Short Report:

Measuring sexual and gender minority status of young people in Ireland

András Költő, Ailish Brick, Megan Curran, Aisling Harrington, Sarah Keenan, Louise Lunney, Geraldine Martyn, Mari Olivia Lennox, Chioma Onyenankeya and Saoirse Nic Gabhainn

HBSC Ireland, Health Promotion Research Centre, University of Galway

March 2022

https://doi.org/10.13025/29159

CONTENTS

1. INTRODUCTION

Sex and gender are fundamental ways of defining ourselves and other people. Sex refers to a person's biological status, usually defined as male, female, or having an intersex variation. Biological sex is based on combinations of sex chromosomes, hormones, internal reproductive organs, external genitalia and secondary sex characteristics. These are often, but not always, concordant. Gender describes culturally defined, expected attributes (including roles, expected behaviours and expressions) associated with being, or being seen as, a woman or man and in some cultures, additional gender options.

In most cultures, sex is identified and assigned at birth based on observations of babies' external genitalia, and is predominantly assigned as one of two categories, male or female. However, approximately 1 in every 500 infants is born with ambiguous genitalia or other variations of sex development, which are grouped together under the term 'intersex variations'. Intersex variations may not be noticeable until pubertal development, and some variations in chromosomes or internal gonads are not noticeable without genetic or other testing. Together, these variations of sex development may be present in up to 1.5% to 2% of the population (Blackless et al., 2000).

Likewise, although sex and gender are correlated in complex ways (Fausto-Sterling, 2019), for the majority of the population, gender identity, or sense of being a boy or man, girl or woman, is aligned with sex assigned at birth (often termed cisgender). For a small proportion of the population, their gender identity may not be aligned with their sex at birth (Frohard-Dourlent et al., 2017; Frohard-Dourlent et al., 2020). These persons are often described as transgender or other terms, such as Two Spirit among Indigenous communities in North America, or hijra in the South Asian subcontinent). Others may not identify within binary gender categories at all (non-binary or other terms, such as gender-queer or gender-fluid). Still others may identify with their sex assigned at birth, but their behaviours or appearance/expressions or roles do not conform to the gender expectations within their culture (often described as gender non-conforming).

Sexual orientation is a separate characteristic that is defined by the romantic and sexual attractions of people in relation to their own and others' sex or gender identity, and includes those attracted to other binary gender (heterosexual), those attracted to their same gender (lesbian or gay) and those attracted to more than one gender (bisexual/pansexual), as well as those who have no sexual attractions to others (asexual). This attraction may guide sexual and romantic relationships, although – similarly to sex and gender – attractions, identity labels and sexual behaviours may not be concordant (Saewyc, 2011; Watson et al., 2020). For instance, of 16–74-year-olds in Britain who have had sexual intercourse with someone of the same sex, 28% men and 45% women identified as heterosexual (Geary et al., 2018). Estimates within the adolescent population, especially in European countries, are largely missing (Költő, Gavin, et al., 2021). This signifies the importance of assessing multiple dimensions of sexual orientation, including self-reported identity, sexual behaviour, romantic attraction and sexual fantasies in adolescent population health surveys (Geary et al., 2018; Saewyc et al., 2004).

Transgender and non-binary gender identities and sexual orientation often become salient during adolescence. Sexual and Gender Minority youth – those who identify themselves as gay, lesbian, bisexual, trans, intersex, or belonging to other gender or sexual minorities (LGBT+) perceive more

stress and less social support than their cisgender and/or heterosexual peers (Hatzenbuehler & Pachankis, 2016; Költő, Vaughan, et al., 2021). Findings from the Health Behaviour in School-aged Children (HBSC), a World Health Organization collaborative cross-cultural study, demonstrate LGBT+ youth's disproportionate exposure to bullying (Cosma et al., 2022), substance use (Költő et al., 2019), and psychosomatic symptoms (Költő et al., 2020); it seems that gender minority youth fare poorer on most health indicators than their cisgender youth (Ciria Barreiro, 2022). These health disparities have been attributed to minority stress, which can be triggered by prejudice and discrimination against sexual and gender minority youth (Meyer, 2007), and is exacerbated by adolescent social regulation processes (Russell & Fish, 2019).

However, the large majority of studies with Sexual and Gender Minority Youth has been conducted in North America, and it still remains to be confirmed whether such patterns can be found among young people in other cultures (Bränström & van der Star, 2016; Saewyc, 2011).

Cross-cultural comparisons of adolescent health across SOGI groups are extremely rare, which means there is a considerable knowledge gap in this area (Költő, Vaughan, et al., 2021). This underscores the importance of asking about sex, gender, and sexual orientation in cross-cultural surveys of adolescent health. Yet developmentally appropriate and inclusive measures of each of these characteristics are relatively new (in the case of gender identity) or evolving, as new terms and cultural understandings emerge (in the case of sexual orientation). Likewise, existing measures may have been evaluated with older adolescents or adults, or only in some languages, or in some countries, although some countries have trialled measures of sexual orientation (Költő et al., 2018) or more expansive measures of gender identity, for example in Canada (Taylor et al., 2020), or sex and gender in Spain (Ciria Barreiro et al., 2019). However, the same measures of sex and gender have not previously been evaluated across multiple HBSC countries.

In June 2019, a Sex, Gender and Sexual Orientation Working Group was appointed by the HBSC International Coordinating Centre, to develop an optional set of items measuring these demographics of youth. The working group included members from Ireland, Canada, Luxembourg, Spain, Scotland and Wales. After consulting with national research teams from the International HBSC Research Network, reviewing existing international literature, and using their own expertise in research with sexual and gender minority adolescents, the working group selected a set of potential items to assess sex assigned at birth, gender identity, and sexual orientation. Some of these items were already included in the British Columbia Adolescent Health Survey in 2018, for students ages 12 to 18 years (Saewyc et al., 2021), or by the Spanish HBSC team (Ciria Barreiro et al., 2019) or by several countries in HBSC (Költő et al., 2018). Before administering the items to nationally representative samples, it is crucial to ensure that young people, especially those belonging to sexual and/or gender minority groups, find the items understandable, acceptable and answerable. To that end the objectives of the present study were threefold:

1) To test the understandability, acceptability, likeability and answerability of the selected items assessing sexual or gender minority status, and elicit participant feedback on the items
2) To test differential validity of the items by comparing gender and sexual minority youth and their non-minority peers across a suite of general health, well-being and social support indicators

3) To elicit the proportion of youth in the LGBTI+ communities in Ireland belonging to specific gender or sexual minorities.

This report present findings from the pilot study carried out with sexual and gender minority youth in Ireland.

2. METHOD AND SAMPLE

The method is presented in detail in a pre-registered study protocol (Költő, Ciria Barreiro, et al., 2021). We used a cross-sectional, observational study design, using a multi-language online questionnaire programmed in the Qualtrics platform, administered to LGBT+ youth aged 13–18 in Canada, England, Ireland, Scotland, Spain and Wales. The structure of the questionnaire was determined by the aims of the study – first, participants answered items that asked about their sexual orientation and gender identity (SOGI). Then, using techniques developed by the HBSC international sexual health focus group (Young et al., 2016), we elicited feedback on the understandability, likeability, answerability and acceptability of the questions; on any words or phrases that was difficult to understand; and participants were invited to give text feedback on the given question if they wished. Then we administered general health indicators routinely used in HBSC, covering mental health and well-being, substance use, bullying and social support. Finally, participants were invited to give feedback on the survey as a whole.

At the beginning of the questionnaire, participants indicated which country they were from, then they were provided with a description of the study and gave informed consent in line with the stipulations of the local research ethics board. Following that, participants from all countries received the same set of items:

1. Sociodemographic information (are you a boy or a girl, self-identified gender, month and year of birth, country of residence)
2. Birth-registered sex (born as male or female)
3. Gender identity (boy, girl, transgender female-to-male or male-to-female, genderqueer, genderfluid, other option; preferred pronouns)
4. Sexual orientation (attraction, love, gender of partner at last sexual intercourse, self-identified sexual orientation, sexual fantasies)
5. Feedback on the items in sections 2-4 (understandability, acceptability, ease of answering the item; any words or phrases the participant did not understand; text feedback on the item)
6. General indicators of health and its psychosocial determinants (life satisfaction, self-rated health, body image, smoking, alcohol consumption, drunkenness, bullying and cyberbullying victimisation, family support, peer support)
7. Optional text feedback on the whole survey.

In the present report, we analyse data from participants who indicated they are residents of Ireland. We used a combination of community and snowball sampling to reach LGBT+ youth in Ireland. We approached the national organisation that represents LGBT+ young people, and via the internet we identified and approached local youth work associations and groups which had LGBT+ youth groups. We sent those associations an invitation to the study and asked them to forward that to young people, aged 13–18, who access their services.

A novel aspect of the study is that parental consent was waived in all participating countries. A vital issue in LGBT+ youth research is whether the studies should be bound to requiring parental consent. While asking for passive or active parental consent has always been a central element of HBSC methodology, it can be very problematic for LGBT+ youth. The main issue is that many young people

have not discussed their orientation or gender identity (SOGI) with their parents, and those whose identity may be stigmatised in their country, or who are still in the process of considering what their sexual orientation or gender identity might be, are even less likely to have discussed this openly with their parents. Insisting on obtaining parental consent inevitably excludes young people who have not come out to their parents and/or have fears that their participation in the study would out them against their will, with potentially harmful consequences. Therefore we decided to waive parental consent. In the letter we sent to LGBT+ youth organisations we explained our decision and provided an online information material for parents. The Research Ethics Committee at the University of Galway (formerly National University of Ireland Galway) approved the research under Decision No. 2021.03.010.

The raw sample from Ireland consisted of 678 participants. However, ten (1.5%) were younger than 13 and another ten were older than 18 (1.5%). We have calculated the percentage of missing responses on the categorical variables in the survey: 155 participants did not answer any of the categorical items (22.9%). These participants were excluded from the item analysis (Section 3.1) and analysis of associations of SOGI items and health and psychosocial indicators (Sections 3.7–3.8), which therefore contain data from 503 participants. In order to maximise the available information, we included all participants in the analysis of the feedback received (Sections 3.2–3.6 and 3.9).

Data were analysed in SPSS 25. First, we obtained descriptive data for the items that classified participants' SOGI. Alongside overall frequencies, we also analysed the distribution of the responses by gender (boy or a girl) and age. Then we analysed quantitative feedback (understandability, likeability, answerability and acceptability of the questions), the words or phrases participants highlighted as being difficult to understand and conducted a thematic analysis of the text feedback they provided on each question. The aim of these analyses was to test the face validity of the items. Next, in order to investigate convergent and differential validity, we analysed the association of SOGI status with a set of standard health and well-being indicators that are routinely used in the international HBSC network. Finally, we conducted a thematic analysis of the feedback participants gave on the whole survey.

Associations were analysed by Chi-square tests. We deemed tests statistically significant which met the $p > .05$ threshold. To assess the magnitude of the effects, Cramer's V effect sizes are also reported. In line with Cohen's (1988) guidelines, absolute values of $V \leq .10$ were interpreted as negligible, between $.10 \leq V \leq .29$ as small, $.30 \leq V \leq .49$ as medium and $V \geq .50$ as large. For all statistical tests, pairwise selection was used.

Finally we formulated a conclusion on whether we suggest using the individual items in the nationally representative data collection rounds. While this information would usually located in a separate Discussion chapter, for the sake of better accessibility we have placed these conclusions at the end of each chapter of the feedback on the survey items (Sections 3.2.4, 3.3.4, 3.4.4, 3.5.4, and 3.6.4, respectively).

3. RESULTS

3.1. Descriptive findings

In this section, we present the frequency of answers for the five SOGI items in the full sample and by gender and age groups. Where there was an open-ended response option, we present a categorical analysis of the responses.

To examine the associations of SOGI with gender and age, we created contingency tables in a way that SOGI categories are rows, and genders (boys, girls) and ages (13, 14, 15, 16, 17, 18-year-olds) are in columns.

3.1.1. Sociodemographic characteristics of the sample

Table 1 presents the distribution of responses on the mandatory 'Are you a boy or a girl' item.

Table 1. Distribution of gender assessed by the 'Are you a boy or a girl' item

	Freq.	Raw %	Valid %
A boy	114	22.7	**25.3**
A girl	337	67.0	**74.7**
Valid total	**451**	89.7	100.0
Missing	52	10.3	
Total	503	100.0	

Table 2 presents the age distribution in the sample.

Table 2. Distribution of age

	Freq.	Raw %	Valid %
13-year-olds	81	16.1	**16.8**
14-year-olds	83	16.5	**17.3**
15-year-olds	108	21.5	**22.5**
16-year-olds	98	19.5	**20.4**
17-year-olds	83	16.5	**17.3**
18-year-olds	28	5.6	**5.8**
Valid total	**481**	95.6	100.0
Missing	22	4.4	
Total	503	100.0	

3.1.2. Birth-registered sex

Table 3 presents distribution of birth-registered sex.

Table 3. Distribution of birth-registered sex

	Freq.	Raw %	Valid %
Male	79	15.7	**16.4**
Female	402	79.9	**83.6**
Valid total	**481**	95.6	100.0
Missing	22	4.4	
Total	503	100.0	

Table 4 presents the association of birth-registered sex with being a boy or a girl (assessed by the mandatory 'are you a boy or a girl' HBSC item).

Table 4. Association of birth-registered sex and being a boy or a girl

	Boys *n* (%)	Girls *n* (%)	Total *n* (%)
Registered male at birth	67 (63.8)	9 (2.8)	76 (17.7)
Registered female at birth	38 (36.2)	316 (97.2)	354 (82.3)
Total	105	325	430

There were more trans girls (registered as male at birth but identifying as a girl) than trans boys (registered as female at birth but identifying as a boy). Birth-registered sex was significantly associated with being a boy or a girl ($p < .001$), and the association had a large effect size ($V = .687$).

Table 5 presents the association of birth-registered sex and age.

Table 5. Association of birth-registered sex and age

	13 years *n* (%)	14 years *n* (%)	15 years *n* (%)	16 years *n* (%)	17 years *n* (%)	18 years *n* (%)	Total *n* (%)
Registered male at birth	3 (3.8)	7 (8.4)	19 (17.9)	23 (23.5)	21 (25.6)	6 (21.4)	79 (16.6)
Registered female at birth	77 (96.3)	76 (91.6)	87 (82.1)	75 (76.5)	61 (74.4)	22 (78.6)	398 (83.4)
Total	80	83	106	98	82	28	477

In general, older participants were more likely to report they were registered as a male at birth. Birth-registered sex was significantly associated with age ($p < .001$), with a small effect size ($V = .216$).

3.1.3. Gender identity

Table 6 presents distribution of gender identity.

Table 6. Distribution of gender identity

	Freq.	**Raw %**	**Valid %**
Identifying as a boy	82	16.3	**17.4**
Identifying as a girl	231	45.9	**49.1**
Identifying as neither a boy nor girl	80	15.9	**17.0**
Other/s	77	15.3	**16.4**
Valid total	**470**	93.4	100.0
Missing	33	6.6	
Total	503	100.0	

Table 7 presents gender identity by gender (are you a boy or a girl)

Table 7. Gender identity by gender

	Boys n **(%)**	**Girls** n **(%)**	**Total** N **(%)**
Identifying as a boy	81 (77.9)	1 (0.3)	82 (19.5)
Identifying as a girl	6 (5.8)	224 (70.9)	230 (54.8)
Identifying as neither a boy nor girl	4 (3.8)	44 (13.9)	48 (11.4)
Other/s	13 (12.5)	47 (14.9)	60 (14.3)
Total	104	316	420

Gender identity was significantly associated with being a boy or a girl ($p < .001$), and the association had a large effect size ($V = .858$).

Table 8 presents gender identity by birth-registered sex (whether the participant was registered at birth as male or female).

Table 8. Gender identity by birth-registered sex

	Registered male at birth (%)	**Registered female at birth (%)**	**Total N (%)**
Identifying as a boy	58 (73.4)	24 (6.1)	82 (17.4)
Identifying as a girl	10 (12.7)	221 (56.5)	231 (49.1)
Identifying as neither a boy nor girl	4 (5.1)	76 (19.4)	80 (17.0)
Other/s	7 (8.9)	70 (17.9)	77 (16.4)
Total	79	391	470

Gender identity was significantly associated with birth-registered sex ($p < .001$), with a large effect size ($V = .664$). In general, most participants' gender identity was concordant with their birth registered sex (cisgender), although there were more trans girls (registered as male and identifying as a girl) than trans boys (registered as female and identifying as a boy). There were around four

times more participants registered as female and identifying as neither a boy nor a girl than participants of the same identity registered as male at birth.

Table 9 presents gender identity by age.

Table 9. Gender identity by age

	13 years n (%)	14 years n (%)	15 years n (%)	16 years n (%)	17 years n (%)	18 years n (%)	Total N (%)
Identifying as a boy	8 (10.4)	10 (12.2)	23 (22.1)	17 (17.5)	15 (19.0)	9 (33.3)	82 (17.6)
Identifying as a girl	38 (49.4)	45 (54.9)	49 (47.1)	41 (42.3)	43 (54.4)	14 (51.9)	230 (49.4)
Identifying as neither a boy nor girl	20 (26.0)	10 (12.2)	21 (20.2)	19 (19.6)	9 (11.4)	1 (3.7)	80 (17.2)
Other/s	11 (14.3)	17 (20.7)	11 (10.6)	20 (20.6)	12 (15.2)	3 (11.1)	74 (15.9)
Total	77	82	104	97	79	27	466

Younger participants were more likely to report their gender identity as other. Gender identity was statistically significantly associated with age (p <.005), with a small effect size (V = .135).

Table 10 presents a thematic grouping of the gender identity 'Other' text responses.

Table 10. Gender identity, other responses

	Freq.	%[a]
Genderfluid/genderqueer	20	3.8
Questioning	6	1.2
Both male and female	5	1.0
Demi-girl	5	1.0
Demi-boy/trans masculine	5	1.0
"All" / "All gender"	4	0.8
Providing pronouns (e.g. "She/them/they/he")	4	0.8
Identifying with all response categories	4	0.8
Non-binary	3	0.6
Does not know	3	0.6
Unrelated or joking comments	3	0.6
Depending on the day more masculine and others more feminine	2	0.4
Sometimes as a girl and sometimes neither gender/ one or another	2	0.4
"A girl because I have a vagina"	1	0.2
"Agender- neither non binary or boy, girl (they/them)"	1	0.2
Any but androgynous	1	0.2
"I felt like I was gender fluid when I was young but mostly girl now"	1	0.2
"I identify as both a boy and non- binary"	1	0.2
"I identify as a girl and a person"	1	0.2
"I identify myself as both a boy and a girl"	1	0.2
"I identify myself as somewhat girl but not fully"	1	0.2
"I refer to myself as girl and prefer to be referred to by others as they"	1	0.2
"My identity isn't definable by words it's purely a spectrum"	1	0.2
Total	76	16.4

[a]Proportion within those who provided a text response.

Of those who responded to the item, 16.4% provided a text response to the 'other' gender identity option. The largest number of such responses were 'genderfluid'/'genderqueer', with 20 participants (3.8%) noting this. Some other responses also reflected the concept of genderfluidity.

3.1.4. Gender of last sexual partner

Table 11 presents distribution of gender of last sexual partner.

<p align="center">Table 11. Distribution of gender of last sexual partner</p>

	Freq.	Raw %	Valid %
I haven't had sexual intercourse	355	70.6	**79.1**
A girl or woman	45	8.9	**10.0**
A boy or man	49	9.7	**10.9**
Valid total	**449**	89.3	100.0
Missing	54	10.7	
Total	503	100.0	

Table 12 presents gender of last sexual partner by gender (are you a boy or a girl).

<p align="center">Table 12: Gender of last sexual partner by gender</p>

	Boys n (%)	Girls n (%)	Total n (%)
I haven't had sexual intercourse	71 (71.7)	246 (81.2)	317 (78.9)
A girl or woman	12 (12.1)	27 (8.9)	39 (9.7)
A boy or man	16 (16.2)	30 (9.9)	46 (11.4)
Total	99	303	402

The gender of last sexual partner was not significantly associated with being a boy or a girl.

Table 13 presents gender of last sexual partner by age.

<p align="center">Table 13: Gender of last sexual partner by age</p>

	13 years n (%)	14 years n (%)	15 years n (%)	16 years n (%)	17 years n (%)	18 years n (%)	Total n (%)
I haven't had sexual intercourse	73 (100.0)	67 (89.3)	82 (82.0)	67 (72.0)	50 (64.9)	13 (48.1)	352 (79.1)
A girl or woman	0 (0.0)	5 (6.7)	11 (11.0)	14 (15.1)	8 (10.4)	6 (22.2)	44 (9.9)
A boy or man	0 (0.0)	3 (4.0)	7 (7.0)	12 (12.9)	19 (24.7)	8 (29.6)	49 (11.0)
Total	73	75	100	93	77	27	445

Younger participants were more likely to report that they had never had sexual intercourse, whereas the older age groups (17 years and 18 years) were more likely to report having sexual intercourse with a girl or a woman. The gender of last sexual partner was statistically significantly associated with age ($p < .001$), with a small effect size ($V = .261$).

3.1.5.   Sexual orientation

Table 14 presents the distribution of sexual orientation.

Table 14. Distribution of sexual orientation

	Freq.	Raw %	Valid%
Heterosexual (attracted to the opposite gender)	23	4.6	**5.3**
Mostly heterosexual	23	4.6	**5.3**
Bisexual (attracted to both girls and boys)	168	33.4	**38.6**
Gay or lesbian (attracted to the same gender)	90	17.9	**20.7**
Other	96	19.1	**22.1**
I am not sure yet	33	6.6	**7.6**
I don't understand this question	2	0.4	**0.5**
Valid total	**435**	86.5	100
Missing	68	13.5	
Total	503	100	

Table 15 presents the sexual orientation by gender.

Table 15. Sexual orientation by gender

	Boy n (%)	Girl n (%)	Total
Heterosexual (attracted to the opposite gender)	11 (11.6%)	12 (4.1%)	23 (6.0%)
Mostly heterosexual	3 (3.2%)	20 (6.9%)	23 (6.0%)
Bisexual (attracted to both girls and boys)	27 (28.4%)	124 (42.6%)	151 (39.1%)
Gay or lesbian (attracted to the same gender)	27 (28.4%)	50 (17.2%)	77 (19.9%)
Other	20 (21.1%)	59 (20.3%)	79 (20.5%)
I am not sure yet	6 (6.3%)	25 (8.6%)	31 (8.0%)
I don't understand this question	1 (1.1%)	1 (0.3%)	2 (0.5%)
Total	95	291	386

There were more girls that were attracted to both gender partners than boys. Sexual orientation was significantly associated with being a boy or a girl ($p < .001$), and the association had a small effect size ($V = .214$).

Table 16 presents sexual orientation by age.

Table 16. Sexual orientation by age

	13 years n (%)	14 years n (%)	15 years n (%)	16 years n (%)	17 years n (%)	18 years n (%)	Total n (%)
Heterosexual (attracted to the opposite gender)	1 (1.4%)	1 (1.4%)	7 (7.4%)	6 (6.6%)	4 (5.3%)	3 (11.1%)	22 (5.1%)
Mostly heterosexual	5 (7.2%)	5 (6.8%)	6 (6.3%)	3 (3.3%)	3 (3.9%)	1 (3.7%)	23 (5.3%)
Bisexual (attracted to both girls and boys)	17 (24.6%)	34 (46.6%)	27 (28.4%)	35 (38.5%)	44 (57.9%)	10 (37.0%)	167 (38.7%)
Gay or lesbian (attracted to the same gender)	16 (23.2%)	13 (17.8%)	22 (23.2%)	23 (25.3%)	10 (13.2%)	6 (22.2%)	90 (20.9%)
Other	24 (34.8%)	14 (19.2%)	24 (25.3%)	19 (20.9%)	11 (14.5%)	4 (14.8%)	96 (22.3%)
I am not sure yet	6 (8.7%)	5 (6.8%)	9 (9.5%)	4 (4.4%)	4 (5.3%)	3 (11.1%)	31 (7.2%)
I don't understand this question	0 (0.0%)	1 (1.4%)	0 (0.0%)	1 (1.1%)	0 (0.0%)	0 (0.0%)	2 (0.5%)
Total	69	73	95	91	76	27	431

Sexual orientation was significantly associated with age ($p < .001$), and the association had a medium effect size ($V = .312$). While there is no clear sexual orientation pattern across different ages, it seems that numbers of lesbian/gay participants are relatively stable across ages, while the occurrence of 'other' responses decrease over age.

Table 17 presents a thematic grouping of the sexual orientation 'Other' text responses. Since many participants indicated both their sexual orientation and romantic preferences, we added a category which reflects the distinction between these two.

Table 17. Gender identity, other response categories

	Freq.	%ᵃ
Pansexual	46	10.6
Omnisexual	16	3.7
Asexual	12	2.8
Difference between sexual orientation and romantic attraction	7	1.6
No labels	5	1.1
Queer	5	1.1
Aromantic	4	0.9
Panromantic	4	0.9
Attracted to boys	2	0.5
Biromantic	2	0.5
Bisexual	2	0.5
Polysexual	2	0.5
Abro-aromantic	1	0.2
Attracted to all genders	1	0.2
Attracted to girls	1	0.2
Confused	1	0.2
Demi-romantic	1	0.2

	Freq.	%a
Demisexual	1	0.2
Fluidity of orientations	1	0.2
Greysexual	1	0.2
Heteroromantic	1	0.2
Homoromantic	1	0.2
Moneysexual	1	0.2
Mostly gay	1	0.2
Mostly homosexual	1	0.2
No attraction to any genders	1	0.2
No preference	1	0.2
Sapphic	1	0.2
Superstraight	1	0.2
Unsure	1	0.2
Total	**125**	**28.7**

aProportion within those who answered the item.

The most frequently mentioned 'Other' responses were: pansexual (10.6%), omnisexual (3.7%), and asexual (2.8%). Some participants answered the item in relation to their attraction, or indicated both their sexual and romantic preferences or attraction (e.g. "*Asexual homoromantic*"; "*Bisexual mostly attracted to boys*"). While coding the responses, it came to our attention that some participants gave similar, very specific responses (e.g. "*omnisexual (all genders with preferences*" (sic), "*omnisexual (attraction to all genders but with preferences)*" (sic), "*Omnisexual (I like all genders but have a preference to women)*" (sic), "*Omnisexual-attracted to all genders with a prefernce*" (sic)).

3.1.6. Sexual fantasies

Table 18 presents the distribution of who respondents sexual fantasise about.

Table 18. Distribution of target of sexual fantasies

	Freq.	Raw %	Valid%
Girls or women	86	17.1	**19.9**
Boys or men	58	11.5	**13.4**
Both	171	34.0	**39.5**
I don't daydream about sex	118	23.5	**27.3**
Valid total	**433**	86.1	100.0
Missing	70	13.9	
Total	86	17.1	19.9

Table 19 presents target of sexual fantasies by gender.

Table 19. Target of sexual fantasies by gender

	Boy *n* (%)	Girl *n* (%)	Total
Girls or women	10 (10.5)	64 (22.0)	74 (19.2)
Boys or men	31 (32.6)	26 (8.9)	57 (14.8)
Both	32 (33.7)	120 (41.2)	152 (39.4)
I don't daydream about sex	22 (23.2)	81 (27.8)	103 (26.7)
Total	95	291	386

A high percentage of participants reported that they have sexual fantasies about both-gender partners. Gender of the participants was significantly associated with sexual fantasies ($p < .001$), and the association had a medium effect size ($V = .296$).

Table 20 presents target of sexual fantasies by age.

Table 20. Target of sexual fantasies by age

	13 years *n* (%)	14 years *n* (%)	15 years *n* (%)	16 years *n* (%)	17 years *n* (%)	18 years *n* (%)	Total *n* (%)
Girls or women	16 (23.5)	13 (18.1)	19 (20.0)	18 (19.8)	14 (18.4)	6 (22.2)	86 (20.0)
Boys or men	3 (4.4)	7 (9.7)	11 (11.6)	19 (20.9)	12 (15.8)	5 (18.5)	57 (13.3)
Both	20 (29.4)	31 (43.1)	35 (36.8)	34 (37.4)	39 (51.3)	11 (40.7)	170 (39.6)
I don't daydream about sex	29 (42.6)	21 (29.2)	30 (31.6)	20 (22.0)	11 (14.5)	5 (18.5)	116 (27.0)
Total	68	72	95	91	76	27	429

Younger age groups (13-15 years) were more likely to report not having sexual fantasies compared to their older counterparts. The association between sexual fantasies and age was significant ($p = .019$) and the association had a small effect size ($V = .149$).

3.2. Feedback on the birth-registered sex item

What sex were you registered at birth?
□ Male
□ Female

3.2.1. Quantitative feedback

Table 21 presents the understandability, likeability, answerability and acceptability of the birth-registered sex item.

Table 21. Quantitative feedback on the birth-registered sex item

	Understandability		Likeability		Answerability		Acceptability	
	n	Valid %	*n*	Valid %	*n*	Valid %	*n*	Valid %
Strongly disagree	12	3.0	12	3.0	16	4.0	17	4.2
Disagree	0	0.0	35	8.6	13	3.2	44	10.9
Neither	19	4.7	151	37.3	39	9.6	111	27.5
Agree	115	28.5	128	31.6	129	31.9	136	33.7
Strongly agree	258	63.9	79	19.5	208	51.4	95	23.6
TOTAL	404		405		405		403	

The majority of participants found the item understandable (92.4%) and easy to answer (83.3%). However, 11.6% of the participants did not like the item, and 15.1% indicated that the item was not acceptable.

3.2.2. Words or phrases difficult to understand

Table 22 presents words or phrases participants highlighted as difficult to understand.

Table 22. Words or phrases in the birth-registered sex item that were difficult to understand

Category	Freq.	%[a]
No difficult words	144	35.6
Unrelated comment	6	1.5
"Registered"	3	0.7
"Gender"	3	0.7
"You were born"	1	0.2
Total	**157**	**38.7**

[a]Proportion within those who answered questions on understandability, likeability, answerability and acceptability.

The vast majority of those who left any comment indicated that there were no difficult words or phrases in the question. A very small number of participants indicated "registered" and "gender" to be difficult to understand.

3.2.3. Comments on the item

Table 23 presents a thematic grouping of the comments participants made on the birth-registered sex item.

Table 23. Comments on the birth-registered sex item

Category	Freq.	%[a]
No comment or no change is needed	93	23
Item inappropriate, invasive or uncomfortable	17	4.2
Add "other"	16	4
Negative feedback	15	3.7
Add "intersex"	13	3.2
Change "registered" to "assigned"	7	1.7
Unrelated comment	7	1.7
Add "prefer not to say"	6	1.5
Positive feedback	6	1.5
Mixed feedback	3	0.7
"Gender" may not be understood	1	0.2
"Gender" and "sex" may be conflated	1	0.2
Does not care	1	0.2
Question should be tailored to different age groups	1	0.2
Suggest other terminology/abbreviations	1	0.2
The item is irrelevant	1	0.2
Total	**189**	**46.4**

[a]Proportion within those who answered questions on understandability, likeability, answerability and acceptability.

Around half of those participants who responded the quantitative feedback items indicated that the item needs no change. However, 4% noted that the item may be uncomfortable to some participants, for instance those who are trans or do not fit these categories. Similar rates of participants suggested adding "other" response option (4.0%) or adding "intersex" as a response option (3.2%). Negative feedback (3.7%) included that the item is invasive, inappropriate or unnecessary, especially for trans participants. A small number of participants (1.7%) suggested that the word "registered" should be changed to "assigned".

3.2.4. Researchers' conclusion

In general, the majority of the participants found the item satisfactory. It should be noted, though, that 15% of them did not find the question acceptable.

While some participants indicated that "intersex" and/or "other" may be added to the response options, this would limit cross-national comparability and therefore we do not recommend such additions.

3.3. Feedback on the gender identity item

Identities of people are varied: some people identify themselves as boys, others as girls, and there are people who don't feel represented by either boy or girl. Please, choose the option that you feel more identified with:

□ I identify myself as a boy

□ I identify myself as a girl

□ I identify myself neither boy nor girl

□ Other/s: _____

3.3.1. Quantitative feedback

Table 24 presents understandability, likeability, answerability and acceptability of the gender identity item.

Table 24. Quantitative feedback on the Gender Identity Item

	Understandability		Likeability		Answerability		Acceptability	
	n	Valid %	*n*	Valid %	*n*	Valid %	*n*	Valid %
Strongly disagree	5	1.5	4	1.2	4	1.2	4	1.2
Disagree	2	0.60	10	3.0	27	8.1	5	1.5
Neither	21	6.2	99	29.4	47	14.0	52	15.4
Agree	118	17.4	139	41.2	115	34.3	152	45.1
Strongly agree	195	57.2	85	25.2	142	42.4	124	36.8
TOTAL	341		337		335		337	

The majority of participants found the item acceptable (81.9%), easy to answer (76.7%) and to understand (74.6%). However, 4.2% of the participants did not like the item, and 9.3% had problems with answerability.

3.3.2. Words or phrases difficult to understand

Table 25 presents words or phrases participants highlighted as difficult to understand.

Table 25. Words or phrases in the birth-registered sex item that were difficult to understand

Category	Freq.	%ᵃ
No difficult words	110	32.3
"Identify" or "Identified"	2	0.6
"The option that you feel more identified with"	1	0.3
"Gender identity"	1	0.3
"Other/s"	1	0.3
"Represented"	1	0.3
Unrelated	1	0.3
Total	**117**	**34.4**

ᵃProportion within those who answered questions on understandability, likeability, answerability and acceptability.

The vast majority of those who left any comment explicitly indicated that there were no difficult words or phrases in the question. A very small number of participants indicated that the words "identity" and "identify/identified" were difficult to understand.

3.3.3. Comments on the item

Table 26 presents a thematic grouping of the comments participants made on the birth-registered sex item.

<p align="center">Table 26. Comments on the birth-registered sex item</p>

Category	Freq.	%[a]
No comment or no change is needed	89	26.1
Positive feedback	8	2.3
Unrelated comment	6	1.8
Add "non-binary"	4	1.2
Add "unsure" or "don't know"	4	1.2
Add more options	4	1.2
Item could be simplified	4	1.2
Delete "identify"	3	0.9
Genderfluidity	3	0.9
Item inappropriate, invasive or uncomfortable	2	0.6
Negative feedback	2	0.6
Add "both"	1	0.3
Age-appropriate terms ("girl/woman", "boy/man")	1	0.3
Fluidity over time	1	0.3
Not clear whether the question refers to cis or trans respondents	1	0.3
Total	**133**	**39.2**

<p align="center">[a]Proportion within those who answered questions on understandability, likeability, answerability and acceptability.</p>

Around quarter of those participants who responded to the quantitative feedback items explicitly indicated that the item needs no change. Some participants noted that the response options could be more various, for instance include [I identify as] "both", "non-binary", "I am unsure", or "I don't know". A small number of participants indicated that the term "identify" is unnecessary, that the response options could have been formulated in a simpler way (e.g. "I am a girl" instead of "I identify myself as a girl"). Some participants noted that someone's gender identity might be fluid and change over time. One participant said that as they are 18 years old, they would prefer to use the term "woman" or "man" instead of "girl" or "boy". A very small number of participants felt that the item is invasive, inappropriate or uncomfortable, or felt negatively about the item (1.2%); a larger but still few participants felt positively about the item (2.3%).

3.3.4. Researchers' conclusion

In general, the majority of the participants found the item satisfactory. Some of them requested further response options such as "non-binary", "I don't know" or "unsure". However, given that

there is an open-ended textbox for other identities, we believe that the response options do not need to be changed. However, **it is proposed that the question remain the same** "Identities of people are varied: …" **but the response options** "I identify myself as…" **are simplified** as "I am a boy", "I am a girl", "I am neither a boy or a girl".

3.4. Feedback on the gender of last sexual partner item

> **The last time you had sexual intercourse, was your partner… (Sometimes sexual intercourse is called "making love", "having sex" or "going all the way")**
> □ A girl or a woman
> □ A boy or a man
> □ I haven't had sexual intercourse

3.4.1.   Quantitative feedback

Table 27 presents understandability, likeability, answerability and acceptability of the gender of last sexual partner item.

Table 27. Quantitative

feedback on the Gender of last sexual partner Item

	Understandability		Likeability		Answerability		Acceptability	
	n	Valid %	*n*	Valid %	*n*	Valid %	*n*	Valid %
Strongly disagree	3	0.9	19	5.8	8	2.5	25	7.6
Disagree	3	0.9	66	20.1	17	5.2	50	15.3
Neither	12	3.7	144	43.9	39	12.0	117	35.8
Agree	126	38.4	51	15.5	132	40.5	84	25.7
Strongly agree	184	56.1	48	14.6	130	39.9	51	15.6
TOTAL	328		328		326		327	

The majority of participants found the item understandable (94.5%) and easy to answer (80.4%). However, 25.9% did not like the item, and 22.9% indicated that the item was not acceptable.

3.4.2.   Words or phrases difficult to understand

Table 28 presents words or phrases participants highlighted as difficult to understand.

Table 28. Words or phrases in the Gender of last sexual partner item that were difficult to understand

Category	Freq.	%ª
No difficult words	103	25.4
"Intercourse"	2	0.4
"Sex"	1	0.2
Total	**106**	**26.0**

ªProportion within those who answered questions on understandability, likeability, answerability and acceptability.

The vast majority of those who left any comment indicated that there were no difficult words or phrases in the question. A very small number of participants indicated that the words "identity" and "identify/identified" were difficult to understand.

3.4.3. Comments on the item

Table 29 presents a thematic grouping of the comments participants made on the gender of last sexual partner item.

Table 29. Comments on the Gender of last sexual partner sex item

Category	Freq.	%[a]
Item inappropriate, invasive or uncomfortable	66	16.2
Add "non-binary"	16	3.9
No comment or no change is needed	14	3.4
Add "other"	8	1.9
Age appropriateness	7	1.7
Positive feedback	7	1.7
Unrelated comment	5	1.2
Add "gender non-conforming"	3	0.7
Make question more inclusive	2	0.4
Negative comment	2	0.4
"Sex"	1	0.02
Add "don't want to have sex"	1	0.02
Change "intercourse" to "experience"	1	0.02
Change "sexual intercourse" to "sexual activity"	1	0.02
Cis or trans partner	1	0.02
Total	**135**	**31.6**

[a]Proportion within those who answered questions on understandability, likeability, answerability and acceptability.

Some participants who responded to the quantitative feedback items indicated that the question was invasive or uncomfortable (16.2%). Others suggested that the partner could have been "non-binary", "gender non-conforming", or "other" and suggested adding this response option (6.5%). Further issues raised less frequently by participants included that the question is not age-appropriate, it suggests sex is normative, that it is not inclusive of the experiences of asexual/aromantic people, and that gender of the sexual partners may not necessarily reflect the identity of the respondent.

3.4.4. Researchers' conclusion

Most important from this feedback is that a number of participants felt this item is invasive or uncomfortable, sometimes elaborating this is not what they would ask from someone else, however there were a very few participants who also added this might be appropriate in a health-related survey. While we understand the item does not specify whether the partner was cis or trans and do not reflect gender identities other than "a boy/man" and "a girl/woman", we believe that the number of those in the general population who would need such response categories is very low. However, **it is important to locate the item among other questions on sexual health**, and **ensure** in the HBSC 2022 Ireland pilot study **that it is acceptable for the general youth population**.

3.5. Feedback on the sexual orientation item

How would you describe your sexual orientation? We mean which gender partners are you attracted to.

□ Heterosexual

□ Mostly heterosexual

□ Bisexual (attracted to both girls and boys)

□ Gay or lesbian (attracted to the same gender)

□ Other: _____

□ I am not sure yet

□ I don't understand this question

3.5.1. Quantitative feedback

Table 30 presents understandability, likeability, answerability and acceptability of the sexual orientation item.

Table 30. Quantitative feedback on the sexual orientation item

	Understandability		Likeability		Answerability		Acceptability	
	n	Valid %	*n*	Valid %	*n*	Valid %	*n*	Valid %
Strongly disagree	7	2.2	6	1.9	7	2.2	4	1.3
Disagree	4	1.3	12	3.8	21	6.6	9	2.8
Neither	12	3.8	79	24.9	49	15.5	48	15.1
Agree	101	31.9	137	43.2	108	34.1	153	48.1
Strongly agree	193	60.9	83	26.2	132	41.6	104	32.7
TOTAL	317		317		317		318	

The majority of participants liked the item (69.4%) and found it understandable (92.8%); a relatively large proportion, 75.7% of the participants found it easy to answer and 80.8% indicated that the item was acceptable.

3.5.2. Words or phrases difficult to understand

Table 31 presents words or phrases participants highlighted as difficult to understand.

Table 31. Words or phrases in the sexual orientation item that were difficult to understand

Category	Freq.	%[a]
No difficult words	89	28.0
"Heterosexual"	2	0.6
"Mostly heterosexual"	2	0.6
"Sexual orientation"	2	0.6
Negative feedback	1	0.3
Positive feedback	1	0.3
Unrelated comment	1	0.3
Total	**98**	**30.7**

[a]Proportion within those who answered questions on understandability, likeability, answerability and acceptability.

More than a quarter of those who answered the quantitative feedback questions indicated that there were no difficult words or phrases in the question (28%). A very small number of participants indicated that the words "heterosexual", "mostly heterosexual" and "sexual orientation" were difficult to understand.

3.5.3. Comments on the item

Table 32 presents a thematic grouping of the comments participants made on the sexual orientation item.

Table 32. Comments on the sexual orientation item

Category	Freq.	%[a]
No comment or no change is needed	71	22.3
Definition problem	13	4.1
Add "asexual"	7	2.2
Add "pansexual"	7	2.2
Positive feedback	6	1.9
Remove "mostly heterosexual"	5	1.6
Add more options	4	1.3
Add "aromantic"	3	0.9
Unrelated comment	3	0.9
Add "mostly gay/lesbian"	2	0.6
Add "mostly homosexual"	2	0.6
Add romantic attraction question	2	0.6
Allow selection of multiple options	2	0.6
Inappropriate	2	0.6
Negative feedback	2	0.6
Add "I'd prefer not to say"	1	0.3
Add "mostly bisexual"	1	0.3
Add questioning option	1	0.3
Ask open ended question instead	1	0.3
Confusion in relation to "mostly heterosexual"	1	0.3
Item does not reflect non-binary experience	1	0.3
Item inappropriate, invasive or uncomfortable	1	0.3
Provide a scale	1	0.3
Total	**139**	**43.4**

[a]Proportion within those who answered questions on understandability, likeability, answerability and acceptability.

Some participants (4.1%) reported that there were problems with the definitions used in the item (i.e. what does "heterosexual", "bisexual", "lesbian" and "gay" mean; one participant questioned whether lesbian and gay can be combined into one response option). Some participants (8.7%) suggested adding additional response options to the item such as "aromantic", "asexual" and "pansexual". Some people argued that the "mostly heterosexual" item is problematic and suggested deleting this response option. Some participants argued that multiple choices should be allowed. One participant suggested using a sliding scale. Some participants made reference to sexual fluidity and the difficulty of choosing from only a pre-set range of items. One participant mentioned that they would like a 'I'd prefer not to say" response option.

3.5.4. Researchers' conclusion

In general, the majority of the participants found the item satisfactory. Some participants found the "Mostly heterosexual" response option difficult to understand or unnecessary. On the other hand, a small but remarkable proportion (4.6%) of the participants chose this option to describe their sexual orientation. A small number of participants also suggested that a "mostly" option should be included for other responses (e.g. "Mostly bisexual" or "Mostly gay or lesbian"). While a number of participants indicated that "aromantic", "asexual" and "pansexual" should be added to the response options, this would limit cross-national comparability and therefore **we do not recommend these additions**. We also believe that despite the **definition** problems some participants raised in relation to the "bisexual" and "gay or lesbian" response options, **these should be left in their current form** to preserve cross-cultural comparability.

3.6. Feedback on the sexual fantasies item

When you think or daydream about sex, do you dream about:

□ Girls or women

□ Boys or men

□ Both

□ I don't daydream about sex

3.6.1. Quantitative feedback

Table 33 presents understandability, likeability, answerability and acceptability of the sexual fantasies item.

<p align="center">Table 33. Quantitative feedback on the sexual fantasies item</p>

	Understandability		Likeability		Answerability		Acceptability	
	n	Valid %	*n*	Valid %	*n*	Valid %	*n*	Valid %
Strongly disagree	5	1.6	24	7.9	8	2.6	24	7.9
Disagree	0	0.0	48	15.8	28	9.2	52	17.1
Neither	13	1.9	116	38.2	47	15.5	108	35.5
Agree	133	43.6	68	22.4	125	41.1	78	25.7
Strongly agree	154	50.5	48	15.8	96	31.6	42	13.8
TOTAL	305		304		304		304	

A high number of participants found the item understandable (94.1%) and easy to answer (72.7%). However, 23.7% of the participants did not like the item, and 25% indicated that the item is not acceptable.

3.6.2. Words or phrases difficult to understand

Table 34 presents words or phrases participants highlighted as difficult to understand.

<p align="center">Table 34. Words or phrases in the sexual fantasies item that were difficult to understand</p>

Category	Freq.	%[a]
No difficult words	91	29.8
Negative feedback	1	0.3
Total	**92**	**30.1**

<p align="center">[a]Proportion within those who answered questions on understandability, likeability,
answerability and acceptability.</p>

The majority of participants that left any comment indicated that there were no difficult words or phrases in the question. One participant responded with negative feedback, indicating that the question is "invasive and weird".

3.6.3. Comments on the item

Table 35 presents a thematic grouping of the comments participants made on the sexual fantasies item.

Table 35. Comments on the sexual fantasies item

Category	Freq.	%ᵃ
No comment or no change is needed	65	21.4
Item inappropriate, invasive or uncomfortable	21	6.9
Add "non-binary"	15	4.9
Add "other"	8	2.6
Unrelated comment	6	2.0
Age appropriateness	4	1.3
Positive feedback	4	1.3
Add "any gender"	3	1.0
Unnecessary	3	1.0
Change to male/female	2	0.7
Separate sexual and romantic attraction	1	0.3
Suggested to change the wording	1	0.3
Total	**133**	**43.8**

ᵃProportion within those who answered questions on understandability, likeability, answerability and acceptability.

Many participants who responded indicated that the item needs no changes (21.4%). However, 6.9% of the participants indicated that the item was invasive or uncomfortable. A small number (1.3%) commented that the item may not be age appropriate for those considered too young or below the age of consent. Around a fifth of the participants suggested the inclusion of more responses such as "any gender", "non binary" or "other" (the latter including "gender-nonconforming"). One participant questioned whether sexual fantasies item is needed while they already gave information on their sexual orientation. One participant suggested that it may be better to change the phrase "do you dream about" to "do you imagine". It was highlighted in one comment that there should be separate questions on sexual and romantic fantasies. There were some potential themes identified when analysing the comments, which may suggest that the questionnaire was being completed in groups.

3.6.4. Researchers' conclusion

Some participants expressed that they would like to see more response options than "girls or women", "boys or men", and "both", however we believe that the number of those who would choose such options would not compensate for the additional cognitive burden of adding extra response options. A relatively large number of participants expressed that they found the item too invasive, which corresponds with the finding that around a quarter of participants indicated that they did not like the item, or found it unacceptable. We should consider **grouping the item with the mandatory sexual health items**, or **do not use the item** in the main study **at all**. However, feedback from young people participating in the HBSC 2022 study should be elicited before that decision.

3.7. Sexual and gender minority status and health and psychosocial outcomes

In this section, we compare how sexual and gender minority youth fare on a set of standard HBSC indicators of health, compared to their non-minority peers. Sexual minority or non-minority status was classified using the sexual orientation question. For distribution of the sexual orientation questions, see **Table 14** above. To categorise gender minority youth, we combined responses of the birth-registered sex and gender identity, using the so-called 'two-step' approach, in line with the approach used in the HBSC 2018 study in Spain (Ciria Barreiro, 2022):

(1) Those who indicated they were registered at birth as male and identified as boy were categorised as cisgender boys.
(2) Those registered at birth as female and identified as girls were categorised as cisgender girls.
(3) Those registered at birth as female and identified as boys were categorised as transgender boys.
(4) Those registered at birth as male and identified as girls were categorised as transgender girls.
(5) Those registered at birth as male and indicated that they identify neither as a boy or girl, or used the open-ended textbox to indicate any other gender identity were categorised as non-binary or other gender minority born as male.
(6) Those registered at birth as female and indicated that they identify neither as a boy or girl, or used the open-ended textbox to indicate any other gender identity were categorised as non-binary or other gender minority born as female.

We think it is important to see distribution of the health outcomes across these groups, therefore we have included descriptive crosstabulations for all of these associations. However, the tables contained many cells with very low numbers, which impacts the reliability of statistical analyses. Therefore we created grouped variables with three values for both sexual orientation and gender identity:

1) Sexual orientation: heterosexual / sexual minority (reporting any other orientation than heterosexual) / unsure about their sexual orientation
2) Gender identity: cisgender (cisgender boys and girls) / binary transgender (transgender boys and girls) / non-binary (non-binary or other gender minority youth born as male or female).

The outcomes included indicators of mental well-being (self-rated health, life satisfaction, psychosomatic symptoms, body image), risk behaviours (smoking cigarettes, consuming alcohol and being drunken in lifetime or the last 30 days), bullying victimisation (face-to-face and cyberbullying), and psycho-social factors (social support from family and peers). We dichotomised all health indicators into favourable and unfavourable outcomes, in line with how they are used and reported in the international HBSC study (Inchley et al., 2020; Inchley et al., 2018).

To examine the associations of SOGI with health outcomes, we created contingency tables in a way that the trichotomous SOGI categories are rows, and health outcomes are in columns. We used Chi-square tests to check if the associations were significant. We also give Cramer's V effect size to indicate the magnitude of the associations. As described in Section 3.1. (Descriptive findings), $V \leq .10$ were interpreted as negligible, V between .10 and .29 as small, V between .30 and .49 as medium and $V \geq .50$ as large. For all statistical tests, pairwise selection was used.

As presented in Table 14, there were 2 participants who said they did not understand the question on sexual orientation. Due to their very low number, we have excluded them from the comparisons across sexual orientation groups .

3.7.1. Self-rated health

Tables 36a and **36b** present the associations between sexual orientation and self-rated health.

Table 36a. Self-rated health across all sexual orientation groups (*N* = 302)

Sexual orientation	Excellent health *n* (%)	Not excellent health *n* (%)
Heterosexual	2 (18.2)	9 (81.8)
Mostly heterosexual	4 (26.7)	11 (73.3)
Bisexual	12 (9.2)	119 (90.8)
Gay or lesbian	7 (11.5)	54 (88.5)
Other	5 (7.7)	60 (92.3)
Unsure	3 (15.8)	16 (84.2)

Table 36b. Self-rated health across sexual orientation groups, sexual minorities grouped together (*N* = 302)

Sexual orientation	Excellent health *n* (%)	Not excellent health *n* (%)
Heterosexual	2 (18.2)$_a$	9 (81.8)$_a$
Sexual minority	28 (10.3)$_a$	244 (89.7)$_b$
Unsure	3 (15.8)$_a$	16 (84.2)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Sexual orientation was not significantly associated with self-rated health (*p* = .558), although there is a 7% difference between the proportion of heterosexual and sexual minority youth who say their health is excellent, at the expense of sexual minorities. Due to the low cell sizes, this result must be treated with caution.

Tables 37a and **37b** present the associations between gender identity and self-rated health.

Table 37a. Self-rated health across all gender identity groups (N = 304)

Gender	Excellent health n (%)	Not excellent health n (%)
Cisgender boy	5 (14.3)	30 (85.7)
Cisgender girl	18 (11.8)	120 (88.2)
Transgender boy	3 (15.8)	16 (84.2)
Transgender girl	0 (0)	4 (100)
Non-binary gender, born as male	0 (0)	6 (100)
Non-binary gender, born as female	9 (8.7)	95 (91.3)

Table 37b. Self-rated health across gender identity groups, gender minorities grouped together (N = 304)

Gender	Excellent health n (%)	Not excellent health n (%)
Cisgender	21 (12.3)$_a$	150 (87.7)$_a$
Transgender	3 (13.0)$_a$	20 (87.0)$_a$
Non-binary	9 (8.2)$_a$	101 (91.8)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender identity and self-rated health were not associated (p = .526).

3.7.2. Life satisfaction

Tables 38a and **38b** present the associations between sexual orientation and life satisfaction.

Table 38a. Life satisfaction across all sexual orientation groups (N = 301)

Sexual orientation	High life satisfaction n (%)	Low life satisfaction n (%)
Heterosexual	6 (50.0)	6 (50.0)
Mostly heterosexual	9 (60.0)	6 (40.0)
Bisexual	41 (31.3)	90 (68.7)
Gay or lesbian	22 (36.1)	39 (63.9)
Other	18 (28.6)	45 (71.4)
Unsure	10 (52.6)	9 (47.4)

Table 38b. Life satisfaction across sexual orientation groups, sexual minorities grouped together (N = 301)

Sexual orientation	High life satisfaction n (%)	Low life satisfaction n (%)
Heterosexual	6 (50.0)$_a$	6 (50.0)$_a$
Sexual minority	90 (33.3)$_b$	180 (66.7)$_a$
Unsure	10 (52.6)$_a$	9 (47.4)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Sexual orientation was not significantly associated with life satisfaction (p = .129).

Tables 39a and **39b** present the association between gender identity and life satisfaction.

Table 39a. Self-rated health across all gender identity groups (*N* = 303)

Gender	High life satisfaction *n* (%)	Low life satisfaction *n* (%)
Cisgender boy	21 (60.0)	14 (40.0)
Cisgender girl	61 (44.9)	75 (55.1)
Transgender boy	2 (10.5)	17 (89.5)
Transgender girl	1 (25.0)	3 (75.0)
Non-binary gender, born as male	3 (50.0)	3 (50.0)
Non-binary gender, born as female	19 (18.4)	84 (81.6)

Table 39b. Self-rated health across gender identity groups, gender minorities grouped together (*N* = 303)

Gender	High life satisfaction *n* (%)	Low life satisfaction *n* (%)
Cisgender	82 (48.0)$_b$	89 (52.0)$_a$
Transgender	3 (13.0)$_b$	20 (87.0)$_a$
Non-binary	22 (20.2)$_b$	87 (79.8)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender identity and life satisfaction were significantly associated (*p* < .001), with a medium effect size (V = .303). Transgender and non-binary participants were significantly less likely to report high life satisfaction than their cisgender peers.

3.7.3. Psychosomatic symptoms

Tables 40a and **40b** present the associations between sexual orientation and frequent psychosomatic symptoms.

Table 40a. Frequent psychosomatic symptoms across all sexual orientation groups (*N* = 293)

Sexual orientation	No frequent symptoms *n* (%)	Frequent symptoms *n* (%)
Heterosexual	2 (27.3)	8 (72.7)
Mostly heterosexual	0 (0)	15 (100)
Bisexual	26 (20.3)	102 (79.7)
Gay or lesbian	9 (15.3)	50 (84.7)
Other	3 (4.9)	58 (95.1)
Unsure	0 (0)	19 (100)

Table 40b. Frequent psychosomatic symptoms across sexual orientation groups, sexual minorities grouped together (*N* = 293)

Sexual orientation	No frequent symptoms *n* (%)	Frequent symptoms *n* (%)
Heterosexual	3 (27.3)$_a$	8 (72.7)$_a$
Sexual minority	38 (14.4)$_a$	225 (85.6)$_a$
Unsure	0 (0)$_a$	19 (100)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

The presence of frequent psychosomatic symptoms was not significantly associated with sexual orientation (*p* = .093).

Tables 41a and **41b** present the associations between gender identity and life satisfaction.

Table 41a. Frequent psychosomatic symptoms across all gender identity groups (*N* = 303)

Gender	No frequent symptoms *n* (%)	Frequent symptoms *n* (%)
Cisgender boy	11 (32.4)	23 (67.6)
Cisgender girl	22 (16.7)	110 (83.3)
Transgender boy	1 (5.3)	18 (94.7)
Transgender girl	0 (0)	4 (100)
Non-binary gender, born as male	1 (16.7)	5 (83.3)
Non-binary gender, born as female	7 (7.0)	93 (93.0)

Table 41b. Frequent psychosomatic symptoms across gender identity groups, gender minorities grouped together (*N* = 303)

Gender	No frequent symptoms *n* (%)	Frequent symptoms *n* (%)
Cisgender	33 (19.9)$_a$	133 (80.1)$_b$
Transgender	1 (4.3)$_a$	22 (95.7)$_b$
Non-binary	8 (7.5)$_a$	98 (92.5)$_b$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was significantly associated with frequent psychosomatic symptoms (*p* = .007), with a small effect size (V = .185). Non-binary and transgender participants were more likely to report frequent psychosomatic symptoms than their cisgender peers.

3.7.4. Body image

Tables 42a and **42b** present the associations between sexual orientation and body satisfaction.

Table 42a. Body satisfaction across all sexual orientation groups (*N* = 293)

Sexual orientation	Satisfied with own body *n* (%)	Not satisfied with own body *n* (%)
Heterosexual	3 (27.3)	8 (72.7)
Mostly heterosexual	3 (20.0)	12 (80.0)
Bisexual	38 (29.9)	89 (70.1)
Gay or lesbian	26 (44.8)	32 (55.2)
Other	21 (34.4)	40 (65.6)
Unsure	6 (31.6)	13 (68.4)

Table 42b. Body satisfaction across sexual orientation groups, sexual minorities grouped together (*N* = 293)

Sexual orientation	Satisfied with own body *n* (%)	Not satisfied with own body *n* (%)
Heterosexual	3 (27.3)$_a$	8 (72.7)$_a$
Sexual minority	88 (33.7)$_a$	173 (66.3)$_a$
Unsure	6 (31.6)$_a$	13 (68.4)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Body satisfaction was not significantly associated with sexual orientation (*p* = .893).

Tables 43a and **43b** present the association of gender identity and body satisfaction.

Table 43a. Body satisfaction across all gender identity groups (*N* = 293)

Gender	Satisfied with own body *n* (%)	Not satisfied with own body *n* (%)
Cisgender boy	14 (41.2)	20 (58.8)
Cisgender girl	40 (30.5)	91 (69.5)
Transgender boy	7 (36.8)	12 (63.2)
Transgender girl	1 (25.0)	3 (75.0)
Non-binary gender, born as male	2 (33.3)	4 (66.7)
Non-binary gender, born as female	34 (34.3)	65 (65.7)

Table 43b. Body satisfaction across gender identity groups, gender minorities grouped together (*N* = 293)

Gender	Satisfied with own body *n* (%)	Not satisfied with own body *n* (%)
Cisgender	54 (32.7)$_a$	111 (67.3)$_a$
Transgender	8 (34.8)$_a$	15 (65.2)$_a$
Non-binary	36 (34.3)$_a$	69 (65.7)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Body satisfaction was not associated with gender minority status (*p* = .956).

3.7.5.   Smoking cigarettes (lifetime)

Tables 44a and **44b** present the associations between sexual orientation and lifetime cigarette smoking.

Table 44a. Lifetime cigarette smoking across all sexual orientation groups (*N* = 288)

Sexual orientation	Never smoked cigarettes lifetime *n* (%)	Ever smoked cigarettes lifetime *n* (%)
Heterosexual	9 (81.8)	2 (18.2)
Mostly heterosexual	13 (92.9)	1 (7.1)
Bisexual	93 (75.0)	31 (25.0)
Gay or lesbian	45 (76.3)	14 (23.7)
Other	46 (75.4)	15 (24.6)
Unsure	17 (89.5)	2 (10.5)

Table 44b. Lifetime cigarette smoking across sexual orientation groups, sexual minorities grouped together (*N* = 288)

Sexual orientation	Never smoked cigarettes lifetime *n* (%)	Ever smoked cigarettes lifetime *n* (%)
Heterosexual	9 (81.8)$_a$	2 (18.2)$_a$
Sexual minority	197 (76.4)$_a$	61 (23.6)$_a$
Unsure	17 (89.5)$_a$	2 (10.5)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Lifetime cigarette smoking was not significantly associated with sexual orientation (*p* = .393). This finding, however, must be treated with caution due to some cells with very low sizes.

Tables 45a and **45b** present the association of gender identity and lifetime cigarette smoking.

Table 45a. Lifetime cigarette smoking across all gender identity groups (*N* = 290)

Gender	Never smoked cigarettes lifetime *n* (%)	Ever smoked cigarettes lifetime *n* (%)
Cisgender boy	28 (82.4)	6 (17.6)
Cisgender girl	100 (77.5)	29 (22.5)
Transgender boy	13 (72.2)	5 (27.8)
Transgender girl	3 (75.0)	1 (25.0)
Non-binary gender, born as male	6 (100)	0 (0)
Non-binary gender, born as female	75 (75.8)	24 (24.2)

Table 45b. Lifetime cigarette smoking across gender identity groups, gender minorities grouped together (*N* = 290)

Gender	Never smoked cigarettes lifetime *n* (%)	Ever smoked cigarettes lifetime *n* (%)
Cisgender	128 (78.5)$_a$	35 (21.5)$_a$
Transgender	16 (72.7)$_a$	6 (27.3)$_a$
Non-binary	81 (77.6)$_a$	24 (22.9)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with lifetime cigarette smoking (*p* = .956).

3.7.6. Smoking cigarettes (last 30 days)

Tables 46a and **46b** present the associations between sexual orientation and cigarette smoking in the last 30 days.

Table 46a. Cigarette smoking in the last 30 days across all sexual orientation groups (*N* = 287)

Sexual orientation	Never smoked cigarettes last 30 days *n* (%)	Ever smoked cigarettes last 30 days *n* (%)
Heterosexual	11 (100)	0 (0)
Mostly heterosexual	15 (100)	0 (0)
Bisexual	110 (88.0)	15 (12.0)
Gay or lesbian	52 (91.2)	5 (8.8)
Other	53 (88.3)	7 (11.7)
Unsure	18 (94.7)	1 (5.3)

Table 46b. Cigarette smoking in the last 30 days across sexual orientation groups, sexual minorities grouped together (*N* = 287)

Sexual orientation	Never smoked cigarettes last 30 days *n* (%)	Ever smoked cigarettes last 30 days *n* (%)
Heterosexual	11 (100)$_a$	0 (0)$_a$
Sexual minority	230 (89.5)$_a$	27 (10)$_a$
Unsure	18 (94.7)$_a$	1 (5.3)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Cigarette smoking in the last 30 days was not significantly associated with sexual orientation (*p* = .409). This finding, however, must be treated with caution due to some cells with very low sizes.

Tables 47a and **47b** present the association of gender identity and cigarette smoking in the last 30 days.

Table 47a. Cigarette smoking in the last 30 days across all gender identity groups (*N* = 289)

Gender	Never smoked cigarettes last 30 days *n* (%)	Ever smoked cigarettes last 30 days *n* (%)
Cisgender boy	34 (100)	0 (0)
Cisgender girl	117 (89.3)	14 (10.7)
Transgender boy	16 (88.9)	2 (11.1)
Transgender girl	3 (75.0)	1 (25.0)
Non-binary gender, born as male	6 (100)	0 (0)
Non-binary gender, born as female	85 (88.5)	11 (11.5)

Table 47b. Cigarette smoking in the last 30 days across gender identity groups, gender minorities grouped together (*N* = 289)

Gender	Never smoked cigarettes last 30 days *n* (%)	Ever smoked cigarettes last 30 days *n* (%)
Cisgender	151 (91.5)$_a$	14 (8.5)$_a$
Transgender	19 (86.4)$_a$	3 (13.6)$_a$
Non-binary	91 (89.2)$_a$	11 (10.8)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with smoking cigarettes in the last 30 days (*p* = .669).

⚠️

3.7.7. Alcohol consumption (lifetime)

Tables 48a and **48b** present the associations between sexual orientation and lifetime alcohol consumption.

Table 48a. Lifetime alcohol consumption across all sexual orientation groups (*N* = 289)

Sexual orientation	Never drank alcohol lifetime *n* (%)	Ever drank alcohol lifetime *n* (%)
Heterosexual	5 (45.5)	6 (54.5)
Mostly heterosexual	9 (60.0)	6 (40.0)
Bisexual	55 (44.0)	70 (56.0)
Gay or lesbian	26 (44.1)	33 (55.9)
Other	27 (45.0)	33 (55.0)
Unsure	11 (57.9)	8 (42.1)

Table 48b. Lifetime alcohol consumption across sexual orientation groups, sexual minorities grouped together (*N* = 289)

Sexual orientation	Never drank alcohol lifetime *n* (%)	Ever drank alcohol lifetime *n* (%)
Heterosexual	5 (45.5)$_a$	6 (54.5)$_a$
Sexual minority	117 (45.2)$_a$	142 (54.8)$_a$
Unsure	11 (57.9)$_a$	8 (42.1)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Lifetime alcohol consumption was not significantly associated with sexual orientation (*p* = .561).

Tables 49a and **49b** present the associations between gender identity and lifetime alcohol consumption.

Table 49a. Lifetime alcohol consumption across all gender identity groups (*N* = 291)

Gender	Never drank alcohol lifetime *n* (%)	Ever drank alcohol lifetime *n* (%)
Cisgender boy	14 (41.2)	20 (58.8)
Cisgender girl	58 (44.3)	73 (55.7)
Transgender boy	9 (50.0)	9 (50.0)
Transgender girl	1 (25.0)	3 (75.0)
Non-binary gender, born as male	2 (33.3)	4 (66.7)
Non-binary gender, born as female	50 (51.0)	48 (49.0)

Table 49b. Lifetime alcohol consumption across gender identity groups, gender minorities grouped together (*N* = 291)

Gender	Never drank alcohol lifetime *n (%)*	Ever drank alcohol lifetime *n (%)*
Cisgender	72 (43.6)$_a$	93 (56.4)$_a$
Transgender	10 (45.5)$_a$	12 (54.5)$_a$
Non-binary	52 (50.0)$_a$	52 (50.0)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with lifetime alcohol consumption (p = .594).

3.7.8. Alcohol consumption (last 30 days)

Tables 50a and **50b** present the associations between sexual orientation and alcohol consumption in the last 30 days.

Table 50a. Alcohol consumption in the last 30 days across all sexual orientation groups (N = 288)

Sexual orientation	Did not drink alcohol in the last 30 days *n (%)*	Drank alcohol in the last 30 days *n (%)*
Heterosexual	8 (72.7)	3 (27.3)
Mostly heterosexual	11 (73.3)	4 (26.7)
Bisexual	83 (66.4)	42 (33.6)
Gay or lesbian	44 (75.9)	14 (24.1)
Other	47 (78.3)	13 (21.7)
Unsure	15 (78.9)	4 (21.1)

Table 50b. Alcohol consumption in the last 30 days across sexual orientation groups, sexual minorities grouped together (N = 288)

Sexual orientation	Did not drink alcohol in the last 30 days *n (%)*	Drank alcohol in the last 30 days *n (%)*
Heterosexual	8 (72.7)$_a$	3 (27.3)$_a$
Sexual minority	185 (71.7)$_a$	73 (28.3)$_a$
Unsure	15 (78.9)$_a$	4 (21.1)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Alcohol consumption in the last 30 days was not significantly associated with sexual orientation (p = .793).

Tables 51a and **51b** present the associations between gender identity and alcohol consumption in the last 30 days.

Table 51a. Alcohol consumption in the last 30 days across all gender identity groups (N = 290)

Gender	Did not drink alcohol in the last 30 days n (%)	Drank alcohol in the last 30 days n (%)
Cisgender boy	26 (76.5)	8 (23.5)
Cisgender girl	85 (64.9)	46 (35.1)
Transgender boy	14 (77.8)	4 (22.2)
Transgender girl	2 (50.0)	2 (50.0)
Non-binary gender, born as male	4 (66.7)	2 (33.3)
Non-binary gender, born as female	78 (80.4)	19 (19.6)

Table 51b. Alcohol consumption in the last 30 days across gender identity groups, gender minorities grouped together (N = 290)

Gender	Did not drink alcohol in the last 30 days n (%)	Drank alcohol in the last 30 days n (%)
Cisgender	111 (67.3)$_a$	54 (32.7)$_b$
Transgender	16 (72.7)$_a$	6 (27.3)$_a$
Non-binary	82 (79.6)$_a$	21 (20.4)$_b$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with drinking alcohol in the last 30 days (p = .091).

3.7.9. Drunkenness (lifetime)

Tables 52a and **52b** present the associations between sexual orientation and lifetime drunkenness.

Table 52a. Lifetime drunkenness across all sexual orientation groups (N = 290)

Sexual orientation	Never been drunk lifetime n (%)	Been drunk lifetime n (%)
Heterosexual	8 (72.7)	3 (27.3)
Mostly heterosexual	12 (80.0)	3 (20.0)
Bisexual	80 (63.5)	46 (36.5)
Gay or lesbian	43 (72.9)	16 (27.1)
Other	48 (80.0)	12 (20.0)
Unsure	17 (89.5)	2 (10.5)

Table 52b. Lifetime alcohol consumption across sexual orientation groups, sexual minorities grouped together (*N* = 289)

Sexual orientation	Never been drunk lifetime *n* (%)	Been drunk lifetime *n* (%)
Heterosexual	8 (72.7)$_a$	3 (27.3)$_a$
Sexual minority	183 (70.4)$_a$	77 (29.6)$_a$
Unsure	17 (89.5)$_a$	2 (10.5)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Lifetime drunkenness was not significantly associated with sexual orientation (*p* = .203).

Tables 53a and **53b** present the associations between gender identity and lifetime drunkenness.

Table 53a. Lifetime drunkenness across all gender identity groups (*N* = 292)

Gender	Never been drunk lifetime *n* (%)	Been drunk lifetime *n* (%)
Cisgender boy	23 (67.6)	11 (32.4)
Cisgender girl	91 (69.5)	40 (30.5)
Transgender boy	12 (63.2)	7 (36.8)
Transgender girl	2 (50.0)	2 (50.0)
Non-binary gender, born as male	4 (66.7)	2 (33.3)
Non-binary gender, born as female	77 (78.6)	21 (21.4)

Table 53b. Lifetime drunkenness across gender identity groups, gender minorities grouped together (*N* = 292)

Gender	Never been drunk lifetime *n* (%)	Been drunk lifetime *n* (%)
Cisgender	114 (69.1)$_a$	51 (30.9)$_a$
Transgender	14 (60.9)$_a$	9 (39.1)$_a$
Non-binary	81 (77.9)$_a$	23 (22.1)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with lifetime alcohol consumption (*p* = .147).

3.7.10. Drunkenness (last 30 days)

Tables 54a and **54b** present the associations between sexual orientation and drunkenness in the last 30 days.

Table 54a. Drunkenness in the last 30 days across all sexual orientation groups
(*N* = 288)

Sexual orientation	Not been drunk in the last 30 days *n* (%)	Been drunk in the last 30 days *n* (%)
Heterosexual	9 (81.8)	2 (18.2)
Mostly heterosexual	14 (93.3)	1 (6.7)
Bisexual	110 (87.3)	16 (12.7)
Gay or lesbian	53 (89.8)	6 (10.2)
Other	54 (93.1)	4 (6.9)
Unsure	19 (100)	0 (0)

Table 54b. Drunkenness in the last 30 days across sexual orientation groups, sexual minorities grouped together (*N* = 288)

Sexual orientation	Not been drunk in the last 30 days *n* (%)	Been drunk in the last 30 days *n* (%)
Heterosexual	9 (81.8)$_a$	2 (18.2)$_a$
Sexual minority	231 (89.5)$_a$	27 (10.5)$_a$
Unsure	19 (100)$_a$	0 (0)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Drunkenness in the last 30 days was not significantly associated with sexual orientation (*p* = .226).

Tables 55a and **55b** present the associations between gender identity and drunkenness in the last 30 days.

Table 55a. Drunkenness in the last 30 days across all gender identity groups (*N* = 290)

Gender	Not been drunk in the last 30 days *n* (%)	Been drunk in the last 30 days *n* (%)
Cisgender boy	29 (85.3)	5 (14.7)
Cisgender girl	117 (89.3)	14 (10.7)
Transgender boy	17 (89.5)	2 (10.5)
Transgender girl	2 (50.0)	2 (50.0)
Non-binary gender, born as male	5 (83.3)	1 (16.7)
Non-binary gender, born as female	91 (94.8)	5 (5.2)

Table 55b. Drunkenness in the last 30 days across gender identity groups, gender
minorities grouped together (*N* = 290)

Gender	Not been drunk in the last 30 days *n* (%)	Been drunk in the last 30 days *n* (%)
Cisgender	146 (88.5)$_a$	19 (11.5)$_a$
Transgender	19 (82.6)$_a$	4 (17.4)$_a$
Non-binary	96 (94.1)$_a$	6 (5.9)$_a$

Note. The same subscript letter means that proportions within the given column did
not significantly differ from each other at the .05 level.

Gender minority status was not associated with drunkenness in the last 30 days (*p* = .154).

3.7.11. Face-to-face bullying victimisation

Tables 56a and **56b** present the associations between sexual orientation and face-to-face bullying victimisation in the past couple of months.

Table 56a. Face-to-face bullying victimisation in the past couple of months, across all
sexual orientation groups (*N* = 288)

Sexual orientation	Never or rarely been bullied *n* (%)	Often been bullied *n* (%)
Heterosexual	11 (100)	0 (0)
Mostly heterosexual	11 (73.3)	4 (26.7)
Bisexual	107 (85.6)	18 (14.4)
Gay or lesbian	48 (82.8)	10 (17.2)
Other	43 (71.7)	17 (28.3)
Unsure	18 (94.7)	1 (5.3)

Table 56b. Face-to-face bullying victimisation in the past couple of months, across
sexual orientation groups, sexual minorities grouped together (*N* = 288)

Sexual orientation	Never or rarely been bullied *n* (%)	Often been bullied *n* (%)
Heterosexual	11 (100)$_a$	0 (0)$_a$
Sexual minority	209 (81.0)$_a$	49 (19.0)$_b$
Unsure	18 (94.7)$_a$	1 (5.3)$_a$

Note. The same subscript letter means that proportions within the given column did
not significantly differ from each other at the .05 level.

Traditional bullying was not significantly associated with sexual orientation (*p* = .094). These findings must be treated with caution due to some cells having very low sizes.

Tables 57a and **57b** present the associations between gender identity and face-to-face bullying victimisation in the past couple of months.

Table 57a. Face-to-face bullying victimisation in the past couple of months, across all gender identity groups (*N* = 290)

Gender	Never or rarely been bullied *n* (%)	Often been bullied *n* (%)
Cisgender boy	28 (82.4)	6 (17.6)
Cisgender girl	116 (89.2)	14 (10.8)
Transgender boy	12 (63.2)	7 (36.8)
Transgender girl	2 (50.0)	2 (50.0)
Non-binary gender, born as male	3 (50.0)	3 (50.0)
Non-binary gender, born as female	78 (80.4)	19 (19.6)

Table 57b. Face-to-face bullying victimisation in the past couple of months, across gender identity groups, gender minorities grouped together (*N* = 290)

Gender	Never or rarely been bullied *n* (%)	Often been bullied *n* (%)
Cisgender	144 (87.8)$_a$	20 (12.2)$_b$
Transgender	14 (60.9)$_a$	9 (39.1)$_b$
Non-binary	81 (78.6)$_a$	22 (21.4)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was significantly associated with traditional bullying (*p* = .003), the effect is small (*V* = .201). Transgender participants were the most likely (approx. 39%) and cisgender participants the least likely (12%) to report they have often been bullied in the past couple of months, with non-binary participants in between (21%).

3.7.12. Cyberbullying victimisation

Tables 58a and **58b** present the associations between sexual orientation and cyberbullying victimisation in the past couple of months.

Table 58a. Cyberbullying victimisation in the past couple of months, across all sexual orientation groups (*N* = 288)

Sexual orientation	Never or rarely cyberbullied *n* (%)	Often been cyberbullied *n* (%)
Heterosexual	11 (100)	0 (0)
Mostly heterosexual	15 (100)	0 (0)
Bisexual	116 (92.8)	9 (7.2)
Gay or lesbian	51 (87.9)	7 (12.1)
Other	52 (86.7)	8 (13.3)
Unsure	17 (89.5)	2 (10.5)

Table 58b. Cyberbullying victimisation in the past couple of months, across sexual orientation groups, sexual minorities grouped together (*N* = 288)

Sexual orientation	Never or rarely cyberbullied *n* (%)	Often been cyberbullied *n* (%)
Heterosexual	11 (100)$_a$	0 (0)$_a$
Sexual minority	234 (90.7)$_a$	24 (9.3)$_a$
Unsure	17 (89.5)$_a$	2 (10.5)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Cyberbullying was not significantly associated with sexual orientation (*p* = .558). These findings must be treated with caution due to some cells with very low sizes.

Tables 59a and **59b** present the associations between gender and cyberbullying victimisation.

Table 59a. Cyberbullying victimisation in the past couple of months, across all gender groups (*N* = 290)

Gender	Never or rarely cyberbullied *n* (%)	Often been cyberbullied *n* (%)
Cisgender boy	31 (91.2)	3 (8.8)
Cisgender girl	120 (92.3)	10 (7.7)
Transgender boy	19 (100)	0 (0)
Transgender girl	2 (50.0)	2 (50.0)
Non-binary gender, born as male	5 (83.3)	1 (16.7)
Non-binary gender, born as female	87 (89.7)	10 (10.3)

Table 59b. Cyberbullying victimisation in the past couple of months, across gender groups, gender minorities grouped together (*N* = 290)

Gender	Never or rarely cyberbullied *n* (%)	Often been cyberbullied *n* (%)
Cisgender	151 (92.1)$_a$	13 (7.9)$_a$
Transgender	21 (91.3)$_a$	2 (8.7)$_a$
Non-binary	92 (89.3)$_a$	11 (10.7)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with cyberbullying (*p* = .745).

3.7.13. Family support

Tables 60a and **60b** present the associations between sexual orientation and family support.

Table 60a. Family support across all sexual orientation groups (*N* = 278)

Sexual orientation	High family support *n* (%)	Low family support *n* (%)
Heterosexual	6 (54.5)	5 (45.5)
Mostly heterosexual	4 (26.7)	11 (73.3)
Bisexual	24 (19.8)	97 (80.2)
Gay or lesbian	10 (18.2)	45 (81.8)
Other	6 (10.3)	52 (89.7)
Unsure	3 (16.7)	15 (83.3)

Table 60b. Family support across sexual orientation groups, sexual minorities grouped together (*N* = 288)

Sexual orientation	High family support *n* (%)	Low family support *n* (%)
Heterosexual	6 (54.5)$_b$	5 (45.5)$_b$
Sexual minority	44 (17.7)$_a$	205 (82.3)$_a$
Unsure	3 (16.7)$_a$	15 (83.3)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Family support was significantly associated with sexual orientation (*p* = .009), with a small effect size (*V* = .183). All sexual minority groups and those unsure about their sexual orientation were less likely than their heterosexual peers to report high level of family support.

Tables 61a and **61b** present the associations between gender identity and family support.

Table 61a. Family support across all gender identity groups (*N* = 280)

Gender	High family support *n* (%)	Low family support *n* (%)
Cisgender boy	12 (38.7)	19 (61.3)
Cisgender girl	32 (25.0)	96 (75.0)
Transgender boy	1 (5.3)	18 (94.7)
Transgender girl	0 (0)	4 (100)
Non-binary gender, born as male	1 (16.7)	5 (83.3)
Non-binary gender, born as female	8 (8.7)	84 (91.3)

Table 61b. Family support across gender groups, gender minorities grouped together (*N* = 280)

Gender	High family support *n* (%)	Low family support *n* (%)
Cisgender	44 (27.7)$_b$	115 (72.3)$_a$
Transgender	1 (4.3)$_a$	22 (95.7)$_a$
Non-binary	9 (9.2)$_b$	89 (90.8)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was significantly associated with family support ($p < .001$), with a small effect size ($V = .246$). Transgender participants were significantly less likely than the other two groups to report high family support (approx. 5%), but it is worth to note that non-binary participants, proportionally, had also around one third chance (9%) to report this outcome compared to cisgender participants (28%).

3.7.14. Peer support

Tables 62a and **62b** present the associations between sexual orientation and peer support.

Table 62a. Peer support across all sexual orientation groups ($N = 278$)

Sexual orientation	High peer support n (%)	Low peer support n (%)
Heterosexual	9 (81.8)	2 (18.2)
Mostly heterosexual	10 (66.7)	5 (33.3)
Bisexual	69 (59.5)	47 (40.5)
Gay or lesbian	32 (60.4)	21 (39.6)
Other	39 (67.2)	19 (32.8)
Unsure	8 (47.1)	9 (52.9)

Table 62b. Peer support across sexual orientation groups, sexual minorities grouped together ($N = 288$)

Sexual orientation	High peer support n (%)	Low peer support n (%)
Heterosexual	9 (81.8)$_a$	2 (18.2)$_a$
Sexual minority	150 (62.0)$_a$	92 (38.0)$_a$
Unsure	8 (47.1)$_a$	9 (52.9)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Peer support was not associated with sexual orientation ($p = .179$).

Tables 63a and **63b** present the associations between gender identity and peer support.

Table 63a. Peer support across all gender identity groups ($N = 280$)

Gender	High peer support n (%)	Low peer support n (%)
Cisgender boy	21 (61.8)	13 (38.2)
Cisgender girl	73 (58.9)	51 (41.1)
Transgender boy	11 (64.7)	6 (35.3)
Transgender girl	3 (75.0)	1 (25.0)
Non-binary gender, born as male	2 (40.0)	3 (60.0)
Non-binary gender, born as female	58 (65.9)	30 (34.1)

Table 63b. Peer support across gender identity groups, gender minorities grouped together (*N* = 280)

Gender	High peer support n (%)	Low peer support n (%)
Cisgender	94 (59.5)$_a$	60 (40.5)$_a$
Transgender	14 (66.7)$_a$	7 (33.3)$_a$
Non-binary	60 (64.5)$_a$	33 (35.5)$_a$

Note. The same subscript letter means that proportions within the given column did not significantly differ from each other at the .05 level.

Gender minority status was not associated with peer support (*p* = .652).

3.7.15. Summary of associations between SOGI status and health and psychosocial outcomes

Table 64 summarises the findings from Chapter 3.7 on how sexual orientation and gender identity was associated with health and psychosocial outcomes.

Table 64. Associations between sexual and gender identity with health and psychosocial outcomes

Outcome	Sexual orientation	Gender identity
Excellent self-rated health (+)	*ns.*	*ns.*
High life satisfaction (+)	*ns.*	*p* < .001, *V* = .303 TG, NB < CG
Frequent psychosomatic symptoms (−)	*ns.*	*p* = .007, *V* = .185 TG, NB > CG
Satisfied with own body (+)	*ns.*	*ns.*
Ever smoking cigarettes in lifetime (−)	*ns.*	*ns.*
Smoking cigarettes in the last 30 days (−)	*ns.*	*ns.*
Ever drinking alcohol in lifetime (−)	*ns.*	*ns.*
Drinking alcohol in the last 30 days (−)	*ns.*	*ns.*
Having been drunk in lifetime (−)	*ns.*	*ns.*
Having been drunk in the last 30 days (−)	*ns.*	*ns.*
Frequent traditional bullying victimisation (−)	*ns.*	*p* = .003, *V* = .201 TG, NB > CG
Frequent cyberbullying victimisation (−)	*ns.*	*ns.*
High family support (+)	*p* = .009, *V* = .183 SM, US < HS	*p* < .001, *V* = .246 TG < NB, CG
High peer support (+)	*ns.*	*ns.*

Note. (+): positive outcome. (−): negative outcome. HS: heterosexual. SM: sexual minority. US: unsure in sexual orientation. CG: cisgender. TG: binary transgender. NB: non-binary or other gender minority. *ns.*: Not significant.

3.8. Final participant comments on the questionnaire

At the end of the questionnaire, we asked participants whether they wanted to share anything more with us, including their opinion on the questions, whether they thought the questions are important to ask, and what other topics they you like to see in a questionnaire for young people of their age. We have received a large number of comments – 175 responses were classified into categories, and five major categories were identified:

1. There were suggestions on topics to be added to a larger questionnaire. Some of the suggested topics are already covered by HBSC in all participating countries (e.g. mental health, body image, number of friends and support from friends, and social media use).
2. For other suggested topics, HBSC offers optional items, and it is at the discretion of national teams whether they are included (e.g. school performance, suicidal thoughts and attempts, spirituality).
3. A third category fully make sense from the perspective of sexual and gender minority participants, for instance questions on being out, experiences of transitioning, and experiences of homophobia (and bi- and transphobia), which would require further surveys in this population but may be irrelevant to non-minority youth.
4. *Another large proportion of the comments were related to inclusive language. Some participants directly pointed at the lack of inclusivity, for example: "In general I found quite a lot of uninclusive language (particularly excluding non-binary and asexual people; sure the very first question was 'are you a boy or a girl') in questions that made it feel like no one from the lgbtqia+ community was consulted about the wording of the questions before the survey was sent out". Others suggested using gender-neutral pronouns (for instance, "he or she" is used in the HBSC items on bullying). "Please try and use they/them pronouns instead of he/she, its way more inclusive."*
5. A large number of the comments contained positive feedback. Some participants appreciated that they are getting involved in research on their group: *"Thank you for this I really appreciate involving young people in the things that affect us!".* Others noted that they liked the questionnaire, and expressed their hope that this will have an impact on future surveys.

There were, however, a small number of negative comments. These reflected on poor quality of the questions, or contested the position/perspective of the researchers:

> *"Overall the questions felt like they were made by a straight person that got their definitions from Wikipedia, and was educated on it but not to the full extend"*

Some comments noted that one or more items felt invasive, offensive or strange:

> *"Some of the questions about sexuality were strange, to say the least. I dont want this to sound nit-picky, but something about the nature of those questions just didnt sit right with me. You wouldn't ask a transperson about their genitals, so why would you need to know how often somebody has thought about/had sex. I dont mean this in an accusatory manner at all, I just think its worth noting."*

There were also a small number of comments asking how the questions on health were related to other parts of the questionnaire. Other issues were raised in 1-1 comments, for instance that the question on body image may be triggering for trans participants; that the researchers should not assume pronouns or allosexuality/heterosexuality, or that some questions felt repetitive. Others shared their experience (e.g. witnessing others bullied based on their sexual orientation or gender identity) or noted that education in Irish schools should be more LGBT+-inclusive.

Table 65 presents a thematic grouping of the final comments made by participants.

Table 65. Final comments on the questionnaire

Comments	Freq.	%[a]
TOTAL	**175**	100.0
Positive feedback	41	23.4
No comment	29	16.6
Use gender-neutral pronouns	11	6.3
Use more inclusive language	11	6.3
Unrelated comment	9	5.1
Invasive/offensive/strange	7	4.0
Negative feedback	7	4.0
Add questions on school (incl. school performance, LGBT+ experiences in school and school-related stress)	5	2.9
Add "intersex" to the birth-registered sex question	2	1.1
Add question(s) on being bullied in the past	2	1.1
Add question(s) on social media use	2	1.1
Make distinction between romantic and sexual experiences	2	1.1
Add individual family members to the family question	1	0.6
Add more options to sexual behaviour items	1	0.6
Add more questions on drug consumption	1	0.6
Add more sexual experience questions	1	0.6
Add question(s) on being out	1	0.6
Add question(s) on polyromantic people	1	0.6
Add question(s) on body image	1	0.6
Add question(s) on friends	1	0.6
Add question(s) on friends' or family members' self-harming behaviour	1	0.6
Add question(s) on friends' or family members' suicidal attempts	1	0.6
Add question(s) on gender and pronouns	1	0.6
Add question(s) on hobbies	1	0.6
Add question(s) on mental health	1	0.6
Add question(s) on opinions	1	0.6
Add question(s) on religion	1	0.6
Add question(s) on self-harm	1	0.6
Add question(s) on sexual knowledge	1	0.6
Add question(s) on spirituality	1	0.6
Add question(s) on suicidal thoughts and attempts	1	0.6
Add question(s) on transitioning	1	0.6
Add question(s) on whether the respondent lost any friends or family members due to suicide	1	0.6

Comments	Freq.	%[a]
Add question(s) on experience of homophobia	1	0.6
Add question(s) on why you feel upset in the mental health section	1	0.6
Age inappropriateness of questions on sexual behaviour	1	0.6
Answered they have never been bullied because of their identity – not being "out" to others	1	0.6
Body image question excludes people with gender dysmorphia	1	0.6
Body image question exclusive of people who wear binders	1	0.6
Change 'male/female' to 'cisgender male/cisgender female'	1	0.6
Change wording in parts	1	0.6
Did not understand how questions on drinking and smoking are related to other questions in the survey	1	0.6
Did not understand how questions on family are related to other questions in the survey	1	0.6
Did not understand how questions on health are related to other questions in the survey	1	0.6
Did not understand how the body weight question is related to other questions in the survey	1	0.6
Difficult to know who you are attracted to	1	0.6
Discrimination is common in Ireland among young people	1	0.6
Distinguish sexual and romantic attraction	1	0.6
Don't assume allosexuality and heterosexuality	1	0.6
Don't assume pronouns	1	0.6
Don't exclude asexuality	1	0.6
Lack of clarity on definition of drunkenness	1	0.6
Multiple choice to allow for multiple pronouns	1	0.6
Not enough sex education or LGBTQ+ education in Irish schools	1	0.6
Provide information on how respondents can get support	1	0.6
Question on body image may be triggering	1	0.6
Questioning if attraction is a sexual attraction or a desire for friendship	1	0.6
Repetition in questions	1	0.6
Witnessed other LBGT+ people being bullied because of identity	1	0.6

[a]Proportion within the thematic units in the final comments.

4. DISCUSSION

In this methodological study, we aimed to test items developed to assess sexual orientation and gender identity in adolescents, and specifically to help determine whether they are suitable to use in the cross-national Health Behaviour in School-aged Children (HBSC) study. We recruited young people aged 13–18 (*N* = 678), who accessed services of the national or local LGBTI+ youth groups in Ireland. Based on a review of the relevant literature and our earlier pilot work, five new items were assessed:

- Gender identity:

    (1) birth-registered sex,

    (2) gender identity;

- Sexual orientation:

    (3) gender of last sexual partner,

    (4) self-identified sexual orientation,

    (5) gender of last sexual partner.

Our study had three objectives. First, we wanted to elicit descriptive data on these fiveitems, including their associations with gender, measured with a standard HBSC question ('Are you a boy or a girl?'), and age of the participants. Second, using a mixed-method aproach developed by our team (Young et al., 2016), we tested whether participants like, understand and accept the items. Third, we tested whether sexual minority (assessed by the self-identified SO item) and gender minority status (assessed by a variable derived from the birth-registered sex and gender items, using the two-step approach) are associated with health and psychosocial outcomes.

4.1. Descriptive results

The descriptive analyses identified that our sample consisted many young people whose birth-registered sex and gender identity were not aligned with each other, or who said they did not identify as a boy or a girl, or preferred another gender descriptor. Similarly, there were many participants who either used another label to describe their sexual orientation than heterosexual; whose last sexual partner was the same gender as the participant; and who fantasised about sex with same-gender partners.

Girls were more likely than boys to identify with neither gender, or use another another gender descriptor. Girls were also more likely to indicate that they identify as bisexual than boys. Younger participants used the 'other' category to describe their gender more often than older participants. The proportion of those identifying as lesbian or gay was relatively stable across ages, but older participants were less likely to use the 'other' category. In addition, older participants were more likely to report having had sex or having sexual fantasies than younger participants.

4.2. Feedback on the items

The items on birth-registered sex and gender identity were, in general, well-received by the participants; only a small proportion indicated that they did not understand the items or found them unacceptable. However, we suggest small changes to the gender identity item, to make it simpler and easier to understand. Instead of "I identify as a boy", "I identify myself as a girl", "I identify myself as a boy or a girl", simplified responses such as "I am a boy", "I am a girl", "I am neither a boy or a girl" would suffice.

Two of the three items on sexual orientation were not so well received. The item on the gender of last sexual partner attracted criticism. More than a quarter (25.9%) of the participants did not like the item, and 22.9% indicated that the item was not acceptable. To a somewhat smaller extent the same problem presented with the sexual fantasies item. Text feedback that indicated the item was too invasive or feels inappropriate. Some participants highlighted that the questions and the response options excluded non-binary experiences and partners. These items might be problematic partly due to the fact that many participants, especially those between 13–15, had not yet had sexual intercourse. Therefore careful consideration is required before these items are included in nationally representative surveys.

The item on self-identified sexual orientation was acceptable and understandable for the large majority of the participants. It is noted, though, that some participants used the 'other' textbox to provide an identity label that was not listed among the standard response options. Most of thse reflected on plurisexual experiences (e.g. 'pansexual' – the most frequently response provided, and 'omnisexual' or 'polysexual' by a smaller number of participants). There was also a sizeable minority of participants who indicated that they were asexual or aromantic. Since these additions would render the questionnaire item even more difficult for those who do not understand the base question, or have not yet arrived to a decision on their sexual identity, we do not recommend adding further response options but recommend keeping the open-ended textbox for 'other' responses.

4.3. Associations of SOGI and health and psychosocial outcomes

In general, we can say that SOGI status was not associated with many health outcomes as we could have expected. Earlier HBSC work has demonstrated that sexual minority youth are more likely than their non-minority peers to be engaged in various forms of substance use, including tobacco and alcohol consumption and drunkenness in the last 30 days (Költő et al., 2019); other studies found similar disparities among transgender youth, compared to their cisgender peers (Fuxman et al., 2021; Rimes et al., 2017). In the present study, however, neither sexual minority (and unsure) nor gender minority youth reported differently levels of substance use than their non-minority peers.

Similarly, for mental health outcomes, few significant differences were found between minority and non-minority SOGI groups. No disparities were identified in self-rated health, while this has been the case in previous studies both on sexual minority (Költő et al., 2020) and gender minority adolescents (Ciria-Barreiro et al., 2021). Life satisfaction was not significantly associated with sexual orientation, however there was a significant association with gender identity – gender minority youth fared worse than their cisgender peers. A similar pattern was observed in frequent psychosomatic

symptoms. These findings partially confirm earlier findings on the health disparities in trans and other gender minority youth, but contradict findings on sexual minority youth, who also faced a disproportionate burden (Hatzenbuehler & Pachankis, 2016).

There is ample evidence that sexual and gender minority youth experience more traditional and cyberbullying than their heterosexual/cisgender peers (Abreu & Kenny, 2018; Ciria-Barreiro et al., 2021; Cosma et al., 2022). Our data showed that gender minority youth had more frequently experienced traditional, face-to-face bullying, but neither sexual minority nor gender minority participants reported higher levels of cyberbullying than their non-minority peers.

Finally, our findings confirm earlier results that both sexual and gender minority youth experience lower family support than their non-minority peers, but the good news is that there is no difference in their perceived support from peers. Indeed, the presence of supportive peers seem to be more closely associated with disclosure of sexual orientation than parents' support and acceptance (Watson et al., 2016).

When interpreting these findings, we must consider the limitation that since we specifically recruited participants from LGBT+ youth groups, the prevalence of those identifying as heterosexual or cisgender was lower than in many earlier studies, where their proportion was probably much closer to the population distribution than in our sample. We analysed the two dimensions of sexual orientation and gender identify separately and in parallel. Thus, our participants probably included transgender or other gender minority youth who identified as heterosexual, and sexual minority youth who were cisgender. In this sense, we did not compare minority youth to their (either in terms of their sexual orientation or gender identity) non-minority peers. Future analyses, where possible, should be mutually controlled for sexual orientation and gender identity.

Another factor which may have contributed to null findings is the sampling strategy employed. We collected data via LGBT+ youth associations and local groups, where probably close networks of sexual and gender minority youth participated; while we have no direct evidence for this, the similarity of some responses suggest that they indeed filled in the questionnaire in each other's company. We speculate that this has two implications for the findings. First, some participants may experience support and solidarity from other LGBT+ youth, which can be a strong resource for SOGI youth (Watson et al., 2016), and to a certain extent, might reduce or alleviate their disproportionate stress. Therefore their health outcomes might not be as different from their non-minority peers as if we has included LGBT+ youth who are not members of such supportive communities. Second, their strong connectedness to one other and the LGBT+ youth movements in Ireland may have influenced their lifestyle choices. This might, for instance, help explain why more cisgender youth in our sample reported drinking alcohol in the last 30 days than gender minority youth.

Despite these limitations, we observed that gender minority youth were less likely to experience high satisfaction and high level of family support, while they were more likely to report frequent psychosomatic symptoms and traditional face-to-face bullying compared to their non-minority peers. In addition, gender minority youth were also more likely than their cisgender peers to report frequent psychosomatic health complaints. These disparities echo earlier findings from other studies.

4.4. Final comments

First, we need to consider the large number of comments related to inclusive language. Some participants contested the 'Are you a boy or a girl' item that has been used in HBSC since the inception of the study in 1983 to categorise participants by gender. The item is problematic on many levels, and (especially for trans and other gender minority) youth may be confused or offended if they receive it on the first place. Further, the whole HBSC questionnaire needs to be reviewed for inclusive language (e.g. should 'she or he' be replaced by the more neutral 'they'?), a task that is currently underway within the international network.

Many participants suggested different topics for investigation, many of which are already included in the international HBSC questionnaire, including mental health, number of friends and support from friends, social media use, school performance, suicidal thoughts and attempts, and spirituality.

Some participants suggested items and topics that would be essential for a better understanding of LGBTQI+ experiences, like being 'out', transitioning, or homo-, bi-, and transphobia. Unfortunately, the space HBSC can dedicate to such measures is quite limited; other studies like the School Climate Survey, which is aimed at LGBTQI+ youth (Pizmony-Levy & BeLonG To, 2019), have the capacity to fill in these gaps.

Finally, we would like to emphasise that the largest number, almost a quarter, of the comments provided positive feedback. Many participants welcomed that their voices and experiences were being heard and appreciated that they had the opportunity to provide feedback on questions relevant to their lives.

5. ACKNOWLEDGEMENTS

6. REFERENCES

Abreu, R. L., & Kenny, M. C. (2018). Cyberbullying and LGBTQ youth: A systematic literature review and recommendations for prevention and intervention. *Journal of Child & Adolescent Trauma*, *11*(1), 81–97. https://doi.org/10.1007/s40653-017-0175-7

Blackless, M., Charuvastra, A., Derryck, A., Fausto-Sterling, A., Lauzanne, K., & Lee, E. (2000). How sexually dimorphic are we? Review and synthesis. *American Journal of Human Biology*, *12*(2), 151–166. https://doi.org/https://doi.org/10.1002/(SICI)1520-6300(200003/04)12:2<151::AID-AJHB1>3.0.CO;2-F

Bränström, R., & van der Star, A. (2016). More knowledge and research concerning the health of lesbian, gay, bisexual and transgender individuals is needed. *European Journal of Public Health*, *26*(2), 208–209. https://doi.org/https://doi.org/10.1093/eurpub/ckv160

Ciria-Barreiro, E., Moreno-Maldonado, C., Rivera, F., & Moreno, C. (2021). A comparative study of health and well-being among cisgender and binary and nonbinary transgender adolescents in Spain. *LGBT Health*, *8*(8), 536–544. https://doi.org/10.1089/lgbt.2020.0477

Ciria Barreiro, E. (2022). *Contextualizing the well-being of transgender adolescents in Spain: An analysis of lifestyles, developmental contexts, victimization at school, and mental health* [Doctoral (PhD) Dissertation, University of Seville].

Ciria Barreiro, E., Moreno-Maldonado, C., Moreno, C., & Rivera, F. (2019). *How to classify gender identity on adolescence? Exploring the functioning of a single-item measure in Spanish school-aged adolescents*. Poster presented at the HBSC Network Spring Meeting, Reykjavik, Iceland.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2 ed.). Routledge.

Cosma, A., Költő, A., Young, H., Thorsteinsson, E., Godeau, E., Saewyc, E., & Nic Gabhainn, S. (2022). Romantic love and involvement in bullying and cyberbullying in 15-year-old adolescents from eight European countries and regions. *Journal of LGBT Youth*, *Ahead of Print*, 1–22. https://doi.org/https://doi.org/10.1080/19361653.2022.2061669

Fausto-Sterling, A. (2019). Gender/sex, sexual orientation, and identity are in the body: How did they get there? *Journal of Sex Research*, *56*(4-5), 529–555. https://doi.org/https://doi.org/10.1080/00224499.2019.1581883

Frohard-Dourlent, H., Dobson, S., Clark, B. A., Doull, M., & Saewyc, E. M. (2017). "I would have preferred more options": Accounting for non-binary youth in health research. *Nursing Inquiry*, *24*(1), e12150. https://doi.org/https://doi.org/10.1111/nin.12150

Frohard-Dourlent, H., Saewyc, E. M., Veale, J. F., Peter, T., & MacAulay, M. (2020). Conceptualizing gender: Lessons from the Canadian Trans Youth Health Survey. *Signs: Journal of Women in Culture and Society*, *46*(1), 151–176. https://doi.org/https://doi.org/10.1086/709302

Fuxman, S., Valenti, M., Kessel Schneider, S., O'Brien, K. H. M., & O'Donnell, L. (2021). Substance use among transgender and cisgender high school students. *Journal of LGBT Youth*, *18*(1), 40–59. https://doi.org/10.1080/19361653.2020.1727814

Geary, R. S., Tanton, C., Erens, B., Clifton, S., Prah, P., Wellings, K., Mitchell, K. R., Datta, J., Gravningen, K., Fuller, E., Johnson, A. M., Sonnenberg, P., & Mercer, C. H. (2018). Sexual identity, attraction and behaviour in Britain: The implications of using different dimensions of sexual orientation to estimate the size of sexual minority populations and inform public health interventions. *PLoS One*, *13*(1), e0189607. https://doi.org/https://doi.org/10.1371/journal.pone.0189607

Hatzenbuehler, M. L., & Pachankis, J. E. (2016). Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: Research evidence and clinical implications. *Pediatric Clinics of North America*, *63*(6), 985–997. https://doi.org/https://doi.org/10.1016/j.pcl.2016.07.003

Inchley, J., Currie, D., Budisavljevic, S., Torsheim, T., Jåstad, A., Cosma, A., Kelly, C., Arnarsson, A. M., Barnekow, V., & Weber, M. W. (2020). *Spotlight on adolescent health and well-being.*

Findings from the 2017/2018 Health Behaviour in School-aged Children (HBSC) survey in Europe and Canada. International report. Volume 1. Key findings (https://apps.who.int/iris/bitstream/handle/10665/332091/9789289055000-eng.pdf

Inchley, J., Currie, D., Cosma, A., & Samdal, O. (2018). *Health Behaviour in School-aged Children (HBSC) study protocol: Background, methodology and mandatory items for the 2017/18 survey* (http://www.hbsc.org/methods/

Költő, A., Ciria Barreiro, E., Chan, A., Nic Gabhainn, S., Taylor, A. B., Willis, M., Young, H., Moreno Maldonado, C., Inchley, J., Saewyc, E., & Nic Gabhainn, S. (2021). Asking about sex, gender and youth health: A pilot study. Pre-registered Protocol at the Open Science Foundation website. https://doi.org/10.17605/OSF.IO/3CPKZ.

Költő, A., Cosma, A., Moreau, N., Young, H., Thorsteinsson, E. B., Gobina, I., Godeau, E., Saewyc, E. M., & Nic Gabhainn, S. (2020). Self-reported health and patterns of romantic love in adolescents from eight European countries and regions. *LGBT Health*, *7*(2), 90–100. https://doi.org/https://doi.org/10.1089/lgbt.2019.0107

Költő, A., Cosma, A., Young, H., Moreau, N., Pavlova, D., Tesler, R., Thorsteinsson, E. B., Vieno, A., Saewyc, E. M., & Nic Gabhainn, S. (2019). Romantic attraction and substance use in 15-year-old adolescents from eight European countries. *International Journal of Environmental Research and Public Health*, *16*(17), 3063. https://doi.org/https://doi.org/10.3390/ijerph16173063

Költő, A., Gavin, A., Vaughan, E., Kelly, C., Molcho, M., & Nic Gabhainn, S. (2021). Connected, respected and contributing to their world: The case of sexual minority and non-minority young people in Ireland. *International Journal of Environmental Research and Public Health*, *18*(3), 1118. https://doi.org/10.3390/ijerph18031118

Költő, A., Vaughan, E., O'Sullivan, L., Kelly, C., Saewyc, E. M., & Nic Gabhainn, S. (2021). *LGBTI+ Youth in Ireland and across Europe: A two-phased landscape and research gap analysis* (https://tinyurl.com/lgbtilandscapereport

Költő, A., Young, H., Burke, L., Moreau, N., Cosma, A., Magnusson, J., Windlin, B., Reis, M., Saewyc, E. M., Godeau, E., & Nic Gabhainn, S. (2018). Love and dating patterns for same- and both-gender attracted adolescents across Europe. *Journal of Research on Adolescence*, *28*(4), 772–778. https://doi.org/https://doi.org/10.1111/jora.12394

Meyer, I. H. (2007). Prejudice and discrimination as social stressors. In I. H. Meyer & M. E. Northridge (Eds.), *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations* (pp. 242–267). Springer Science+Business Media. https://doi.org/https://doi.org/10.1007/978-0-387-31334-4_10

Pizmony-Levy, O., & BeLonG To. (2019). *The 2019 School Climate Survey report: The experience of lesbian, gay, bisexual and trans young people in Ireland's schools* (http://belongto.org/wp-content/uploads/2019/11/BeLonG-To-School-Climate-Report-2019.pdf

Rimes, K. A., Goodship, N., Ussher, G., Baker, D., & West, E. (2017). Non-binary and binary transgender youth: Comparison of mental health, self-harm, suicidality, substance use and victimization experiences. *International Journal of Transgenderism*, *20*(2-3), 230–240. https://doi.org/https://doi.org/10.1080/15532739.2017.1370627

Russell, S. T., & Fish, J. N. (2019). Sexual minority youth, social change, and health: A developmental collision. *Research in Human Development*, *16*(1), 5–20. https://doi.org/https://doi.org/10.1080/15427609.2018.1537772

Saewyc, E. M. (2011). Research on adolescent sexual orientation: Development, health disparities, stigma and resilience. *Journal of Research on Adolescence*, *21*(1), 256–272. https://doi.org/https://doi.org/10.1111/j.1532-7795.2010.00727.x

Saewyc, E. M., Bauer, G. R., Skay, C. L., Bearinger, L. H., Resnick, M. D., Reis, E., & Murphy, A. (2004). Measuring sexual orientation in adolescent health surveys: Evaluation of eight school-based surveys. *J Adol Health*, *35*. https://doi.org/10.1016/j.jadohealth.2004.06.002

Saewyc, E. M., Thawer, Z., O'Dwyer, C., Sinclair, J., & Smith, A. (2021). *Gender-diverse: A spotlight on the health of trans and non-binary young people in BC* (http://www.saravyc.ubc.ca

Taylor, A. B., Chan, A., Hall, S. L., Saewyc, E. M., & the Canadian Trans & Non-binary Youth Health Survey Research Group. (2020). *Being Safe, Being Me 2019: Results of the Canadian Trans and Non-binary Youth Health Survey* (https://apsc-saravyc.sites.olt.ubc.ca/files/2020/12/Being-Safe-Being-Me-2019_SARAVYC_ENG_1.2.pdf

Watson, R. J., Grossman, A. H., & Russell, S. T. (2016). Sources of social support and mental health among LGB youth. *Youth & Society*, *51*(1), 30–48. https://doi.org/10.1177/0044118X16660110

Watson, R. J., Wheldon, C. W., & Puhl, R. M. (2020). Evidence of diverse identities in a large national sample of sexual and gender minority adolescents. *Journal of Research on Adolescence*, *30*(S2), 431–442. https://doi.org/https://doi.org/10.1111/jora.12488

Young, H., Költő, A., Reis, M., Saewyc, E. M., Moreau, N., Burke, L., Cosma, A., Windlin, B., Nic Gabhainn, S., & Godeau, E. (2016). Sexual health questions included in the Health Behaviour in School-aged Children (HBSC) study: An international methodological pilot investigation. *BMC Medical Research Methodology*, *16*(1), 169. https://doi.org/https://doi.org/10.1186/s12874-016-0270-8