social sciences

MDPI

Article

Protective Factors for Marijuana Use and Suicidal Behavior Among Black LGBQ U.S. High School Students

DeKeitra Griffin [1,*], Shawndaya S. Thrasher [1], Keith J. Watts [2], Philip Baiden [3], Elaine M. Maccio [1] and Miya Tate [4]

[1] School of Social Work, Louisiana State University, Baton Rouge, LA 70803, USA; sthrasher@lsu.edu (S.S.T.); emaccio@lsu.edu (E.M.M.)
[2] College of Social Work, University of Kentucky, Lexington, KY 40506, USA; keithjwatts@uky.edu
[3] School of Social Work, The University of Texas at Arlington, Arlington, TX 76019, USA; philip.baiden@uta.edu
[4] School of Social Work, University of Georgia, Athens, GA 30602, USA; miya.tate@uga.edu
* Correspondence: dgrif36@lsu.edu

Abstract: This study aimed to investigate the association between protective factors, marijuana use, and suicidal behavior among Black LGBQ U.S. adolescents. Methods: A subsample of 991 Black LGBQ adolescents was derived from the 2019 Combined High School YRBSS dataset. Suicidal behavior was measured as suicidal planning and/or previous suicide attempts. Marijuana usage gauged lifetime consumption. The protective factors included sports team participation, physical activity, eating breakfast, hours of sleep, and academic performance. Age and sex were entered as covariates. Multiple imputation by chained equations (MICE) was used to address missing data, and pooled binary logistic regression analyses were conducted. Results: Academic performance and hours of sleep were significantly associated with lower odds of suicidal behavior and lifetime marijuana use. Sports team participation was associated with higher odds of lifetime marijuana use. Being female was linked to higher odds of marijuana use, while older age was associated with lower odds. Discussion: For Black LGBQ youth, academic performance and sufficient sleep may function as protective factors. Participating in sports was associated with greater odds of risk behaviors, highlighting the need to assess the experiences of Black LGBQ youth in sports. Implications and Contributions: Our findings inform school programming, policy, and practice by identifying academic support and sleep health as intervention areas.

Keywords: Black LGBQ adolescents; suicidality; substance use; protective factors

Academic Editors: Nigel Parton and Melinda McCormick

Received: 3 February 2025
Revised: 27 March 2025
Accepted: 17 April 2025
Published: 26 April 2025

Citation: Griffin, DeKeitra, Shawndaya S. Thrasher, Keith J. Watts, Philip Baiden, Elaine M. Maccio, and Miya Tate. 2025. Protective Factors for Marijuana Use and Suicidal Behavior Among Black LGBQ U.S. High School Students. *Social Sciences* 14: 267. https://doi.org/10.3390/socsci14050267

1. Introduction

Adolescence (ages 13–24) is a period filled with opportunities and, among some, risky behavior. In the United States (U.S.), there has been a notable rise in marijuana use and suicide rates among this age group (Bowers et al. 2011; Centers for Disease Control and Prevention 2019). Suicide is the second leading cause of death for adolescents aged 13–18 (Centers for Disease Control and Prevention 2019). Specifically, high school students, typically ages 14–18, who identify as Black (Lindsey et al. 2019; Opara et al. 2025) and lesbian, gay, bisexual, transgender, queer, questioning, intersex, or asexual (LGBTQIA+) are at a higher risk for suicidal thoughts and attempts compared to their White and non-LGBTQIA+ counterparts (Gibson 1989; Hong et al. 2011; Marshal et al. 2011; Ream 2019; Robinson and Espelage 2011). Research indicates that Black (Montgomery and Mantey 2018) and LGBTQIA+ high school students report higher rates of marijuana use (Yockey and Barnett 2023), particularly at the intersection of race and sexual orientation

(Eisenberg et al. 2022). These findings underscore the importance of understanding the unique challenges faced by Black LGBTQIA+ adolescents to develop effective interventions and support systems.

Research on protective factors for suicidal behavior and marijuana use among Black and LGBTQIA+ high school students has produced mixed results. While some studies suggest that sports participation may act as a protective factor (Hextrum 2020), others indicate it could be a risk factor (Robinson-Dooley 2022). Additional protective factors for suicide and marijuana use identified include eating breakfast, getting at least 8 h of sleep, maintaining high academic performance, and engaging in physical activity (Baiden et al. 2023; Joseph et al. 2023; Michael et al. 2020). However, existing studies often emphasize the risk factors for suicide and substance use (Lynch et al. 2020; Runcan 2020), with limited focus on the protective factors for those identifying as both Black and LGBTQIA+ (Arensman et al. 2020; Ati et al. 2021; Holman and Williams 2022; Schauer et al. 2020; Scheier and Griffin 2021). Given the heightened risks faced by this group, it is essential to assess whether these protective factors are relevant for Black LGBTQIA+ students. This study investigates whether physical activity, eating breakfast, averaging at least 8 h a night of sleep, sports participation, and high academic performance are protective factors associated with a decreased likelihood of lifetime marijuana use and suicidal behavior among Black lesbian, gay, bisexual, and questioning (LGBQ) high school students.

2. Literature Review

The suicide rate among Black adolescents has risen significantly, increasing by 131.5% over the past 20 years (Bridge et al. 2018; Centers for Disease Control and Prevention 2019). Similarly, LGBTQIA+ adolescents are three times more likely to experience suicidal ideations and attempts compared to their heterosexual peers (Gibson 1989; Hong et al. 2011; Marshal et al. 2011; Ream 2019; Robinson and Espelage 2011). Black individuals are less likely to report suicidal ideation than non-Hispanic White individuals, but they are more likely to report attempts (Perez-Rodriguez et al. 2008), and LGBQ adolescents are significantly more likely to report suicide planning and attempts (Caputi et al. 2017). Since suicidal ideation alone is not considered an effective predictor for a suicide attempt (Van Orden et al. 2010), researchers have turned their attention to planning and attempts instead of ideation, using the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance System (Li et al. 2022; Yang 2023).

Factors contributing to elevated suicide rates in LGBTQIA+ youth include, but are not limited to, family rejection, lack of belonging, and lack of acceptance (Hatzenbuehler 2011; Ryan et al. 2010). These experiences are associated with mental health challenges (i.e., anxiety and depression) (Aranmolate et al. 2017; Dueñas et al. 2020; Hatchel et al. 2019; Hatchel et al. 2021). Furthermore, such factors highlight the need to examine factors influencing suicidality among Black LGBQ youth.

Marijuana use in the U.S. has garnered significant attention, particularly among marginalized adolescents, including those identifying as Black or LGBTQIA+. These groups experience unique challenges that contribute to higher rates of marijuana use compared to their White and heterosexual/cisgender peers (Robin et al. 2002; Veliz et al. 2016). Research indicates that Black high school students are more likely to report marijuana use than their White counterparts (Centers for Disease Control and Prevention 2019; Montgomery and Mantey 2018), a disparity linked to structural factors such as systemic racism and resultant socioeconomic differences, and targeted marketing by the cannabis industry (Golub et al. 2005). Similarly, Yockey and Barnett (2023) suggest that marijuana use among LGBTQIA+ adolescents is associated with minority stress, discrimination, and maladaptive coping strategies in response to societal stigma. These findings highlight the need for

targeted interventions and support systems to address the specific challenges faced by these communities and mitigate the potential negative consequences of marijuana use.

Understanding the mental health disparities faced by Black LGBTQIA+ adolescents requires considering frameworks like minority stress theory (Meyer 2003) and intersectionality theory (Collins 2000; Crenshaw 1991). Minority stress theory posits that individuals holding marginalized identities experience chronic stress stemming from stigma, discrimination, and systemic oppression, which can take the form of internalized homophobia or structural racism (Meyer 2003; Moody et al. 2018). This stress can lead to maladaptive coping mechanisms, such as suicidality or substance use, and greater exposure to minority stressors correlates with worse mental health outcomes (Fulginiti et al. 2021; Meyer et al. 2008). Intersectionality theory, meanwhile, emphasizes that overlapping identities like race, gender, and sexual orientation interact to shape individuals' lived experiences, and potentially compounds exposure to stressors (Bauer 2014; Bowleg 2012). Applying these frameworks together illuminates why Black LGBTQIA+ adolescents may be especially vulnerable to mental health issues and substance use as they navigate the compounded risks associated with holding multiple marginalized identities simultaneously.

Black LGBTQIA+ adolescents compared to White LGBTQIA+ adolescents are more vulnerable to victimization and bullying (Almeida et al. 2009; Birkett et al. 2014; Grossman et al. 2009; Hatchel et al. 2019; Hillard et al. 2014; Mueller et al. 2015; Olsen et al. 2014; Robinson and Espelage 2012; Shields et al. 2012), emotional distress (Almeida et al. 2009), social isolation (Hall-Lande et al. 2007), and parental rejection (Needham and Austin 2010). Moreover, Black LGBTQIA+ adolescents experience racism and microaggressions both within and outside of the LGBTQIA+ community (Sutter and Perrin 2016). The intersection of race and sexual minority status for Black LGBTQIA+ adolescents may elevate stressors such as rejection or discrimination, leading to isolation (Mereish et al. 2022). Considering the increased risk of suicidality and substance use, especially marijuana use, among Black LGBTQIA+ adolescents, and the inaccessibility of services (Barksdale et al. 2010; Brailovskaia et al. 2018; Cook et al. 2013; Murry et al. 2011; Phillips 2010), it is important to focus on the protective factors that mitigate these maladaptive coping strategies.

2.1. Protective Factors for Suicide and Marijuana Use

Community center programs (Woodland 2008), faith-based communities (Morlock et al. 2008), and having a close relationship with parents (Hong et al. 2021) have been identified as protective factors for Black adolescents. Previous research has highlighted parental support (Eisenberg and Resnick 2006), family acceptance (Eisenberg and Resnick 2006), teacher support (Whitaker et al. 2016), and school safety (Whitaker et al. 2016) as protective factors against suicide and marijuana use among LGBTQIA+ adolescents. The resilience of Black LGBTQIA+ communities encompasses protective factors that aid in addressing and overcoming challenges associated with discrimination, stigma, and marginalization. Unfortunately, stigma and discrimination related to Black sexual minority adolescents' identities can lead to experiences of isolation that make it critical to examine the significance of protective factors for suicide and marijuana use.

Protective factors against suicide and marijuana use among Black adolescents include eating breakfast, sleeping at least 8 h a night, physical activity, playing on a sports team, maintaining good grades, and demonstrating self-efficacy (Latino et al. 2023; Reverdito et al. 2023). For example, Baiden et al. (2023) found that physical activity for at least 60 min for five out of the last seven days and higher academic performance decreased the odds of suicidal ideations and attempts among Black adolescents. Similarly, Crawford and Ridner (2018) highlighted physical activity as a protective factor for LGBTQIA+ adolescents. However, there is conflicting research about Black and LGBTQIA+ adolescents and partici-

pation in sports. Robinson-Dooley (2022) suggests that Black adolescents participating in sports endure heightened mental health challenges and risks, while Eitle and Eitle (2002) conclude that Black adolescents' sports participation does not correlate with mental health issues or substance use. For LGBTQIA+ adolescents, previous research emphasizes sports participation as a risk factor for mental health challenges, stemming from discrimination, stigma, and marginalization (Kulick et al. 2019), while Clark and Kosciw (2022) mention that sports participation serves as a protective factor for mental health.

Prioritizing sleep and breakfast is crucial for youth health and wellness (Defeyter and Russo 2013; Roberts and Duong 2015). Breakfast has been identified as a protective factor against adolescent suicide. Research indicates that skipping breakfast can lead to calorie deficiencies, potentially contributing to depressive moods and suicidal thoughts (Fulkerson et al. 2004; Lee et al. 2019). While studies on breakfast as a protective factor are limited, there is substantial literature on sleep. Data from the Youth Risk Behavior Surveillance System (YRBSS) show that getting 8 or more hours of sleep serves as a protective factor against suicide for Black (Baiden et al. 2020) and LGBTQIA+ adolescents (Joseph et al. 2023). However, identifying as a sexual minority increases the likelihood of sleep deprivation (Fricke and Sironi 2017), and sleep deprivation is associated with a higher risk of planning suicide among Black adolescents (Joseph et al. 2023). Beyond these few studies, the impact of these protective factors on Black LGBTQIA+ adolescents remains under-explored.

2.2. Theoretical Framework

Given the compounded stressors faced by Black LGBTQIA+ youth due to intersecting minority statuses (as outlined by minority stress theory and intersectionality), identifying potential buffers becomes crucial. The positive youth development (PYD) framework provides a valuable lens for this, shifting the focus from deficits to strengths and resources that might mitigate these specific challenges. PYD is an approach that is based on the idea of building young people's internal and environmental resources to support their development (Lerner et al. 2005). Instead of concentrating on risk behaviors, PYD encourages researchers and implementers to work on positive outcomes that lead to healthy development (Lerner et al. 2013; Werner and Smith 2019). PYD comprises 5 Cs that represent core skills that support healthy adolescent development: competence, confidence, connection, character, and caring (Lerner 2009). (1) Competence refers to a young person's ability in academic, social, and vocational areas, while (2) confidence is an internal sense of self-worth and self-efficacy (Lerner 2009). (3) Connection reflects positive bonds with people and institutions like family, peers, and schools (Lerner 2009). (4) Character involves respect for societal norms and a sense of integrity, and (5) caring refers to empathy and compassion for others (Lerner 2009). PYD is useful in the case of multiply disadvantaged youth, such as Black LGBTQIA+ youth, who must deal with racism, homophobia, and biphobia (Bauer 2014; Bowleg 2012).

In the context of this study, PYD is useful for examining predictors of suicidal behavior and lifetime marijuana use among Black LGBTQIA+ youth, as it highlights the importance of competence, confidence, and connection. These three Cs represent foundational developmental factors. Academic performance, eating breakfast, and hours of sleep are aligned with competence, focusing on cognitive, emotional, and physical well-being (Lerner 2009). Competence and confidence are reflected in physical activity and sports participation, while sports participation creates connections with peers and adults (Lerner 2009). These strengths may help to prevent negative behaviors such as suicidal activities and substance use (Geldhof et al. 2015; Murnan and Price 2004).

This study adopts PYD's perspective when examining the studied sample, thereby aiming to shift the narrative from a focus on young people's vulnerabilities to an exploration

of their strengths. Applying PYD within the constraints of the available YRBSS data, this study focuses primarily on aspects related to the three Cs of competence, confidence, and connection. Within this framework, behaviors such as maintaining good academic performance (linked primarily to competence), participating in sports (linked to connection and potentially confidence), and engaging in physical activity (linked to competence and confidence) are viewed as potential strengths (Good and Willoughby 2010; Lopez-Bermudez et al. 2024; Pereira da Silva et al. 2024). Similarly, foundational health behaviors like getting enough sleep and eating breakfast are considered essential for overall competence and functioning (Dahl 2004; Lundqvist et al. 2019). These strengths and behaviors are hypothesized, according to PYD principles, to foster favorable developmental conditions (Lerner et al. 2005) that are theoretically associated with a reduced likelihood of engaging in risky behaviors, such as suicidal behaviors or marijuana use (Price et al. 2001).

2.3. The Current Study

Given the increased risks of suicide and marijuana use among adolescents (Bowers et al. 2011; Centers for Disease Control and Prevention 2019), especially among those who identify as Black and LGBQ, as well as the lack of knowledge about protective factors, and the lack of behavioral and mental health resources for Black LGBQTQIA+ adolescents (The Trevor Project 2019), it is crucial to examine factors associated with risky health behaviors, including suicidal behavior and marijuana use. The present study aims to advance the field of LGBTQIA+ adolescent health research focused on intersectional identities by exploring factors associated with suicidal behavior and marijuana use among Black LGBQ youth. The purpose of the study is to explore whether eating breakfast, getting 8 h of sleep, participating in sports, engaging in physical activity, and maintaining good grades are linked to a decreased likelihood of suicidal behavior and marijuana use among Black LGBQ U.S. adolescents. Informed by previous research on Black youth, LGBQ adolescents, and PYD, it is hypothesized that these factors will be negatively correlated with suicidal behavior and marijuana use in Black LGBQ adolescents as well (see Figure 1).

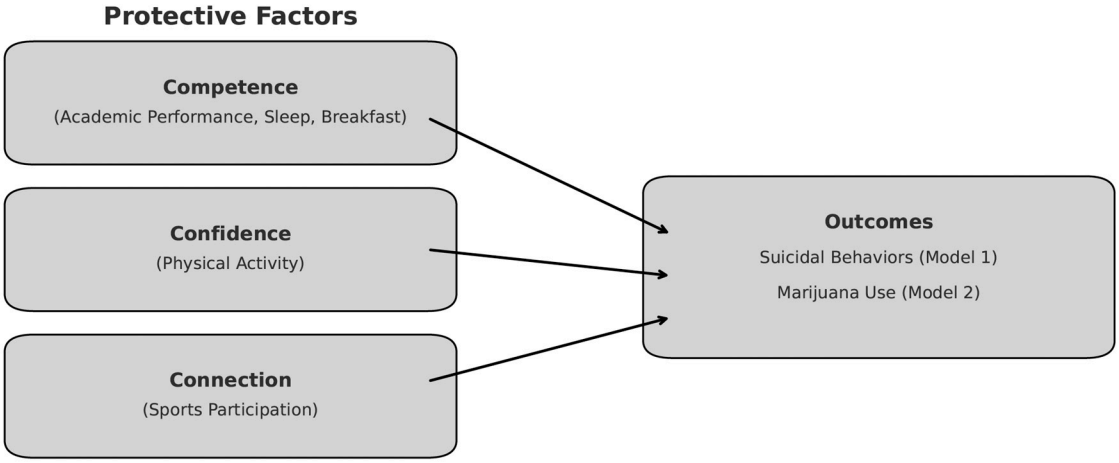

Figure 1. Conceptual Framework: Protective Factors and Adolescent Outcomes. Note: This framework illustrates the hypothesized associations between key protective factors—competence (academic performance, sleep, nutrition), confidence (physical activity), and connection (sports participation)—and the outcomes of suicidal behaviors and marijuana use among Black LGBQ adolescents.

3. Methods

3.1. Data Source

Data for this study were derived from the 2019 combined YRBSS, a national survey conducted biennially by the CDC to examine self-reported health-risk behaviors among

U.S. adolescents, focusing on the years 2015, 2017, and 2019. YRBSS is a cross-sectional, school-based survey of 9th to 12th grade students recruited from public and private schools in all 50 states and the District of Columbia using a three-stage cluster sample design to ensure data were nationally representative. Detailed information about the YRBSS study aims, methodology, and design is available elsewhere (Brener et al. 2013; Khan et al. 2012).

3.2. Sample

The total combined YRBSS sample comprised 44,066 adolescents, with annual samples of 15,624 in 2015, 14,765 in 2017, and 13,677 in 2019. A subsample of 991 participants who self-identified as both Black/African American and either lesbian, gay, bisexual, and/or not sure—representing questioning—(LGBQ) were included in the current study. It is key to note that there was a question asking if the participant identified as transgender. Given that this question contained missing data for every respondent, this study excluded Black transgender adolescents. The study sample was predominantly female (75%) and bisexual (53.3%), with an average age of 16.1 years (SD = 1.28; see Table 1). The selection of participants for the present analyses was based on their responses to suicide planning, suicide attempts, and lifetime marijuana use. Lastly, since de-identified secondary data were used, the current study did not require IRB approval.

Table 1. Study Sample Characteristics (n = 991 [a]).

Variable	*N*	%	Mean	SD
Sex				
Male	244	24.6		
Female	743	75.3		
Missing	4	0.4		
Age				
12 years or less	6	0.61		
13 years	3	0.3		
14 years	3	11.1		
15 years	110	23.31	16.06	1.28
16 years	231	25.13		
17 years	249	24.42		
18 year or more	242	15.04		
Missing	1	0.09		
Sexual identity				
Gay/Lesbian	220	22.2		
Bisexual	528	53.3		
Questioning	243	24.5		

[a] n = 991 represents participants who self-identified as both Black/African American and either lesbian, gay, bisexual, and/or not sure, representing questioning (LGBQ).

3.3. Measures

3.3.1. Dependent Variables

This study utilized two dependent variables. The variable "suicidal behavior" reflects the combination of two YRBSS variables: "suicide planning" and attempted suicide within the past 12 months. "Suicide planning/attempts" was coded 1 if the respondent endorsed either or both YRBSS variables and 0 if the respondent did not endorse either variable.

Marijuana usage assessed lifetime consumption and was coded 0, never used, and 1, ever used.

3.3.2. Independent Variables

The independent variables in the present study were the protective factors identified in the literature (Baiden et al. 2023; Baiden et al. 2020; Clark and Kosciw 2022; Crawford and Ridner 2018; Joseph et al. 2023; Latino et al. 2023; Michael et al. 2020; Reverdito et al. 2023): participating in sports, engaging in physical activity, eating breakfast, getting 8 h of sleep, and maintaining good grades.

Sports team participation was measured by asking students whether they participated in any sports team activity. Physical activity was measured by asking the students if they were active at least five out of the last seven days for at least 60 min. Eating breakfast was measured by asking participants whether they ate breakfast at least once within the last 7 days. Sleep was measured by asking participants whether they slept 8 or more hours per night on average. Maintaining good grades was measured by students' self-reporting whether all of their grades were B or higher. Responses to all items were coded 0 (no) and 1 (yes).

3.3.3. Control Variables

Age was measured by participants self-identifying as 12 years or younger, 13 years, 14 years, 15 years, 16 years, 17 years, or 18 years or older, and sex was measured by participants self-identifying as male (0) or female (1).

3.4. Data Analysis

The data were analyzed using IBM SPSS Statistics 29. First, variables were assessed for missing data. Results indicated substantial missing data (up to 27% on key predictors and up to 37% for outcome variables). The variables with missing data were sports participation, physical activity, hours of sleep, academic performance, and breakfast eating, along with the covariates age and sex, and outcomes of suicidal behavior and lifetime marijuana use. The mechanism of accounting for missing data was developed using SPSS's Compute Variable function. The variables with missing values were coded as 1 = missing and 0 = not missing. Then, chi-square tests were conducted via Crosstabs to check the relationship between each missingness indicator and the observed variables, i.e., age (categorized), sex, and suicidal behavior or lifetime marijuana use. Results suggested that missingness in most independent variables was associated with participant age and/or suicidal behavior ($p < 0.05$), indicating that data were not missing completely at random (MCAR). Instead, missingness was consistent with missing at random (MAR). Therefore, it was appropriate to use multiple imputation (MI) to address the missing data in the subsequent analyses.

Multiple imputation by chained equations (MICE) was performed using SPSS's fully conditional specification (FCS) method. The MICE procedure was repeated 10 times (Schafer 1999). The imputation model included all outcome variables (suicidal behavior and lifetime marijuana use), independent variables (e.g., sleep, grades, sports), and covariates (age and sex). Finally, parameter estimates and standard errors were computed on the combined imputed datasets using Rubin's rules (Rubin 1987).

Descriptive statistics were analyzed (Table 1), followed by two bivariate correlational analyses (see Table 2). Afterwards, two separate binary logistic regression models ($n = 991$) were conducted to explore whether the several protective factors were associated with two different outcomes, suicidal behavior and marijuana usage, controlling for age and gender. Due to the dichotomous nature of the dependent variables, two separate binary logistic regression analyses were conducted to examine associations between the protective factors and each outcome variable, suicidal behavior and lifetime marijuana use. This approach allowed for a focused examination of the protective factors relevant to each behavioral

outcome: suicidal behavior (model 1) and marijuana usage (model 2) among Black LGBQ adolescents. The predictor variables were sports participation, physical activity, hours of sleep, academic performance, and breakfast eating. Age and sex were included as covariates. Pooled logistic regression analyses were conducted using SPSS's binary logistic (imputed) procedure that combined results from all 10 imputations (Table 3).

Table 2. Pearson Correlations Between Protective Factors and Outcome Variables Among Black LGBQ Adolescents (n = 991).

Variables	%	M	SD	1	2	2	3	4	5	6	7
1. Suicidal behavior [yes]	31.60%			-							
2. Marijuana use [yes]	51.87%			0.13 ** [0.07, 0.20]							
3. Academic performance [yes]	62.93%			−0.13 *** [−0.19, −0.07]	−0.10 ** [−0.16, −0.04]	-					
4. Physically active [yes]	25.71%			−0.04 [−0.10, 0.02]	0.01 [−0.06, 0.07]	0.06 [−0.01, 0.12]	-				
5. Sleep [yes]	20.92%			−0.09 * [−0.15, −0.02]	−0.10 * [−0.16, −0.04]	−0.01 [−0.07, 0.06]	0.03 [−0.04, 0.09]	-			
6. Eating breakfast [yes]	78.60%			−0.08 [−0.14, −0.01]	−0.01 [−0.07, 0.06]	0.05 [−0.01, 0.11]	0.12 ** [0.06, 0.18]	0.02 [−0.05, 0.08]	-		
7. Sports team [yes]	46.43%			0.02 [−0.04, 0.09]	0.08 * [0.02, 0.14]	0.04 [−0.03, 0.10]	0.25 *** [0.19, 0.31]	0.00 [−0.06, 0.06]	0.11 ** [0.05, 0.17]	-	
8. Age		16.06	1.28	−0.04 [−0.10, 0.02]	0.13 *** [0.07, 0.19]	0.01 [−0.05, 0.07]	−0.05 [−0.11, 0.01]	−0.08 * [−0.15, 0.02]	−0.03 [−0.09, 0.03]	−0.05 [−0.12, 0.01]	-
9. Sex [female]	75.30%			0.06 [0.01, 0.13]	0.14 *** [0.08, 0.20]	0.02 [−0.04, 0.08]	0.02 [−0.04, 0.08]	−0.02 [−0.11, 0.02]	−0.01 [−0.07, 0.05]	0.02 [−0.05, 0.08]	−0.04 [−0.10, 0.02]

* Indicates $p < 0.05$, ** indicates $p < 0.01$, *** indicates $p < 0.001$.

Table 3. Pooled Multivariable Binary Logistic Regression Results Using Multiple Imputation among Black LGBQ U.S. Youth (n = 991).

	Model 1: Suicidal Behavior		Model 2: Lifetime Marijuana Use	
Variables	**OR (95% CI)**	***p* Value**	**OR (95% CI)**	***p* Value**
Academic performance	0.57 (0.41–0.78)	**<0.001**	0.62 (0.43–0.86)	**0.004**
Physically active	0.82 (0.56–1.20)	0.311	0.99 (0.69–1.42)	0.970
Hours of Sleep	0.61 (0.41–0.92)	**0.018**	0.64 (0.43–0.97)	**0.034**
Eating breakfast	0.69 (0.44–1.09)	0.107	0.99 (0.69–1.42)	0.971
Sports team	1.21 (0.85–1.72)	0.287	1.46 (1.10–1.95)	**0.010**
Sex	1.38 (0.97–1.96)	0.073	2.01 (1.45–2.80)	**<0.001**
Age in years	0.92 (0.81–1.06)	0.252	0.26 (0.13–0.54)	**<0.001**

Note. Results are pooled estimates from 10 multiple imputed datasets, using fully conditional specification (MICE) in SPSS. Odds ratios (ORs) and 95% confidence intervals (CIs) are reported. DV for Model 1: Suicidal Behavior (suicide planning and/or attempt). DV for Model 2: Lifetime Marijuana Use. ORs less than 1 indicate reduced odds of the outcome; ORs greater than 1 indicate increased odds.

4. Results

In the suicidal behavior model (model 1), academic performance was associated with a decreased likelihood in suicidal behaviors (OR = 0.57, 95% CI [0.41, 0.78], $p < 0.001$), and hours of sleep was also associated with a decreased likelihood of suicidal behaviors (OR = 0.61, 95% CI [0.41, 0.92], $p = 0.018$). Physical activity, breakfast eating, sports participation, sex, and age were not significant predictors in this model ($p > 0.05$). In the lifetime marijuana use model (model 2), academic performance (OR = 0.62, 95% CI [0.43, 0.86], $p = 0.004$), hours of sleep (OR = 0.64, 95% CI [0.43, 0.97], $p = 0.034$), and age (OR = 0.26, 95% CI [0.13, 0.54], $p < 0.001$) were associated with a decreased likelihood of lifetime marijuana usage. Sports team participation (OR = 1.46, 95% CI [1.10, 1.95], $p = 0.010$) and sex (OR = 2.01, 95% CI [1.45, 2.80], $p < 0.001$) were associated with an increased likelihood of lifetime marijuana usage. Participants identifying as female had significantly higher odds of reporting marijuana use than males, and as age increased, participants had a

significantly lower likelihood of reporting lifetime marijuana usage. Physical activity and eating breakfast were not significant for the lifetime marijuana usage model ($p > 0.05$).

5. Discussion

The findings of this study indicate that academic performance and adequate sleep are associated with decreased odds of both suicidal behavior and lifetime marijuana use among Black LGBQ youth. Furthermore, age, sex, and sports team participation were also found to be associated with the likelihood of lifetime marijuana use, with younger participants and those who identified as female having higher odds of use. These findings emphasize the potential importance of these school-related and behavioral factors for the health outcomes of this population and reinforce the need to further explore these relationships in the context of adolescent health research, paying careful attention to intersecting identities and experiences of the participants.

Making grades of at least As and Bs significantly decreased the odds of Black LGBQ students planning and/or attempting suicide and using marijuana. This finding suggests that academic success may serve as a protective factor against mental and behavioral health in this population. This finding aligns with previous research (Baiden et al. 2023), highlighting the importance of educational achievement in promoting mental health and well-being among adolescents. Higher academic performance may provide a sense of purpose, social support, and access to resources that may buffer against the development of suicidal behavior.

Consistent with hypotheses and prior research, sufficient sleep (defined as 8 or more hours per night) was significantly associated with lower odds of both suicidal behavior and lifetime marijuana use among Black LGBQ youth in this study. This aligns with previous work highlighting sleep as a protective factor against suicide for both Black adolescents (Baiden et al. 2020) and LGBTQIA+ adolescents generally (Joseph et al. 2023). The association with reduced marijuana use may be related to the known impact of sleep deprivation on impaired decision-making, increased impulsivity, and heightened risk-taking behaviors (Galván 2020). These findings are particularly salient given that sexual minority youth experience disproportionate sleep deprivation (Fricke and Sironi 2017), and insufficient sleep is linked to a higher suicide planning risk, specifically among Black adolescents (Joseph et al. 2023). Therefore, this study adds valuable evidence suggesting that adequate sleep may function as a crucial protective factor against multiple adverse behavioral health outcomes, even within this multiply marginalized population.

Findings from this study highlight that young, Black sexual minority females are twice as likely to report ever consuming marijuana compared to young, Black sexual minority males. This study aligns with that of Fish et al. (2021), emphasizing that LGBQ girls report higher substance use rates than LGBQ boys. Research on substance use should consider how race, sex, and sexual orientation intersect for Black LGBQ youth, as these intersecting identities may contribute to specific risk factors and lived experiences.

While sports participation is often promoted within a PYD framework for fostering connection and competence (Lerner 2009), the benefits may not be universally realized. Consistent with minority stress theory (Meyer 2003) and intersectionality (Crenshaw 1991), Black LGBQ adolescents may encounter unique stressors within sports environments, including racism, homophobia, biphobia, discrimination, microaggressions, exclusion, or intense pressure to conform to norms that do not affirm their identities (Kulick et al. 2019; Sutter and Perrin 2016). Such adverse experiences could plausibly counteract potential mental health benefits, contributing to the non-significant finding for suicidal behavior in this study, which aligns with some research indicating that sports participation does not consistently reduce suicide risk, specifically for LGBQ youth (e.g., Kulick et al. 2019).

Furthermore, the heightened stress from navigating potentially unwelcoming sports environments, or alternatively, the specific social dynamics and peer networks within certain teams, might foster maladaptive coping mechanisms. This could partially explain the observed association with increased odds of lifetime marijuana use, a pattern noted in other research comparing substance use rates among LGBQ athletes and their peers (Veliz et al. 2016). Therefore, while sports can offer protective elements, these findings underscore the critical need to assess and ensure that athletic settings are actively inclusive, affirming, and supportive of Black LGBQ youth; otherwise, participation may fail to be protective or even pose additional risks.

Whereas some past research has found that eating breakfast was inversely associated with suicidal ideation among adolescents (Fulkerson et al. 2004; Lee et al. 2019; Michael et al. 2020), we found no support for our hypothesis that eating breakfast was protective against suicidal behavior and marijuana use among Black LGBQ adolescents. For instance, using data from the 2017 YRBSS, Michael et al. (2020) found that male and female adolescents who did not eat breakfast, compared to those who did, had 1.36 times higher odds of considering attempting suicide, and more than twofold higher odds of attempting suicide during the past year. The non-significant association observed between eating breakfast and these outcomes suggests that its potential protective influence may be overshadowed by other factors, such as academic performance and sleep, within this marginalized and vulnerable group of adolescents.

5.1. Limitations and Future Research

While this study contributes to the growing body of literature on the health disparities and protective factors faced by Black LGBQ adolescents, it is not without limitations. Though there are three cycles of national data, the short period of 2015–2019 may not be sufficient to evaluate trends and is limited to a cross-sectional study design. Given the use of secondary data, the study was limited to existing measures, some of which may not fully capture the complexity of the outcomes examined. Considering that the magnitude of the associations is quite modest, studies using other levels of measurement, such as continuous variables, may provide greater sensitivity in capturing the complexity of Black LGBQ youth experiences. Additionally, the following differing time frames used for the key outcome variables must be considered: lifetime marijuana use captures behavior over a potentially long period, whereas suicidal behavior was assessed for the past 12 months. This discrepancy limits the ability to draw conclusions about the temporal relationship between current protective factors (often measured with recent referents like “last 7 days” or “average”) and these outcomes, particularly for lifetime marijuana use, which may have predated recent circumstances. As such, longitudinal data are necessary to monitor changes over time. It is also important to track the ongoing disparities faced by LGBQ students through continuous monitoring of these indicators. The students who identified as Black and LGBQ were a small sample overall; consequently, the ability of the current analyses to identify variations and trends in models stratified by sexuality and race/ethnicity was limited. Moreover, survey questions about gender identity were optional for respondents, making it impossible to include transgender youth in the analyses, since participants did not answer this question. The likelihood of identifying trends in stratified models will increase as data from more LGBTQIA+ adolescents are gathered in subsequent cycles of the national YRBSS.

While this study identifies multiple factors associated with marijuana usage and suicidal behavior, it does not clarify whether a combination of factors might interact to increase risk, nor does it examine whether marijuana usage might directly relate to or compound the risk of suicidal behavior. Understanding the interaction between marijuana

usage and other identified risk factors and the interaction between protective factors themselves could provide crucial insights into more comprehensive prevention strategies for reducing suicidal behavior in this vulnerable population. Additionally, research is warranted to examine potential differences in the association between suicidal behavior and substance use, given the intersections of race, gender, and sexual minority status, alongside studies exploring adaptation and resilience processes within these groups. Future research should also qualitatively explore which and whether certain protective factors are pertinent to preventing risky health behaviors among Black LGBQ adolescents.

In this study, MICE was used because of the missing data and as a method to prevent the bias brought about by listwise deletion. MICE is regarded as a robust and popular technique for handling missing data, assuming that the data are MAR (Austin et al. 2021). Even though diagnostic tests (e.g., chi-square associations between missing data and outcome variables) supported the plausibility of the MAR assumption, it is possible that some missingness was due to unobserved factors that would lead to bias (Carpenter and Kenward 2012). Furthermore, while MICE increases statistical power and precision by keeping cases with partial data, it is not a substitute for complete or longitudinal data, and does not eliminate all of the uncertainty in the estimates (Sterne et al. 2009). The use of pooled estimates also requires that the measurement is consistent across imputations, and it does not capture the variability that may occur in single datasets (Rubin 1987). Finally, although the models reveal the relationships between protective factors and health behaviors, we cannot establish causality. To understand how these factors interact over time and how they may be acted on by structural determinants like racism, homophobia, and school climate, we need longitudinal and intersectional research.

5.2. Implications for Policy, Practice, and Education

This study underscores the importance of academic achievement and sleep hygiene for positive mental and behavioral health outcomes among Black LGBQ adolescents. Therefore, there is an urgent need for governmental policy changes at the federal, state, and local levels to support Black LGBQ adolescents. Policies should prioritize creating supportive and inclusive environments within educational institutions to facilitate academic success for Black LGBQ adolescents. Public health initiatives should also address the importance of sleep hygiene and promote healthy sleep habits among Black LGBQ adolescents to potentially reduce marijuana use, as sleep deprivation has been linked to increased substance use (Babiss and Gangwisch 2009). By prioritizing these policy changes, governments can work towards creating a more supportive and nurturing environment for Black LGBQ adolescents, ultimately improving their overall well-being and reducing the risk of negative health outcomes.

In addition to academic and behavioral support, communities should try to ensure that sports participation is accessible, affirming, and inclusive for Black LGBQ youth. However, while participation on sports teams was linked to a higher likelihood of marijuana use, many LGBTQIA+ youth have reported being excluded, harassed, or made to feel invisible in athletic settings (Kulick et al. 2019). Youth programs and schools should ensure that they have anti-bullying policies in place that specifically include sexual orientation, gender identity, and race; train their coaches on LGBTQIA+ cultural responsiveness; and ensure that Black LGBQ youth are able to participate in team sports without the fear of being discriminated against (Kulick et al. 2019). Offering more choices regarding gender-inclusive sports, and focusing on the aspects of belonging, teamwork, and well-being, as opposed to competition, may be the key to improving the protective factors for this population when it comes to sports.

School-based healthcare practitioners, such as school social workers, guidance counselors, and school nurses, should prioritize interventions that support academic success and healthy sleep hygiene and practices, and encourage supportive social interactions that provide inclusive spaces for Black LGBQ adolescents. Incorporating discussions on healthy sleep habits and substance use prevention strategies into their treatment plans may promote holistic wellness and greater resilience, and reduce the risk of negative health behaviors in this vulnerable population (Claudatos et al. 2019). Additionally, in educational settings, interventions and therapeutic practices that support academic success can be instrumental in reducing the likelihood of suicidal behaviors such as planning and attempts. Addressing sleep hygiene and promoting healthy sleep habits may also help to decrease the likelihood of marijuana use among this population. Lastly, schools can enhance support for students' mental health and wellness by adding a break during the day dedicated for students to take a nap (Lemos et al. 2014), or having a later start time for adolescents (Carvalho-Mendes et al. 2020). Addressing these factors in policy, clinical practice, and education may help improve the well-being and mental and behavioral health outcomes of this vulnerable population.

6. Conclusions

The present study highlights the need to examine protective factors in relation to both mental and behavioral health outcomes among Black LGBQ adolescents. Using pooled estimates from multiple imputed data, academic performance and sleep hygiene were negatively associated with the odds of suicidal behavior and lifetime marijuana usage, while participation in sports was positively associated with the odds of lifetime marijuana use. These findings emphasize the importance of comprehensive approaches to address the mental health needs of Black LGBQ adolescents and the significance of considering various factors in developing effective interventions and support systems for this vulnerable population.

This paper also contributes to the existing PYD literature on Black LGBQ youth, who are typically underrepresented in broader adolescent health research. Through identifying factors that are linked to resilience and decreased health risks, the findings move beyond narratives of deficits and instead highlight the potential for strengths-based, affirming interventions. Therefore, academic success and healthy sleep routines may be important components of culturally responsive PYD strategies that support well-being and decrease vulnerability for Black LGBQ adolescents.

Author Contributions: Conceptualization, D.G.; methodology, D.G. and S.S.T.; formal analysis, D.G. and S.S.T.; resources, D.G.; writing—original draft, D.G.; writing—review and editing, D.G., S.S.T., K.J.W., P.B., E.M.M. and M.T.; supervision, S.S.T. and K.J.W. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Restrictions apply to the availability of these data. Data were obtained from the Centers for Disease Control and Prevention, and are available at https://www.cdc.gov/yrbs/data/national-yrbs-datasets-documentation.html (accessed on 29 December 2023) with the permission of the Centers for Disease Control and Prevention.

Conflicts of Interest: The authors declare no conflicts of interest.

References

Almeida, Joanna, Renee M. Johnson, Heather L. Corliss, Beth E. Molnar, and Deborah Azrael. 2009. Emotional Distress among LGBT Youth: The Influence of Perceived Discrimination Based on Sexual Orientation. *Journal of Youth and Adolescence* 38: 1001–14. [CrossRef] [PubMed]

Aranmolate, Rasaki, Danielle R. Bogan, Tiffany Hoard, and Anthony R. Mawson. 2017. Suicide risk factors among LGBTQ youth. *JSM Schizophrenia* 2: 1011. [CrossRef]

Arensman, Ella, Vanda Scott, Diego De Leo, and Jane Pirkis. 2020. Suicide and Suicide Prevention from a Global Perspective. In *Suicide and Suicide Prevention from a Global Perspective*. Edited by Ella Arensman, Diego De Leo and Jane Pirkis. Göttingen: Hogrefe, pp. S3–S7. [CrossRef]

Ati, Niken A. L., Mareta D. Paraswati, and Heni D. Windarwati. 2021. What Are the Risk Factors and Protective Factors of Suicidal Behavior in Adolescents? A Systematic Review. *Journal of Child and Adolescent Psychiatric Nursing* 34: 7–18. [CrossRef] [PubMed]

Austin, Peter C., Ian R. White, Douglas S. Lee, and Stef van Buuren. 2021. Missing Data in Clinical Research: A Tutorial on Multiple Imputation. *Canadian Journal of Cardiology* 37: 1322–31. [CrossRef]

Babiss, Lindsay A., and James E. Gangwisch. 2009. Sports Participation as a Protective Factor against Depression and Suicidal Ideation in Adolescents as Mediated by Self-Esteem and Social Support. *Journal of Developmental and Behavioral Pediatrics: JDBP* 30: 376–84. [CrossRef]

Baiden, Philip, Catherine A. LaBrenz, Yi Jin Kim, Jennifer J. Muehlenkamp, and Shawndaya Thrasher. 2023. Risk and Protective Factors Associated with Suicidal Ideation and Suicide Attempts Among Black Adolescents Based on the 2017 Youth Risk Behavior Survey. *Journal of Black Psychology* 49: 319–58. [CrossRef]

Baiden, Philip, Savarra K. Tadeo, Betty C. Tonui, Jaylon D. Seastrunk, and Godfred O. Boateng. 2020. Association between Insufficient Sleep and Suicidal Ideation among Adolescents. *Psychiatry Research* 287: 112579. [CrossRef]

Barksdale, Crystal L., Melissa Azur, and Philip J. Leaf. 2010. Differences in Mental Health Service Sector Utilization among African American and Caucasian Youth Entering Systems of Care Programs. *Journal of Behavioral Health Services & Research* 37: 363–73. [CrossRef]

Bauer, Greta R. 2014. Incorporating Intersectionality Theory into Population Health Research Methodology: Challenges and the Potential to Advance Health Equity. *Social Science & Medicine* 110: 10–17. [CrossRef]

Birkett, Michelle, Stephen T. Russell, and Heather L. Corliss. 2014. Sexual-Orientation Disparities in School: The Mediational Role of Indicators of Victimization in Achievement and Truancy Because of Feeling Unsafe. *American Journal of Public Health* 104: 1124–28. [CrossRef]

Bowers, Edmond P., Steinunn Gestsdottir, and G. John Geldhof. 2011. Developmental Trajectories of Intentional Self Regulation in Adolescence: The Role of Parenting and Implications for Positive and Problematic Outcomes among Diverse Youth. *Journal of Adolescence* 34: 1193–206. [CrossRef] [PubMed]

Bowleg, Lisa. 2012. The Problem with the Phrase Women and Minorities: Intersectionality—An Important Theoretical Framework for Public Health. *American Journal of Public Health* 102: 1267–73. [CrossRef]

Brailovskaia, Julia, Tobias Teismann, and Jürgen Margraf. 2018. Cyberbullying, Positive Mental Health and Suicide Ideation/Behavior. *Psychiatry Research* 267: 240–42. [CrossRef]

Brener, Nancy D., Laura Kann, Shari Shanklin, Steve Kinchen, Danice K. Eaton, Joseph Hawkins, and Katherine H. Flint. 2013. Methodology of the Youth Risk Behavior Surveillance System-2013. *MMWR Recommendations and Reports* 62: 1–20.

Bridge, Jeffrey A., Lisa M. Horowitz, Cynthia A. Fontanella, Arielle H. Sheftall, Joel Greenhouse, Kelly J. Kelleher, and John V. Campo. 2018. Age-Related Racial Disparity in Suicide Rates among US Youths from 2001 through 2015. *JAMA Pediatrics* 172: 697–99. [CrossRef] [PubMed]

Caputi, Theodore L., Davey Smith, and John W. Ayers. 2017. Suicide Risk Behaviors Among Sexual Minority Adolescents in the United States, 2015. *JAMA* 318: 2349–51. [CrossRef] [PubMed]

Carpenter, James R., and Michael G. Kenward. 2012. *Multiple Imputation and Its Application*. Hoboken: John Wiley & Sons Inc. [CrossRef]

Carvalho-Mendes, Rubia P., Gideon P. Dunster, Horacio O. de la Iglesia, and Luiz Menna-Barreto. 2020. Afternoon School Start Times Are Associated with a Lack of Both Social Jetlag and Sleep Deprivation in Adolescents. *Journal of Biological Rhythms* 35: 377–90. [CrossRef]

Centers for Disease Control and Prevention. 2019. Data & Documentation. Available online: https://www.cdc.gov/healthyyouth/data/yrbs/data.htm (accessed on 17 January 2024).

Clark, Caitlin M., and Joseph G. Kosciw. 2022. Engaged or Excluded: LGBTQ Youth's Participation in School Sports and Their Relationship to Psychological Well-Being. *Psychology in the Schools* 59: 95–114. [CrossRef]

Claudatos, Stephanie, Fiona C. Baker, and Brant P. Hasler. 2019. Relevance of Sleep and Circadian Rhythms to Adolescent Substance Use. *Current Addiction Reports* 6: 504–13. [CrossRef]

Collins, Patricia Hill. 2000. Gender, Black Feminism, and Black Political Economy. *The Annals of the American Academy of Political and Social Science* 568: 41–53. [CrossRef]

Cook, Benjamin Lê, Colleen L. Barry, and Susan H. Busch. 2013. Racial/Ethnic Disparity Trends in Children's Mental Health Care Access and Expenditures from 2002 to 2007. *Health Services Research* 48: 129–49. [CrossRef]

Crawford, Timothy N., and S. Lee Ridner. 2018. Differences in Well-Being between Sexual Minority and Heterosexual College Students. *Journal of LGBT Youth* 15: 243–55. [CrossRef]

Crenshaw, Kimberle. 1991. Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review* 43: 1241–99. [CrossRef]

Dahl, Ronald E. 2004. Adolescent Brain Development: A Period of Vulnerabilities and Opportunities. Keynote Address. *Annals of the New York Academy of Sciences* 1021: 1–22. [CrossRef]

Defeyter, Margaret Anne, and Riccardo Russo. 2013. The Effect of Breakfast Cereal Consumption on Adolescents' Cognitive Performance and Mood. *Frontiers in Human Neuroscience* 7: 789. [CrossRef]

Dueñas, Jorge-Manuel, Matheus Fernández, and Fàbia Morales-Vives. 2020. What Is the Protective Role of Perceived Social Support and Religiosity in Suicidal Ideation in Young Adults? *Journal of General Psychology* 147: 432–47. [CrossRef]

Eisenberg, Marla E., Amy L. Gower, Ryan J. Watson, G. Nic Rider, De'Shay Thomas, and Stephen T. Russell. 2022. Substance Use Behaviors Among LGBTQ+ Youth of Color: Identification of the Populations Bearing the Greatest Burden in Three Large Samples. *Journal of Adolescent Health* 71: 317–23. [CrossRef]

Eisenberg, Marla E., and Michael D. Resnick. 2006. Suicidality among Gay, Lesbian and Bisexual Youth: The Role of Protective Factors. *Journal of Adolescent Health* 39: 662–68. [CrossRef]

Eitle, Tamela McNulty, and David J. Eitle. 2002. Race, Cultural Capital, and the Educational Effects of Participation in Sports. *Sociology of Education* 75: 123–146. [CrossRef]

Fish, Jessica N., Meg D. Bishop, and Stephen T. Russell. 2021. Developmental Differences in Sexual Orientation and Gender Identity–Related Substance Use Disparities: Findings from Population-Based Data. *Journal of Adolescent Health* 68: 1162–69. [CrossRef] [PubMed]

Fricke, Julie, and Maria Sironi. 2017. Dimensions of Sexual Orientation and Sleep Disturbance among Young Adults. *Preventive Medicine Reports* 8: 18–24. [CrossRef]

Fulginiti, Anthony, Harmony Rhoades, Mary Rose Mamey, Cary Klemmer, Ankur Srivastava, Garrett Weskamp, and Jeremy T. Goldbach. 2021. Sexual Minority Stress, Mental Health Symptoms, and Suicidality among LGBTQ Youth Accessing Crisis Services. *Journal of Youth and Adolescence: A Multidisciplinary Research Publication* 50: 893–905. [CrossRef]

Fulkerson, Jayne A., Nancy E. Sherwood, Cheryl L. Perry, Dianne Neumark-Sztainer, and Mary Story. 2004. Depressive Symptoms and Adolescent Eating and Health Behaviors: A Multifaceted View in a Population-Based Sample. *Preventive Medicine* 38: 865–75. [CrossRef]

Galván, Adriana. 2020. The Need for Sleep in the Adolescent Brain. *Trends in Cognitive Sciences* 24: 79–89. [CrossRef]

Geldhof, G. John, Jennifer A. Malin, Amy L. Johnson, Matthew J. Hilliard, Edmond P. Bowers, and Richard M. Lerner. 2015. Adolescent Thriving: The Role of Sparks, Relationships, and Empowerment. *Journal of Youth and Adolescence* 44: 947–964. [CrossRef]

Gibson, Paul. 1989. *Gay Male and Lesbian Youth Suicide. Report to the Secretary's Task Force on Youth Suicide: Vol. 3. Prevention and Intervention in Youth Suicide*; Edited by Marcia Feinleib. Washington, DC: U.S. Department of Health and Human Services, pp. 110–42.

Golub, Andrew, Bruce D. Johnson, and Eloise Dunlap. 2005. The Growth in Marijuana Use Among American Youths During the 1990s and the Extent of Blunt Smoking. *Journal of Ethnicity in Substance Abuse* 4: 1–21. [CrossRef]

Good, Marie, and Teena Willoughby. 2010. Evaluating the Direction of Effects in the Relationship between Religious versus Non-Religious Activities, Academic Success, and Substance Use. *Journal of Youth and Adolescence* 40: 680–93. [CrossRef]

Grossman, Arnold H., Adam P. Haney, Perry Edwards, Edward J. Alessi, Maya Ardon, and Tamika Jarrett Howell. 2009. Lesbian, Gay, Bisexual and Transgender Youth Talk about Experiencing and Coping with School Violence: A Qualitative Study. *Journal of LGBT Youth* 6: 24–46. [CrossRef]

Hall-Lande, Jennifer A., Marla E. Eisenberg, and Sandra L. Christenson. 2007. Social Isolation, Psychological Health, and Protective Factors in Adolescence. *Adolescence (San Diego): An International Quarterly Devoted to the Physiological, Psychological, Psychiatric, Sociological, and Educational Aspects of the Second Decade of Human Life* 42: 265.

Hatchel, Tyler, Dorothy Espelage, and Gabriel J. Merrin. 2019. Peer Victimization and Suicidality among LGBTQ Youth: The Roles of School Belonging, Self-Compassion, and Parental Support. *Journal of LGBT Youth* 16: 134–56. [CrossRef]

Hatchel, Tyler, Joshua R. Polanin, and Dorothy L. Espelage. 2021. Suicidal Thoughts and Behaviors among LGBTQ Youth: Meta-Analyses and a Systematic Review. *Archives of Suicide Research* 25: 1–37. [CrossRef]

Hatzenbuehler, Mark L. 2011. The Social Environment and Suicide Attempts in Lesbian, Gay, and Bisexual Youth. *Pediatrics* 127: 896–903. [CrossRef]

Hextrum, Kirsten. 2020. Socializing Sport: How Academic Exclusion and Athletic Inclusion Draw Black Youth to Sport. *Journal of Contemporary Athletics* 14: 281–305.

Hillard, Pamela, Lisa Love, Heather M. Franks, B. A. Laris, and Karin K. Coyle. 2014. 'They Were Only Joking': Efforts to Decrease LGBTQ Bullying and Harassment in Seattle Public Schools. *Journal of School Health* 84: 1–9. [CrossRef] [PubMed]

Holman, Mikayla S., and Matt N. Williams. 2022. Suicide Risk and Protective Factors: A Network Approach. *Archives of Suicide Research* 26: 137–54. [CrossRef] [PubMed]

Hong, Jun Sung, Alberto Valido, Matthew M. Koehl-Rivas, Ryan M. Wade, Dorothy L. Espelage, and Dexter R. Voisin. 2021. Bullying Victimization, Psychosocial Functioning, and Protective Factors: Comparing African American Heterosexual and Sexual Minority Adolescents in Chicago's Southside. *Journal of Community Psychology* 49: 1358–75. [CrossRef] [PubMed]

Hong, Jun Sung, Dorothy L. Espelage, and Michael J. Kral. 2011. Understanding Suicide among Sexual Minority Youth in America: An Ecological Systems Analysis. *Journal of Adolescence* 34: 885–94. [CrossRef]

Joseph, Victoria A., Noah T. Kreski, and Katherine M. Keyes. 2023. Sleep Deprivation and Suicide Risk among Minoritized US Adolescents. *BMC Psychiatry* 23: 638. [CrossRef]

Khan, Karim M., Angela M. Thompson, Steven N. Blair, James F. Sallis, Kenneth E. Powell, Fiona C. Bull, and Adrian E. Bauman. 2012. Sport and Exercise as Contributors to the Health of Nations. *The Lancet* 380: 59–64. [CrossRef]

Kulick, Alex, Laura J. Wernick, Mario Alberto V. Espinoza, Tarkington J. Newman, and Adrienne B. Dessel. 2019. Three Strikes and You're Out: Culture, Facilities, and Participation among LGBTQ Youth in Sports. *Sport, Education and Society* 24: 939–53. [CrossRef]

Latino, Francesca, Francesco Tafuri, Emma Saraiello, and Domenico Tafuri. 2023. Classroom-Based Physical Activity as a Means to Improve Self-Efficacy and Academic Achievement among Normal-Weight and Overweight Youth. *Nutrients* 15: 2061. [CrossRef] [PubMed]

Lee, Hae Jeong, Cheol Hong Kim, Intae Han, and Sung Hoon Kim. 2019. Emotional State According to Breakfast Consumption in 62276 South Korean Adolescents. *Iranian Journal of Pediatrics* 29: e92193. [CrossRef]

Lemos, Nathalia, Janaina Weissheimer, and Sidarta Ribeiro. 2014. Naps in School Can Enhance the Duration of Declarative Memories Learned by Adolescents. *Frontiers in Systems Neuroscience* 8: 1–6. [CrossRef] [PubMed]

Lerner, Richard M. 2009. The Positive Youth Development Perspective: Theoretical and Empirical Bases of a Strengths-Based Approach to Adolescent Development. In *The Oxford Handbook of Positive Psychology*. Oxford: Oxford University Press, pp. 148–64. [CrossRef]

Lerner, Richard M., Jacqueline V. Lerner, Erin Phelps, Colleen M. Bowers, Selva Lewin-Bizan, Audun Dahl, Jennifer S. Lerner, Pamela M. Weiner, Kristin DeSouza, and Alexander J. Smith. 2013. *The Positive Development of Youth: Comprehensive Findings from the 4-H Study of Positive Youth Development*. Chevy Chase: National 4-H Council.

Lerner, Richard M., Jacqueline V. Lerner, Jason B. Almerigi, Christina Theokas, Erin Phelps, Steinunn Gestsdottir, Sophie Naudeau, Helena Jelicic, Amy Alberts, Lang Ma, and et al. 2005. Positive Youth Development, Participation in Community Youth Development Programs, and Community Contributions of Fifth-Grade Adolescents. *The Journal of Early Adolescence* 25: 17–71. [CrossRef]

Li, Xun, Shi-Ting Xiang, and Jie Dong. 2022. The Concurrence of Sexual Violence and Physical Fighting among Adolescent Suicide Ideators and the Risk of Attempted Suicide. *Scientific Reports* 12: 5290. [CrossRef] [PubMed]

Lindsey, Michael A., Arielle H. Sheftall, Yunyu Xiao, and Sean Joe. 2019. Trends of Suicidal Behaviors among High School Students in the United States: 1991–2017. *Pediatrics* 144: e20191187. [CrossRef]

Lopez-Bermudez, Esther, Diego Gomez-Baya, Elena Planells, and Jorge Molina-Lopez. 2024. The Mediational Role of Positive Youth Development in the Relationship between Physical Activity and Health-Related Quality of Life in Adolescents from Urban and Rural Environments. *International Journal of Adolescence and Youth* 29: 2354917. [CrossRef]

Lundqvist, Martina, Nicklas Ennab Vogel, and Lars-Åke Levin. 2019. Effects of Eating Breakfast on Children and Adolescents: A Systematic Review of Potentially Relevant Outcomes in Economic Evaluations. *Food & Nutrition Research* 63: 1618. [CrossRef]

Lynch, Frances L., Edward L. Peterson, Christine Y. Lu, Yong Hu, Rebecca C. Rossom, Beth E. Waitzfelder, Ashli A. Owen-Smith, Samuel Hubley, Deepak Prabhakar, L. Keoki Williams, and et al. 2020. Substance Use Disorders and Risk of Suicide in a General US Population: A Case Control Study. *Addiction Science & Clinical Practice* 15: 14. [CrossRef]

Marshal, Michael P., Laura J. Dietz, Mark S. Friedman, Ron Stall, Helen A. Smith, James McGinley, Brian C. Thoma, Pamela J. Murray, Anthony R. D'Augelli, and David A. Brent. 2011. Suicidality and Depression Disparities between Sexual Minority and Heterosexual Youth: A Meta-Analytic Review. *Journal of Adolescent Health* 49: 115–23. [CrossRef]

Mereish, Ethan H., Luis A. Parra, Ryan J. Watson, and Jessica N. Fish. 2022. Subtle and Intersectional Minority Stress and Depressive Symptoms Among Sexual and Gender Minority Adolescents of Color: Mediating Role of Self-Esteem and Sense of Mastery. *Prevention Science: Official Journal of the Society for Prevention Research* 23: 142–53. [CrossRef]

Meyer, Ilan H. 2003. Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence. *Psychological Bulletin* 129: 674–97. [CrossRef] [PubMed]

Meyer, Ilan H., Jessica Dietrich, and Sharon Schwartz. 2008. Lifetime Prevalence of Mental Disorders and Suicide Attempts in Diverse Lesbian, Gay, and Bisexual Populations. *American Journal of Public Health* 98: 1004–6. [CrossRef] [PubMed]

Michael, Shannon L., Richard Lowry, Caitlin Merlo, Adina C. Cooper, Eric T. Hyde, and Richard McKeon. 2020. Physical Activity, Sedentary, and Dietary Behaviors Associated with Indicators of Mental Health and Suicide Risk. *Preventive Medicine Reports* 19: 101153. [CrossRef] [PubMed]

Montgomery, LaTrice, and Dale Mantey. 2018. Racial/Ethnic Differences in Prevalence and Correlates of Blunt Smoking among Adolescents. *Journal of Psychoactive Drugs* 50: 195–205. [CrossRef]

Moody, Raymond L., Tyrel J. Starks, Christian Grov, and Jeffrey T. Parsons. 2018. Internalized Homophobia and Drug Use in a National Cohort of Gay and Bisexual Men: Examining Depression, Sexual Anxiety, and Gay Community Attachment as Mediating Factors. *Archives of Sexual Behavior: The Official Publication of the International Academy of Sex Research* 47: 1133–44. [CrossRef]

Morlock, Sherry Davis, Samantha Matlin, Crystal Barksdale, Rupa Puri, and Joseph Lyles. 2008. Developing Suicide Prevention Programs for African American Youth in African American Churches. *Suicide & Life-Threatening Behavior* 38: 323–33. [CrossRef]

Mueller, Anna S., Wesley James, Seth Abrutyn, and Martin L. Levin. 2015. Suicide ideation and bullying among US adolescents: Examining the intersections of sexual orientation, gender, and race/ethnicity. *American Journal of Public Health* 105: 980–85. [CrossRef]

Murnan, Judy, and James H. Price. 2004. The Role of Health Education in the Prevention of Youth Violence. *American Journal of Health Studies* 19: 114–21.

Murry, Velma McBride, Craig Anne Heflinger, and Sarah V. Suiter. 2011. Examining Perceptions about Mental Health Care and Help-Seeking among Rural African American Families of Adolescents. *Journal of Youth and Adolescence* 40: 1118–31. [CrossRef]

Needham, Belinda L., and Erika L. Austin. 2010. Sexual Orientation, Parental Support, and Health during the Transition to Young Adulthood. *Journal of Youth and Adolescence* 39: 1189–98. [CrossRef] [PubMed]

Olsen, Emily O'Malley, Laura Kann, Alana Vivolo-Kantor, Steve Kinchen, and Tim McManus. 2014. School Violence and Bullying among Sexual Minority High School Students, 2009–2011. *Journal of Adolescent Health* 55: 432–38. [CrossRef] [PubMed]

Opara, Ijeoma, Sitara M. Weerakoon, Jasmin R. Brooks Stephens, Taylor Choe, John F. Gunn, 3rd, and Shawndaya S. Thrasher. 2025. Relationship between Suicide Ideation and Attempts, Bully Victimization, Dating Violence, and Depressive Symptoms among Black and Hispanic Youth. *Suicide & Life-Threatening Behavior* 55: e13015. [CrossRef]

Pereira da Silva, Maynara Priscila, Evandro Morais Peixoto, Bartira Pereira Palma, and Marcos Alencar Abaide Balbinotti. 2024. Exploring the Networks of Relationships between the 5cs of Positive Youth Development through Sport. *Acta Colombiana de Psicología* 27: 79–96. [CrossRef]

Perez-Rodriguez, M. Mercedes, Enrique Baca-Garcia, Maria A. Oquendo, and Carlos Blanco. 2008. Ethnic Differences in Suicidal Ideation and Attempts. *Primary Psychiatry* 15: 44–53.

Phillips, Michael R. 2010. Rethinking the Role of Mental Illness in Suicide. *The American Journal of Psychiatry* 167: 731–33. [CrossRef] [PubMed]

Price, James H., Joseph A. Dake, and Ruthie Kucharewski. 2001. Assets as Predictors of Suicide Attempts in African American Inner-City Youths. *American Journal of Health Behavior* 25: 367–75. [CrossRef]

Ream, Geoffrey L. 2019. What's Unique About Lesbian, Gay, Bisexual, and Transgender (LGBT) Youth and Young Adult Suicides? Findings From the National Violent Death Reporting System. *Journal of Adolescent Health* 64: 602–7. [CrossRef]

Reverdito, Riller Silva, Sofia Fonseca, Antonio Lopes, Karyna Aires, Luciano Santos Alves, Leilane Alves de Lima, Mayara de Almeida Tavares, and Carlos Gonçalves. 2023. Sources of Sport Satisfaction and Perceived Self-Efficacy among Youth in a Competitive Environment. *Perceptual and Motor Skills* 130: 1221–38. [CrossRef]

Roberts, Robert E., and Hao T. Duong. 2015. Is There an Association between Adolescent Sleep Restriction and Obesity. *Journal of Psychosomatic Research* 79: 651–56. [CrossRef]

Robin, Leah, Nancy D. Brener, Shaun F. Donahue, Tim Hack, Kelly Hale, and Carol Goodenow. 2002. Associations Between Health Risk Behaviors and Opposite-, Same-, and Both-Sex Sexual Partners in Representative Samples of Vermont and Massachusetts High School Students. *Archives of Pediatrics & Adolescent Medicine* 156: 349–55. [CrossRef]

Robinson, Joseph P., and Dorothy L. Espelage. 2011. Inequities in Educational and Psychological Outcomes Between LGBTQ and Straight Students in Middle and High School. *Educational Researcher* 40: 315–30. [CrossRef]

Robinson, Joseph P., and Dorothy L. Espelage. 2012. Bullying Explains Only Part of LGBTQ—Heterosexual Risk Disparities: Implications for Policy and Practice. *Educational Researcher* 41: 309–19. [CrossRef]

Robinson-Dooley, Vanessa. 2022. *Beyond Moving the Ball in Youth Sports: Making the Case for Mental Health for Black Youth*. Cham: Springer International Publishing. [CrossRef]

Rubin, Donald B. 1987. Multiple Imputation for Nonresponse in Surveys. In *Wiley Series in Probability and Statistics*. New York: John Wiley & Sons Inc. [CrossRef]

Runcan, Remus. 2020. Adolescent Substance Use, Misuse, and Abuse. *Agora Psycho-Pragmatica* 14: 136–57.

Ryan, Caitlin, Stephen T. Russell, David Huebner, Rafael Diaz, and Jorge Sanchez. 2010. Family Acceptance in Adolescence and the Health of LGBT Young Adults. *Journal of Child and Adolescent Psychiatric Nursing* 23: 205–13. [CrossRef]

Schafer, Joseph L. 1999. Multiple Imputation: A Primer. *Statistical Methods in Medical Research* 8: 3–15. [CrossRef]

Schauer, Gillian L., Heather B. Clayton, Rashid Njai, and Althea M. Grant. 2020. Adolescent Marijuana Use and Related Risk Behaviors, National Findings From 2015 to 2017. *American Journal of Preventive Medicine* 59: 714–24. [CrossRef]

Scheier, Lawrence M., and Kenneth W. Griffin. 2021. Youth Marijuana Use: A Review of Causes and Consequences. *Current Opinion in Psychology* 38: 11–18. [CrossRef]

Shields, John P., Kelly Whitaker, Jill Glassman, Heather M. Franks, and Kelli Howard. 2012. Impact of Victimization on Risk of Suicide Among Lesbian, Gay, and Bisexual High School Students in San Francisco. *Journal of Adolescent Health* 50: 418–20. [CrossRef]

Sterne, Jonathan A. C., Ian R. White, John B. Carlin, Michael Spratt, Patrick Royston, Michael G. Kenward, Angela M. Wood, and James R. Carpenter. 2009. Multiple Imputation for Missing Data in Epidemiological and Clinical Research: Potential and Pitfalls. *BMJ* 338: b2393. [CrossRef]

Sutter, Megan, and Paul B. Perrin. 2016. Discrimination, Mental Health, and Suicidal Ideation among LGBTQ People of Color. *Journal of Counseling Psychology* 63: 98–105. [CrossRef] [PubMed]

The Trevor Project. 2019. *National Survey on LGBTQ Mental Health*. New York: The Trevor Project.

Van Orden, Kimberly A., Tracy K. Witte, and Kelly C. Cukrowicz. 2010. The Interpersonal Theory of Suicide. *Psychological Review* 117: 575–600. [CrossRef] [PubMed]

Veliz, Philip, Quyen Epstein-Ngo, Jennifer Zdroik, Carol J. Boyd, and Sean Esteban McCabe. 2016. Substance Use Among Sexual Minority Collegiate Athletes: A National Study. *Substance Use & Misuse* 51: 517–32. [CrossRef]

Werner, Emmy E., and Ruth S. Smith. 2019. *Overcoming the Odds: High Risk Children from Birth to Adulthood*. Ithaca: Cornell University Press.

Whitaker, Kelly, Valerie B. Shapiro, and John P. Shields. 2016. School-Based Protective Factors Related to Suicide for Lesbian, Gay, and Bisexual Adolescents. *Journal of Adolescent Health* 58: 63–68. [CrossRef]

Woodland, Malcolm H. 2008. Whatcha Doin' after School? A Review of the Literature on the Influence of After-School Programs on Young Black Males. *Urban Education* 43: 537–70. [CrossRef]

Yang, Yingwei. 2023. Suicide Attempt and Suicide Plan among U.S. Adolescents: The Role of Repeated and Co-Occurring Violence Experiences. *Psychiatry Research* 320: 115040. [CrossRef]

Yockey, Robert Andrew, and Tracey E. Barnett. 2023. Past-Year Blunt Smoking among Youth: Differences by LGBT and Non-LGBT Identity. *International Journal of Environmental Research and Public Health* 20: 5304. [CrossRef]