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HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN
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HBSC Study Luxembourg Methods

Report on the Luxembourg HBSC Survey 2022

HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN:
WORLD HEALTH ORGANIZATION COLLABORATIVE CROSS-NATIONAL STUDY (HBSC)

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Éducation nationale,
de l'Enfance et de la Jeunesse

LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Santé
et de la Sécurité sociale
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WORLD HEALTH ORGANIZATION COLLABORATIVE
CROSS-NATIONAL STUDY

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Acknowledgement

The Health Behaviour in School-aged Children (HBSC) study was initiated in 1982 and has been conducted every four years to understand and promote the health and well-being of children and adolescents. Currently, more than 50 countries participate in the international study, Luxembourg being one of them since 2006. By comparing data over many years and across countries, policy makers, teachers, students, parents, as well as anyone interested in the health of the growing generation can make informed decisions.

This report on the HBSC 2022 survey was only possible because many people contributed to data collection and processing. We would like to take this opportunity to thank them.

HBSC is an international survey conducted in collaboration with the World Health Organization - Regional Office for Europe. We would like to thank the international coordinator of the 2021/22 survey, Dr Joanna Inchley from the University of Glasgow. Our thanks also go to the database manager, Professor Oddrun Samdal from the University of Bergen, and to Joe Hancock from the International Coordinating Centre in Glasgow, who developed the artwork for this report.

The Luxembourg part of the HBSC study has been organised by three project partners since 2016: the University of Luxembourg, the Ministry of Health and Social Security/Health Directorate, and the Ministry of Education, Children and Youth. We would like to express our sincere thanks to our contacts in the ministries (Dr Katharina Pucher, Dr Senad Karavdic, Aurélie Ventujol, Dr Josepha Nell, Raoul Wirion) and to Professor Robert Harmsen, Dean of the Faculty of Humanities, Education and Social Sciences, for the good cooperation and support of our research.

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Finally, we would like to express our appreciation and gratitude to all the children and young people who have consented to and participated in the HBSC Luxembourg study over the years, as well as to their parents. In addition, we would like to thank all the school headmasters and teachers whose cooperation made this study possible.

For the HBSC Luxembourg team:
Dr Carolina Catunda and Dr Maud Moinard (Co-Principal Investigators)

Summary

About this report

The present report describes the methods of the Health Behaviour in School-aged Children (HBSC) survey conducted in Luxembourg in 2022. This report provides comprehensive information about the survey procedure, sampling, the examined population, and the statistical analyses conducted in the other reports.

The HBSC study

The HBSC study aims to monitor and promote adolescents' health and well-being. Conducted quadrennially in collaboration with the World Health Organization (WHO), HBSC is the longest running international study dedicated to adolescents' health. In 2021/2022, HBSC was carried out in 44 countries and regions, including Luxembourg.

Survey procedure

Pupils responded to the survey using a paper-pencil questionnaire in class from February 22nd to June 1st, 2022, during school hours. The questionnaire was originally developed by the HBSC researchers in English and translated into German and French using a translation/back-translation process to ensure high similarity to the original questions.

Sampling

A one-stage cluster sampling using classes as primary units stratified by educational tracks and grades was used in Luxembourg. In 2022, the target population of the HBSC study in Luxembourg were 11 to 18-year-old pupils attending public and private schools that teach according to the national curriculum and public schools whose teaching is based on the international curriculum. A total of 802 school classes from 178 schools were drawn, and all the 13 343 pupils in these classes were invited to participate in the survey.

Population

A total of 9 432 pupils from 688 classes and 152 schools responded to the survey. The participation rate corresponded to 85.4%, 85.8% and 70.7% of the invited schools, classes and pupils, respectively. Pupils who were too young (<11) or too old (>18), those who did not report their age were excluded. Pupils from schools whose teaching is based in the international curriculum indeed differ in terms of gender, age, migration background and family structure. Participants from schools whose teaching is based on the international curriculum were also excluded. The population included in the 2022 HBSC Luxembourg forthcoming reports was 7 893 adolescents.

Analysis

Categorical variables were analysed using the chi-square test of independence. Continuous variables were analysed using t-tests or analysis of variance (ANOVA) with post-hoc analysis.

HBSC Luxembourg Reports

This report serves as base for the following five HBSC Luxembourg 2022 reports: Mental health and well-being, Health behaviours, Risk behaviours, Social context and, COVID-19 impact and trends. In order to compare the results with previous survey round, pupils from schools whose teaching is based on the international curriculum were excluded from the analyses for those reports. Their data will be included in the HBSC Luxembourg dashboard (online) once the 2026 survey takes place.

HBSC Luxembourg 2022
Methods

The Health Behaviour in School-aged Children (HBSC) study

Adolescence is a key developmental phase at both physiological and psychosocial levels (Dorn & Biro, 2011; Meeus et al., 2010). From a physiological viewpoint, adolescence involves pubertal dynamics that dramatically affect and shape weight, height, sex characteristics, as well as the brain structure and the endocrine system (Ismail et al., 2017; Lenroot & Giedd, 2006). In particular, pubertal hormones have been found to boost sensitivity to stress and, more generally, to influence emotional management (National Academies of Sciences, Engineering, and Medicine, 2019). From a psychosocial viewpoint, adolescence and puberty are associated with self-exploration, novelty seeking, and social identity advancement (Crone & Dahl, 2012; Spear, 2013). Moreover, body-image issues and peer pressure usually reach their peak during adolescence (Markey, 2010; Steinberg & Monahan, 2007).

From a sanitary perspective, such physiological and psychosocial changes are of the utmost importance. First, they relate to a large range of vulnerabilities and risk behaviours (e.g., depression, anorexia, substance use). Second, the manifestation of health issues in youth presents mid-to-long-term consequences. As an illustration, the World Health Organization (World Health Organization, 2020) reported that up to 50% of adults' mental illness originate during childhood and adolescence. Although mortality rate as well as the prevalence of chronic diseases are lower in adolescents than in adults, young individuals' health-related issues should not be overlooked.

The HBSC study aims to monitor and promote adolescents' health and well-being. Initiated in 1982 by researchers from England, Finland, and Norway, the first HBSC survey took place in 1983-84 in five countries. In 2021/2022, HBSC was carried out in 44 countries and regions across three continents and involved about 280 000 students aged 11, 13, and 15. Conducted quadrennially in collaboration with the World Health Organization (WHO), HBSC is the longest running international study dedicated to adolescents' health.

The HBSC framework adopts the WHO characterization of health, defined as *a state of complete physical, mental, and social well-being, not merely as the absence of disease or infirmity*. The HBSC study thus covers a large range of health-related topics, such as life satisfaction, food consumption, physical activity, substance use, health complaints, bullying, and social support. The study comprises sociodemographic measures (e.g., age, gender) as well. Importantly, the HBSC survey includes a set of core questions that have remained unchanged since the launching of the project. This allows investigators to assess the dynamics of adolescents' physical and mental life through the years and across countries.

HBSC survey's aim and scope go beyond the mere description of youth wellness; the study is also designed to pinpoint the protective and risk factors of health. As a result, HBSC findings are used by policy makers, professionals, and scientists to better capture and address adolescents' health issues. In sum, the HBSC study represents a unique opportunity not only to monitor adolescents' health both in space and time, but also to inspire evidence-based policies.

Luxembourg joined the HBSC network in the late 1990's. A pilot study was carried out in 1999. Quadrennial surveys have been conducted since 2006, with the participation of more than 9 000 adolescents per cycle. Initially, the study

was supervised by the Ministry of Health with the cooperation of the Luxembourg Institute of Health (LIH) and of the Ministry of Education, Children and Youth. Since 2016, the HBSC study is co-financed by the Ministry of Health (since 2023 Ministry of Health and Social Security)/Health Directorate, the Ministry of Education, Children and Youth, and the University of Luxembourg. All three Partners are members of the Steering Committee. The University of Luxembourg is the main scientific partner and ensures the project management.

The aim of this report is to present the methods used in the Luxembourg HBSC Survey 2022. More specifically to present the 2022 survey procedure, sampling, population and analyses in which the five HBSC Luxembourg 2022 reports were based on.

The Luxembourg HBSC Survey 2022 was approved by the Ethics Review Panel of the University of Luxembourg in June 2021 (ERP 21-013 HBSC 2022).

Survey procedure

First, pupil's parents or caregivers received an information letter and a consent form. In the consent form, they could indicate a refusal to participate in the study. The adolescents themselves could also refuse their participation in the survey at any time, as well as the school and teachers.

Following, the schools received boxes with questionnaires to be delivered to the sampled classes. Pupils effectively responded to the survey using a paper-pencil questionnaire in class from February 22nd to June 1st, 2022, during one school hour. The instructions below (Figure 1: Questionnaire instructions) were written on the questionnaire.

Figure 1: Questionnaire instructions

6th Study on Youth Health

Dear pupil,

With this questionnaire, we would like to find out how young people your age live. The same questions are asked to several thousand pupils in Luxembourg, but also in 40 other countries.

Please do **not** write your name on the questionnaire. This way, no one will know that you filled in the questionnaire. Neither your teachers nor your parents will see the answers. You can answer all the questions freely and openly. If you do not want to take part in the survey, you do not have to take part. If you do not want to answer a particular question, you can skip it and answer the next question. Because the questions are asked in many countries, you may find some questions rather unusual. Please read the questions carefully and answer them as honestly as possible. This is not an exam, so there are no wrong answers. Only your own opinion counts.

Thank you for your cooperation!

In addition, teachers were instructed to reinforce orally that pupils could refuse participation at any time, skip questions and that the survey was completely anonymous. To ensure the anonymity of the survey, teachers could not read the responses given. Teachers could, however, answer pupils' questions if they had any doubts. Once complete, students placed the questionnaires in envelopes and sealed them. The envelopes were collected by teachers and placed in a box. The boxes received at the University of Luxembourg did not contain any information in relation to the class or school that responded.

The questionnaire was originally developed by the HBSC researchers in English and included the topics listed in Table 1. It includes: 1. mandatory questions, such as age and life satisfaction, asked in all participating countries; 2. optional questions, such as anxiety and impact of the COVID-19 pandemic, asked in countries that choose those particular optional package and; 3. national questions (such as age at first cannabis use - if ever - and since when they live in

Luxembourg, asked only in our country). The questionnaire was translated into German and French using a translation/back-translation process to ensure high similarity to the original English questions. As it can be seen in Figure 2: Question example in German and French, each question integrates both the French and German translations, so that pupils can read in whatever language they understand better and even switch between languages if needed. In international schools, however, the original English questionnaire was used.

Table 1: Luxembourg HBSC survey 2022 main topics

Sociodemographic information	Age, gender, family affluence, migration status, family structure, type of school
Mental health and health outcomes	Life satisfaction, psychosomatic health complaints, self-rated health, well-being and depression, anxiety, loneliness, self-efficacy, weight status, impact of the COVID-19 pandemic
Health Behaviours	Breakfast, toothbrushing, physical activity, eating behaviours, body image
Risk Behaviours	Alcohol use, drunkenness, cigarette use, e-cigarette use, cannabis use and its acceptability (secondary pupils only), sexual intercourse and contraception (secondary pupils only), bullying, physical fighting and problematic use of social media
Social Context	School satisfaction, schoolwork pressure, school performance, teacher support, classmate support, friends support, family support, communication with father/mother with family

Figure 2: Question example in German and French

2. *In welchem Monat bist du geboren?*
Quel mois es-tu né(e) ?

Jan.	*Feb.*	*März*	*April*	*Mai*	*Juni*	*Juli*	*August*	*Sept.*	*Okt.*	*Nov.*	*Dez.*
Jan.	Fév.	Mars	Avril	Mai	Juin	Juillet	Août	Sept.	Oct.	Nov.	Déc.
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

To answer the questionnaire, pupils ticketed the box that correspond to their answer. Questionnaires were scanned using TeleForm software that capture pupils' answers. To check the quality of the data collection, some questionnaires were double entered, and some were double checked manually.

Sampling

Sampling procedures are instructed by the HBSC International Network, in order to have a similar procedure across countries and through the years. The recommended technique of a one-stage cluster sampling with classes being the primary sampling unit was used in Luxembourg. In addition, to achieve a nationally representative data, the sample was stratified by educational tracks and grade. As such, entire classes were randomly selected from a list in order to be able to survey pupils in the appropriate age range from each educational track and grade.

The number of classes necessary to sample is determined by the desired number of pupils per age group. The HBSC requires that the national sample size is sufficiently large that in 95% of the time the true prevalence (i.e., of the entire target population) can be expected with +/- 3 percentage points of the estimate obtained from the sample. In Luxembourg this precision is achieved with a sample of 1114 pupils per age group.

In Luxembourg, the HBSC survey involved adolescents aged 11 to 18. The age range is thus larger in Luxembourg than in other countries from the HBSC network, where only 11-, 13-, and 15-year-old students are surveyed. That is because in many countries participating in the HBSC Study compulsory education ends at age 15 or 16. In Luxembourg, however, only a minority leaves school at that age.

Since 2006, the target population of the HBSC study in Luxembourg are 11 to 18-year-old pupils attending schools in Luxembourg that teach according to the national curriculum. In 2022, in addition to pupils attending Luxembourg public and private schools whose teaching is based on the national curriculum, the target population also included Luxembourg public schools whose teaching is based on the international curriculum. That is because since 2016 the public school system also provided teaching based on the international curriculum (Gezer et al., 2023). Classes of *éducation différenciée* (special needs) and pupils taught abroad were excluded from all HBSC surveys.

A total of 802 school classes from 178 schools were drawn, and all the 13 343 pupils in these classes were invited to participate in the survey. In the following section of this report, the actual respondents will be further detailed.

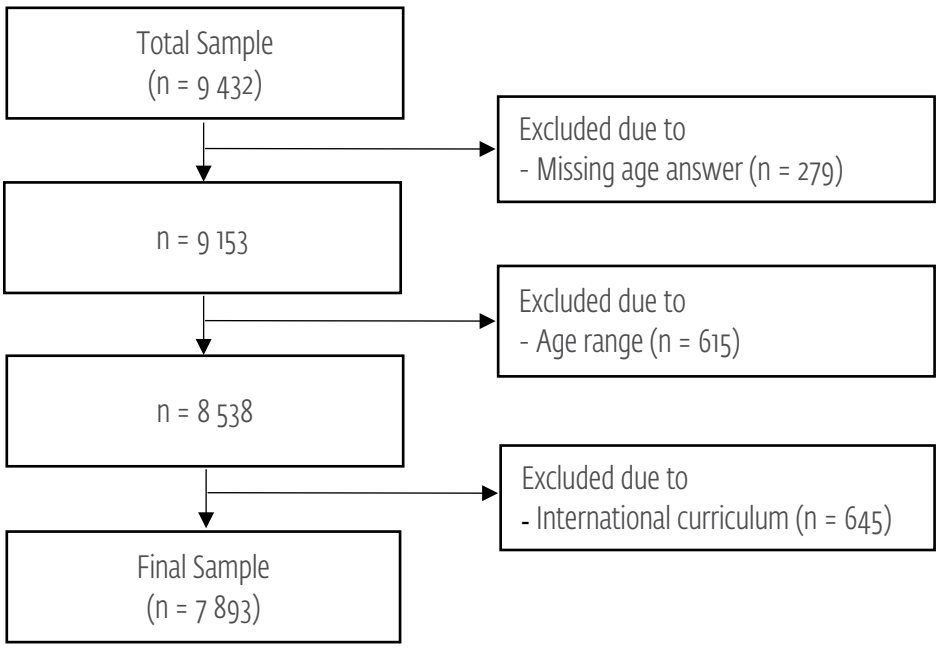
Importantly, we note that respondents attending Luxembourg public schools whose teaching is based on the international curriculum were excluded from the Luxembourg HBSC 2022 reports. That is to ensure comparability with the previous waves, and specially the 2018 round, in which they were not included in the sample. Considering that the scholar system remains the same in 2026 (the next survey round), those pupils will once again be invited to participate in the HBSC Survey. Once the 2026 survey take place, the data from the 2022 survey round will be updated accordingly in the HBSC dashboard. That is also to insure the comparability between the 2022 survey and the next survey rounds. In the present report, exceptionally, pupils from both the national and the international curriculum will be described, in order to clarify possible sociodemographic differences between these population that might affect the results and, as a consequence, comparisons with previous and future survey rounds.

Population

A total of 9 432 pupils from 688 classes and 152 schools attending Luxembourg schools actually responded to the survey (a high participation rate, corresponding to 85.4%, 85.8% and 70.7% of the invited schools, classes and pupils, respectively).

As mentioned previously, all pupils from the selected classes were invited to participate. As such, the age range of the actual respondents was larger than the target age. The youngest respondent was 9 years old and the oldest was 20 years old. For that reason, 615 participants were excluded for being too young (<11) or too old (>18). In addition, participants who did not report their age were also excluded. Finally, in order to ensure comparability with the previous HBSC rounds, participants from public schools whose teaching is based on the international curriculum were also excluded from the analyses. Therefore, the final sample of the 2022 HBSC survey was 7 893 adolescents in Luxembourg (Figure 3).

Figure 3: HBSC 2022 total and final sample



As the sample was stratified by educational tracks and grade and the response rates in each one varied, the data were weighted accordingly. Underrepresented grades were assigned a higher weight and overrepresented grades were assigned a lower weight. This ensures that the distribution of the educational tracks/grades in the sample are in line with their distribution in the population as a whole, reducing possible bias that may arise from differences in participation rates. Unless otherwise stated, data presented in what follows and in the reports on the Luxembourg HBSC Survey 2022 are weighted.

Due to the weighting, it can happen that the number of participants categorized by a certain sociodemographic characteristic do not add up exactly to the number of respondents who participated. That is because rounded whole numbers are presented, while weighted rational numbers were used in the calculation.

The HBSC study relies on six main sociodemographic variables, namely *age*, *gender*, *family affluence*, *migration background*, *family structure*, and *type of school (educational track/grade)*. In what follows, the population will be described according to those characteristics.

Age

Depending on the case, age is examined on a one- (i.e. 11, 12, 13 years old, etc.) or a two-year basis (i.e. 11-12, 13-14, 15-16, and 17-18 years old). In Table 2 is presented the distribution by age on a two-year basis. In 2022, there was a small significant difference, between pupils attending schools that follow the national curriculum and international curriculum (the latter being slightly younger).

Table 2: Age response distribution

	11-12 years old n(%)	13-14 years old n(%)	15-16 years old n(%)	17-18 years old n(%)	Age Mean(SD)
National curriculum	2 028 (26.0%)	2 139 (27.5%)	2 117 (27.2%)	1 505 (19.3%)	14.74 (2.16)
International curriculum	137 (22.0%)	226 (36.2%)	170 (27.2%)	92 (14.6%)	14.69 (1.95)

Cramér's V. = .056; p <.001

Gender

Gender is assessed binarily. Participants are invited to indicate whether they are a boy or a girl. The proportion of boys compared to girls who participated in the survey was slightly higher in the schools following the international curriculum than in those following the national curriculum (Table 3).

Table 3: Gender response distribution

	Boy n(%)	Girl n(%)
National curriculum	3 957 (51.2%)	3 778 (48.8%)
International curriculum	359 (58.9%)	250 (41.1%)

Cramér's V. = .040; p <.001

Family affluence

Family affluence is an indicator of social milieu and socio-economic status. Because a significant number of adolescents are unable to accurately report their parents' educational, financial, and occupational status (Currie et al.,

1997), the HBSC study uses the Family Affluence Scale (FAS) to assess socio-economic status. This 6-item scale estimates family material assets. The items relate to car, computer, and dishwasher ownership, family holidays, use of an unshared bedroom, and the number of bathrooms at home. Answers to these six items are coded to compute a general family affluence score. Finally, three groups representing the lowest 20%, the middle 60%, and the highest 20% are created. No significant difference was found between pupils in schools following the national or international curriculum (Table 4).

Table 4: Family affluence response distribution

	Lowest n(%)	Medium n(%)	Highest n(%)
National curriculum	1 298 (17.2%)	4 528 (59.9%)	1 729 (22.9%)
International curriculum	98 (16.3%)	363 (59.9%)	141 (23.4%)

Cramér's V. = .006; p = .846

Migration background

Migration background is assessed based on the country of birth of participants and their parents. Possible response options were: Luxembourg, Portugal, France, Belgium, Italy, Germany, Another country. Three categories are then created: (a) 'no migration background'; (b) 'second generation' (parents migrated) and; (c) 'first generation' (pupil migrated).

In Table 5 is presented the migration background distribution. The majority of pupils in schools following international curriculum migrated themselves (66.3%) and only 3.1% have no recent migration background. In schools following the national curriculum, they were 22.2% first generation immigrants and 27.8% with no recent migration background.

Table 5: Migration background response distribution

	No migration n(%)	Second generation n(%)	First generation n(%)
National curriculum	2 077 (27.8%)	3 738 (50.0%)	1 663 (22.2%)
International curriculum	19 (3.1%)	186 (30.6%)	402 (66.3%)

Cramér's V. = .273; p <.001

Family structure

Family structure refers to the composition of adolescents' household. Respondents are asked to indicate who they live with. The HSBC study employs the following four categories: (a) 'live with both parents'; (b) 'live with a single parent'; (c) 'live with one parent and his/her partner' and; (d) 'other'.

In Table 6 is presented the family structure distribution. The proportion of pupils who had both parents living in the household was slightly higher in schools that follow the international curriculum than in those following the national curriculum.

Table 6: Family structure response distribution

	Both parents n(%)	Single parent n(%)	Stepfamily n(%)	Other n(%)
National curriculum	4 783 (65.4%)	1 581 (21.6%)	797 (10.9%)	152 (2.1%)
International curriculum	429 (72.1%)	92 (15.5%)	61 (10.2%)	13 (2.2%)

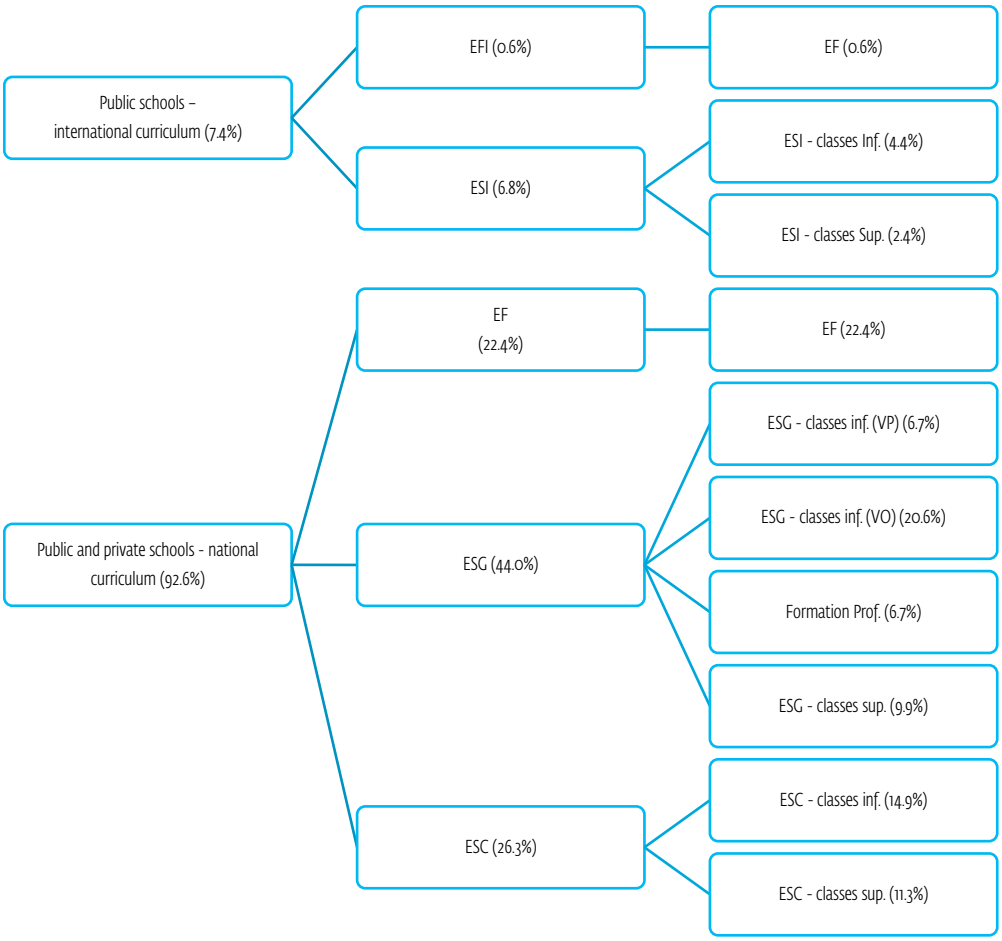
Cramér's V. = .042; p = .003

Type of school

Type of school refers to the educational tracks and grade of pupils and includes the following categories (Figure 4):

- *Enseignement fondamental* (EF): Primary education (4th cycle);
- *Enseignement secondaire général, classes inférieures, voie de préparation* (VP): General secondary education, lower classes, preparatory route;
- *Enseignement secondaire général, classes inférieures, voie d'orientation* (VO): General secondary education, lower classes, guidance route;
- *Enseignement secondaire classique, classes inférieures* (ESC - classes inf.): Classic secondary education, lower classes;
- *Formation professionnelle* (Formation prof.): Vocational training;
- *Enseignement secondaire général, classes supérieures* (ESG - classes sup.): General secondary education, upper classes;
- *Enseignement secondaire classique, classes supérieures* (ESC - classes sup.): Classic secondary education: upper classes;
- *Enseignement fondamental international* (EFI): International schooling, primary education;.
- *Enseignement secondaire international, classes inférieures* (ESI - classes inf.): International schooling, lower classes;
- *Enseignement secondaire international, classes supérieures* (ESI - classes sup.): International schooling, upper classes.

Figure 4: Type of school response distribution



Correlation between sociodemographic characteristics

We used Cramér's V to estimate association between the examined sociodemographic variables. Cramér's V coefficient ranges from 0 to 1; a value comprised between .1 and .3 is usually considered to reflect a small association; a value between .3 and .5, a medium association; a value above .5, a large association.

Table 7: Associations between sociodemographic variables (Cramér's V)

	1 [A]	2 [FA]	3 [FS]	4 [G]	5 [MB]	6 [TS]
(1) Age [A]	-	.105	.053	.025	.060	**.480**
(2) Family affluence [FA]	.105	-	.108	.010	.157	.212
(3) Family structure [FS]	.053	.108	-	.026	.055	.097
(4) Gender [G]	.025	.010	.026	-	.017	.120
(5) Migration background [MB]	.060	.157	.055	.017	-	.160
(6) Type of school [TS]	**.480**	.212	.097	.120	.160	-

Notes. Medium associations are bolded; small ones are underlined.
International Schools are not included.

As shown in Table 7 and as expected, we found a medium correlation between age and type of school. In addition, we observed small correlations between family affluence and type of school, family affluence and migration background, family affluence and family structure. The higher the family affluence, the higher the probability to (a) attend the classic stream, (b) have no migration background, and (c) live with both parents.

Our data also involve small correlations between type of school and migration background, and between type of school and gender. Migrants of the first or second generation as well as boys appeared more likely to attend the streams *formation professionnelle* and *voie de préparation* than adolescents with no migration background and girls.

Finally, the small correlation we found between family affluence and age can be considered of minor importance, because it most likely reflects a contingency artifact.

Analysis

The variables used in the HBSC reports are derived from single items or multi-items within the HBSC survey. In the five HBSC Luxembourg reports, results are reported in the form of response frequencies for each variable. Subsequently, responses to survey variables are grouped into categorical or continuous variables. The categorical variables were analysed using the chi-square test of independence in cross-tables/bar charts alongside socio-demographic characteristics (e.g., sex, age, socio-economic status). For the continuous variables we employed t-tests or analysis of variance (ANOVA) with post-hoc analysis, considering socio-demographic characteristics. All variables are presented in figures using prevalence or mean values along with their respective 95% confidence intervals, depending on the nature of the variables and on the characteristics of the analysis. The inferential analyses aimed to identify statistically significant differences, with an error probability of less than 5% considered significant.

The results of all tests, including the number of observations (N), prevalences, mean values, 95% confidence intervals, and information about the inferential analyses, were detailed in tables or bar charts in each of the reports' appendix.

Additionally, in each of the five reports, we aimed to gain a deeper understanding of the Luxembourg context in relation to the thematic area covered. Therefore, each report includes specific analyses that are detailed within each of these reports.

In addition to the five reports, the HBSC Luxembourg data is available online in the form of a dashboard. The latest 2022 results are presented alongside comparable figures from the previous HBSC Luxembourg surveys (2006, 2012, 2014 and 2018). Although the calculation methods are similar to the ones implemented in the reports, differences in the rounding might lead to slightly different numbers. For instance, the prevalence of 13-14 years old boys who perceived their health as excellent was 43.488%. When rounding this number in the Mental health report, Figure 24 and Table 7 presented a total of 43.5%. In the dashboard, however, prevalences are rounded to an integer number (i.e.: 43%).

HBSC Luxembourg Reports

The aim of this report was to present the methods used in the Luxembourg HBSC Survey 2022.

The survey took place from February 22nd to June 1st, 2022, in schools, during school hours. The target population of the HBSC 2022 study in Luxembourg were 11 to 18-year-old pupils attending public and private schools that teach according to the national curriculum and public schools whose teaching is based on the international curriculum.

A total of 802 school classes from 178 schools were drawn, and all the 13 343 pupils in these classes were invited to participate in the survey. The participation rate corresponded to 85.4% of the invited schools, 85.8% of the invited classes and 70.7% of the invited pupils. Participants who were too young (<11), too old (>18) or did not report their age were excluded.

The prevalence of pupils with a migration background was higher in schools whose teaching is based on the international curriculum than in those following the national curriculum. In addition, older pupils, boys and participants living with both their parents were slightly more present in schools whose teaching is based on the international curriculum. As they were invited to participate in the HBSC Luxembourg Study for the first time in 2022, they were excluded from the analyses displayed in the five 2022 reports to ensure comparability with the previous survey rounds. A total of 7 893 adolescents were included in the 2022 HBSC Luxembourg reports.

This report serves as base for the following five HBSC Luxembourg 2022 reports: Mental health and well-being, Health behaviours, Risk behaviours, Social context and, COVID-19 impact and trends. Each report will contain an introduction of the theme; the questions that were asked; descriptive results analysed by age, gender, family affluence, migration background, family structure and type of school; in depth analyses of a specific theme highlighted in the specific report and; implications for prevention.

Please note that the results of the reports are based solely on the HBSC study which applies a cross-sectional research method. As such, the data collected represents the population (in this case, adolescents in schools) at a specific time. Thus, even if in the reports association between variables could be identified, these links refer to higher probabilities of occurrence of a certain behaviour or outcome in certain groups, but are not proof of a causal relationship. With observational data, such as those from the HBSC study, we can only test the link between the variables, but not the directionality of this link. In addition, the results are based solely on what pupils' report about themselves and their behaviour, with no external objective observation. Although it might not be systematically stated that a certain group reported a certain behaviour more frequently or perceive something as better, results are always based on adolescents' subjective assessments.

HBSC Luxembourg findings are also available online, in a data browser (Health Behaviour in School-aged Children Luxembourg Study, 2023). Once the 2026 survey take place, the data from the 2022 survey round will be updated to include international schools, once again ensuring comparability between survey rounds.

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Abbreviations

EF	*Enseignement Fondamental*
ESC	*Enseignement Secondaire Classique*
ESG	*Enseignement Secondaire Général*
FAS	Family Affluence Scale
FP	*Formation Professionnelle*
HBSC	Health Behaviour in School-aged Children (study/survey)
SCRIPT	*Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques*
VO	*Voie d'orientation*
VP	*Voie de préparation*
WHO	World Health Organization

Report on the Luxembourg HBSC Survey 2022

HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN (HBSC) STUDY

This report presents the methods used in the Luxembourg HBSC Survey 2022, including the survey procedure, sampling, population and statistical analyses in which the five HBSC Luxembourg 2022 reports (Mental health and well-being, Health behaviours, Risk behaviours, Social context and, COVID-19 impact and trends) were based on.

The HBSC Luxembourg Survey 2022 took place between February 22nd and June 1st, 2022 during school hours. Pupils aged 11 to 18-year-old attending public and private schools that teach according to the national curriculum and public schools whose teaching is based on the international curriculum were invited to participate in the survey. Pupils in schools following the national or international curriculum differed in terms of age, gender and migration background. Pupils from schools whose teaching was based on the international curriculum were included in the survey for the first time in 2022. In order to compare results with previous survey rounds, they were excluded from the analyses for the five HBSC Luxembourg 2022 reports. A total of 7 893 adolescents were included in the 2022 HBSC Luxembourg reports.

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