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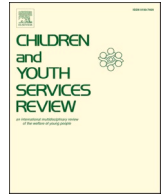
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## Wellbeing and healthcare access for sexuality and gender minority secondary school students with long-term health conditions

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### ABSTRACT

**Objective:** To explore the prevalence of long-term health conditions (which includes disorders such as asthma and diabetes, lasting six months or more) among sexuality and gender minority youth (SGMY) within Aotearoa New Zealand, and report on SGMY access to health care services.

**Method:** We used data from a population-based survey (Youth'19) of 7,059 secondary school students in Aotearoa New Zealand. Multivariable logistic regression models were used to investigate the associations of five sex, gender and sexuality groups: heterosexual cisgender females (n = 3,127, 44.30%); heterosexual cisgender males (n = 2,934, 41.64%); sexuality minority cisgender females (n = 659, 9.34%); sexuality minority cisgender males (n = 216, 3.06%); and gender minority adolescents (n = 123, 1.74%), and the selected outcome variables (i.e., general health, long-term health conditions, difficulties accessing healthcare and talked to a health provider privately).

**Results:** Gender minority adolescents reported the highest odds of having a long-term health condition (adjusted Odds Ratio/aOR = 6.69, 95% Confidence Intervals/CI 3.89–11.42) compared to heterosexual cisgender males. Sexuality minority cisgender females and males also had significantly higher odds of having a long-term health condition compared to heterosexual cisgender males. Gender minority youth reported the highest odds of experiencing difficulties accessing health care (aOR = 3.99, 95% CI 2.50–6.36) compared to heterosexual cisgender males. Sexuality minority cisgender females and males were also significantly more likely to experience difficulties accessing healthcare than heterosexual cisgender males.

**Conclusion:** SGMY are more likely to report a long-term health condition compared to their peers and access to health care for SGMY is constrained. Health and social care service providers need to ensure their provisions are safe, accessible, inclusive, and appropriate for SGMY.

### 1. Introduction

It has been estimated that approximately 10–15% of adolescents live with a long-term health condition (Rasalingam, Brekke, Dahl, & Helseth, 2021). However, the prevalence of these conditions is thought to be

increasing in high-income countries and may increase further given the likely impacts of 'long Covid' (Shah, Hagell, & Cheung, 2019; Zimmermann, Pittet, & Curtis, 2021). Long-term health conditions include diabetes, neurodegenerative disorders, asthma and chronic pain. These conditions impact upon the physical and the mental health of young

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people (Bogosian, Van Vliet, Craig, Fraser, & Turner-Cobb, 2016; Denny et al., 2014). The effective management of any long-term health condition in adolescence, a time of rapid growth and change, has long been thought to constitute a sizeable challenge for the individual and their family, as well as health and social care services (Sawyer, Drew, Yeo, & Britto, 2007; Suris, Michaud, & Viner, 2004). As chronic or long-term health conditions are typically ongoing, the clinical emphasis is placed on controlling symptoms and managing the complications associated with any treatments. But despite the need for appropriate health services, adolescents with long-term health conditions frequently encounter inaccessible or inadequate help, which is not age-relevant (Denny et al., 2013; James, Perry, Gallagher, & Lowe, 2020). In addition to the issues associated with health care provision, young people with long-term health conditions also face being excluded from activities at school and elsewhere. For example, when they miss out on sporting events, are unable to attend parties or when they cannot obtain a driving license because of their condition (Lambert & Keogh, 2015). These excluding experiences can make them feel different physically and socially from their peers, and as a result they grapple "...constantly with balancing the dilemma of feeling and acting normal or feeling, being and revealing difference" (Lambert & Keogh, 2015, p. 63). Adolescents with a long-term health condition may also vary in their 'outness' or in the visibility of their disability and, as a result, in exposure to disability-related stigma. Young people with an "invisible disability" (Davis, 2005, p. 153) may therefore avoid direct stigma; however, they may also receive less support for, and acknowledgement of, their disability, which can produce different challenges (Davis, 2005).

In common with adolescents that have a long-term health condition, sexuality and gender minority youth (SGMY), including those who are lesbian, gay, bisexual, transgender as well as non-binary (LGBT+), must also cope with the issues linked to difference, (in)visibility and otherness. Like many adolescents with a long-term health condition, SGMY often encounter difficulties engaging with activities that their peers enjoy, such as school sports (Lucassen et al., 2019). Likewise, school belonging is an issue for many SGMY (Fenaughty, Lucassen, Clark, & Denny, 2019). Similarly, some SGMY are able to 'pass' as heterosexual and cisgender (i.e., where a person's gender identity aligns with their assigned sex at birth). While other SGMY have physical presentations or ways of being in the world that challenge dominant norms, this in turn, can expose them to stigma. Although comprising up to 10% of adolescents overall, based on the results of a range of population-based samples (Lucassen, Stasiak, Samra, Frampton, & Merry, 2017; Reisner et al., 2016), many SGMY conceal their otherness and are not 'out' during their high school years (Lucassen et al., 2015). Given the similar tensions for SGMY and adolescents with long-term health conditions, it is crucial to explore the prevalence and experiences of SGMY that also have a long-term health condition.

To date, Meyer's minority stress model has been widely cited to explain the elevated rates of challenges experienced by sexuality and gender minority people (Meyer, 2003). According to this model, the mistreatment and resulting distress that SGMY experience increases their risk of negative health outcomes. This will include their risk in terms of certain long-term health conditions, for example, chronic pain. While it is important to note that many SGMY report occupying positive environments (e.g., Lucassen et al., 2015), data from the Youth2000 series of adolescent health surveys in Aotearoa New Zealand, for instance, has reinforced that inequalities and difficulties persist. Youth2000 results from 2001 (Youth'01), 2007 (Youth'07) and 2012 (Youth'12), combining to include over 27,000 secondary school students, has highlighted that sexuality minority youth are less likely to rate their general health as good (Odds Ratio/OR 0.46, 95% Confidence Intervals/CI 0.39–0.53) compared to their exclusively opposite-sex attracted peers (Lucassen et al., 2015). Sexuality minority youth in Aotearoa New Zealand, also appear to be more likely to have a long-term health condition. For example, in 2012, approximately one-third of sexuality minority youth (34.0%, 95% CI 27.8–40.2) reported this

compared to 19.9% (95% CI 18.9–20.9) of exclusively opposite-sex attracted youth (Lucassen, Clark, Moselen, Robinson, & The Adolescent Health Research Group, 2014).

Population-based data regarding the overall health of gender minority youth in Aotearoa New Zealand (and elsewhere) has been underexplored. Moreover, to the best of the authors' knowledge, it is not known, based on population-based studies, whether gender minority youth are more likely to have a long-term health condition when compared to their cisgender peers. But health care access issues for gender minority youth have been raised as a concern. For instance, 39.2% of transgender students in Youth'12 indicated that they had not been able to access health care when they needed it compared to 17.8% of their cisgender peers (OR 2.7, 95% CI 1.8–4.1) (Clark et al., 2014).

In addition to differences when SGMY are compared to their cisgender heterosexual peers, there are also likely to be 'within group differences' for SGMY. There is sparse population-based data in the SGMY field in relation to overall physical health, but results from the Canadian Community Health Survey of adults aged 18 to 59, who reported their sexual identity (n = 159,824), suggest such within group differences exist in terms of sexuality (Tjepkema, 2008). In particular gay men and bisexual women in their study were the only sexuality diverse groups to be significantly more likely to report long-term health conditions in comparison to the heterosexual reference group (Tjepkema, 2008). A survey in the Netherlands of a random sample of primary healthcare patients (i.e., regular health care users) from general practices (n = 9,684) found the proportion of people with one or more long-term health conditions was significantly higher among gay men (OR 1.86, 95% CI 1.06–3.28) and lesbian women (OR 1.88, 95% CI 1.05–3.37) than among heterosexual respondents (Bakker, Sandfort, Vanwesenbeeck, Van Lindert, & Westert, 2006).

Our current study sought to explore the prevalence of SGMY with long-term health conditions in Aotearoa New Zealand, using the Youth'19 data and report upon their access to health care services. The study is unique in that it includes both sexuality and gender minority youth and utilizes data from a large population-based study, when most studies in the field of SGMY draw upon convenience-based samples (Lucassen et al., 2017).

## 2. Methods

Youth'19 is a cross-sectional study that surveyed a total of 7,891 high school students, in Years 9–13 (between the ages of 12 and 19 years old). Forty-nine secondary schools were randomly selected for this study, including four kura kaupapa Māori schools (i.e., schools that are based on Indigenous philosophies and primarily taught in the Māori language). Unlike the previous Youth2000 survey waves (which were conducted across the whole of Aotearoa New Zealand), the Youth'19 survey selected a random sample of schools from the Auckland, Waikato and Northland/Tai Tokerau regions that account for close to half (i.e., 47%) of Aotearoa New Zealand's youth population (Fleming et al., 2020). Youth'19 was funded by two Health Research Council of Aotearoa New Zealand project grants and received ethical approval from the University of Auckland's Human Participants Ethics Committee (application #022244). Detailed descriptions of the survey methods are available elsewhere (Fleming et al., 2020, see also <https://www.youth19.ac.nz>). In summary, following consent, young people completed the survey using the cloud-based platform Qualtrics Core XM on a 7-inch mobile tablet. Students were provided with the option of engaging with the survey text with or without audio descriptions in both English and te reo Māori (the Indigenous language of Aotearoa New Zealand). A certified translator was used to translate the survey into te reo Māori while the recorded audio descriptions were provided by a fluent te reo Māori speaker. The anonymity of responses and privacy of respondents was protected by organizing the survey in large school halls or gymnasiums, to ensure sufficient space to allow maximal privacy between students.

Item	Responses				
A)“How do you describe yourself?”	A boy or man~	A boy or man~	A girl or woman~	A girl or woman~	Identified in another way
	↓	↓	↓	↓	↓
B)“Are you (or might you be) transgender or gender diverse?”	No	No	No	No	Yes
	↓	↓	↓	↓	↓
C)“Which of the following best describes you?”	Not applicable/ not asked	Not applicable/ not asked	Not applicable/ not asked	Not applicable/ not asked	Any gender minority & ‘not sure’
	↓	↓	↓	↓	↓
D)“Who are you attracted to?”	Opposite or a different sex	Same, both sexes or not sure	Opposite or a different sex	Same, both sexes or not sure	Any response
	↓	↓	↓	↓	↓
<b>Sexuality and gender groups</b>	Heterosexual cisgender males	Sexuality minority cisgender males	Heterosexual cisgender females	Sexuality minority cisgender females	Gender minority

~ Gender minority adolescents may identify as “A boy or man” (e.g., as a trans young man) or “A girl or woman” (e.g., as a trans young woman), therefore participants who responded in those ways for item A) and then responded “Yes” for item B) and any gender minority or ‘not sure’ for item C) were categorized as a transgender and gender minority youth.

Fig. 1. Flowchart of items and the sexuality and gender groups.

2.1. Measures

2.1.1. Demographics

- **Age** = The survey participants were asked their age in years.
- **Ethnicity** = The ethnic groups in Youth’19 are based on the Aotearoa New Zealand Census ethnicity question and an established Statistics Aotearoa New Zealand prioritization method was utilized when students selected more than one ethnic group (Lang, 2002). Ethnicity was grouped as Māori, Pacific, Asian, “Other” and European (i.e. the major ethnic group categories in Aotearoa New Zealand).
- **Socioeconomic deprivation** = This was measured using the Aotearoa New Zealand Deprivation Index (NZDep2018) for the neighborhood where the student resided. NZDep2018 combines nine measures of deprivation across eight domains following the 2018 Aotearoa New Zealand Census. For instance, domains included communication (access to the internet), income (unemployment data), and living conditions (housing quality). Students were then categorized into deprivation deciles based on the NZDep2018, and these deciles were classified into low levels of deprivation (deciles 1–3), medium levels of deprivation (deciles 4–7), and high levels of deprivation (deciles 8–10) (Fleming et al., 2020).
- **Sex, gender and sexuality** = Aotearoa New Zealand is situated in the South Pacific and as such has unique perspectives in terms of

understanding human diversity, for instance in relation to SGM individuals. Such that there are Māori ways of knowing which encompass identities like whakawahine (i.e., transgender woman, or those born with the wairua/‘soul’ of a woman) and tangata ira tane (i.e., transgender man, or those born with the wairua/‘soul’ of a man) (Burford, Lucassen, & Hamilton, 2017). Given Aotearoa New Zealand’s geographical location and migration patterns from the wider region to the nation, Pacific ways of understanding are also especially relevant. As a result of the social context, the Youth’19 survey adopted questions and explanations that were culturally meaningful for a diverse sample, for example using terms like fa’afafine (a term for people who are assigned male at birth who take on the roles, manners and the responsibilities of women in Samoan culture and contexts), to ensure the survey was both acceptable and easily understood. Five discrete sex, gender and sexuality groups were created based on a series of culturally-informed questions. The groups being: heterosexual cisgender males; heterosexual cisgender females; sexuality minority cisgender males; sexuality minority cisgender females; and gender minority youth (of any sexuality). These groups were derived using the following three aspects which pertained to sex, gender and sexuality (also summarised in Fig. 1 below):

1. Because of the commonly cited differences for female and male adolescents in terms of health and wellbeing outcomes (e.g., Brener et al., 2023; Daly, 2022; Vink, Postma, Schouten, Rosmalen, &

Boezen, 2010), we retained female and male categories for both heterosexual and sexuality minority cisgender youth. The question “How do you describe yourself?” (with the response options of “I am a boy or man”; “I am a girl or woman”; or “I identify in another way”) was used for determining a participant’s sex, whereby participants who identified with a binary response were presumed to be the sex traditionally assigned to that gender (e.g., girl/woman = female), if they were not identified as being a gender minority participant (see point 2, which immediately follows).

- Gender minority participants were identified by either an affirmative response to “Are you (or might you be) transgender or gender diverse?” [which included the culturally appropriate for Aotearoa New Zealand explanation: “By this, we mean that your current gender is different from your gender at birth (e.g. trans, non-binary, Queen, fa’afafine, whakawahine, tangata ira tane, genderfluid or genderqueer)”, or if they responded “another way” to the binary gender question (under point 1 above), and then for both items if they selected a transgender or gender minority identity in the subsequent question “Which of the following best describes you? (You may choose as many as you need)”, with answer options: Trans boy or man, Trans girl or woman, Non-binary, Genderqueer, Genderfluid, Agender, Takatāpui [a Māori term incorporating diversity in terms of both gender and sexuality], Whakawahine, Tangata ira tane, Fa’afafine, Fa’afatama [a Samoan term, broadly speaking a trans masculine person], Akava’ine [a Cook Island Māori term encapsulating gender diversity], “I’m not yet sure of my gender”, “Something else, please state” (open text), and “I don’t understand this question”. Participants that indicated “I’m not sure of my gender” (i.e. they were questioning their gender identity) were included in the gender minority group as earlier research has indicated that they are also at an elevated risk of compromised health and wellbeing outcomes (Clark et al., 2014).
- Sexuality was determined using the question “Who are you attracted to?” (response options: “The opposite or a different sex (e.g. I am a male attracted to females or I am a female attracted to males)”, “The same sex (e.g. I am a male attracted to males or I am a female attracted to females)”, “I am attracted to males and females”, “I’m not sure”, “neither” and “I don’t understand this question”). This item is developmentally relevant, given the majority of adolescents in Aotearoa New Zealand have not had sex (Clark et al., 2016), meaning a sexual behavior item is very limited. A sexual identity item also has its limitations, especially given the extensive and expansive ways in which sexuality is understood in the South Pacific. Additionally, after previously reviewing school-based health and wellbeing surveys, Saewyc and colleagues recommended that if a

survey could only include one item about sexuality, this should ask about sexual attractions (Saewyc et al., 2004). Students were considered heterosexual if they reported that they were attracted to the opposite sex. Students were considered sexual minority individuals if they reported being attracted to the same sex, both sexes or if they responded, “I’m not sure” (i.e., they were questioning their sexuality). We included those who were “not sure” in the sexuality minority category in line with earlier evidence that suggests that they are also an ‘at risk’ group in terms of their mental health, along with same and both sex attracted youth (Lucassen et al., 2011).

Our analysis excluded students responding that they did not understand any of the questions relating to sex, gender and sexuality.

### 2.1.2. Outcomes

- Rated general health as fair or poor** = This was based on the question “In general, how would you say your health is?” (response options “Excellent”, “Very good”, “Good”, “Fair” or “Poor”). Those selecting “Fair” or “Poor” were categorized as rating their general health as fair or poor.
- Has a long-term health condition** = Was based on an affirmative/yes response to the question “Do you have any long-term health problems or conditions (lasting 6 months or more) (e.g. asthma, diabetes, depression)?” Where the response options were “Yes”, “No” or “I don’t know”.
- Impact on everyday functioning** [asked of those with a long-term health condition only] = Students were then asked a follow-up question: “Does this health problem or condition cause you difficulty with, or stop you doing...” with the response options “Everyday activities that other people your age can usually do”, “Communicating, talking, mixing with others or socializing” and/or “Any other activity that people your age can usually do”. They could choose more than one option or respond, “No difficulty with any of these”. Where a student reported one or more of the difficulties, we categorized their long-term health condition as having a “considerable impact on their everyday functioning”.
- Difficulties accessing healthcare** = Was based on an affirmative/yes response to the question “In the last 12 months, has there been any time when you wanted or needed to see a doctor or nurse (or other health care worker) about your health, but you weren’t able to?” Where the response options were “Yes” or “No”.
- Could talk to a health provider privately** = Was based on an affirmative/yes response to the question “In the last 12 months, did you get a chance to talk to a doctor or other health provider privately

**Table 1**  
Demographics of students according to sexuality and gender groups (N = 7,059).

	Heterosexual cisgender males		Heterosexual cisgender females		Sexuality minority cisgender males		Sexuality minority cisgender females		Gender minority youth	
	n <sup>†</sup>	%	n <sup>†</sup>	%	n <sup>†</sup>	%	n <sup>†</sup>	%	n <sup>†</sup>	%
<b>Age (years)</b>										
≤15	1843	62.50	1,977	63.51	122	53.28	370	55.17	75	60.69
≥16	1091	37.50	1,150	36.49	94	46.72	289	44.83	48	39.31
<b>Ethnicity<sup>a</sup></b>										
Māori	493	16.94	513	16.16	36	16.18	92	14.23	25	21.26
Pacific	314	12.35	459	14.69	22	14.33	52	7.60	11	9.38
Asian	710	24.07	697	23.64	61	27.52	189	26.78	28	20.81
Other <sup>b</sup>	148	5.51	123	4.06	16	7.78	43	6.13	10	9.87
European	1263	41.13	1333	41.45	79	34.20	281	45.26	49	38.68
<b>NZDep2018</b>										
Low deprivation	870	30.99	924	30.93	48	21.45	188	31.25	33	28.57
Medium deprivation	1089	40.22	1189	41.39	91	46.54	270	44.98	48	42.95
High deprivation	699	28.79	801	27.68	52	32.01	144	23.77	27	28.48

<sup>a</sup> Ethnicity is categorized using the NZ census ethnicity prioritization method; <sup>b</sup> Includes Middle Eastern Latin American and African (MELAA), Other Ethnicity, and ethnicity unknown.

<sup>†</sup> n are unweighted while % are weighted.

**Table 2**  
General health, long term health conditions and healthcare access according to sexuality and gender groups.

	Rated general health as fair or poor <sup>c</sup>		Has a long-term health condition		Difficulties accessing healthcare		Could talk to a health provider privately	
	n <sup>†</sup>	%	n <sup>†</sup>	%	n <sup>†</sup>	%	n <sup>†</sup>	%
Heterosexual cisgender males	169	6.34	495	18.98	508	18.33	815	38.13
Heterosexual cisgender females	288	9.19	724	27.14	619	20.51	840	35.09
Sexuality minority cisgender males	32	14.59	62	34.48	58	30.67	59	41.17
Sexuality minority cisgender females	132	21.11	260	52.85	179	27.77	212	43.77
Gender minority youth	25	23.33	49	58.27	46	46.05	33	49.26

<sup>†</sup> n are unweighted while % are weighted.

<sup>c</sup> From the response options “Excellent”, “Very good”, “Good”, “Fair” or “Poor”.

(meaning one on one, without your parents or other people in the room)?” Where the response options were “Yes” or “No”.

2.2. Analyses

The  $\chi^2$  test was used to test differences between the five discrete sex, gender and sexuality groups by the available key demographic variables, which are important in terms of adolescent health and wellbeing (i.e., age, socioeconomic deprivation/NZDep2018 and ethnicity). The adjusted odds ratios were calculated using multivariable logistic regression models to investigate the associations of the five sex, gender and sexuality groups and the selected outcome variables. The covariates in the models included age, ethnicity and NZDep2018. The analyses reported here refer to unweighted numbers, whereas percentages are weighted to ensure that the estimated percentages reflect the national student population while accounting for school stratification. Given the number of comparisons and size of the survey,  $p < 0.01$  was taken to indicate statistical significance in all analyses. All statistical analyses were conducted using STATA software version 14 (StataCorp, 2015). Youth’19 consisted of a total of 7,891 participants; however, the current study included 7,059 participants, given that students had to answer the sex, gender and sexuality items and those who did not understand any of these questions were excluded.

3. Results

Overall, most survey participants were heterosexual cisgender females (n = 3,127, 44.3%) and heterosexual cisgender males (n = 2,934, 41.6%). There were also 659 sexuality minority cisgender females (9.3%), 216 sexuality minority cisgender males (3.1%), and 123 gender minority adolescents (1.7%). Most of the participants were younger adolescents (i.e., almost two-thirds of the heterosexual cisgender males and females were 15 years or younger), but a larger proportion of the SGMY (i.e. sexuality minority cisgender males and females as well as gender minority youth) were aged 16 years or older ( $\chi^2 = 24.3, p = 0.007$ ). There were no significant differences in prioritized ethnicity and NZDep2018 (i.e. socioeconomic deprivation) categories across the sex, gender and sexuality groups (see Table 1 for details).

**Table 3**  
Adjusted odds ratios<sup>d</sup> for health and healthcare provision according to sexuality and gender groups.

	Rated general health as fair or poor		Has a long-term health condition		Difficulties accessing healthcare		Could talk to a health provider privately	
	aOR	95 % CI	aOR	95 % CI	aOR	95 % CI	aOR	95 % CI
Heterosexual cisgender males	1	N/A	1	N/A	1	N/A	1	N/A
Heterosexual cisgender females	1.48**	1.15–1.91	1.60***	1.36–1.89	1.16*	1.02–1.33	0.86*	0.74–0.99
Sexuality minority cisgender males	2.73***	1.65–4.53	2.28***	1.51–3.45	1.95***	1.40–2.70	1.02	0.68–1.52
Sexuality minority cisgender females	3.87***	2.94–5.08	4.59***	3.85–5.48	1.75***	1.50–2.05	1.18	0.99–1.40
Gender minority youth	4.81***	2.70–8.58	6.69***	3.89–11.42	3.99***	2.50–6.36	1.72	0.92–3.22

<sup>d</sup> aOR = adjusted Odds Ratios adjusted for age, ethnicity and NZDep2018; N/A = Not applicable.

\*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\* $p < 0.001$ .

Gender minority youth (23.3%), sexuality minority cisgender females (21.1%) and sexuality minority cisgender males (14.6%) were more likely to report their health as fair or poor (from the response options “Excellent”, “Very good”, “Good”, “Fair” or “Poor”) than heterosexual cisgender males (6.3%) and heterosexual cisgender females (9.2%) ( $\chi^2 = 171.4, p < 0.001$ ). Over half of the gender minority students (58.3%) and sexuality minority cisgender female students (52.9%) reported having a long-term health condition, compared to less than one-in-five of the heterosexual cisgender males ( $\chi^2 = 316.9, p < 0.001$ ). Almost half of the gender minority students had difficulties accessing healthcare in the previous 12 months, whereas this was approximately one-in-five of the heterosexual cisgender students (see Table 2). Only half of the gender minority youth could talk to a health provider privately. But they were more likely to be able to do so because over 40% of the sexuality minority cisgender young people could do so compared to only 38% of heterosexual cisgender males and 35% heterosexual cisgender females ( $\chi^2 = 20.4, p = 0.003$ ).

Multivariable analyses show that compared to heterosexual cisgender males (after adjusting for age, ethnicity and NZDep2018), the other groups had greater odds of reporting their general health was only fair or poor (see Table 3). Gender minority youth, in particular, were more likely to have compromised general health (adjusted ORs 4.8), followed by sexuality minority cisgender females (adjusted ORs 3.9), then sexuality minority cisgender males (adjusted ORs 2.7) and finally heterosexual cisgender females (adjusted ORs 1.5). Similarly, gender minority youth reported the highest odds of having a long-term health condition (adjusted ORs 6.7) compared to heterosexual cisgender males. Sexuality minority cisgender females, sexuality minority cisgender males and heterosexual cisgender females also had significantly higher odds of having a long-term health condition compared to heterosexual cisgender males.

The severity and impact of long-term health conditions reported by these young people were not insubstantial. SGMY with a long-term health condition were significantly more likely to indicate that this had a considerable impact, and they were more likely to have experienced difficulties with everyday activities that other young people can do (including communicating and mixing with others) ( $\chi^2 = 79.5, p < 0.001$ ). Breaking this down by the five groups, 78.6% (n = 34) of gender

minority youth, 73.3% (n = 187) of sexuality minority cisgender females and 55.9% (n = 34) of sexuality minority cisgender males with long-term health conditions reported that their condition had a considerable impact on their everyday functioning. In comparison, half or less of the heterosexual cisgender students with a long-term health condition reported this level of impact (i.e., 43.2%, n = 213 of heterosexual cisgender males and 49.7%, n = 362 of heterosexual cisgender females).

Multivariable analyses also show that gender minority youth reported the highest odds of experiencing difficulties accessing health care (adjusted ORs 4.0) compared to heterosexual cisgender males. Sexuality minority youth were also significantly more likely to experience difficulties accessing healthcare compared to heterosexual cisgender males. However, there were no statistically significant differences in a young person being able to talk to a health care provider privately at  $p < 0.01$  level, but this was significant for heterosexual cisgender females at  $p < 0.05$ .

#### 4. Discussion

In this large representative sample of high school students, we found major inequities for SGMY in terms of their general health, prevalence of long-term health conditions and in access to health care in comparison to cisgender heterosexual students. Gender minority young people are particularly impacted, with over half having a long-term health condition, and yet almost half reported difficulties accessing health care when this was needed. Prior related research has already highlighted that sexuality and gender minority individuals have higher mental health needs and are poorly served by 'mainstream' supports (Foy, Morris, Fernandes, & Rimes, 2019; Lucassen et al., 2021; Rimes, Ion, Wingrove, & Carter, 2019). Unfortunately, healthcare providers are often perceived as unhelpful by SGMY (McDermott, Hughes, & Rawlings, 2016), and our findings continue to show that considerable work is required to enhance health service provision for SGMY. It is particularly concerning that access to healthcare for SGMY remains disparate, despite years of research highlighting inequities. Adolescence is a critical stage in physical development, where timely and appropriate access to medical professionals within effective youth-friendly services is important (Colver et al., 2020; Rigby et al., 2021). Addressing the specific health needs SGMY early during adolescence, in particular gender minority youth, is vital for long-term health outcomes.

A way forward to better support SGMY has already been envisaged, as outlined in documents such as the Guidelines for Gender Affirming Healthcare for Gender Diverse and Transgender Children, Young People and Adults in New Zealand (Oliphant et al., 2018). Key recommendations have reinforced the need for providers to partner with trans communities to shape health service provision; for trans communities to take an active role in leadership in regard to healthcare for SGMY; for the ongoing pathologizing of gender diversity to be addressed; and for Aotearoa New Zealand's treaty commitments to Māori (under Te Tiriti o Waitangi) be upheld to ensure healthcare provision is available, accessible, and of an acceptable quality for Māori (Clark et al., 2022; Oliphant et al., 2018).

Other actions, including practical steps undertaken by individual health and social care professionals are also needed. For example, practitioners should not automatically assume the gender or sexuality of the adolescents they are working with. It is also important to recognize that SGMY vary considerably; some gender minority youth may also identify with other 'rainbow communities' (e.g., they may also be bisexual), consequently practitioners need to develop their cultural competencies in order to work effectively with young people with a range of sex, sexuality and gender identities.

As researchers and practitioners in the adolescent health and social care field, we think professionals should habitually talk to their adolescent service users/patients in private and should be better at recognizing three key points. Firstly, that some adolescents will have experienced stigma related to their SGMY status and they may be wary

of disclosing important aspects of their identity to practitioners. An unwillingness to disclose important aspects of their identity in turn likely impacts upon their access to care as well as the effective monitoring of long-term health conditions. Secondly, that SGMY encounter health professionals who are inexperienced at working with SGMY. This means SGMY are frequently required to educate practitioners about relevant aspects of their identities and experiences and, as a result may feel invisible, poorly understood and less confident in the care that is provided. Continuing professional development programmes in working with SGMY are required, and should be mandated for health professionals. Finally, given the ongoing threat of erosion of rights for SGMY internationally, providing legislative protections for healthcare that is affirmative of SGMY is required to support equity of outcomes.

At the time of data collection, Deciles 1, 2, 3 and 4 secondary schools (i.e., the most socioeconomically disadvantaged schools in Aotearoa New Zealand) were universally funded for free school-based health services. However, our findings indicate an urgent need to address the fact that free school-based service provision alone is not sufficient to meet the health needs of SGMY, there must be free, accessible, quality and inclusive care at all levels of healthcare. Free primary healthcare is provided for all children up to their 13th birthday in Aotearoa New Zealand, but this must be extended to include the adolescent years. This point is particularly relevant given that SGMY have among the highest health needs that are currently unmet. We suggest that Aotearoa New Zealand government frameworks, for quality improvement and monitoring for primary and secondary healthcare services, must explicitly name SGMY as priority populations and provide guidance and monitoring on best practices for these young people.

Strengths of this study include the diverse and representative sample meaning that useful comparisons could be made in terms of prevalence, where SGMY could be reliably compared to their heterosexual cisgender peers. Having three groups under the wider 'LGBT+' umbrella allowed for certain within group comparisons of SGMY. Of note, in the present study there were proportionately less gender minority youth, in particular 1.7% in Youth'19 compared to 3.7% in Youth'12 (Clark et al., 2014). For Youth'19 three items were utilized to determine whether a participant was a gender minority adolescent, in line with best practices drawn from mostly adult North American surveys (e.g., Slade, Gross, Niwa, McKillop, & Guphill, 2021), as opposed to the single item which was used previously in the Youth'12 survey. Despite the use of a culturally appropriate modified two-stage approach to identifying gender minority participants in Youth'19, some younger students (or those in earlier stages developmentally) may have struggled to endorse being transgender or questioning of their gender identity, given a social climate that appears increasingly hostile towards trans individuals. Some participants may have therefore been coded as cisgender when they are in fact a gender minority young person who is not yet comfortable disclosing this, even in the context of an anonymous questionnaire. As such our findings may undercount the number of gender minority young people in the sample. Limitations of this work include numbers that did not permit us to do additional subgroup analyses (e.g., by ethnicity or specific gender or sexuality identities and long-term health conditions), or compare all outcomes to only those with long-term health conditions across the SGMY sub-groupings. Moreover, given our numbers, we could not meaningfully explore difficulties accessing health care for only the SGMY with long-term health conditions. The results are all based on self-report and "long-term health conditions" was particularly inclusive (covering a breadth of disorders including asthma, diabetes and depression). Previously we have identified a higher proportion of SGMY reporting depression (Clark et al., 2014; Fenaughty et al., 2021; Lucassen et al., 2011); however, our data are unable to distinguish the nature of the long-term health condition reported by young people. In subsequent Youth2000 surveys we would like to explore including additional follow-up questions pertaining to long-term health conditions. However, the fact that these conditions are significantly more likely to be associated with everyday difficulties for



SGMY further underscores the urgent need to re-evaluate provision and the prioritization of adequate health care services for SGMY. Also, the participants were all in school on the day of the survey, meaning that the results are skewed 'towards the positive' – in that those sick and too ill to attend school on the day of the survey, and those avoiding school due to being mistreated because of their sexuality and/or gender, would not have taken part.

## 5. Conclusion

The mental health needs of SGMY have been well documented, but little attention has been paid to the physical health, long-term health conditions and healthcare access of SGMY based on population-based research that has explored within group differences when sexuality minority youth are compared to gender minority youth. Health and social care services need to strive towards making their services more accessible and suitable for SGMY, many of whom have high and complex physical and emotional needs.

## CRedit authorship contribution statement

**A.M. Guntupalli:** Conceptualization, Software, Methodology, Data curation, Writing – original draft. **M.F.G. Lucassen:** Conceptualization, Methodology, Writing – original draft, Data curation. **J. Fenaughty:** Writing – review & editing. **T. Fleming:** Writing – review & editing, Investigation, Supervision, Funding acquisition. **R. Peiris-John:** Writing – review & editing. **B. Farrant:** Writing – review & editing. **T.C. Clark:** Writing – review & editing, Investigation, Supervision, Funding acquisition.

## Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Researchers can access Youth2000 data through the mechanisms set out in the Adolescent Health Research Group's (New Zealand) Data Access Policy (see <https://www.fmhs.auckland.ac.nz/en/faculty/adolescent-health-research-group/collaborations-and-access-to-datasets.html> for details).

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