#### **ORIGINAL ARTICLE**



# Nuanced Longitudinal Effects of Domains of Perceived Gender Similarity on Adolescent Peer Victimization

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#### Abstract

Gender similarity is an indicator of perceived fit with own-gender peers and other-gender peers and is strongly correlated with indicators of adolescent adjustment, including negative peer interactions. Although gender similarity is generally studied as a composite variable, evidence is increasing that peer victimization might be uniquely related to specific domains of gender similarity such as appearance or interests. A better understanding of the specific factors that motivate peer victimization will likely aid in intervention efforts. We analyzed five domains of own- and other-gender similarity (feelings, actions, appearance, preferences, time spent with peers) for adolescents, and explored whether they uniquely predicted negative peer interactions including general peer victimization (e.g., pushing/hitting) and experiencing or perpetrating gender-based peer victimization (e.g., anti-gay name-calling) over time. With 407 adolescents (14–17 years old,  $M_{age}$  = 15.42, 50% girls, 52% White) from two timepoints that were six months apart, we first conducted MANOVAs at T1 to assess gender differences in peer victimization experiences. Next, we conducted logistic regression path analyses to model the relation between gender similarity and peer victimization over time. Adolescents reported unique outcomes for different domains of gender similarity with girls focused on appearance and boys focused on not spending time with girls. We discuss how girls' and boys' experiences of gender similarity may be differentially informed by androcentric culture and how different expressions of gender uniquely provoke negative peer attention.

 $\label{eq:constraint} \begin{array}{l} \mbox{Keywords} \ \mbox{Gender similarity} \cdot \mbox{Peer victimization} \cdot \mbox{Gender-based victimization} \cdot \mbox{Gender self-concept} \cdot \mbox{Anti-gay bullying} \cdot \mbox{Adolescents} \cdot \mbox{Longitudinal} \end{array}$ 

Decades of research on adolescent peer interactions indicate the prevalence of peer victimization and its negative consequences. This victimization can be general (e.g., peer rejection or marginalization) or group-based (e.g., based on one's gender, sexuality, ethnic-racial background, etc.). Gender similarity is an aspect of gender identity that refers

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to people's perceptions of themselves as similar or dissimilar to own- and other-gender peers. It is a multidimensional construct involving perceptions of one's feelings, actions, appearance, preferences, and peer associations. Generally, these domains of gender similarity are collapsed into a composite variable ("gender similarity"), which is related to experiencing general peer victimization (i.e., social rejection and marginalization; Martin et al., 2016). This composite of gender similarity is also related to perpetrating (Pauletti et al., 2014; Tam et al., 2019) and experiencing gender-based peer victimization (Jewell & Brown, 2014; Toomey et al., 2014).

However, evidence is growing that different aspects of gender similarity have unique impacts on adolescent peer interactions (Connolly et al., 2004; Martin et al., 2016; Thompson et al., 2013; Yu et al., 2017). It remains unclear, however, how specific domains of gender similarity might relate to peer victimization outcomes, including gender-based victimization. The purpose of this current research,

therefore, was to explore the salience of different domains of gender similarity (e.g., feelings, actions, appearance, preferences, and peer associations) for adolescents, and analyze how these domains differentially predicted experiencing general peer victimization, experiencing gender-based peer victimization, and perpetrating gender-based victimization.

# Perceived Gender Similarity Domains and Peer Victimization

Gender similarity is an important feature in many aspects of adolescents' social lives. It constitutes a person's perception of their similarity to own-gender peers, as well as to other-gender peers. Gender similarity impacts broader peer relationships with gender similarity impacting the degree to which adolescents expect to feel included by their peers (Martin et al., 2016). Indeed, feeling similar to own-gender and other-gender peers is a robust indicator of inclusion and positive peer relations, while feeling dissimilar to samegender peers (and sometimes to other-gender peers) predicts social rejection and isolation from peers (Martin et al., 2016).

When domains of gender similarity (*actions, appearance, preferences, peer associations,* and *feelings*) are considered individually, there is reason to believe that certain domains might carry more weight than others in certain social interactions. Activities and toy choices, for example, are a focus of gender policing in early childhood (Xiao et al., 2019); young children enforce gender norms by saying things like "you can't play with that because you're a girl." Appearance, too, may be a particularly potent domain of gender similarity for gender-based victimization because young children become very rigid about girls wearing "girl clothes" and boys wearing "boy clothes" (Halim et al., 2014). Further, peer groups are strongly gendered throughout childhood (Martin & Fabes, 2001); spending time with children of another gender likely elicits negative reactions from peers.

The relative importance of these domains during adolescence, however, is understudied, and developmental realities of this period mean that they are likely to be unique from childhood. For example, by middle school, romantic attractions are blossoming, and it may be increasingly acceptable for girls and boys to spend time together (Connolly et al., 2004). Because of this, adolescents might not be as concerned as children about policing their peers' time spent with members of another gender. Adolescent research that investigates the uniquely influential nature of gender-similar feelings (Martin et al., 2016), actions (Yu et al., 2017), or peer associations (Nielson et al., 2020a) on peer interactions encourage direct analysis of the unique effect each gender similarity domain might have on gender-based victimization.

The only study of which we are aware that compares the unique effect of different domains of perceived gender similarity on gender-based victimization for adolescents is that of Thompson et al. (2013). With a sample of middle school and high school students, they assessed the degree to which adolescents expected appearance and interests to evoke peer gender-based victimization. They found that 60% of adolescents reported frequent gender-based victimization of appearance, and 33% reported frequent genderbased victimization of interests. However, Thompson and colleagues' study was cross-sectional and they only included two (appearances and preferences) of the five common domains of gender similarity (feelings, actions, appearance, preferences, and peer associations; Egan & Perry, 2001). Further, they did not differentiate whether these adolescents witnessed gender-based victimization, were victimized, or victimized others; research is increasingly illustrating the ways gender similarity differentially relates to experiencing and perpetrating gender-based victimization.

# Experiencing and Perpetrating Gender-based Victimization

Gender-based victimization refers to negative peer interactions that specifically references one's gender group or expression, and it is most commonly operationalized as antigay name-calling (Birkett & Espelage, 2015; DeLay et al., 2017; Ioverno et al., 2020; Pascoe, 2007; Thompson et al., 2013). In many peer groups, anti-gay name-calling functions as a sanction against non-conforming gendered behavior. For example, Pascoe (2007) describes how boys police their friends' non-masculine behavior via anti-gay name-calling and calls it "the fag discourse." The boys in this study called each other gay when they failed in some way to adhere to masculine norms. Though many boys claim that their antigay epithets are a benign (even affectionate) practice among their friends (Slaatten et al., 2014), it nevertheless serves to regulate their own and others' degree of gender conformity (Phoenix et al., 2003). Indeed, adolescents who experience gender-based victimization such as anti-gay name-calling experience negative outcomes. In a series of prospective studies, DeLay et al. (2016, 2017) found that early adolescents who experienced anti-gay name-calling experienced heightened levels of depression, lower self-esteem, and decreased perceptions of one's own-gender similarity. This last finding, especially, may perpetuate a negative cycle because research consistently shows that youth who are less gender-typical generally experience more peer victimization; both gender-based victimization and general victimization.

Studies are increasingly demonstrating a distinction between generalized victimization behaviors such as pushing, hitting, ignoring, and gender-based victimization. Though these victimization behaviors are inter-correlated, gender-based victimization consistently relates to negative psychological and academic outcomes above and beyond the effects of general victimization (DeLay et al., 2016, 2017; Jewell & Morrison, 2010; Martin-Storey & August, 2016; Rogers et al., 2021a; Tam et al., 2019). As gender-based victimization explicitly references gender, it can have the added effects of evoking group-based stereotypes (Rogers et al., 2021a) and targeting gender non-conforming adolescents who, likely because of being victimized, experience worse mental well-being than their more conforming counterparts (Jewell & Brown, 2014). Thus, it is important when examining associations between perceived gender similarity and peer interactions, that research differentiates between the different forms of victimization that adolescents may experience, as this may have important implications for identifying points of intervention.

Studies are further indicating nuances between victimization and perpetration. Adolescents who experience genderbased victimization (Ioverno et al., 2020) or are less typical themselves (Pauletti et al., 2014; Tam et al., 2019) are more likely to harass other less gender-typical youth (Birkett & Espelage, 2015; Ioverno et al., 2020; Pauletti et al., 2014; Tam et al., 2019). To explain this, researchers have posited that peer victimization (and anti-gay victimization specifically) can be used as a tactic for gaining social status, especially during adolescence. Thus, less gender-typical adolescents may victimize other less gender-typical adolescents to solidify their own social standing. Alternately, it could be that less gender-typical adolescents have internalized antigay attitudes to the degree that they also want to sanction gender atypical behaviors, even if they have those characteristics themselves. Therefore, in addition to examining associations between similarity and victimization, we also explored whether gender similarity predicted the perpetration of anti-gay name-calling.

# Gender Differences in Gender-based Victimization

In general, the literature indicates that boys are more invested than girls in upholding gender norms and punishing gender norm violators (i.e., see Yu et al., 2017). This may be because boys report higher levels of same-gender similarity and lower levels of other-gender similarity than do girls, or because boys feel more pressure to conform to gender norms than do girls (Nielson et al., 2020b). Yet girls, too, are victimized and harass their peers based on gender. Pauletti et al. (2014) found that girls and boys with an insecure gender identity (i.e., low gender typicality, high pressure to conform, low efficacy for popularity or attractiveness) were equally likely to bully gender non-conforming peers. Further, Tam et al. (2019) found that low gender-typical boys were more likely than high gender-typical boys to harass peers, but that girls who felt higher levels of pressure to conform to gender norms were also likely to victimize their gender non-conforming peers.

Investigations into the perpetration of gender-based victimization are generally conducted on composite variables of gender similarity, but when unique domains are considered separately, gendered patterns emerge. When Thompson et al. (2013) investigated the unique contributions of appearances and preferences, they found that girls felt less safe in school when they felt less typical in both appearance and interests, but boys' gender atypical interests drove their worries about school safety. This pattern makes sense given the specific norms expected of girls compared to boys. Girls are expected to focus on their appearance and attracting boys (Daniels et al., 2020; Fredrickson & Roberts, 1997); boys are expected to show an interest in sports, to be romantically and sexually competent with girls, and to avoid all things feminine (Farkas & Leaper, 2016; Pleck, 1981). Given that these gender-specific expectations are reflected in the different domains of gender similarity, we explored whether specific gender similarity domains, such as perceiving similar interests or appearances with the other gender, would evoke more peer victimization than other domains.

# **Current Study**

Although the current literature does not allow for the strong proposition of a priori hypotheses, our study was guided by three empirically supported, albeit exploratory, research aims. Thompson et al. (2013) laid the foundation for comparing the differential effect of select domains of perceived gender similarity on peer interactions. We build on their work in several important ways. First, Thompson and colleagues only looked at perceived gender similarities in appearance and interests; thus, our first research aim was to explore the relative salience of the five conventional domains of gender similarity: gender-typical feelings, actions, appearance, preferences, and peer relations. Peer gender socialization often differs by gender, so we compared gender differences in all the study dependent variables. Because of the exploratory nature of this study, we put forth no a priori hypotheses about the direction of effects for any of our research aims.

Our second research aim was to explore the longitudinal relation between these five aspects of gender similarity and negative peer interactions. Specifically, we parsed the effects of gender similarity on different forms of negative peer interactions that are often intertwined: experiencing general peer victimization, experiencing gender-based victimization, and perpetrating gender-based victimization. As in our first aim, we also compared gender differences in these longitudinal models.

# Method

## **Participants and Procedure**

Data were drawn from Project AHEAD (Advancing Health and Education for Adolescent Development), an ongoing longitudinal study of adolescent development in the U.S. Adolescents were reached through a third-party research service (Bovitz) that retains a nationally representative database of research participants gathered through digital advertising channels (e.g., social media, search engines) and address-based sampling methods (e.g., mailing lists). A stratified random sample of parents/ guardians of adolescent children was drawn from this database, using national quotas for race/ethnicity, formal education, and child gender. Just under 1,000 parents were contacted through the service's online survey platform. A description of the study was provided that allowed parents to consent to their child's participation. Parents were then asked to provide the survey to their adolescent child. In total, 609 adolescents assented and completed the survey at Time 1 (T1) in October 2019. Time 2 (T2) was administered between April 11 and April 25, 2020. At both time points, participants completed questionnaires assessing interpersonal relationships and mental health. Surveys took 30 min to complete, and adolescents were compensated \$10 USD per survey. All procedures were approved by the Brigham Young University Institutional Review Board prior to data collection.

Of the original 609 participants, 407 completed both T1 and T2 assessments and were included in the analyses. T2 data potentially differed from T1 data in that the Covid-19 pandemic began in the interim between the two waves. Attrition analyses using *t*-tests and logistic regressions to compare those who remained in the study with those who dropped out after T1 showed no differences on age, sex, ethnic minority status, or mothers' education. Participants were evenly matched across gender (50% girls), ranged from 14 to 17 years ( $M_{age} = 15.42$ ,  $SD_{age} = 1.16$ ), and resided in the four major U.S. regions at rates comparable to U.S. Census estimates (18% Northeast; 22% Midwest; 41% South; 19% West). Participants came from both urban (88%, includes suburban) and rural (12%) communities and reported various racial/ethnic identities (52% White, 20% African-American, 17% Hispanic/Latinx, 3% Asian- American, 1% American Indian or Alaska Native, 7% Mixed/ Other). Their parents had diverse educational backgrounds (27%) high school or less, 42% some college, 30% 4-year college degree or higher).

#### Measures

Perceived Gender Similarity Participants responded to questions asking about their perceived similarity to owngender and other-gender peers (Martin et al., 2016). The scale assesses five different domains of gender similarity including feelings, actions, appearance, preferences, and time spent with peers. These dimensions are manifest as individual items. For example, the item assessing preferences asked, "How much do you like to do the same things as girls?". Each item appears in the measure twice: once to assess perceived similarity to girls and once to assess perceived similarity to boys. Thus, there were 10 total items that were rated on a Likert-type scale from 0 (not at all) to 4 (a lot). Responses were then transformed based on the gender of the participant so that answers reflected perceived similarity to own-gender peers and perceived similarity to other-gender peers. Higher scores indicated greater perceived gender similarity. Cronbach's alpha for own-gender similarity was .90; for other-gender similarity .79.

Anti-gay Name-calling Adolescents reported the frequency with which they were victimized with anti-gay epithets, as well as how they perpetrated the same, using a modified version of the Homophobic Content Target Scale (Poteat & Espelage, 2005). Victimization was assessed with the stem, "Some kids call each other names such as gay, lesbo, fag, etc. How many times in the past week did the following people call you these names?" followed by five sources: a friend, a classmate who is not a close friend, a schoolmate who is not a classmate or a friend, a teacher, and a coach or staff member. Perpetration was assessed with a similar question, but which specified, "How many times in the past week did you say these things to ... " those same five sources. Each source was rated on a five-point ordinal scale (1 = never, 5)=7 or more times). These scales displayed adequate internal consistency at both timepoints (T1  $\alpha_{vict} = .91$ ; T2  $\alpha_{vict} = .91$ ; T1  $\alpha_{perp} = .83$ ; T2  $\alpha_{perp} = .82$ ). Due to the low frequency of occurrence and because the various sources were not of theoretical interest in the present analysis, we dichotomized the items (0 = not experienced in the last week and 1 = experienced in the last week).

**General Peer Victimization** We used four items from the Peer Interactions subscale of the Early Adolescent Role Strain Inventory (EARSI; Fenzel, 1989). Participants rated how often they experienced negative treatment by peers (e.g., "How often are other students mean to you?" and "How often do other students exclude you from activities?") on a 5-point rating scale (1 = Strongly Disagree, 5 = Strongly Agree). Items were averaged to create mean scores ( $\alpha = .85$ ), with higher scores reflecting more experiences of negative treatment from peers. Construct and convergent validity for

the EARSI and its subscales has been demonstrated previously (Fenzel, 1989). Similar to the prior subscales, scores were dichotomized (0=not experienced in the last week and 1=experienced in the last week).

#### **Analysis Plan**

To address our first aim of exploring the salience of the different aspects of perceived gender similarity, we calculated sample means for the five domains of own- and other-gender similarity. We specifically tested whether means differed by domain of gender similarity, across gender, across time because of the lifestyle changes wrought by the Covid-19 pandemic, and the interactions among these factors. To do so, we conducted a mixed  $5 \times 2x2$  MANOVA design where the first variable, domain of gender similarity, had five levels (feelings, actions, appearance, preference, and time with peers); the second variable, time, had two levels (T1, T2); and the third variable, gender, had two levels (girl, boy). In follow-up pairwise comparisons, a Bonferroni adjustment was applied to the significance criterion and a one-sample Cohen's d was computed. This MANOVA was repeated for the other-gender similarity items.

For our second aim, we explored whether the different domains of perceived gender similarity would uniquely predict longitudinal, between-person change in negative peer interactions, including general victimization, gender-based victimization, and perpetration of gender-based victimization. To do so, we estimated two separate path models in a SEM framework: one for own-gender similarity, and one for other-gender similarity. Each model specified the five gender similarity items (feelings, actions, appearance, preference, and peer relations) at Time 1 as predictors of the peer victimization variables (general victimization, anti-gay victimization, and anti-gay perpetration) at Time 2. Due to the intercorrelated nature of the gender similarity items (rs ranged from .45 to .83), and to increase the parsimony of the model, we created a latent variable for gender similarity that specified each similarity item as an indicator. The resultant latent construct reflects the common variance among a set of indicators. In most applications, it is this latent construct that is used as a predictor variable in a model. However, because our interest was in the unique effects of gender similarity indicators, we used the latent variable as a means of absorbing shared variance among the five similarity items, resulting in five indicators of similarity representing the unique and orthogonal gender similarity dimensions (e.g., variance in gender appearance that is not shared with any of the other gender similarity items). These five unique indicators were then used as predictors of peer interaction variables at T2 (see Fig. 1). The result was that we were able to examine unique, parsimonious effects of each gender similarity dimension on the outcomes of interest.

Furthermore, in these models, the T2 peer victimization variables that served as outcomes were regressed onto themselves at T1. Thus, the hypothesized paths between the unique own-gender similarity indicators and the T2 peer victimization variables represented rank order change over time, or the variance above and beyond previous levels (see Fig. 1). Finally, and similar to other peer victimization data (Huang & Cornell, 2012), a large portion of our participants indicated that they had not experienced negative peer interactions in the last week. To account for this, negative peer interaction variables were dichotomized. As such, a logistic regression framework with a Monte Carlo Numerical Integration feature (Muthén & Muthén, 2019) was used. The trade-off with this approach is that it does not produce traditional model fit indices (Muthén & Muthén, 2019), nor does it allow for multigroup comparisons. Therefore, to assess gender differences in these processes, we ran separate path models for boys and girls, and then tested the overlap in the confidence intervals for boys' and girls' regression coefficients (Cumming, 2009). According to this method, if confidence intervals overlap by less than 50%, beta weights are significantly different at the p < .05 level. This same method was used to determine a significant difference when multiple domains of gender similarity significantly predicted one specific type of peer interaction (e.g., if appearance and interests both significantly predict perpetration of anti-gay name-calling). These models were replicated for the othergender similarity items.

# Results

#### **Mean Levels of Similarity Domains**

First, a series of descriptive analyses including means, standard deviations, and correlations were conducted in SPSS to investigate how adolescents experienced perceived gender similarity and negative peer interactions (See Tables 1 and 2). Correlations indicated that gender similarity domains were more consistently related to experiencing (and perpetrating) gender-based victimization than they were to experiencing general victimization.

To explore our second aim – the relative salience of gender similarity domains – we conducted a set of MANO-VAs to assess whether own-gender similarity scores varied across domain, time, or gender (see Table 3 and Fig. 1). Results indicated that time did not significantly interact in the three-way interaction between domain, time, and gender F(4, 392) = .95, p = .437,  $\Lambda = .990$ , partial  $\eta^2 = .01$ ; nor in the two-way interactions with domain F(4, 392) = .95, p = .436,  $\Lambda = .990$ , partial  $\eta^2 = .01$ ; or gender F(4, 395) = .64, p = .424,  $\Lambda = .998$ , partial  $\eta^2 = .002$ . Finally, the main effect of time was not significant either Fig. 1 MANOVA results portraying mean differences in the significant two-way interaction between own-gender similarity domain and gender for own-gender similarity and other-gender similarity. Error bars represent 95% confidence intervals



F(4, 395) = 3.36, p = .068,  $\Lambda = .992$ , partial  $\eta^2 = .01$ . These non-significant differences across time somewhat allay fears that the Covid-19 pandemic severely disrupted peer relations during this time. There was, however, a significant two-way interaction between own-gender similarity domain and participant gender F(4, 392) = 25.49, p < .001,  $\Lambda = .794$ , partial  $\eta^2 = .23$ . Pairwise comparisons withingender showed that girls felt more similar to girls in their appearance compared to all other domains (ps < .001), and that girls reported higher levels of similarity with own-gender feelings than actions (p = .004; see Appendix for all pairwise comparison results) (Tables 4 and 5). Boys perceived themselves to be less similar to boys in time spent with other boys compared to all other domains (ps < .001), and they reported feeling lower levels of similarity with other-gender feelings compared to appearance (p = .041) and actions (p = .039). Comparisons across gender showed significant gender differences for four domains: boys had higher levels than girls for perceived similarity in feelings (p < .001), actions (p < .001), appearance

Table 1Means of StudyVariables

Time 1							
		Own-Gender	Own-Gender Similarity		Other-Gender Similarity		
		Girls	Boys	Girls	Boys		
	Range	M(SD)	M (SD)	M (SD)	M (SD)		
1. Feelings	1–5	4.09 (1.06)	4.42 (1.01)	2.37 (1.18)	1.73 (1.11)		
2. Actions	1–5	4.01 (1.13)	4.53 (.86)	2.10 (1.14)	1.36 (.93)		
3. Appearance	1–5	4.42 (.87)	4.58 (.83)	1.48 (1.02)	1.42 (.98)		
4. Preference	1–5	4.00 (1.11)	4.51 (.86)	2.64 (1.09)	1.83 (1.12)		
5. Peer time	1–5	4.05 (1.04)	3.91 (.95)	3.23 (1.11)	3.32 (1.26)		
Time 2							
		Own-Gender	Similarity	Other-Gender Similarity			
		Girls	Girls Boys		Boys		
	Range	M(SD)	M(SD)	M(SD)	M(SD)		
1. Feelings	1–5	4.08 (1.04)	4.37 (1.00)	2.39 (1.17)	1.75 (1.15)		
2. Actions	1–5	3.85 (1.14)	4.52 (.84)	2.10 (1.16)	1.34 (.88)		
3. Appearance	1–5	4.28 (1.05)	4.48 (.95)	1.56 (1.07)	1.43 (1.08)		
4. Preference	1–5	3.95 (1.08)	4.49 (.79)	2.67 (1.11)	1.66 (.92)		
5. Peer time	1–5	3.92 (1.08)	3.89 (.98)	3.22 (1.16)	3.21 (1.28)		
	Peer Victimization						
	Range	M(SD)	M(SD)				
1. Anti-Gay Perpetration	0-1	.26 (.44)	.41 (.49)				
2. Anti-Gay Victimization	0-1	.14 (.35)	.35 (.48)				
3. General Victimization	0-1	.63 (.48)	.63 (.48)				

(p = .022), and preferences (p < .001) with their own-gender peers. The only domain with no gender difference was time spent with own-gender peers (p = .328).

For other-gender similarity, the MANOVA again indicated that time was not a significant factor in the threeway interaction ( $F(4, 388) = .70, p = .591, \Lambda = .993$ , partial

Table 2 Correlations

Own-Gender Similarity									
	1		2	3	4	5	6	7	8
1. T1 Feelings		_	.63***	.38***	.51***	.31***	.21**	.20**	.14
2. T1 Actions		.64***	-	.47***	.55***	.29***	.28***	.24***	.11
3. T1 Appearance		.51***	.62***	_	.33***	.18*	.23**	.29***	.13
4. T1 Preference		.60***	.63***	.51***	-	.56***	.14*	.09	.16*
5. T1 Peer time		.20***	.18*	.18*	.31***	-	.15*	.17*	.09
6. T2 Anti-Gay Perpetrator		.13	.20**	.12	.19**	.09	-	.66***	.26***
7. T2 Anti-Gay Victim		.14*	.26***	.25***	.22**	.16*	.68***	-	.14
8. T2 General Victim		04	.09	.001	.14*	.11	.24***	.22**	_
<b>Other-Gender Similarity</b>									
		1	2	3	4	5	6	7	8
1. T1 Feelings		_	.63***	.38***	.51***	.31***	.21**	.20**	.14
2. T1 Actions		.64***	_	.47***	.55***	.29***	.28***	.24***	.11
3. T1 Appearance		.51***	.62***	-	.33***	.18*	.23**	.29***	.13
4. T1 Preference		.60***	.63***	.51***	-	.56***	.14*	.09	.16*
5. T1 Peer time		.20***	.18*	.18*	.31***	_	.15*	.17*	.09
6. T2 Anti-Gay Perpetrator		.13	.20**	.12	.19**	.09	-	.66***	.26***
7. T2 Anti-Gay Victim		.14*	.26***	.25***	.22**	.16*	.68***	-	.14

Boys below the diagonal; girls above

p < .05; \*\*p < .01; \*\*\*p < .001

#### Table 3MANOVA Results

Own-Gender Similarity

Own-Gender Sinnarity					
Predictor	Wilks' $\Lambda$	df	F	р	${\eta_p}^2$
Гime	.992	1, 395	3.36	.068	.008
Time*Gender	.998	1, 395	.641	.424	.002
Similarity Domain	.723	4, 392	37.53	<.001	.277
Similarity Domain*Gender	.794	4, 392	25.49	<.001	.206
Time*Similarity Domain	.990	4, 392	.95	.436	.010
Time*Similarity Domain*Gender	.990	4, 392	.95	.437	.010
Other-Gender Similarity					
Predictor	Wilks' A	df	F	р	$\eta_p^2$
Гіme	1.00	1, 391	.146	.703	.000
Time*Gender	.997	1, 391	1.174	.279	.003
Similarity Domain	.314	4, 388	211.487	<.001	.686
Similarity Domain*Gender	.708	4, 388	39.946	<.001	.292
Time*Similarity Domain	.991	4, 388	.896	.466	.009
Time*Similarity Domain*Gender	.993	4, 388	.701	.591	.007

 $\eta^2 = .01$ ), two-way interaction with domain (*F*(4, 388) = .90, p = .466,  $\Lambda = .991$ , partial  $\eta^2 = .01$ ), two-way interaction with gender  $(F(4, 391) = 1.17, p = .279, \Lambda = .997, par$ tial  $\eta^2 = .003$ ), or main effect (*F*(4, 395) = 3.36, *p* = .068,  $\Lambda = .992$ , partial  $\eta^2 = .01$ ). Like own-gender similarity, other-gender similarity showed a significant two-way interaction between similarity domain and gender F(4,388 = 39.95, p < .001,  $\Lambda = .708$ , partial  $\eta^2 = .29$ . Pairwise comparisons within-gender showed a clear pattern where girls felt most similar to boys in the domain of spending time with boys (ps < .001; see Appendix for all pairwise comparison results). Preferences was the next highest domain (ps < .009) followed by feelings (ps < .001), actions (ps < .009), and appearances, which was significantly lower than all other domains (p < .001). Boys perceived themselves to be most similar to girls in the domain of time spent with girls (ps < .001). Next, preferences were significantly higher than all other domains (ps < .001) except feelings (p = .891). Boys' third highest domain was feelings (ps < .001) followed by actions (ps < .001) and their lowest domain was appearance (ps < .001). Comparisons across gender showed significant gender differences for three domains: girls had higher levels than boys for other-gender similar feelings (p < .001), actions (p = .022), and preferences (p < .001). Domains with no significant gender differences included appearance (p = .299) and time with other-gender peers (p = .688).

## Longitudinal Associations between Gender Similarity Domains and Peer Victimization

To assess our second research aim regarding the differential associations of perceived gender similarity domains with negative peer interactions, we conducted four logistic regression SEM models: own-gender similarity (girls model and boys model) and other-gender similarity (girls model and boys model). The values for the regression beta coefficients are the logistic regression odds ratios. Odds ratios are interpreted such that values > 1 are associated with higher odds of outcome, and values < 1 are associated with lower odds of outcome (Szumilas, 2010).

Our models indicated that specific domains of gender similarity significantly predicted peer victimization six months later, above and beyond prior levels. There were some associations with anti-gay victimization as well. It should also be noted that auto-regressive paths for negative peer interaction variables were highly significant (ps < .001) and relatively stable ( $\beta$ s between .24 and .54) from T1 to T2 despite the interruption of the Covid 19 pandemic-related restrictions on physical proximity. We did not find evidence for a significant longitudinal relation between gender similarity and perpetration of anti-gay name-calling for girls or boys. However, some of the other patterns did show significant results that differed by gender.

**Girls** For the girls' perceived own-gender similarity model (see Fig. 2), perceived similarity with own-gender feelings at T1 predicted significantly less general victimization at T2 ( $\beta$ =-.19, p=.041); the more similar girls felt to other girls, the less likely they were to report general victimization six months later. For other-gender similarity, the more girls *appeared* like boys ( $\beta$ =.17, p=.032) and the more time they spent with boys ( $\beta$ =.25, p=.049), the more likely they were to be called anti-gay names. Interestingly, the



**Fig. 2** Proposed model: T1 gender similarity items regressed upon T2 anti-gay name-calling perpetration (Anti-Gay Perpetration), T2 anti-gay name-calling victimization (Anti-Gay Victimization), and T2

General Victimization. The model was created for own-gender similar items and other-gender similar items

more they preferred boy-typical activities, the less likely they were to be called anti-gay names ( $\beta$ =-.28, *p*=.032). Confidence interval significance testing indicated that the protective effect of preferring boy-typical activities on experiencing anti-gay victimization was stronger (*p* < .05) than the detrimental effect (i.e., increased victimization) of appearing like boys or spending time with boys (*p* > .05) (Figs. 3 and 4).

**Boys** Boys showed no significant paths from own-gender similarity to peer interaction outcomes, however, there was a significant correlation between experiencing anti-gay victimization at Time 2 and experiencing general victimization at Time 2 (see Fig. 2). Other-gender similarity significantly related to general victimization in two ways: the more boys felt similar to girls ( $\beta = .23$ , p = .021) and the more they preferred girl-typical activities ( $\beta = .21$ , p = .032), the more general victimization they experienced. Confidence interval testing indicated no significant difference in the strength of effects between feeling other-gender similar, preferring other-gender typical activities, and general victimization (p > .05). Gender similarity items did not significantly predict experiencing anti-gay name-calling or its perpetration.

# Discussion

The purpose of this study was to explore variability and relative salience of the different domains of perceived gender similarity in adolescence, and to examine their longitudinal associations with various negative peer interactions over a six-month period spanning an academic year. Our first major finding was that adolescents reported significant differences in the types of similarity they displayed or perceived, further justifying a dimensional approach to gender similarity in adolescence. For girls, appearance seemed to be the most important domain, as they showed the highest levels of own-gender similarity and the lowest levels of other-gender similarity on this single dimension. For boys, with whom they spent their time had the strongest effect on peer victimization. Second, we found that unique domains of gender similarity, particularly similarity to other-gender peers, predicted more general victimization and more antigay peer victimization over the course of an academic year. These patterns manifested differently for boys and girls. Perceived similarity with own-gender feelings protected against general victimization, but only for girls.



Fig.3 Final model for own-gender similarity. Anti-Gay Perpetration=antigay name-calling perpetration; Anti-Gay Victimization=anti-gay namecalling victimization. Solid lines represent significant girls' outcomes;

Perceived similarity with other-gender appearance, preference, and peer associations were related to genderbased victimization for girls, and perceived similarity

dashed lines represent significant boys' outcomes. Values listed are standardized betas (boys' values are in parenthesis). p < .05, p < .01, p < .01

with other-gender feelings and preferences was associated with general victimization for boys. There were no significant relations between gender similarity and later



Fig.4 Final model for other-gender similarity. Anti-Gay Perpetration=anti-gay name-calling perpetration; Anti-Gay Victimization=anti-gay name-calling victimization. Solid lines represent

significant girls' outcomes; dashed lines represent significant boys' outcomes. Values listed are standardized betas (boys' values are in parenthesis). \*p < .05, \*\*p < .01, \*\*\*p < .001

perpetration of anti-gay name-calling. Our findings illuminate how and why variations in gender similarity matter for adolescent peer interactions.

#### **Similarity Domains Differentiated**

Our finding that gender similarity domains had differing levels of salience, and that these differed again according to gender consistent with the gender-specific pressures experienced by girls and boys. For example, the appearance concerns of girls may be the result of the physical objectification experienced by girls and women in the US. There is an extensive literature showing the pressure that girls, as young as those in our sample, feel to look attractive (for a review, see Daniels et al., 2020), and we add to this by showing how much weight girls give to appearance compared to other domains of gender-similarity as well as the strength of gender-typical appearance in evoking gender-based victimization. Parents, practitioners, and others working with adolescent girls who experience - or perpetrate - gender-based victimization may benefit from giving special importance to the topic of appearance and the role it plays in girls' experiences of gender similarity.

Boys felt that the most important aspect of gender similarity was manifest by not spending time with girls, a finding that is consistent with the well-documented tendency for boys to avoid femininity (Rogers et al., 2021b). Given that the mean age of our sample was around 15 years old, we were surprised that boys were still so adamant about not spending time with girls. We suspect that when boys saw the item, "How much do you like to spend time with girls?" they responded about having friends that were girls as opposed to having girlfriends. There is a documented increase in mixedgender friendships as adolescents age, but unless this is more reflective of romantic couples, our data might indicate that boys still receive negative feedback about hanging out with girls throughout their high school years.

#### Girls, Similarity, and Peer Interactions

For girls, feeling similar to other girls protected against experiencing general victimization, but feeling similar to other boys had no significant outcomes for boys. When studies examine the protective interpersonal properties of gender similarity, they find that being more gender-typical in adolescence is connected to increased peer acceptance and popularity (Jewell & Brown, 2014; Kleiser & Mayeux, 2021), to more stable friendships (Nielson et al., 2020a), and that peer acceptance moderates the relation between gender similarity and intrapersonal wellbeing (Smith & Leaper, 2006). In our sample, only girls experienced the protective effects of feeling like their same-gender peers. Maybe for girls in particular, being more similar to their own gender is connected with popularity, which may safeguard against peer victimization. Prior research has established a link between popularity and gender similarity for both girls and boys (Kleiser & Mayeux, 2021), but no comparison has been conducted to determine whether these effects are more prominent for girls compared to boys.

Although not much is known about the relation between perceived own-gender similarity and peer interaction outcomes, many studies examine the negative effect of othergender similarity on adolescent peer relationships. We, too, found more activity in this direction, and our outcomes are nuanced by specific domains of other-gender similarity. For girls, the more they looked like or associated with boys, the more they were called anti-gay names. It is not surprising that girls are rewarded for looking feminine given the strong culture of objectifying women and girls in the West (Fredrickson & Roberts, 1997). Indeed, prior work also found that girls expected gender atypical appearance to be a key predictor of gender-specific victimization (Thompson et al., 2013). Our findings illustrate how gendered appearance socialization for girls includes not only the importance of having a traditionally feminine appearance, but also the importance of avoiding any features of a traditionally masculine appearance. The extent of the negative feedback that attends girls' masculine-typical appearance merits further study. For example, certain aspects of appearance, such as body hair (Braun et al., 2013), might evoke more negative peer feedback than others, such as wearing masculine-typical clothes (Yu et al., 2017). And, as with other aspects of gender socialization, additional factors such as popularity, likely impact the degree of negative feedback evoked by gender counter-normative appearances (Thorne, 1993).

Interestingly, we also found that girls who preferred more masculine-typed activities were *less* likely to be called antigay names six months later. Thompson et al. (2013) also found that other-gender typical preferences were less problematic for girls than for boys. We can think of several factors at play here. First, masculine-typed activities and interests are more valued than feminine activities/interests by westernized societies. A job in a STEM field (traditionally masculine-typed) will receive more cultural approval than a job in a careoriented field (traditionally feminine-typed). Similarly, adolescent girls who play sports (traditionally masculinetyped) are more likely to be considered cool, despite the counter-stereotypical nature of the activity (Yu et al., 2017). A second, related factor, is that women in the United States are showing higher levels of traditionally masculine-typed behavior than in the past (Donnelly & Twenge, 2017). This is likely due to the higher value given to masculine-typed behaviors, as described above, thus even when girls prefer traditionally masculine-typed things they may not experience much negative feedback from peers.

#### **Boys, Similarity, and Peers**

For boys, perceived own-gender similarity was unrelated to their experiences of general and gender-based victimization. This may be an indicator of the eternal struggle of trying to prove that one is "man enough" (Vandello & Bosson, 2013). Because manhood is positioned as something to earn rather than something that comes with age or experience, boys must consistently strive to live up to masculine ideals and achieve the elusive status of being a man (Pleck, 1981). As such, all boys, no matter how gender-typical, experience gender-based victimization from their peers.

Whereas girls' perceived other-gender similarity was related only to anti-gay name-calling, boys' other-gender similarity was related only to general victimization. Specifically, feeling more like girls generally and having more feminine preferences predicted higher levels of general victimization for boys. It is not surprising that boys who felt more like girls experienced peer victimization; there is a long and detailed account of gender non-conforming boys and peer rejection (Fagot, 1977; Farkas & Leaper, 2016).

Where our project yields important new information is in the inclusion of both anti-gay name-calling and general peer victimization in the same model. By doing so, we effectively investigate how strongly they are related, and how, when competing for variance, they relate to gender similarity. In our model, boys' other gender similarity did not relate to anti-gay name-calling. Instead, perceived similarity with girls' feelings preferring girl-typical activities/ interests predicted more general victimization. There are several ways of thinking about this pattern. First, experiencing anti-gay name-calling may be less connected to boys' perceived gender similarity than to the tolerance or rigidity of the school climate regarding gender nonconformity. All boys experience sanctions against nonconforming gender behavior in rigid environments. As Pascoe (2007) observed, all boys experience the fag discourse, even those who are most gender typical. In this barrage of anti-gay name-calling, boys who consistently or more intensely perceive similar feelings to girls may

not experience any more or less anti-gay names than other boys. Instead, these boys are likely to incur the added penalty of more general, and perhaps indirect forms of victimization, such as rejection and isolation.

A competing explanation is that patterns of anti-gay name-calling are complex with different motivations based on the sexual orientation or gender similarity of the target (Phoenix et al., 2003). On one hand, boys who felt more gender-typical truly may not have experienced much antigay name-calling. Or, if they did, they assumed that the friendly, joking nature of the name-calling, they experienced was not what was being assessed by our questionnaire. On the other hand, boys who felt more like girls may have been more likely to think of the anti-gay name-calling they experience as malicious victimization compared to boys who use anti-gay name-calling as a joke with their friends. Thus, although more feminine-typical boys experienced anti-gay name-calling, they more strongly connected their femininity to general victimization. In our sample, anti-gay name-calling and general victimization were weakly correlated for boys, but perhaps this correlation was driven mainly by the small group of highly feminine boys. More work is needed in this area to identify how boys interpret the anti-gay name-calling they experience.

#### No Perpetration of Anti-gay Name-calling

We did not find any significant relations between perceived gender similarity and anti-gay name-calling perpetration. This is somewhat surprising given that previous research has found that youth with low gender similarity were more likely to bully gender atypical peers (Pauletti et al., 2014). However, this previous work combined low own-gender similarity with high felt pressure to conform to gender norms when finding that "gender insecure" youth were more likely to bully peers who were less gender typical. Thus, perhaps it is not the gender atypicality that contributes to these youth perpetrating anti-gay bullying but the pressure to conform. Future studies should examine the interactive effects of felt pressure and dimensions of gender similarity to explore this possibility. Additionally, previous research has found that experiencing antigay name-calling is related to greater bullying of gender atypical peers (Ioverno et al., 2020). Because youth who are less gender typical experience more anti-gay bullying, we expected that they would also perpetrate more antigay bullying; however, we did not find this. This could be because the previous study examined general bullying of less gender typical peers rather than anti-gay bullying specifically. By including both general and gender-based victimization in our model, we parse out the difference between them and find that, for boys, gender similarity relates more strongly to general victimization than genderbased victimization.

Our outcomes differ also from those that have specifically studied gender-based victimization. The work by Tam et al. (2019) found that low other-gender similarity led to more perpetration of gender-based victimization. To help explain this, we turn to the different construction of the gender-based victimization items from each study. The measure used by Tam and colleagues defined gender-based victimization as teasing, exclusion, and physical bullying whereas the measure that we used only included anti-gay name-calling. Perhaps the political incorrectness of using anti-gay epithets is beginning to impact adolescent audiences and they no longer do this as frequently as prior generations. Indeed, the adolescents in our sample had low levels of experiencing or perpetrating anti-gay name-calling compared to experiencing general victimization. This may be a hopeful indicator that adolescents are becoming more accepting of gender non-conformity in general, but it may simply indicate that methods other than anti-gay name-calling are used to victimize peers.

#### **Limitations and Future Directions**

Our study is not without limitations. First, though the platform from which our sample originated is nationally representative, Time 2 data collection took place during the global Covid-19 pandemic. During this time, the majority of participants shifted to online schooling and individuals in their area sheltered in place. Because of this, participants likely experienced drastically reduced physical exposure to peers, though they may still have maintained virtual contact. Indeed, the study shows comparable levels of negative peer interactions between the first and second data points. Still, in light of these unique circumstances, our findings should be applied with caution to adolescents from other points in time. Second, we did not assess peer networks and thus lack understanding of specific victimizer/victim relations. With peer network data, one could better understand adolescent peer network dynamics as well as the gender of the peers that our participants victimized or were victimized in turn. The literature on adolescent peer victimization focuses on same-gender interactions, but it is entirely possible that girls harass boys and vice versa. This is an important avenue for future research.

Additionally, this work did not focus on the experiences of those who show more extreme forms of gender nonconformity, such as youth who identify as gender non-binary or transgender. However, these adolescents experience high rates of relational and physical victimization which is then connected to negative wellbeing outcomes (Kosciw et al., 2019; Martin-Storey & Baams, 2019). In the face of these negative peer reactions, this group of youth will likely need extra support as they explore their gender identities in the face of potentially negative peer reactions.

#### **Practice Implications**

In illuminating distinct gender-based expressions that can elicit - or mitigate - negative peer treatment, our findings provide important nuance to existing prevention and intervention efforts. Although it is generally well-understood that gender non-conforming youth are more at risk for harassment and victimization (Toomey et al., 2014), our findings can help sensitize professionals and educators to specific forms of non-conformity that may be more or less likely to elicit this treatment in the peer group. With this knowledge, those who work with youth may have a potentially sharpened awareness of those who are more at risk. For example, knowing that boys tend to perceive that spending time with girls is the most concerning breach of gender norms provides a clear intervention target by being able to educate around the research on the positive social benefits that come from associating with peers of all genders (Martin et al., 2016). In this way, identifying those salient domains of gender expression that can evoke victimization and discrimination can provide important steps for leveraging more inclusive peer contexts.

#### Conclusion

In this work, we build on past research to further illustrate the nuanced effects of different aspects of gender self-concept on adolescent peer victimization. Specifically, we found that certain masculine-typical features or behaviors (e.g., spending time with boys or perceived similarity to boys in their appearance and preferences) were directly related to anti-gay victimization for girls, whereas similar patterns for boys were associated with general peer victimization. These findings provide more nuanced insights into specific domains of gender selfconcept that may be most amenable to intervention and deepen our understanding of gender in adolescent peer interactions.

# Appendix

**Table 4** Pairwise Comparisonsfor Own-Gender Similarity

# Within Gender: Girls

					95% CI	
Similarity Domain		Mean Diff	SE	р	Lower	Upper
Feelings vs	Actions	.15	.04	.004	.03	.28
	Appearance	26	.05	<.001	39	13
	Preference	.11	.05	.212	02	.24
	Peer Time	.10	.06	.940	07	.27
Actions vs	Appearance	42	.04	<.001	54	30
	Preference	05	.03	1.000	14	.04
	Peer Time	06	.06	1.000	22	.11
Appearance vs	Preference	.37	.04	<.001	.25	.49
	Peer Time	.36	.06	<.001	.20	.53
Preference v s	Peer Time	01	.05	1.000	16	.14
Within Gender: Boys						
						95% CI
Similarity Domain		Mean Diff	SE	р	Lower	Upper
Feelings vs	Actions	13	.04	.039	25	.00
	Appearance	13	.05	.041	26	.00
	Preference	10	.05	.294	23	.03
	Peer Time	.50	.06	<.001	.33	.66
Actions vs	Appearance	01	.04	1.000	12	.11
	Preference	.03	.03	1.000	07	.12
	Peer Time	.62	.06	<.001	.46	.78
Appearance vs	Preference	.03	.04	1.000	09	.15
	Peer Time	.63	.06	<.001	.46	.80
Preference v s	Peer Time	.60	.05	<.001	.45	.75
Across Gender						
						95% CI
Similarity Domain		Mean Diff (Girls-Boys)	SE	р	Lower	Upper
Feelings		314	.088	<.001	487	140
Actions		594	.089	<.001	769	418
Appearance		182	.079	.022	338	027
Preference		520	.085	<.001	688	353
Peer time		.085	.087	.328	085	.255

**Table 5** Pairwise Comparisonsfor Other-Gender Similarity

Within Gender: Girls						
					95% CI	
Similarity Domain		Mean Diff	SE	р	Lower	Upper
Feelings vs	Actions	.28	.05	<.001	.13	.44
	Appearance	.87	.07	<.001	.68	1.06
	Preference	27	.06	<.001	44	10
	Peer Time	84	.09	<.001	-1.08	59
Actions vs	Appearance	.58	.06	<.001	.43	.74
	Preference	55	.05	<.001	70	40
	Peer Time	-1.12	.08	<.001	-1.35	88
Appearance vs	Preference	-1.14	.06	<.001	-1.32	95
	Peer Time	-1.70	.09	<.001	-1.95	-1.45
Preference v s	Peer Time	57	.07	<.001	77	-37
Within Gender: Boys						
					-	95% CI
Similarity Domain		Mean Diff	SE	p	Lower	Upper
Feelings vs	Actions	.39	.05	<.001	.24	.54
	Appearance	.31	.07	<.001	.12	.50
	Preference	.00	.06	1.000	17	.17
	Peer Time	-1.52	.09	<.001	-1.76	-1.28
Actions vs	Appearance	08	.06	1.000	23	.08
	Preference	39	.05	<.001	54	24
	Peer Time	-1.91	.08	<.001	-2.14	-1.67
Appearance vs	Preference	32	.06	<.001	50	13
	Peer Time	-1.83	.09	<.001	-2.08	-1.59
Preference v s	Peer Time	-1.52	.07	<.001	-1.72	-1.32
Across Gender						
						95% CI
Similarity Domain		Mean Diff (Girls-Boys)	SE	р	Lower	Upper
Feelings		.64	.10	<.001	.44	.84
Actions		.75	.09	<.001	.57	.93
Appearance		.09	.09	.299	08	.26
Preference		.91	.09	<.001	.73	1.09
Peer time		04	.10	.688	25	.16

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Author Contributions Matthew G. Nielson: Conceptualization, Methodology, Formal analysis, Writing–original draft. Adam A. Rogers: Project administration, Data collection, Writing–review & editing. Rachel E. Cook: Writing–review & editing.

#### Declarations

**Consent for Research Involving Human Participants** A description of the study was provided that allowed parents to consent to their child's participation. Parents were then asked to provide the survey to their adolescent child. In total, 609 adolescents assented and completed the survey at time 1 (T1) in October 2019. Time 2 (T2) was administered between April 11 and April 25, 2020. At both time points, participants

completed questionnaires assessing interpersonal relationships and mental health. Surveys took 30 min to complete and adolescents were compensated \$10 USD per survey. All procedures were approved by the [blinded] Institutional Review Board.

**Conflict of Interest** There are no commercial, financial, or other associations that could pose a conflict of interest in connection with this article. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors declare no conflicts of interest.

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