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Young people's health and risk behaviours in relation to their sexual orientation: A cross-sectional study of Thailand and Sweden

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ABSTRACT

Objectives: This study examined the associations between sexual orientation of young people and their health and risk behaviours in Thailand and Sweden, and to explore similarities and differences between the countries.
Study design: A cross-sectional study using data from the *Life and Health – Young* surveys in Thailand and Sweden. Three different statistical analyses were used to examine the associations of the variables.
Results: In total, 3869 students aged 16–18 years old were included: 1488 Thai students and 2381 Swedish students. Significantly more Thai (20%) than Swedish (9%) students identified themselves as bisexual, homosexual or unsure ($p < .001$). Bivariate analysis showed that, in Thailand, self-harm was more often reported by the homosexual, unsure, and bisexual groups than by the heterosexual group ($p = .005$). In Sweden, early sexual debut was more often reported by the unsure, bisexual, and homosexual groups than by the heterosexual group ($p = .033$). Multiple logistic regression analysis showed that homosexual and unsure sexual orientations were significantly associated with self-harm ($p < .05$) among Thai students. Unsure sexual orientation was significantly associated with early sexual debut ($p = .04$) among Swedish students. Multiple correspondence analysis indicated that sexual orientation was associated with health and risk behaviours, and varied by different subcategories of students' backgrounds such as country, sexual orientation, family structure and adult support.
Conclusions: Sexual minority young people reported more risk behaviours and poorer health than their heterosexual counterparts. The findings are useful for policy programmes on sexual and reproductive health and rights of young people.

Introduction

Sexual and reproductive health and rights (SRHR) are fundamental to health and survival, to economic development, and to the wellbeing of all people. SRHR should be achieved for all and respected in particular for specific groups such as sexual minority and young people [1]. Most research on SRHR focuses on heterosexuality which can lead to that people with diverse sexual orientation being ignored and invisible in normative policies [2]. SRHR are explicitly mentioned in the United Nation's Sustainable Developmental Goals, target 3.7 and 5.7, which aim to ensure universal access in relation to sexual and reproductive health. However, the targets do not highlight young people with diverse sexual identities, whose needs have to be acknowledged and supported [1].

In many societies, lesbian, gay, bisexual, transgender or queer people, here defined as "sexual minorities", are not fully accepted [3]. Experiences of oppression, stigma and discrimination are common among sexual minorities, and may influence their health and wellbeing and restrict them from accessing appropriate health-care services [4].

Sexual orientation is one of identities that young people develop [5,6]. Gagnon and Simon [6] state that sexual development is a social learning process. Young people develop their sexuality by observing and imitating societal norms and expectations. Concerning SRHR of young people in relation to diverse sexual orientations, a study from USA found that bisexual and homosexual young women made their sexual debut earlier and had more male and female sexual partners than their heterosexual counterparts [7]. Sexual debut before age 13 increased the prevalence of sexual risk-taking behaviour, substance

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abuse, violent victimization and suicidal behaviour among young people, regardless of sexual orientation [8]. Some studies on health and risk behaviours of young people in relation to their sexual orientation showed that sexual minorities engaged in more risk behaviours and had worse health than their heterosexual counterparts [4,5,9,10].

The studies mentioned above demonstrate a disparity of health, SRHR and risk behaviours of young people in relation to their sexual orientation. There is a lack of comparative studies on the sexual orientation of young people in relation to their health and risk behaviours in Asian and European countries. A research project was therefore developed in collaboration between Thailand and Sweden.

Law in both Thailand [11] and Sweden [12] forbid discrimination and other degrading treatment of young people because of their sexual orientation. However, a report by the Swedish National Board for Youth Affairs shows that sexual minorities still experience discrimination [13]. Such discrimination limits young people's ability to shape their own lives and identities. In Thailand, sexual minorities gradually become more accepted. However, the level of acceptance varies in Thai society [14], and discrimination because of sexual orientation still exists [15].

In Sweden, SRHR and mental health are provided for all young people aged 12–25 years at youth clinics [16]. In contrast, youth services in Thailand are limited, due to poor confidentiality, inadequately trained staff, social stigma, service fees, and lack of information and publicity about reproductive health service for young people [17]. Young people in Thailand are likely to receive less community-provided support regarding sexual health and sexuality than their counterparts in Sweden.

The aim of this study was to examine associations between sexual orientations of young people and their health and risk behaviours in Thailand and Sweden, and to explore similarities and differences between the countries by analysing data from one specific province in each country.

Materials and methods

Data collection

The data used in this study were derived from the self-reported survey *Life and Health – Young* conducted in Sweden (Liv & Hälsa Ung, SYQS) and in Thailand (ชีวิตและสุขภาพของวัยรุ่นในประเทศไทย, TYQS). The TYQS is a part of a PhD project on living conditions, lifestyles and sexuality of young people in Thailand and Sweden.

The SYQS was a series of population-based studies for investigating and monitoring living conditions, lifestyles, and self-perceived health of young people in Sörmland, Uppsala, Örebro, Västmanland and Värmland counties [18]. The questionnaire used in the SYQS was originally developed by the representatives from the five country council counties. Different results from SYQS have previously been presented in several scientific papers [18–20]. Data from the Sörmland survey were used in this study. The Sörmland SYQS was conducted during February–March 2014, by the Centre of Public Health, in cooperation with the county council's Centre for Clinical Research. The survey included students in grades five, seven and nine, and upper-secondary students in year two. In total, 9576 students participated in the survey.

TYQS was a sample survey conducted for the first time in Ubon Ratchathani province in July 2014. The questionnaire used in TYQS was developed from the *Life and Health – Young* questionnaire used in SYQS [21]. A stratified sampling method was used to select the students. All secondary schools, both theoretical and vocational, were grouped separately by considering the schools' size and location. A lottery method was used to randomly select schools and classes: one school from each group, and one or two grade 9 and 11 classes from each selected school. All students in the selected classes were invited to participate in the survey. In total, 2717 students participated.

TYQS and Sörmland SYQS were a cross-sectional school-based survey. All students answered a questionnaire anonymously, which they returned individually in a sealed envelope, during school hours. Sexual orientation was only assessed for year-two Swedish students (17–18 years old); therefore a comparison was made to grade 11 Thai students (16–17 years old).

Measures

Sociodemographic background

Sociodemographic background included gender, sexual orientation, family structure and adult support. Gender referred to boys and girls. Sexual orientation was identified as "heterosexual", "bisexual", "homosexual" or "unsure". Family structure was assessed as the persons the student was living with. The answers were categorized as "both parents" or "separated parents/other people". Adult support was assessed through the question "Can you talk about things that are troubling you with your mother, father, or another adult?" The answers were recorded as "good" if the response was "yes, it is easy" and "poor" if the response was "it is neither easy nor difficult", "no, I find it difficult" or "I don't have anyone [to talk to] or we never meet", for at least one of the three provided options.

Health

State of health was assessed by self-rated general health and mental health. *Poor general health* was assigned to those who responded "neither good nor bad", "bad" or "very bad" to the question "How do you feel, generally?" *Poor mental health* was assigned to those who reported "yes" to the question "Have you felt bad during any two-week period in the past 12 months?" Feeling bad referred to feeling at least one of the following: stressed; depressed; anxious; lonely; bullied; suicidal.

Risk behaviours

Risk behaviours referred to *early sexual debut* (initiated sexual intercourse when younger than 15 years), *binge drinking* (consumed enough alcohol to be drunk at least once a month during the last 12 months), *ever used drugs* (used illicit drugs, e.g., hashish, marijuana, methamphetamine during the last 12 months), and *self-harm* (cutting, scratching or otherwise harming oneself during the past 12 months).

Statistical analysis

The data were analysed with Statistical Package for Social Sciences (SPSS) version 22. Internal missing data ranged from 0.3% for reporting mental health to 12.5% for reporting binge drinking for both countries. Descriptive statistics and distributional properties of the variables were calculated for each country. Bivariate analysis, cross tabulation and Chi square test were used to examine the group differences in health and risk behaviours, separately, by sexual orientation and country. Fisher's Exact Test was used if the expected number of frequencies was less than 5. The association of sexual orientation with health and risk behaviours was examined using multiple logistic regression analysis controlling for gender, family structure, and adult support. Heterosexuals were treated as the reference group. The results are presented as adjusted odds ratios (aOR) with 95% confidence interval (CI). The number of students differed between the various analyses depending on the number of students answering the various questions. The significance level was set at a p-value = ≤ 0.05. Multiple correspondence analysis was performed to examine relationships among variable categories through graphic visualizations, but not to indicate a statistical correlation or significance level [18]. The distances between the categories show how closely the categories relate to each other, i.e. the less the distance between two categories, the more closely related they are.

Ethical considerations

The study was approved by the Ethical Committee at

Table 1
Description of students' sociodemographic background.

Background	Thailand (n = 1488)		Sweden (n = 2381)		p-value
	n	%	n	%	
Gender					.000
Boys	540	36.3	1219	51.2	
Girls	948	63.7	1145	48.1	
Sexual orientation					.000
Heterosexual	1182	79.4	1982	83.2	
Bisexual	53	3.6	102	4.3	
Homosexual	102	6.9	19	0.8	
Unsure	138	9.3	96	4.0	
Family structure/ living with					.000
Both parents	1128	75.8	1390	58.4	
Separated parents/ other people	360	24.2	991	41.6	
Adult support					.000
Good	1032	69.4	1418	59.6	
Bad	445	29.9	935	39.3	

Boromarajonani College of Nursing, Sanpasitthiprasong, Thailand (EC.1/2014), and the Regional Ethical Review Board in Uppsala, Sweden (Dnr 2014/472).

Results

Students' sociodemographic backgrounds

In total, 3869 students were included in the study: 1488 Thai and 2381 Swedish. The response rates were 86% and 84% for the Thai and Swedish students respectively. In Table 1, the proportions of girls (48%) and boys (51%) were relatively equal among the Swedish students, but not among the Thai students (64% girls, 36% boys). More Thai than Swedish students reported living with both parents (76% vs 58%) and receiving good support from adults (69% vs 60%). Less than 1% (n = 13) of Thai students and about 7.6% (n = 182) of Swedish students did not answer the question on sexual orientation. About 14.05% (n = 244) of the Thai students were absent and were not included in the study. The Swedish students who were absent from school on the day the survey took place were eligible to answer the survey later.

The proportion of students who identified themselves as homosexual, bisexual or unsure was significantly higher in Thailand (20%, n = 293) than in Sweden (9%, n = 217). The proportion of students reporting themselves as bisexual, homosexual or unsure was similar between girls and boys in Thailand (21% vs 18%) (Table 2). In Sweden significantly more girls (13%, n = 134) than boys (7%, n = 76) identified themselves as bisexual, homosexual or unsure; of these, bisexual was more common among girls than boys (8% vs 1%) (Table 3).

Sexual orientation and associations with health and risk behaviours

Bivariate analysis showed that sexual orientation did not show a significant association with general health and mental health among the students in Thailand or Sweden. The proportion of students reporting poor general health was highest among the homosexual students, both in Thailand (22%, n = 22) and Sweden (42%, n = 8), compared to the other sexual orientations, but no statistical differences were found.

The proportion of students reporting poor mental health was highest among the Thai bisexual (48%, n = 25) and homosexual students (47%, n = 458) (Table 2). In Sweden, more than 50% of the students in each sexual orientation group reported poor mental health, especially among the homosexual students (61%, n = 11), but no statistical differences were found (Table 3).

Concerning risk behaviours, in Thailand, sexual orientation was significantly associated with self-harm but not with early sexual debut, binge drinking and ever having used drugs. Reported self-harm was highest among the homosexual students (21%, n = 21) and lowest among the heterosexual students (11%, n = 124) (Table 2). In Sweden, sexual orientation was significantly associated with early sexual debut but not with binge drinking, ever having used drugs and self-harm. Reported early sexual debut was highest among the unsure students (53%, n = 20) (Table 3).

In multiple logistic analysis, some significant differences between sexual orientation groups related to health and risk behaviours were found (Table 4). In Thailand, the homosexual students were significantly more likely to report binge drinking (aOR 1.86, p = .013) and self-harm (aOR 2.01, p = .009) than the heterosexual students. The unsure students were significantly more likely to report self-harm than the heterosexual students (aOR 1.83, p = .016). In Sweden, the unsure students were significantly more likely to have had an early sexual debut than the heterosexual students (aOR 2.01, p = .040). The homosexual students were significantly more likely to report poor general health than the heterosexual students (aOR 2.77, p = .029).

Multiple correspondence analyses were run for both countries at the same time (Fig. 1), and for each country separately (Figs. 2 and 3). In Fig. 1, girls in Thailand were more closely related with bisexual, unsure and homosexual sexual orientation than girls in Sweden. Sexual minorities were more related with self-harm, poor general health and poor mental health than the heterosexual students. Heterosexuality coincided more with good mental and general health, less risk of self-harm, drinking alcohol and using drugs, good adult support and a family structure with both parents living together. Heterosexual and bisexual boys in Sweden were closely related with binge drinking, early sexual debut and having ever used drugs compared to their counterparts in Thailand.

Considering each country separately, in Thailand, homosexual, bisexual or unsure sexual orientation was related with poor general and mental health, self-harm and early sexual debut among girls. Binge drinking, having ever used drugs and early sexual initiation seem to be more prevalent among boys than girls. Students with heterosexual orientation were closer to good general and mental health, less drinking and drug use, and lower risk of self-harm than the other sexual orientations. In general, girls' vulnerability regarding health and self-harm related to bad adult support was more obvious than that of boys (Fig. 2).

In Sweden, girls tend to have more adult support, live with both parents, and use less alcohol and drugs than boys. We cannot see any noticeable differences in vulnerability between girls and boys for health and self-harm (Fig. 3). This is an obvious dissimilarity to Thailand. Another disparity was that homosexuality was more closely related to binge drinking and ever having used drugs in Sweden than in Thailand.

According to Figs. 2 and 3, there are some similarities between Thailand and Sweden regarding relations between heterosexuality and good health (both general and mental), as well as between bisexuality and poor mental health. Further, early sexual debut was closely related to using more alcohol and drugs, both in Thailand and in Sweden.

Discussion

Similarities and differences in associations between the sexual orientation of young people and their health and risk behaviours in Thailand and Sweden were studied for the first time. Sexual minorities were related to impaired health and risk behaviours, which varied by country, sexual orientation, family structure and adult support. Regarding risk behaviour among the Thai students, self-harm was more often reported by homosexual, unsure, and bisexual students than by heterosexual students. In Sweden, early sexual debut was more often reported by unsure, bisexual, and homosexual students than heterosexual students.

Table 2
Bivariate analysis showing the associations between sexual orientation and gender, health and risk behaviours of the students in Thailand (n = 1475).

Characteristics	Heterosexual		Bisexual		Homosexual		Unsure		p-value
	n	%	n	%	n	%	n	%	
Gender									.285
Boys	435	81.5	13	2.4	34	6.4	52	9.7	
Girls	747	79.4	40	4.3	68	7.2	86	9.1	
Health									
General health									.060
Poor	161	13.8	11	21.2	22	21.6	25	18.1	
Good	1007	86.2	41	78.8	80	78.4	113	81.9	
Mental health									.134
Poor	458	39.1	25	48.1	48	47.1	62	45.9	
Good	712	60.9	27	51.9	54	52.9	73	54.1	
Risk behaviours									
Early sexual debut									.208*
Yes	52	21.9	1	10.0	8	34.8	5	38.5	
No	185	78.1	9	90.0	15	65.2	8	61.5	
Binge drinking during the past 12 months									.059
Yes	195	16.6	8	15.1	26	25.5	17	12.5	
No	977	83.4	45	84.9	76	74.5	119	87.5	
Ever used drugs									.897*
Yes	61	5.2	3	5.7	4	4.0	8	6.0	
No	1102	94.8	50	94.3	97	96.0	126	94.0	
Self-harm									.005
Yes	124	10.7	8	15.1	21	20.8	23	17.3	
No	1035	89.3	45	84.9	80	79.2	110	82.7	

* Fishers' Exact Test was used.

Similarities and differences in health and risk behaviours

Bisexual, homosexual or unsure sexual orientations seem to be more frequently reported among Thai than Swedish students. Expressing diverse sexual orientations could be a sensitive matter, and can vary by sexual orientation, political views, educational level, social status, romantic relationship status, and level of internalized sexual stigma or self-confidence [16,22]. The stigma and discrimination can vary widely depending on ability, age, sex, ethnicity, nationality, religion, socioeconomic status, geographical location and other factors [4]. Politically, discrimination of sexual minorities is unacceptable in Thailand and Sweden, but some people with diverse sexual orientations still experience discrimination in both countries [13,15]. Reporting diverse sexual orientation was more common in Thai students than in Swedish students and may depend on differences in culture, society, religion and be governed by different norms and values. Norms and values concerning sexual practice in society play an importance role in young people's development of sexual identity [6]. The number of students

Table 3
Bivariate analysis showing the associations between sexual orientation and gender, health and risk behaviours of the students in Sweden (n = 2199).

Characteristics	Heterosexual		Bisexual		Homosexual		Unsure		p-value
	n	%	n	%	n	%	n	%	
Gender									.000
Boys	1046	93.2	17	1.5	12	1.1	47	4.2	
Girls	931	87.4	81	7.6	7	0.7	46	4.3	
Health									
General health									.119
Poor	409	20.9	18	18.0	8	42.1	18	19.1	
Good	1546	79.1	82	82.0	11	57.9	76	80.9	
Mental health									.452
Poor	1010	52.1	59	59.0	11	61.1	53	55.2	
Good	929	47.9	41	41.0	7	38.9	43	44.8	
Risk behaviours									
Early sexual debut									.033*
Yes	351	31.7	29	39.2	3	33.3	20	52.6	
No	755	68.3	45	60.8	6	66.7	18	47.4	
Binge drinking during the past 12 months									.823
Yes	483	30.0	24	26.1	4	26.7	19	27.1	
No	1129	70.0	68	73.9	11	73.3	51	72.9	
Ever used drugs									.136*
Yes	295	15.3	22	22.0	4	22.2	19	19.8	
No	1637	84.7	78	78.0	14	77.8	77	80.2	
Self-harm									.757*
Yes	199	10.2	7	7.1	1	5.6	11	11.5	
No	1746	89.8	91	92.9	17	94.4	85	88.5	

* Fishers' Exact Test was used.

Table 4
Multivariate logistic regression analysis showing the association between sexual orientation (with heterosexuals as the reference group) and health and risk behaviours of the students after controlling for gender, family structure and adult support.

	Bisexual		Homosexual		Unsure	
	aOR (95% CI)	P	aOR (95% CI)	P	aOR (95% CI)	P
Thailand						
Binge drinking	1.09 (0.49–2.39)	.837	1.86 (1.14–3.03)	.013	0.74 (0.43–1.28)	.289
Ever used drugs	1.73 (0.49–6.16)	.395	0.81 (0.28–2.36)	.703	1.32 (0.59–2.93)	.497
Early sexual debut	0.44 (0.05–3.71)	.455	1.84 (0.72–4.73)	.203	2.77 (0.82–9.39)	.101
Self-harm	1.49 (0.68–3.25)	.319	2.01 (1.19–3.38)	.009	1.83 (1.12–3.00)	.016
Poor mental health	1.39 (0.79–2.44)	.252	1.31 (0.87–1.98)	.199	1.38 (0.96–1.98)	.081
Poor general health	1.70 (0.84–3.46)	.139	1.48 (0.88–2.48)	.138	1.44 (0.89–2.34)	.137
Sweden						
Binge drinking	0.83 (0.50–1.37)	.471	0.84 (0.26–2.67)	.769	0.87 (0.51–1.51)	.626
Ever used drugs	1.65 (0.99–2.76)	.057	1.52 (0.49–4.71)	.468	1.39 (0.82–2.36)	.216
Early sexual debut	1.33 (0.80–2.21)	.279	1.02 (0.25–4.11)	.983	2.01 (1.03–3.94)	.040
Self-harm	0.54 (0.23–1.26)	.154	0.53 (0.07–4.02)	.541	1.06 (0.54–2.09)	.854
Poor mental health	1.25 (0.82–1.91)	.291	1.46 (0.56–3.79)	.437	1.10 (0.72–1.69)	.647
Poor general health	0.80 (0.47–1.38)	.433	2.77 (1.11–6.95)	.029	0.90 (0.52–1.55)	.705

who did not report their sexual orientation was higher among Swedish students than Thai students, which could imply that more Swedish students suspected that their answers might not remain anonymous, or that they were ambivalent of their sexual orientation.

Our findings highlight that risk behaviours, poor general health and poor mental health are more frequently reported among sexual minorities than heterosexuals in both Thailand and Sweden. In Thailand, reporting of self-harm was significantly higher for bisexual, homosexual, and unsure participants than for heterosexuals, according to the bivariate analysis. When controlling for sociodemographic background in multiple logistic regression analysis, the bisexual, homosexual and unsure students were more likely to report self-harm than the heterosexual students, but only homosexual and unsure orientations showed a significant association. However, a relation between the bisexual students and self-harm was found in multiple correspondence analysis. This finding is in line with a previous study

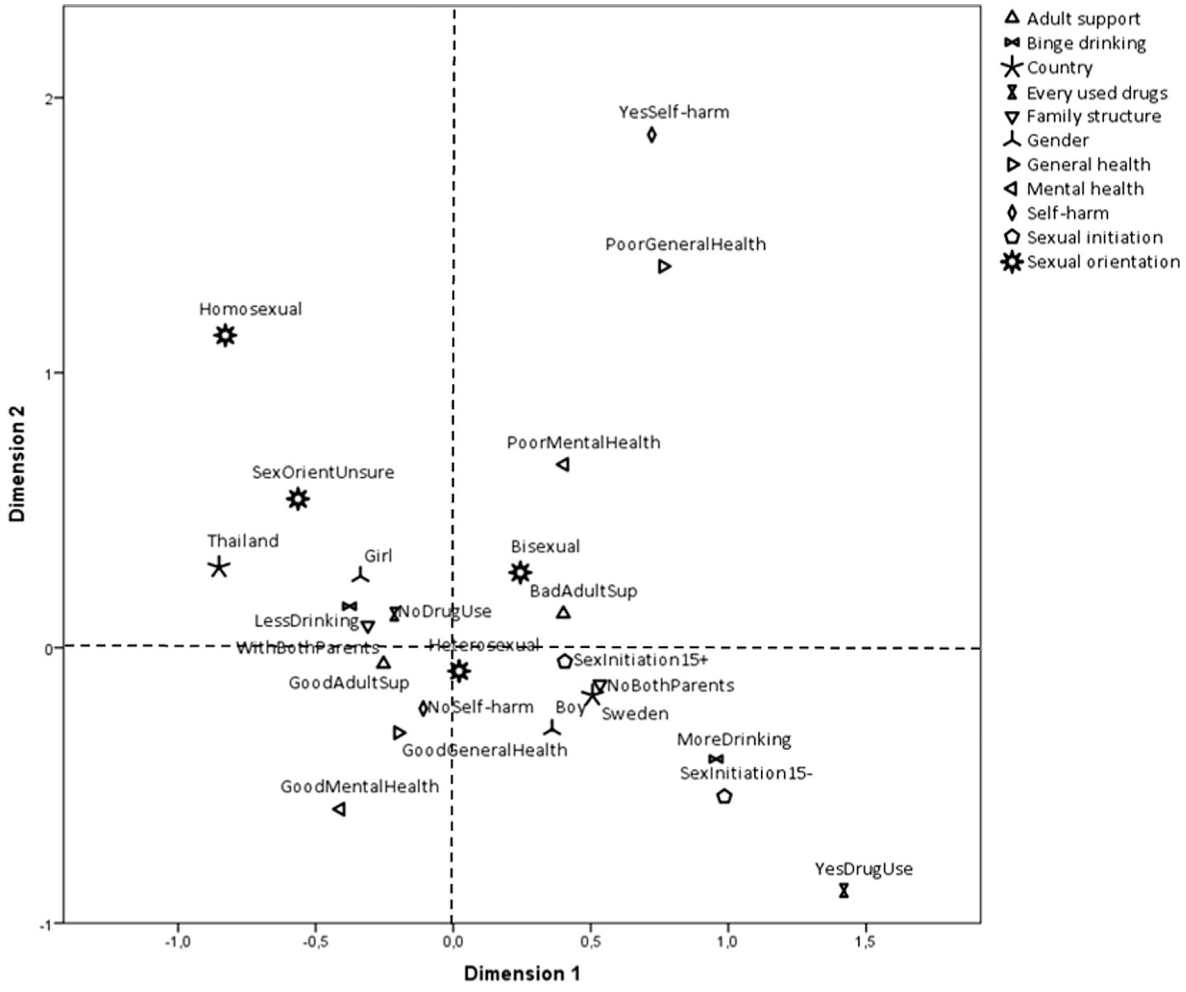

Fig. 1. Multiple correspondence analysis showing associations between sexual orientation and health and risk behaviours of the students in Thailand and Sweden.

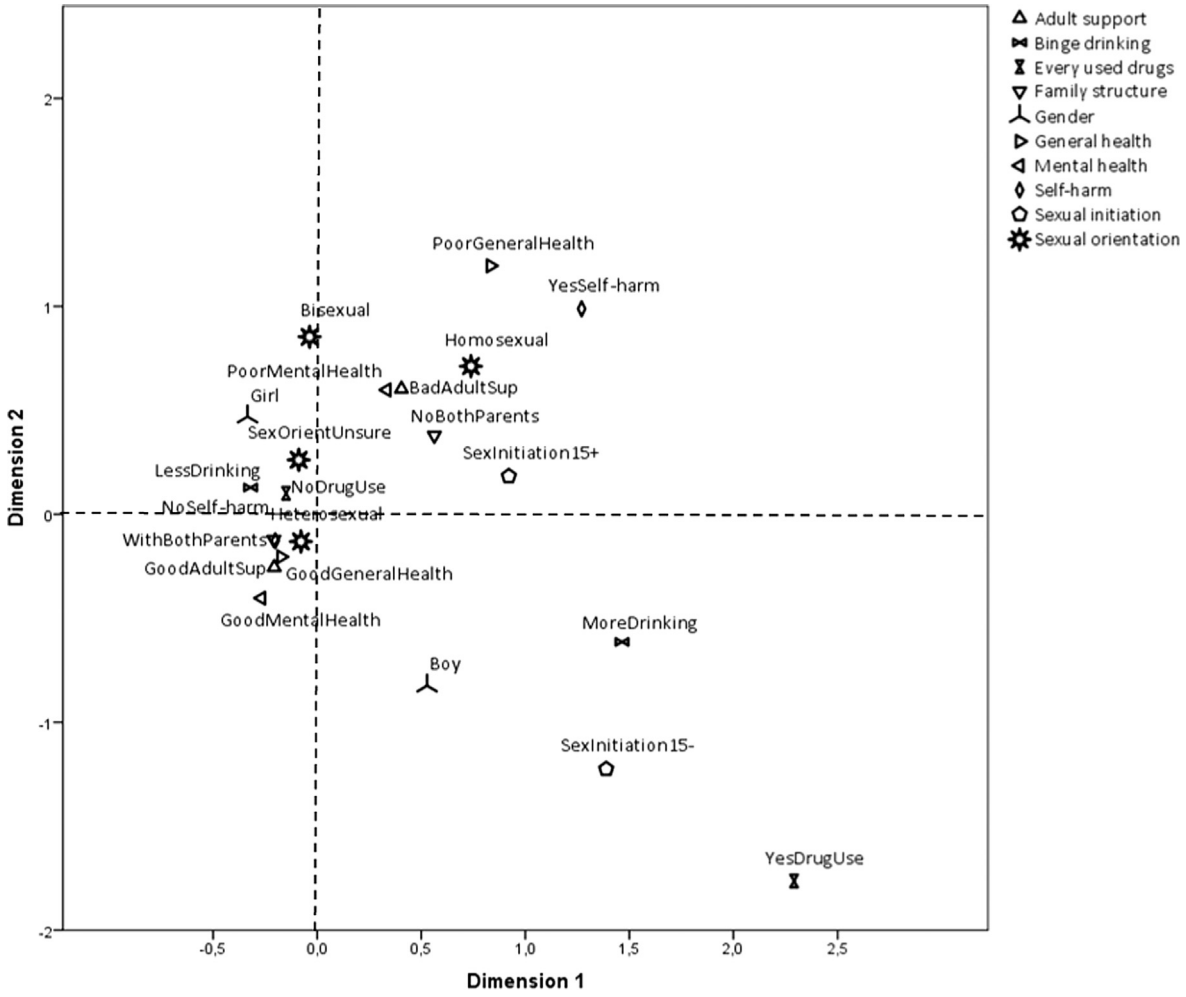

Fig. 2. Multiple correspondence analysis showing the associations between sexual orientation and health and risk behaviours of the Thai students.

where it was found that suicide attempts were more frequent among sexual minorities than heterosexual young people, except for boys who had sexual contact with boys [23].

Multiple correspondence analysis also revealed close relationships between sexual minorities and drug use and mental health among Thai and Swedish students, whereas the results from bivariate analysis and multiple logistic regression analysis did not show a significant association between these variables. The result is in line with previous studies reporting that sexual minorities were greater users of drugs than heterosexuals [9]; levels of depressive symptoms were higher among homosexuals than heterosexuals [24]; and bisexual girls were more likely to report depression than their heterosexual counterparts [10]. It has been found that levels and patterns of drinking among sexual minorities vary substantially across countries, depending on the stress level they experience from being discriminated or stigmatized [25]. Considering mental health, lesbian, gay and bisexual young people have been found to be at greater risk of depressive symptoms than their heterosexual counterparts [26]. Further, the need for psychological support among sexual minorities is still unmet, because the majority is assumed by health care providers to be heterosexual. This makes it difficult for sexual minorities to discuss their sexual issues with health care professionals [27].

In Sweden, students who reported unsure sexual identity were significantly more likely to initiate early sexual debut than the heterosexual students were. Early sexual debut was associated with sexual risk-taking behaviour, substance abuse, violent victimization and suicidal behaviour [8]. This indicates that this group of individuals may need special attention and support through universal access to SRHR services as youth clinics including family planning, counselling and education, to prevent poor SRHR outcomes [6].

Our findings also highlight that health and risk behaviours of young people can vary by sexual orientation and sociodemographic background. The finding is supported by a study that found a variety of disparities in health behaviours, health outcomes and services use among men and women in relation to their sexual identity [28].

Method discussion

A combination of bivariate analysis, multiple logistic regression analysis and multiple correspondence analysis was useful for identifying patterns of associations more explicit [18,20].

The fact that the SQYS questionnaire has been used consecutively to identify trends and changes over time, and also in several scientific studies [18–20] strengthens its validity and reliability. Further, TYQS was developed from SYQS and tested for cultural sensitivity for this study [21].

The data used in this study were considered appropriate for a comparative approach. In both countries, the data collections were completed in the same year, they included large samples from one province in each country and the response rates were high. The confidentiality of the survey and the possibility to answer the questionnaire voluntarily and anonymously in the school environment may strengthen the finding. Answering in school without direct parental influence could facilitate the students feeling comfortable about

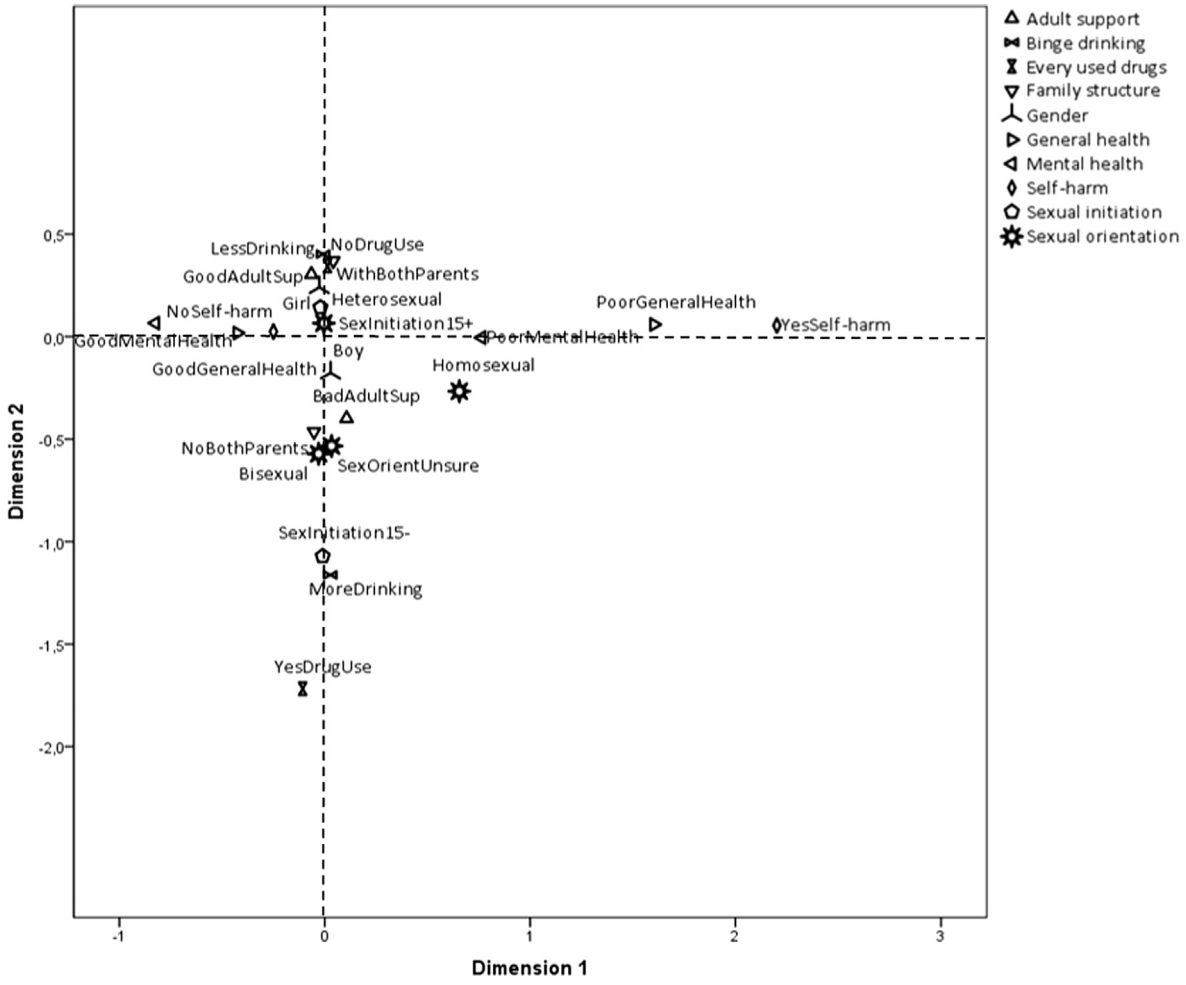

Fig. 3. Multiple correspondence analysis showing the associations between sexual orientation and health and risk behaviours of students in Sweden.

responding to sensitive questions truthfully and being less likely to give a socially desirable answer. There may be some influence from peers when completing a survey in school; however, as the survey was monitored by adults, this risk is minimized.

Limitations of the study

Cross-sectional studies have limited ability to address temporal ordering of incidents, which limits the possibility of addressing causality. As the study was a school-based survey, the results may not be representative of the young people who are not in the school system, especially in Thailand where upper-secondary school is not compulsory. In the analysis, some of the subgroups were very small, therefore the results should be interpreted cautiously.

Questions assessing self-harm, drinking, and mental health required retrospective recall, which can influence our findings. Retrospective recall can cause recall bias, particularly for questions assessing previous experiences during a long time-frame [29].

The Thai students were a few months younger than the Swedish students at the time when answering the questionnaire, a variation in the young people's maturity has to be considered.

Conclusions and implications

Our findings highlight that reporting oneself as sexual minority was significantly more frequent among Thai than Swedish students and that health and risk behaviours of young people vary by sexual orientation, with sexual minorities reporting more risk-taking behaviours and poorer health than the heterosexual students.

The findings can be useful for schools, health sectors, youth clinics, policymakers and policy programmes on SRHR to become more aware of diverse sexual orientations among young people.

Further research on factors that may affect SRHR of sexual minority young people such as societal values, peer support groups, internet and social media is needed.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.srhc.2019.05.004.

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