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# Youth mental health: how same-sex attraction, peer victimization, future beliefs, and personal competence relate to internalizing problems

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## ABSTRACT

A cross-sectional survey was conducted with 949 Dutch adolescents aged 15 to 18 to examine whether peer victimization, future beliefs, and personal competence mediate the relationship between sexual orientation and internalizing problems. Additionally, the study explored whether sex assigned at birth moderates these mediation effects. Serial mediation was found through peer victimization and future beliefs, and through peer victimization and personal competence, but only for male-assigned adolescents. Male-assigned adolescents with same-sex attraction (SSA) reported more peer victimization, which related to more negative future beliefs and less personal competence, which both were associated with more internalizing problems. For all adolescents, future beliefs also independently mediated the SSA – internalizing problems relationship. SSA was directly related to more negative future beliefs, which in turn related to more internalizing problems, regardless of peer victimization. These findings stress the need to address peer victimization and promote psychological resources to improve mental health in sexually diverse youth.

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## KEYWORDS

Sexual orientation; peer victimization; future beliefs; personal competence; internalizing problems

Sexually diverse youth who experience same-sex attraction (SSA), engage in same-sex behaviour, or self-identify as lesbian, gay, or bisexual (LGB), face an excess burden of internalizing problems (i.e. depressive and anxious symptoms) when compared to their heterosexual peers. Systematic reviews and meta-analyses show the consistency of this finding across cross-sectional studies with different approaches to measuring sexual orientation and internalizing problems (Lucassen et al., 2017; Marshal et al., 2011; Plöderl & Tremblay, 2015). Longitudinal research has demonstrated that sexual orientation disparities in internalizing problems appear in early adolescence and persist into young adulthood (Irish et al., 2019; Pachankis et al., 2022; Roi et al., 2016). In the present study, we explore intra- and interpersonal factors that are associated with sexual orientation disparities in internalizing problems among adolescents.

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Victimization by peers is one factor shown to partially explain the excess burden of internalizing problems among sexually diverse youth (Argyriou et al., 2020). According to Meyer's (2003) minority stress model, victimization is a distal stressor that, when experienced in isolation or in combination with general life stressors, or proximal minority stressors such as internalized homophobia, can lead over time to the development of mental health problems (Meyer, 1995, 2003). As applied to internalizing problems among sexually diverse youth, there is robust support for this minority stress process from emerging longitudinal and multi-informant research that builds upon a larger foundation of cross-sectional evidence based on youths' self-reports. For example, Feinstein et al. (2024) found that youths' social problems (being teased and not getting along with peers) partially explained an increased risk for later internalizing problems among youth who identified as gay or bisexual and who were followed from ages 10 to 12. Pachankis et al. (2022) found that peer victimization at age 12, measured through youth and parent reports, mediated disparities in depression and anxiety symptoms between same-sex- and exclusively other-sex-attracted youth at age 15, with depression and anxiety assessed via both clinical interviews and screening questionnaires. In their analysis of data from a cohort study that followed youth into early adulthood, from ages 17 to 21, and compared youth with heterosexual attractions to those with same-sex or both-sex attractions or who were questioning, Luk et al. (2018) found that experiences of cyberbullying victimization in 11<sup>th</sup> grade (along with family satisfaction and unmet medical needs) mediated the relationship between sexual orientation and depression at follow-up.

Factors along the pathway between peer victimization and internalizing problems are less well understood, especially with regard to how they might explain sexual orientation disparities (Argyriou et al., 2020). Hatzenbuehler's (2009) psychological mediation framework offers an explanation for how stigma-related stress leads to mental health problems among sexually diverse individuals, proposing three psychological processes that mediate between stressors such as victimization and mental health (including internalizing problems in particular). The three processes Hatzenbuehler (2009) describes and summarizes evidence for are 1) emotion regulation (e.g. maladaptive coping such as rumination), 2) interpersonal processes (such as reduced social support), and 3) cognitive processes (such as hopelessness, pessimism, and low self-esteem or negative self-schema). Deficits in these psychological processes, caused by stigma-related stress, diminish sexually diverse individuals' ability to bounce back from adversity (Hatzenbuehler, 2009). In the present study, we explore two cognitive processes along the pathway between peer victimization and internalizing problems: (1) future-related thinking and beliefs, and (2) personal competence – both of which are important factors for mental health (Friborg et al., 2003; Griffin et al., 2001; Havnen et al., 2020; Hong et al., 2023; Kerpelman et al., 2008; Morote et al., 2017). During adolescence, sexually diverse youth may experience difficulty in developing these aspects due to heightened peer victimization (Espelage et al., 2015) and the concurrent process of coming to terms with their sexual orientation (Hall et al., 2021). These two resilient cognitive processes, future-related thinking and personal competence, can be considered positive counterparts to the negative cognitive processes described in Hatzenbuehler's (2009) psychological mediation framework (e.g. hopelessness, pessimism, and negative self-schema).

### ***Future-related thinking and beliefs***

Future-related thinking is an umbrella term that, as used by Tang et al. (2024), refers to a group of related concepts encompassing youths' thoughts, motivations, and feelings about the future, for example, hope and hopelessness, optimism and pessimism, future expectations, and future orientation/planning. In their meta-analysis of 22 longitudinal studies that explored the relationship between future-related thinking and internalizing problems in adolescents, Tang et al. (2024) identified a significant association between more negative future-related thinking and subsequent depressive and anxious symptoms.

Studies to date have explored future-related thinking as a moderator of the relationship between peer victimization and internalizing problems. For example, Ricker et al. (2022) found that peer victimization was not associated with later increases in internalizing problems for adolescents (ages 14–19) with moderate to high levels of hope, while victimized adolescents with low levels of hope showed more persistent internalizing problems over a 4-month follow-up period. Hong et al. (2021) found that positive future orientation moderated the relationship between peer victimization and suicidal thoughts, but not internalizing problems, in a sample of African American youth ages 13 to 24. In a subsequent study that assessed sexual orientation differences (Hong et al., 2023), positive future beliefs mitigated the impact of peer victimization on school disconnectedness for sexually diverse but not heterosexual youth (mental health outcomes were not included). Because peer victimization experiences have been negatively associated with future-related thinking in cross-sectional (Låftman et al., 2018) and longitudinal research (Schacter et al., 2024) among adolescents, it is also possible that future-related thinking may mediate between peer victimization and internalizing problems; we explore that possibility in this study.

### ***Personal competence***

An adolescent's sense of personal competence is based on self-belief in their ability to achieve goals and overcome challenges (Griffin et al., 2001). While personal competence can be assessed in relation to specific domains, such as academics or interpersonal relationships (Griffin et al., 2001), as a broader developmental construct it is a component of resilience and related to the concepts of general self-efficacy, self-esteem, and self-mastery (Girón & Doty, 2023; Griffin et al., 2002; Marcionetti & Rossier, 2021). Griffin et al. (2001, 2002) found that personal competence skills among seventh graders predicted psychological well-being and distress for these same youth when they were followed up as eighth graders. However, other concepts related to personal competence have been more thoroughly studied in relation to internalizing problems or peer victimization. Among adolescents, greater self-efficacy (Andretta & McKay, 2020; De Caroli & Sagone, 2014; Ehrenberg et al., 1991; Muris, 2002) and self-esteem (see Sowislo & Orth, 2013, for a meta-analysis of longitudinal studies) have been associated with fewer depressive and anxious symptoms.

Furthermore, there is evidence that greater exposure to peer victimization leads to lower self-esteem among youth, perhaps because victimized youth are internalizing negative appraisals by their peers (van Geel et al., 2018). Qualitative research with

sexually diverse young adults (ages 16–24) demonstrates that for some, peer victimization led to reduced feelings of self-worth and belonging, uncertainty about their sexuality, or disappointment in how they responded to experiences of stigma (Bridge et al., 2022). Girón and Doty (2023) found that self-mastery partially mediated the relationship between peer victimization and later depressive symptoms. Given this evidence, we believe adolescents' sense of personal competence deserves further exploration as a factor that may lie along the pathway between peer victimization and internalizing problems, especially with regard to disparities between sexually diverse and heterosexual youth.

### ***Peer victimization and intrapersonal psychological processes as mediators of sexual orientation disparities in mental health***

Research with sexually diverse and heterosexual youth has rarely focused on *both* intrapersonal psychological processes and stigma-related stressors as mediators between sexual orientation and mental health. The studies by Martin-Storey and Crosnoe (2012) and Kiekens et al. (2020) stand out as among the few that examined both stigma-related stressors and intrapersonal psychological processes in samples of sexually diverse and heterosexual youth. In their study of 15-year-olds, Martin-Storey and Crosnoe (2012) found sexual minority status to be associated with increased peer victimization, which in turn was associated with lower levels of self-concept (a construct close to self-esteem). These diminished self-concept levels were associated with increased depression. Kiekens et al. (2020) longitudinal study found peer victimization to mediate the longitudinal relation between sexual orientation and mental health (internalizing problems and substance use). However, they found no support for the psychological mediation framework. While the LGB adolescents in their study reported more peer victimization, and more peer victimization was related to the psychological processes of fear of negative social evaluation and lack of social support, and in turn to internalizing problems, the psychological process mediators did not make additional contributions to explaining sexual orientation disparities in the mental health outcomes (Kiekens et al., 2020). Our current study builds upon this prior research by examining different intrapersonal psychological processes – future-related thinking (as future beliefs) and personal competence – together with peer victimization as separate serial mediators in the relationship between sexual attraction and mental health.

### ***The current study***

This study aims to advance understanding of mental health differences among sexually diverse and heterosexual youth by exploring the role of two intrapersonal psychological processes – likely shaped by experiences with peer victimization – that have yet to be well explored. Using cross-sectional survey data from a sample of Dutch adolescents, we investigate peer victimization as a primary mediator and two separate intrapersonal psychological processes (future beliefs and personal competence) as secondary mediators in the relationship between sexual attraction and internalizing problems. As such, we address two key research questions:

- (1) Do peer victimization and future beliefs mediate, in serial, the relationship between sexual attraction and internalizing problems?
- (2) Do peer victimization and personal competence mediate, in serial, the relationship between sexual attraction and internalizing problems?

Following the literature we reviewed, we hypothesize that youth with SSA will experience more peer victimization (first mediator) than youth without SSA. We further anticipate that peer victimization will be correlated with more negative future beliefs (second mediator), which in turn is hypothesized to be associated with more internalizing problems.

Additionally, we hypothesize that peer victimization will be correlated with lower personal competence (second mediator), which is hypothesized to be associated with more internalizing problems. Furthermore, we explore whether peer victimization, future beliefs, and personal competence independently mediate the relationship between sexual attraction and internalizing problems (See Figure S1 in the supplementary material for a visual depiction of our hypothesized models). Although analysing cross-sectional data has limitations in terms of directionality and sequential causality (see Discussion), we use these data to conduct an initial test of our hypotheses in a sample of youth with and without SSA.

Finally, we examine whether adolescents' assigned sex at birth influences these mediated relationships, given the documented sex differences in peer victimization (Collier et al., 2013), future-related thinking (Johnson et al., 2014), and concepts related to personal competence (e.g. self-esteem and self-efficacy, Bachman et al., 2011; McKay et al., 2014).

## Method

### Participants

A total of 949 Dutch secondary school students participated in this study, with 530 of them being assigned female at birth (55.8%). The participants' ages ranged from 15 to 18 years, with a mean age of 16.7 years ( $SD = 0.82$ ). Educational backgrounds were: 17.9% ( $n = 170$ ) in pre-vocational secondary education (low), 32.5% ( $n = 308$ ) in secondary vocational education or senior general secondary education (middle), and 49.6% ( $n = 471$ ) in pre-university education (high). Regarding ethnicity, 88.1% ( $n = 836$ ) reported both parents with Dutch or Western backgrounds, 11.9% ( $n = 113$ ) indicated a non-Western background for either their mother or father. The most frequently reported non-Western ethnic backgrounds for mothers and fathers were Turkish ( $n = 14$ , 15.4% and  $n = 16$ , 17.6%, respectively) and Moroccan ( $n = 10$ , 11% and  $n = 9$ , 9.9%, respectively). In terms of religion, 81.9% ( $n = 777$ ) identified as non-religious while 18.1% ( $n = 172$ ) identified as religious, primarily Christian ( $n = 131$ , 76.2%), followed by Muslim ( $n = 32$ , 18.6%), Hindu ( $n = 4$ , 2.3%), Buddhist ( $n = 3$ , 1.7%), and other ( $n = 2$ , 1.2%).

### Procedure

Secondary schools in the Netherlands were randomly chosen from a list from the Netherlands Ministry of Education website. The selected schools were contacted by

phone and invited to participate. Interested schools received a formal letter outlining the study's aims and procedures. Of the 32 schools contacted, five agreed to participate, with refusals due to ongoing involvement in other research.

Before data collection, school boards sent letters to parents of students under sixteen, informing them about the study's purpose, subject matter, and date of data collection. Parents were explicitly informed of the voluntary nature of their child's participation and encouraged to contact the research team if they did not want their child to participate. No 15-year-olds were opted out of the study by their parents, and older students consented independently in accordance with Dutch law.

At each school, research assistants explained the study's subject matter and emphasized the voluntary and confidential nature of participation. Students were assured that their responses would remain confidential and not be shared with teachers, parents, or peers. The first page of the questionnaire asked students to check a box if they understood the study's rationale and instructions, and agreed to participate in the study. All students agreed to participate.

Data were collected using a paper-and-pencil questionnaire administered by research assistants in classroom sessions. The questionnaires were completed in an examination-like setting. The study design and protocol were reviewed and approved by the Institutional Review Board of Utrecht University.

## **Instruments**

### ***Sexual attraction***

Sexual attraction was assessed using a single-item measure. Participants were asked, 'Have you ever experienced romantic and/or sexual feelings for someone of the same sex?' Responses were recorded on a five-point scale: 1 (*Never*), 2 (*Rarely*), 3 (*Sometimes*), 4 (*Frequently*), 5 (*Very often*). Adolescents who reported '*Never*' were categorized as not same-sex attracted ( $n = 802$ ), while those who reported being '*Rarely*,' '*Sometimes*,' '*Frequently*,' or '*Very often*' attracted to the same sex were categorized as same-sex attracted ( $n = 147$ ; 0 = non-SSA; 1 = SSA). This question has been used successfully in prior research on youth with SSA in the Netherlands (e.g. Van Beusekom et al., 2019).

### ***Peer victimization***

A modified version of the 4-item University of Illinois Victimization Scale (UIVS) was used to measure general peer victimization (for the original items, see Espelage & Holt, 2001; Espelage et al., 2012). Adolescents reported the frequency with which fellow students (1) gossiped or made negative comments about them, (2) were physically aggressive toward them, (3) made verbal insults or threats directed at them, and (4) excluded them. Responses ranged from 1 (*Never or almost never*) to 5 (*Multiple times a week*). A mean score for the four items was computed, with higher scores indicating more peer victimization experiences. Cronbach's alpha was .62.

### ***Future beliefs***

To assess adolescents' perceptions of their future, we used a four-item subscale called 'Planned Future' from the Resilience Scale for Adults (RSA; Hilbig et al., 2015; Hjemdal, 2007; for items, see; Rossi et al., 2021). This subscale measures a positive

outlook, hope for the future, and a sense of purpose, with items like 'I feel that my future looks very promising.' Participants rated their responses on a scale from 1 (*Absolutely not true*) to 5 (*Absolutely true*). The mean score was computed based on these four items, with higher scores indicating more positive future beliefs. Cronbach's alpha was .88.

### ***Personal competence***

To measure personal competence, we used the 'The Personal Competence' subscale of the Resilience Scale (RS) originally developed by Wagnild and Young (1993, as cited in Cajada et al., 2023; YouthREX Research & Evaluation Exchange, n.d.). This subscale, consisting of 17 items, assesses an individual's ability to endure life's stressors (e.g. 'I can overcome difficult times because I've faced adversity before'). Participants indicated the extent to which statements applied to them using a seven-point scale from 1 (*Never*) to 7 (*Always*). A mean score across the 17 items was computed, with higher scores reflecting greater personal competence. Cronbach's alpha was .88.

### ***Internalizing problems***

We used the internalizing subscale of the Youth Self-Report (YSR), developed by Achenbach (1991) and translated into Dutch by Verhulst et al. (1997), to assess adolescents' internalizing problems. This subscale comprised 32 items measuring symptoms related to anxiety, depression, withdrawal, and somatic complaints (e.g. 'I worry a lot'). Participants rated each item on a 3-point scale: 0 (*not true*), 1 (*somewhat true*), and 2 (*very true or often true*). A sum score was calculated across all 32 items, with higher scores indicating more internalizing problems. Cronbach's alpha was .91.

## ***Statistical analyses***

### ***Mediation analyses***

We conducted two bootstrapped mediation analyses using SPSS PROCESS Model 6 (Hayes, 2013) to investigate two serial mediation pathways:

- (1) Sexual attraction → peer victimization → future beliefs → internalizing problems.
- (2) Sexual attraction → peer victimization → personal competence → internalizing problems.

In the first mediation pathway, we also assessed the individual mediation effects of peer victimization and future beliefs, while in the second, we also examined the individual mediation effects of peer victimization and personal competence to determine their significance.

Bootstrapping with 5,000 random samples was used to estimate mediation effects and calculate bias-corrected 95% confidence intervals (CIs). Mediation was significant if the CIs did not include zero. Bootstrapping provides a robust method for estimating mediation effects, improves the accuracy of CIs, and reduces biases in significance testing (Hayes, 2013).

### **Moderated mediation analyses**

We conducted two bootstrapped moderated mediation analyses using PROCESS Model 84 (Hayes, 2013) with 5,000 random samples. These analyses examined differences between adolescents assigned male or female at birth in the mediated relationship between sexual attraction and internalizing problems through (1) peer victimization and future beliefs, as well as through (2) peer victimization and personal competence. In both models, sexual attraction, assigned sex, and their interaction (sexual attraction  $\times$  assigned sex) were predictors of peer victimization.

For exploratory purposes, we also entered sexual attraction and assigned sex, along with the interaction of sexual attraction  $\times$  assigned sex, to both models to predict future beliefs and personal competence. An index of moderated mediation was used to test the significance of the moderated mediation (Hayes, 2015), which quantifies the relationship between an indirect effect and a moderator. The absence of zero in the bias-corrected 95% CIs indicates significance (Hayes, 2015).

## **Results**

### **Descriptive statistics**

Chi-square ( $\chi^2$ ) tests and independent *t*-tests assessed differences between adolescents with ( $n = 147$ ) and without SSA ( $n = 802$ ) across demographic characteristics and studied variables (see Table 1). More female-assigned adolescents reported SSA than male-assigned adolescents. Adolescents with SSA were more likely to be non-religious than adolescents without SSA. No significant differences were found regarding cultural background, education, or age. Thus, assigned sex at birth and religiosity were controlled for in the main analyses.

### **Peer victimization and future beliefs as serial mediators**

Figure 1 illustrates the mediation model in which peer victimization and future beliefs act as mediators in the relationship between sexual attraction and internalizing problems, controlling for assigned sex and religiosity. Peer victimization and future beliefs mediated the relationship between sexual attraction and internalizing problems in serial (Partially standardized coefficient ( $\beta_{ps}$ ) = 0.01;  $SE = 0.01$ ; bias-corrected 95% CI [0.003, 0.023]). The mediated associations were in the expected directions: Adolescents with SSA reported more experiences of peer victimization than their peers without SSA. These experiences, in turn, were related to more negative beliefs about their future, which in turn were associated with a heightened prevalence of internalizing problems.

Peer victimization ( $\beta_{ps} = 0.10$ ;  $SE = 0.04$ ; bias-corrected 95% CI [0.037–0.173]) and future beliefs ( $\beta_{ps} = 0.05$ ;  $SE = 0.02$ ; bias-corrected 95% CI [0.003, 0.094]) were also found to independently mediate the relationship between sexual attraction and internalizing problems. These mediated associations also followed the anticipated direction (see Figure 1): Youth with SSA reported more peer victimization and more negative future beliefs, both of which were directly associated with more internalizing problems.

The direct effect of sexual attraction on internalizing problems ( $c'$ ) remained significant after accounting for peer victimization and future beliefs as mediators, as well as assigned

**Table 1.** Demographic characteristics and studied variables of adolescents with and without same-sex attraction.

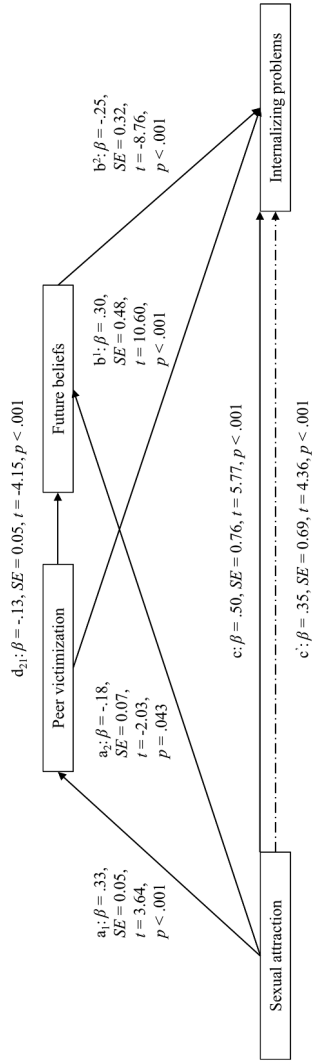
	Sexual Attraction		$\chi^2/t$	<i>p</i>
	No Same-Sex Attraction	Same-Sex Attraction		
<b>Overall (% , n)</b>	84.5%, 802	15.5%, 147		
<b>Sex assigned at birth (% , n)</b>			17.12	< .001
– Male	47%, 377	28.6%, 42		
– Female	53%, 425	71.4%, 105		
<b>Age</b>			–0.54	.592
<i>M (SD)</i>	16.65 (0.82)	16.69 (0.80)		
<b>Cultural background (% , n)</b>			2.32	.127
– Dutch/Western	87.4%, 701	91.8%, 135		
– Non-Dutch/-Non Western	12.6%, 101	8.2%, 12		
<b>Education (% , n)</b>			1.04	.596
– Pre-vocational secondary education (low)	18.5%, 148	15%, 22		
– Secondary vocational education or senior general secondary education (middle)	32.3%, 259	33.3%, 49		
– Pre-university education (high).	49.3%, 395	51.7%, 76		
<b>Religiosity (% , n)</b>			13.27	< .001
– Non-religious	79.9%, 641	92.5%, 136		
– Religious	20.1%, 161	7.5%, 11		
<b>Peer victimization</b>			–3.28	< .001
<i>M (SD)</i>	1.27 (0.49)	1.42 (0.63)		
<b>Future beliefs</b>			3.18	.002
<i>M (SD)</i>	3.62 (0.76)	3.40 (0.77)		
<b>Personal competence</b>			2.66	.008
<i>M (SD)</i>	5.14 (0.73)	4.97 (0.72)		
<b>Internalizing problems</b>			–6.77	< .001
<i>M (SD)</i>	9.66 (8.26)	14.83 (9.74)		

sex and religiosity as covariates. This suggests that peer victimization and future beliefs mediate the relationship between sexual attraction and internalizing problems both independently and in serial, but only partially.

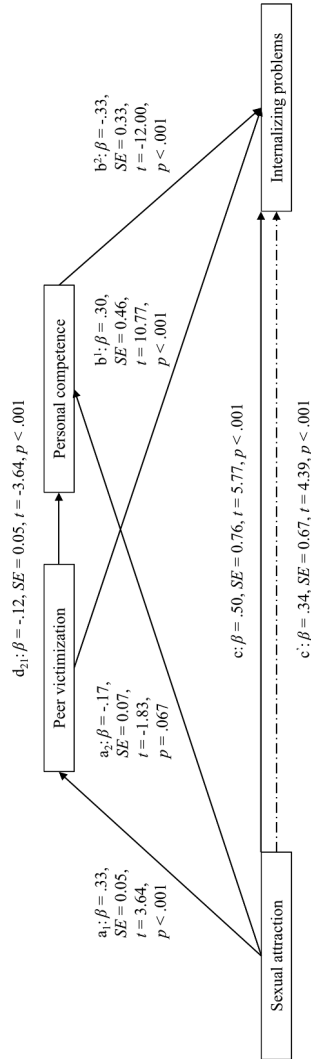
### **Peer victimization and personal competence as serial mediators**

Figure 2 presents the associations within the mediation model, where peer victimization and personal competence act as serial mediators in the relationship between sexual attraction and internalizing problems, controlling for assigned sex and religiosity. The results confirmed our hypothesis that peer victimization and personal competence mediate the relationship between sexual attraction and internalizing problems in serial (partially standardized coefficient ( $\beta_{ps}$ ) = 0.01;  $SE = 0.01$ ; bias-corrected 95% CI [0.003, 0.028]). The mediated associations followed the expected direction: Same-sex attracted adolescents experienced higher levels of peer victimization compared to their peers without SSA, which was associated with lower personal competence, and in turn, with increased internalizing problems.

The relationship between sexual attraction and internalizing problems was also independently mediated by peer victimization ( $\beta_{ps} = 0.10$ ;  $SE = 0.03$ ; bias-corrected 95% CI [0.037, 0.167]). Adolescents with SSA experienced more peer victimization than adolescents without SSA, which was associated with increased internalizing problems. However, personal competence did not independently mediate the relationship between sexual attraction and internalizing problems ( $\beta_{ps} = 0.05$ ;  $SE = 0.03$ ; bias-corrected 95% CI



**Figure 1.** Serial and independent mediation of peer victimization and future beliefs in the relation between sexual attraction and internalizing problems. Mediation analyses controlled for sex assigned at birth and religiosity; all coefficients are standardized. Although a serial mediation model was tested, all data were cross-sectional and inferences about temporal or causal order are thus limited.



**Figure 2.** Serial and independent mediation of peer victimization and personal competence in the relation between sexual attraction and internalizing problems. Mediation analyses controlled for sex assigned at birth and religiosity; all coefficients are standardized. Although a serial mediation model was tested, all data were cross-sectional and inferences about temporal or causal order are thus limited.

[−0.003, 0.113]), because the direct association between sexual attraction and personal competence was not significant (see [Figure 2](#)).

The direct effect of sexual attraction on internalizing problems ( $c'$ ) remained significant after accounting for peer victimization and personal competence as mediators, along with assigned sex and religiosity as covariates. This suggests that the relationship between sexual attraction and internalizing problems is only partially mediated, both through the serial pathway of peer victimization and personal competence and through peer victimization alone.

### **Assigned sex as a moderator**

In the first phase of the mediation models, the interaction between sexual attraction and assigned sex at birth in predicting peer victimization was significant ( $\beta = -.11$ ,  $SE = 0.03$ ,  $t = -3.24$ ,  $p < .001$ ). Specifically, for male-assigned adolescents, those with SSA reported higher levels of peer victimization compared to those without SSA ( $\beta = .28$ ,  $SE = 0.08$ ,  $t = 4.73$ ,  $p < .001$ ). In contrast, for female-assigned adolescents, peer victimization levels did not differ significantly between those with and without SSA ( $\beta = .05$ ,  $SE = 0.06$ ,  $t = 1.25$ ,  $p = .212$ ).

The index of moderated mediation showed that assigned sex influences the mediated relationship between sexual attraction and internalizing problems through peer victimization and future beliefs ( $\beta = -.01$ ,  $SE = 0.01$ ; bias-corrected 95% CI [−0.020, −0.001]). Significant effects were observed only for male-assigned adolescents ( $\beta = .01$ ,  $SE = 0.01$ ; bias-corrected 95% CI [0.003, 0.023]) and not for female-assigned adolescents ( $\beta = .00$ ,  $SE = 0.00$ ; bias-corrected 95% CI [−0.001, 0.005]).

Sex assigned at birth also moderated the mediated relationship between sexual attraction and internalizing problems, via peer victimization and personal competence (Index of moderated mediation:  $\beta = -.01$ ,  $SE = 0.01$ ; bias-corrected 95% CI [−0.023, −0.001]). This mediation effect was significant for male-assigned adolescents ( $\beta = .01$ ,  $SE = 0.01$ ; bias-corrected 95% CI [0.002, 0.026]), but not for female-assigned adolescents ( $\beta = .00$ ,  $SE = 0.00$ ; bias-corrected 95% CI [−0.001, 0.006]). We also explored whether assigned sex moderated the relation between sexual attraction and personal competence and the relation between sexual attraction and future beliefs. These interaction effects were non-significant.

## **Discussion**

Using cross-sectional school survey data from Dutch adolescents, we investigated whether adolescents with same-sex attraction (SSA) reported more internalizing problems than those without SSA. Additionally, we investigated two serial mediation pathways: (1) whether peer victimization and future beliefs mediate the relationship between sexual attraction and internalizing problems in serial, and (2) whether peer victimization and personal competence do so. Furthermore, we assessed whether assigned sex at birth moderates these mediation effects, focusing on whether the strength or presence of these pathways differs for male- and female-assigned adolescents. Our findings showed that adolescents with SSA reported more internalizing problems than their peers without SSA. Both mediation pathways were supported among male-assigned adolescents, but

not among female-assigned adolescents: one through peer victimization and future beliefs, and the other through peer victimization and personal competence.

Consistent with previous research indicating elevated internalizing problems among sexually diverse individuals across various life stages (Blashill et al., 2021; Feinstein et al., 2022; Nelson et al., 2020), we found that SSA was associated with increased internalizing problems in adolescents. In line with sexual minority stress theory (Meyer, 2003) and prior studies (Burton et al., 2013; Dürbaum & Sattler, 2020; Feinstein et al., 2022; Kiekens et al., 2020), peer victimization experiences partially explained this relationship. These findings are particularly significant, as peer victimization in adolescence can have lasting effects into adulthood. A large Dutch psychiatric epidemiological study by Baams et al. (2021) found that peer victimization before age 16 was associated with a higher prevalence of DSM-IV mood, anxiety, and substance use disorders in adults with SSA, compared to those without SSA. Our findings show that adolescents with positive future beliefs and greater personal competence reported fewer internalizing problems. These results align with previous research (Andretta & McKay, 2020; Griffin et al., 2001, 2002; Tang et al., 2024) and underscore the importance of resilient traits as protective factors for youth mental health. Consistent with our hypothesis and the psychological mediation framework (Hatzenbuehler, 2009), peer victimization and intrapersonal psychological processes, namely future beliefs and personal competence, acted as serial mediators between sexual attraction and internalizing problems. More specifically, adolescents with SSA experienced more peer victimization than those without SSA. This exposure was associated with more negative future beliefs and lower personal competence, which in turn contributed to an increased risk for internalizing problems. These findings suggest that exposure to stigma-related stress, such as peer victimization, can undermine coping resources in sexually diverse youth, which in turn heightens their risk for mental health problems.

Moderated mediation analysis showed that the mediation effects were significant only for male-assigned adolescents, specifically through the pathways of peer victimization and either future beliefs or personal competence. These findings align with previous studies indicating that sexually diverse boys experience peer victimization more frequently than sexually diverse girls (Lu et al., 2024; Toomey & Russell, 2016). Much of the peer victimization directed at these boys occurs as a means for other male adolescents to enforce gender behaviours and traditional gender norms, which are often stricter for boys than for girls, especially towards gender-nonconforming boys (Reigeluth & Addis, 2016). Although we did not assess the gender expression of our adolescents, research suggests that gender nonconformity is associated with SSA and is also perceived by others as an indicator of SSA (Rieger et al., 2008, 2010). This suggests that the significant mediation effects for male-assigned adolescents may be related to how their gender expression is perceived and enforced by their peers. Peer victimization in this context may be more pronounced for male adolescents with SSA, particularly those who express behaviours that deviate from traditional gender expectations.

Our study further showed that for both male- and female-assigned adolescents, beliefs about the future, rather than personal competence, independently mediate the relationship between SSA and internalizing problems. This suggests that these future beliefs are shaped by a variety of experiences other than peer victimization. For sexually diverse youth, proximal stigma-related stressors, such as concealing one's sexual orientation or

internalizing negative attitudes towards sexual diversity, may also play a role in diminishing their future beliefs relative to heterosexual peers (Meyer, 2003). Sexually diverse youth who are afraid of rejection and feel unable to express their SSA openly may miss key opportunities for positive social interactions that could help shift negative perceptions (Pachankis, 2007). The cognitive burden of hiding their same-sex attracted feelings, combined with the fear of being outed, may perpetuate negative beliefs about their future. Future research could explore proximal minority stressors and social supports that may shape adolescents' future beliefs.

### ***Strengths and limitations***

This study had several strengths. First, our research utilized a general school sample of adolescents. Although random participant selection within schools was not feasible, this method helped in addressing some of the typical selection biases associated with recruiting participants from LGB venues. In addition, the inclusion of a question about sexual attraction in a general school sample of adolescents enabled us to integrate stigma-related processes (Meyer, 2003) and, intrapersonal psychological processes (Hatzenbuehler, 2009). This allowed us to examine intrapersonal psychological processes as intermediate associations between stigma-related stress and mental health outcomes.

Our study also has some limitations. First, we relied on cross-sectional data, limiting our ability to draw conclusions about the temporal sequence and directionality of effects. Mediation, by definition, is a process that unfolds over time, assuming that there is a temporal interval between each of the variables (O'Laughlin et al., 2018). Although traditional mediation analysis cannot confirm causality, longitudinal data can help establish a temporal order and suggest potential directional relationships (Fiedler et al., 2011). A recent longitudinal study (Oginni et al., 2023) found that SSA was related to more psychological distress over time, partly due to peer victimization, supporting the directions of effects suggested in our study. However, Oginni et al. (2023) also identified a bi-directional relationship: peer victimization predicted heightened psychological distress, which, in turn, increased vulnerability to further instances of peer victimization. To improve our understanding of how SSA, assigned sex, peer victimization, and intrapersonal psychological processes impact adolescents' mental health, it is crucial to conduct more longitudinal research.

Second, we questioned adolescents about their same-sex attracted feelings and did not assess other indicators of sexual orientation (such as self-identification as LGB or same-sex sexual behaviour). Therefore, we do not know whether adolescents with SSA in our sample identify as LGB, engage in same-sex sexual behaviour, or will do so in the future. Furthermore, adolescents were categorized as same-sex attracted based on their self-reported frequency of experiencing romantic or sexual feelings for someone of the same sex. This approach did not allow us to distinguish between adolescents exclusively attracted to the same sex and those attracted to both sexes, nor did it account for attraction to other-sex individuals. These limitations reduce our ability to differentiate between various sexual orientation patterns. We also do not know whether adolescents with SSA had disclosed their same-sex attracted feelings to their peers at school. Therefore, we could not examine whether differences in adolescents' disclosure of their same-sex attracted feelings to their peers at school relates to differences in scores on our studied variables.

Last, as we used a school-based sample of adolescents instead of a selected sample of sexually diverse youth, we relied on a general measure of peer victimization applicable to all adolescents. Therefore, it remains uncertain as to whether the increased instances of peer victimization faced by sexually diverse youth are directly associated with their (presumed) sexual orientation. To align with Meyer's sexual minority stress theory (2003), future studies using school samples could, after asking youth about peer victimization experiences, follow up by inquiring whether youth attribute these experiences to their sexual orientation.

## Conclusion

Numerous studies show that sexually diverse youth are more vulnerable to mental health problems (DiGiacomo et al., 2018; Lucassen et al., 2017; Plöderl & Tremblay, 2015). Our study expands this by examining both minority stress processes (Meyer, 2003) and intrapersonal psychological factors (Hatzenbuehler, 2009) among Dutch adolescents. We found that same-sex attracted adolescents reported more internalizing problems compared to adolescents without SSA. For male-assigned adolescents, this relationship was indirectly related to experiences of peer victimization, which were associated with more negative beliefs about the future and lower personal competence. In turn, these negative future beliefs and reduced personal competence were related to higher levels of internalizing problems. Conversely, for all adolescents, negative beliefs about the future independently accounted for some of the increased internalizing problems associated with SSA. These findings highlight the importance of addressing peer victimization, particularly among male-assigned adolescents, and fostering psychological resources, such as personal competence and positive future beliefs, to mitigate mental health problems in sexually diverse youth. To address these issues, interventions should focus on improving school environments to foster acceptance of sexual diversity and help sexually diverse youth envision a positive future for themselves.

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