

Disengaged or Bookworm: Academics, Mental Health, and Success for Sexual Minority Youth

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Same-sex attracted youth (SSAY) experience higher rates of negative mental health outcomes compared with their heterosexual peers; however, the association between sexual minority status and academic achievement is less clear. We used four waves of data from the National Longitudinal Study of Adolescent Health to compare 1,279 ethnically diverse SSAY (57% male) based on the degree to which they were “engaged” (65%) or “disengaged” (35%) in school, classified through cluster analysis techniques. The pattern of results indicated significantly better mental health among the engaged group one and 6 years later (e.g., fewer depressive symptoms, less alcohol use), and more occupational and educational achievement eleven years later. The implications of school connection and achievement across a decade of life are discussed.

A growing body of evidence has shown that sexual minority (i.e., same-sex attracted) youth are at risk for a myriad of heightened health disparities (Institute of Medicine, 2011), especially suicidality and depression (Haas et al., 2010; Hatzenbuehler, 2011). A separate—yet narrow—body of research documents negative school experiences for sexual minority youth, at both the levels of interpersonal interactions (e.g., bullying; Kosciw, Greytak, Diaz, & Bartkiewicz, 2010) and the climate or culture of schools (e.g., policies and programs that promote safety and inclusion; Russell & McGuire, 2008).

Although there is a strong body of literature that documents compromised health of sexual minority youth and protective factors for these youth (see Eisenberg & Resnick, 2006; Saewyc, Konishi, Rose, & Homma, 2014), there is surprisingly little and

inconsistent empirical evidence for compromised academic achievement and related school outcomes in this population. If school experiences are often negative for sexual minority youth (see Russell, Seif, & Truong, 2001), why is there not clear evidence of compromised academic achievement and well-being? On one hand, the ability of some youth to do well academically seems to be undermined. For example, youth may feel or experience a lack of safety at school, which may undermine school performance (Goodenow, Szalacha, & Westheimer, 2006). On the other hand, some sexual minority youth may build strong ties with teachers or adopt academic priorities that are valued highly by adults (Seelman, Walls, Hazel, & Wisneski, 2012).

Prior studies provide evidence that support both possibilities. A small number of studies indicate that sexual minority adolescents report lower grades, feel less integrated and connected to peers (Pearson, Muller, & Wilkinson, 2007), and report less positive attitudes about school (Russell et al., 2001) especially when confronted with peer harassment. Additionally, the experience of peer harassment and negative school climates by sexual minorities could have long-term implications for educational and occupational attainment (Hewitt, 1995). Yet other evidence suggests that some sexual minority youth excel in school. For example, some sexual minority youth excel academically at schools with inclusive school policies and gay–straight alliances (Griffin, Lee, Waugh, & Beyer, 2003). One study found that sexual minority youth that were

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victimized at school reported lower academic achievement—yet school-based supports, such as inclusive policies and gay-straight alliance clubs offset the negative effects of victimization (Kosciw, Palmer, Kull, & Greytak, 2013). Theories of resiliency suggest that despite the stigma they face, many sexual minority youth successfully navigate adolescence (Saewyc, 2011).

These disparities are often attributed to minority stress (Meyer, 2003). Negative psychosocial outcomes are argued to result in part from homophobic and discriminatory stressors experienced by sexual minorities. The minority stress model has been used to study multiple forms of sexual minority adolescent maladjustment including behavioral problems that may last into adulthood (Kertzner, Barber, & Schwartz, 2011). Despite a direct and clear link between minority stress and compromised mental health (see Meyer, 2003), the associations with educational achievement are not as transparent. The minority stress model helps explain mental health disparities for sexual minority youth. It is understandable that stigmatization and victimization on the basis of sexual orientation leads, for example, to higher levels of depression for youth (Meyer, 2003). Yet minority stress experiences may not have singular direct associations for academic achievement.

We posit that inconsistent findings regarding academic outcomes may have to do with variability in engagement or connectedness at school for sexual minorities. Previous research shows that for the general population of adolescents, early perceptions of the learning environment (such as positive relationships with peers and teachers) predict later motivation, achievement, and emotional functioning in school (Roeser, Eccles, & Sameroff, 1998); similarly, positive teacher regard predicts academic values and competence (Roeser & Eccles, 1998). A prior study based on the National Longitudinal Study of Adolescent Health (Add Health; Russell et al., 2001) showed that for same-sex attracted youth, identifying a supportive teacher was a strong protective factor for academic achievement. Thus, notwithstanding minority stressors, some sexual minority students may have strong engagement with school due to supportive peers or teachers.

In this study, we investigate academic experiences for sexual minority youth and explore whether these experiences are related to subsequent mental health and educational and occupational attainment. We examine the collection of experiences for youth in terms of their investment, achievement, and engagement at school; we include

academic performance, school connectedness and belonging, and educational aspirations in our analyses. We expect that youth might react to their negative school environments in different ways to manage their minority stress.

METHOD

Participants

The National Longitudinal Study of Adolescent Health (Add Health) survey began in 1994 and is one of the most comprehensive studies of adolescents in the United States. The original in-home survey included 20,745 adolescents in Grades 7 through 12. Wave 1 began when students were between 14 and 18 years of age, Wave 2 was administered a year later, and Waves 3 (6 years later) and 4 (11 years later) when respondents were between the ages of 21 to 25 and 32 to 36, respectively. The study includes 1,279 same-sex and both-sex attracted youth who self-identified their romantic attractions at Wave 1; these participants are identified by their sexual attractions and not sexual identities or behaviors. About half of sexual minority subsample from the Add Health data was White (50%) and male (57%). The sample was racially and ethnically diverse: 22% reported their race as Black, and 20% of the sample reported their ethnicity as Hispanic.

Measures

All measures were reported by the adolescent.

Demographics. Participants reported their biological sex (0 = *female*, 1 = *male*) and race or ethnicity by choosing White, Latino, African American, Asian American, or Native American (0 = *not checked*, 1 = *checked*); those who chose more than one race were coded separately (0 = *checked one race*, 1 = *checked more than one race*). Youth who chose more than one race were treated as multiracial in the analyses. Age was calculated using information that asked the participants' birthdate. Last, parent education was measured by averaging the resident mother and father responses on the question: "How far in school did he (or she) go?" Responses ranged from 1 (*eighth grade or less*) to 9 (*professional training beyond a four-year college or university*).

Romantic attractions. Two items asked participants about their attractions at Wave 1: (1) Have

you ever had a romantic attraction to a male? and (2) Have you ever had a romantic attraction to a female? Two groups were created: those that reported romantic attractions only to another sex were categorized as having heterosexual attraction, whereas those who were romantically attracted to the same sex and those who were romantically attracted to the same sex and or to both the same sex and another sex were classified as sexual minorities (see Russell & Consolacion, 2003). In preliminary analyses, we tested potential differences in psychosocial outcomes for youth based on attraction to the same versus both sexes and found no differences.

Academic experience (measured at Wave 1). Four variables assessed adolescents' educational experience. Previous literature (see Pearson et al., 2007; Russell et al., 2001) has demonstrated the importance of these academic measures for sexual minorities.

Grade point average (GPA). GPA was assessed using four different items: self-reported grades of science, English, social studies, and mathematics. Subjects were combined and averaged to produce an overall GPA (Russell et al., 2001). GPA was based on a 4-point scale (i.e., 4 = A), $\alpha = .94$.

School belonging. The school belonging scale is a mean score of three items pertaining to the current school year: "feel close to people at school", "feel part of school", and "happy to be at school" (Russell et al., 2001). The response options ranged from 0 (*never*) to 4 (*every day*), $\alpha = .77$.

School trouble. The school troubles scale is a mean score of three items pertaining to the current school year: "getting along with other students", "paying attention", and "getting homework done" (Russell et al., 2001). The response options ranged from 0 (*never*) to 4 (*every day*); $\alpha = .69$.

Educational expectations. One item asked the participant if he desired to attend college after graduating high school (Pearson et al., 2007). The potential responses to this ordinal variable ranged from 1 (*no desire*) to 5 (*most desire*).

Late adolescent and young adult mental health and alcohol use. Items that measured young adult outcomes were administered at Waves 2 and 3.

Depressive symptoms. Depression was assessed by a sum score of 20 items from the CES-D adapted by Meadows, Brown, and Elder (2006) for use with Add Health. An example included: "Have you been depressed in the past 7 days?" Each item included dichotomous response options (1 = *yes*,

0 = *no*); thus, responses ranged from 0 to 20. Higher scores indicate higher rates of depression, $\alpha = .81$.

Self-esteem. Self-esteem was measured using six items drawn from the Rosenberg Self-Esteem Inventory (Rosenberg, 1965) and similar scales (e.g., "You like yourself just the way you are"); individuals answered on a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Higher scores correspond to higher self-esteem, $\alpha = .87$.

Suicide attempts. A single item asked: "During the past 12 months, how many times have you actually attempted suicide?" Response options were dichotomous (1 = *yes*, 0 = *no*).

Suicidal ideation. Suicide ideation was measured by a single item ("During the past 12 months, have you ever seriously thought about committing suicide?") Response options were dichotomous (1 = *yes*, 0 = *no*).

Ever drank alcohol. Participants were asked: "Have you had a drink of beer, wine, or liquor more than two or three times? Do not include sips or tastes from someone else's drink." Response options were dichotomous (1 = *yes*, 0 = *no*).

Alcohol consumption. Alcohol consumption was measured by a single item that asked: "Think of all the times you have had a drink during the past 30 days. How many drinks did you usually have each time? A 'drink' is a glass of wine, a can or bottle of beer, a wine cooler, a shot glass of liquor, or a mixed drink." Response options ranged from 0 to 18 drinks at a time.

Young adult educational and occupational success. All items that measured young adult success were at Wave 4.

Educational attainment. Participants were asked: "What is the highest level of education that you have achieved to date?" Responses ranged from 1 (*less than eighth grade*) to 13 (*completed postbaccalaureate professional education*).

Personal income. One item asked: "How much income did you receive from personal earnings before taxes—that is, wages or salaries, including tips, bonuses, and overtime pay, and income from self-employment?" The participant responded with the actual monetary amount of their income for the past year. Responses ranged from \$0 to \$999,995.

PLAN OF ANALYSIS

Data were analyzed for missing values, for outliers, and to ensure normal distributions. There were no outliers, and distributions were fairly normal. Miss-

ing data ranged from 2.5% to 32% on study variables; thus, the multiple imputation procedure in SAS 9.2 (SAS Institute, Inc., Cary, NC, United States) was used to create 10 imputed datasets that were then combined once analyses were conducted. Variables with high levels of missingness (more than 5%) included school trouble, school belonging, and GPA; we were able to imputed this data due to the large number of covariates available in Add Health that helped predict more reliable estimates (see Schlomer, Bauman, & Card, 2010 for an explanation of multiple imputation).

We assert that academic trajectories might appear as distinct subgroups (or "clusters") for same-sex attracted youth. To test this, a cluster analysis was conducted using SPSS 20.0 that included all 1279 participants. The four academic experience variables were chosen to identify potential clusters of achievement. A cluster analysis using the squared Euclidean distance similarity measure and hierarchical agglomerative cluster method was performed to investigate whether any potential classifications could be identified (for more information on cluster analysis, see Aldenderfer & Blashfield, 1984). We utilized the dendrogram and stopping methods (see Clatworthy, Buick, Hankins, Weinman, & Horne, 2005) and identified two clusters in the sample of sexual minority youth. To determine the validity of the clusters, we randomly divided the sample into two halves and repeated the cluster analysis on each; results indicated that the same clusters emerged. Last, a MANCOVA was conducted to investigate whether the clusters differed on variables that measured mental health, alcohol use, educational and occupation achievement in one model that controlled for age, biological sex, ethnicity, and parent education. Models were first disaggregated by sex; the overall model did not separate gender because findings were similar across sexes.

RESULTS

In Table 1, we present the means of the four membership variables that define each cluster. Results indicate two distinct groups of sexual minority youth: one cluster (which we label the "engaged youth," 52% male) significantly differed from the other cluster (which we label the "disengaged youth," 61% male) on GPA ($F = 12.83, p < .001$), school trouble ($F = 17.23, p < .001$), school belonging ($F = 20.36, p < .001$), and educational expectations ($F = 26.86, p < .001$). The engaged youth cluster was a little more than twice the size of the

disengaged youth cluster. In addition, the engaged cluster had significantly fewer Native American and male participants than the disengaged cluster.

Late Adolescent and Young Adult Outcomes by Cluster Membership

After identifying both clusters, cluster membership was then used to test whether youth differed on indicators of adjustment assessed at multiple time points over the next 11 years (see Table 2).

Mental health and alcohol use. Youth in the disengaged cluster reported more depression,

TABLE 1
Cluster Analysis Results

Membership Variables (Wave 1)	Engaged (n = 834)		Disengaged (n = 445)	
	M	SD	M	SD
Grade point average	2.63	0.83	2.32*	0.94
School trouble	3.22	2.30	4.97*	2.69
School belonging	12.39	1.50	7.56*	2.00
Desire for college	4.43	1.04	4.19*	1.14

Note. * $p < .001$ represents a significant difference in the mean between clusters on membership variables.

TABLE 2
Multivariate Analysis of Covariance Significant Effects by Wave 1 Clusters

Dependent Variable	Wave	F	df	Engaged (M/%)	Disengaged (M/%)
Depression	2	24.02***	8	13.53	18.48
	3	17.50***	8	5.56	7.57
Self-esteem	2	17.85	8	4.16	3.89
	3	5.92***	8	4.35	4.17
Suicide attempt	2	24.63***	8	14%	29%
	3	43.59**	8	4%	14%
Suicidal Ideation	2	12.70***	8	25%	28%
	3	6.58***	8	49%	69%
Ever drank alcohol	2	11.66***	8	50%	64%
	3	5.88***	8	76%	79%
Alcohol consumption	2	7.63	8	2.42	2.40
	3	19.12**	8	1.78	2.04
Education attainment	4	34.60***	8	5.42	5.16
Personal income (US dollars)	4	7.26*	8	40,406	30,552

Note. Wave 1: Ages 14–18; Wave 2: Ages 15–19; Wave 3: Ages 21–25, Wave 4: Ages 32–36; Results are adjusted for age, biological sex, ethnicity, and parent education. For categorical variables, no suicide attempt or ideation/drinking alcohol = 0, suicide attempt or ideation/drinking alcohol = 1. Multivariate model: $F = 18.18, p < .01$. * $p < .05$; ** $p < .01$; *** $p < .001$

suicide attempts and ideation, and alcohol use a year later, at Wave 2. Youth in the disengaged cluster reported significantly higher depression compared with their engaged counterparts. Youth in the disengaged cluster reported more suicidal ideation and suicide attempts than their counterparts in the engaged cluster, a difference that intensified over time. Additionally, youth in the disengaged cluster answered that they were more likely to have ever drank alcohol compared with their engaged cluster counterparts.

Six years later at Wave 3, youth in the disengaged cluster reported more depression, lower self-esteem, more suicide attempts and ideation, and more drinking (prevalence and ever drinking alcohol). Youth in the disengaged cluster reported significantly more depression compared with those in the engaged cluster. Youth in the disengaged cluster reported significantly lower self-esteem compared with their engaged counterparts. More youth in the disengaged cluster reported suicide attempts and ideations compared with their engaged counterparts, both significant differences. Last, youth in the disengaged cluster reported significantly more drinking compared with the engaged youth, such that disengaged youth were more likely to ever have drunken alcohol and used more alcohol than their engaged counterparts.

Educational and occupational success. Young adults classified in the disengaged cluster as adolescents reported significantly less educational attainment compared with their young adult counterparts that were classified in the engaged cluster. In addition, young adults who were classified in the disengaged cluster reported making significantly less money than their counterparts in the engaged cluster per year eleven years later.

DISCUSSION

Although prior studies document clear and strong mental health disparities for sexual minority youth, the link between sexual minority status and academic achievement has not been as clear. We asserted that different findings for mental health and academics have to do with the role of minority stress. In the realm of mental health, minority stress is clearly associated with compromised mental health. Yet such stressors might lead to multiple possible pathways in the academic realm; our study shows two distinct academic experiences in this national sample. We found that some youth engage at school, likely to ensure their academic

success, perhaps even in the face of adverse school experiences, while others disengaged at school and consequently report more troubles and lower educational expectations and achievement.

It is plausible that some youth might associate themselves with spaces for achievement and success, whereas other youth might “check out” and remove themselves from academic spaces (see Pearson et al., 2007). The finding that two-thirds of our sample was engaged at school is promising. Same-sex attracted youth are resilient given the many hostilities (Kosciw, Greytak, & Diaz, 2009) they report in educational settings and at home. Thus, it is imperative to continue examining protective factors for sexual minorities, especially LGB (lesbian, gay, bisexual)-specific protective factors such as involvement in the gay community (Sawyc, 2011). This has implications for how interventions might leverage the experiences of the engaged same-sex attracted students to support the one-third that reported disengagement in our sample from a resiliency perspective.

Disengaged adolescents were more likely to report compromised mental health both 1 year later (Wave 2) and 6 years later (Wave 3). According to the findings presented in this paper, a pattern of negative psychosocial outcomes in young adulthood begins as early as high school for some sexual minorities who were members of the disengaged cluster. This work reinforces the body of research that argues for investment in engaging sexual minority youth at school (e.g., Russell & McGuire, 2008). Last, this study provides an impetus for schools to continue to invest in creating safe environments with inclusive policies and programs to support same-sex attracted youth.

Limitations and Future Directions

This study has a number of strengths. First, we consider sexual minority development over time; most studies utilize cross-sectional data. Second, this study linked academic experiences to adjustment across a decade. No other studies have considered a set of diverse adult outcomes predicted by earlier school experiences. Despite the strengths of Add Health, there are few measures specific to sexual minority youth and their experiences. For purposes of these analyses, data were restricted to include only youth that reported same-sex and both-sex attractions. The use of other datasets designed to understand the lives of LGB-identified youth will extend the analyses presented here. In addition, the data from the first wave of Add

Health are nearly two decades old. Data are self-reported through Add Health; future studies might consider teacher and parent reports, as well as school records. Add Health does not include measures of general stress or sexuality-specific stress; thus, we cannot be sure whether the students in disengaged cluster encountered more stressful experiences.

There is a need to continue to study the educational performance and opportunities of sexual minorities in school (see Kosciw et al., 2010) because these results show a strong link between school experiences and several negative outcomes later in life. Attention should be paid to the use of intervention and prevention programming that may provide disengaged sexual minority youth the tools they need to engage in school and excel academically. These attempts could take strength-based approaches and focus on resilience of sexual minorities; most research has found that protective factors operate in similar ways for sexual minorities and the general population (see Saewyc, 2011).

Recent research has additionally noted the success and importance of enumerated and numerated antibullying policies which promote safe and supportive school climates by training teachers and supporting gay-straight alliance clubs (Russell & McGuire, 2008). School programs (e.g., gay-straight alliance networks) are associated with lower odds of discrimination and suicidal thoughts and attempts for LGB youth (Saewyc et al., 2014; Toomey, Ryan, Diaz, & Russell, 2011).

A potential negative academic experience for same-sex attracted youth might be buffered by the implementation of supportive policies that educate teachers how to handle bias-based harassment at school. In addition to antibullying policies, LGB-inclusive curriculum has been shown to have a positive impact of school climate for outcomes of both heterosexual and LGB students (Goodenow et al., 2006). Thus, our findings have implications for adults, clinicians, teachers, and stakeholders that wish to support sexual minority students in schools. Administrators can advocate for inclusive policies at school, while teachers may be trained to respectfully and thoughtfully create inclusive lesson plans to create engaging environments for sexual minority youth to learn and grow. Parents and students themselves can advocate for these changes in school- and district-level policies. There are opportunities to expand the existing body of literature with these findings by further examining how unique personality traits and family support and value of education might affect engagement at

school. Taken together with our findings, there is encouraging evidence that strategies that foster safety, connection, and achievement are likely to pay-off in the long run with better health and achievement in young adulthood.

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