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Mental and Physical Health Disparities Among Sexual and Gender Minority Adolescents Based on Disability Status

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Abstract

Purpose: Sexual and gender minority (SGM) youth and youth with disabilities both experience health disparities. Little data exist on whether SGM youth with disabilities have worse health outcomes compared with SGM youth without disabilities. This study aimed to examine differences in health behaviors and outcomes among a sample of SGM youth by different types of disabilities.
Methods: Secondary analyses were conducted with a subset ($N = 9418$) of the *LGBTQ National Teen Survey*, a comprehensive survey of risk and protective factors and health outcomes of SGM youth across the United States collected in 2017. Multiple types of disabilities (physical, cognitive, or psychiatric) and mental, behavioral, and physical health outcomes were self-reported.
Results: Of the sample, 18.3% reported a disability. Significant findings included higher odds of exercise avoidance, greater depressive symptoms and sleep concerns, and lower self-esteem and overall health ratings among SGM youth who reported any form of disability compared with SGM youth who reported no disability. Youth with cognitive disabilities had lower odds of alcohol use than youth with no disability. Youth with psychiatric disabilities had higher odds of cannabis and cigarette use, and lower physical activity than youth with no disability. Youth with either psychiatric or physical disabilities reported higher body mass index than youth with no disability.
Conclusion: SGM youth with disabilities experience greater health disparities than SGM youth with no reported disabilities. Results provide groundwork evidence about the impact of disability status on SGM adolescents. Disability-inclusive or -specific frameworks are needed for future interventions and studies of SGM youth.

Keywords: adolescents, disability, LGBTQ, mental health, physical health, substance use

Introduction

Sexual and gender minority (SGM) youth experience increased rates of adverse mental, behavioral, and physical outcomes compared with heterosexual and cisgender peers. For instance, SGM youth report higher rates of substance use and poor mental health than heterosexual and cisgender peers.[1] They are also less likely to participate in physical activity; in particular, sexual minority adolescent girls are at greater risk of being overweight or obese.[2] However, disparities are not uniformly distributed; gender minority youth are more likely to be overweight and physically inactive than sexual minority cisgender peers.[3]

These disparities are consistent with the minority stress model, which posits that the burden of unique stressors SGM youth experience related to their stigmatized identities puts them at risk of poor health.[4] Essentially, minority stressors (e.g., enacted victimization or discrimination, internalized stigma), largely driven by stigma and marginalization, are chronic stressors that have deleterious effects on health. The extent to which subgroups of SGM youth who experience multiple forms of marginalization, such as SGM

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youth with disabilities, are at greater health risks is significantly understudied.

The prevalence estimates of disability among children in the United States vary. One population estimate is 5.6% for children aged 5–17,[5] while ~14% of public school students of age 3–21 receive special education services.[6] The prevalence of disability increases with age. Youth with disabilities also experience health disparities and higher health risks, such as increased tobacco product use and condomless sex.[7,8] Although some disparities may stem from chronic physical and mental health conditions related to their disability, social oppression that perpetuates ableist barriers and stigma is another factor.[9]

There is a dearth of existing literature on health behaviors and outcomes at the intersection between SGM and disability status, in part because like sexual orientation and gender identity demographics, data collection on disability has been rare.[10] However, research among adults is concerning; for example, a study of adults with autism spectrum disorders showed significantly higher smoking rates and self-reported mental health conditions among SGM youth compared with heterosexual cisgender peers.[11]

SGM youth are more likely to have disabilities, including learning disabilities, than heterosexual and cisgender peers.[12] In addition, SGM youth with disabilities experience increased suicidal ideation compared with heterosexual youth with or without disabilities and SGM youth without disabilities.[13] Nonetheless, having multiple minority identities may also foster increased resilience or different effective coping strategies, as seen in SGM adolescents of racial and ethnic minority backgrounds.[14,15]

Knowledge about adolescent health outcomes for SGM youth with and without disabilities would allow researchers, policymakers, and clinicians to better understand unique health inequities, which can help inform and foster antiableist and resiliency-generating environments for youth with disabilities. This article aimed to describe mental and physical health behaviors and outcomes by disability status among a large national nonprobability sample of SGM adolescents. We specifically focused on health disparities by overall disability status and three different types of disabilities (i.e., physical, cognitive, and psychiatric). We hypothesized that SGM adolescents with a reported disability would show poorer mental and physical health outcomes than SGM adolescents without a reported disability.

Methods

Procedures

Secondary data analyses were conducted using the 2017 *LGBTQ National Teen Survey*, a comprehensive cross-sectional survey containing risk and protective factors and health outcomes of SGM youth across the United States.[16] Inclusion criteria were identification as a sexual and/or gender minority, ages 13–17 years, a resident of the United States, and ability to read and understand English. For the purposes of this study, only participants who responded to the self-reported disability measure were included in the analyses. Of those participants, 1906 were excluded for endorsing ''don't know'' for whether they had a known disability. The final analytic sample was $N = 9418$.

Participants were surveyed through several media of online recruitment. The original study was approved by University of Connecticut's Institutional Review Board #16–322. The analyses in this study utilized the anonymous dataset and were exempt from review. Consistent with prior work with SGM youth, parental permission was waived. Adolescent informed assent was obtained. More detailed information regarding the study design and data cleaning and preparation can be found elsewhere.[16] Responses were analyzed to minimize mischievous bias,[17] and responses were anonymous to minimize social desirability bias.

Measures

Demographic characteristics. All demographic characteristics were self-reported, including age, sex assigned at birth (''What sex were you assigned at birth?''), gender identity (''What is your current gender identity?''), race/ethnicity (Black or African American, American Indian or Alaska Native, Asian or Pacific Islander; Hispanic/Latino[a/x], White, or other), sexual orientation (''How do you describe your sexual identity?''). Table 1 lists response options; the measures have been previously reported elsewhere.[16] Gender identity (cisgender or transgender/gender minority) was constructed using sex assigned at birth and current gender identity. Geographical region was grouped by reported U.S. state into Northeast, Midwest, South, and West by the primary study team.

Disability. A question set assessed participants' disability identification. First, participants were asked, ''Do you consider yourself to have a disability?'' Response options were *yes*, *no*, or *don't know*. ''Don't know'' responses were excluded from data analyses. If *yes* was endorsed, participants were asked, ''Which of the following best describes the disability/disabilities that you have? Please select all that apply.'' Response options were *physical*, *developmental or learning*, *psychiatric/mental health*, or *another type of disability, please describe*. Write-in responses were further recategorized based on each disability's classic impact (e.g., physical disabilities included hearing loss; attention-deficient/hyperactivity disorder [ADHD], autism spectrum, and learning disorders were coded as cognitive disabilities,[18] and depression was coded as psychiatric).

Mental health outcomes. Depressive symptoms were assessed with 10 items from the Kutcher Adolescent Depression Scale.[19] Participants reported if they experienced any of the symptoms in the past week (e.g., ''low mood, sadness, feeling blah or down, depressed, just can't be bothered''). Responses ranged from 0 (*hardly ever*) to 3 (*all of the time*), and items were summed. Self-esteem was assessed with the 10-item Rosenberg Self-Esteem Scale (e.g., ''I feel that I have a number of good qualities'').[20] Responses ranged from 0 (*strongly disagree*) to 3 (*strongly agree*) and were averaged.

Lifetime substance use outcomes. We assessed recent alcohol, tobacco, and cannabis consumption using questions similar to items in the 2015 Youth Risk Behavior Survey. Substance use outcomes were as follows: alcohol use (''During your life, on how many days did you have at least one drink of alcohol?''), cannabis (''During your life, on how many days did you use marijuana?''), and cigarettes (''Have you ever tried cigarette smoking, even one or two

Table 1. Sample Demographics and by Disability

	Total sample, M *(SD)* *or* N *(%)*	*No disability,* M *(SD)* *or* N *(%)*	*Any disability,* M *(SD)* *or* N *(%)*	*Test statistic,* t *(df)*/χ^2 *(df)*	*Physical disability,* M *(SD)* *or* N *(%)*	*Cognitive disability,* M *(SD)* *or* N *(%)*	*Psychiatric disability,* M *(SD)* *or* N *(%)*
Age	15.62 (1.25)	15.62 (1.26)	15.64 (1.24)	t (9416) = 0.48, p = 0.631	15.76 (1.20)	15.76 (1.19)	15.64 (1.25)
Sex assigned at birth				χ^2 (1) = 83.71, p < 0.001			
Male	2507 (26.6)	2201 (28.6)	306 (17.8)		76 (17.0)	119 (21.4)	195 (14.5)
Female	6911 (73.4)	5498 (71.4)	1413 (82.2)		370 (83.0)	438 (78.6)	1149 (85.5)
Gender identity				χ^2 (5) = 484.53, p < 0.001			
Cisgender male	2197 (23.3)	1979 (25.7)	218 (12.7)		54 (12.1)	83 (14.9)	127 (9.4)
Cisgender female	4290 (45.6)	3968 (48)	592 (34.4)		154 (34.5)	162 (29.1)	441 (32.8)
Transgender male	719 (7.6)	508 (6.6)	211 (12.3)		63 (14.1)	66 (11.8)	182 (13.5)
Transgender female	108 (1.1)	81 (1.1)	27 (1.6)		8 (1.8)	9 (1.6)	20 (1.5)
Transmasculine/nonbinary	1902 (20.2)	1292 (16.8)	610 (35.5)		153 (34.3)	210 (37.7)	526 (39.1)
Transfeminine/nonbinary	202 (2.1)	141 (1.8)	61 (3.5)		14 (3.1)	27 (4.8)	48 (3.6)
Gender identity				χ^2 (1) = 464.42, p < 0.001			
Cisgender	6487 (68.9)	5677 (73.7)	810 (47.1)		208 (46.6)	245 (44.0)	568 (42.3)
Transgender	2931 (31.1)	2022 (26.3)	909 (52.9)		238 (53.4)	312 (56.0)	776 (57.7)
Sexual orientation				χ^2 (7) = 214.90, p < 0.001			
Gay/lesbian	3598 (38.2)	3111 (40.4)	487 (28.3)		131 (29.4)	166 (29.8)	350 (26.0)
Bisexual	3246 (34.5)	2709 (35.2)	537 (31.2)		142 (31.8)	176 (31.6)	407 (30.3)
Straight	145 (1.5)	117 (1.5)	28 (1.6)		8 (1.8)	10 (1.8)	20 (1.5)
Queer	385 (4.1)	296 (3.8)	89 (5.2)		30 (6.7)	22 (3.9)	75 (5.6)
Pansexual	1226 (13.0)	890 (11.6)	336 (19.5)		73 (16.4)	97 (17.4)	286 (21.3)
Asexual	417 (4.4)	287 (3.7)	130 (7.6)		32 (7.2)	51 (9.2)	111 (8.3)
Questioning	218 (2.3)	168 (2.2)	50 (2.9)		13 (2.9)	16 (2.9)	42 (3.1)
Other	183 (1.9)	121 (1.6)	62 (3.6)		17 (3.8)	19 (3.4)	53 (3.9)
Race/ethnicity				χ^2 (7) = 86.84, p < 0.001			
Asian or Pacific Islander	375 (4.0)	324 (4.2)	51 (3.0)		12 (2.7)	15 (2.7)	40 (3.0)
Black or African American	448 (4.8)	383 (5)	65 (3.8)		17 (3.8)	19 (3.4)	44 (3.3)
Hispanic/Latino(a)/x	969 (10.3)	861 (11.2)	108 (6.3)		29 (6.5)	31 (5.6)	82 (6.1)
American Indian or Alaska Native	42 (0.4)	27 (0.4)	15 (0.9)		4 (0.9)	4 (0.7)	13 (1.0)
Multiracial/biracial	1227 (13.0)	950 (12.4)	277 (16.2)		63 (14.2)	88 (15.9)	223 (16.6)
Middle Eastern	60 (0.6)	42 (0.5)	18 (1.0)		4 (0.9)	2 (0.4)	15 (1.1)
White	6232 (66.3)	5071 (65.9)	1161 (67.7)		310 (69.7)	386 (69.5)	909 (67.7)
Other	52 (0.6)	32 (0.4)	20 (1.2)		6 (1.3)	10 (1.8)	16 (1.2)

(*continued*)

Table 1. (Continued)

	Total sample, M *(SD)* *or* N *(%)*	*No disability,* M *(SD)* *or* N *(%)*	*Any disability,* M *(SD)* *or* N *(%)*	*Test statistic,* t *(df)*/χ^2 *(df)*	*Physical disability,* M *(SD)* *or* N *(%)*	*Cognitive disability,* M *(SD)* *or* N *(%)*	*Psychiatric disability,* M *(SD)* *or* N *(%)*
Geographical location				χ^2 (3) = 1.43, p = 0.70			
Northeast	1738 (18.5)	1430 (18.6)	308 (17.9)		74 (16.6)	98 (17.6)	246 (18.3)
Midwest	2177 (23.1)	1792 (23.3)	385 (22.4)		100 (22.4)	111 (19.9)	314 (23.4)
South	3441 (36.5)	2796 (36.3)	645 (37.5)		167 (37.4)	213 (38.2)	498 (37.1)
West	2062 (21.9)	1681 (21.8)	381 (22.2)		105 (23.5)	135 (24.2)	286 (21.3)
Disability	1719 (18.3)			—			
Physical disability	446 (4.7)	—	446 (25.9)			83 (14.9)	231 (17.2)
Cognitive disability	557 (5.9)	—	557 (32.4)		83 (18.6)		389 (28.9)
Psychiatric disability	1344 (14.3)	—	1344 (78.2)		231 (51.8)	389 (69.8)	
Mental health outcomes							
Depression	12.74 (7.48)	11.83 (7.20)	16.79 (7.39)	t (9045) = 25.16, p < 0.001	15.97 (7.42)	16.52 (7.65)	17.84 (6.96)
Self-esteem	1.50 (0.66)	1.57 (0.64)	1.20 (0.62)	t (8486) = 21.18, p < 0.001	1.24 (0.65)	1.23 (0.64)	1.10 (0.58)
Substance use outcomes							
Alcohol	5248 (56.0)	4285 (55.9)	963 (56.4)	χ^2 (1) = 0.13, p = 0.72	245 (55.4)	294 (53.0)	785 (58.8)
Cannabis	2534 (27.2)	2016 (26.5)	518 (30.5)	χ^2 (1) = 11.55, p < 0.001	139 (31.6)	161 (29.2)	425 (32.1)
Cigarette	2028 (21.8)	1590 (20.9)	438 (25.9)	χ^2 (1) = 19.78, p < 0.001	101 (23.0)	126 (23.0)	362 (27.4)
Physical health outcomes							
Health rating	1.50 (0.78)	1.58 (0.76)	1.16 (0.75)	t (9125) = 20.38, p < 0.001	1.04 (0.80)	1.20 (0.73)	1.10 (0.73)
Sleep	2.09 (1.19)	2.0 (1.17)	2.50 (1.20)	t (9157) = 15.74, p < 0.001	2.44 (1.25)	2.51 (1.21)	2.6 (1.17)
BMI	24.22 (6.29)	24.03 (6.05)	25.05 (7.19)	t (9013) = 5.99, p < 0.001	25.52 (7.62)	24.93 (7.06)	25.16 (7.31)
Exercise avoidance	6077 (66.2)	4835 (64.4)	1242 (74.3)	χ^2 (1) = 59.83, p < 0.001	321 (74.8)	398 (73.4)	999 (76.4)
Physical activity	36.51 (13.4)	36.76 (13.5)	35.40 (13.1)	t (9142) = 3.76, p < 0.001	35.88 (13.51)	35.35 (12.80)	34.92 (12.95)

Gender identity is presented in two ways: 1) disaggregated to show the varying gender identities represented in the sample; and 2) aggregated into two gender categories.
BMI, body mass index; *M*, mean; SD, standard deviation.

puffs?''). Response options for alcohol and cannabis use ranged from 0 (*0 days*) to 6 (*≥100 days*), and for cigarette use were 0 (*No*) and 1 (*Yes*). Consistent with prior work,[21,22] all substance use items were recoded to reflect no use = 0 and any lifetime use = 1.

Physical health outcomes. Participants rated their overall health with one item (''How would you describe your health?''); response options were 0 (*poor*) to 3 (*excellent*).[23] Sleep was measured by one item (''How often do you have trouble getting to sleep?''), with responses ranging from 0 = *never* to 4 = *always*.[24] Body mass index (BMI) was calculated with height, weight, age, and sex of participants using the Centers for Disease Control and Prevention growth charts.[25]

Physical activity was measured with the Godin Leisure-Time Exercise Questionnaire, which assessed strenuous, moderate, and mild exercise of at least 15 minutes duration.[26] This scale calculates an overall weighted activity score based on the frequency and intensity of exercise (e.g., mild activity was weighted by three points, whereas strenuous activity was weighted by nine points); higher scores indicate a higher activity level.[26] Exercise avoidance was assessed with a binary question, which asked participants if they avoided exercise (''Do you ever avoid exercise?''); response options were 0 (*No*) and 1 (*Yes*).

Analytic plan

Descriptive and regression analyses were conducted using IBM SPSS Statistics Version 25. For descriptive purposes, we conducted *t*-tests and χ^2 tests to examine differences by disability status (no reported disability vs. having any disability) in our sociodemographic and outcome variables. We then conducted regression analyses to test disability disparities in mental health, substance use, and physical health outcomes.

We conducted four separate models for endorsement of any disability (no disability vs. having any disability) and each type of disability (i.e., physical, cognitive, and psychiatric) for each health outcome. Logistic regressions were used for dichotomous outcomes (substance use, exercise avoidance), and linear regressions were used for continuous outcomes (depression, self-esteem, overall health rating, sleep, BMI, and physical activity). All models accounted for sociodemographic variables (age, gender identity, sexual orientation, race/ethnicity, and geographical region).

Results

Of the total sample, 18.3% reported having a disability. Of those reporting a disability, 78.2% reported a psychiatric disability, 32.4% a cognitive disability, and 25.9% a physical disability. Participants were 13–17 years old (mean [*M*] = 15.62, standard deviation = 1.25). Most participants reported their assigned sex at birth as female (73.4%) and were cisgender (68.9%). Most participants were gay/lesbian (38.2%) or bisexual (34.5%). Participants were mostly White (66.3%), with the largest proportion coming from the South (36.5%). More detailed participant information is presented in Table 1. *t*-Tests and χ^2 tests indicated that there were significant differences by disability status in sex, gender, sexual orientation, race/ethnicity, depressive symptoms, self-esteem, cannabis use, cigarette use, overall health rating, sleep, BMI, exercise avoidance, and physical activity.

Results of the regression models are reported in Table 2. We found that participants who reported physical, cognitive, or psychiatric disability had greater depressive symptoms and lower self-esteem than those with no reported physical ($\beta = 0.07$, $\beta = 0.06$), cognitive ($\beta = 0.09$, $\beta = 0.07$), or psychiatric disability ($\beta = 0.23$, $\beta = 0.19$).

Physical disability was not associated with any substance use outcomes. Participants with a cognitive disability had lower odds of alcohol use than those with no reported cognitive disability (adjusted odds ratio [AOR] = 0.80, 95% confidence interval [CI] 0.67–0.95); cognitive disability was not associated with cannabis or cigarette use. Participants with a reported psychiatric disability had greater odds of cannabis and cigarette use than those with no reported psychiatric disability (AOR = 1.22, 95% CI 1.07–1.40; AOR = 1.26, 95% CI 1.10–1.45); psychiatric disability was not associated with alcohol use.

Participants who reported a physical, cognitive, or psychiatric disability had poorer overall health rating and sleep than those with no reported physical ($\beta = -0.12$; $\beta = 0.05$), cognitive ($\beta = -0.08$; $\beta = 0.07$), or psychiatric disability ($\beta = -0.19$; $\beta = 0.14$). Participants with a physical or psychiatric disability had greater BMI than those with no reported physical ($\beta = 0.04$) or psychiatric disability ($\beta = 0.05$), respectively; cognitive disability was not associated with BMI.

Participants who reported a physical, cognitive, or psychiatric disability had higher odds of exercise avoidance than those with no reported physical (AOR = 1.44, 95% CI 1.15–1.80), cognitive (AOR = 1.33, 95% CI 1.09–1.62), or psychiatric disability (AOR = 1.63, 95% CI 1.41–1.87). Participants with a reported psychiatric disability were less likely to be engaged in physical activity than those with no reported psychiatric disability ($\beta = -0.037$); physical and cognitive disabilities were not associated with differences in physical activity.

The pattern of results comparing participants with no reported disability with participants with any reported disability across mental health, substance use, and physical health outcomes was consistent with the psychiatric disability results. Specifically, participants reporting any type of disability had greater depressive symptoms, lower self-esteem, higher odds of cannabis and cigarette use, poorer overall health rating and sleep, greater BMI, higher odds of exercise avoidance, and were less likely to be engaged in physical activity than participants with no reported disability.

Discussion

This study examined differences by disability status in multiple mental and physical health behaviors in a large national sample of SGM youth. Overall, nearly one in five SGM youth reported having a disability; psychiatric disabilities were most commonly reported in the sample. We found some differences by disability status for several health behaviors and outcomes.

The results of our study revealed differences in mental health, substance use, and sleep outcomes based on disability status among SGM youth. It is unsurprising to find higher likelihood of recent depressive symptoms, in part because youth with a reported psychiatric disability were included in the study. However, minority stress may also help explain these

Table 2. Summary of Results of the Linear and Logistic Regression Models

	Depression		*Self-esteem*	
	B *(SE)*	*β*	B *(SE)*	*β*
Any disability	4.02 (0.20)	0.21***	−0.29 (0.02)	−0.17***
Physical disability	2.50 (0.36)	0.07***	−0.19 (0.03)	−0.06***
Cognitive disability	2.98 (0.32)	0.09***	−0.20 (0.03)	−0.07***
Psychiatric disability	4.90 (0.22)	0.23***	−0.36 (0.02)	−0.19***

	Alcohol	*Cannabis*	*Cigarette*
	AOR (95% CI)	*AOR (95% CI)*	*AOR (95% CI)*
Any disability	0.97 (0.87–1.09)	1.13 (1.00–1.28)†	1.18 (1.03–1.34)*
Physical disability	0.89 (0.73–1.09)	1.12 (0.90–1.38)	0.93 (0.74–1.18)
Cognitive disability	0.80 (0.67–0.95)*	0.97 (0.80–1.40)	0.93 (0.75–1.15)
Psychiatric disability	1.11 (1.11–1.25)	1.22 (1.07–1.40)**	1.26 (1.10–1.45)**

	Overall health rating		*Sleep*		*BMI*	
	B *(SE)*	*β*	B *(SE)*	*β*	B *(SE)*	*β*
Any disability	−0.37 (0.02)	−0.18***	0.40 (0.03)	0.13***	0.85 (0.17)	0.05***
Physical disability	−0.43 (0.04)	−0.12***	0.28 (0.06)	0.05***	1.23 (0.31)	0.04***
Cognitive disability	−0.26 (0.03)	−0.08***	0.34 (0.05)	0.07***	0.56 (0.28)	0.02
Psychiatric disability	−0.41 (0.02)	−0.19***	0.49 (0.04)	0.14***	0.89 (0.19)	0.05***

	Exercise avoidance	*Physical activity*	
	AOR (95% CI)	B *(SE)*	*β*
Any disability	1.47 (1.30–1.67)***	−0.90 (0.37)	−0.028**
Physical disability	1.44 (1.15–1.80)**	−0.25 (0.66)	−0.004
Cognitive disability	1.33 (1.09–1.62)**	−0.82 (0.60)	−0.014
Psychiatric disability	1.63 (1.41–1.87)***	−1.42 (0.41)	−0.037**

The models account for age, gender identity, sexual orientation, race/ethnicity, and geographical region. Each type of disability was entered in a separate model.

†$p = 0.05$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

β, standardized coefficients beta; AOR, adjusted odds ratio; B, unstandardized beta coefficient; CI, confidence interval; SE, standard error.

differences. Given that SGM-specific minority stressors contribute to poor mental health and greater substance use, research is needed to examine the impact of ableism-based minority stress in understanding these disparities.

Ableism-based minority stress may stem from different causes such as chronic inaccessibility, ability-based harassment, exclusion, and discrimination, or medical trauma. These can be internalized as stigma or disability concealment. SGM youth with disabilities experiencing multiple forms of minority stress might experience synergistic or differential effects compared with youth without disabilities if only one or no identity is supported.

Symptoms of some disabilities can be inherently disruptive of sleep, such as disrupted sleep stemming from depression or chronic pain. Unfortunately, no literature seems to exist on this for adolescents. However, one study of adults found that adults with disabilities had higher prevalence of short sleep duration compared with those without disabilities (43.8% compared with 31.6%, respectively).[27]

SGM youth reporting psychiatric disabilities had greater risk of tobacco and cannabis use than their peers. This corresponds with a survey finding high rates of illicit substance use among adolescents with psychiatric disabilities,[28] including social anxiety disorder, an identified risk factor for alcohol and cannabis use.[29] Similarly, electronic cigarette use is consistently associated with greater mental health problems among adolescents, although directionality is uncertain.[30] SGM youth with disabilities may self-medicate to cope with ableism-specific minority stressors, such as ableist exclusionary experiences, which could explain greater risk for substance use.

In contrast, we found that SGM youth with a reported cognitive disability had lower odds of alcohol use than SGM youth without a reported cognitive disability. This finding is surprising, given that ADHD is associated with substance use. However, some literature suggests that youth with cognitive disabilities may be rejected by their peers and excluded from events, including ones with adolescent alcohol use, conferring a protective effect by an exclusionary mechanism.[31,32]

The findings of our study suggest that there are differences in physical health behaviors and outcomes based on disability status among SGM youth. Overall, SGM youth with disabilities had lower health ratings compared with SGM youth without a reported disability, which is expected given the extensive literature indicating that disability is associated with poorer health. However, this could also reflect internalized

disability stigma, which is categorized as internalizing negative stereotypes about people with disabilities into one's self-concept.[33] For example, SGM youth with disabilities may internalize a commonly held stigmatizing belief that having a disability means one cannot have perfect health, and in turn view themselves and their health in a negative manner.[34,35] This may cause youth to self-report lower health status than their true health status.

Ableism-specific minority stress might also explain disparities in physical behaviors and outcomes. For example, contexts where physical activity is promoted are often ableist; thus, SGM youth with disabilities may avoid these settings to avoid experiencing ableism. We also found that SGM youth with a reported physical or psychiatric disability had higher BMI than SGM youth with no reported physical or psychiatric disability. This finding is consistent with prior work, demonstrating that youth with disabilities have higher prevalence of obesity compared with youth without disabilities.[36] Instilling physical exercise routines during this period is more likely to persist into adulthood, which raises concerns that SGM youth with disabilities will experience increased disparities as they transition into adulthood.

Strengths and limitations

Strengths of this study include its unique ability to examine disparities in several mental and physical health outcomes among a large national sample of SGM youth based on disability status and the inclusion of multiple categories of disability. However, future studies could be strengthened by addressing the following limitations: The assessments are self-reported, and collapsed scales may obscure nuanced differences. The cross-sectional design cannot demonstrate trends in health outcomes that may not emerge until adulthood. Disabilities may have been misclassified into categories, which we argue would be nondifferential. Reported disability was only available for a small subset of participants, prohibiting us from more nuanced analysis or disaggregating by further disability type (e.g., physical included both sensory and mobility).

Severity of disability was not assessed in this study. Furthermore, those with more severe disabilities may not be represented, limiting our ability to evaluate whether severity correlates with poorer outcomes and potentially underestimating the impact of disability-specific minority stress. We also aggregated SGM youth into one group, which may hide gendered nuances, especially for gender minority youth with disabilities. Given that we found that gender minority youth reported greater rates of disabilities than cisgender youth in our sample, future work should examine disability disparities in health outcomes, specifically for gender minority youth.

Conclusions

Disability is often ignored, and may impact health behaviors and outcomes. Despite the overall small magnitude of differences seen among our reported health outcomes by disability status, these differences may accumulate over years if not addressed. Future work is needed to understand how ableism-specific minority stress may also interact with psychological and socioenvironmental factors to impact health outcomes. Further work is also needed to understand the intersection between identities, stigma, and health behaviors, and how they may impact health outcomes and access as well as health care utilization among SGM youth with disabilities. Our study provides initial insights into the impact of disability on SGM adolescents, which can inform design of disability-inclusive frameworks for future interventions and studies.

Disclaimer

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the CDC.

Authors' Contributions

M.S.A. and E.H.M. contributed to conceptualization, synthesis, writing, and editing. E.H.M. conducted the statistical analyses. R.J.W. contributed to review and editing. R.J.W. conceptualized the project, designed the study, and collected the data. All authors reviewed and approved the article before submission, and provided final approval of the article.

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