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Self-rated health, symptoms and health behaviour of upper secondary vocational students by field of study

ABSTRACT

This article examines the symptoms and health behaviour of upper secondary vocational students in Finland. The data consist of the responses of first and second year vocational students ($n = 34,554$) to the 2013 School Health Promotion Survey. The data were analysed statistically and processed separately for girls and boys. Associations between symptoms and health behaviour and fields of study were examined by cross-tabulation. Statistical significance was measured using the chi-square test. Self-rated health, symptoms and health behaviours were found to have a statistically significant association with field of study ($p < 0.001$). Vocational students in different fields had different symptoms and different health behaviours. The results complement existing evidence about disparities in well-being among young people in the context of education.

Keywords: symptoms, health behaviour, vocational students, survey

Symptoms and health behaviour of upper secondary vocational students by field of study

INTRODUCTION

Students on different educational paths have different health behaviours. Many adverse health behaviours are more common among students in vocational institutions than in upper secondary schools. (1) It has been suggested that these differences are explained by family background factors and the close intercorrelation between different types of substance use (2). Girls in vocational institutions report more psychological and physical symptoms than boys in vocational schools and both girls and boys in general upper secondary schools (1). To our knowledge there is no earlier research into upper secondary vocational students' symptoms and health behaviour in different fields of study in Finland.

Vocational education and training (VET) in Finland is designed both for young people without upper secondary qualifications and for adults already in work life. Vocational qualifications can be completed in school-based VET or as competence-based qualifications. VET is organised mainly in institutions or as apprenticeship training. VET provides skills for both life and work. A vocational qualification gives general eligibility for university of applied science and university studies.

The qualifications structure in vocational education and training (VET) has three levels. There are three types of qualifications: vocational upper secondary qualification, further vocational qualification, specialist vocational qualification. Vocational upper secondary education and training is designed primarily for students who have just completed basic education and for others who have no work experience or vocational skills. The context of this study refers to students who are studying on the 1st or 2nd grade of vocational school.

The Ministry of Education and Culture. Vocational education and training in Finland.

<https://minedu.fi/en/vocational-education-and-training>

YOUNG PEOPLE'S SELF-RATED HEALTH AND ASSOCIATED FACTORS

Self-rated health refers to an individual's subjective perception of their own state of health. It is a very common research measure of health status (3). Young people's responses to self-rated health questions seem to quite accurately reflect their well-being, functional ability, use of health

services and health behaviour (4). Young people's subjective health assessments seem to remain relatively constant for several years, and therefore self-rated health can be used to predict the individual's health in the years ahead as well as the appearance of risk factors at a later age (5).

Young people often think of health in terms of the opposite of illness, but also in terms of psychological and social dimensions in connection with different areas of life (6). Young people most typically rate their health as good or very good (1,7-9). With increasing age, however, the proportion reporting poorer health begins to rise. Girls tend to have poorer self-rated than boys (4,7,10).

Research has shown that a physically active way of life is associated with better self-rated health and well-being. Young people who participate in sports have a better perceived quality of life and health than those who are physically inactive (7,9,11,12). The more frequently young people engage in physical exercise, the better their subjective assessments of health. The association between physical activity and self-rated health is more apparent in boys than girls (11). It has also been reported that various types of sleeping difficulties such as interrupted or inadequate sleep correlate with poor self-rated health (13,14).

Young people who smoke and drink are more likely to report poor self-rated health than non-smokers and non-drinkers (7). High tobacco product consumption and daily smoking increase the risk of poor self-rated health. Likewise, a history of smoking has been reported to correlate with poor self-rated health, although the evidence also indicates that giving up smoking results in some improvement in perceived health (15).

There is an established association between family factors and self-rated health. Young people living with both parents rate their health as better than those living in other family forms (16,17). Living in a single-parent family may adversely affect self-rated health, especially in boys (9,18). It has been found that young people whose parents have a high education have a lower risk of poor self-rated (17). This connection is strongest with mother's educational background (12,18).

YOUNG PEOPLE'S REPORTED SYMPTOMS AND ASSOCIATED FACTORS

Physical and psychological symptoms such as fatigue, pain, sleeping difficulties and anxiety and tension symptoms are relatively common in young people (1,10,19,20), and they often co-occur

(20). Irrespective of age or type of symptoms, girls tend to have more symptoms than boys (10,21-23). This difference increases with age (10,23).

Constant symptoms complicate the lives of young people in many ways. Tiredness and fatigue hamper their performance at school (24). School absenteeism is more common among young people with recurring symptoms than others (22). Those suffering from pain symptoms have more difficulty attending class, and pain also increases the risk of sleeping difficulties and dropping out of leisure physical activities (19). Young people with regular pain symptoms, especially those experiencing pain in different parts of the body, have reported a reduced quality of life (22).

Health service use, such as visits to the school health nurse, is more common among those with recurring pain and depression symptoms than those with only occasional symptoms (22,25,26). Anxiety, irritability, withdrawal from social relations and school absenteeism all hamper the learning of interaction skills and therefore present a risk to age-appropriate development (27).

The presence of symptoms in youth predicts having symptoms later in life (20). In particular, young people reporting many symptoms are at a higher risk than other youths to have permanent symptoms and to see their symptoms continue into adulthood (28). Indeed, perceived symptoms in youth may predict psychological problems in adulthood for young people who report not only somatic symptoms, but also depression and anxiety (29). Although youth is an important period for preventing the emergence of problems in adulthood, good health in youth is in itself valuable and worth pursuing (27).

Research has shown that family factors and young people's health behaviour are associated with the presence of symptoms. The prevalence of pain symptoms, for instance, is higher among young people living with one than two parents (21,26). Furthermore, children from financially disadvantaged families report pain symptoms more often than those in financially healthy families (25). It has been found that low involvement in physical activities is associated with somatic symptoms in girls, and with symptoms of anxiety in boys (12). Young people who sleep short hours report more symptoms of pain, depression and anxiety than others (14,30). Pain symptoms are more common among young people who smoke and drink (21,31). Heavy alcohol use also increases the risk of depression and anxiety symptoms as well as sleeping difficulties in young people (32).

The purpose of this study is to describe the self-rated symptoms and health behaviour of upper secondary vocational students in Finland. We have the following research questions: 1) What symptoms are reported by girls and boys in different fields of study? 2) What characterises the health behaviour of girls and boys in different fields of study? and 3) To what extent do health problems occur in different fields of study?

RESEARCH DATA AND METHODS

Data

The data were drawn from the 2013 School Health Promotion (SHP) Survey conducted by the National Institute for Health and Welfare (THL) among first and second year vocational students aged under 21 and pursuing upper secondary qualifications (n=34,776). The data were collected in March-April 2013 using online questionnaires that were completed voluntarily, independently and anonymously during class (1).

The data was made available to the research team upon written application to THL. The present study was limited to students aged 14 or over (n=34,554). The oldest respondents were aged 20.4 years.

The SHP survey is designed to collect information about young people's living conditions, school conditions, self-rated health, health habits and student services. It is conducted every other year among first and second year vocational students since 2008. (1)

Instrument

For this study we used the SHP items concerning field of study, self-rated health, symptoms, health behaviour, gender and family factors.

Field of study

The response options for the field of study item were: "humanities and education", "culture", "social sciences, business and administration", "technology, communications and transport",

“natural resources and environment”, “social services, health and sport” and “tourism, catering and domestic services”.

Self-rated symptoms

The question concerning symptoms (“In the past six months, have you had any of the following symptoms and if so, how often?”) listed eight symptoms: “neck and shoulder pain”, “lower back pain”, “stomach pain”, “tension or nervousness”, “irritability or outbursts of anger”, “difficulty falling asleep or waking up during the night”, “headache” and “fatigue or weakness”. Symptom frequency was measured as follows: “rarely or never”, “about once a month”, “about once a week” and “almost daily”. Reported symptoms were also collapsed into a single variable that combined all types of symptoms and divided into two categories: “at least two different symptoms almost daily” and “less than two different symptoms daily”.

The health behaviour items included smoking, alcohol use, physical exercise and number of hours slept per night. The smoking item was, “Which of the following options best describes your current smoking status?” The response options were “I smoke once a day or more often”, “I smoke once a week or more often, but not daily”, “I smoke less often than once a week”, and “I’m staying away or have quit smoking”. The two middle responses were collapsed into the category “less often than daily”. Those whose response to the question, “In all, how many cigarettes, pipefuls and cigars have you smoked to date?” was “none” or “just one”, were placed in the category “no smoking”.

Alcohol use was assessed with the question, “How often do drink alcohol, say half a bottle or beer or more?” The response options were “once a week or more often”, “a couple of times a month”, “about once a month or less often” and “I don’t drink alcohol”.

The physical exercise question was worded as follows: “How many hours a week do you usually exercise in your free time so much that you get out of breath or sweat?” The response options were “none”, “about half an hour”, “about an hour”, “about 2–3 hours”, “about 4–6 hours”, and “about 7 hours or more”. The variable was divided into four categories, with the second and third response option collapsed into one category, “about half an hour to an hour” and the last two response options into “more than 4 hours a week”.

Number of hours slept at night was assessed with two questions. "At what time do you usually go to bed on weekdays/weekends" and "At what time do you usually get up on weekdays/weekends?" The variable used in this study described the number of hours slept on weekdays, and it was divided into three categories: "less than 7 hours", "7–9 hours" and "more than 9 hours".

Family factors

We used two family factors as background variables: parental education and respondents' living arrangement. Parental education was assessed by asking: "What is the highest education your parents have completed?" (mother's and father's education separately). The response options were "comprehensive school or primary school", "general or vocational upper secondary education", "vocational studies in addition to general or vocational upper secondary education", "university, polytechnic or other post-secondary education" and "no education". These were combined into a four-category variable by combining the first and last response options.

Living arrangement was determined by asking the respondents to identify the adults with whom they lived. The response options were: "I live with my mother and father", "I live in turn with my mother and my father, my parents don't live together", "I live only with my mother", "I live only with my father", "I live with my mother/father and his/her partner", "I live with some other adult or adults" and "other living arrangement". These were combined into a five-category variable describing family structure. The first category was called "nuclear family", and the second response option represented "dual residence". Living only with one's mother or father was called "single-parent family", and the next response option a "stepfamily". The last two response options were combined into the category "other living arrangement".

Data analysis

Associations between self-rated symptoms, health behaviour and background factors were analysed by cross-tabulation, and statistical significance was tested by chi square test. Statistical significance was set at $p < 0.001$ because of the large size of the dataset. (33) Analyses were run separately for girls and boys because past research has found significant gender differences in self-

rated symptoms in different fields of study (1). The research data were analysed using IBM SPSS 22 Statistics.

RESULTS

Respondents' background

Over one-third of the girls (n=5,140) were studying for vocational qualifications in the social services, health and sports field, which had the largest number of female students. The number of girls was lowest in the natural sciences field (1%, n=85). Most of the boys (70%, n=13,413) were pursuing qualifications in technology, communications and transport. The number of boys was lowest in the humanities and education field: just 1% of boys were studying in this field (n=139) (Table 1).

Insert Table 1 here

The most common living arrangement in all fields of study and among both girls and boys was nuclear family. Girls reported some other living arrangement more often than boys. General or vocational upper secondary education was the most commonly reported highest level of parental education among both girls and boys. It is noteworthy that 5% of the respondents (n=1,592) failed to answer the question concerning father's education and 4% (n=1,222) the question concerning mother's education. Both parental education and family structure showed a statistically significant association ($p < 0.001$) with field of study among both girls and boys (Table 2).

Insert Table 2 here

Insert Table 3 here

Symptoms

Both girls' and boys' most common symptoms were fatigue and weakness. In the technology, communications and transport field one in four girls reported feeling tired or weak almost every day. Almost daily experiences of fatigue and weakness were slightly less common among girls in the natural resources and environment field (16%) than in other fields of study. Among boys the proportion reporting almost daily fatigue or weakness symptoms ranged from 7% to 13%.

Girls in the natural sciences field and in the technology, communications and transport field were affected by sleeping difficulties more often than others: more than one in five of them reported almost daily difficulties falling asleep or waking up at night. Girls in the social services, health and sports field reported almost daily sleeping difficulties least often (14%). Among boys, difficulties falling asleep or waking up at night were most common in the culture field (16%). In other fields of study the proportion reporting sleeping difficulties was around one-tenth.

In all fields of study girls' most common daily pain symptoms were neck and shoulder pains. The proportion was highest among culture students (25%), but the share of students reporting neck and shoulder pains was less than one-fifth only in the natural resources and environment field. In all fields of study over one-tenth of girls reported almost daily lower back pain. Daily headache was reported somewhat more often (8–16%). Daily abdominal pain was quite rare (4–8%), but less frequent abdominal pain was very common (57–70%).

Among boys there was greater variation across fields of study in the most common type of pain symptoms. In the humanities and education field neck and shoulder pain was more common (14%) than in other fields of study. Daily lower neck pain, then, was reported most often by social services, health and sports students (10%). In all fields of study 2–6% of boys reported daily abdominal pain and headache.

Almost daily tension and nervousness was reported most often by girls studying natural sciences (19%). In many other fields the proportion was around one-tenth. Among boys, the figure ranged from 4% to 9%. At least one in ten girls in all fields of study reported almost daily irritability and outbursts of anger. The corresponding proportion for boys in the humanities and education field was 9%. In other fields a smaller proportion of boys (3–6%) reported irritability and outbursts of anger. A statistically significant association was shown between individual symptoms and fields of study ($p < 0.001$). Girls' and boys' symptoms by field of study are shown in Table 3.

Health behaviour

Health behaviour and field of study showed a statistically significant correlation ($p < 0.001$). Girls' and boys' health behaviour is described in Table 2.

In almost all fields of study the majority of both girls and boys smoked or had smoked earlier. However, around half of the girls and boys in the natural sciences field had never smoked. Among natural resources and environment students and culture students, 40% of both girls and boys had never smoked. Among tourism, catering and domestic services students the proportion of non-smokers was lower: less than one-third said they had never smoked. The proportion of non-smokers was lowest (30%) among boys studying for qualifications in the humanities and education field (30 %).

Among girls the proportion who said they did not drink ranged from 14% to 38%, among boys from 16% to 38%. Among both girls and boys the proportion of teetotallers was highest among natural science students.

Participation in intense physical exercise for more than four hours a week was highest among boys studying for qualifications in social services, health and sport (50%) and in social sciences, business and administration (42%). Among girls, too, the proportion reporting that they did more than four hours of physical exercise a week was highest in social services, health and sport (25%). The proportion of girls who said they did two to three hours of physical exercise that made them get out of breath or sweat was 20–31%, for boys the figure was 20–30%.

In all fields of study over 80% of girls got 7–9 hours of sleep during the week. Among boys the proportion who said they slept 7–9 hours a night ranged from 70% to 81%. Students who slept more than nine hours during the week were in the minority among both girls and boys in all fields of study.

Health problems

Figures 1 and 2 sum up the proportion of girls and boys who reported at least two daily symptoms; who smoked daily; who drank alcohol at least once a week; who did not take any strenuous physical exercise; and who got less than seven hours of sleep during the week by field of study.

Among natural science students, 23–33% of girls and 9–17% of boys reported at least two daily symptoms. Multiple symptoms were reported most often by girls in the technology, communications and transport field. Among boys the proportion reporting at least two daily symptoms was highest among humanities and education students.

Among girls the proportion of daily smokers ranged from 26% to 44%. Daily smoking was most common among technology, communications and transport students. The figure was almost as high among students in the tourism, catering and domestic services field. Girls in these fields also used alcohol more often than others. Among girls studying for qualifications in tourism, catering and domestic services 17% drank once a week or more often, among girls in the technology, communications and transport field the figure was 16%.

Among boys the proportion of daily smokers ranged from 22% to 42%. The proportion of daily smokers was highest in the humanities and education field. In almost all fields one-fifth of the boys used alcohol once a week or more often.

Girls studying for natural science qualifications did the least amount of intense physical exercise. Around one-third of them said they never engaged in physical exercise to the extent that they got out of breath or began to sweat. Among boys, too, the proportion of inactive students was highest in the natural sciences (30%).

Technology, communications and transport students got the least amount of sleep: 15% of these students slept for less than seven hours a night. Among boys, natural science students got by far the least amount of sleep during the week (26%).

Insert Figures 1 and 2 here

DISCUSSION

The results of this study show that upper secondary vocational students' self-reported symptoms and health behaviour vary significantly between different fields of study. As well as complementing existing research, our findings shed new light on differences in the well-being of

young people following different educational paths. Previous research in Finland has highlighted differences between vocational and general upper secondary students (1,2).

One potential explanatory factor behind these differences is that different fields of vocational training and education training constitute different kinds of learning environments (34). Within each of these fields, students can choose to pursue different qualifications. Humanities and education students can take qualifications to become youth and leisure instructors. Culture students can become media assistants, artisans or dancers. Social sciences, business and administration students can pursue qualifications in financial and office services and natural science students' qualifications in information and communications technology. The technology, transport and communications sector is the largest field of education, and students graduate among others as vehicle mechanics, drivers, property maintenance operatives, laboratory technicians, dressmakers and foods makers. Natural resource and environment students graduate among others as gardeners and forest machine operators. Future jobs of tourism, catering and domestic services students include those of waiter, cook and travel counsellor. Finally, social services, health and sports students pursue qualifications needed to practise as practical nurses, hairdressers and sports assistants (36).

In almost all fields of study around one in three girls reported at least two daily symptoms. Although the prevalence of symptoms among boys varied considerably between different fields, girls reported a much larger number of symptoms in all fields of study. Our findings on gender differences in reported symptoms are consistent with earlier research (7,10,21,23). Perceived health reflects the young individual's well-being in general (4,35), and that well-being is threatened by recurring multiple symptoms (22,28,29). The results are far from positive as far as girls' health and quality of life are concerned. It is also noteworthy that among humanities and education students and culture students, the proportion of boys reporting several symptoms was higher than in other fields of study.

Adverse health behaviours seem to show some tendency to cluster in certain fields of study. Smoking was common in all fields of study among both girls and boys. However there were some fields where girls' daily smoking was far more common than in others. In technology, communications and transport and in tourism, catering and domestic services the proportion of girls who said they smoked daily was higher than the overall proportion of boys who said they

were daily smokers. Based on the earlier literature there is a clear correlation between poor self-rated health and smoking especially among girls (15).

Among natural science and culture students, girls not only reported multiple symptoms but also had another health risk: they took very little physical exercise. In these same fields of study lack of physical exercise was worryingly common among boys, too. Current national guidelines are that children and youths should be physically active for at least one hour a day, while adults need to engage in moderate physical activity for at least 150 minutes or in intense activity for at least 75 minutes a week (37). According to our results a clear minority of culture and natural science students engaged in physical activity for more than two hours a week.

Reliability of study

Student numbers varied widely between the different fields of study, among both girls and boys. In some fields the number of students was extremely low in comparison with others. We have no accurate figures for data coverage, but estimate that our dataset captures 37% of all first and second year students in upper secondary training and vocational leading to vocational qualifications (1). This needs to be borne in mind when generalising the results to first and second year students in Finnish vocational institutions. Statistical significance was tested in our study using chi square test. We had a large dataset and the conditions for using the chi square test were fulfilled. The large size of the dataset can be considered to enhance the reliability of the study (33).

It is known from earlier research that young people with multiple symptoms have higher rates of school absenteeism (22). It is possible that some of these people were not reached in this study because the questionnaire was administered during class. In reality, therefore, it is possible that symptoms occur more frequently than the results indicate.

CONCLUSIONS

In conclusion, the self-rated symptoms and health behaviour of upper secondary vocational students in Finland differ quite a lot among both girls and boys in different fields of study. In all these fields large numbers of girls report large numbers of symptoms. More research is needed to

identify the component factors of vocational students' health and well-being and to gain clearer insight into the reasons that lie behind the differences between different fields of study.

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Table 1. Number and percentage breakdown of upper secondary vocational students by field of study (2013 School Health Promotion Survey, n=34,554).

	Girls		Boys		Total	
	n	%	n	%	n	%
Humanities and education	494	3	139	1	633	2
Culture	1039	7	443	2	1482	4
Social sciences, business and administration	2325	15	1683	9	4008	12
Natural sciences	85	1	619	3	704	2
Technology, communications and transport	2043	13	13413	70	15456	45
Natural resources and environment	697	5	787	4	1484	4
Social services, health and sports	5140	34	541	3	5681	17
Tourism, catering and domestic services	3451	23	1425	8	4876	14

Table 2. Background factors and health behaviour of upper secondary vocational students by field of study (2013 School Health Promotion Survey, n=34,554), % (n).

	Humanities and education		Culture		Social sciences, business and administration		Natural sciences		Technology, communications and transport		Natural resources and environment		Social services, health and sports		Tourism, catering and domestic services	
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B
Family structure																
Nuclear family	45(219)	38(51)	37(380)	50(217)	51(1167)	59(956)	38(32)	53(320)	40(805)	56(7253)	51(357)	67(510)	48(2428)	56(292)	41(1400)	45(624)
Dual residence	5(22)	9(12)	5(51)	7(29)	4(99)	8(124)	6(5)	9(57)	5(92)	8(1022)	4(25)	7(52)	4(200)	7(38)	5(163)	10(137)
Single-parent family	14(70)	23(31)	13(128)	13(58)	16(373)	15(236)	28(24)	18(108)	17(338)	17(2204)	14(98)	12(95)	14(720)	13(68)	18(595)	21(284)
Stepfamily	11(53)	8(11)	8(86)	7(30)	9(206)	8(137)	7(6)	9(52)	10(200)	9(1218)	9(59)	6(48)	9(444)	7(35)	11(374)	12(163)
Other	26(127)	21(28)	37(382)	24(103)	19(445)	11(173)	21(18)	12(70)	29(580)	10(1328)	23(158)	8(62)	25(1274)	17(91)	25(860)	13(173)
Mother's highest education																
No education or comprehensive/primary school	12(59)	16(21)	14(139)	11(45)	15(345)	13(202)	20(16)	12(69)	17(343)	15(1862)	15(102)	17(129)	13(671)	15(75)	18(604)	15(197)
General or vocational upper secondary education	46(225)	36(48)	39(399)	37(161)	45(1015)	39(619)	40(32)	40(236)	44(866)	42(5426)	40(271)	42(318)	44(2210)	34(174)	44(1473)	40(539)
Vocational studies in addition to general or vocational upper secondary education	22(106)	14(18)	22(224)	25(109)	21(474)	23(371)	20(16)	23(138)	20(400)	21(2676)	26(176)	22(167)	21(1075)	20(105)	20(665)	21(283)
University, polytechnic or other post-secondary education	20(99)	35(46)	25(250)	27(115)	19(436)	26(415)	21(17)	25(148)	19(379)	22(2865)	20(135)	18(138)	21(1079)	32(165)	18(608)	25(332)
Father's highest education																
No education or comprehensive/primary school	26(124)	16(21)	19(188)	17(72)	23(511)	20(313)	22(17)	21(122)	25(488)	21(2601)	23(156)	28(207)	21(1025)	18(90)	26(856)	20(272)
General or vocational upper secondary education	45(219)	45(59)	45(445)	41(174)	47(1044)	40(645)	43(34)	40(231)	46(904)	46(5814)	43(294)	46(343)	49(2415)	39(202)	47(1538)	44(589)
Vocational studies in addition to general or vocational upper secondary education	16(78)	19(25)	18(179)	22(92)	15(328)	18(284)	23(18)	16(91)	14(279)	16(1988)	17(116)	15(109)	16(771)	21(107)	14(459)	15(199)
University, polytechnic or other post-secondary education	13(61)	19(25)	18(183)	21(88)	16(353)	22(356)	13(10)	24(137)	15(288)	18(2306)	17(116)	12(92)	15(762)	22(114)	14(449)	21(278)
Smoking																
Daily	37(180)	42(57)	27(275)	29(125)	37(841)	27(449)	26(22)	22(128)	44(884)	37(4898)	26(179)	36(282)	34(1731)	29(156)	43(1477)	35(491)

Table 3. Upper secondary vocational students' self-rated health and symptoms by field of study (2013 School Health Promotion Survey, n=34,554), % (n).

	Humanities and education		Culture		Social sciences, business and administration		Natural sciences		Technology, communications and transport		Natural resources and environment		Social services, health and sports		Tourism, catering and domestic services	
	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B
Self-rated health																
Very good	12(60)	28(38)	13(133)	22(98)	18(405)	36(593)	17(14)	23(139)	16(318)	34(4544)	12(85)	35(270)	17(851)	39(206)	15(495)	31(435)
Rather good	60(294)	55(75)	50(518)	53(232)	58(1340)	48(789)	43(36)	48(295)	54(1097)	50(6596)	60(416)	51(391)	62(3152)	47(252)	57(1957)	47(658)
Average or poorer	28(140)	17(23)	37(382)	25(109)	25(571)	16(266)	40(33)	29(176)	31(624)	16(2119)	28(194)	15(112)	22(1106)	14(74)	28(966)	23(317)
Neck or shoulder pain																
Rarely or never	19(91)	30(42)	18(182)	38(167)	21(477)	46(769)	35(30)	47(286)	20(408)	51(6728)	26(180)	49(385)	19(971)	46(246)	20(697)	45(634)
About once a week to once a month	57(281)	56(78)	58(598)	54(236)	59(1369)	47(780)	49(42)	44(268)	57(1153)	44(5812)	56(386)	44(346)	60(3063)	46(246)	59(2030)	47(659)
Almost daily	24(120)	14(19)	25(256)	9(38)	20(467)	7(114)	15(13)	9(57)	23(472)	6(789)	19(129)	7(54)	21(1094)	8(44)	20(701)	9(122)
Lower back pain																
Rarely or never	35(174)	38(53)	35(362)	50(220)	36(827)	53(885)	49(42)	57(348)	32(638)	55(7273)	36(251)	48(376)	34(1751)	49(259)	34(1154)	50(700)
About once a week to once a month	52(255)	52(72)	53(547)	42(184)	54(1250)	40(662)	39(33)	37(225)	53(1079)	39(5168)	52(363)	45(349)	54(2738)	42(223)	54(1832)	42(590)
Almost daily	13(64)	9(13)	12(123)	8(35)	10(229)	7(117)	12(10)	6(39)	15(309)	6(856)	11(79)	7(58)	12(619)	10(52)	13(434)	9(122)
Headache																
Rarely or never	19(93)	41(56)	23(240)	39(174)	20(472)	42(705)	33(28)	44(269)	22(455)	47(6272)	31(211)	45(351)	20(1029)	41(221)	21(735)	43(615)
About once a week to once a month	65(322)	56(77)	63(649)	56(248)	64(1487)	53(886)	58(49)	51(312)	62(1261)	49(6557)	59(407)	52(409)	66(3362)	54(293)	64(2203)	52(731)
Almost daily	16(77)	4(5)	14(145)	5(20)	16(359)	5(79)	9(8)	6(35)	16(320)	4(487)	11(74)	3(22)	14(731)	5(26)	15(498)	5(70)
Stomach pain																
Rarely or never	27(131)	61(82)	28(287)	62(271)	25(567)	63(1030)	37(31)	59(360)	28(558)	68(8976)	37(257)	70(543)	26(1315)	64(342)	25(856)	63(875)
About once a week to once a month	67(330)	33(45)	66(684)	33(145)	70(1604)	35(573)	57(48)	38(229)	65(1317)	30(3941)	60(413)	28(219)	68(3450)	34(179)	67(2286)	34(476)
Almost daily	6(30)	6(8)	6(62)	5(20)	6(134)	3(45)	7(6)	4(22)	7(146)	2(285)	4(24)	2(14)	6(328)	3(14)	8(258)	3(43)
Tension or nervousness																
Rarely or never	23(113)	38(53)	22(230)	40(175)	28(644)	49(819)	37(31)	49(295)	31(623)	56(7433)	34(233)	58(450)	27(1351)	46(244)	29(990)	50(700)
About once a week to once a month	67(328)	53(73)	63(646)	52(229)	63(1447)	45(758)	45(38)	44(265)	57(1152)	40(5342)	57(395)	38(298)	64(3257)	50(265)	59(2023)	44(627)

Almost daily Irritability or outbursts of anger	10(51)	9(12)	15(158)	8(37)	9(216)	6(92)	19(16)	8(46)	13(255)	4(510)	10(67)	4(33)	10(498)	5(25)	12(403)	6(84)
Rarely or never	23(115)	41(57)	28(283)	52(227)	24(543)	53(875)	32(27)	58(351)	27(548)	60(7907)	32(219)	62(485)	25(1285)	52(277)	24(804)	52(724)
About once a week to once a month	66(326)	50(69)	61(625)	43(187)	64(1475)	42(692)	57(48)	36(219)	59(1187)	37(4869)	59(406)	35(272)	64(3279)	44(236)	63(2149)	44(610)
Almost daily Difficulty falling asleep or waking up during the night	11(52)	9(12)	12(122)	5(22)	12(281)	6(92)	11(9)	6(36)	14(291)	4(477)	9(65)	3(24)	10(531)	4(23)	13(456)	5(69)
Rarely or never	36(178)	40(56)	30(309)	42(186)	36(826)	50(826)	41(35)	51(310)	33(675)	57(7592)	41(284)	61(479)	38(1931)	52(279)	35(1198)	49(695)
About once a week to once a month	48(233)	48(67)	51(523)	42(184)	49(1136)	41(684)	38(32)	36(221)	46(928)	35(4654)	42(294)	34(265)	48(2470)	38(203)	47(1604)	41(570)
Almost daily Fatigue or weakness	16(79)	12(16)	20(203)	16(69)	15(346)	9(156)	21(18)	13(78)	21(427)	8(1038)	17(115)	5(39)	14(720)	10(55)	18(623)	10(141)
Rarely or never	17(86)	30(42)	15(156)	30(130)	16(369)	36(600)	20(17)	37(226)	16(334)	43(5723)	25(176)	47(368)	15(759)	33(175)	17(585)	36(501)
About once a week to once a month	61(299)	57(78)	61(626)	59(257)	62(1425)	53(887)	59(50)	50(305)	59(1194)	49(6467)	59(407)	46(357)	64(3266)	57(306)	59(2005)	52(726)
Almost daily	22(108)	13(18)	24(252)	12(52)	22(517)	11(174)	21(18)	13(78)	25(505)	8(1084)	16(110)	7(53)	21(1093)	10(56)	24(838)	13(183)

Association of self-rated health and symptoms with fields of study. Chi square test, $p < 0.001$. G=girls, B=boys.

Less often than daily	14(68)	15(21)	15(153)	16(70)	18(401)	16(254)	6(5)	9(56)	11(223)	13(1681)	12(84)	11(83)	16(834)	17(92)	15(494)	14(191)
Used to smoke earlier	16(78)	13(18)	15(155)	12(54)	15(344)	18(289)	14(12)	13(78)	14(284)	15(2005)	13(89)	11(85)	18(911)	21(109)	14(492)	15(203)
No smoking	33(161)	30(41)	43(442)	43(190)	31(710)	39(644)	54(45)	56(334)	31(631)	35(4625)	49(340)	42(327)	32(1625)	33(175)	28(954)	37(510)
Alcohol use																
Once a week or more often	10(47)	20(28)	13(139)	17(73)	15(345)	18(303)	6(5)	15(92)	16(324)	21(2749)	11(73)	20(155)	12(614)	20(109)	17(590)	21(292)
About twice a month	34(168)	35(48)	28(294)	27(119)	33(752)	29(475)	18(15)	18(110)	31(626)	30(3924)	24(170)	28(215)	32(1645)	30(161)	34(1154)	30(428)
About once a month or less often	40(195)	30(41)	36(373)	31(135)	37(855)	31(521)	39(33)	29(179)	36(731)	31(4152)	38(264)	29(222)	38(1946)	34(182)	35(1203)	29(407)
No alcohol use	17(83)	16(22)	22(228)	26(113)	16(363)	22(368)	38(32)	38(229)	17(355)	19(2458)	27(190)	24(186)	18(911)	16(87)	14(489)	20(288)
Physical exercise																
None	14(67)	14(19)	23(232)	19(83)	14(311)	12(198)	29(25)	30(180)	19(384)	14(1805)	12(86)	15(117)	10(531)	8(43)	16(546)	14(195)
About 1/2-1 hour a week	34(167)	32(44)	39(401)	35(154)	35(804)	23(384)	35(30)	33(200)	34(699)	30(4009)	37(254)	32(252)	33(1692)	20(109)	39(1340)	32(454)
About 2-3 hours a week	31(151)	20(27)	24(250)	22(95)	29(659)	23(383)	20(17)	21(129)	27(538)	25(3314)	32(225)	30(234)	31(1597)	22(119)	27(917)	23(325)
More than 4 hours a week	22(108)	34(47)	15(150)	24(107)	23(537)	42(695)	15(13)	17(101)	20(412)	31(4105)	19(129)	22(174)	25(1289)	50(266)	18(622)	31(437)
Number of hours slept during weekdays																
Less than 7 hours	9(45)	18(24)	14(146)	19(80)	12(275)	17(278)	10(8)	26(159)	15(293)	17(2176)	9(61)	13(96)	11(555)	14(73)	14(458)	19(264)
7-9 hours	82(405)	76(101)	81(831)	75(322)	83(1897)	78(1267)	82(69)	70(422)	82(1653)	80(10306)	82(563)	79(602)	85(4279)	81(426)	82(2759)	76(1035)
More than 9 hours	9(43)	6(8)	5(48)	6(27)	5(110)	5(78)	8(7)	4(22)	3(64)	3(419)	10(67)	8(60)	5(227)	5(25)	4(145)	5(62)

Association of background factors and health behaviour with fields of study. Chi square test, $p < 0.001$. G=girls, B=boys.