



Original article

Growing Up With the Right to Marry: Sexual Attraction, Substance Use, and Well-Being of Dutch Adolescents


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 A B S T R A C T

Purpose: To assess the well-being and substance use of sexual minority adolescents growing up in a tolerant society, we examined differences among same-sex attracted (SSA), those who do not know their attraction yet (not yet attracted [NYA]), and heterosexual Dutch adolescents.

Methods: Unadjusted and adjusted logistic and linear multilevel analyses were performed using representative data of the 2013 Health Behaviour in School-Aged Children study (N = 5,995; 11–16 years old). The adjusted analyses controlled for sociodemographics (gender, age, education type, ethnicity, urbanicity, and religion).

Results: Adjusted results showed that SSA adolescents substantially more often reported alcohol use (adjusted odds ratio [AOR] = 2.01), tobacco smoking (AOR = 2.37), and cannabis smoking (AOR = 3.52) than their heterosexual peers, while NYA participants less often reported alcohol use (AOR = .57) and equal levels of tobacco (AOR = .71) and cannabis smoking (AOR = .87) compared with heterosexual adolescents. SSA adolescents reported lower levels of life satisfaction ($b = -1.25$) and higher levels of psychosomatic complaints ($b = .61$) and emotional problems ($b = 1.57$) than heterosexual adolescents. NYA adolescents reported equal levels of life satisfaction ($b = -.18$) and psychosomatic complaints ($b = .06$) as heterosexual adolescents, but higher levels of emotional problems ($b = .51$).

Conclusions: In Dutch society, with over 20 years of inclusive policies for sexual minorities and generally tolerant population attitudes toward sexual minorities, SSA adolescents are still at increased risk of substance use and have lower levels of well-being compared with peers.

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IMPLICATIONS AND CONTRIBUTION

In a country known for its equal legislation and long-standing tolerant attitudes toward sexual minorities, differences in substance use and well-being between sexual minority and heterosexual adolescents are found. These findings imply that notwithstanding legislation and positive population attitudes, additional interventions, and policies are needed to eliminate these health disparities.

Eliminating health disparities between minority and majority groups is an important public health goal. Even so, health disparities are prevalent between sexual minority and heterosexual

youth. Recent population-based studies showed that sexual minority youth, compared with their heterosexual peers, reported higher levels of alcohol use [1,2], drug use [1,3,4], cigarette use [5,6], mental health problems [7], and suicidality [8,9]. Meta-analyses showed that these health differences are not only significant, but also quite substantial [1,7,10]. For example, sexual minority youth were almost three times as likely to report a history of suicidality and reported much higher levels of depression, and the average effect sizes of differences in

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substance use were medium to large. The vast majority of these studies have been conducted in the United States, while a handful of studies has been performed in Canada, the UK, and continental Europe [7].

A central model explaining health disparities between sexual minority and heterosexual individuals is the minority stress framework [11–13]. In this framework, health disparities are explained by the institutional and societal stigma attached to sexual minorities and their accompanying stressors such as victimization and discrimination. Therefore, one way to overcome the sexual orientation–related health inequalities among youth would be to ban these stigmas and prejudices on the intrapersonal, interpersonal, and structural level [12,14]. For example, combatting the stigmas by changes in national legislation such as allowing same-sex couples to marry or obliging school curricula to address sexual minority issues might diminish the health disparities between heterosexual and sexual minority youth.

Sexual minority and heterosexual youth growing up in the Netherlands today are living in abovementioned circumstances in a country with a long history of equal legislation and policies for sexual minority individuals [15]. For example, the Equal Opportunities Act including forbidding discrimination on sexual orientation in areas such as employment, housing, services and goods, education, health care, social work, and recreation came into force in 1994. On April 1, 2001, the first same-sex couples were officially married, and legal partnerships were possible since 1998. Discussing sexual orientation at schools is a mandatory part of the official school curricula since 2012. In addition, Dutch population attitudes toward sexual minorities have been among the most positive in the world for several decades [16–18]. This implies that early and mid-adolescents born and raised in the Netherlands have always lived in a society that has provided them with the right to marry regardless of their sexual orientation, where laws explicitly prohibit discrimination based on sexual orientation in almost every area in life, where the vast majority of the population holds positive attitudes toward sexual minority individuals and where sexual diversity is addressed at school. In other words, examining the well-being of sexual minority adolescents in the Netherlands could provide insight into the well-being of sexual minority youth growing up under relatively low levels of structural and societal stigma.

Unfortunately, the health status of today's Dutch sexual minority youth is currently unknown. Although several studies have been performed, these studies used convenience or local samples [19–23]. While these studies have been crucial for setting the agenda and exploring health issues and accompanying risk and protective factors, they are less suited for the exploration of prevalence estimates of health disparities since these findings cannot be generalized to the population of sexual minority and heterosexual youth in the Netherlands [24]. The Health Behaviour in School-aged Children (HBSC) study, which is representative for the Netherlands, does not have this limitation. The present study set out to examine whether there are disparities between Dutch sexual minority and heterosexual adolescents in substance use (alcohol, tobacco, and cannabis) and well-being (life satisfaction, psychosomatic complaints, and emotional problems) based on the HBSC data.

Methods

Data were drawn from the Dutch 2013 HBSC survey, a cross-sectional study involving adolescents aged 11–16 years, performed as part of the World Health Organization's cross-national HBSC Project. The study involved students in their last year of primary education and their first 4 years of secondary education. A two-stage random sampling procedure was used [25]. First, a random sample of schools was selected from a list of all schools providing primary and secondary education in the Netherlands; the selection was performed proportionally within urbanization strata. This resulted in a sample of 78 schools for primary education and 67 schools for secondary education (response rates of 61% and 40%, respectively). Reasons for nonresponse were primarily connected to other research going on in the schools already (47%), or frequently being asked to participate in studies (23%). Participating and nonparticipating schools did not differ in the type of education or in the ethnic background of the students, but smaller schools (<500 students) more often participated than large schools (>1,000 students). Second, from a list of all classes provided by each participating school, one class in each grade was randomly selected for participation. Within schools, the response rate of participants was 95%. Nonresponse of participants was mainly due to sickness during data collection. Self-report questionnaires were administered in classroom settings during a regular class. Parents of the pupils received a letter informing them about the study, and they were asked to inform the school in case they did not consent with the participation of their child. This procedure was based on the decision of the Ethical Advisory Committee and in accordance with prevailing Dutch law.

The initial sample consisted of 7,073 adolescents. Listwise deletion was used in case of missing values ($n = 1,078$), yielding a final sample size of 5,995 adolescents. For 596 cases (8.4%), missings were due to a lack of data regarding sexual attraction. The results did not change if pairwise deletion in case of missing values on the control or dependent variables was used instead. Since lifetime prevalence of cannabis use was not assessed in primary school participants, a sample size of 4,649 adolescents was used to analyze cannabis use. The final sample of 5,995 participants consisted of 50.5% boys and 49.5% girls. The mean age of the adolescents was 13.2 years (standard deviation = 1.6); and 26.7% were enrolled in primary school, 34.1% in lower types of secondary education (such as vocational schools), and 39.2% followed higher secondary education. A total of 15.3% belonged to nonwestern ethnic minority groups of which 15.3% was of Moroccan, 21.1% of Turkish, 15.1% of Surinamese, 8.2% of Antillean, and 40.4% of another nonwestern background.

Measures

Sexual attraction. Participants were asked whether they felt attracted to (1) boys; (2) girls; (3) boys and girls; or (4) do not know yet. Participants attracted to same-sex peers or to both sexes were considered same-sex attracted (SSA; $n = 111$, 1.9%), those who felt attracted to members of the opposite sex were considered heterosexual ($n = 5,506$, 91.8%), and those who did not yet know were seen as “not yet attracted” (NYA; $n = 381$, 6.4%).

Substance use. With respect to substance use, lifetime prevalence of adolescent alcohol use, tobacco smoking, and cannabis

use was assessed. Adolescents were asked how often in their entire life they had drunk alcohol, smoked tobacco, and used cannabis, respectively. Response categories ranged from 0 (“never”) to 40 times or more on a 14-point scale [26]. Answers were recoded into dichotomous variables indicating whether participants had ever used the specific substance (0 = never used; 1 = used).

Well-being. With respect to well-being, life satisfaction, psychosomatic complaints, and emotional problems were assessed.

Life satisfaction. Self-Anchoring Ladder by Cantril [27] was used to measure life satisfaction. Adolescents were asked to rate their present life satisfaction using a ladder with steps numbered from 0 (extremely unsatisfied) through to 10 (extremely satisfied).

Psychosomatic complaints. Participants were asked if they had suffered from eight psychosomatic complaints in the last 6 months (e.g., headache or abdominal pain) on a five-point scale (1 = [almost] never; 5 = [almost] every day) [28]. Mean scores were calculated with higher scores reflecting more complaints (Cronbach $\alpha = .80$).

Emotional problems. Participants completed the child version of the Strengths and Difficulties Questionnaire [29]. For the present study, the subscale for emotional symptoms was used. The subscale consisted of 5 items (e.g., ‘I am often unhappy, downhearted or tearful’) measured on a 3-point scale (0 = not true; 1 = somewhat true; 2 = definitely true). A sum score was created by adding the answers with higher scores indicating more problems (Cronbach $\alpha = .71$).

Demographics. Single-item measures were used to assess age, gender, educational type, religion, and country of birth of the participant and both parents. A measure for ethnicity was based on the last three items. In line with the Dutch standard for coding ethnicity, participants born or with a parent born in a nonwestern country were categorized as having a nonwestern background.

Analyses

Multilevel analyses with three levels were performed controlling for the nesting of adolescents (Level 1) within classes (Level 2) and schools (Level 3). Multilevel logistic analyses were performed to examine the association of sexual attraction with substance use, and multilevel linear analyses were performed to examine the association between sexual attraction and well-being. The same analyses were performed while controlling for sociodemographics (gender, age, educational type, ethnicity, urbanicity, and religion) to examine whether the (lack of) associations changed after controlling for these variables as they are known to be related to health disparities among Dutch adolescents [30].

Stata version 14 (StataCorp, College Station, TX) was used for the analyses. The data were weighted to match the characteristics of the Dutch adolescent population. Weights were based on gender, grade, educational type, and urbanization.

Results

The descriptives of the subgroups SSA, NYA, and heterosexual participants can be found in Table 1. Sociodemographic differences were found for gender: $X^2(2, 5,995) = 7.31, p < .05$; age:

Table 1

Descriptives of demographic characteristics, substance use, and well-being of SSA,^a NYA,^b and heterosexual adolescents

	SSA ^a (n = 112)	NYA ^b (n = 380)	Heterosexual (n = 5,503)
Demographic characteristics			
Female (%)	58.2	55.6	49.3
Age (M [SD])	13.9 (1.3)	12.1 (1.4)	13.3 (1.6)
Age (%)			
11–12 years old	16.2	70.9	36.6
13–14 years old	47.8	20.1	36.4
15–16 years old	36.0	8.9	27.0
Nonwestern ethnicity (%)	14.8	18.8	15.9
Educational type (%)			
Primary school	8.2	58.5	24.6
Lowest type secondary education	22.7	6.6	17.8
Low-to-middle-type secondary education	26.2	5.8	18.2
Middle-to-high-type secondary education	25.8	15.3	22.4
Highest type secondary education	17.0	13.7	17.1
Urbanicity (M [SD])	3.3 (1.2)	3.2 (1.3)	3.1 (1.3)
Importance of religion (%)			
No religious upbringing/ religion not important	64.0	51.2	61.0
Not very important	11.7	10.6	14.7
Somewhat important	13.6	15.2	13.5
Very important	10.7	23.1	10.9
Substance use			
Used alcohol (%)	61.4	14.9	38.6
Smoked tobacco (%)	41.0	6.1	17.8
Used cannabis (%)	26.1	6.2	9.5
Well-being			
Life satisfaction (M [SD])	6.3 (2.5)	7.8 (1.7)	7.7 (1.6)
Psychosomatic complaints (M [SD])	2.6 (1.0)	1.9 (.7)	1.9 (.8)
Emotional problems (M [SD])	4.3 (3.0)	2.9 (2.3)	2.5 (2.2)

M = mean; SD = standard deviation.

^a SSAs are participants who indicated they are (also) attracted to partners of the same sex.

^b NYAs are participants who indicated they do not know to which sex they are attracted yet.

$F(2, 143) = 104.95, p < .001$; educational type: $X^2(2, 5,995) = 228.42, p < .001$; and religious upbringing: $X^2(2, 5,995) = 53.02, p < .001$. SSA and NYA participants were more often female. SSA adolescents were older, and NYA adolescents were younger than heterosexual adolescents. Consistent with the aforementioned age differences, NYA participants more often attended primary school than heterosexual adolescents, while SSA adolescents more often followed secondary education than heterosexual adolescents. NYA adolescents more often grew up in religious families than SSA or heterosexual adolescents.

Substance use

Unadjusted and adjusted multilevel logistic analyses yielded a significant association between sexual attraction and alcohol use (Table 2). SSA adolescents were significantly more likely to have used alcohol when compared with heterosexual adolescents, while NYA adolescents had significantly decreased odds of alcohol use when compared with heterosexual adolescents. The results of the unadjusted multilevel logistic analyses for tobacco smoking were in line with the results for drinking: SSA had significantly increased odds, while NYA adolescents had significantly diminished odds compared with heterosexual adolescents.

Table 2Adjusted odds of substance use among Dutch SSA,^a NYA,^b and heterosexual adolescents

	Model 1	Model 2
	OR (95% CI)	AOR (95% CI)
Used alcohol		
Sexual attraction		
Heterosexual (<i>ref.</i>)	1	1
SSA	2.11 (1.44–3.09)	2.01 (1.40–2.88)
NYA	.46 (.31–.68)	.57 (.37–.87)
Female		.91 (.77–1.06)
Age		2.14 (1.98–2.31)
Educational type		
Primary school (<i>ref.</i>)		1
Lowest type secondary education		1.11 (.80–1.54)
Low-to-middle-type secondary education		1.21 (.84–1.75)
Middle-to-high-type secondary education		.91 (.67–1.24)
Highest type secondary education		.68 (.49–.94)
Nonwestern ethnicity		.65 (.52–.83)
Urbanicity		.97 (.92–1.03)
Importance of religion (%)		
No religious upbringing/religion not important (<i>ref.</i>)		1
Not very important		1.13 (.92–1.38)
Somewhat important		.71 (.58–.87)
Very important		.35 (.24–.50)
Smoked tobacco		
Sexual attraction		
Heterosexual (<i>ref.</i>)	1	1
SSA	2.34 (1.53–3.59)	2.37 (1.57–3.56)
NYA	.52 (.35–.77)	.71 (.46–1.09)
Female		.96 (.80–1.14)
Age		1.83 (1.68–2.00)
Educational type		
Primary school (<i>ref.</i>)		1
Lowest type secondary education		3.1 (1.89–5.10)
Low-to-middle-type secondary education		2.91 (1.71–4.94)
Middle-to-high-type secondary education		1.30 (.79–2.14)
Highest type secondary education		.80 (.49–1.33)
Nonwestern ethnicity		1.19 (.90–1.57)
Urbanicity		.98 (.92–1.06)
Importance of religion (%)		
No religious upbringing/religion not important (<i>ref.</i>)		1
Not very important		1.02 (.78–1.33)
Somewhat important		.71 (.56–.89)
Very important		.40 (.27–.59)
Used cannabis		
Sexual attraction		
Heterosexual (<i>ref.</i>)	1	1
SSA	3.54 (2.20–5.67)	3.52 (2.14–5.79)
NYA	.72 (.34–1.53)	.87 (.38–1.99)
Female		.84 (.66–1.07)
Age		2.34 (2.07–2.65)
Educational type		
Lowest type secondary education (<i>ref.</i>)		1
Low-to-middle-type secondary education		1.04 (.70–1.53)
Middle-to-high-type secondary education		.71 (.47–1.07)
Highest type secondary education		.33 (.20–.55)
Nonwestern ethnicity		1.51 (1.05–2.16)
Urbanicity		1 (.91–1.11)
Importance of religion (%)		
No religious upbringing/religion not important (<i>ref.</i>)		1

Table 2

Continued

	Model 1	Model 2
	OR (95% CI)	AOR (95% CI)
Not very important		.84 (.58–1.20)
Somewhat important		.63 (.43–.92)
Very important		.36 (.21–.63)

AOR = adjusted odds ratio; CI = confidence interval; OR = odds ratio.

^a SSAs are participants who indicated they are (also) attracted to partners of the same sex.^b NYAs are participants who indicated they do not know to which sex they are attracted yet.

(Table 2). Controlling for sociodemographic variables did not change the results for SSA adolescents. However, the differences in smoking between NYA and heterosexual adolescents disappeared. Unadjusted and adjusted multilevel analyses showed that NYA and heterosexual adolescents did not differ in cannabis use, but SSA adolescents had increased odds of cannabis use compared with heterosexual adolescents (Table 2).

Well-being

The unadjusted and adjusted multilevel linear analyses in Table 3 illustrate the differences in well-being between SSA and heterosexual adolescents. Both analyses yield the same result: SSA adolescents reported more problems than heterosexual adolescents on all measures assessing their well-being. SSA adolescents reported significantly lower levels of satisfaction with their current lives, higher levels of psychosomatic complaints, and higher levels of emotional problems. NYA adolescents did not differ from heterosexual adolescents in life satisfaction or psychosomatic complaints both in the unadjusted model and in the adjusted model, but the models did show higher levels of emotional problems among NYA adolescents.

Discussion

The present study showed that, when controlling for socio-demographics, Dutch SSA adolescents considerably more often reported the use of alcohol, tobacco, and cannabis, and lower levels of life satisfaction, and higher levels of psychosomatic complaints and emotional problems than their heterosexual peers. NYA participants, when controlling for sociodemographics, less often reported alcohol use, had similar experience with cigarette and cannabis use, and showed an equally high level of life satisfaction and psychosomatic complaints, but higher levels of emotional problems than heterosexual adolescents.

The results regarding the disadvantaged position of SSA adolescents in the present study are in line with results from population studies in other countries [1–10]. The Netherlands is a country in which the legal and social situation for SSA adolescents is often seen as one of the best in the world with an equal legal position for SSA and heterosexual individuals, mandatory education about sexual diversity at schools, and positive population attitudes toward homosexuality [12,14]. Therefore, the increased risk of substance use and the lower levels of well-being of SSA adolescents can be perceived as remarkable. There are two explanations for these findings: Either

Table 3Unstandardized coefficients of well-being among Dutch SSA,^a NYA,^b and heterosexual adolescents

	Model 1	Model 2
	<i>b</i> (<i>p</i> value)	<i>b</i> (<i>p</i> value)
Life satisfaction		
Sexual attraction		
Heterosexual (<i>ref.</i>)	.00	.00
SSA	−1.33 (<.001)	−1.25 (<.001)
NYA	−.09 (.34)	−.18 (.05)
Female		−.47 (<.001)
Age		−.14 (<.001)
Educational type		
Primary school (<i>ref.</i>)		.00
Lowest type secondary education		−.32 (<.01)
Low-to-middle-type secondary education		−.32 (<.01)
Middle-to-high-type secondary education		−.20 (.02)
Highest type secondary education		−.04 (.65)
Nonwestern ethnicity		−.16 (.04)
Urbanicity		.03 (.12)
Importance of religion (%)		
No religious upbringing/religion not important (<i>ref.</i>)		.00
Not very important		.11 (.10)
Somewhat important		.17 (<.01)
Very important		.38 (<.001)
Psychosomatic complaints		
Sexual attraction		
Heterosexual (<i>ref.</i>)	.00	.00
SSA	.65 (<.001)	.61 (<.001)
NYA	.04 (.32)	.06 (.20)
Female		.32 (<.001)
Age		.04 (<.001)
Educational type		
Primary school (<i>ref.</i>)		.20 (<.001)
Lowest type secondary education		.09 (.10)
Low-to-middle-type secondary education		.05 (.21)
Middle-to-high-type secondary education		.01 (.90)
Highest type secondary education		.32 (.00)
Nonwestern ethnicity		.06 (.06)
Urbanicity		.00 (.83)
Importance of religion (%)		
No religious upbringing/religion not important (<i>ref.</i>)		.00
Not very important		−.05 (.06)
Somewhat important		−.03 (.24)
Very important		−.08 (.03)
Emotional problems		
Sexual attraction		
Heterosexual (<i>ref.</i>)		
SSA	1.70 (<.001)	1.57 (<.001)
NYA	.49 (<.001)	.51 (<.001)
Female		1.41 (<.001)
Age		.09 (<.01)
Educational type		
Primary school (<i>ref.</i>)		.00
Lowest type secondary education		.37 (<.01)
Low-to-middle-type secondary education		.13 (.33)
Middle-to-high-type secondary education		.08 (.48)
Highest type secondary education		−.01 (.94)
Nonwestern ethnicity		−.14 (.15)
Urbanicity		.02 (.52)
Importance of religion (%)		
No religious upbringing/religion not important (<i>ref.</i>)		.00

Table 3

Continued

	Model 1	Model 2
	<i>b</i> (<i>p</i> value)	<i>b</i> (<i>p</i> value)
Not very important		−.13 (.12)
Somewhat important		−.03 (.77)
Very important		−.33 (<.01)

^a SSAs are participants who indicate they are (also) attracted to partners of the same sex.

^b NYAs are participants who indicated they do not know to which sex they are attracted yet.

the situation in the Netherlands is not as good as expected or other risk factors play a role.

There are reasons to apply some disclaimers to the positive social climate for LGB individuals in the Netherlands. A closer look at the population attitudes toward LGB individuals reveals that not every aspect of being LGB is as accepted as general indicators suggest [31]. For instance, same-sex couples showing affection in public places are frowned on by a third of the Dutch population. Among Dutch early adolescents, 67% indicated that they would have LGB peers as friends, while 10% explicitly indicated that LGB peers could never be their friends. Among older adolescents, 17% indicated that they would not accept their child living with a same-sex partner. This shows that although the Netherlands is known for its positive population attitudes toward LGB individuals when compared with other countries, SSA adolescents growing up today may still encounter negative attitudes among peers and adults. Another example of where the overall positive picture has some shortcomings is the mandatory discussion of sexual diversity in schools. While this legislation was introduced by the end of 2012, no guidelines exist on how the subject of sexual diversity should be addressed. There is a lack of evidence-based programs or interventions aimed at reducing prejudices and improving the social behavior toward LGB adolescents [32]. This implies that although addressing sexual diversity at schools is mandatory, ineffective methods may be used.

The second line of explanations assumes that other risk factors serve as additional risk factors and explanations of why health disparities between Dutch SSA and heterosexual adolescents exist. Even with decreasing societal stigma on LGB individuals, simply being dissimilar to most peers during adolescence might be harmful in itself. Adolescence is a developmental period in which individuals are highly self-aware and likely to worry about the opinions of others [33]. The strongly experienced pressure of adhering to social norms might have negative consequences for any numeric minority at that age, especially for young people who differ from their peers in an area that is very important at that age: relationships and sexuality.

An additional risk factor might be that due to the low prevalence of LGB individuals, SSA adolescents often lack the opportunity to engage in same-sex romantic relationships and same-sex sexual behaviors [14]. This might be harmful during adolescence, since romantic relationships and sexuality are an important developmental task of adolescents [14]. Not having the opportunity to relate to similar others and engage in such behaviors due to the unavailability of similar others in their social surroundings could have a negative influence on their health.

NYA participants—after controlling for sociodemographics—only reported higher levels of emotional problems compared with heterosexual peers, while they have less experience with alcohol use and show no differences in other substance use, life satisfaction, and psychosomatic symptoms. Adolescents who are unsure of, or question, their sexual attractions did appear as a vulnerable group in previous studies [2,4,7]. An explanation for the inconsistent results may be that the NYA group is a very diverse group. It may include young people who have never given much thought to their sexual attractions and adolescents doubting whether they are SSA. The distribution of risks might be quite different for both groups. Since our participants were relatively young (11–16 years old) and the percentage of NYA participants in our study was relatively high, our NYA participants might largely belong to the group that has not yet gone through puberty nor given much thought to their attractions. Their sexual attraction pattern might be more or less normative behavior and, therefore, less likely to be a possible indication of a sexual minority status. Studies exploring the different subgroups of NYA, unsure, and questioning adolescents and the association with their health should increase our knowledge of this relatively understudied group.

Limitations

The present study departed from the minority stress framework that points out the stigma and prejudice-related stressors on intrapersonal, interpersonal, and structural level as important mediators for the association between belonging to a sexual minority group and substance use/well-being [11–13]. We examined whether health disparities were found between sexual minority and heterosexual youth who grew up with low levels of structural stigma. It must be noted that the present study cannot be seen as an explicit test of the minority stress model [12]. While we did examine the main effect of the model (i.e., the prevalence of substance use and well-being in sexual minority and heterosexual adolescents), we did not examine possible mediators of this association (i.e., stigma and prejudice-related stressors). In addition, due to variance in research methodology, our results cannot directly be compared with results from youth population studies conducted in other countries with higher levels of structural stigma. For an explicit test of the model, mediators such as bullying should be included as well as several countries that have varying levels of structural stigma.

The present study has some methodological limitations that should also be kept in mind when interpreting the results and designing future studies. First of all, although the response rate at individual level was high, the response rate at school level was lower. While the main reasons for nonresponse provided by the schools were not related to the topic of the study, there might nevertheless be a selection in the response hindering generalizability. The nonresponse on the question about same-sex attraction might introduce an additional bias. A second limitation is the low number of SSA adolescents included in the present study. Owing to the limited sample size of the subgroup, no separate analyses could be performed for sociodemographic subgroups such as boys and girls, religious and nonreligious adolescents, ethnic minorities, or bisexual and lesbian/gay participants. This is a limitation, since previous studies have, for example, shown the relatively vulnerable position of bisexual

youth, females, and relatively young adolescents [1–7]. Another limitation is the sexual attraction measure used as an indication of sexual orientation. Although sexual attraction is recommended as a best possible measure for sexual orientation in case of limited space in large-scale studies [34], different results might have been found with different indicators such as self-identification [1,11]. In addition, the sexual attraction measure only consisted of three options (only boys; only girls; boys and girls), while a five-point scale including a “mostly boys” and “mostly girls” option has been found to be preferable [34]. Future studies are encouraged to include more measures of more dimensions of sexual orientation (such as identification) and to use more refined indicators.

Not a limitation in itself as much as something to be kept in mind when interpreting the current results is the potential distortion due to the relatively young age of the participants. It remains to be seen if SSA participants who report and/or experience same-sex attractions at a relatively young age are representative of the general population of SSA adolescents [35].

Implications

The present study showed that even when SSA adolescents are born in a country that provides them with the opportunity to marry a same-sex partner, a country that is known for its tolerant population attitudes to LGB individuals, and a country that has made addressing sexual diversity at schools a mandatory part of the school curricula for primary and secondary schools, SSA young people still experience many health problems. This should serve as a reminder to all professionals dealing with adolescents in school and care settings as well as to policy makers, researchers, intervention workers, and parents that improving the well-being of LGB adolescents might begin with having the same rights as heterosexual peers and addressing sexual diversity at school, but introducing policies and laws is not enough. Interventions aiming at reducing health disparities between sexual minorities and heterosexual individuals should be targeted at the intrapersonal, interpersonal, and structural level [11,14]. Previous studies provided insight into various interpersonal risk factors and protective factors such as (childhood) victimization, bullying, or parental support [11,13,14,22], but additional research is needed into the interplay of these interpersonal and intrapersonal and structural risk and resilience factors [11]. Together, these studies can inform interventions and policies aimed at improving the well-being and lowering the substance use of sexual minority adolescents.

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