to death on discovery with intervention or luck preventing death. To simplify analyses, the seven categories were collapsed into three: "Not serious" (1 and 2), "Serious" (3 and 4), and "Very Serious" (5, 6, and 7). In addition, youth were asked about their seriousness about wanting to die. The question was, "Do you think you really wanted to die? Would you say *definitely yes*, *yes*, *no*, or *definitely no*?" A review of the protocol material about the suicide attempt was later reviewed by another staff member and given a second lethality rating. Discrepancies between the ratings were resolved by the second author, a licensed social worker with many years of clinical experience.

Of the entire sample of 528 youth, 31% ($n = 166$) stated they had made a suicide attempt, and 69% ($n = 362$) did not. Of the attempters, 89% ($n = 147$) acknowledged suicide attempts during interviews, while 19 youth noted suicide attempts on individual items on two instruments they had completed, but they did not acknowledge the attempts during the interviews. (The items were: "I have tried killing myself because of my homosexuality" and "I have attempted suicide"). Because information about the suicide attempts was unavailable to judge their seriousness, these 19 cases were dropped. Of the 147 youth, nine verbally threatened suicide but did not act in self-destructive ways. Because their attempts were not considered serious (lethality rating 1), these youth were also dropped, leaving 138 participants who had made a suicide attempt. One third (40%, $n = 55$) of the attempts were not seriously lethal, about half (36%, $n = 49$) were seriously lethal, and 25% ($n = 34$) very seriously lethal.

We then excluded another 60 cases—30 youth whose attempt was rated not seriously lethal who stated they did not want to die, 23 youth whose attempt was rated seriously lethal and also stated they did not want to die, and 7 youth who did not provide information about their intent to die. The 78 remaining youth made three types of suicide attempts: (1) attempts that were not seriously lethal (lethality rating 2), but youth intended to die (27%, $n = 21$); (2) serious attempts (lethality ratings 3 and 4) who stated they intended to die (32%, $n = 25$), and (3) very serious attempts (lethality ratings 5, 6, and 7) regardless of their stated intention to die (41%, $n = 32$). The 78 youth represent 15% of the entire study sample (78/528) and 47% (78/166) of

youth reporting suicide attempts. The remaining 362 (85%) youth reported no suicide attempts. Of the 440 youth available for analyses, an additional 79 youth had to be dropped because analyses required complete data. Many youth, for instance, did not know their parents' occupations; consequently, socioeconomic status could not be determined for these youth.

Family History of Mental Health Problems. Youth were asked about histories of both suicidality (attempts or completed suicides) and serious depression in their families, answered as "Yes" or "No." The suicidality question was, "Have any members of your family ever attempted or committed suicide?" The depression question was, "Has anyone in your family ever been treated or admitted to the hospital because of emotional problems?" The number of youth noting a family member treated or hospitalized for depression was recorded.

RESULTS

Descriptive Findings

Table 1 presents the descriptive statistics for the major study variables for the three suicide attempt groups. Categorical data are presented first, followed by interval-level data.

Sexual Orientation Development. Youth noted they were first sexually attracted to the same sex at a mean age of 10 ($SD = 3.4$), first self-identified as LGB at 14 ($SD = 2.4$), and first disclosed their sexual orientation to someone else at 14.5 ($SD = 2.1$). Males became aware of their sexual attractions to the same sex at younger ages than females, t (350) = 2.09, $p < .05$, and males self-identified at younger ages than females, t (359) = 2.68, $p < .001$. There was no difference between males and females on the age of first disclosure of sexual orientation. Nearly three-quarters (73%; $n = 262$) had told a parent about their sexual orientation. Youths' first disclosure to a parent occurred at a mean age of 14.9 ($SD = 2.31$), with males disclosing to a parent at earlier ages, t (256) = 2.20, $p < .05$. Both males and females reported about 7 years of awareness of their sexual orientation. Approximately 1 year ($M = .88$, $SD = 1.66$) transpired between youths' self-identification as LGB and their first disclosure to a parent. Males took significantly less time between awareness and self-identification than females, t (359) = 2.64, $p < .01$

Childhood Gender Atypicality. More than half (61%; $n = 222$) reported that they had been called a "sissy" or "tomboy" under age 13, and 61% ($n = 222$) said that parents had called them "sissy" or "tomboy." One third (33%; $n = 119$) reported that parents discouraged their gender-atypical behavior. This was most often attempted by telling youth to change atypical behavior and being punished for the behavior. Over one third (37%; $n = 168$) had parents who called them LGB or suggested that they were LGB.

Victimization Experiences. Analysis of parental childhood psychological abuse scores showed no sex differences. On the other hand, males experienced significantly more gay-related verbal victimization than females (Males: $M = 6.24$, $SD = 5.44$; Females: $M = 2.91$, $SD = 3.78$), t (359) = 6.54, $p < .001$.

Suicide Attempts. Of the 361 youth, 17% ($n = 61$) reported suicide attempts and 83% ($n = 300$) did not. More females (21%, $n = 27$) than males (13%, $n = 34$) made suicide attempts, χ^2 (1, $N = 361$) = 3.88, $p < .05$. Eight percent ($n = 29$) reported a gay-related suicide attempt, and 9% ($n = 32$) reported an attempt unrelated to their sexual orientation. More males said their suicide attempts were related to their sexual orientation: over half (59%; $n = 16$) of the males compared to 38% ($n = 13$) of the females, χ^2 (1, $N = 61$) = 2.67, $p = .10$.

As to medical attention following their suicide attempts, 43% ($n = 26$) required no medical attention; 18% ($n = 11$) required some medical attention, but not emergency care; and, 39% ($n = 24$) required emergency medical care. Over one third (39%, $n = 24$) said they definitely wanted to die; half (49%; $n = 30$) said that they wanted to die; six youth said that they did not want to die; and one

TABLE 1
Descriptive Statistics for Major Study Variables

		Gay-Related Suicide Attempt			Non-Gay-Related Suicide Attempt			No Suicide Attempt			Overall Total
		Male ($n = 16$)	Female ($n = 13$)	Total ($n = 29$)	Male ($n = 11$)	Female ($n = 21$)	Total ($n = 32$)	Male ($n = 174$)	Female ($n = 126$)	Total ($n = 300$)	($N = 361$)
African American		38%	23%	31%	9%	33%	25%	29%	33%	31%	30%
White		38%	39%	38%	27%	43%	38%	24%	31%	27%	29%
Hispanic		25%	39%	31%	64%	24%	38%	47%	36%	42%	41%
Ever called sissy/tomboy		63%	85%	72%	82%	53%	63%	56%	66%	60%	61%
Parents called youth sissy/tomboy		63%	54%	59%	30%	24%	26%	29%	24%	27%	29%
Parents discouraged gender-atypical behavior		75%	62%	69%	36%	29%	31%	31%	29%	30%	33%
Parents called youth LGB		63%	46%	55%	64%	43%	50%	37%	33%	35%	38%
History of family suicidality		38%	39%	38%	36%	33%	34%	24%	21%	23%	25%
History of family depression		19%	0%	10%	9%	10%	9%	6%	7%	6%	7%
Family socioeconomic status	*M*	3.09	3.23	3.16	2.09	3.17	2.80	2.89	3.12	2.99	2.98
	SD	1.20	1.59	1.36	1.11	1.63	1.54	1.35	1.40	1.37	1.38
Age of first awareness of same-sex attractions	*M*	8.69	8.62	8.66	10.64	10.00	10.22	9.66	10.64	10.07	9.97
	SD	2.87	2.14	2.53	4.43	3.85	4.00	3.52	3.26	3.44	3.44
Age of self-identification as LGB	*M*	12.25	13.00	12.59	14.09	14.14	14.12	13.61	14.34	13.92	13.83
	SD	2.93	1.63	2.43	2.63	1.93	2.15	2.58	2.03	2.39	2.39
Age of first disclosure of sexual orientation	*M*	13.75	13.00	13.41	14.36	14.67	14.56	14.48	14.62	14.34	14.45
	SD	2.54	1.63	2.18	2.91	1.65	2.12	2.11	1.88	2.02	2.06

Openness with family members about sexual orientation	*M*	4.06	3.85	3.97	2.45	2.57	2.53	3.11	2.87	3.01	3.04
	SD	1.06	.90	.98	1.37	1.54	1.46	1.58	1.46	1.53	1.52
Age of disclosure of sexual orientation to a parent	*M*	13.27	13.92	13.57	14.86	14.64	14.72	14.59	15.35	14.89	14.73
	SD	3.06	2.53	2.79	1.46	1.80	1.64	2.46	1.73	2.24	2.30
Years of awareness of sexual orientation	*M*	8.13	8.85	8.45	5.82	6.90	6.33	7.32	6.37	6.92	7.01
	SD	2.45	2.19	2.32	3.95	3.73	3.78	3.66	3.54	3.63	3.58
Years between self-identification and first disclosure	*M*	1.50	.38	1.00	.56	.67	.56	1.09	.63	.90	.88
	SD	1.93	.87	1.63	.92	1.91	1.63	1.81	1.43	1.67	1.66
Openness about sexual orientation with friends	*M*	4.31	4.23	4.28	3.64	4.05	3.91	3.95	4.43	4.15	4.14
	SD	1.35	1.24	1.28	1.21	1.32	1.28	1.26	.94	1.16	1.18
Openness about sexual orientation in junior high school	*M*	.38	.77	.55	1.00	.71	.81	.77	.66	.72	.72
	SD	1.09	1.17	1.12	1.27	1.15	1.18	1.34	1.10	1.24	1.22
Childhood gender atypicality	*M*	3.89	3.43	3.68	3.37	2.44	2.76	2.79	3.15	2.94	2.99
	SD	1.24	1.57	1.39	1.55	1.71	1.69	1.28	1.61	1.43	1.46
Parental psychological abuse	*M*	1.83	1.71	1.78	1.92	1.64	1.73	1.09	1.09	1.09	1.20
	SD	.82	.92	.85	.58	.70	.67	.69	.69	.69	.74
Gay-related verbal abuse	*M*	10.31	5.23	8.03	7.45	2.71	4.34	5.79	2.73	4.51	4.78
	SD	7.85	3.35	6.67	4.66	4.00	4.75	5.08	3.73	4.80	5.05

female said that she definitely did not want to die. There were no significant gender differences on medical attention or intent to die.

One quarter of the 361 youth (25%; $n = 91$) reported a history of suicide attempts or completed suicides in their families. More youth reporting a suicide attempt (36%; $n = 22$) had a family history of suicidality than youth not reporting a suicide attempt (23%; $n = 69$), χ^2 (1, $N = 361$) = 4.59, $p < .05$. About 7% ($n = 25$) reported that family members had been treated or hospitalized for depression. Youths' reports of their own suicide attempts were unrelated to family members' treatment for depression, χ^2 (1, $N = 361$) = .97, *ns*.

Comparisons Among Youth with Different Suicide Attempt Histories

Discriminant function analysis was used to determine which variables discriminated between LGB youth who attempted suicide due to their sexual orientation, attempted suicide for reasons unrelated to their sexual orientation, or did not attempt suicide. Predictors were demographic characteristics, sexual orientation development variables, gender atypicality variables, verbal victimization experiences, and suicide attempt information. Two analyses were done. The first was a full model utilizing all predictors and the second used a stepwise approach to identify the most parsimonious model discriminating among the three groups. As the second analysis did not add to the findings from the first, only the results for the analysis using all predictors will be discussed.

Because there are three possible outcomes, results report two discriminant functions. Each function is a linear combination of predictors, analogous to multiple regression. The first discriminant function is the linear combination of predictors that maximally separate the three groups. The second discriminant function is orthogonal to the first, maximally separating the groups on variance not accounted for by the first function. Taken together, the functions identify variables that predict groups that are as distinct and non-overlapping as possible.

Table 2 presents the results of the analysis using all predictors. An analysis of the canonical discriminant functions indicated that both have significant predictive value, with significant values for Wilks' lambda. The structure matrix in Table 2 shows the correlation of each variable with the value of both discriminant functions. These values are comparable to factor loadings and provide insight into the meaning of each discriminant function. To simplify interpretation of the loadings, we considered those with a value greater than or equal to 0.30 important for predictive purposes. The first function is generally related to parental psychological abuse or disapproval. The variable with by far the strongest loading on the first discriminant function was childhood parental psychological abuse (.747). Parental discouragement of gender-atypical behavior was the other variable that met our criterion (.403). Being called LGB by parents approached the criterion (.292). A history of more lifetime gay-related verbal abuse was also significant (.315) and loaded on the second function as well. Although a family history of suicidality did not achieve our criterion, its loading was high and is consistent with the finding that youth who had made suicide attempts reported more suicides or suicide attempts in their families. The factors loading on this function appear related to general factors increasing the probability of a suicide attempt. Although gay-related victimization was one of these factors, verbal abuse from parents was more important.

The second function concerned variables related to identifiability as LGB and gender atypicality. Openness about sexual orientation with family members (.544) and being called "sissy" or "tomboy" by parents (.520) were similarly important. Gay-related verbal abuse was also important (.373) as was being more gender atypical in childhood (.340). Being male loaded on this function (–.312) as did parental discouragement of gender-atypical behavior (.396).

Standardized canonical coefficients for

TABLE 2
Full Discriminant Function Model

Predictor	Structure Matrix[a]		Standardized Coefficients	
	Function 1	Function 2	Function 1	Function 2
Parental psychological abuse	.747(*)	–.173	.752	–.264
Parents discouraged gender-atypical	.403(*)	.396	.393	.171
Parents called youth LGB	.292(*)	–.015	.252	–.195
History of family suicidality	.243(*)	–.017	.096	–.067
Hispanic	–.132(*)	–.045	–.322	.053
Ever called a sissy/tomboy	.128(*)	.090	–.165	–.122
History of family depression	.111(*)	–.007	.050	–.065
Openness about sexual orientation with family members	.190	.544(*)	.376	.544
Parents called youth sissy/tomboy	.139	.520(*)	–.281	.469
Gay-related verbal abuse	.315	.373(*)	.071	.185
Gender atypicality score	.192	.340(*)	.176	.178
Sex	.181	–.312(*)	.295	–.278
Years of awareness of sexual orientation	.162	.288(*)	–.039	.083
Openness about sexual orientation with friends	–.018	.200(*)	–.281	.015
Years between self-identification and disclosure	–.037	.173(*)	–.054	.050
Family socioeconomic status	.011	.157(*)	.028	.287
Openness about sexual orientation in junior high school	–.041	–.121(*)	–.129	–.348
African American	–.042	.093(*)	–.167	.180

[a]Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function. Asterisks denote variables loading on particular functions.

the analysis are shown in Table 2. These coefficients are similar to beta coefficients in linear regression and indicate the relative importance of the predictors in each discriminant function. There is one set of coefficients for each discriminant function. The coefficients represent the unique contribution of each predictor to the discriminant function, controlling for other predictors. Variables with the largest coefficients on the first discriminant function were parental psychological abuse, parental discouragement of gender atypical behavior, and openness about sexual orientation with family members. Parental psychological abuse was by far the most important variable for distinguishing suicide attempters from nonattempters, with a standardized coefficient almost twice the next most important variable. For the second function, openness about sexual orientation with family members, being called "sissy" or "tomboy" by parents, and openness about sexual orientation in junior high school, had the largest coefficients. The coefficients of variables related to the second function were more homogeneous in magnitude than those related to the first function.

To gain additional understanding of how the functions differentiated between the three suicide groups, the group centroid values for each discriminant function were examined. Function group centroids are the mean values of each group on the dependent variable for each function. The greater the difference of one centroid from another for a given function, the better that function differentiates those two groups. The function group centroids are presented in Table 3. For the first discriminant function, the group centroids of gay-related and non-gay related

TABLE 3
Group Centroid Values and Predictive Accuracy for Full Discriminant Function Model

	Group Centroid		Predicted Suicide Status[a]		
Suicide Attempt Status	Function 1	Function 2	Gay-related attempt	Non-gay-related attempt	No attempt
Gay-related suicide attempt	1.259	.698	**72.4%**	10.3%	17.2%
Non-gay-related suicide attempt	.806	–.914	12.5%	**68.8%**	18.8%
No suicide attempt	–.208	.030	17.3%	18.0%	**64.7%**

Note. 65.7% of original grouped cases correctly classified. 52.7% of randomly grouped cases correctly classified.

Bold type are cases correctly classified using statistical model.

suicide attempt groups are similar, though the gay-related attempt centroid is somewhat higher (1.259) than the non-related centroid (.806). Both centroids are distinctly different from the no attempt group (–.208). Thus, the first function (identified by the structure matrix as verbal abuse) best distinguishes youth who attempted suicide regardless of reason from youth who did not. The second discriminant function (identified by the structure matrix as identifiability as LGB and gender-atypicality) strongly differentiated gay-related and non-gay related suicide attempts (.698 vs. –.914).

The accuracy of the statistical model in classifying suicide behavior was examined by comparing predicted and actual suicide attempt group membership. The predictive accuracy of the statistical model was contrasted to the accuracy of a model where group membership was randomly assigned. Table 3 shows these results. A cross tabulation between observed and predicted group membership shows that 72% of gay-related suicide attempters, 69% of non-gay related attempters, and 65% of nonattempters were correctly classified. About 18% (17.2% and 18.8%) of youth who attempted suicide (whether gay related or not) were misclassified as not having made an attempt. The overall classification accuracy of this model was about 66%. In contrast, if no information were available about the suicide statuses of these youth, each individual would be randomly classified into one of three groups in proportion to the actual size of these groups in the sample. In randomly classifying the 300 youth who did not attempt suicide, 24 would be mistakenly identified as making gay related attempts ($300 \times .08$), 27 as making non-related attempts ($300 \times .09$), and 249 ($300 \times .83$) would be correctly identified as nonattempters. However, applying random identification to the 29 individuals who made a gay-related attempt would correctly classify only 2 youth ($29 \times .08$), while 24 would be predicted to be in the no-attempt group. Among the youth in the group of 32 non-related attempts only 3 would be correctly classified ($32 \times .09$), and 27 would be assigned to the no-attempt group.

Thus, in the absence of any predictive information about members of the sample except the relative sizes of the three groups of youth, youth would be overwhelmingly assigned to the no attempt group. The discriminant model offers a significant improvement in correctly identifying youth in the two suicide attempt groups, correctly classifying 72% and 69% of the youth in the gay related and non-gay related groups, respectively. The most important variables that make this improvement in predictive accuracy possible are a history of parental psychological abuse, parental discouragement of atypical behavior during childhood, openness about sexual ori-

entation with family members about sexual orientation, and lifetime experiences of gay-related verbal abuse.

DISCUSSION

The results of this study help to clarify other research findings about the nature of suicide attempts among LGB youth. Nearly one third of the LGB youth reported a past suicide attempt; however, when suicide attempts were evaluated for lethality, it was found that 15% reported serious suicide attempts, about half of which required some medical attention. Significantly more female youth than male youth reported a suicide attempt. Half of the males and one third of the females considered their suicide attempts to be related to their sexual orientation. In all, about 17% of the entire sample of youth made a suicide attempt specifically related to their sexual orientation. As most discussions of suicidality among LGB youth assume but do not assess the relationship of suicide attempts to sexual orientation, these results underscore the importance of precision about suicide attempts so as to determine the prevalence of serious suicide attempts in this population (Savin-Williams, 2001a,b). Recent epidemiological data from New York City, for example, show that about 11% of high school youth report planning suicide (Grunbaum et al., 2004), although no assessment of lethality was attempted. Making the reasonable assumption that many of these were not serious attempts, the findings reported here once again suggest that LGB youth suicide attempt rates are higher than rates for heterosexual youth.

Our effort to distinguish LGB youth who made suicide attempters from nonattempters found that high levels of earlier parental psychological abuse, more parental discouragement of childhood gender atypical behavior, and more lifetime gay-related verbal abuse were characteristic of attempters. Being labelled LGB by their parents as they were growing up and having a family history of suicidality were also important. In distinguishing LGB suicide attempters whose attempts were related or unrelated to their sexual orientation, we again found that having experienced more lifetime gay-related verbal abuse and parental discouragement of gender atypical behavior were important; however, other factors were more important. Compared to LGB youth making suicide attempts unrelated to their sexual orientation, gay-related suicide attempers were more open about being LGB with their families, had been more often called "sissy" or "tomboy" by parents, were more gender atypical in childhood, and were more often males. Family histories of depression or suicidality were not significant in differentiating gay-related from other suicide attempts, in contrast to the importance of such family histories in identifying suicide attempters in general.

National data show that adolescent females are more likely to report suicide attempts than males, but that differences in serious suicide attempts are not found (Gould, Greenberg, Velting, & Shaffer, 2003). In contrast, females in this study reported more serious suicide attempts than males. Gay and bisexual males, however, reported more suicide attempts were related to their sexual orientation than lesbian and bisexual females. Examination of the factors associated with suicide attempts finds that factors related to being LGB are of considerable importance in all LGB youth suicide attempts. LGB youth who experienced more verbal abuse from parents as they were growing up and more gay-related verbal abuse in their lifetimes, who were seen by parents as more gender-atypical during childhood, and whose parents made efforts to change gender-atypical behavior, were more likely to have made a suicide attempt. Openness about being LGB with families and parental discouragement of gender atypical behavior were more likely for youth whose attempts were attributed to sexual orientation. That openness about sexual orientation with parents was associated with other negative parental responses is consistent with findings that LGB youth living at

home who disclose their sexual orientation to parents are victimized more than youth whose parents do not know (D'Augelli, Hershberger, & Pilkington, 1998).

The importance of childhood gender atypicality among LGB youth is seen in these results. Adolescence is a time of gender intensification, when socialization pressures from families and peers encourage the adoption of traditional sex-role related behavior (Barrett & White, 2002; Galambos, Almeida, & Petersen, 1990; Lytton & Romney, 1991), and divergence from traditional behaviors is less tolerated as youth move through adolescence. Morgan (1998) found that female adolescents' "tomboy" behavior was typical in pre-adolescent females, having started at about age 6, but decreased substantially by around age 13. "Feminine" behavior in young males, considerably less normative than "masculine" behavior in young females, is more negatively sanctioned (Katz, 1986). Males with a history of childhood gender atypicality, who have been open with others about themselves, and who have experienced considerable gay-related verbal abuse (and discouragement of gender atypical behavior for many years) may be more prone to making serious suicide attempts that are related to their sexual orientation. Stressors related to sexual orientation, especially identifiability as LGB, whether by youths' openness about sexual orientation or by gender atypicality demonstrated since childhood, are unique burdens that add to factors associated with youth suicide attempts among adolescents in general. While gay-related stressors help account for higher serious suicide attempt rates for lesbian and bisexual females than heterosexual female youth, the more deleterious of these stressors fall heavily on young gay and bisexual males. Clearly the importance of gender development from early childhood through early adulthood requires future study.

There are limitations to this study that should be noted. The data are from a convenience sample of LGB youth from a major metropolitan area and its suburbs. Additionally, the youth in the sample were self-identified as LGB and had accessed community settings serving LGB youth. Consequently, there is no way of determining the representativeness of the sample or its generalizability, especially related to youth who do not disclose their sexual orientation to others. Whether non-disclosed youth would report similar suicide attempt rates or patterns cannot be determined. Furthermore, youths' unverified self-reports were used. Although difficult to obtain, parental confirmation of youths' reports would help to determine their accuracy. Another concern is that youth were asked to describe the suicide attempt during which they were most intent on dying and to determine whether or not that attempt was related to their sexual orientation. There is no way to determine if the youths' recollections and the attributions accurately reflect their psychological state at the time of the suicide attempts. Despite these limitations, we note that the sample was relatively large, that youth were from diverse backgrounds, that there was an approximately equal representation of female and male youth, and that the youth were recalling highly significant events in their lives which occurred within the previous few years.

The developmental processes for LGB youth during adolescence are distinct in several ways from the experiences of heterosexual youth, especially for LBG youth who behave in gender-atypical ways. Gender-atypical behavior provokes parents' concern that the youth might be lesbian or gay, and some parents react with efforts to diminish or suppress these behaviors to thwart homosexuality, especially for males. Because parents are of the utmost importance to youth during adolescence, years of disappointing parents as a result of gender atypicality or identification as LGB can cause strong emotional responses. With parental approval uncertain, LGB youth may feel increasingly isolated, a process exacerbated by peer rejection related to gender atypicality or LGB self-identification. Youth may feel that they have no place to turn. A history of parental conflict about

gender atypicality and being LGB, when complemented as it often is with verbal abuse from others based on youths' sexual orientation, may set the stage for mental health problems, including serious suicide attempts.

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