Factors Associated with Academic Achievement for Sexual and Gender Minority and Heterosexual Cisgender Students: Implications from a Nationally Representative Study

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Abstract

Research on sexual and gender minority student achievement indicates that such students report lowered achievement relative to other students. Increased victimization and less school belonging, amongst other factors, have been identified as contributing to these inequalities. However, supportive schooling structures and caregiver support may support their achievement. A nationally representative survey of secondary school students was used to identify specific factors that support achievement for sexual minority (n = 485), gender minority (n = 298), and heterosexual cisgender (where one's sex assigned at birth "matches" a binary gender identity, i.e., a male assigned at birth identifies as a boy/man, n = 7,064) students in New Zealand. While reported victimization did not affect achievement for sexual and gender minority students, school belonging, and teacher expectations of success emerged as significant factors. Differences emerged between sexual minority and gender minority achievement factors, suggesting a range of detailed policy implications and recommendations.

Keywords: ●LGBTQIA+ Students ●Academic Achievement ●Teacher Expectations ● School Belonging.

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Introduction

Despite decades of evidence demonstrating significant inequalities for sexual and gender minority young people (Russell and Fish 2016), only a handful of quantitative studies, predominantly from the United States of America (USA), have focused on sexual and gender minority student achievement in depth. Findings indicate that sexual and gender minority students' learning is significantly compromised relative to heterosexual and cisgender (where one's sex assigned at birth "matches" a binary gender identity, i.e., a male assigned at birth identifies as a boy/man) peers. Disparities are apparent in Grades 7 through 12 in four major USA cities and some smaller states (Birkett et al. 2014); for those in the Midwest (Aragon et al. 2014); for students in rural communities (Rostosky et al. 2003a); and among students in both waves of a nationally representative USA study (Pearson et al. 2007; Russell et al. 2001). The experiences of gender minority students in this research has usually not been explicitly explored or, if gender minority students are recognized, their experiences are combined with the more prevalent sexual minority students. It is important to note, that, of course, sexual and gender minority young people are not inherently inferior in terms of academic ability in comparison to their peers. Meyer's minority stress model (2003) has been used to explain compromised outcomes and issues reported by sexual and gender minority young people. According to this model, it is the mistreatment and resulting distress that sexual and gender minority youth experience that increases their risk for a range of negative outcomes, including scholastically. The goal of this research is to understand the factors associated with achievement for sexual minority and gender minority students, as well as heterosexual cisgender students, to identify policy and practice recommendations to address these inequalities. Data from a nationally representative New Zealand sample provides an international perspective on this issue.

Demographics: Socioeconomic Status, Ethnicity, and Sex Assigned at Birth

Global research emphasizes the significance of socioeconomic status and deprivation on achievement (UNESCO 2017). In New Zealand, this pattern is also obvious, with the number of Year 13 students who received University Entrance (i.e., the highest school qualification in the country) being a third lower in the most deprived schools, at 30%, compared to those in the least deprived schools, where 65.3% of students achieved University Entrance (New Zealand Qualifications Authority 2017). The effects of systematic racism closely intertwine ethnicity with social economic status, making ethnicity the second major factor for predicting achievement in New Zealand. Achievement disparities are evident for "Pasifika" (30.7% achieving University Entrance) and indigenous Māori (31.4% achieving University Entrance)

students, compared to the European settler majority (57.8% achieving University Entrance). Conversely, "Asian" identified students are more likely to achieve (with 66.5% achieving University Entrance) than all other ethnicities. Following ethnicity, students' sex assigned at birth is the next most significant demographic factor in relation to achievement, with 13.2% more female students achieving University Entrance than male students (i.e., 55.7% for females versus 42.5% for males) (New Zealand Qualifications Authority 2017).

While the majority of the studies on sexual and gender minority achievement specifically control for social economic status and ethnicity, evidence from the USA suggests that parents' highest education level, a potential proxy for social economic status, is correlated with female sexual minority student achievement but not male sexual minority student achievement (Pearson et al. 2007). Additionally, Pearson et al. (2007) found that sex assigned at birth was also associated with achievement differences, with male sexual minority students more likely to report disparities in comparison to heterosexual males than between female sexual minority and female heterosexual students. Conversely, in Birkett and colleagues' (2014) study, male and female identified sexual minority students both had higher odds of poor grades compared to heterosexual students, however disparities here were greater for female sexual minority students.

In reviewing the USA literature, Russell and Truong (2001) indicated that, on average, ethnic minority sexual minority youth report different experiences of school victimization than white sexual minority youth. They found that ethnic minority sexual minority youth were less likely to experience victimization from other students but more discrimination from teachers. In their nationally representative sample, Russell and Truong (2001) further found that ethnic minority sexual minority students were significantly less likely to differ from their ethnic minority heterosexual peers around negative attitudes towards schools, negative experiences, and lowered school expectations, whereas white sexual minority students were significantly more likely to be negatively impacted compared to their white heterosexual peers. Significant differences were also reflected in grade point average (GPA) scores between sexual minority white students and their white heterosexual peers, but not within other ethnic groups (though, the small sample size prevented statistical analysis of Asian American identified students). The reasons for ethnicity differences for sexual minority student experiences may reflect that students of color have developed strategies for managing racism, which may facilitate their resilience to later heterosexist victimization when compared to white sexual minority students who may have little earlier life experience with managing prejudice and mistreatment (Russell et al. 2001).

School Victimization

A meta-analysis of longitudinal research demonstrates that students who report school victimization are more likely to report psychological distress (Reijntjes et al. 2010). Psychological distress from school victimization can include lowered self-worth and esteem, which is associated with reduced achievement (Juvonen et al. 2000). The mechanisms for psychological distress reducing achievement include decreased engagement and classroom participation (Buhs et al. 2006), especially if students are concerned for their physical safety, and avoid school due to fear for their safety.

Concerns about physical safety at school are reported by sexual and gender minority students across the USA (Kosciw et al. 2018). A meta-analysis of 18 large scale USA studies from 2003 to 2008 found that sexual minority students have significantly increased odds of missing school, due to fear for their safety, relative to heterosexual students (Friedman et al. 2011). In New Zealand's Youth'12 research (i.e., the third survey wave from Youth 2000 series), 57.9% of sexual minority students in this nationally representative study of 8,166 school students reported feeling afraid that someone would hurt or bother them at school compared to 39.7% of heterosexual students (Lucassen et al. 2014). Further disparities were apparent in relation to reports of feeling safe at school all or most of the time, with twice as many sexual minority students (25.2%) not reporting feeling safe at school compared to their heterosexual peers (12.5%) (Lucassen et al. 2014). Furthermore, gender minority students from Youth'12 had 1.9 times the odds of reporting feeling afraid that someone would hurt or bother them at school compared to their non-gender minority peers (Clark et al. 2014).

Research from two large USA studies demonstrates that sexual minority students who experience more school victimization are significantly more likely to report a lower grade point average (Aragon et al. 2014), particularly for male sexual minority students (Birkett et al. 2014). The negative effects of victimization on achievement is also reflected in a predominantly multi-ethnic USA sample (Craig and Smith 2014) and for gender minority as well as sexual minority students (Kosciw et al. 2018). Birkett and colleagues (2014) demonstrated that sexual and gender minority students who withdraw from school in relation to victimization may, understandably, do so out of concerns for their personal safety. Similar findings are found for various forms of school victimization, including verbal slurs, for sexual minority students in Israel and sexual and gender minority students in the USA (Pizmony-Levy and Kosciw 2016). A study by Poteat et al. (2011) found that homophobic school victimization versus general school victimization was associated with worse school outcomes for sexual minority students. A study of New Zealand sexual minority adults (N = 2,269) also found that retrospective reports of school bullying and physical assault were related to lower educational attainment and aspirations in adulthood (Henrickson 2008).

School Belonging

Osterman's (2000) review on the concept of school belonging describes it as a personal sense of being valued, accepted and included at school. School belonging is related to academic achievement through increased educational engagement (Fredricks et al. 2004), intrinsic motivation, and positive attitudes towards school, teachers, and students, as well as reduced levels of anxiety (Osterman 2000). Research on school belonging for sexual minority students in the USA demonstrates a significant association with achievement (Rostosky et al. 2003b) and educational attainment (Watson and Russell 2016), often mediated by reduced school avoidance (Birkett et al. 2014) and increased educational engagement (Seelman et al. 2015). Poteat and colleagues' (2011a) study included gender minority as well as sexual minority students in grades 7 through 12, and found significant links between reported school belonging, GPA, and truancy.

Supportive School Structures

Whereas self-reports of school belonging, and victimization, are individual-level variables associated with achievement, structural features of schools are also associated with sexual and gender minority achievement. Nationwide research in the USA (Kosciw et al. 2018) linked sexual and gender minority discrimination at school to lowered graduation rates for sexual and gender minority students, via the production of a "hostile school climate" (p. 44). Furthermore, Kosciw and colleagues (2018) found that the negative effects of school "institutional discrimination" (p. 46) persisted when individual experiences of victimization were controlled for. Institutional discrimination can include policies and practices that prevent sexual and gender minority students from: writing about sexual and gender minority issues in assignments; wearing clothing or personal articles that match their gender identity and/or supports sexual and gender minority related causes; taking a same-gender partner to a dance or function; and being disciplined for public displays of affection that are not banned for heterosexual couples (Kosciw et al. 2018). Kosciw et al. (2018) further detailed that gender minority students often experienced further discrimination, including policies and practices preventing the use of their preferred names, correct pronouns and appropriate-gender bathrooms, as well as oppressive, gendered clothing requirements for school activities (e.g., dresses for graduation for all students assigned female at birth, etc.).

Earlier work by Kosciw et al. (2010) emphasized that supportive school structures, including teachers and school staff avoiding homophobic language, and an expectation that schools would take action when sexual and gender minority students reported bias-related mistreatment and victimization, were associated with increased academic achievement and aspiration for sexual and gender minority students. Concerningly, since 2010, a higher proportion of participants in the three subsequent School Climate Surveys have reported hearing negative remarks from

teachers about gender expression, while the proportion reporting hearing homophobic remarks has remained relatively stable at around 50% of all participants (Kosciw et al. 2018). While a causal relationship cannot be established in a cross-sectional survey, the latest School Climate Survey found that sexual and gender minority students who reported that sexual and gender minority people and issues were represented in the curriculum had higher GPAs than those without such curriculum inclusion (Kosciw et al. 2018). Additionally, sexual and gender minority students who reported the presence of supportive teachers were more likely to report increased academic achievement and aspirations than those with fewer supportive teachers (Kosciw et al. 2018).

Supportive school structures may also include the provision of Gay–Straight Alliances, also known as Queer–Straight Alliances, Rainbow Diversity groups, or, locally in New Zealand, as simply "diversity" groups. Kosciw and colleagues (2018) demonstrated that sexual and gender minority students at schools with such groups were less likely to report severe victimization related to their sexual and gender minority status compared to similar students in schools without such groups. Other USA research has focused attention on other protective factors linked to such groups, which offers insights into intervention strategies that include the ability for such groups to increase sexual minority students' school belonging (Toomey and Russell 2013) and student engagement (Seelman et al. 2012).

Teacher Expectations

Teacher expectations, potentially through the mechanism of "self-fulfilling prophecies" (Merton 1948), have consistently been found to be associated with student achievement (Jussim and Harber 2005). While the effects of teacher expectation on achievement are of mild to moderate predictive strength for students as a whole, they are much stronger for students "considered to be at risk" (Hinnant et al. 2009, p. 664) and/or in "stigmatized social groups" (Jussim and Harber, 2005, p. 143). To date, the research has demonstrated negative teacher expectation effects based on social economic status and ethnic stigmatization (Jussim and Harber 2005), but no research has been published on teachers' expectations in relation to sexual and gender minority students. However, other teacher expectation research suggests that teachers may use a student's perceived social competence as a proxy factor in estimating a student's academic abilities (Hinnant et al. 2009). Therefore, students from stigmatized groups, or those experiencing higher rates of challenges and stress relative to other students, may be viewed as less academically able if such stigma and stress negatively affects their perceived social competence from the teacher's perspective. Additionally, Hinnant et al. (2009) suggest that "it may be that teachers tend to overestimate the academic competence of children they like and find easy to manage in the classroom" (p. 610).

Data from the USA indicate that large numbers of sexual and gender minority students report hearing homophobic and transphobic comments from teachers (Kosciw et al. 2018). Therefore, sexual and gender minority student achievement in the USA may be impacted by low teacher expectations, via the mechanism of increased teacher dislike of such students due to their sexual and gender minority *identity*, regardless of their academic potential. Furthermore, the disproportionate additional stressors that sexual and gender minority students are more likely experience relative to other young people, including increased school victimization, may place them at greater risk of low teacher-expectations as such situations may falsely imply they lack social competence, a predictor of teacher-expectation (Hinnant et al. 2009). Additionally, the increased classroom management required of teachers to address the victimization that such students report, may potentially decrease a teacher's positive feelings towards victimized sexual and gender minority students. Findings from the School Climate Survey (Kosciw et al. 2018) support this potential mechanism, where nearly a quarter (21.4%) of victimized sexual and gender minority students who informed teachers about being victimized were told by those teachers to change themselves "in relation to their sexual orientation or gender identity" (p. 33), potentially implying "that they somehow brought the problem upon themselves for simply being who they are" (p. 33). Teachers who believe that sexual and gender minority students are intentionally difficult or socially incompetent, especially as evidenced during periods of school victimization, may therefore have lower expectations of these students regardless of their actual ability.

Parent and Caregiver Support

Parental support and positive affect are associated with academic achievement (King et al. 2005). One mechanism through which such support is hypothesized to support academic achievement is in its ability to buffer the negative effects of stressors (Nettles et al. 2000) which can otherwise result in scholastic inattention and decreased achievement (Pomerantz et al. 2007). Another mechanism may stem from such support fostering the development of positive attitudes and aptitudes that may assist learning. For instance, parental support is associated with increased confidence that people can and will assist them in times of need (Cutrona et al. 1994); as well as increased curiosity, novel thinking, flexibility and autonomy in the classroom; and student beliefs that challenges in learning can be addressed and overcome (Pomerantz et al. 2007).

Although parental support is associated with less depression and/or higher self-esteem for a range of sexual minority (Watson et al. 2019) and sexual and gender minority (Kosciw et al. 2018) young people, the relationship with sexual and gender minority student achievement is less clear. For instance, Murdock and Bolch (2005) found that, on its own, a lack of family support was not predictive of achievement, however when combined with negative school

environments and low levels of social support from peers, it did predict lower achievement. Whereas Poteat et al. (2011) noted that while parental support was associated with heterosexual student achievement via increased school belonging, the same relationship was much weaker for sexual and gender minority students. Poteat and colleagues (2011) hypothesized that general parental support may have been inadequate to support sexual and gender minority students in schools, particularly when such students experience cisheterosexist discrimination and bullying. Conversely, Craig and Smith's (2014) study of 255 minority ethnic sexual minority students found that family support, including parental support, was significantly associated with academic achievement.

The Current Study

The literature demonstrates that academic achievement is patterned by sexual and gender minority-status, ethnicity, social economic status, experiences of school victimization, school belonging, supportive school structures, teacher expectation, and parent and caregiver support. However, the research is unable to determine which of these aspects is most significant, how they interact, and whether such patterns are similar for both gender minority and sexual minority students. This study hypothesizes that all of these factors will be significant for sexual and gender minority achievement, and that gender minority student achievement will be particularly affected by the higher rates of reported school victimization and reduced parental support that have previously been reported by such young people. Further, the complex interactions of ethnicity with sexual minority student achievement are hypothesized to be replicated with gender minority students, resulting in increased achievement for ethnic minority sexual and gender minority students relative to their ethnic majority peers. Given that sexual and gender minority young people are more likely to experience increased bullying at school, as well as reduced parental support, the study hypothesizes that reports of school belonging and high teacher expectations will be particularly significant protective factors for these students compared to heterosexual cisgender students. Additionally, the presence of supportive school structures are hypothesized to increase achievement for sexual and gender minority students.

Methods

Data from Youth'12, a nationally representative cross-sectional survey of students aged 12–19 years old in New Zealand, was used for analysis. The self-completed survey was administered via 91 schools that were randomly selected to participate, resulting in 8,500 participants (a response rate of 68%). The survey was administered via tablet computers in English or Māori with personal headphones so questions could be communicated audibly if desired. Following the student survey, a letter was sent to principals requesting their consent to participate in a school climate survey. Of the 91 schools that participated in the Youth'12 student survey, 80

schools agreed to take part in the school climate survey. Senior school managers (i.e., principals, deputy principals, and deans) completed an on-line questionnaire about various aspects of their school environment, including school polices and information on support services for students. The full methodology and ethical approval is detailed elsewhere (Denny et al. 2016).

Measures

Sex. Sex was assessed with one forced choice item, "What sex are you?", with responses of "male" or "female" only.

Ethnicity. Ethnicity data were collected by asking students to select their ethnic identities from the list used for the New Zealand Census (Statistics New Zealand 2005). Participants who selected more than one ethnic identity were assigned a single ethnic group, based on the Statistics New Zealand ethnicity prioritization method (Lang 2002). The decision to use this prioritization method reflects that New Zealand's health and education funding and policy decisions are based on these prioritized ethnicities, as well as the fact that other research from the same sample uses these cut-offs (e.g., Chiang et al. 2016; Clark et al. 2014; Lucassen et al. 2015), enabling comparison across studies. Ethnicity was grouped as New Zealand/NZ European, Māori, Pacific, Asian, and an "Other" ethnicity.

Social Economic Status. Household social economic status settings were assessed through nine indicators of socioeconomic deprivation, specifically: no car; no phone; no computer; their parent/s worry about not having enough money for food; more than two people sharing a bedroom; no holidays with their families; moving home more than twice that year; garages or living rooms used as bedrooms; and no parent in employment at home. Students who reported at least two indicators of socioeconomic deprivation were categorized as being from homes with high levels of socioeconomic deprivation (Denny et al. 2016).

Sexual minority category. Although there is some disagreement amongst researchers regarding how sexual orientation is defined and measured in adolescence (e.g., Friedman et al. 2004), three non-exclusive groups were constructed to explore similarities and differences between sexual minority, gender minority, and heterosexual cisgender students. Sexual minority status was identified via self-reported sexual attraction, where the question "Which are you sexually attracted to?" was followed with the responses "opposite sex", "same sex", "both sexes", "not sure", "neither" or "I don't understand this question". Students who indicated they were attracted to the same sex, both sexes, or who were "not sure" about their sexual attraction/s, were classed as sexuality diverse and questioning, and included in the group sexual

minority students. The "not sure" participants were included in this group as prior research has indicated that they have a similar "risk profile" to same- and both-sex-attracted young people (Lucassen et al. 2011). Although individuals who identify as asexual are considered sexual minority people, the current item, as a measure of attraction towards males, females or neither sex, was not a measure of asexual identity per se, but is more likely to represent a number of students who due to their age may not have yet experienced sexual attractions or recognize their attractions for developmental reasons (Lucassen et al. 2014). Thus, "neither" sex attracted students were excluded from this category, as well as the heterosexual category below.

Gender minority category. Gender minority status was identified from a question asking "Do you think you are transgender? This is a girl who feels like she should have been a boy, or a boy who feels like he should have been a girl (e.g., Trans, Queen, Fa'afafine, Whakawahine, Tangata ira Tane, Genderqueer)?". Responses included "yes", "no", "not sure", or "I don't understand this question". Students who indicated yes, or said they were unsure if they were transgender, were classed as gender diverse and questioning, and included in the group gender minority students. Students who selected "not sure" in relation to the transgender question were classed as a gender minority because other research has indicated that they strongly mirror gender-minority youth in relation to their mental health and other psycho-social needs (Clark et al. 2013).

Heterosexual cisgender category. Students who indicated that they were only sexually attracted to the opposite sex and were not questioning their sexual attractions, and who said that they were not transgender or questioning their gender identity, were classed as heterosexual cisgender students.

Participants were excluded from all three of the above categories and analyses if they did not answer the sexual-attraction question or the question about whether or not they were transgender, or if they responded "I don't understand this question" to either of these two questions.

Academic achievement. The dependent variable was self-reported academic achievement, generated from the question "How well do you do at school?" Students could select one answer: (1) "near the top"; (2) "above middle"; (3) "about the middle"; (4) "below the middle"; or (5) "near the bottom". The item is self-reported and norm-referenced (i.e., the responses are measured against the perceived average rather than their actual achievement) as New Zealand has multiple officially sanctioned achievement frameworks that include criterion-based (i.e., "achieved" versus "not achieved") as well as merit-based models (i.e., "Excellence", "Merit", "Achieved", "Not Achieved", *International Baccalaureate* Grades 1–7, *Cambridge International Examination* A's, B's, etc.) (Ministry of Education n.d.; Nusche et al. 2012) that

preclude a *universal* question on actual grades or standards earned. Given the mix of assessment standards, and the additional possibility for students to sit advanced credits beyond their year level if they are willing and able (which may result in lower grades but in advanced subjects), a norm-referenced item is useful to enable a broad range of participants to answer one question in a commensurate way.

Academic achievement was dichotomized via those who reported average or better achievement (responses 1, 2 or 3) versus those who reported below average achievement (responses 4 or 5). The decision to dichotomize responses reflected methodological concerns (e.g., the limited scale of the measure and the significant skew in the data) and pragmatic considerations related to the national and policy context of the research. This dichotomy is designed to focus on students who were achieving versus those who were not, enabling the analysis to foreground equity considerations. The dichotomous variable thus presents very clear policy implications, particularly by taking a broader approach to identifying students who are not achieving.

Educational intentions. To contextualize the measure of self-reported and norm-referenced academic achievement, data about intentions to pursue further education after secondary school was collected via the question "What do you plan to do when you leave secondary school?". The response options included: (1) "Get more training or education"; (2) "Start work or look for a job"; (3) "Start a family"; (4) "Go overseas to study"; (5) "Go overseas to work"; (6) "Go back to my country of birth"; (7) "Do nothing"; or (8) "I don't know/I have no idea". Participants who selected responses 1 or 4 were classed as intending to pursue further education, and participants who did not were dichotomized as not intending to pursue further education.

School belonging. A series of self-reported items assessed attitudes towards school. School belonging was assessed via the item "Do you feel like you are a part of your school?" which involved a "yes" or "no" response.

Teacher expectations. One item, "Do people at your school expect you to do well?" was used to assess teacher expectation. This item included "yes" or "no" dichotomous responses.

Bullying. Bullying was assessed by a preamble in the survey: "Bullying is when another student or group of students say, write, text or message nasty and unpleasant things to another student. Or the student is hit, kicked, threatened, pushed or shoved around. Bullying also means when a group of students completely ignores somebody and leaves them out of things on purpose" and the question, "In the last 12 months how often have you been bullied in school?" with the following responses: (1) "I haven't been bullied in school"; (2) "I haven't been bullied in the past 12 months"; (3) "It has happened once or twice"; (4) "About once a week"; (5) "Several times a week"; or (6) "Most days". To ensure that the repetitive nature of bullying, rather than occasional or one-off victimization was assessed, participants who selected

responses 4, 5 or 6 were classed as experiencing weekly or more frequent bullying, and those who did not were classed as not bullied.

Sexual minority supportive structures. An item in the school climate survey for school leaders and management asked "To what extent has your school developed support structures for students who are gay or lesbian?" with the following responses: (1) "Not in our school"; (2) "To a slight extent"; (3) "To some extent"; (4) "To a great extent"; (5) "To a very great extent". Responses were dichotomized from the presence of supportive structures to "some extent" to "a very great extent" (responses 3, 4, or 5) versus few or no structures present (responses 1 or 2).

High parental care. Participants were asked "How much do you feel the following people care about you?" including their "Mum (or someone who acts as your mum)" and "Dad (or someone who acts as your dad)" with the following response options: (1) "Not at all"; (2) "A little"; (3) "Some"; (4) "A Lot"; and (5) "Does not apply to me". Participants were coded as having a parent who cared about them a lot if they selected option 4 for either or both of these questions, and those who selected options 5, 1–3 for both questions were coded as not having a parent who cared about them a lot.

Results

The data were analyzed using IBM SPSS Statistics (version 25). The analysis involved comparing students who reported achieving versus those who reported not-achieving *within* each sexual and gender category of students (e.g., "achieving" gender minority students were compared to non-achieving gender minority students, etc.). In total, 8,500 participants were recruited for the study; however, some did not answer (n = 334 and n = 333 respectively), or reported not understanding (n = 137 and n = 178 respectively) the items on whether they identified as transgender or gender questioning, or what their sexual attractions were, or reported having no sexual attractions (n = 167). In total, only 28 participants did not answer the item on achievement, however of those 28 students who answered the sexual attraction (n = 10) and transgender identity (n = 8) items, all identified as heterosexual cisgender students, thus suggesting that sexual and gender minority students were not disproportionately missing from the achievement item that formed the independent variable for analysis.

Within this sample, the numbers of participants who answered items that formed the dependent variables in the analysis also varied. Chi-Square tests of independence and Fisher's Exact tests (where appropriate) were calculated on the effects of these missing data on reported achievement. These analyses demonstrated no significant interactions for missing data in any of the dependent variables, including within each of the three categories of students, in relation to reported achievement. The final sexual minority category included 60 same-sex and 243 both-sex-attracted young people, along with 182 participants who were not sure of their attraction(s),

totaling 485 students. The gender minority student category included 96 participants who identified as transgender and 202 students who were not sure if they were transgender, totaling 298 participants. Some students identified as a gender and sexual minority (n = 39) and were included in both the gender and sexual minority categories. Young people classed as heterosexual cisgender totaled 7,064.

Descriptive statistics on sex, ethnicity, and social economic status, for the three categories of students (Table 1) show differential rates of achievement, with heterosexual cisgender students reporting the highest levels of achievement, followed by sexual minority, and then gender minority students. Intention to pursue further education after leaving school also differed within these groups. Unsurprisingly, students who self-reported average or above achievement (for brevity "achieving") were more likely to report intending to pursue further education than those who did not. Self-reported achieving was greatest for the heterosexual cisgender students (n = 4,472 [68.8%]), closely followed by the sexual minority achieving students (n = 287 [66.7%]), and then the gender minority achieving students (n = 146 [59.8%]). In contrast, only 214 (38.6%) of the non-achieving heterosexual cisgender students, 20 (38.2%) of the sexual minority non-achieving students, and 20 (39.7%) of the gender minority non-achieving students reported an intention to pursue further education after finishing school.

Table 1 demonstrates that achievement is more common for students with lower social economic deprivation. Descriptively the difference is greatest for gender minority students, for whom 13.9% more students in low social economic deprivation settings reported achieving, than those in high social economic deprivation settings. The descriptive findings indicate that sexual minority students reported a 10.4% difference in achievement rates by social economic status, while heterosexual cisgender students reported a 6.4% difference. The outcomes of three logistic regressions for each status category of students (see Table 2) confirmed that, holding all other factors in the model constant, students from high social economic deprivation settings had lower odds of achievement compared to those not living in social economic deprivation. The effects of social economic status were more pronounced within the sexual minority student category (sexual minority students who reported high social economic deprivation had 2.94 the odds of not reporting achievement compared to other sexual minority students), and the gender minority student category (where high social economic deprivation was associated with 2.56 the odds of not reporting achievement), than between heterosexual cisgender students (for whom high social economic deprivation increased their odds by 1.5 of not reporting achievement compared to their peers).

The results demonstrate differential patterns of achievement by ethnicity and sexual and gender minority-status. Controlling for other factors in the model, ethnicity was not a significant predictor of achievement among gender minority students (Table 2). However, Table 1

demonstrates that the rates of New Zealand European gender minority students reporting achievement (85.8%) are 7.1% lower than New Zealand European heterosexual cisgender students (92.9%). Table 1 suggests that, while ethnicity does not reduce or improve achievement of gender minority students relative to the New Zealand European gender minority student majority, gender minority students, regardless of their ethnicity, are disadvantaged compared to New Zealand European heterosexual cisgender students. While there were no significant differences in odds of achievement for Māori and Asian sexual minority students compared to New Zealand European sexual minority students in the logistic regression, both Pacific and Other ethnicity sexual minority students had nearly three times the odds of reporting achievement than New Zealand European sexual minority students (Table 2). Conversely, Table 2 shows that Māori heterosexual cisgender students had significantly lower odds of reporting achievement (being 64% more likely to not report achievement) than New Zealand European heterosexual cisgender peers, and Asian and other ethnicity students had 68% increased odds of reporting achievement than their New Zealand European peers.

Table 1 demonstrates that students in all categories who report bullying are less likely to report achieving, with the greatest disparities in achievement apparent for gender minority students (where 13.3% more students who were not bullied reported achieving who compared to those who were bullied) and sexual minority students (a 13.2% disparity by bullying status against achievement), followed by heterosexual cisgender students (where there was a 6.7% difference in those reporting achievement by bullied-status). Interestingly, when holding the other factors in the logistic regression model constant (Table 2), bullying was not associated with decreased achievement for sexual and gender minority students. In fact, only heterosexual cisgender students who were bullied had statistically significant lower odds of achievement, and then only by 16% compared to heterosexual cisgender students who had not been bullied.

Of all the descriptive variables (Table 1), school belonging was the second most divergent factor amongst heterosexual cisgender students who reported achievement, with 12.9% more students who reported belonging at school also reporting achievement (93.5%) compared to those who did not report school belonging (80.6%). Reports of school belonging diverged further for sexual minority young people, for whom 92.8% of those that experienced this reported achievement, compared to 15.8% fewer students (77.0%) who did not report school belonging, reporting achievement. The difference for gender minority students was particularly high, with 17.5% more students who reported belonging at school also reporting achievement (87.0%), compared to 69.5% of gender minority students who reported achievement but did not report belonging at school. The multivariable-logistic regressions (Table 2) confirmed the significance of school belonging for achievement for all categories of students, making this one of the three significant factors distinguishing gender minority student achievement. However,

holding all variables in the model stable (Table 2), the effects of school belonging on the odds of achievement was strongest for sexual minority students (Odds Ratio/OR = 3.75), then heterosexual cisgender students (OR = 2.95), and finally for gender minority students (OR = 2.50).

According to Table 1, supportive structures in schools for sexual minority students seemed to make little difference to heterosexual cisgender student and gender minority student achievement, but more difference for sexual minority students (where 7.8% more sexual minority students in such schools reported achievement compared to sexual minority students in schools without such structures). These differences were confirmed in the logistic regression analyses (Table 2), where holding all other factors in the model stable, sexual minority supportive structures at schools were associated with nearly three and a half times increased odds of sexual minority student achievement, and yet had no significant effect on gender minority or heterosexual cisgender student achievement.

Students in all categories who reported low teacher expectations were less likely to report achieving (Table 1), with the greatest disparities in achievement apparent for sexual minority achieving students (where 38.9% more sexual minority achieving students reported high teacher expectations compared to achieving sexual minority students without such support) and gender minority students (where 27.2% more of achieving gender minority students had such teachers compared to achieving students without such teachers), followed by heterosexual cisgender students (where 16% of achieving students with such teachers reported achievement compared to achieving students without such teachers). Unsurprisingly, when controlling for the other factors in the logistic regression (Table 2), teacher expectation is strongly associated with achievement for all categories of students, however the odds of achievement for sexual minority students (over 14 times) eclipses that for heterosexual cisgender and gender minority students, for whom teacher expectation was nonetheless associated with an approximate threefold increased odds of reporting achievement (at OR = 3.03 and 2.82 respectively).

For heterosexual cisgender students, Table 1 demonstrates that the next highest differences between students who report achieving is whether they experience high parental care, with 92.3% of those who received such support reporting achievement, compared to 81.3% who did not receive such care reporting achievement (a difference of 11%). However, for both gender minority and sexual minority students, the difference in proportions of those who reported high parental care and achievement was less than 4% (Table 1). When controlling for other factors in the model (Table 2), high parental care was associated with twice the odds of heterosexual cisgender student achievement (OR = 2.10) and was not significantly associated with increased odds of sexual and gender minority student achievement.

Table 1 Demographics, school and family factors of sexual- and gender-minority students, and heterosexual cisgender students, in relation to self-reported achievement.

	Heterosexual Cisgender		Gender Minority		Sexual Minority	
	Average, or above, Achievement *n* (%)*	**Below average Achievement** *n* (%)*	**Average, or above, Achievement** *n* (%)*	**Below average Achievement** *n* (%)*	**Average, or above, Achievement** *n* (%)*	**Below average Achievement** *n* (%)*
Achievement	6,511 (92.2%)	533 (7.8%)	246 (82.9%)	52 (17.1%)	432 (89.4%)	52 (10.6%)
Sex						
Male	2,966 (91.7%)	271 (8.3%)	105 (83.9%)	21 (16.1%)	154 (86.4%)	24 (13.6%)
Female	3,545 (92.7%)	282 (7.3%)	141 (82.2%)	31 (17.8%)	278 (91.1%)	28 (8.9%)
Ethnicity						
European	3,303 (92.9%)	256 (7.1%)	85 (85.8%)	14 (14.2%)	185 (88.7%)	24 (11.3%)
Māori	1,234 (88.3%)	163 (11.7%)	46 (78.0%)	14 (22.0%)	80 (86.5%)	12 (13.5%)
Pacific	799 (92.0%)	69 (8.0%)	54 (82.9%)	11 (17.1%)	73 (91.2%)	7 (8.9%)
Asian	774 (95.6%)	36 (4.4%)	45 (81.8%)	10 (18.2%)	59 (90.7%)	6 (9.3%)
Other	395 (93.7%)	28 (6.3%)	16 (92.0%)	2 (8.0%)	35 (96.1%)	2 (3.9%)
SES						
Low Deprivation	5,459 (93.3%)	393 (6.7%)	164 (88.1%)	23 (11.9%)	306 (92.7%)	25 (7.3%)
High Deprivation	1,053 (86.9%)	160 (13.1%)	82 (74.2%)	29 (25.8%)	127 (82.3%)	27 (17.7%)
High Parental Care						
Yes	5,853 (92.8%)	442 (7.2%)	193 (83.1%)	40 (16.9%)	360 (90.8%)	37 (9.2%)
No	299 (81.3%)	66 (18.7%)	35 (85.4%)	6 (14.6%)	47 (86.9%)	7 (12.1%)
School Belonging						
Yes	5,818 (93.5%)	389 (6.5%)	198 (87.0%)	30 (13.0%)	352 (92.8%)	28 (7.2%)
No	686 (80.6%)	163 (19.4%)	48 (69.5%)	22 (30.5%)	81 (77.0%)	24 (23.0%)
Teacher expectations						
Yes	6,035 (93.3%)	424 (6.7%)	224 (85.9%)	37 (14.1%)	407 (93.2%)	30 (6.8%)
No	463 (77.3%)	127 (22.7%)	20 (58.7%)	15 (41.3%)	26 (54.3%)	22 (45.7%)
Bullying						
Yes	331 (85.6%)	53 (14.4%)	29 (71.3%)	12 (28.7%)	52 (78.0%)	15 (22.0%)
No	6,165 (92.3%)	497 (7.7%)	215 (84.6%)	40 (15.4%)	379 (91.2%)	37 (8.8%)
Sexual Minority Supportive Structures						
Yes	3,768 (92.2%)	305 (7.8%)	144 (84.3%)	27 (15.7%)	264 (92.0%)	23 (8.0%)
No	2,148 (91.8%)	186 (8.2%)	85 (80.8%)	21 (19.2%)	136 (84.2%)	26 (15.8%)

Note: * *n* are unweighted while % are weighted.

Table 2 Multivariate logistic regression results for self-reported achievement for sexual-, and gender-minority students, and heterosexual cisgender students in relation to demographic, family, and school factors

Model Predictors and Constant	**Heterosexual Cisgender (*n* = 5,998)**		**Gender minority (*n* = 253)**		**Sexuality minority (*n* = 415)**	
	B (*SE)*	*OR (95% CI)*	B (*SE)*	*OR (95% CI)*	B (*SE)*	*OR (95% CI)*
Sex (Ref: Female)	-.04 (0.05)	0.96 (0.88-1.05)	**0.39 (0.17)***	**0.68 (0.49-0.95)**	**0.75 (0.19)*****	**0.47 (0.33-0.68)**
Ethnicity (Ref: European)						
Māori	**-.49 (0.06)*****	**0.61 (0.55-0.68)**	0.72 (0.23)	1.07 (0.68-1.69)	0.09 (0.24)	1.10 (0.68-1.77)
Pacific	-.06 (0.08)	0.94 (0.81-1.09)	0.05 (0.24)	1.05 (0.66-1.68)	**0.97 (0.32)****	**2.63 (1.41-4.91)**
Asian	**0.63 (0.10)*****	**1.87 (1.53-2.29)**	-.19 (0.24)	0.83 (0.52-1.32)	-.26 (0.28)	0.77 (0.45-1.34)
Other	**0.52 (0.12)*****	**1.68 (1.33-2.12)**	0.25 (0.24)	1.29 (0.56-2.96)	**1.10 (0.44)***	**3.01 (1.28-7.10)**
SES (Ref: Low)	**0.46 (0.06)*****	**0.63 (0.57-0.71)**	**0.95 (0.18)*****	**0.39 (0.27-0.55)**	**1.08 (0.20)*****	**0.34 (0.23-0.50)**
High Parental Care	**-.74 (0.08)*****	**2.10 (1.81-2.42)**	0.40 (0.24)	0.67 (0.42-1.08)	-.12 (0.26)	1.12 (0.68-1.86)
School Belonging	**-1.08 (0.05)*****	**2.94 (2.65-3.27)**	**-.92 (0.18)*****	**2.50 (1.76-3.56)**	**-1.32 (0.19)*****	**3.75 (2.58-5.43)**
Teacher Expectation	**-1.11 (0.06)*****	**3.03 (2.70-3.40)**	**-1.04 (0.22)*****	**2.82 (1.85-4.31)**	**-2.66 (0.21)*****	**14.29 (9.43-22.2)**
Bullying	**0.17 (0.09)***	**0.84 (0.71-1.00)**	0.21 (0.24)	0.78 (0.51-1.31)	0.07 (0.23)	0.94 (0.60-1.47)
SM Supportive Structures	-.07 (0.05)	1.07 (0.97-1.17)	0.07 (0.17)	0.94 (0.67-1.32)	**-1.23 (0.19)*****	**3.42 (2.34-5.00)**
Model Constant (*SE*)	2.52 (0.11)		1.16 (0.29)		3.22 (0.32)	

Note: * p <0.05; ** p <0.01; ***p <0.001

Robustness testing and ancillary analysis. A range of sensitivity tests were carried out as part of the analysis. Tests involved exploring whether alternative measures for the Bullying factor were more sensitive, including substituting or appending the current measure with a measure of electronic harassment, or with self-reported severity of a bullying incident. Although both alternative Bullying items reproduced the same direction as the current item, neither reached its level of sensitivity. Equally, the New Zealand Deprivation measure was explored in place of the constructed social economic status measure, and again while it confirmed the impact of deprivation as a significant factor, it provided limited sensitivity than current more comprehensive measure. Parental support was tested by the gender of the parent or caregiver, and by numbers of highly supportive parents and caregivers, as well as by the level of stated support. While a lower cut-off for parental support made the factor insignificant (i.e., when parental support included "some" as well as "a lot" of support provided it was no longer sensitive), the other items supported the direction of the final model, albeit with less sensitivity.

The final items were also tested in conservative multi-logistic regression models that assessed odds of achievement, adjusted for sex, ethnicity, and social economic status, against High Parental Care, School Belonging, Teacher Expectation, Bullying, and Sexual Minority Supportive Structures as individual predictors. These tests showed that School Belonging, Teacher Expectation, and Bullying were significant for all categories of participants, while Parental Care was significant for heterosexual cisgender students, and Sexual Minority Supportive Structures was significant for sexual minority students. In this test, the impact of Teacher Expectation had an AOR (Adjusted Odds Ratio) of 11.8 (*95% CI* = 8.47-16.4; *p<0.001)* for sexual minority student achievement. The increased impact of teacher expectation in the final model (Table 2) seems to be mainly generated from the decreased impact of Bullying and a slightly reduced impact of School Belonging for sexual minority students when compared to the conservative model. In the conservative model, as individual factors, Bullying predicted an AOR of 0.42 (*95% CI* = 0.31-0.59; *p<0.001)* and School Belonging predicted an AOR of 4.12 (*95% CI* = 3.15-5.78; *p<0.001)* for sexual minority student achievement, while in the final model (Table 2) Bullying was insignificant and School Belonging was associated with an AOR of 3.75 (*95% CI* = 2.58-5.43; *p<0.001*). The impact of sexual minority supportive structures also increased from an AOR of 2.17 (*95% CI* = 1.64-2.88; *p<0.001*) in the conservative model to 3.42 (*95% CI* = 2.34 – 5.00; *p<0.001*) in the final model. Interestingly, Bullying was also significant in the conservative model for gender minority students (*AOR* = 0.54; *95% CI* = 0.47-0.61; *p<0.01*) but not in the final model, which also saw a drop in the adjusted impacts of Teacher Expectation (*AOR* = 4.31; *95% CI* = 2.98-6.21) or School

Belonging (AOR = 2.73; *95% CI* = 2.00–3.72; *P<0.001*) from the conservative model when these factors were in the final model (See Table 2).

Discussion

Although sexual and gender minority student achievement has received increasing attention in the USA, nationally representative research on this topic is still relatively nascent, and largely inexistent internationally. As such, few nationally representative, population-based studies have explored achievement factors for sexual minority and gender minority students independently of each other, nor assessed how teacher expectations may be associated with academic achievement. However, research indicates that sexual minority and gender minority students usually diverge in their experiences of schooling, with gender minority students often reporting increased victimization and less school safety relative to sexual minority students. International research also shows that teacher expectations are important for achievement, and may be more significant for stigmatized populations, which may mean that sexual and gender minority students will be disproportionately affected by such expectations. To address these gaps in the literature, the present study examined these aspects, as well as other influential factors identified a priori from the literature, in a nationally representative study of New Zealand secondary school students.

Consistent with the study's hypothesis, gender minority, sexual minority, and heterosexual cisgender categories of students, had significantly distinctive achievement profiles. The disparities for gender minority student achievement, including the reduced intentions for further study by those who self-identified as achieving, indicate urgent action is required for this group. A range of divergent intersectional and other factors characterized these groups' achievement profiles. For instance, although social economic status is strongly associated with achievement for all categories of students, the impact of social economic deprivation is more significant for sexual and gender minority students. This finding adds support to the minority stress model (Meyer 2003), where the additional stressors of social economic deprivation may be particularly deleterious for sexual and gender minority student academic achievement. Research is required to explore reasons for the disproportionate effects social economic deprivation has on sexual and gender minority students. In addition to the minority stress hypothesis, another mechanism may stem from difficulties finding quality employment to offset the effects of social economic deprivation; sexual and gender minority students may experience increased employment challenges relative to their heterosexual cisgender peers due to cisheteronormative discrimination, in turn mitigating their ability to buffer the experiences associated with low social economic status with independent funds.

Heterosexual cisgender Māori students reported lower odds of academic achievement compared to their New Zealand/NZ European peers. For Māori heterosexual cisgender students, poor academic achievement has been well documented and reflects ongoing indigenous discrimination and racism in education and long-standing structural disadvantage (Bishop et al. 2009). Conversely, the relative disadvantages reported by Māori and Pacific heterosexual cisgender students are not exacerbated, or are even slightly reversed for sexual minority Pacific youth, relative to their NZ European peers. Instead, NZ European and Asian identified students' academic advantage seems to be "disabled" by a sexual and gender minority status. Although Pacific and Other ethnicity sexual minority youth reported 2–3 greater odds of achievement compared to their NZ European peers, Pacific and Other ethnicity gender minority students do not seem to benefit from the same advantage.

The patterns and disparities of ethnicity differences in achievement by sexual and gender minority status suggest that "additive" models of minority stress are not sufficient for conceptualizing the role of ethnicity in achievement. This is supported by Russel and Truong (2001) who found that ethnic discrimination and sexual and gender minority-stigma was associated with increased school achievement for some groups, suggesting that the interactions between ethnicity and sexual and gender minority status are more complex than the additive models of minority stress suggest. The negative additive effects for Asian sexual and gender minority students in this study provides further evidence for intersectional perspectives (Chiang et al. 2017). Of note, Asian students report ethnic stereotypes in New Zealand that do not frame them as academically inferior, but rather construct them as a high-achieving group relative to other ethnicities (Webber et al. 2013). The interaction of such Model Minority myths (Oyserman and Sakamoto 1997), that frame Asian students as always academically able with one's sexual and gender minority status seems to offer little protective benefit for such youth and requires further exploration.

School belonging increases the odds of achievement for all groups of students, and this impact is higher among heterosexual cisgender and sexual minority students, than among gender minority students. School belonging can significantly moderate the effects of bullying on all student categories for achievement, however these protective effects operate differentially for sexual minority youth relative to the other categories of students. The same pattern is apparent for teacher expectations, which demonstrate particularly positive impacts for sexual minority student achievement. While the positive effects on school belonging on sexual and gender minority achievement have been noted elsewhere, these data offer a lifeline to schools struggling to tackle the complex phenomenon of bullying, by emphasizing the protective route bolstering school belonging can offer for fostering achievement. However, the negative health outcomes associated with bullying, and the chances (see Strengths and Limitations below) that

the study may have under-sampled young people who experienced destructive bullying (McGuire et al. 2010), means that bullying prevention must remain a part of all efforts to support sexual and gender minority student achievement.

In contrast to the hypothesis, yet similar to Poteat et al. (2011), sexual and gender minority students' likelihood of achievement was not affected by having one or more parent that cares a lot for them, while the opposite was true for heterosexual cisgender students. The study did not have adequate numbers to ascertain the differential effects for this variable for ethnic and sexual minority students as was found by Craig and Smith (2014). The finding therefore suggests that for sexual minority and gender minority students as a whole, high parental support is not able to effectively reduce disparities in sexual and gender minority achievement in the school setting.

Supportive school structures for sexual minority students resulted in these students achieving much higher odds of achievement than sexual minority students in schools without such structures. However, in contrast to the hypothesis, sexual minority supportive school structures were not associated with increased gender minority student achievement. This finding provides evidence that simply mitigating institutional homophobia in particular does not adequately address the effects of transphobia and cisnormativity, despite common heteronormative elements in the genesis of all of these phenomena (DePalma and Jennett 2010).

Strengths and Limitations

Strengths of the current study include the use of nationally representative data, from an alternative national context to the USA, to explore the factors associated with sexual minority and gender minority student achievement distinctly. The use of a nationally representative sample avoids limitations associated with convenience or self-selecting sampling issues, increasing the validity of the findings to demonstrate the broad significance of these issues. Further, by drawing on data from an alternative context to the USA, these findings strengthen international evidence supporting school-level intervention as critical for sexual and gender minority youth equity and wellbeing. Finally, this study contributes to scholarship that disentangles gender minority youth realities from their more researched sexual minority youth peers. In so doing the findings indicate that addressing sexual minority youth equity issues on their own is not sufficient to ameliorate gender minority youth inequalities, and additional policy actions are required to achieve equality of opportunity for these young people.

However, there are limitations associated with nationally representative school survey methodologies, include challenges around representation of young people who are excluded from schools. For instance, by sampling those who have the resources to remain in school, the study may over-estimate sexual and gender minority achievement. The *potential* additional

support and resiliency afforded to these participants that enables them to remain in school, and be sampled in the study, may also be associated with increased ability to achieve academically and may over-represent achievement levels for sexual and gender minority students. For instance, some students who are particularly affected by bullying, may have already left school (McGuire et al. 2010) and, as such, their absence in the sample may reflect why bullying was reduced as a predictive factor.

Another limitation of large-scale national surveys in relation to youth health is realized in attempts to balance specificity in questions whilst keeping survey items short enough to enable a broad scope of activities to be explored in a large survey. For instance, the question "Do people at your school expect you to do well?" may, on its own, seem ambiguous in terms of who it refers to (i.e., teachers, students, a combination of them, or others). However, in the survey, this item (Sch12) was asked after two questions that were centered on adults at school (i.e., Sch10 asked "How much do you feel that people at school care about you (like teachers, coaches or other adults)?" and Sch11, "How often do the teachers at your school treat students fairly?"). The previous two items focusing on adults, especially teachers, strongly suggests that participants may have answered this question with them in mind, but some ambiguity may also be present here. Either way, the current findings, in combination with the existing literature on this topic, suggest, at a minimum, a focus on cultivating positive teacher expectations will be very beneficial. If the "people at school" were seen by participants to be referring to, or including, peers, then a further focus on cultivating positive peer expectations of students doing well may also be of value as a policy intervention.

Finally, small sample sizes may potentially limit the power of some of these findings, so that some granular features for the sexual minority and gender minority student groups did not reach the highest levels of significance. For instance, caution is required around the small numbers of some ethnically identified sexual and gender minority young people and their experiences. However, despite low numbers in some instances, the many significant results overall highlight the scope of this issue and indicate many key features for intervention.

Future Research

The current study supports recommendations to assess the experiences of sexual minority and gender minority students as distinct populations, and suggests further granular examination of issues for students who are non-binary versus transgender, and bisexual (or "both sex attracted" in the current study) versus gay and lesbian (or "same sex attracted"). The impact of the expectations of others at school suggests future research on what might limit teacher expectations, and how teachers can best be supported to effectively demonstrate such expectations of sexual and gender minority and indigenous/ethnic minority students. Equally,

evaluation of techniques to foster belonging at school for sexual and gender minority students is also advocated by this study. The study findings indicate that sexual minority supportive schooling structures support academic achievement for sexual minority students; however, further work is required to explore if, and what, supportive schooling structures might support gender minority student achievement as well as their future educational intentions. In addition, this study highlighted the complex interactions between sexual and gender minority status and ethnicity; further investigation is required to explore these mechanisms and pathways. Finally, this study joins others in calling for nuanced and intersectional analyses on the roles that ethnicity and social economic status play in sexual and gender minority student achievement, including the potential for these to interact and foster or mitigate resiliency.

Conclusion

Important work in the USA has demonstrated key factors associated with sexual minority student achievement, yet international, and representative findings that explore gender minority student achievement, are limited. The present study addressed these gaps by examining how key factors from the achievement literature were associated with self-reported achievement in a nationally representative New Zealand sample of gender minority and sexual minority secondary school students. Actions to increase levels of subjective school belonging and reported teacher expectations are vital for all students, particularly for sexual minority students. However, the study also demonstrated different profiles associated with achievement for all three categories of students, indicate that a one-size-fits-all policy will be less effective for all sexual and gender minority students. For schools further committed to supporting sexual and gender minority achievement, actions that focus on ensuring supportive structures are in place for all sexual and gender minority students (not just gay and lesbian-identified students), are likely to increase the odds of sexual and gender minority student academic achievement. Finally, the complex interactions between the needs of sexual and gender minority youth, ethnic minority and indigenous youth, and their families who experience poverty and deprivation require intersectionality approaches acknowledging the overlapping and interdependent systems of discrimination or disadvantage.

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