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Social Support, Discrimination, and Self-Esteem in LGBTQ+ High School and Post-Secondary
Students

By

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Bachelor of Arts (Hons) in Psychology, Cape Breton University, 2013

THESIS

Submitted to the Faculty of Science

in partial fulfillment of the requirements for

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Wilfrid Laurier University

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Abstract

LGBTQ+ (lesbian, gay, bisexual, transgender, queer, plus) people are at a disadvantage compared to their heterosexual and cisgender (non-transgender) counterparts. LGBTQ+ people are 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. Using t-tests, we found that transgender students in high school reported significantly higher levels of direct transphobia and of victimization compared to transgender post-secondary students. Using multiple linear regressions, 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 LGBTQ 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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I would like to express my gratitude to the LGBTQ+ community, particularly the individuals in Waterloo Region that participated in the OutLook Study, for making it possible to do the research that matters to me. I would also like to thank the LGBTQ+ organizers in Waterloo Region community for the work they do that allows me to feel a little bit more at home, it gives me faith to see the amazing work that is done here.

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Social Support, Victimization, and Self-Esteem in LGBTQ+ High School and Post-Secondary Students

Literature Review

There are increased mental health risks for LGBTQ+ (lesbian, gay, bisexual, transgender, queer, plus) people compared to the rest of the population (Canadian Mental Health Association, 2018). LGBTQ+ people are likely to be victimized based on their gender and sexual identities (Button, 2015; Taylor, Peter, McMinn, Elliot, Beldom, et. al, 2011). Moreover, transgender people, meaning persons whose gender does not align with that assigned to them at birth, tend to experience greater levels of psychological distress than cisgender LGBTQ people (Birkett & Newcomb, 2015; Snapp, Watson, Russell, Diaz, & Ryan 2015). Experiencing victimization is linked to psychological distress (Birkett & Newcomb, 2005), and lower self-esteem (Kosciw, Palmer, Kull, & Greytak, 2013). In addition, LGBTQ+ students experience bullying based on their identities (Espelage, Aragon, Birkett, Koenig, 2008; Daley, Soloman, Newman, & Mishna, 2007; Williams, Connolly, Pepler, & Craig, 2005), including physical, sexual, and verbal harassment (Taylor et. al, 2011). Transfeminine students, in particular, are most likely to be targets of physical bullying in schools (Daley, Soloman, Newman, & Mishna, 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, 2018). LGBTQ 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, Kulick, Wernick, & Sullivan, 2018). 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, Coleman, McKie, Woodford, Courtice, et. al, 2019; Woodford & Kulick, 2015). The first year of university can be both exciting and concerning for LGBQ students, who may worry about coming out to roommates who are potentially homophobic (Alessi, Saponi, Kahn, & Craig, 2017). Psychological wellbeing, including self-esteem, tends to increase between the ages of 18 and 25 (Galambos, Barker, & Krahn, 2006), including in the LGBTQ+ population (Birkett, Newcomb, & Mustanski, 2015). Friedlander, Reid, Shupack & Cribbie (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, Newcomb, and Mustanski 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, Barker, Krahn, 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 centres, leaving smaller cities underrepresented (Hulko & Hovanes, 2018; Hulko, 2018). The current research takes place in a mid-sized region 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 (Birkett & Newcomb, 2015; Snapp, Watson, Russell, Diaz, & Ryan 2015), and grouping all LGBTQ+ individuals together runs the risk of missing this nuance. Therefore, we explore four research questions in order to explore the relationship between self-esteem, discrimination, and social support in LGBTQ+ students:

1. Do the experiences of LGBTQ+ high school students and post-secondary education students differ?

- 1.1 Do the levels of discrimination differ between post-secondary education and high school students?
- 1.2 Do the levels of self-esteem differ between high school and post-secondary LGBTQ+ students differ?
- 1.3 Do the levels of social support differ between high school and post-secondary transgender students, or cisgender LGBQ students?
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 100km west of Canada's largest metropolis, Toronto, Ontario. The population of Waterloo Region is estimated to be 601,220 (Region of Waterloo, 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 the one of the most comprehensive studies of LGBTQ+ health and wellbeing undertaken to date in Canada. 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.

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 in Waterloo Region, or were 16-18 years of age at the time of the study (n=195). For the purposes of this study, people considered to be in high school (n=46) either 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 college for a short period of time when data collection occurred (only 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 university for these students. The post-secondary sample (n=149) includes 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) and transgender (n=46) students.

Table. 1

Demographic characteristics of the participants in the sample.

	Cisgender LGBTQ 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		55.2%		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%

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, Ayala, Bien, Henne, & Marin, 2001) and transphobia (Khobzi, Bauer, Scanlon, Kaay, Travers, & Travers, 2011) 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 LGBTQ 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 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. The 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).

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 also answered 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 be more marginalized than cisgender LGBQ people.

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 labelled 'number of types of victimization', ranging from 0-3.

In addition, we utilized homophobia (Diaz, Ayala, Bien, Henne, & Marin, 2001) and transphobia (Khobzi, Bauer, Scanlon, Kaay, Travers, & Travers, 2011) scales to provide another indicator of discrimination. Participants selected whether they had experienced different forms of homo/transphobia from 0 (never) to 3 (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*. The principal component analysis resulted in two components in each scale, based on the criteria of eigenvalue above 1.

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

	Transgender		Cisgender LGBTQ	
	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		0.704	
How often have you been hit or beaten up for being trans?	0.824		0.735	
How often have you been objectified or fetishized sexually because you are trans?	0.640		0.760	
How often have you experienced some form of police harassment for being trans?	0.793		0.586	
How often have you had to move away from your family or friends because you are trans?	0.499		0.627	
How often have you heard that trans people are not normal?		0.697		0.497
How often have you felt that being trans hurt and embarrassed your family?		0.674		0.619
How often have you had to try to pass as non-trans to be accepted?		0.671		0.806
How often do you worry about growing old alone?		0.713		0.643
How often do you fear you will die young?		0.608		0.667
Eigenvalues	3.913	1.536	3.187	1.678

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

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 ($\alpha = .71$) and indirect transphobia ($\alpha = .73$) 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 ($\alpha = .66$) and direct transphobia ($\alpha = .75$) had adequate internal consistency.

Social Support

For social support, the Multi-Dimensional Social Support Scale by Zimet (1988) was used. Social support was measured on a scale of 0-5 representing levels of participants' agreement with statements 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 ($\alpha = .89$) and transgender ($\alpha = .90$) 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 ($\alpha = .89$) and transgender ($\alpha = .93$) 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 ($\alpha = .92$) and transgender ($\alpha = .89$) samples. 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 0-3.

Results

T-Tests

The results of the t-tests can be found in *Table 3*. 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 ($M=1.50$, $SD=0.54$), $t(43)=-0.728$, $p=0.470$. 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 ($M=4.38$, $SD=1.39$), $t(44)=-0.125$, $p=0.901$.

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

	<i>M</i>	<i>SD</i>	<i>n</i>	Skewness	Kurtosis	High school		Post-secondary		<i>t</i>	<i>df</i>	<i>p</i>
						<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
LGBQ students												
Self-esteem	1.79	0.61	148	-0.091	-0.358	1.54	0.70	1.84	0.58	-2.235	146	0.027
Direct homophobia	0.55	0.52	148	1.125	1.030	0.57	0.61	0.55	0.50	0.182	146	0.856
Indirect homophobia	1.69	0.76	148	0.096	-0.085	1.77	0.72	1.68	0.77	0.539	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	146	0.434
Social support family	3.56	1.53	148	-0.047	-0.587	3.43	1.64	3.59	1.51	-0.465	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	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	43	0.470
Direct Transphobia	0.84	0.67	44	0.943	0.799	1.09	0.74	0.64	0.54	2.336	42	0.024
Indirect Transphobia	1.90	0.79	44	-0.264	-0.771	2.14	0.97	1.69	0.62	1.927	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	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	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	44	0.901

Multiple Regression

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 relationship to self-esteem ($\beta=0.20$, $p<0.05$), whereas outness ($\beta=-0.08$, $p=n.s$) and education level ($\beta=0.08$, $p=n.s$) did not. In step two, we found indirect homophobia had a significant negative relationship to self-esteem ($\beta=-0.41$, $p<0.001$), ($R^2=.17$, $F(5,147)=10.77$, $p<.01$). Direct homophobia ($\beta=-0.02$, $p=n.s$) 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 ($\beta=0.20$, $p<0.05$) was significantly related to self-esteem. Outness, ($\beta=-0.08$, $p=n.s$), and education level ($\beta=0.08$, $p=n.s$) were not significantly related to self-esteem. In the second step, number of types of victimization experienced was not significantly associated with self-esteem ($\beta=-0.02$, $p=n.s$).

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 related ($\beta=0.20$, $p<0.05$). Outness ($\beta=0.20$, $p=n.s$) 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 ($\beta=-0.22$, $p=n.s$), ($R^2=.20$, $F(5,147)=11.77$, $p<0.001$); social support from family ($\beta=-0.02$, $p=n.s$) did not have a significant relationship with self-esteem.

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

Predictor Variables	B	SE	β	Predictor Variables	B	SE	β	Predictor Variables	B	SE	β
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: $R^2 = 0.26$ 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; $\Delta R^2 = .21$, $p < 0.001$.

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 ($\beta = 0.20$, $p = n.s.$), outness ($\beta = 0.12$, $p = n.s.$), and education level ($\beta = -0.21$, $p = n.s.$) were not significantly related to self-esteem. In step two, indirect transphobia was found to have a significant negative relationship with self-esteem ($\beta = -0.48$, $p < 0.05$), ($R^2 = .20$, $F(5,42) = 3.591$, $p < 0.01$). Direct transphobia did not have a significant relationship to self-esteem ($\beta = -0.06$, $p = n.s.$).

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 ($\beta = 0.37$, $p = n.s.$) had a significant relationship with self-esteem. Outness ($\beta = 0.10$, $p = n.s.$), and education level ($\beta = -0.26$, $p = n.s.$) 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 ($\beta = -0.34$, $p < 0.05$), ($R^2 = .20$, $F(3,42) = 5.140$, $p < 0.05$).

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, ($\beta = 0.36$, $p < 0.05$) and outness ($\beta = 0.07$, $p < 0.01$) were significantly related to self-esteem, but education level was not ($\beta = -0.11$, $p = n.s.$). In step two, we entered social support from friends and family. Our results indicated that neither social support from friends ($\beta = 0.06$, $p = n.s.$) nor family were related to self-esteem ($\beta = 0.05$, $p = n.s.$).

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

Predictor Variables	B	SE	β	Predictor Variables	B	SE	β	Predictor Variables	B	SE	β
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: $R^2 = 0.11$ for Step 1; $R^2 = 0.20$ for Step 2 direct and indirect transphobia; $\Delta R^2 = .17$, $p < .001$;

$R^2 = 0.20$ for Step 2 Number of types of victimization 2; $\Delta R^2 = .09$, $p = n.s.$

$R^2 = 0.12$ for Step 2 Social support from friends and family; $\Delta R^2 = .01$, $p < 0.001$.

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, see Figure 1 for a diagrammatic representation of the relationship we tested. 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 LGBQ students and the section on the right the results for transgender students. None of the interaction effects were found to be significant.

Figure 1. Diagrammatic representation of the interaction effect we tested between discrimination, social support, and self-esteem.

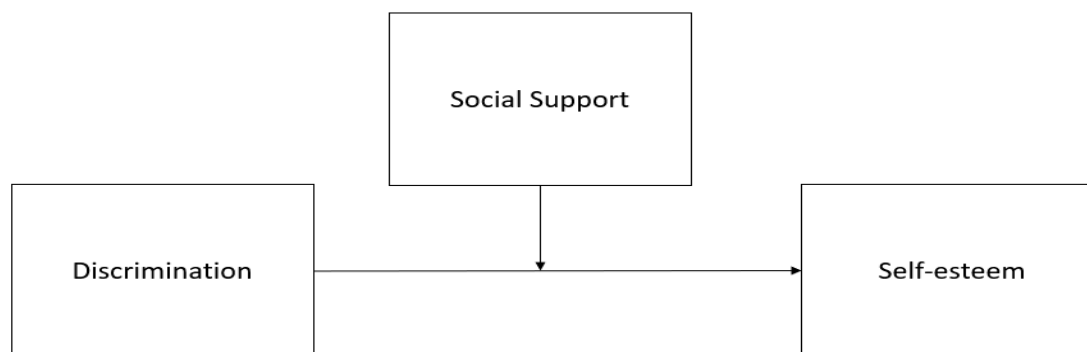


Table 6. Interaction effect of direct homo/transphobia and social support from friends and family on self-esteem in cisgender LGBTQ students and transgender students.

Predictor Variables	<i>B</i>	<i>SE</i>	Predictor Variables	<i>B</i>	<i>SE</i>	Predictor Variables	<i>B</i>	<i>SE</i>	Predictor Variables	<i>B</i>	<i>SE</i>
Cisgender LGBTQ 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 LGBTQ 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	-0.22	0.20	Outness	-0.61**	0.19	Outness	0.13	0.24	Outness	0.15	0.24
sexual orientation (yes to anyone=1; 0=no)			sexual orientation (yes to anyone=1; 0=no)			gender identity (yes to anyone=1; 0=no)			gender identity (yes to anyone=1; 0=no)		
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	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	-0.30	0.21	Outness	-0.71**	0.22	Outness	0.19	0.25	Outness	0.15	0.24
sexual orientation (yes to anyone=1; 0=no)			sexual orientation (yes to anyone=1; 0=no)			gender identity (yes to anyone=1; 0=no)			gender identity (yes to anyone=1; 0=no)		
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: ΔR^2 number of types of victimization for cisgender students and social support from family due to

interaction = .002, $p=n.s.$;

ΔR^2 number of types of victimization for cisgender students and social support from friends due to interaction = .002, $p=n.s.$;

ΔR^2 number of types of victimization for transgender students and social support from family due to interaction = .002, $p=n.s.$;

ΔR^2 number of types of victimization for transgender students and social support from friends due to interaction = .002, $p=n.s.$;

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 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 cisgender LGBQ and transgender 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 and Newcomb, 2005), suicidal ideation (Espelage,

Merrin, & Hatchel, 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, Barker, Krahn, 2006), including in LGBTQ+ individuals (Birkett, Newcomb, & Mustanski 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, Newcomb, & Mustanski 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 discrimination. Transgender people in general tend to experience higher levels of distress than cisgender LGBTQ people (Birkett & Newcomb, 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 LGBTQ students (Garvey & Rankin, 2015).

High schools often have specific resources available for LGBTQ+ students, such as Gay-Straight Alliances. In Ontario, Canada, 2012 provincial legislation mandated high schools to have a GSA if the students desire one (Brotten, 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, & Ketterly, 2016; Heck, Flentje, & Cochran, 2011; Ioverno, Belser, Baiocco, Grossman, & Russell, 2016), and depression (Toomey, Ryan, Diaz & Russell., 2011). Indeed, one Waterloo Region study found GSAs can help students feel connected to the LGBTQ+ community (St. John, Travers, Munro, Liboro, Schneider, & Grieg, 2014). Thus, continued support for GSAs may be an effective way to address the level of discrimination transgender 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. 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 fleshing out a more robust understanding of the needs of a community.

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 centres. 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 centres, 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, Barker, & Krahn, 2006; Birkett, Newcomb, & Mustanski 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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