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## Original article

# The Association Between Daily Concealment and Affect Among Sexual and Gender Minority Adolescents: The Moderating Role of Family and Peer Support

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## A B S T R A C T

**Purpose:** There is a lack of research on the association between identity concealment and mental health among sexual and gender minority (SGM) adolescents and how social support may attenuate this association. Furthermore, research typically neglects the day-to-day variability in concealment experiences of SGM adolescents. Therefore, we examined the association between daily sexual orientation and gender identity concealment and positive and negative affect and the moderating role of family and peer support on this association among SGM adolescents.

**Methods:** A 21-day daily diary study among 94 SGM adolescents (mean [M] age = 16.10, standard deviation [SD] = 1.50; 31.9% gender minority; 44.7% youth of color) was conducted. Multilevel regression analyses tested the association between daily concealment and positive and negative affect and a cross-level interaction was used to assess the moderating effects of social supports.

**Results:** Daily concealment was associated with higher negative but not with positive affect. Family support was associated with lower daily negative affect but not with positive affect. Peer support was not significantly associated with negative or positive affect. Moderation results indicated that the association between daily concealment and negative affect was significant for adolescents who reported low or average levels of family support but was no longer significant for adolescents who reported high levels of family support.

**Discussion:** Daily identity concealment was positively associated with negative affect and this association was attenuated by family support. Future research and interventions should target families to improve the lives of SGM adolescents and to help reduce and eliminate mental health disparities.

**IMPLICATIONS AND CONTRIBUTION**

This study examined the associations between daily experiences of identity concealment and affect and how family and peer support buffered this association among sexual and gender minority adolescents. Daily concealment was associated with negative affect and this association was attenuated by family support.

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Sexual and gender minority (SGM) adolescents report poorer mental health than their heterosexual and cisgender peers [1]. This disparity is often explained by the minority stress

framework and its extensions [2,3], which states that SGM people experience chronic distal (e.g., discrimination) and proximal (e.g., expectations of discrimination, concealment) stressors related to their sexual or gender minority identity in addition to general stressors, which have detrimental health effects. One form of proximal minority stress is the concealment of one's sexual or gender identity [2,3], which is described as a concealable stigma [4]. Although there are differences in sexual

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and gender identity concealment, both groups may conceal their identity as a mean of safety or coping with stigma [3,4]. Considering that a recent meta-analysis found that concealing one's sexual orientation especially impacts the mental health of young sexual minority people [5], a better understanding of how concealment affects the mental health of SGM adolescents is needed. Examining factors that are related to mental health among SGM adolescents is also important because poor mental health in adolescence negatively influences health later in life [6].

Concealment is often conflated with disclosure or outness. Concealment refers to the active prevention of one's stigmatized identity from being known by others, while disclosure or outness is understood as the extent that one has revealed one's stigmatized identity to others [7]. Thus, concealment is not only the absence of disclosure or outness, but the active prevention of disclosure or outness [8]. Studies often research disclosure or outness [7], despite that concealment is associated with negative health outcomes [8].

Focusing on the association between concealment and health, a recent meta-analytic study found a small positive association between sexual orientation concealment and internalizing mental health problems [5]. However, studies among sexual minority adolescents are scarce [5], even more so for gender minority adolescents, and do not often assess concealment [7]. For example, more disclosure was associated with lower mental distress among sexual minority youth [9] and more outness was associated with less depressive symptoms among SGM youth [10]. Furthermore, gender identity concealment was identified as a source of stress in a qualitative study among gender minority adults [11]. Despite few empirical studies on concealment among SGM adolescents, the existing research suggests that concealment of one's sexual or gender identity might negatively affect mental health. Although when it is done to prevent, for instance, discrimination or victimization, it could also be seen as a protective factor [12].

Studying concealment in adolescence is especially relevant because sexual orientation and gender identity exploration, disclosure, and concealment are a key part of this developmental period [6]. However, SGM adolescents' concealment or disclosure of their identities is an ongoing and shifting process that differs based on individuals they interact with (e.g., peers, teachers, family members) and varying contexts they navigate (e.g., school, home) [13]. Thus, depending on the social context and how hostile or affirming it may be, SGM adolescents may conceal part of their identity [14], resulting in variability in concealment on a day-to-day basis. However, research on concealment often uses a between-person approach, neglecting the day-to-day variability in concealment experiences and how this is associated with mental health among SGM people. Taking a within-person approach can deepen our understanding of the impact of daily variations in concealment on mental health among SGM adolescents.

As indicators of mental health, within-person research often assesses positive and negative affect, which represent orthogonal mood states with positive affect reflecting an enthusiastic active mood while negative affect reflects a mood of distress [15]. Although affect and depression are different constructs, low positive and high negative affect plays a role in the development of depression [15]. A better understanding of factors that influence affect among SGM adolescents is therefore important to better understand health disparities in this population.

### *Social support as a Potential Protective Factor*

Social support is associated with better mental health [16]. Considering the vital role of parents and peers during adolescence [17], both are considered important sources of support for SGM adolescents. A recent literature review found that, in general, lower levels of social support were associated with higher levels of mental health problems among SGM adolescents [18]. Sexual minority youth that received social support from friends but not from parents reported poorer mental health than youth who received social support from both friends and parents [19]. Furthermore, peer support and especially parental support were inversely associated with depression among sexual minority youth [20], and parental support was associated to fewer depressive symptoms in a small sample of transgender youth [21].

Besides directly affecting mental health, parental and peer support may attenuate the adverse effects of minority stressors, such as identity concealment, on mental health [16,22]. However, research primarily focuses on social support's buffering role against the effects of distal minority stressors (e.g., discrimination) on mental health [23,24] but has not adequately studied how it may attenuate adverse effects of proximal stressors such as concealment. One cross-sectional study among sexual minority youth found that sexual orientation-specific support by family members and friends attenuated the relation between minority stress, including concealment, and emotional distress [22]. Although concealment might limit access to support (e.g., avoidance of certain social supports), on a daily basis, SGM adolescents might conceal part of their identity in one social context (e.g., classroom) but are able to receive support in a different social context (e.g., extracurricular activity), which can minimize the effect of concealment on mental health. Thus, research is needed to understand how parents' and peers' support may moderate the relation between daily concealment and mental health among SGM adolescents.

### *The present study*

We aimed to study the association between within-person identity concealment and positive and negative affect and how social support from family and peers moderated this association among SGM adolescents. We expected that daily experiences with concealment would be associated with greater negative affect and lower positive affect, despite that concealment might protect against the negative effects of, for instance, discrimination. Furthermore, we expected that greater levels of social support from family and peers would attenuate the adverse effect of daily concealment on mental health. Specifically, we hypothesized that the associations between daily concealment and mental health would be attenuated for SGM adolescents with greater social support from family and peers compared to SGM adolescents with lower social support.

## **Methods**

### *Procedures*

Participants were recruited from the community in a mid-Atlantic metropolitan city as part of a larger study of SGM

**Table 1**  
Descriptive Statistics of Key Variables

Variables	M (SD)/%	Minimum–Maximum	N missing (%)
Positive affect <sup>a</sup>	1.52 (0.76)	0.11–3.92	0 (0.0%)
Negative affect <sup>a</sup>	1.06 (0.65)	0.11–3.60	0 (0.0%)
Concealment <sup>a</sup>	0.88 (1.05)	0–4	0 (0.0%)
Support family	17.72 (5.93)	4–28	0 (0.0%)
Support friends	20.64 (6.98)	4–28	0 (0.0%)
Age	16.1 (1.50)	12–18	1 (1.1%)
Total number of days participated	17.33 (4.28)	1–21	0 (0.0%)
Sexual identity			0 (0.0%)
Gay	12.8		
Lesbian	17.0		
Bisexual	35.1		
Heterosexual	0.0		
Queer	10.6		
Pansexual	16.0		
Asexual	5.3		
Not sure	3.2		
Gender identity			0 (0.0%)
Cisgender male	9.6		
Cisgender female	58.5		
Transgender male	12.8		
Transgender female	0.0		
Genderqueer	11.7		
Other gender identity	7.4		
Sex assigned at birth			0 (0.0%)
Male	9.6		
Female	90.4		
Race/ethnicity			1 (1.1%)
Asian	2.1		
Black/African American	23.4		
White	54.3		
Multiracial	16.0		
Other race/ethnicity	3.2		
Reduced lunch			0 (0.0%)
No	66.0		
Yes	34.0		

M = mean; SD = standard deviation.

<sup>a</sup> Mean levels over all days are given for within-person variables.

adolescents' wellbeing [25]. Adolescents were screened for inclusion criteria and potentially eligible youth were invited to an in-person meeting. Inclusion criteria were self-identification as LGBTQ and age 12–18 years old. Study procedures were explained and 18-year-old youth provided written consent and youth under 18 years of age provided written assent. Parental permission was waived to mitigate potential risks related to disclosure of one's sexual orientation or gender identity. The second authors' Institutional Review Board approved the protocol.

Ninety-six adolescents completed the baseline survey and were invited to participate in the daily diary portion of the study; 94 agreed to participate in the 21-day daily diary. Participants then received instructions for completing the daily diary surveys. They received an individual, personalized email with a link to their daily diary survey every evening at 7:30 P.M. and tailored feedback regarding their progress in the study. Participants received a reminder at 9:30 P.M. if they had not completed the survey. Uncompleted surveys expired at 5 A.M. the next morning and were considered missed reports. Participants were asked to reflect on the past 24 hours when completing the questions. Participants received daily incentives and a weekly bonus for participating in the form of gift cards. Detailed procedures are provided elsewhere [25].

In total, 94 SGM adolescents aged 12–18 years (mean [M] = 16.10, standard deviation [SD] = 1.50) participated in

the study. Detailed demographic information is presented in Table 1.

### Measures

**Concealment.** Daily concealment of sexual orientation and/or gender identity in the 21-day daily diary monitoring period was assessed with 1 item (“I hid part of my LGBTQ identity from another person or other people”). The item was developed for this study based on prior measures of identity concealment [26–28]. The item was rated from 0 = *not at all true* to 4 = *very true*.

**Social support from family and peers.** Participants completed the 4-item family (“My family really tries to help me”;  $\alpha = 0.90$ ) and 4-item peers (“I can count on my friends when things go wrong”;  $\alpha = 0.95$ ) subscales of the Multidimensional Social Support Scale at baseline [29]. Answer options ranged from 1 = *very strongly disagree* to 7 = *very strongly agree* and the sum score for each scale was calculated.

**Daily positive and negative affect.** Items from the Positive and Negative Affect Scale assessed daily positive and negative affect [15]. Three items from the Positive and Negative Affect Scale assessed positive affect (i.e., excited, proud, inspired) and eight items assessed negative affect (i.e., upset, guilty, scared, irritable,

ashamed, nervous, jittery, stressed). Participants rated items using a 5-point scale from 0 = *very slightly or not at all* to 4 = *extremely* and the scales were averaged. A previous study using the same data set reported adequate between- and within-person alpha reliability coefficients for positive ( $\alpha_{\text{within}} = 0.63$  and  $\alpha_{\text{between}} = 0.90$ ) and negative ( $\alpha_{\text{within}} = 0.73$  and  $\alpha_{\text{between}} = 0.94$ ) affect [25].

**Covariates.** Total number of days participated in the daily diary study, sexual identity (0 = *gay or lesbian*, 1 = *bisexual, queer, or pansexual*, 2 = *other* [i.e., *asexual and not sure*]), gender identity (0 = *cisgender* and 1 = *gender minority*), sex assigned at birth (0 = *male* and 1 = *female*), race/ethnicity (0 = *White* and 1 = *people of color*), age, and receiving free or reduced lunch (0 = *no* and 1 = *yes*) were assessed and included as covariates in the models.

**Analytic strategy**

Linear multilevel regression analyses were estimated in Mplus version 8.3 [30]. The within-person predictor was daily concealment and the between-person level predictor variables were between-person level concealment (the average of daily concealment across all completed days), family support, peer support, sexual identity, gender identity, sex assigned at birth, race/ethnicity, age, free or reduced lunch, and the total number of days participated. Daily within-person concealment was centered at each participant’s mean, and between-person level concealment, family support, and peer support were centered at

the overall mean [31]. The outcome variables were positive and negative affect and were predicted simultaneously in all models.

Four multilevel regression models were estimated. First, Model 0 included no predictor variables, in which the intraclass correlation of positive and negative affect was calculated. Second, in Model 1, the direct effect of daily concealment on positive and negative affect was estimated, controlling for between-person level concealment, sexual identity, gender identity, sex assigned at birth, race/ethnicity, age, free or reduced lunch, and the total number of days participated. Third, in Model 2, family support and peer support were added as predictors in the model. Finally, in Model 3, the cross-level interaction effects between family support and peer support with daily concealment were estimated. For significant interaction terms, simple slope analyses were conducted [32].

At the between-person level, there were missing data for race/ethnicity and age (Table 1). At the within-person level, there were missing data for positive affect (n = 2), negative affect (n = 2), and concealment (n = 2). As missing data analyses indicated that data were missing completely at random, multiple imputation was used to take into account missing data [33]. Ten imputed data sets were estimated using the IMPUTATION option in Mplus. Data for skipped days were not imputed as participants were allowed to skip a day per study design.

**Results**

Table 2 presents the results from the linear multilevel regression analyses with positive and negative affect as outcome

**Table 2**  
Results from multilevel linear regression analyses with positive affect and negative affect as outcome variables

Predictors	Model 1				Model 2				Model 3			
	Negative affect		Positive affect		Negative affect		Positive affect		Negative affect		Positive affect	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Level 1 (within-person)												
Daily concealment	<b>0.07</b>	0.02	0.01	0.03	<b>0.07</b>	0.02	0.01	0.03	<b>0.07</b>	0.02	0.00	0.03
Level 2 (between-person)												
Person level concealment	0.10	0.06	0.00	0.07	0.09	0.06	0.00	0.08	0.09	0.06	0.00	0.08
Support family					<b>-0.03</b>	0.01	0.01	0.01	<b>-0.03</b>	0.01	0.01	0.01
Support peers					0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Sexual identity (reference = gay or lesbian)												
Bisexual, queer, or pansexual	0.02	0.16	-0.05	0.16	0.06	0.15	-0.06	0.16	0.05	0.15	-0.07	0.16
Other	0.36	0.24	0.03	0.26	0.34	0.25	0.03	0.25	0.35	0.25	0.04	0.25
Gender identity (reference = cisgender)												
Gender minority	<b>0.31</b>	0.14	0.13	0.15	<b>0.27</b>	0.12	0.14	0.15	<b>0.27</b>	0.12	0.14	0.15
Sex assigned at birth (reference = male)												
Female	-0.05	0.20	-0.13	0.26	-0.05	0.21	-0.13	0.26	-0.05	0.21	-0.13	0.26
Race/ethnicity (reference = White)												
People of color	-0.07	0.14	-0.22	0.15	-0.01	0.15	-0.23	0.15	-0.01	0.15	-0.23	0.15
Reduced lunch (reference = no)												
Yes	-0.19	0.13	0.01	0.19	-0.27	0.14	0.03	0.20	-0.27	0.14	0.03	0.20
Age	-0.02	0.04	0.00	0.05	-0.02	0.04	0.01	0.05	-0.02	0.04	0.01	0.05
Total number of days participated	<b>-0.06</b>	0.02	<b>-0.06</b>	0.02	<b>-0.07</b>	0.02	<b>-0.06</b>	0.02	<b>-0.07</b>	0.02	<b>-0.06</b>	0.02
Cross-level interaction												
Daily concealment ×												
Support family									<b>-0.01</b>	0.00	0.00	0.01
Support peers									0.00	0.00	0.00	0.00
Deviance	6,929.42				6,919.85				6,909.02			
Decrease in deviance (compared with Model 2)									10.83 (df = 2), p < .01			

Bold b values indicate significance at p < .05.

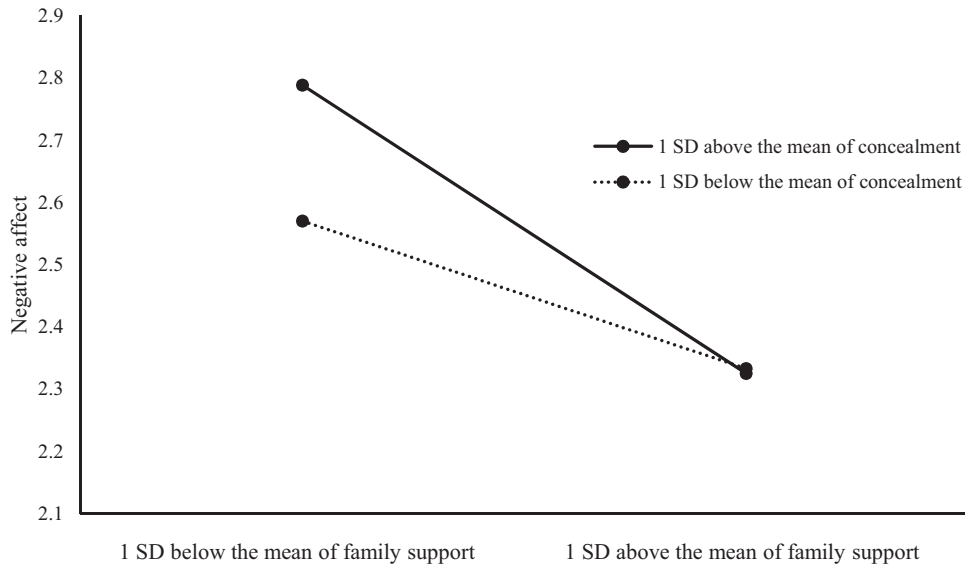
The results of the simple slope analyses for the cross-level interaction support family × daily concealment:

One SD below the mean of family support: b = 0.14, SE = 0.03, p < .01.

Mean level of family support: b = 0.07, SE = 0.02, p < .01.

One SD above the mean of family support: b = -0.05, SE = 0.03, p = .86.

SE = standard error; SD = standard deviation.

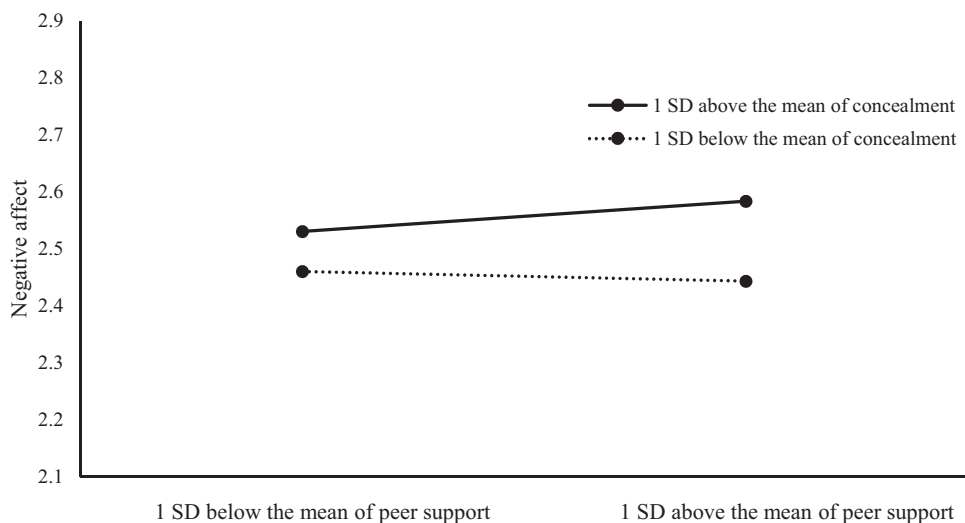


**Figure 1.** Visual representation of the cross-level interaction effect for concealment and family support. SD, standard deviation.

variables. The intraclass correlation obtained from Model 0 (not presented in Table 2) indicated that for positive affect 44.7% and for negative affect 56.9% of the variance can be explained by differences between participants. Additionally, the ICC for daily concealment was obtained, indicating that 60.0% of the variance could be explained by differences between participants and thus 40.0% by differences within participants. This indicates that concealment fluctuates day to day. Model 1 indicated that on days on which participants reported greater concealment of their sexual or gender identity they reported greater negative affect ( $b = 0.07$ , standard error [SE] = 0.02,  $p < .01$ ); no significant association for positive affect was found ( $b = 0.01$ , SE = 0.03,  $p = .87$ ). Furthermore, gender identity was associated with negative affect, in which gender minority adolescents had higher scores on negative affect compared to cisgender adolescents ( $b = 0.31$ , SE = 0.14,  $p = .02$ ); gender identity was not associated

with positive affect ( $b = 0.13$ , SE = 0.15,  $p = .40$ ). In Model 2, receiving family support was associated with lower scores on negative affect ( $b = -0.03$ , SE = 0.01,  $p = .02$ ) but was not associated with positive affect ( $b = 0.01$ , SE = 0.01,  $p = .63$ ).

The cross-level interaction effects between family support and daily concealment and peer support and daily concealment were added in Model 3 and resulted in a significant model improvement ( $\chi^2(2) = 10.83$ ,  $p = .01$ ). The interaction between family support and daily concealment was significant in predicting negative affect ( $b = -0.01$ , SE = 0.00,  $p < .01$ ; Figure 1) but the interaction between peer support and daily concealment was not significant ( $b = 0.00$ , SE = 0.00,  $p = .19$ ; Figure 2). Simple slope analyses were conducted to better understand the significant interaction between family support and daily concealment. The conditional effects of daily concealment on negative affect were tested for three levels of



**Figure 2.** Visual representation of the cross-level interaction effect for concealment and peer support.



family support: 1 SD below the mean, at the mean, and 1 SD above the mean. Daily concealment was significantly associated with negative affect when family support was 1 SD below the mean ( $b = 0.14$ ,  $SE = 0.03$ ,  $p < .01$ ), at the mean ( $b = 0.07$ ,  $SE = 0.02$ ,  $p < .01$ ), but not when family support was 1 SD above the mean ( $b = -0.05$ ,  $SE = 0.03$ ,  $p = .86$ ). Thus, simple slope analyses indicated that family support buffers the association between daily concealment and negative affect. The cross-level interactions between family support and daily concealment and peer support and daily concealment were not significant in predicting positive affect.

#### Robustness check

Models were rerun separately for family support and peer support to assess independently how they moderate the association between daily concealment and positive and negative affect (see Table A1, A and B in the online supplementary). Models yielded similar results compared with models in which the moderating effect of family support and peer support were assessed simultaneously.

#### Discussion

The aim of this study was twofold. First, we examined the within-person associations between daily identity concealment and positive and negative affect among SGM adolescents. Second, we tested if and how family and peer support attenuate the associations between concealment and positive and negative affect. As expected, the results indicate that daily concealment was associated with higher negative affect, however not with positive affect. This is in line with prior work on the association between concealment and mental health among sexual minority youth and adults [5] and extends these findings to SGM adolescents. Although not hypothesized, gender minority adolescents had higher daily negative affect over the daily diary monitoring period, which is consistent with previous studies that document poorer mental health for gender minority adolescents compared to their cisgender peers [34]. Furthermore, family support was associated with lower negative affect, whereas peer support was not significantly associated with negative affect.

Our moderation results indicated that the association between daily concealment and negative affect was no longer significant when SGM adolescents reported higher levels of family support but was significant for adolescents who reported low or average levels of family support. This finding is crucial as it shows that having a supportive family may protect SGM adolescents from the negative impact of daily minority stress experiences, such as concealing one's sexual or gender identity, on their mental health. Previous studies among sexual minority youth have also suggested that family support may attenuate the adverse effects of minority stress on mental health [22,24]. We extend this literature by focusing on concealment, an understudied minority stressor among SGM adolescents, and move beyond cross-sectional studies by understanding the impact of fluctuations of concealment on mental health in the daily lives of SGM adolescents. These findings are informative for prevention efforts as they show that the family can play a role in coping with the adverse effects of minority stressors among SGM adolescents.

Although previous research points to the protective role of peer support [20,35,36], we did not find a direct association

between peer support and positive or negative effect, nor did we find that peer support moderated the association between daily concealment and positive or negative affect. These null findings could be explained by the operationalization of peer support. We used a general measure of peer support. However, research among sexual minority people has distinguished between support for general life problems, referred to as general support, and support for sexual identity-related concerns (e.g., minority stress), referred to as sexual identity-specific support [22]. Identity-specific support may differently relate to SGM adolescent's mental health. We also did not assess the sexual orientation or gender identity of peers, despite that sexual minority peers have been pointed to as especially important in providing sexual identity-specific support compared to heterosexual peers [22,37]. Thus, the type, quality, and source of support could influence the protective role of peer support on the association between daily concealment and affect. Future research should consider the type of support (general or identity specific) and the source of support (heterosexual and sexual minority; cisgender and gender minority) when studying peer support for SGM adolescents.

No significant associations between daily concealment and positive affect were identified. Our study adds to research that also found no significant associations between minority stressors and daily positive affect among adolescents and young adults [25,38]. It has been hypothesized that negative events are specifically associated with negative affect and not with positive affect [38], which could explain the lack of significant associations between daily concealment and positive affect in our study. Furthermore, the present study included 3 of the 10 positive affect items of an established affect scale [15], which might have biased our results. The null finding with regard to positive affect could also reflect that concealment was measured instead of disclosure. Concealment is often hypothesized to be associated with negative health outcomes, whereas disclosure is often hypothesized to be associated with positive health outcomes [8].

Although research indicates that concealment is associated with poorer health among SGM people [5], perceived stigma might confound this association. When SGM adolescents perceive an environment as more stigmatizing, they may be more likely to conceal their sexual or gender identity. Thus, perceived stigma may affect mental health and future work should study this confounding effect.

Finally, although we tested social support as a moderator, social support could also be operationalized as mediator. By concealing one's sexual or gender identity, it could be that one receives less sexual or gender identity related support, which is associated with worse mental health. Future research should study this mechanism to better understand how social support relates to mental health.

#### Limitations

The findings of this study should be interpreted in light of some limitations. First, our concealment measure conflated sexual and gender identity. Thus, we were not able to discern differences in the impact of sexual or gender identity concealment on positive and negative affect. Second, this study uses a community sample which may have biased the results. For example, the present sample primarily consisted of cisgender females but was relatively diverse concerning race/ethnicity,

socioeconomic status, and sexual identity. Additionally, in nonprobability samples there is often an overrepresentation of sexual minority people who are out [5], making the sample less representative and potentially affecting the number of adolescents that concealed their sexual or gender identity. Future studies using probability samples are therefore needed to study the association between concealment and mental health. Third, despite the longitudinal design of the study, no inferences about causal associations can be made. Fourth, general family support was measured, whereas previous studies often assess the role of parental support specifically [21]. To better understand the importance of different family members in providing support, future research should assess support for specific family members. Fifth, we could not study the difference in association between daily concealment and mental health by sexual or gender identity. This is especially important considering that a recent meta-analysis showed that the association between concealment and internalizing mental health problems was smaller in bisexual samples [5] and differences for gender identity are currently understudied.

### Conclusion

This study examined the within-person associations between daily concealment and positive and negative affect among SGM adolescents. Findings suggested that daily concealment is positively associated with negative affect and that this association was attenuated by family support but not by peer support. Future research and interventions that target families are needed to improve the lives of SGM adolescents and help reduce and eliminate their mental health disparities.

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### Supplementary Data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.jadohealth.2021.11.019>.

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