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Social support, discrimination, and Self-Esteem in LGBTQ + high school and Post-Secondary students

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ABSTRACT

LGBTQ+ (lesbian, gay, bisexual, transgender, queer, plus) people, compared to their heterosexual and/or cisgender (non-transgender) counterparts, are more likely to be discriminated against based on their gender or sexual identities. Drawing on data from The OutLook Study in Waterloo Region, Ontario, Canada this paper examines discrimination and social support among high school and post-secondary students, and how they are related to self-esteem. We found that transgender students in high school reported significantly higher levels of direct transphobia and of victimization compared to transgender post-secondary students. We found indirect homophobia and indirect transphobia had a significant adverse relationship to self-esteem. Further, social support from friends was related to higher self-esteem for cisgender LGBQ students, but not for transgender students. These findings have the potential to inform school-based policies and mental health interventions in support of improved wellbeing for LGBTQ + students.

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Introduction

There are increased risks for adverse mental health outcomes for LGBTQ+ (lesbian, gay, bisexual, transgender, queer, plus) people compared to the cisgender/heterosexual population (Canadian Mental Health Association, 2018). LGBTQ + people are likely to experience victimization based on their gender and sexual identities (Button, 2015; Taylor, Peter, McMinn, Elliot, Beldom, et. al, 2011). Button (2015), in their sample of Delaware high school students, found 46.2% of cisgender LGBQ youth experienced some form of victimization vs. 31.2% of heterosexual youth. In Canada, the National Climate Survey on Homophobia, Biphobia, and Transphobia in

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Canadian Schools by Taylor et al. (2011), which sampled 3,607 participants, indicated 74% of trans, and 55% of sexual minority students, respectively experienced verbal harassment about their gender expression. Further, they found that 37% of trans, and 21% of sexual minority students (versus 10% of non-LGBTQ students) experienced physical harassment or assault based on their gender expression (Taylor, Peter, McMinn, Elliot, Beldom, et. al, 2011). Moreover, transgender people, meaning persons whose gender identity does not align with that assigned to them at birth, report experiencing greater levels of adverse mental health outcome than cisgender LGBQ people (Birkett et al., 2015; Snapp, Watson, Russell, Diaz, & Ryan 2015). For our purposes, the term cisgender LGBQ refers to persons whose gender does align with that assigned to them at birth who have a sexual orientation that is not heterosexual, such as lesbian, gay, bisexual, or queer. Psychological distress is linked to experiences of victimization (Birkett et al., 2015), and lower self-esteem (Kosciw, Palmer, Kull, & Greytak, 2013). In addition, LGBTQ + students experience bullying, which is a form of victimization, based on their gender identity and/or sexual orientation (Espelage et al., 2008; Daley et al., 2007; Williams, Connolly, Pepler, & Craig, 2005), including physical, sexual, and verbal harassment (Taylor, 2011). Transfeminine students, in particular, are most likely to be targets of physical bullying in schools (Daley et al., 2007).

The period of life between 16-25 years of age is a unique time, where many young adults are finishing high school and starting post-secondary school. The school environment, including dominant norms and beliefs present in the school, can affect students' wellbeing (Aldridge & Mcchesney, 2018). In high schools, LGBTQ + students who feel unsafe are more likely to miss school (Hazel, Walls, & Pomerantz, 2019). Cisgender LGBQ youth in high school are more likely to report victimization and suicidality than their heterosexual peers (Button, 2015), and identifying as LGBTQ + is associated with lower self-esteem in high school students (Dessel et al., 2017). A review of the literature found that peer victimization is associated with multiple negative psychological outcomes, such as traumatic stress and alcohol use, in LGBTQ + adolescents (Collier, Van Beusekom, Bos, & Sandfort, 2013).

Additionally, experiencing homophobia in post-secondary education has been linked to worse academic outcomes, such as a lower grade point average in cisgender LGBQ students in the United States (Mathies et al., 2019; Woodford et al., 2014). The first year of university can be both exciting and concerning for cisgender LGBQ students, who may worry about coming out to roommates who are potentially homophobic (Alessi et al., 2017). Psychological wellbeing, including self-esteem, tends to increase between the ages of 18 and 25 (Galambos et al., 2006), including in the

LGBTQ + population (Birkett et al., 2015). Friedlander et al. (2007) found in studies with a general population of students that stress tends to decrease over time, and that social support may be a protective factor during the transition to university. Social support includes real or perceived feelings of love and care for others (emotional support), as well the ability to rely on others for tangible assistance when needed (instrumental support) (Taylor, 2011). Social support may be a protective factor for LGBTQ + young adults at some levels of discrimination but may not entirely moderate the negative consequences of victimization (Birkett et al., 2015; Snapp, Watson, Russell, Diaz, & Ryan 2015).

According to Minority Stress Theory, being stigmatized for one's identity and being at risk for victimization puts undue stress on marginalized people, contributing to poor mental health and wellbeing (Meyer, 2003). LGBTQ + students' self-esteem may be affected by discrimination (Kosciw, Palmer, Kull, & Greytak, 2013). Lower self-esteem may also indicate higher levels of psychological distress (Isomaa, Väänänen, Fröjd, Kaltiala-Heino, & Marttunen, 2013), and mental health problems (Isomaa, Väänänen, Fröjd, Kaltiala-Heino, & Marttunen, 2013; Whitney, Sullivan, & Herman, 2010). Having higher self-esteem has been found to be associated with lower levels of depression among the general student population (Galambos et al., 2006).

Much of the research done with LGBTQ + students in the high school and post-secondary contexts has been conducted in the United States, or in larger Canadian metropolitan centers, leaving smaller cities underrepresented (Hulko & Hovanes, 2018; Hulko, 2018). The current research takes place in a mid-sized region (Region of Waterloo, Ontario, Canada) in terms of population, offering a new perspective to the literature. As well, little research compares both high school and post-secondary students from the same sample. This period of life often corresponds with new life developments and increasing levels of responsibility. High schools and post-secondary institutions are unique settings with key differences, such as the structure, amount of freedom, and resources available in each. It is important to know the experiences of both, and, in comparing them, we can understand how the different settings may influence the experiences of young adults.

Considering cisgender LGBQ and transgender students separately is also important to avoid glossing over unique experiences. As stated, there is evidence to suggest transgender people face higher levels of psychological distress than cisgender LGBQ people based on their gender identity (Birkett et al., 2015; Snapp, Watson, Russell, Diaz, & Ryan 2015). While some transgender participants identify as lesbian, gay, bisexual, queer, or otherwise non-heterosexual, we will explore their experiences of discrimination based

on their gender identity and experiences of transphobia specifically. We explored four research questions in order to explore the relationship between self-esteem, discrimination, and social support in LGBTQ + students:

1. Do the experiences, specifically levels of discrimination, self-esteem, and social support, of LGBTQ + high school students and post-secondary education students differ?
2. What is the relationship between discrimination and self-esteem among cisgender LGBQ and transgender students?
3. What is the relationship between self-esteem and social support in cisgender LGBQ and trans students?
4. Is there a moderation effect of social support on the relationship between discrimination and self-esteem?

Methodology

This present study draws upon data from the OutLook Study, a comprehensive survey of LGBTQ + health and wellbeing in Waterloo Region, Ontario, Canada. Waterloo Region consists of three cities, four townships, and is situated 100 km west of Canada's largest metropolis, Toronto, Ontario. The population of Waterloo Region is estimated to be 601,220 ("Population", 2019). The OutLook Study was a collaboration between various community organizations within the region, academic researchers and a local public health authority, and it is one of the most comprehensive studies of LGBTQ + health and wellbeing undertaken to date in Canada. Participants were recruited via extensive community-based and online campaigns. Data collection took place in 2016 through an online survey. The present paper includes participants who were considered to be in high school, college, or university at the time of the survey. This study received REB approval at Wilfrid Laurier University (REB #4875).

Participants

A total of 526 individuals took part in The OutLook Study. The present research looks at students, people who self-identified as going to school (including high school, college, or university students) in Waterloo Region, or were 16-18 years of age at the time of the study (n = 195). Out of this subsample, people considered to be in high school (n = 46; 24% of the subsample) included those who stated they were in high school part- or full-time, or were 18 or younger. Students who were 18 years old and in college or university would have only attended their post-secondary institution for

Table 1. Demographic characteristics of the participants in the sample.

	Cisgender LGBQ students n = 149		Transgender students n = 46	
	High school n = 26	Post-secondary n = 123	High school n = 20	Post-secondary n = 26
Sexual Orientation				
Lesbian	30.8%	14.8%	5.0%	0.0%
Gay	23.1%	45.1%	0.0%	11.5%
Bisexual	30.8%	20.5%	30.0%	34.6%
Queer	0.0%	13.9%	25.0%	23.1%
Asexual	3.8%	0.8%	0.0%	7.7%
Other	3.8%	4.1%	35.0%	15.4%
Questioning	7.7%	0.0%	5.0%	3.8%
Heterosexual	0.0%	0.0%	0.0%	3.8%
Race				
Racialized	0.0%	26.7%	16.7%	22.2%
Non-Racialized	100%	73.3%	83.3%	77.8%
Age				
16	19.2%		30.0%	
17	11.5%		35.0%	
18	55.7%		20.0%	
19+	11.4%		15.0%	
19-23	Transgender	55.2%	Cisgender LGBQ	62.2%
24-28		18.7%		11.4%
29-34		14.5%		19.1%
35+		11.2%		
Gender Identity				
Cisgender Woman	61.5%	47.2%		
Cisgender Man	38.%	52.8%		
Transgender Woman			25.0.%	11.5%
Transgender Man			10.0%	0.0%
Two-Spirit			10.0%	1.6%
Genderqueer			25%	42.3%
Bigender			0.0%	1.6%
Other			30%	42.3%
Age at time of coming out				
Not out	0.0%	6.5%	25%	7.7%
Less than 13	16.0%	2.4%	10%	7.7%
13-18	76.0%	48.8%	50%	23.1%
19-24	8.0%	35.8%	10%	42.3%
25-34	0.0%	4.9%	5%	19.2%
35-55	0.0%	1.6%	5%	0.0%

a short period of time when data collection occurred (a matter of months) and were thus included in the high school sample. Survey questions related to 'previous experiences', and as such, were likely to best reflect time in high school as opposed to post-secondary school for these students. The post-secondary sample (n = 149; 76% of the analytic sample) included people who were either full-time or part-time in college/university and were 19 years of age or older. Table 1 presents a full list of demographic information separating the two educational contexts, as well as cisgender LGBQ (n = 149), representing 76% of the sample, and transgender (n = 46) students, representing 24% of the sample.

Data analysis

SPSS version 24 was used to run a principal component analysis of one of the discrimination variables measured, t-tests, and multiple linear regression analysis. The PROCESS MACRO (Hayes, 2012) was used in SPSS to run moderation analysis.

We conducted a principal component analysis to identify components underlying the homophobia (Diaz et al., 2001) and transphobia (Khobzi, Bauer, Scanlon, Kaay, Travers, & Travers, 2011) scales. Principal component analysis was used in order to reduce the amount of variables used in subsequent analysis by allowing to identify how the information from multiple items of the scales can be combined in meaningful ways (DeVellis, 2003). To our knowledge, the components of these two scales have not been explored in published work before, especially with participants from smaller urban areas. Although the PCA was ran separately for each of these two scales, the emerging components were similar across the two scales.

We used t-tests for independent samples to address the first research question. Because transgender and cisgender individuals were asked different questions on the homophobia and transphobia scales, we chose not to include them in the same analysis.

To address research questions two and three, we ran a series of multiple linear regression analyses to explore whether our measures of discrimination were related to self-esteem in both the cisgender LGBQ and transgender subsamples. In the first step of each multiple linear regression, we entered the same three variables as controls: age, outness, and education setting. Then, the variables of interest were added in Step 2.

Additionally, we used the PROCESS macro (Hayes, 2012) to run a moderation analysis in SPSS and explore question four, whether social support moderated the impact of discrimination on self-esteem, after controlling for age, outness, and education status. As a "computational tool for observed variable path analysis-based moderation and mediation analysis" (Hayes, 2018), PROCESS macro allowed us to test the interaction between an independent variable and a potential moderator without requesting the software user to "manually" create the interaction term, thus making moderation testing more straightforward (Allen, Bennett, & Heritage, 2019). The simple slopes at multiple values of the moderator are also provided automatically when using this macro, facilitating the interpretation of significant interaction effects.

Measures

Demographics

In order to split the sample between cisgender LGBQ and transgender students, we considered whether participants self-identified as transgender or

not. In addition, participants were asked which terms best corresponded with their gender identity, such as 'genderqueer' or 'trans male', which we used to classify gender identity. Participants were also asked their age and whether they were full-time or part-time in school. For outness, participants were asked at what age they came out to others, if at all either based on their sexual orientation if they were cisgender LGBQ or based on their gender identity if they were transgender. Participants who selected they had come out at any age, to at least one person, were considered to be out. Participants were asked to self-identify their ethnoracial background, and with this information, we classified them as either part of a racial minority group (racialized) or not part of a racial minority group (not racialized). With that, only a small non-representative portion of our sample were racialized, so an adequate analysis of those layers of identity are not possible here and were not explored.

Discrimination

Discrimination was measured in three ways. For cisgender LGBQ students, we used data related to discrimination based on sexual orientation. For transgender students, we used questions that pertained to discrimination based on gender identity. Although some transgender participants identified as lesbian, gay, bisexual, queer, or otherwise non-heterosexual and also answered the questions based on sexual orientation, we did not use these answers in the analysis, because transgender people are likely to experience different discrimination based on their gender identity, and transgender people tend to experience more discrimination than cisgender LGBQ people on the basis of their gender identity. In addition, not all the transgender participants identified as non-heterosexual, therefore we could not use the homophobia scale (described below) for all transgender participants.

The survey asked participants to indicate which, if any, type of victimization they had experienced in their lifetime based on their sexual orientation/gender identity. The options were silent/verbal, physical, and sexual victimization. For the present analysis, the number of types of victimization participants had selected was calculated as a count variable and labeled 'number of types of victimization', ranging from 0-3.

In addition, to provide another indicator of discrimination, we utilized a homophobia scale (Diaz et al., 2001) as well as a modified version of it (used by Khobzi, Bauer, Scanlon, Kaay, Travers, & Travers, 2011) that focuses on transphobia. Each scale included 10 items used in this current study. One item of the original homophobia scale (i.e. job discrimination item) was not used as it likely would not have been applicable to all participants; thus, it was not included in the survey used for data collection.

Table 2. Principal component analysis of the homophobia and transphobia scales.

	Component 1 Direct transphobia	Component 2 Indirect transphobia		Component 1 Direct homophobia	Component 2 Indirect homophobia
How often have you been made fun of or called names for being trans?	0.714		As you were growing up, how often were you made fun of or called names because of your sexual orientation?	0.704	
How often have you been hit or beaten up for being trans?	0.824		As you were growing up, how often were you hit or beaten up because of your sexual orientation?	0.735	
How often have you been objectified or fetishized sexually because you are trans?	0.640		As an adult, how often have you been made fun of or called names because of your sexual orientation?	0.760	
How often have you experienced some form of police harassment for being trans?	0.793		As an adult, how often have you been hit or beaten up because of your sexual orientation?	0.586	
How often have you had to move away from your family or friends because you are trans?	0.499		How often have you experienced some form of police harassment because of your sexual orientation?	0.627	
How often have you heard that trans people are not normal?		0.697	As a child, how often did you hear that people who are lesbian, gay and bisexual grow old alone?		0.497
How often have you felt that being trans hurt and embarrassed your family?		0.674	As a child, how often did you hear that people who are lesbian, gay or bisexual are not normal?		0.619
How often have you had to try to pass as non-trans to be accepted?		0.671	As a child, how often have you felt that being lesbian, gay, or bisexual has hurt your family?		0.806
How often do you worry about growing old alone?		0.713	How often have you had to pretend to be straight (heterosexual)?		0.643
How often do you fear you will die young?		0.608	How often have you had to move away from your family or friends because of your sexual orientation?		0.667
Eigenvalues	3.913	1.536		3.187	1.678

Note: Only loadings above .45 are presented in the table.

Participants selected whether they had experienced different forms of homo/transphobia from 1 (never) to 4 (many times). We ran a principal component analysis on the homophobia and transphobia items (separately) in order to discern whether the scales looked at unique types of discrimination or not. The results of this analysis can be found in Table 2. For each scale, the principal component analysis resulted in two components in each scale, based on the criteria of eigenvalue above 1.

The content area of the identified components was similar across the two scales. The first component was indirect homophobia or indirect transphobia, which corresponded to items that indicated more subtle discrimination e.g., 'How often do you worry about growing old alone?' 'As a child, how often have you felt that being lesbian, gay, or bisexual has hurt your family?'. Both indirect homophobia ($\alpha = .70$; 95% CI [.61, .77]) and indirect transphobia ($\alpha = .77$; 95% CI [.64, .86]) had adequate internal consistency. The second component in both scales were direct homophobia and direct transphobia, which corresponded to items that dealt with outright forms of discrimination such as, 'How often have you been hit or beaten up for being trans?' and 'As an adult, how often have you been made fun of or called names because of your sexual orientation?' For each subsample, we computed two scores that correspond to the average of the items of each component. Both direct homophobia ($\alpha = .71$; CI 95% [0.63, 0.78]) and direct transphobia ($\alpha = .73$; CI 95% [0.58, 0.84]) had adequate internal consistency.

Social support

For social support, the Multi-Dimensional Social Support Scale by Zimet et al. (1988) was used. This scale features 12 items, but only the four items focused on support from family and the four items on support from friends were used. Although additional four items related to support from a special person were included in our survey, they were not used for the present article, as they were not applicable to several youth. Social support was measured on a scale of 0 (strongly disagree) to 6 (very strongly agree) on questions such as, 'I can talk about my problems with my family'. For the purposes of this study, we averaged the items related to family and the items related to friends in order to create two scores. Social support from family corresponded to questions such as 'My family really tries to help me' and had internal consistency for both cisgender LGBQ ($\alpha = .89$; CI 95% [.86, .92]) and transgender ($\alpha = .89$; CI 95% [.86, .92]) subsamples. Social support from friends corresponded to questions such as, 'I can count on my friends when things go wrong' and had internal consistency for both cisgender LGBQ ($\alpha = .89$; CI 95% [.86, .92]) and transgender ($\alpha = .93$; CI 95% [.88, .95]) subsamples.

Self-Esteem

To measure self-esteem, we used the Rosenberg Self-Esteem Scale (Rosenberg, 1965). This scale consists of 10 items and had internal consistency for both the cisgender ($\alpha = .92$; CI 95% [.89, .94]) and transgender ($\alpha = .90$; CI 95% [.83, .94]) samples, representing excellent internal consistency. Self-esteem was measured with questions such as 'I'm a person of worth, at least on an equal plane with others', measured on an agreement scale from 0-4. As in the original scale, appropriate items are reversed so the total of the scale indicates higher self-esteem.

Results

Results are presented in order of the four research questions, stratifying by gender modality, with cisgender LGBQ students' results listed first, and transgender students listed second.

T-Tests

The results of the t-tests can be found in Table 3, including effect size estimates. For cisgender LGBQ students, self-esteem was significantly lower in high school ($M = 1.54$, $SD = 0.70$) than it was in post-secondary school ($M = 1.84$, $SD = 0.58$), $t(146)$=-2.235, $p = 0.027$. Direct homophobia was not significantly different between high school ($M = 0.57$, $SD = 0.61$) and post-secondary students ($M = 0.55$, SD = 0.50) $t(146)$=0.182, $p = 0.856$. Indirect homophobia was also not significantly different between high school ($M = 1.77$, $SD = 0.72$) and post-secondary school ($M = 1.68$, $SD = 0.77$) $t(146)$=0.539, $p = 0.591$. The number of types of victimization experienced was not significantly different between high school ($M = 1.88$, $SD = 1.54$) and post-secondary school ($M = 1.61$, $SD = 1.58$), $t(146)$=0.758, $p = 0.434$. We found no significant difference in social support from family between high school ($M = 3.43$, $SD = 1.64$) and post-secondary ($M = 3.59$, $SD = 1.51$) cisgender LGBQ students, $t(146)$=-0.465, $p = 0.643$. Lastly, we found no significant difference in social support from friends between high school ($M = 4.53$, $SD = 1.03$) and post-secondary school ($M = 4.64$, $SD = 1.00$), $t(146)$=-0.483, $p = 0.630$.

For transgender students, direct transphobia was significantly higher in high school students (M = 1.09, SD = 0.74) than it was in post-secondary ($M = 0.64$, $SD = 0.54$), $t(42)$=-0.728, $p = 0.024$; number of types of victimization was also higher in high school ($M = 3.05$, $SD = 1.82$) than in post-secondary school ($M = 1.46$, $SD = 1.48$), $t(44)$ =3.269, $p = 0.002$. Self-esteem was not significantly different between high school ($M = 1.37$, $SD = 0.64$) and post-secondary school ($M = 1.50$, $SD = 0.54$), $t(43)$ =-0.728, $p = 0.470$.

Table 3. Descriptive statistics and comparison between high school and post-secondary students on self-esteem, homo/transphobia, victimization, and social support variable.

						High school		Post-secondary		*t*	*Cohen's d*	*df*	*p*
						M	*SD*	*M*	*SD*				
LGBQ students	*M*	*SD*	n	Skewness	Kurtosis								
Self-esteem	1.79	0.61	148	−0.091	−0.358	1.54	0.70	1.84	0.58	−2.235	0.49	146	0.027
Direct homophobia	0.55	0.52	148	1.125	1.030	0.57	0.61	0.55	0.50	0.182	−0.04	146	0.856
Indirect homophobia	1.69	0.76	148	0.096	−0.085	1.77	0.72	1.68	0.77	0.539	−0.118	146	0.591
Number of types of victimization	1.66	1.57	148	0.609	−0.656	1.88	1.54	1.61	1.58	0.785	−0.172	146	0.434
Social support family	3.56	1.53	148	−0.047	−0587	3.43	1.64	3.59	1.51	−0.465	0.105	146	0.643
Social support friends	4.62	1.00	148	−0.930	0.568	4.53	1.03	4.64	1.00	−0.483	−1.673	146	0.630
Transgender students													
Self-esteem	1.44	0.58	45	−0.129	−0.771	1.37	0.64	1.50	0.54	−0.728	−0.678	43	0.470
Direct Transphobia	0.84	0.67	44	0.943	0.799	1.09	0.74	0.64	0.54	2.336	−0.593	42	0.024
Indirect Transphobia	1.90	0.79	44	−0.264	−0.771	2.14	0.97	1.69	0.62	1.927	−0.996	42	0.061
Number of types of victimization	2.15	1.80	46	0.430	−0.590	3.05	1.82	1.46	1.48	3.269	−0.837	44	0.002
Social support family	2.94	1.54	46	0.046	−0.590	2.66	1.53	3.15	1.53	−1.078	−0.476	44	0.287
Social support friends	4.35	1.33	46	−0.594	−0.193	4.33	1.28	4.38	1.39	−0.125	−0.476	44	0.901

We found no significant difference between indirect transphobia in high school ($M = 2.14$, $SD = 0.97$) and post-secondary school ($M = 1.69$, $SD = 0.62$), $t(42) = 1.927$, $p = 0.061$. Social support from family was not significantly different between high school ($M = 2.66$, $SD = 1.53$) and post-secondary school ($M = 3.15$, $SD = 1.53$), $t(44) = -1.078$, $p = 0.287$. Finally, social support from family was not significantly different between high school ($M = 4.33$, $SD = 1.28$) and post-secondary school ($M = 4.38$, $SD = 1.39$), $t(44) = -0.125$, $p = 0.901$.

Multiple regression – cisgender LGBQ students

The results of the multiple linear regression explore whether indirect and direct homophobia were related to self-esteem in cisgender LGBQ students and can be found in Table 4. In the first step, age had a significant negative relationship to self-esteem ($ß = 0.20$, $p < 0.05$), whereas outness ($ß = -0.08$, $p =$ n.s) and education level ($ß = 0.08$, $p =$ n.s) was not significant. In step two, we found indirect homophobia had a significant negative relationship to self-esteem ($ß = -0.41$, $p < 0.001$), ($R^2 = .17$, $F(5,147) = 10.77$, $p < .01$). Direct homophobia ($ß = -0.02$, $p =$ n.s) was not significantly related to self-esteem.

In the next multiple linear regression, we explored whether number of types of victimization experienced was associated with self-esteem. Results can be found in Table 4. In the first step, we found age ($ß = 0.20$, $p = < 0.05$) was significantly positively related to self-esteem. Outness, ($ß = -0.08$, $p =$ n.s), and education level ($ß = 0.08$, $p =$ n.s) were not significantly related to self-esteem. In the second step, number of types of victimization experienced was not significantly associated with self-esteem ($ß = -0.02$, $p =$ n.s).

The results of the multiple linear regression explore whether social support from family and friends were related to self-esteem in cisgender LGBQ students and can be found in Table 4. In the first step, age was significantly positively related ($ß = 0.20$, $p = < 0.05$). Outness ($ß = 0.20$, $p =$ n.s) and education level were not significantly associated with self-esteem. In step two, social support from friends had a significant positive relationship with self-esteem ($ß = -0.22$, $p =$ n.s), ($R^2 = .20$, $F(5,147) = 11.77$, $p < 0.001$); social support from family ($ß = -0.02$, $p =$ n.s) did not have a significant relationship with self-esteem.

Multiple regression – transgender students

We used multiple linear regression to explore whether indirect or direct transphobia predicted levels of self-esteem in our transgender student sample. The results of this analysis are presented in Table 5. In the first step, age ($ß = 0.20$, $p =$ n.s), outness ($ß = 0.12$, $p =$ n.s), and education level

Table 4. Multiple linear regressions with discrimination and social support variables predicting self-esteem in cisgender LGBQ students.

Predictor Variables	*B*	*SE*	ß	Predictor Variables	*B*	*SE*	ß	Predictor Variables	*B*	*SE*	ß
Entered at Step 1											
Age	0.02*	0.006	0.20	Age	0.02*	0.006	0.20	Age	0.02*	0.006	0.20
Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.22	0.20	−0.08	Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.22	0.20	−0.08	Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.22	0.20	−0.08
Post-secondary (1) vs. high school (0)	0.14	0.13	0.08	Post-secondary (1) vs. high school (0)	0.14	0.13	0.08	Post-secondary (1) vs. high school (0)	0.14	0.13	0.08
Entered at Step 2											
Direct homophobia	−0.02	0.09	−0.02	Number of types of victimization	−0.02	0.09	−0.02	Support from family	−0.02	0.09	−0.02
Indirect homophobia	−0.32***	0.06	−0.41					Support from friends	0.21***	0.05	0.34

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.
Note: $R^2 = 0.10$ for Step 1; $R^2 = 0.26$ for Step 2 direct and indirect homophobia; $\Delta R^2 = .17$, $p < .001$..
$R^2 = 0.10$ for Step 2 number of types of victimization 2; $\Delta R^2 = .00$, p = n.s.
$R^2 = 0.20$ for Step 2 social support from friends and family; $\Delta R^2 = .21$, $p < 0.001$.

Table 5. Multiple linear regressions with discrimination and social support variables predicting self-esteem in transgender students.

Predictor Variables		*B*	*SE*	ß	Predictor Variables	*B*	*SE*	ß	Predictor Variables	*B*	*SE*	ß
Entered at Step 1												
Age		0.02	0.02	0.20	Age	0.04*	0.02	0.37	Age	0.04*	0.02	0.36
Outness gender identity (yes to anyone = 1; 0 = no)	0.19		0.24	0.12	Outness gender identity (yes to anyone = 1; 0 = no)	0.17	0.24	0.10	Outness gender identity (yes to anyone = 1; 0 = no)	0.01**	0.26	0.07
Post-secondary (1) vs. high school (0)		−0.24	0.20	−0.21	Post-secondary (1) vs. high school (0)	−0.30	0.22	−0.26	Post-secondary (1) vs. high school (0)	−0.13	0.21	−0.11
Entered at Step 2												
Direct transphobia		0.06	0.14	−0.06	Number of types of victimization	−0.10*	0.05	−0.34	Support from family	0.02	0.06	0.06
Indirect transphobia		−0.35**	0.12	−0.48					Support from friends	0.02	0.07	0.05

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.
Note: $R^2 = 0.11$, Cohen's $f^2 = 0.124$ for Step 1; $R^2 = 0.20$, Cohen's $f^2 = 0.250$ for Step 2 direct and indirect transphobia; $\Delta R^2 = .17$, $p < .001$..
$R^2 = 0.20$, Cohen's $f^2 = 0.250$ for Step 2 Number of types of victimization 2; $\Delta R^2 = .09$, p = n.s.
$R^2 = 0.12$, Cohen's $f^2 = 0.136$ for Step 2 Social support from friends and family; $\Delta R^2 = .01$, $p < 0.001$.

(ß=-0.21, p = n.s) were not significantly related to self-esteem. In step two, indirect transphobia was found to have a significant negative relationship with self-esteem (ß=-0.48, $p < 0.05$), (R^2=.20, $F(5,42)$=3.591, $p < 0.01$). Direct transphobia did not have a significant relationship to self-esteem (ß=-0.06, p = n.s).

The results of the next multiple linear regression analysis, testing number of types of victimization experienced predicted levels of self-esteem in transgender students, can also be found in Table 5. In the first step, we found age (ß = 0.37, p = n.s) had a significant relationship with self-esteem. Outness (ß = 0.10, p = n.s), and education level (ß=-0.26, p = n.s) were not significantly related to self-esteem. In step two, we found the number of types of victimization experienced had a significant negative relationship to self-esteem (ß=-0.34, p= <0.05), (R^2=.20, $F(3,42)$=5.140, $p < 0.05$).

Lastly, the results of the multiple linear regression explore whether social support from family and friends were related to self-esteem in transgender students and can be found in Table 5. In the first step, we found age, (ß = 0.36, $p < 0.05$) and outness (ß = 0.07, $p < 0.01$) were significantly positively related to self-esteem, but education level was not significant (ß=-0.11, p = n.s). In step two, we entered social support from friends and family. Our results indicated that neither social support from friends (ß = 0.06, p = n.s) nor family were related to self-esteem (ß = 0.05, p = n.s).

Moderation

We tested a series of models for each subsample, cisgender LGBQ and transgender students. In each model, we tested the interaction between one of the measures of discrimination and one of the measures of social support in order to see whether social support would moderate the effect of discrimination on self-esteem. This was repeated until all the possible pairs of discrimination and social support measures were tested as interaction. The findings of these analyses can be found in Tables 6–8, with the section on the left presenting results for cisgender LGBQ students and the section on the rights the results for transgender students. None of the interaction effects were found to be significant.

Discussion

These results contribute to the knowledge base concerning LGBTQ + high school and post-secondary students. We did not find social support to be a significant moderator of the relationship between discrimination and self-esteem, but we found evidence to suggest that social support plays a positive role in the lives of cisgender LGBQ students. Social support from

Table 6. Interaction effect of direct homo/transphobia and social support from friends and family on self-esteem in cisgender LGBQ students and transgender students.

Predictor Variables	*B*	*SE*	Predictor Variables	*B*	*SE*	Predictor Variables	*B*	*SE*	Predictor Variables	*B*	*SE*
	Cisgender LGBQ Students					Transgender Students					
Covariates											
Age	0.02**	0.006	Age	0.02**	0.006	Age	0.04	0.02	Age	0.05*	0.02
Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.26	0.20	Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.70**	0.21	Outness gender identity (yes to anyone = 1; 0 = no)	0.15	0.30	Outness gender identity (yes to anyone = 1; 0 = no)	0.26	0.28
Post-secondary (1) vs. high school (0)	0.11	0.13	Post-secondary (1) vs. high school (0)	0.08	0.12	Post-secondary (1) vs. high school (0)	−0.26	0.22	Post-secondary (1) vs. high school (0)	−0.38	0.23
Main Effect											
Direct homophobia	−0.07	0.22	Direct homophobia	0.49	0.42	Direct transphobia	−0.01	0.32	Direct transphobia	−0.67	0.52
Social support from family	0.14**	0.04	Social support from friends	0.33***	0.07	Social support from family	0.11	0.11	Social support from friends	0.02	0.12
Interaction	−0.31	0.06		−0.14	0.09		−0.07	0.10		0.10	0.11

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.
Note: ΔR^2 for direct homophobia and social support from family due to interaction = .002, p = n.s.
ΔR^2 for direct homophobia and social support from friends due to interaction = .012, p = n.s.
ΔR^2 for direct transphobia and social support from family due to interaction = .010, p = n.s.
ΔR^2 for direct transphobia and social support from friends due to interaction = .017, p = n.s;.

Table 7. Interaction effect of indirect homo/transphobia and social support from friends and family on self-esteem in cisgender LGBQ and transgender students.

Predictor Variables	*B*	*SE*	Predictor Variables	*B*	*SE*	Predictor Variables	*B*	*SE*	Predictor Variables	*B*	*SE*
	Cisgender LGBQ students					Transgender students					
Covariates											
Age	0.02*	0.006	Age	0.02**	0.005	Age	0.25	0.02	Age	0.02	0.02
Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.22	0.20	Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.61**	0.19	Outness gender identity (yes to anyone = 1; 0 = no)	0.13	0.24	Outness gender identity (yes to anyone = 1; 0 = no)	0.15	0.24
Post- secondary (1) vs. high school (0)	0.11	0.12	Post-secondary (1) vs. high school (0)	0.05	0.11	Post-secondary (1) vs. high school (0)	−0.22	0.19	Post-secondary (1) vs. high school (0)	−0.23	0.20
Main Effect											
Indirect homophobia	−0.09	0.14	Indirect homophobia	0.23	0.28	Indirect transphobia	−0.16	0.23	Indirect transphobia	−0.53	0.36
Social support from family	0.17*	0.08	social support from friends	0.43***	0.11	social support from family	0.15	0.14	social support from friends	−0.01	0.16
Interaction	−0.05	0.03		−0.11	0.06		−0.06	0.07		0.04	0.09

Note: ΔR^2 for indirect homophobia and social support from family due to interaction = .002, p = n.s.
ΔR^2 for indirect homophobia and social support from friends due to interaction = .002, p = n.s.
ΔR^2 for indirect transphobia and social support from family due to interaction = .002, p = n.s.
ΔR^2 for indirect transphobia and social support from friends due to interaction = .002, p = n.s.

Table 8. Interaction effect of number of types of victimization and social support from friends and family on self-esteem in cisgender LGBQ and transgender students.

Predictor Variables Cisgender LGBQ students	*B*	*SE*	Predictor Variables	*B*	*SE*	Predictor Variables Transgender students	*B*	*SE*	Predictor Variables	*B*	*SE*
Covariates											
Age	0.02*	0.006	Age	0.02	0.006	Age	0.04	0.02	Age	0.05*	0.02
Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.30	0.21	Outness sexual orientation (yes to anyone = 1; 0 = no)	−0.71**	0.22	Outness gender identity (yes to anyone = 1; 0 = no)	0.19	0.25	Outness gender identity (yes to anyone = 1; 0 = no)	0.15	0.24
Post- secondary (1) vs. high school (0)	0.14	0.13	Post-secondary (1) vs. high school (0)	0.09**	0.13	Post-secondary (1) vs. high school (0)	−0.29	0.22	Post-secondary (1) vs. high school (0)	−0.37	0.23
Main Effect											
Number of types of victimization	−0.06	0.70	Number of types of victimization	0.14	0.13	Number of types of victimization	−0.02	0.10	Number of types of victimization	−0.19	0.20
Social support from family	0.10*	0.05	Social support from friends	0.32***	0.07	Social support from family	0.10	0.10	Social support from friends	0.03	0.11
Interaction	0.01	0.01		−0.04	0.03		−0.04	0.04		0.02	0.04

*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.
Note: Δ R^2 number of types of victimization for cisgender students and social support from family due to interaction = .002, p = n.s.
Δ R^2 number of types of victimization for cisgender students and social support from friends due to interaction = .002, p = n.s.
Δ R^2 number of types of victimization for transgender students and social support from family due to interaction = .002, p = n.s.
Δ R^2 number of types of victimization for transgender students and social support from friends due to interaction = .002, p = n.s.

friends was associated with higher self-esteem in cisgender LGBQ students, but not transgender students. Another key finding is that the experiences of indirect forms of transphobia and homophobia were related to lower self-esteem in both transgender and cisgender LGBQ students. Additionally, experiences of victimization were related to lower self-esteem in transgender students. For cisgender LGBQ students, self-esteem was higher among high school students than post-secondary students, but not for transgender students in the sample.

Our research contributes important information about LGBTQ + experiences of self-esteem, discrimination, and social support to the literature. Experiencing, or being at risk for, victimization, can contribute to poor mental health and wellbeing, as suggested by the Minority Stress Theory (Meyer, 2003). Our research suggests that experiencing indirect homophobia and transphobia had negative consequences for self-esteem in LGBTQ + students, similar to previous research. This is in sync with previous research that has shown victimization to predict later levels of psychological distress (Birkett et al., 2015), suicidal ideation (Espelage et al., 2018), and lower self-esteem (Kosciw, Palmer, Kull, & Greytak, 2013) among LGBTQ + individuals.

Based on previous research, we would expect that wellbeing, including self-esteem would increase between the ages of 18-25 (Galambos et al., 2006), including in LGBTQ + individuals (Birkett et al., 2015). However, when reviewing the averaged levels of self-esteem in the current study, transgender students' self-esteem did not differ between high school and post-secondary education. Transgender students' post-secondary education self-esteem score was more similar to that of the high school students in the cisgender LGBQ subsample. While we did not consider psychological distress in the analysis, low self-esteem may indicate underlying psychological issues (Isomaa, Väänänen, Fröjd, Kaltiala-Heino, & Marttunen, 2013; Whitney, Sullivan, & Herman, 2010). Moreover, our results indicate that indirect transphobia and indirect homophobia were related to lower self-esteem. This supports other studies where self-esteem is adversely affected by victimization (Kosciw, Palmer, Kull, & Greytak, 2013). Minority Stress Theory (Meyer, 2003) would predict that wellbeing and self-esteem would be adversely affected when individuals experience victimization. In the case of both indirect homophobia and indirect transphobia, our results clearly indicate that this is the case.

Social support from friends was associated with higher self-esteem in cisgender LGB students, but not for transgender students. Within our sample, social support did not buffer the effect of victimization on self-esteem in either cisgender LGBQ students or transgender students. Indeed, social support may only minimally moderate the experience of discrimination

(Birkett et al, 2015; Snapp, Watson, Russell, Diaz, & Ryan 2015; Button, 2015). Overall, social support is thought to be a protective factor, but in cases where discrimination or victimization is severe, it is possible that social support is simply not enough to counteract these negative consequences.

This research has important implications for educational institutions. We found that transgender students (particularly those in high school) are vulnerable to experiences of discrimination. Transgender people in general tend to experience higher levels of distress than cisgender LGBQ people (Birkett et al., 2015; Snapp, Watson, Russell, Diaz, & Ryan, 2015). Moreover, transgender students had a more negative perception of their college campus environment and curriculum inclusivity compared to cisgender LGBQ students (Garvey & Rankin, 2015).

High schools often have specific resources available for LGBTQ + students, such as Gay-Straight Alliances. Gay-Straight Alliances (GSA) are school-based clubs that generally advocate for and support LGBTQ + students and topics. Not all GSAs are the same, depending on the needs of the students and the school they are in, and they may serve functions beyond social justice advocacy, for example, they may provide the opportunity for students to socialize in a more casual manner as well. In Ontario, Canada, 2012 provincial legislation mandated high schools must have a GSA if the students desire one (Broten, 2012). Evidence suggests that GSAs can be an effective intervention for the victimization experienced by LGBTQ + students in high school. The presence of GSAs in schools is related to a reduction in discrimination (Saewyc, Konishi, Rose, & Homma, 2014; Marx & Kettery, 2016; Heck, Flentje, & Cochran, 2011; Ioverno, Belser, Baiocco, Grossman, & Russell, 2016), and depression (Toomey et al., 2011). Indeed, one Waterloo Region study found GSAs can help students feel connected to the LGBTQ + community (St. John et al., 2014). Thus, continued support for GSAs may be an effective way to address the level of discrimination transgender high school students experience.

This study, of course, has some limitations. As mentioned, The OutLook Study took place in a specific region of Ontario and may not be generalizable to other locales. Additionally, the sample of students is not particularly large, and those who identify as transgender is small. Thus, the potentially limited power of the analysis may have affected results that focused on transgender students. As well, with regard to the sample of transgender students, we only considered their experiences of discrimination based on their gender identity, without accounting for their possible experiences of homophobia in the case they identified as non-heterosexual, which may lose some nuance of intersectionality. Additionally, The OutLook Study did

not include an assessment of psychological distress, which limits the comparisons that can be made to other research that measured psychological distress as an indicator of wellbeing. We recognize that the LGBTQ + literature focuses heavily on psychological distress, which limits the way LGBTQ + individuals are perceived. Being able to include a wide range of wellbeing factors, both positive and negative, is important in gaining a more robust understanding of the needs of a community. Finally, the outness variable used in this article measured outness in a binary way (out or not), without considering the specific people (e.g., one's friend versus one's parent) the participants may be out to and how this could influence their experiences of discrimination, support and self-esteem. Future research with larger samples would allow for the inclusion of multiple outness-related variables (i.e., specific to different people in students' networks) needed to address this question.

The current study also has notable strengths. Much of the current literature on LGBTQ + students is based in the United States or in larger Canadian metropolitan centers. Given our focus on a non-metropolitan region that is inclusive of smaller cities and rural areas, our contribution is unique and has implications for other similar-sized regions. While our findings may not be generalizable to much larger urban centers, it is imperative to look at smaller regions to assess their unique needs.

As for future research, much of the current literature is focused on the impact of victimization on psychological distress, but other aspects of wellbeing, such as self-esteem, should be considered when measuring the effects of discrimination. In our study, transgender students' self-esteem was not significantly different between high school and post-secondary students. It would be particularly important to measure self-esteem longitudinally, as it has been established that wellbeing tends to rise throughout young adulthood (Galambos et al., 2006; Birkett et al., 2015). Future research should also consider recruiting from a wider pool of students and including as many transgender students as possible in order to attain a more equal sample.

Through the current study we cannot explore the reasons why, in Waterloo Region, transgender students are experiencing more direct transphobia and victimization than post-secondary trans students. Future research should investigate the sources of such discrimination; qualitative research may help to shed some light on this issue. Additionally, it would be helpful for other regions to investigate whether this phenomenon holds true in their areas.

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Data availability

Due to data confidentiality restrictions as outlined in the informed consent process, as approved by the Research Ethics Board at Wilfrid Laurier University, the quantitative data

set is not available. Requests for clarification related to analytic methods may be sent to the corresponding author.

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