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Prevalence, Course, and Predictors of Multiple Problem Behaviors Among Gay and Bisexual Male Adolescents

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Multiple problem behaviors, stress, and personal resources were assessed over 2 years among 136 mainly Black and Hispanic gay and bisexual male adolescents age 14-19 years. Whereas sexual risk acts, substance abuse, conduct problems, and emotional distress were common, the risk acts did not form a multiple problem behavior cluster, compared with previous findings with heterosexual youths. Problem behaviors were stable over time: Only 20% to 30% of the youths changed their pattern of problem behaviors over 2 years. For each individual, the pattern of change in one behavior problem was not related to patterns of change in other problem behaviors over 2 years. At baseline, personal resources were associated with less alcohol use and emotional distress, and stress was associated with delinquent behaviors. The pattern of results was similar whether youths labeled themselves as gay or bisexual, suggesting that problem behaviors among mainly Black and Hispanic gay and bisexual youths may follow different developmental pathways than among heterosexual youths.

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Substantial research over the last 15 years has documented that adolescents who engage in any one problem behavior are likely to engage in a cluster of unconventional acts, such as early sexual activity, substance use, conduct problems, and delinquent acts (Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988; Ensminger, 1990; Farrell, Danish, & Howard, 1992; Jessor, 1992; Jessor, Donovan, & Costa, 1991; Jessor & Jessor, 1977; McGee & Newcomb, 1992; Newcomb & Bentler, 1988). Furthermore, adolescents who engage in multiple problem behaviors are considered likely to follow a developmental trajectory that leads to adjustment problems in early adulthood, although this is not universally the case (Jessor et al., 1991). These conclusions have been based primarily on data gathered from

White, heterosexual male adolescents. There has been little examination of whether the pattern of multiple problem behaviors generalizes to other subgroups. In one recent study by Gillmore et al. (1991), the problem behaviors of young female adolescents did not cluster as expected. Among minority youths, sexual behavior and substance use are not as highly related as among White youths (Mott & Haurin, 1988). The present study examined whether gay and bisexual adolescents demonstrated a pattern of multiple problem behavior syndrome similar to that found among heterosexual adolescents.

The few studies that have been conducted concerning gay and bisexual youths suggest that some youths who identify as gay or bisexual do engage in problem behaviors from an early age. Substance use among these gay and bisexual youths appears common: 58% of a sample from Minneapolis, Minnesota, met *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM-III-R*) criteria for substance abuse (Remafedi, 1987a). The rate of crack cocaine use in a New York City sample (25%; Rotheram-Borus, Koopman, & Bradley, 1988) was about seven times the national average for adolescents (National Institute on Drug Abuse, 1990). Conduct problems were reflected in the high rates of running away from home (48%) and reports of delinquent acts that led to contact with the criminal justice system (48%; Remafedi, 1987a).

Among inner-city, Black and Hispanic gay male youths seeking services in a gay-identified agency, many youths engage in sexual intercourse with multiple male and female partners, initiating sexual intercourse about 3 years earlier ($M = 12.5$ years; Rotheram-Borus, Rosario, Meyer-Bahlburg, et al., in press) than their heterosexual peers ($M = 15.5$ years; Sonenstein, Pleck, & Ku, 1989). About a quarter of these youths have traded sex for drugs or money (23%; Rotheram-Borus, Rosario, Meyer-Bahlburg, et al., in press), a behavior that is likely to place

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youths at high risk for contracting HIV and other sexually transmitted diseases (J. Cohen et al., 1989). White, middle-class gay male adolescents in Minneapolis (Remafedi, 1987a) and disenfranchised White gay male youths in Seattle, Washington (Roesler & Deisher, 1972) show similar patterns of sexual behaviors.

While researchers of multiple problem behavior syndrome have focused on youths' risk-taking acts, (i.e., *externalizing* symptoms; Achenbach & Edelbrock, 1981), these same youths are concurrently at high risk to demonstrate emotional symptoms (i.e., *internalizing* symptoms; Irwin, 1987; Irwin & Millstein, in press). For example, adolescents with conduct problems are at risk for suicide (Gould, Shaffer, & Davies, 1990); substance use is related to depression (Kandel & Davies, 1982); and the developmental pathways are similar for those who engage in externalizing and internalizing symptoms (P. Cohen, Brook, Cohen, Velez, & Garcia, 1990). Because we know little about early developmental pathways for adolescents who self-identify as gay and bisexual, it is important that when the relation among multiple problem behaviors are assessed, we simultaneously examine the presence of internalizing symptoms such as emotional distress and suicidality. Remafedi (1987a) found that 72% of the gay and bisexual youths in his study consulted a psychiatrist or psychologist, suggesting that these youths are emotionally distressed. Suicide attempts are also high among samples of gay male youths, ranging from 20% to 39% (Remafedi, 1987a; Remafedi, Farrow, & Deisher, 1991; Rotheram-Borus, Rosario, & Hunter, in press; Schneider, Farberow, & Kruks, 1989). The documented evidence of externalizing acts (sexual behaviors, substance use, conduct problems, and delinquent acts) and internalizing symptoms (emotional distress and suicidality) suggests that both types of problems be evaluated among gay and bisexual adolescents.

When both problem behaviors and symptoms of emotional distress are assessed, it is not known if these behaviors cluster together to form a single underlying syndrome or even two dimensions. The earlier work with heterosexual youths (Jessor & Jessor, 1977) suggests that at least sexual behavior, substance use, delinquency, and conduct problems should form one dimension. The relations among these risk acts and emotional distress and suicidality are unclear. Thus, the first goal of the present study was to examine the prevalence of problem behaviors in gay and bisexual youths and to determine the underlying structure of these behaviors.

Not only did we expect that the structure of problem behaviors would be different at one point in time, but we also anticipated that the pattern of problem behaviors over time may differ from their heterosexual peers. An adolescent's development is likely to be significantly influenced by being gay or bisexual in a predominantly heterosexual society (Savin-Williams, 1990; Sophie, 1986). It is likely that the meaning and the context of problem behaviors may be different for gay and bisexual youths compared with their heterosexual peers. For example, early sexual behavior among heterosexual male adolescents with multiple problems typically reflects the adolescent's choice to act unconventionally (Jessor, 1992). Among these male adolescents, early heterosexual sexual experimentation is likely to be encouraged and regarded positively by both the youth and their peers, although not explicitly approved by the larger society. With age,

sexual behaviors receive increased social approval and eventually become normative. In contrast, youths who want to explore same-gender relationships usually cannot discuss their feelings or explore their sexual identity except through sexual behaviors (Hunter, 1990). Gay and bisexual youths are unlikely to be rewarded for these behaviors by their peers, and should they be discovered, the youths are punished and often rejected (Kruks, 1991; Remafedi, 1987b; Rotheram-Borus, Rosario, & Koopman, 1991). Because same-gender sexual encounters are sometimes considered atypical by the youth, his peers, and society, homosexual behaviors may marginalize the youths, undermine their positive self-concepts, and associate youths with unconventional roles. Thus, early sexual behaviors may have very different meanings and consequences for gay and bisexual youths.

Substance use may also have different meanings for homosexual and heterosexual youths. Some adolescents may use alcohol and drugs to self-medicate for depression (Lazarus & Folkman, 1984; Patterson & McCubbin, 1987) or to be accepted by peers (Walter et al., 1992). Gay youths may be more likely to use drugs to provide a socially acceptable explanation to themselves for engaging in same-gender behavior (Rotheram-Borus, Luna, Marotta, & Kelly, 1994). Alternatively, society's negative sanctions toward homosexuality may lead gay youths to become affiliated with marginalized subcultures, that is, subcultures that are more likely to be permeated with substance use. Substance use is high among adult gay men (Jay & Young, 1979), and the youths' use may also reflect socialization to the norms of gay adult subculture.

Because of differences in the precursors of sexual and substance use acts, problem behaviors may not cluster or be maintained over time by gay and bisexual youths in a manner similar to their heterosexual peers. Jessor (1992) found a bimodal developmental pattern among youths with problem behaviors. Some reduced and others increased their problem behaviors over time. Therefore, in this study, we examined the structure of problem behaviors and emotional symptoms among the gay and bisexual youths over 2 years to examine developmental changes in their pattern of problem behaviors.

After examining patterns of problem behaviors among gay and bisexual youths over time, we examined three potential mediators of these behaviors: (a) self-labeling of sexual orientation, (b) stress, and (c) personal resources. Data on sexual orientation among adolescents are almost exclusively gathered from retrospective reports (Jay & Young, 1979). Therefore, we know little about differences between youths who label themselves *gay* and those who label themselves *bisexual*. As reviewed earlier, the meaning may differ for problem behaviors depending on the youth's self-perception. Therefore, we anticipated differences in the prevalence and structure of problem behaviors between gay and bisexual youths.

Given data from heterosexual samples, we anticipate that stressful life events are often associated with an increase in the frequency of problem behaviors and psychiatric symptoms (Amato & Keith, 1991; Dryfoos, 1990; Hawkins, Catalano, & Miller, 1992; Hendin, 1987; Kendal-Tackett, Williams, & Finkelhor, 1993; Malinosky-Rummell & Hansen, 1993; Rubenstein, Hellen, Housman, Rubin, & Stechlor, 1989). Acknowledging same-gender attractions or identifying oneself as

homosexual is likely to increase stress among adolescents as a consequence of societal disapproval. The risk of such disapproval can be quite high. In one study (Rotheram-Borus et al., 1991), about half of gay-identified youths were "discovered" to be gay by others. Being discovered by others is significantly related to drug use and conduct problems (Rosario, Rotheram-Borus, & Reid, in press) and to suicide attempts (Rotheram-Borus, Rosario, & Hunter, in press). Therefore, it is critical to examine whether stress, particularly stress related to being gay and bisexual, is associated with problem behaviors over time.

Conversely, personal resources may buffer the impact of stress. For example, academic success and positive life events may serve to offset the negative effects of stress that may be associated with youths' problem behaviors (Farrell et al., 1992). A gay adolescent who is a high achiever in school has more personal resources and indexes of personal success to support his self-esteem. The grades of the high achiever may serve to offset somewhat the stress associated with being gay. Therefore, a second goal of this study was to examine both stress and personal resources as potential moderators of problem behaviors among gay-identified adolescents.

Method

Recruitment Site

The Hetrick-Martin Institute (HMI) is a gay-identified community-based agency in New York City providing recreational, educational, and social services to gay and lesbian youths. It is unclear what segment of the gay youth population attend this agency because many gay and bisexual youths hide their sexual orientation. Thus, the recruitment site provides access only to youths who are willing to be identified as gay. There is no evidence that the agency attracts primarily troubled youths.

Participants

A consecutive series of 141 male adolescents age 14–19 years old were recruited with informed consent immediately following their intake interview in the counseling, drop-in, and school programs at HMI. Three adolescents refused to take part in the study; 2 others were omitted because of substantial missing information, resulting in a final sample of 136 adolescents. The mean age of the 136 gay and bisexual male adolescents in the sample was 16.8 years ($SD = 1.4$ years). The adolescents were of Hispanic (51%), Black (30%), White (12%), and other (7%) backgrounds (Asian American and Native American). Youths labeled themselves as gay (68%), bisexual (25%), straight (3%), or unsure (5%) at recruitment. On average, youths had completed their sophomore year of high school ($M = 10.2$ years, $SD = 1.5$ years) with a grade point average of about C+ to B-. Of the youths, 54% reported being at or above grade level. More than one half were affiliated with a religious group (53%) and were employed (55%).

Interviewer Selection and Training

Three master's-level, White male homosexual research assistants conducted all of the interviews. All interviewers received a minimum of 12 hr of training in conducting sexual behavior interviews, ethics, identifying and triaging youths in crises situations, and tracking youths for follow-up interviews. Interviewers' audiotapes of the sexual history portion of the interviews were monitored randomly, and interviewers received frequent individual and group supervision (typically biweekly) to ensure interview integrity.

Procedure

Within 2 weeks after intake at HMI, youths were individually interviewed for 2.0 to 2.5 hr as a baseline assessment. Youths were interviewed at 3, 6, 12, 18, and 24 months following the baseline interview. Each youth was paid \$2 for the baseline assessment and \$20–\$25 for each follow-up interview. Currently, 24-month follow-up interviews continue to be collected for 20% of the youths. At each follow-up point, about 73% of the youths were reassessed (75% at 3 months; 79% at 6 months; 69% at 12 months; 63% at 18 months; and 59% at 24 months). Of the 136 youths, 35% had all six assessments; 25% had five of six assessments across 2 years; 24% were interviewed three or four times; and only 9% were interviewed twice. Over 2 years, 93% of the youths were interviewed at least two times and had sufficient data points to allow calculation of a slope. The sample is reduced to 130 participants for all regression analysis because we required that the youths be assessed at two follow-up assessment points to be included in the analysis.

Services Received

The youths' attendance in individual counseling services or a daily drop-in program with recreational activities at HMI may affect the frequency of multiple problem behaviors after they initially seek services at the agency. In particular, all of the youths seeking services at HMI were invited to participate in an HIV-related preventive intervention we conducted. A 20-session intervention rotated within a 3-week sequence, and youths joined at various points. Small groups of about 10 youths each were formed that focused on (a) enhancing youths' general knowledge and positive attitudes toward HIV; (b) coping skills to negotiate safer sex; (c) knowledge of community-based resources for health, mental health, legal, vocational, and educational counseling; (d) positive attitudes toward "coming-out"; and (e) ability to identify individual barriers to safer sex. No schedule of each day's content was posted; therefore, youths could not select to attend sessions covering the topics of their choice. About equal numbers of youths chose to attend 0–5 sessions ($n = 45$), 6–14 sessions ($n = 46$), and 15–30 sessions ($n = 45$). The mean number of sessions received was 11.3 ($SD = 8.9$). Receiving the HIV intervention is highly correlated to the frequency of receiving any services at HMI ($r = .80$ with the number of days of service received at the agency; $r = .76$ with the number of drop-in service days attended; and $r = .48$ with the number of individual counseling sessions attended). To examine the impact of services received on the frequency of multiple problem behaviors, we considered the number of intervention sessions attended as a mediating factor in all analysis. Youths who chose to attend varying numbers of intervention sessions did not differ in ethnicity, age, sexual risk behaviors, knowledge or attitudes toward HIV, or emotional distress at the baseline interview.

Assessment Measures

At each follow-up point, the assessment covered the time frame of the last 3 months to provide consistency across assessment periods. Each of the measures described here was administered at each follow-up point with the exception of the measure of the number of conduct problems. These conduct problems were only assessed at baseline.

Conduct problems. We developed a 15-item scale to assess conduct problems on the basis of behaviors that form a *DSM-III-R* criteria for conduct disorder (American Psychiatric Association, 1987): skipped school or work; ran away from home; destroyed property (other than setting fires); teased or fought with younger children; used a weapon in a fight; said things that were not true; stole (with confrontation of a victim, e.g., purse-snatching, mugging); stole (with no confrontation); broke into a house, building, or car; forced someone to have sex with him; were physically cruel to animals; joined with members of a gang to cause trouble; or got in trouble at home. This scale does not reflect a

diagnosis but a dimensional index of conduct problems. Because alcohol and drug use indicate a separate index of problem behaviors, these acts were excluded from this scale. Although we monitored the frequency of occurrence of each behavior, a conduct problem index was formed by summing the number of behavior problems reported over the last 6 months (a different time frame from the rest of the measures). Reliability was in the acceptable range (Cronbach $\alpha = .63$).

Multiple Problem Behaviors

Alcohol and drug use. During a 45-min interview, we assessed the prevalence, frequency of use, and form or method of the youths' consumption of alcohol, marijuana, cocaine, crack, heroin, barbiturates, amphetamines, hallucinogens, legal nonprescription medication, and prescription medication over the lifetime and during the last 3 months, using street language for each substance. The interview was developed on the basis of focus groups with drug abuse researchers, staff at community-based agencies, and focus groups with gay and bisexual youths. In this article, the frequency of use during the past 3 months is reported on a 3-point response scale from *never have used* (1) alcohol or any drug to *have used [the substance] less than weekly* (2) to *have used [the substance] at least once per week* (3).

Sexual behaviors. The youth Sexual Risk Behavior Assessment Schedule for homosexual males (Meyer-Bahlburg, Ehrhardt, Exner, & Gruen, 1988) was used to assess sexual behaviors with male and female partners during the past 3 months. Because the prevalence with female partners during the last 3 months was low and the type of sexual behaviors varied, we included only sexual behaviors with male partners. A *sexual partner* was defined as a person of the same gender with whom the youth engaged in oral sex, anal sex, or anilingus. A *sexual encounter* was defined as a single session of oral sex, anal sex, or anilingus. The number of male sexual partners, sexual encounters, and unprotected sex acts (i.e., the number of sexual acts minus the number of acts in which a condom was used during oral or anal sex) were calculated. Because these data were highly skewed, we trimmed each at a maximum of 5% (no more than 4 participants per assessment frame were trimmed) and then submitted each to a logarithmic transformation before computing any parametric statistics (J. Cohen & Cohen, 1983, p. 128).

Delinquency. Four items from Johnson and McCutcheon's (1980) Life Events Scale were modified to construct the Delinquency scale (Cronbach's $\alpha = .89$; e.g., "getting into trouble with the police but not arrested," "were arrested but not convicted of a crime," "getting put in jail," and "convicted of a crime"). Very few youths had these experiences in the last 3 months, which made the scale highly skewed. Therefore, we transformed it logarithmically before submitting it to significance testing.

Suicide attempts. A single item assessed the frequency of suicide attempts during the last 3 months.

Emotional distress. Three subscales of the Symptom Checklist-90 (SCL-90; Derogatis, 1983)—anxiety, phobic anxiety, and depression—were administered by using a 5-point Likert response scale from *not at all distressing* (0) to *extremely distressing* (4). The subscales were highly correlated (r s between .50 and .68) and formed a single, reliable factor (Cronbach's $\alpha = .81$), explaining 61% of the variance, and all three subscales loaded highly ($r = .66$ or higher). Therefore, a single subscale was formed by combining three subscales and converting the subscales to z scores to standardize their variability.

Stress

Gay-related events. An inventory of gay-related stressful life events was constructed on the basis of the youths' reports in focus groups. The seven-item measure summed items that included disclosing one's homosexuality to family and friends, having one's homosexuality dis-

covered by them, and being ridiculed or harassed for being gay (Cronbach's $\alpha = .80$).

Academically related events. Seven items from the Life Events Checklist (Johnson & McCutcheon, 1980) assessed academically related events (e.g., failing a grade, failing to make an athletic team, or being suspended from school; Cronbach's $\alpha = .79$).

Other stressful life events. Revisions were made in the Life Events Checklist (Johnson & McCutcheon, 1980) on the basis of focus groups and chart review with gay males. Thirty-seven events in key areas of life relevant for adolescents were summed from categories into the following five life domains: family (15 items; e.g., parents divorced), self (8 items; e.g., dropped from a school club), peers (7 items; e.g., fight with peer), health (4 items; e.g., hospitalized for illness), and moving from one place to another (3 items; Cronbach's $\alpha = .91$).

Personal Resources

Positive life events. Ten positive or desirable life events (Johnson & McCutcheon, 1980) were used to assess pleasant events (e.g., parent getting a new job, making an athletic team, making-up with a boyfriend or girlfriend). A count of the number of pleasant events was computed (Cronbach's $\alpha = .73$).

Self-esteem. Rosenberg's (1965) 10-item Self-Esteem scale was used. The items have a 4-point Likert response scale from *strongly agree* (1) to *strongly disagree* (4), with a high score indicating high self-esteem (Cronbach's $\alpha = .83$).

Results

How Common Are Multiple Problem Behaviors?

Table 1 contains the means and standard deviations of each of the multiple problem behaviors at baseline and each follow-up point on the unadjusted data. Analyses of some of the problem behaviors at baseline have been reported previously (Rotheram-Borus, Rosario, Meyer-Bahlburg, et al., in press; Rotheram-Borus et al., 1991) and are reviewed here for the reader. (For an extended presentation of the findings, see the references cited.)

Substance use was common: In the last 3 months, 68% used alcohol, 33% marijuana, and 14% cocaine (including crack cocaine); no one reported injecting drugs. Of our sample, 43% reported using alcohol on a less than weekly basis, whereas 26% used alcohol one or more times per week. For drug use, the respective numbers are 23% and 13%. Substantial numbers of youths reported bad reactions that are due to substance use (28%), as well as health problems (12%).

Sexual risk acts were also common. Over their lifetime, 92% of youths engaged in vaginal, oral, or anal sex. Most youths engaged in oral (71%) and anal (65%) sex, and almost one quarter engaged in anilingus (24%) with other male partners in the last 3 months, with a mean of 1.9 male partners and 7.2 encounters of oral and anal sex. Sexual behaviors were not normally distributed, with a few youths having had hundreds of male partners and encounters during the last 3 months. Fewer youths used condoms during oral sex (33% receptive, 18% insertive) than during anal sex (63% receptive, 50% active). Each of the indexes of sexual risk (the number of male sexual partners, sexual encounters, and unprotected sexual acts with male partners) were highly skewed, with extreme ranges on each measure. Therefore, we trimmed the top 5% of these data (no more than 4 participants per assessment frame) and submitted the trimmed

point. There were no significant differences in the frequency of problem behaviors between gay and bisexual adolescents at any time point. A significant difference in self-esteem at baseline (for gay youths, $M = 3.00$, $SD = 0.57$; for bisexual youths, $M = 3.2$, $SD = 0.40$) is one of 25 t tests conducted at baseline. When the Bonferroni correction was applied to control for the number of contrasts ($.05/25 = .002$), no significant differences were found. This is fewer than the number of differences that would be expected by chance. Similarly, we examined the slopes of each problem behavior for gay and bisexual youths; these too did not differ. The pattern of change in multiple problem behaviors was similar for gay and bisexual youths. Therefore, we did not distinguish these groups when conducting further analysis.

Is There an Underlying Dimension to Multiple Problem Behaviors?

We first tested a model replicating as closely as possible the analysis of Jessor and his colleagues (Jessor & Jessor, 1977). We conducted a factor analysis including the following behaviors: conduct problems, alcohol use, drug use, and sexual behavior. The goodness-of-fit test did not support a single latent factor underlying these four variables, $\chi^2(2, N = 127) = 3.3$, $p < .20$. In addition, both the factor loading (.23) and squared multiple correlation (.05) for sexual encounters were different and smaller than the loadings and squared multiple correlations for the other variables (e.g., .51 and .26, respectively, for conduct problems). We also tested a model consisting only of conduct problems, alcohol use, and drug use, omitting sexual behavior. These variables loaded highly on the single factor for the data collected at baseline: .50 for number of conduct problems, .82 for frequency of alcohol use, and .77 for frequency of drug use. The squared multiple correlations ranged from .25 to .68. At the follow-up points, we did not have an index of conduct problems but had to use a delinquency index to assess conduct problems. Alcohol and drug use and delinquency did not load on a single factor at the follow-up assessment points.

In addition, no single factor emerged when sexual behavior and the internalizing problem behaviors (emotional distress and suicide) were included among the multiple problem behaviors for data collected at the baseline interview and at any of the follow-up points. A series of confirmatory factor analyses, using LISREL VI (Joreskog & Sorbom, 1984), did not support the existence of a single, latent factor. The data indicated that alcohol and drug use clustered about one factor over time; however, the relation among emotional distress, suicide attempts, and sexual risk behaviors varied at different assessment points. At some points, these variables were related, but not at other time points. Given the strong relation among the sexual risk acts (number of partners, encounters, and unprotected sexual acts), each confirmatory factor model included only one of the risk acts. The results were quite similar; therefore, we only discuss models involving sexual encounters, the index that serves as a marker of sexual risk in this article.

We examined several unsuccessful strategies to attempt to replicate a single-factor solution: (a) Single-factor confirmatory factor models resulted in low loadings for sexual encounters, suicide attempts, and emotional distress; (b) the chi-square fit

test was significant rather than nonsignificant for models including number of sexual encounters, $\chi^2(9, N = 119) = 22.0$, $p < .05$, with factor loadings less than .40, the recommended cut-off indicating that a variable loads on a factor (Comrey, 1973); (c) a two-factor model was examined for the baseline data, significantly improving fit, $\chi^2(8, N = 119) = 13$, $p > .10$; and (d) at every later time period (assessments at 3, 6, 12, 18, and 24 months), when a two- or three-factor solution was attempted, the extracted factors did not contain the same variables across time. In summary, we could not find one dimension underlying the multiple problem behaviors, despite adopting several different strategies to identify such a dimension.

Do Problem Behaviors Change in a Similar Pattern Over Time?

Table 2 contains the Pearson product-moment correlations among the slopes of the measures of problem behaviors to answer the question of how changes across time in a problem behavior were similar across assessment periods. To control for Type I error, we submitted sets of correlations (e.g., each within- and between-correlations matrix) to an omnibus test that examined whether the set was significant (J. Cohen & Cohen, 1983; Steiger, 1980). If significant, the corresponding t test for each correlation was examined; if nonsignificant, each individual correlation was presumed to be nonsignificant.

The set of bivariate relationships between alcohol use, drug use, sexual encounters, delinquency, and emotional distress was significant, $\chi^2(10, N = 126) = 25.7$, $p < .05$, suggesting that these multiple problem behaviors were related to each other. A priori we excluded suicide attempts during the last 3 months because the incidence rate and, therefore, statistical power were low. Three bivariate correlations were significant ($p < .05$): Increasing alcohol use was related to increasing drug use ($r = .27$), and decreasing sexual encounters with males and decreasing emotional distress were associated with increasing delinquent acts ($r_s = -.24$ and $-.22$, respectively). The last two findings were unexpected given multiple problem behavior theory, for which we expected problem behaviors to be positively correlated.

How Common Are the Patterns of Problem Behaviors Demonstrated by Individual Youths?

Although problem behaviors may not form a single dimension for the sample, individual youths may demonstrate multiple problem behavior syndrome. Therefore, we examined individual patterns of problem behaviors for each participant. On the basis of the slope of each problem behavior over 2 years, we categorized the slopes into one of four patterns: (a) decreasing frequency, where the youth's slope was negative and more than one standard deviation from the zero slope; (b) consistently low, where the slope was within one standard deviation of zero, and the y -intercept for the youth was below the mean for the intercept on that measure; (c) consistently high, where the youth hardly changed over time, that is, the slope was within one standard deviation of the zero slope, and the y -intercept for the youth was above the mean of the intercept for the measure;

and (d) increasing frequency, where the slope was positive and greater than one standard deviation of a zero slope.

The majority of youths (59%) had fairly flat slopes and, therefore, their reports of problem behaviors were consistent across time for three or more behaviors. Most youths reported consistently low levels of problem behaviors: 39% of the youths were rated at a consistently low level on three or more of the problem behaviors. For example, 40% were consistently low on alcohol use, 58% were low on substance use, 63% were low on the number of delinquent acts, 74% never attempted suicide, and more than half were low on emotional distress consistently (52%). Only 11% were classed at a consistently high level on three or more of the problem behaviors. Sexual acts were those most likely to be reported high across time: 30% reported a high number of sexual encounters, 29% reported a high number of male partners, and 35% reported a high number of unprotected sex acts. Alcohol use was consistently high among 32% of youths; drug use was consistently high among 19% of youths. Fewer than 4% were classed as having the decreasing frequency pattern on three or more problem behaviors: 20% decreased in alcohol use, 15% decreased their emotional distress across time, 17% reduced the numbers of sexual encounters, 16% decreased their numbers of sexual partners, 10% reduced their delinquent acts, and 10% reduced drug use. Fewer than 1% were classed as having increasing frequency of three or more problem behaviors: A rising number of sexual partners over time was the most common change (20%), 16% increased the number of unprotected acts, 14% increased their drug use, and 5% increased their delinquent acts.

What Predicts Problem Behaviors Over Time?

We examined whether problem behaviors in the prior assessment period or at baseline informed us about subsequent problem behaviors at the next assessment. We classed each problem behavior as present or absent, and we conducted log linear analyses predicting future behaviors on the basis of past behaviors. Present and absent were defined respectively as having a score above or below the cross-assessment frame median. These log linear analyses generated odds ratios.² Only one consistent finding emerged: Those who engaged in a problem behavior were very likely to continue engaging in that same behavior in the future. This was found when the problem behaviors in the previous time period predicted a subsequent problem behavior or when the baseline problem behaviors predicted each problem behavior at every subsequent time period. In addition, we found that alcohol and drug use were related, indicating that those who consumed alcohol at an earlier time period were likely to consume drugs in the future, and vice versa. Aside from the reciprocal relationship between alcohol and drug use, we did not find that the other problem behaviors were consistently related to each other.

Table 1 indicates that stress was evident in each area; youths experienced about eight stressful life events during the last 3 months. Most of the stress was focused on gay-related stressors. With a potential range of seven gay-related stressors, youths reported a mean of 2.7 stressors in the last 3 months. Most youths (77%) experienced at least one event: 38% came out to their parents, 28% to siblings, and 50% to friends; 27% were discov-

ered to be gay by their parents, 33% by relatives, and 38% by friends; 50% had been ridiculed in the last 3 months for being gay. The ratings of academically related stressors ($M = 1.2$, range = 1–7) and stress in other life domains ($M = 5.8$, range = 1–29) were relatively less frequent. In the last 3 months, youths had also experienced about 3.2 positive life events (range = 1–10). Youths' self-esteem was above average at baseline ($M = 3.1$ out of a maximum score of 4) but was approximately average ($M = 1.8$) at every successive time period.

To examine differences in the frequency of stress and personal resources as a result of ethnicity, age, or youths' selected label for sexual orientation (gay or bisexual), bivariate correlations were computed for each measure of problem behaviors, stress, and personal resources, as well as for each background factor. Of the 20 bivariate correlations, only one was significant. Hispanic youths experienced more gay-related stress than Black youths. Because this one correlation was less than the number of significant correlations expected by chance, we did not impose statistical controls for age, ethnicity, and sexual orientation in later regression analyses.

Table 2 indicates that the slopes of the three stressful life events scales were significantly and positively related: Increasing stress in one domain was accompanied by increasing stress in another domain. Table 2 also contains the correlations among the multiple problem behaviors, stress factors, and personal resources. The omnibus test indicated the set of correlations was significant, $\chi^2(91, N = 113) = 233.3, p < .05$. The significant ($p < .05$) individual correlations primarily involved alcohol use: Increasing gay-related, academically related, and other life events stressors were associated with increasing alcohol use.

Rather than earlier problem behaviors predicting later behaviors, we hypothesized that stress would increase problem behaviors and personal resources would decrease the frequency. We conducted multiple linear regressions to examine the relation between stress and personal resources on each problem behavior at baseline and at 3 months, controlling for the presence of other problem behaviors. Because indexes of personal resources were not available at later time frames, we could not conduct this analysis beyond 3 months. The indexes of stress significantly predicted a problem behavior in 1 of 10 possible relationships: As the number of stressors in life domains associated with family, peers, and others increased, so did number of delinquent acts. Personal resources significantly predicted less alcohol use at 3 months and lower emotional distress at baseline.

Discussion

The theory of multiple problem behavior states that adolescent risk acts are not only related to one another but are actually linked by an underlying construct of unconventionality (Jessor & Jessor, 1977). When the theory was developed, no mention was made of youths' sexual orientation, and the samples studied were likely to have been predominantly heterosexual. The goal of this study was to examine the theory's generalizability to gay and bisexual male adolescents served at a gay-identified com-

² Log linear analyses are available on request from Mary Jane Rotham-Borus.

Table 2
Pearson Product Moment Correlations Among Multiple Problem Behaviors, Stress Factors, and Personal Resources

Variable	1	2	3	4	5	6	7
Multiple problem behaviors							
1. Frequency of alcohol use	—						
2. Frequency of drug use	.27*	—					
3. No. of male sex partners	.14	.21*	—				
4. No. of sexual encounters with males	.06	.14	.67*	—			
5. No. of unprotected acts with males	.02	.05	.40*	.68*	—		
6. No. of unprotected anal acts	.03	-.02	.26*	.32*		—	
7. No. of unprotected oral acts	.01	.11	.41*	.63*		.45*	—
8. No. of delinquent acts	.17	-.10	-.08	-.24*	-.03	-.07	-.06
9. No. of conduct problems	.36*	.04	.25	.26	.02	.11	-.03
10. Incidence of suicide attempt (yes/no)	.28*	.06	.05	-.03	-.01	.05	.10
11. Emotional distress (no. of symptoms)	-.18	.10	.04	.04	.05	-.01	.07
12. Externalizing problems			.17	.09	-.07	.08	-.12
Stress factors							
13. No. of gay-related stressors	.23*	-.06	.26*	.20	.04	.07	.12
14. No. of academic stressors	.31*	.13	.10	.24*	.15	-.02	.19
15. No. of other life stressors	.28*	.04	.14	.13	.19	-.02	.17
Personal resources							
16. No. of positive life events	.08	.12	.29*	.29*	.32*	.22*	.36*
17. Self-esteem	.02	-.03	.07	.00	-.03	.00	-.06
18. Grade point average (0-4)	.13	.03	.13	.10	.08	-.06	-.03
19. At grade level in school (yes/no)	.08	.03	.05	.07	-.10	-.09	.03
20. Religious affiliation (yes/no)	-.15	-.11	-.06	-.05	.10	.11	.03
21. Working (yes/no)	-.09	.00	.00	.08	-.01	-.07	.04

Note. Correlations were computed by using the slopes for each multiple problem behavior, stress factor, and personal resource calculated over 2
 * $p < .05$.

munity-based agency. We were unable to replicate Jessor and Jessor's assessment measures for sexual behavior and delinquency, limiting our ability to assess the generalization of Jessor's theory for the youths in this study. With this limitation, the data obtained do not support the theory of multiple problem behavior syndrome.

Gay and bisexual youths appeared to engage in problem behaviors. Although the substance use rates appeared higher than national norms (National Institute on Drug Abuse, 1990), the rates were similar to the senior high school male students in the Jessor and Jessor (1977) study for drinking (73% vs. 83%) and marijuana use (39% vs. 38%) and lower for problem drinking (17% vs. 12%). In addition, contact with the criminal justice system was lower among gay youths (i.e., never; 85% vs. 75%). Conduct problems were at about the same level as those found by Jessor and Jessor (1977; i.e., none, 28% vs. 25%). The rates of delinquency and school drop-out were lower than those reported by national samples of Black and Hispanic adolescents (Rutter, 1993; U.S. Bureau of the Census, 1986). In addition, the youths' scores on emotional distress were similar to community-based samples (Derogatis, 1983). Only the rate of suicide attempts appeared higher than reports of high school students' over 1 year (Centers for Disease Control, 1991).

Whereas most of the problem behaviors occurred at rates similar to heterosexual males, sexual behaviors were not similar (90% vs. 33% prevalence). In fact, because almost all of the gay and bisexual youths were sexually active, we could not use the marker of ever having sex or not having sex as our index of sexual risk, as was used by Jessor and Jessor (1977). We used re-

sponse scales that assessed the range of sexual partners, the frequency of sexual encounters, and the frequency of engaging in anal and oral sexual acts. Even though we used a different index, we expected the theory of multiple problem behavior to be sufficiently robust to allow for this modification, that is, not only to link the presence of problem behaviors but also to link variability in those behaviors. We expected statistical variability to enhance the strength of relationships.

However, sexual behavior did not appear to be part of the syndrome of problem behaviors in this sample. The results of the analyses were similar for each of the indexes of sexual risk. Even though youths engaged in most problem behaviors at levels similar to the heterosexual youths, the behaviors did not appear to factor into one dimension or syndrome as found by Jessor and Jessor (1977). This central finding was reflected in correlational and factor analyses, as well as in the examination of patterns of problem behaviors for individual youths (consistently high, consistently low, increasing, or decreasing). This attempt to replicate Jessor and Jessor's findings also failed whether we examined the structure of the problem behaviors at a single point in time or across all assessment frames using a slope analysis. Sexual behavior at one time frame was not related to alcohol or drug use, emotional distress, or delinquency at a subsequent time frame. The best predictor of future sexual behavior was past sexual behavior, a pattern found for each of the problem behaviors. Many of these youths had only one problem behavior: their sexual behavior, which was similar to a subgroup of heterosexual youths in Ensminger's (1990) sample. Given that these findings are at odds with earlier research,

8	9	10	11	12	13	14	15	16	17	18	19	20	21
—	—	—	—	—	—	—	—	—	—	—	—	—	—
-.11	.11	—	—	—	—	—	—	—	—	—	—	—	—
.05	.09	-.04	—	—	—	—	—	—	—	—	—	—	—
-.22*	.11	—	—	—	—	—	—	—	—	—	—	—	—
.10	.11	-.15	—	—	—	—	—	—	—	—	—	—	—
.12	.21	-.03	.18	.08	—	—	—	—	—	—	—	—	—
.11	.31*	.18	-.05	.19	.23*	—	—	—	—	—	—	—	—
.37*	.22	.05	.05	.01	.33*	.38*	—	—	—	—	—	—	—
.15	-.02	.14	.09	-.16	.21*	.38*	.44*	—	—	—	—	—	—
.22*	-.10	-.01	.11	-.08	.15	.03	.15	.12	—	—	—	—	—
.06	.31*	.10	-.03	.34*	.12	.09	.05	-.17	-.16	—	—	—	—
-.04	.03	.11	.16	.01	.21*	-.08	-.05	-.28*	.02	.18	—	—	—
-.04	-.16	-.15	-.30*	-.20	-.15	-.07	-.08	-.00	-.01	-.06	-.14	—	—
.02	-.03	.16	.04	.01	.06	.11	-.18	-.05	.05	-.17	-.03	.05	—

years. Blank values indicate variables that are linear combinations of each other.

it is critical to examine potential reasons for the discontinuity in the findings. The difference may be linked to the sampling strategy used; youths were not randomly selected from the New York City adolescent population. However, the original theory of multiple problem behavior was not based on randomly selected samples (Jessor & Jessor, 1977). Furthermore, studies of gay and bisexual adolescents are typically samples of convenience. The base rate of reported homosexuality among adolescents (3%; Sonenstein, Pleck, & Ku, 1991) is too low to allow a randomly selected sample; the size of the sample required to conduct developmental studies of gay-identified youths is cost prohibitive. Furthermore, gay and bisexual youths are likely to hide their sexual orientation because of negative societal sanctions (Rotheram-Borus et al., 1991), forcing researchers to recruit only youths who have publicly acknowledged their sexual orientation. Because most homosexual persons do not disclose their sexual orientation until adulthood (Jay & Young, 1979) and, therefore, did not contact a gay-identified agency during adolescence, the youths in this study are different from most homosexual adults. The sample does represent youths seeking services at the only gay-identified adolescent agency in New York City at the time, with most of these youths assessed over 2 years. Our findings are similar to the rate of occurrence of problem behaviors reported among White, middle-class gay male adolescents in the Midwest and Northwest (Remafedi, 1987a; Remafedi et al., 1991; Roesler & Deisher, 1972). However, it is critical to recognize that the sample does not reflect a generalizable sample of gay youths.

There were several other aspects of our analysis that point

to important developmental issues for gay and bisexual male adolescents. First, sexual behavior, per se, cannot be viewed as a problem behavior; problem behaviors appear to be a means of exploring one's self-identity and developing relationships with others who define themselves as gay or bisexual. The high rates of sexual risk taking (a) are consistent with other studies of gay male youths that are finding high levels of risk taking among young gay males and (b) point to the need for interventions to reduce that risk if this generation of gay and bisexual male adolescents is to survive into adulthood. Second, the high substance may reflect a number of possible determinants. Among the alternative explanations, youths may be adopting norms that exist within the gay subculture or reacting to negative reactions for being gay. Finally, stresses associated with being gay or bisexual (e.g., disclosure of sexual identity, anti-gay and bisexual stigmatization and victimization) are linked to problem behaviors. These results are consistent with theories about the buffering roles of personal resources (Farrell et al., 1992) and the negative impact of stress (Dryfoos, 1990; Rubenstein et al., 1989). We need to know more about the personal resources that mediate or "protect" gay and bisexual adolescents from such stressors.

The unexpected relation between sexual behavior and the other problem behaviors, emotional distress, and stress may indicate that gay youths may follow fundamentally different developmental pathways from heterosexual youths, particularly with respect to their sexual behavior (Cass, 1979; Coleman, 1982; Ehrhardt & Remien, in press; Savin-Williams, 1990; Sophie, 1986; Trolden, 1989). Adolescence is the developmental period during which personal identity is explored and commit-

ments are made for roles regarding sex role behavior, occupational choices, and religious and political beliefs (Erikson, 1950). In addition, youths who identify as gay or bisexual must explore their sexual orientation. This is rarely possible outside a sexual context because youths do not know which peers are gay, leading youths to specific community locations where they are likely to find older partners (Hunter & Schaecher, in press; Martin, 1982). Many gay youths may engage in sexual activity as a means of exploring their sexual orientation, making sexual activity for gay youths normative, as a developmental marker of identity formation. However, future research is needed to explore this hypothesis because a competing interpretation must be entertained: The failure of sexual activity to lead with other multiple problem behaviors may be attributed to ethnic status rather than to sexual orientation. In a sample of Black, inner-city adolescents, many of whom were sexually active (78% of the sample), Ensminger (1990) found that sexual activity was unrelated to substance use and assaultive behavior. Nevertheless, the minority status hypothesis is unlikely to apply to Hispanic adolescents because Hispanic adolescents are less likely to be sexually active than Black adolescents (Durbin et al., 1993; Kann et al., 1991; Sonenstein et al., 1989). Our failure to find significant differences between Hispanic and Black gay male adolescents on sexual activity, therefore, may suggest that sexual orientation rather than minority group status explains the inability of sexual activity to factor with the other multiple problem behaviors.

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