

# Pitch Poster Presentation

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# THE DEPLOYMENT OF SCHOOL NURSES TO PROMOTE HEALTH LITERACY AMONG STUDENTS IN INTERNATIONAL COMPARISON

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## Background and Aims:

The interaction between health and educational opportunities underscores the importance of health literacy. Limited health literacy in the population contributes to individual and social disadvantages. Therefore, early integration of health literacy into daily life is essential. School Nurses offer a promising approach for this purpose. Internationally, School Nurses have been integral to the school environment for decades. In recent years, they have been deployed in various projects across German federal states. Therefore, it was imperative to investigate, from an international standpoint, how School Nurses are deployed to promote health literacy among students. The objective was to comprehend the implementation extent in Germany and identify overseas approaches as best practices for national adoption.

## Methods:

A systematic literature review examined how the promotion of health literacy is carried out by School Nurses in the USA, Australia, Finland and the United Kingdom. School Nurses from Germany and Estonia, along with subject matter experts from Germany, were interviewed to gain precise insights into this topic. Additionally, the practical implementation of health literacy promotion by a School Nurse was observed during a two-week internship at a school in Hesse.

## Results:

School Nurses are implemented in varied and accessible manners to enhance health literacy among students. While there are numerous similarities in interventions, topics, organizational frameworks, resources and evaluation methods, there are also challenges, coping strategies and overseas best practices that warrant consideration in Germany. Analysis of results from the diverse methods yielded six recommendations to effectively implement measures for health literacy promotion by School Nurses in Germany. These recommendations include the establishment of a standardized and

legally binding professional profile for School Nurses, implementation of a national program to enhance health literacy in educational institutions, structuring training and professional development opportunities for these professionals, systematic evaluation and adjustment of their competence profile, promotion and reinforcement of their professional network, and implementation of mental health as an essential aspect of their health literacy promotion efforts.

Conclusions:

As a bridge between health and education, School Nurses offer a low-threshold service for students from various economic backgrounds and can promote their health literacy during school years. Therefore, School Nurses should be empowered and supported in their role in health literacy promotion, enabling them to unleash their diverse potentials and act holistically, accessibly and evidence-oriented in promoting health literacy.

No conflict of interest

# THE EFFECT OF STUDENTS' JOURNEY ON TIMELY MENTAL HEALTH HELP - EXAMPLES BASED ON THE EXPERIENCE OF TALLINN SCHOOL HEALTH FOUNDATION

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## Background and aims

Mental health problems among Estonian schoolchildren are on the rise. In order to support students with mental health problems, it is important to quickly identify problems and implement early intervention. Unaddressed mental health problems can lead to for example reduced social functioning and academic performance, suicide attempts, and substance abuse.

Mental health nurses of Tallinn School Health Foundation created the student's journey to help students to reach the appropriate help in time. The aim of this work is to show examples of the impact of the work of mental health nurses, as part of the student's journey.

## Methods

Mental health nurses prepared a student's journey, which included, in addition to the student, specialists both from the school and outside the school system. Success stories are presented to evaluate the effectiveness of the student's journey and the cooperation between different parties.

## Results

By following the student's journey, several positive experiences have been reached.

Case 1: Referral by a school psychologist to assess/specify the need for referral. Conversation with the student and parent (anamnesis, emotional wellbeing questionnaire). Referred to a family doctor's center. E-consultation for a psychiatrist made by the family doctor was based on the entry of the school nurse and mental health nurse. Today, the student is under the supervision of a psychiatrist and receives antidepressant treatment.

Case 2: The student turns to the school nurse with mental health concerns, the school nurse calls the mental health nurse to assess the student's mental health status. Conversation with the student and parent (anamnesis, emotional wellbeing questionnaire). Referred to a family doctor's center. E-consultation for a psychiatrist made by the family doctor was based on the entry of the school nurse and mental health nurse. Today, the student is in the field of psychiatry.

Case 3: During the health check-up, school nurse detected depression and anxiety in the student. The mental health nurse talked to the student and parent to assess the condition (anamnesis, emotional wellbeing questionnaire). There was no need for referral, the student was offered a short intervention by the mental health nurse.

### Conclusion

Creating and following the student's journey and cooperation between specialists make mental health help faster and more accessible for students. A mental health nurse is competent to provide students with low-intensity psychological interventions that increase students' access to evidence-based mental health assistance and to assess if the student needs more intensive intervention and referral. The admissions of students made together by the school nurse and the mental health nurse and the epicrisis based on them have been the basis in several cases where the general practitioner has requested an e-consultation from a psychiatrist, which means that the student has reached the necessary help faster.

No conflict of interest

# EFFECTS OF AGE AND ECHOSCREEN DEVICE ON PERCENTAGE OF FALSE POSITIVE RESULTS AT FIRST HEARING SCREENING

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## Background and aims

For parents, children and efficiency considerations the number of false positive screening results needs to be as low as possible. We analysed the effect of age and type of screening device on the percentage of false positive results at the first hearing screening.

## Methods

Results from the first hearing screening test of newborns screened from 2013 to 2022 by child health care in The Netherlands were analysed. The dataset contained the otoacoustic emission (OAE) results for the left and right ear separately (pass, refer, failed measurement or missing), day of first screening (with day of birth=day 0), year of birth, type of screening device (Echoscreen I/II (together) or III) and preterm birth. Preterm infants are often screened at older ages than a terme infants. Therefore, this group was excluded from the analyses.

Since 2020, the percentage of children screened with the Echoscreen III has increased from 25% to 42% in 2022. Therefore, for the effect of type of screening device only data from 2020 to 2022 were considered.

The results of left and right ear were combined into one result. Only children who had a pass result on both ears were considered as 'no second test needed'. All other combinations of results were given 'positive at first test' as outcome. The percentage with a 'positive at first test' was calculated by age at screening. Results from children who were referred to an audiological centre were excluded. This was done to exclude possible true-positive results. Thus, the outcome 'positive at first test' was considered as 'false-positive at first test'.

## Results

The dataset contained data from 1,663,646 children.

The relationship between age at first hearing test with the Echoscreen I/II/III and the percentage with 'false-positive at first test' for all years combined showed the lowest percentages between day 6 to 12 (3.3-3.7%). An increase is visible toward younger ages (6.3% on day 3 to 3.8% on day 5). An increase is also visible after day 12 to 6.3% at week 3, 6.6% at week 4 and then a decrease to 5.6% at week 5 and 5.4% at the rest of the 2<sup>nd</sup> month.

The Echoscreen I/II and III had an average percentage of 'false-positive at first test' of respectively 3.9% and 5.4% (difference 1.5%; 95% confidence interval 1.4 to 1.7%). At all ages, the Echoscreen III has a higher percentage of 'false-positive at first test' than the Echoscreen I/II.

### Conclusions

To prevent false-positive screening results at the first hearing screening, the Echoscreen tests can best be performed between day 6 to 12 after birth.

Changes in screening devices also affect the test results. The Echoscreen III gives more false-positive results at the first test than the Echoscreen I/II. It is recommended to monitor the performance of screening devices before and while introducing them in national screening programmes.

No conflict of interest

# SCHOOL-BASED HPV VACCINATION PROGRAMMES ARE KEY TO ACHIEVE A HIGH COVERAGE VACCINATION FOR ADOLESCENTS

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**Background:** Human Papilloma Virus (HPV) is a common cause of sexually transmitted infections. The consequences range from genital warts to cancer, in relation to the different subtypes of HPV. Subtypes 16 and 18 are associated with potentially invasive lesions in anogenital and oropharyngeal regions and are responsible for about 70% of all cases of cervical cancer. Cervical screening with cytology and HPV vaccination have significantly reduced the impact of HPV infection. Prophylactic HPV vaccines protect against the most pathogenic subtypes. In Switzerland, vaccinations are not mandatory. Since 2007 the Federal Office of Public Health recommends HPV vaccination for girls. The recommendation for boys has been implemented since 2015. Vaccines are recommended to individuals, aged between 11 and 26 years, but ideally between 11 and 14 years, aiming for a vaccination coverage of 80%. Gardasil 9® was introduced in the routine schedule in 2019 replacing Cervarix® and Gardasil® which were originally proposed.

**Methods:** The School Health Service in Geneva (Service santé enfance et jeunesse -SSEJ) plays a crucial role in HPV vaccination. The innovative program started in 2007 initially only for girls and was extended to boys in 2016, agreeing with officials recommendations. Since its inception, HPV vaccination has been offered free of charge to students of the ninth class (aged 12-13 years old) annually. At the beginning of the school year in August, the SSEJ sends an information letter and a consent form (translated into six different languages) to the parents of concerned adolescents. If parents agree, they must return the signed consent form to the service. The vaccination campaign takes place in November (first dose) and in Mai (second dose) of the same school year. Significant resources are deployed to its implementation.

**Results:** Since the school year 2015-2016, the SSEJ has vaccinated 7'284 adolescents against HPV. Since 2016-2017 when boys joined the program, the yearly proportion of vaccinated students of the ninth year ranges from 17% (during the Covid pandemic) to



28.8% (mean 20.8%). During the period ranging from 2016 to 2023, the mean proportion of vaccinated girls is 52%. In 2022, two-doses HPV vaccination coverage for 16-year-old adolescents in Geneva was 76% for girls (CI 65.4-86.6) and 56% for boys (CI 44.7-67.9), while for Switzerland it was 71% (CI 68,2-72,9) and 49% (CI 46,1-51,1) respectively.

Conclusion: Vaccination programs by school medicine allow for better implementation of public health recommendations. In Switzerland, cantons proposing school-based HPV vaccination programs have a better vaccination coverage. Such programs should be further promoted and implemented thoroughly.

No conflict of interest

# MENTAL HEALTH OF INTERNATIONAL STUDENTS AT THE UNIVERSITY OF ZAGREB FROM 2019 TO 2023

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**Background and aims:** The conditions of a pandemic are associated with increased risks to the mental health of both, adults and children and adolescents. Studies indicate an elevated risk of developing anxiety, depression, grief-related symptoms, post-traumatic stress disorder, and substance abuse, as well as disruptions and changes in the care for those with pre-existing mental health disorders. This study aimed to investigate the frequency of utilization of the Multidisciplinary Counselling Centre by international students for mental health disorders before, during, and after the COVID-19 pandemic.

**Methods:** For this study, medical records of international students at the University of Zagreb who visited the Multidisciplinary Counselling Centre for mental health disorders between 2019 and 2023 were analysed, based on diagnosis data according to the International Classification of Diseases (ICD-10). Data were analysed using descriptive statistical methods and presented with a significance level of  $P < 0.05$ .

**Results:** In 2019, a total of 515 international students (57.8% females) sought healthcare at the centre; in 2020, there were 455 (67.5% females); in 2021, there were 462 (67.7% females); in 2022, there were 509 (68.7% females); and in 2023, there were 500 students (64.9% females). Of the total consultations, in 2019, 8.7% were due to mental health disorders (42.2% females), in 2020, it was 5.9% (44.4% females), and in 2021, it peaked at 14.3% (57.6% females), significantly higher compared to previous years ( $\chi^2 = 19.11$ ;  $P < 0.001$ ). In 2022, it was 13.6% (63.8% females), and in 2023, it was 9.0% (64.4% females). The most commonly diagnosed conditions in all three observed years were from the group of neurotics, stress-related, and somatoform disorders (51.1%, 79.2%, and 72.0%), including mixed anxiety and depressive disorder, and adjustment disorder.

**Conclusions:** The results indicate a significant increase in consultations for mental health disorders among international students at the Multidisciplinary Counselling Centre during the 2021 COVID-19 pandemic compared to periods before and after the pandemic. Findings underscore the need for continuous availability and care of mental

health for international students. Additional longitudinal studies are needed to determine whether there is a long-term impact of a pandemic on the mental health of students.

Keywords: students, mental health, healthcare, COVID-19 pandemic.

No conflict of interest

# THE CHALLENGES OF VISION AND HEARING SCREENING IN SCHOOLS IN GENEVA, SWITZERLAND

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**Background:** From the age of 4 (first year of school), pupils are entitled to free sight and hearing tests at school carried out by the Sight and Hearing (VO) unit of the service of school medicine (SSEJ). The screening test consists of identifying whether the pupil suffers from sensory problems (sight and/or hearing). If the screening is positive, parents will receive a letter inviting them to consult a specialist doctor (ophthalmologist or ENT specialist) to establish a precise diagnosis and propose appropriate treatment and follow-up. Although every pupil benefits from this screening, are they all equal when it comes to the risk of sensory disorders? Are more or fewer pupils being screened than in previous years?

**Methods:** The SSEJ plays a crucial role in detection of sensory disorders. The examination is carried out systematically in state school classes at age 4, 5 and 10. Screening for colour blindness is carried out in 6-year-old classes. At other school degrees, pupils are examined at the request of teachers or school nurses if a sensory disorder is suspected. Screening is also carried out for pupils who have recently arrived in Geneva, or who were absent during screening the previous year, or as part of the pupil's follow-up. This analysis focuses on the screening examinations that took place during 2018-19 and will be compared with those of previous years. The profile of the population tested will also be analysed. In the 2018-19 school year, just over 22,500 pupils were examined and received vision and/or hearing screening, i.e. 97% of the target population.

**Results:**

In the school year 2018-2019, the SSEJ has detected an untreated sensory disorder in 22% of the pupils screened (4,900 pupils), including just over 3,500 pupils with a visual impairment (16% of pupils screened) and 1,600 pupils with a hearing impairment (9% of pupils screened). There has been a slight increase in positive screening for visual problems since 2010-2011, rising from 12% to 17% in 2016-2017 before falling again

until 2018-2019. For hearing problems, the proportion fell from 11% to 7%. Screening for visual problems is more often positive for pupils from disadvantaged backgrounds or allophones. Among pupils with systematic vision screening, the results differ according to social background, language spoken and, to a lesser extent, gender. The VO unit detects visual problems that have not yet been treated more often among pupils from modest backgrounds (17%) or among allophone pupils (16%) than among French-speaking pupils or children of senior executives (10%).

Conclusion:

The school-based vision and hearing screening programmes by school medicine allow for better implementation of public health recommendations and a real attenuation of social inequalities in health.

All pupils in Geneva's state schools benefit from this screening (97%).

This screening enables the detection of light or severe pathologies (amblyopia, mild or moderate hearing loss, rare pathologies) that would otherwise go unnoticed.

Children from disadvantaged backgrounds or with a foreign language are at greater risk of having a positive screening according to our study.

The study is continuing with the current data.

No conflict of interest

# FOCUS ON KNOWLEDGE AND RISK PERCEPTION OF PREVENTIVE CHILD HEALTHCARE PROFESSIONALS IN NATIONAL IMPLEMENTATION OF THE INFANT STOOL COLOUR CARD

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Background and aims Biliary atresia is a rare life-threatening cholestatic disease of early infancy with an incidence of approximately 10 children every year in the Netherlands. Delay in diagnosing biliary atresia due to insufficient recognition of symptoms of neonatal cholestasis, such as prolonged jaundice and pale-coloured stools, is a major problem. Use of the Infant Stool Colour Card (ISCC) in other countries resulted in earlier diagnosis and Kasai operation (<60 days) of infants with biliary atresia, which led to an improved survival.

The use of the ISCC is therefore advised to youth health care organisations in the upcoming Dutch national guideline Neonatal Cholestasis, in addition to the current advise to perform a bilirubin assessment at 3 weeks in case of prolonged jaundice. In that guideline, the ISCC has to be introduced to parents at two weeks in a home visit by a youth healthcare nurse. Its outcomes have then to be discussed at the first visit to the youth healthcare doctor at the age of 4 weeks. Currently, the youth health care organisations in the Netherlands are under pressure by labour shortages, which could potentially influence implementation. We therefore aimed to analyse the facilitating and hindering factors for implementation of the ISCC.

Methods We performed a qualitative study with semi-structured interviews performed in youth health care organisations in the Netherlands. To maximize variability, we selected participants from different professions (physicians and nurses) and from both small and large organisations spread over the country. We included organisations that already officially implemented the ISCC, and organisations that did not work with the ISCC yet.

Participants were involved with or responsible for the organisational policy regarding hyperbilirubinemia (including biliary atresia). The interview topic guide was based on the Consolidated framework of Implementation Research. We transcribed the interviews verbatim, and coded them using ATLAS.ti software.

**Results** Ten of 17 approached youth health care organisations participated (10 physicians and 3 nurses), among which all three organisations that officially implemented the ISCC. Within these three organisations the use of the ISCC varied between teams, because the rationale behind the ISCC was not clear for all professionals. A major contributor was a lack of effective maintenance of the intervention within the organisations. Professionals that used the ISCC, said it is simple and costs little time. Collaboration with general practitioners and paediatricians was considered essential during the implementation and maintenance phase.

Within organisations that did not implement the ISCC, the need to perform a bilirubin assessment in case of prolonged jaundice and the rationale behind the ISCC were not completely clear. Professionals had inadequate knowledge of the clinical presentation of neonatal cholestasis and inadequate risk perception.

**Conclusions with take home messages** This qualitative study shows that improving knowledge and risk perception about neonatal cholestasis in youth healthcare professionals is needed. On top, more effective maintenance of the intervention is required to successfully implement the use of the ISCC in Dutch youth healthcare organisations. Thereby professionals will understand the need to use the simple ISCC and follow the guideline, which will lead to earlier diagnosis and surgery of infants with biliary atresia and an improved survival.

No conflict of interest

# ADRESSING ABSENTEEISM IN PRIMARY EDUCATION: A VALUABLE EXPERIENCE.

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**Background and aim:** Early intervention in the case of frequent absenteeism among children in primary education is crucial, as absenteeism is associated with long-term issues. Although parents play a significant role in addressing absenteeism, insight into their experiences with addressing absenteeism was insufficient. This study aimed to explore the experiences of parents of children with frequent absenteeism and youth healthcare professionals in regular primary education in Friesland, a province in the north of the Netherlands. The aim of this study was to assess if addressing frequent absenteeism in primary education can be enhanced, according to these experiences.

**Method:** A qualitative study using a case study design was conducted through semi-structured interviews with parents and a focus group with youth healthcare professionals. Data were analyzed using Braun & Clarke's thematic analysis (2006).

**Results and discussion:** Experiences of parents and youth healthcare professionals with addressing frequent absenteeism were examined. Seven parents and five youth healthcare professionals participated in the study. Four main themes emerged: (1) differences in problem perception between parents and professionals; (2) varying levels of parental involvement in addressing frequent absenteeism; (3) insufficient proactivity from involved professionals; and (4) lack of awareness of the added value of youth healthcare professionals. Results should be interpreted with caution due to the limited number of participants.

**Conclusions and recommendations:** The experiences of parents and youth healthcare professionals with addressing frequent absenteeism reveal discrepancies in perceptions and expectations. Integrating an evidence-based method for joint problem assessment and shared decision-making in the approach of absenteeism is recommended. Implementation of the intervention, particularly in schools, appears to be inadequate. Utilizing the MIDI instrument (Measurement Instrument for Determinants of Innovations) (Fleuren et al., 2014) can provide insight into determinants influencing the successful use of this intervention, allowing for the design of targeted implementation



strategies. The added value of involving youth healthcare professionals needs to be better communicated to parents and stakeholders.

# DO YOUTH HEALTH CARE DOCTORS ENGAGE WITH THE HEALTHY LIVING ENVIRONMENT?

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## Background and aims

Youth public health physicians promote a health society for youth, within and outside the consultation room. For this healthy society for youth, playing an influence on the determinants of health, like the healthy living environment, is of great importance. A healthy living environment encourages healthy behaviour, invites to engage with others and is pleasant to live in. This study explores whether and how youth health care physicians are engaged in activities concerning a healthy living environment and the role they see for themselves and their profession.

## Methods

Youth public health physicians who are member of the Association of Dutch Youth Health Care Physicians (AJN) were invited to participate (n=1408). Data collection took place between February 2024 and March 2024 via a questionnaire and one-to-one video calling interviews. All interviews were audio-taped and transcribed verbatim. The interview data and open-ended questions of the questionnaire were analyzed using a thematic approach. The closed questions of the questionnaire were used for descriptive statistics.

## Results

This study interviewed 12 youth public health physicians. 60 youth public health physicians completed the questionnaire, half of them actively working on this topic. Working on a healthy living environment is important for them, because of the preventive influence of the living environment on health. They are particularly concerned with lifestyle, outdoor space being second. The main bottleneck to do more on this topic is that youth health care organizations are overlooked when it comes to working on a healthy living environment. As a result, they are not financially compensated and staff have no time to work on it.

## Conclusions with Take Home Messages

A significant part of the youth public health physicians wants to work on this topic, but

doesn't know how to do so or has lack of time. The AJN could help them get started. Outdoor space is a nice theme to focus on. It's close to the daily work and influences lifestyle, the topic physicians are most familiar with. Little response on the questionnaire could be due to the length of the questionnaire, the fact that another questionnaire had been send just before this one or only a small number of youth public health physicians being engaged with this topic.

Given the great importance of the healthy living environment the AJN can appoint ambassadors to put this topic on the map and support others. To enthuse others, it's important to address this topic and collect good examples and knowledge. Furthermore, emphasize the role of youth public health physicians regarding the healthy living environment in contact with partners.

No conflict of interest

# THE ARTIFICIAL INTELLIGENCE: AN EFFICIENT TOOL IN PROMOTING HEALTHY LIFESTYLE OF ADOLESCENTS?

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## Background

One of the fastest growing technological areas is the development of artificial intelligence (AI), particularly "chatbots" with ability to mimic traditional model of human communication channels (speech or text) based on default databases. Health-related information can be collected by these systems from different sources: medical and non-medical databases. As smartphone and Internet use have become an integral part of daily adolescent life, artificial intelligence applications provide expanded learning opportunities for adolescents to adopt healthy lifestyle.

## Aim

The aim of the study is to determine adolescents' knowledge of AI and AI generated chatbots, as well as their habits of using them as a source of information on well-being and healthy lifestyles.

## Methods:

A survey questionnaire specially designed for the study was used, having included 348 students in grades 1-4 of a secondary school in Split.

## Results:

Most commonly used AI application was "AI ChatGPT" (72%), providing help with literary essay writing and completing other school assignments. Resources for finding health-related information and recommendations online were used by merely 18% of the respondents. Top trending searches included recommendations for healthy diets and

caloric value of certain foods (21%), followed by mental health (16%) and physical exercise (6%) topics.

Almost a third of the students included in the study discussed about AI and its use with their friends, and 17% recommended it to their peers. The questionnaire respondents also expressed doubts about the reliability of the data obtained from these applications, thus this information is considered to be completely accurate by only 8% of them, while half of the respondents believe that this information is not always relevant and useful. Generally, given the high availability of various on-line information, 29% students fear of the potential risk regarding possible manipulated information. Nevertheless, when faced with health issues, the majority of students (3 out of 5) search online resources, and 18% would rather seek health advice online than from a health professional.

Conclusion:

According to the survey results, it is evident that adolescents are well acquainted with AI generated apps, however, despite this fact, they do not use them very often. As the aforementioned applications can represent a useful tool in promoting the health of adolescents and adopting healthy lifestyles, legal acts and regulatory mechanisms must be clearly defined in order to protect adolescents ensuring access to verified and scientifically based data.

No conflict of interest

# EXPLORING THE RELATIONSHIP BETWEEN SOCIAL MEDIA ENGAGEMENT AND ADOLESCENT MENTAL HEALTH: INSIGHTS FROM A CROATIAN HIGH SCHOOL STUDY

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## Background and Aims:

In an era dominated by digital connectivity, understanding the ramifications of prolonged social media exposure on youth well-being is of paramount importance. This study aims to investigate the intricate association between social media engagement and mental health outcomes among adolescents in Croatian high schools. Specifically, the study seeks to identify potential correlations between adolescents' social media usage patterns and their levels of depression, anxiety, and stress.

## Methods:

An anonymous questionnaire was devised for the current study and distributed amongst high schools from Rijeka (Croatia). Demographic information and social media usage data were collected from 218 high school students aged 15 to 19. Participants' mental health status was assessed using the youth version of the Depression Anxiety Stress Scales (DASS-Y).

## Results:

At the point of writing the abstract, the results of the study showed that highest percentage (48,6%) of participants spend on average 1-3 hours on social media, with most regularly used apps being TikTok (68,8%), Snapchat (64,2%) and Instagram (61,9%) respectively across participant sample. Further correlational statistical analysis will be carried out upon completion of data collection from the anonymous questionnaire. The findings of the study are expected indicate a significant positive correlation between adolescents' duration of social media usage and heightened levels of depression, anxiety, and stress.

## Conclusions:

This study sheds light on the complex dynamics between social media usage and mental health outcomes among adolescents. The findings will have the potential to provide insights contributing to our understanding of the complexities surrounding social media usage in this demographic. The implications of this research are a valuable resource for educators, parents, mental health professionals, and policymakers seeking to promote healthy social media habits and support the mental health needs of adolescents in the digital era.

No conflict of interest

# DEVELOPMENTAL SCREENING AND EARLY ASSESSMENT OF SCHOOL-RELEVANT SKILLS IN THE CHILD AND YOUTH HEALTH SERVICES - A PILOT PROJECT

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## Introduction

In the year previous to school enrolment, the Public Health Department of Frankfurt/Main carries out school enrolment screenings as part of the primary school admission procedure. Data from our health reports show that every year around a quarter of the preschool children in Frankfurt require support in achieving school skills. The remaining timespan until the children enter school is often insufficient to provide these children with appropriate support, rendering it essential to recognise developmental deficits relevant to school at an early stage. In a pilot project, we therefore tested the feasibility of developmental screening for preschool children 1 to 1.5 years before the normal time of examination.

## Material and methods

A pre-selection was made of 28 out of 870 kindergartens that had below-average results in the dental health examinations. Seven of these agreed to participate. A total of 39 children aged 4;0 to 4;6 years were examined using the testing material "Basisdiagnostik Umschriebener Entwicklungsstörungen im Vorschulalter" (BUEVA III). With this we assessed verbal and non-verbal intelligence, receptive and expressive language, visuomotor skills and body coordination, understanding of numbers and quantities, phonological awareness, articulation, attention and working memory. A hearing and vision test was also carried out.

## Results



35 of the 39 children which were analysed had a history of migration and bilingualism. A selected developmental disorder in the area of language was found in 24 children (61%). Eight children (21%) showed a disorder in the area of motor skills. Attention deficit disorder was suspected in ten children (26%). Normal overall intelligence, a combination of verbal and non-verbal intelligence, was found in 27 children (69%). The result of the overall developmental status was deemed age appropriate in 25 children (64%) and was below average in 14 children (36%).

## Discussion

The "BUEVA III" preschool testing material proved to be suitable to assess necessary skills for schooling. However, testing children from a bilingual background for their German language competence was particularly challenging. For these children, the use of a more suitable language test should be considered as an alternative. Moreover, it seems worthwhile to expand the professional constellation of the the Child and Adolescent Health Services, for example by involving speech therapists as subsidiary support for standard care.

## Conclusion

A need for action to support school-relevant skills was identified earlier than usual. The support of German language skills remains the most urgent need at preschool age. Early awareness of this will be the basis to create support measures by the Child and Youth Health Services to enable ideal conditions for entering school. In order to optimise the limited personnel resources in the Child and Youth Health Services, uniform criteria and standards need to be drawn up to identify children in need of support early and efficiently. One promising option is the qualification of medical assistants as social paediatric assistants, who would carry out a pre-selection using the "BUEVA III" testing method during a preschool enrolment examination and notify the medical staff of children with special needs early on.

No conflict of interest

# SCHOOL HEALTH BEFORE, DURING, AND AFTER THE PANDEMIC IN CHILDREN AND ADOLESCENTS WITH SPECIAL EDUCATIONAL NEEDS

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**Context and Objectives:** In Chile, school health ceased to be comprehensively addressed by the Ministry of Health following the 1973 coup d'état. In response to Decree 170 from the Ministry of Education, comprehensive health assessments were implemented for children and adolescents (C&A) with special educational needs (SEN). The objective of this study is to observe the impact of the Covid-19 pandemic on the health assessment outcomes of this group of students in a rural region of Chile, characterised by high levels of poverty and disability.

**Methods:** Assessments were conducted in schools by a multiprofessional team, addressing anthropometry, visual and auditory acuity measurements, orthopaedic examinations, dental issues, and autism spectrum disorder detection.

**Results (currently being tabulated):** An increase in the incidence of autism spectrum disorder and visual problems has been observed. The trend towards malnutrition due to excess remains stable or decreases. Dental health issues remain constant or increase.

**Conclusions:** The impact of the Covid-19 pandemic in a region already vulnerable due to poverty and disability has heightened the health issues in C&A with SEN that may significantly affect future development of disabilities and/or adaptation gaps if not properly addressed. Other deteriorated health conditions remain stable or worsen.

**Main Message:** In the face of a pandemic, it is crucial to reinforce school health for C&A, focusing on the risk of diseases that are most likely to contribute to the development of disabilities, which could impede their quality of life as children, adolescents, and adults.

No conflict of interest

# EXAMPLE OF GOOD PRACTICE: THE ROLE OF PEER EDUCATION IN SEXUAL AND REPRODUCTIVE HEALTH CARE AND PROMOTION AMONG YOUNG PEOPLE

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**Goals.** Present the peer education project in Split, Croatia, which started in 2003 according to the Italian model "Informagiovani", first organized by the Association "Help" with Teaching Public Health Institute of Split-Dalmatia County having been continuously participating since 2005. The goal is to train young people for independent decision-making based on full knowledge of the facts in the field of reproductive health and health promotion in general.

**Materials and methods.** The program has been implemented for 20 years, and during the school year more than 300 young people aged 15-18 go through the workshops. The workshops are led by teams (experts - epidemiologist or school medicine specialist and young people as peer educators). Education has entered the program of elective biology classes in several schools in Split, and there is a great interest from other secondary and elementary schools as well. At the workshops, useful information affecting various aspects of young people's lives are collected with special emphasis on sexual and reproductive health, contraception, prevention of sexually transmitted diseases, HIV/AIDS, and addiction to alcohol and opiates. The education of peer educators enables further knowledge transfer and every year 30 to 40 new peer educators are educated in the field of reproductive health. Educational materials related to sexually transmitted diseases, HIV and reproductive health are available to everyone at the workshops. At the end of each workshop, an internal process evaluation is continuously carried out. Participation in the workshops improves the ability to make decisions and solve problems, providing interpersonal and communication skills, creative and critical thinking, ability to recognize and express emotions and manage one's reactions in stressful situations, as well as self-awareness and empathy.

**Results and conclusion.** This model of informal yet scientifically based education is an excellent tool to improve health education, knowledge and competence in the area of

sexual health of young people. It is this approach that advocates the right of young people to be involved and informed, and over time has proven to be an extremely effective tool in the prevention of infectious diseases, especially sexually transmitted diseases. The internal process evaluation of the project showed that the majority of participants were satisfied with participating in this type of education, and the average rating of the benefits of the workshops on a grading scale was very good (4).

No conflict of interest

# NEURODEVELOPMENTAL PROBLEMS, GENERAL HEALTH AND ACADEMIC ACHIEVEMENTS IN A SCHOOL-BASED COHORT OF 11-YEAR-OLD SWEDISH CHILDREN

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**Aim:** Assessing rates of neurodevelopmental problems (NDPs) in 11-year-old children and possible association with other health complaints and school performance.

**Methods:** In-school study of 11-year-old children as an add-on assessment to the 4th grade regular health check-up, comprising a structured physical neurodevelopmental examination, neuropsychological assessment, behavioural ratings, maternal interview, review of medical records and academic achievements.

**Results:** Out of 348 children recruited from eight schools, 223 (64%) participated. Any physical condition was found in 102/222 (46%), most commonly atopy (18%). One in five had a BMI z-score >2 standard deviations over the reference mean. One or more NDP was found in 86/221 (40%) children. The number of failed national tests correlated positively with NDP severity rated with the clinical global impression severity instrument (Spearman's  $r = 0.41$ ,  $p < 0.001$ ). The majority of participants with failed national tests, also had co-occurring health complaints ( $\geq 2$  of: stomach or extremity ache, headache, difficulties sleeping, internalising symptoms or obesity) and NDPs.

**Conclusion:** Health complaints, physical conditions and NDPs are very common in 11-year-old children. The authors argue for a more integrated school healthcare system that can proactively address and manage these health and developmental issues as they arise, rather than relying on later diagnosis and referral to specialized services.

No conflict of interest

# THE LIEBESLEBEN – JOIN IN PROJECT – PROMOTING SEXUAL HEALTH IN SCHOOLS

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## Background and aims

Promoting sexual health has become an educational mandate, giving pupils the right to age-appropriate information. The Federal Centre for Health Education (BZgA) has developed an interactive, face-to-face communication initiative to prevent HIV/STIs and to promote sexual health in schools: the LIEBESLEBEN »Join in« project (LLMP) in cooperation with parents' and teachers' associations, federal states and local health authorities. This free offer is aimed at all secondary schools throughout Germany and is being conducted in co-operation with the Association of Private Health Insurance Companies (PKV). LLMP aims to promote sexual health in pupils aged 12 to 18 by equipping them with the information and personal skills they need to deal with their sexual health. The project was pilot tested and evaluated in 2019. In the current 2nd project phase 2022-2026, the measures will be continued and structurally anchored.

## Methods

The 2nd project phase comprises two linked intervention packages: 1. an interactive hands-on course with the six topic modules Protection and Safer sex, Friendships and Relationships, Body and Emotions, HIV and other STIs, Diversity and Respect, as well as Sexuality and the Media in schools and a subsequent provision of a material kit with the topic modules in compact form and 2. a continuation and expansion of the measures through cooperation with federal states and a distribution of the material kit via specially trained local specialists, who in turn provide training for teachers in schools to enable them for an independent use of the material kit with their pupils. Both intervention packages are accompanied by process and results-oriented evaluations. The evaluation is based on a mixed-methods approach. Representatives of the state ministries, sexual prevention experts, school administrators, teachers and pupils are interviewed using quantitative and qualitative methods. Project reports and protocols are also included in the evaluation.

## Results

Interim results of the process evaluation show that in the period from the first quarter of 2022 to the first quarter of 2024, 33 interventions with the interactive hands-on course took place throughout Germany as part of intervention package 1, reaching 440 internal school specialists (e.g. teachers, school administrators), 69 external prevention specialists and 4681 pupils. 44 material kits were distributed to schools. Four federal states have already been won over for intervention package 2. Initial training measures for local specialists have already taken place in two federal states. First obstacles in getting the planned amount of schools to take part in the evaluation have emerged. Surveys in participating schools are ongoing. Further interim results of the process evaluation will be available in late summer 2024. First indications of the impact of the measures on pupils and teachers will be available at the end of 2025.

## Conclusions with take home messages

The LLMP is a far-reaching measure that supports schools and teachers in their mission of sex education through qualification, interactive and appealing material and networking with regional specialists. The participating federal states are building structures to expand the topic of sexual health in schools.

# THE GERMAN HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN (HBSC) STUDY (PART 1) – INSIGHTS INTO THE CONCEPT AND METHODOLOGY

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Background: Health Behaviour in School-aged Children (HBSC) is one of the largest international studies on child and adolescent health and cooperates with the World Health Organization (WHO). In Germany, adolescents aged 11, 13 and 15 are surveyed every four years about their health, health behaviour and social conditions. We will present the HBSC study in Germany and in particular the methodology of the current 2022 survey and prior surveys conducted between 2009/10 and 2017/18. HBSC offers an essential input for health monitoring during childhood and adolescence.

Method: 174 schools with a total of 6,475 students participated in the 2022 survey. The survey was conducted using questionnaires and covered a wide range of topics (including mental health, physical activity, bullying experiences, social determinants of health and experiences related to COVID-19). The 2022 survey was complemented by a school principal survey (N = 160). In addition to the current sample, the samples of the three previous surveys with representative data for Germany are presented: 2009/10 (N = 5,005), 2013/14 (N = 5,961) and 2017/18 (N = 4,347).

Discussion: The health of children and adolescents is of great public health importance. The HBSC study makes a substantial contribution by providing internationally



comparable results, analysing trends, and providing stakeholders with comprehensive and representative health monitoring data.

Acknowledgement: Our special thanks go to all schools, teachers, parents/ guardians, and, of course, the students who provided us with valuable information on their health situation by participating in this survey. We would also like to thank all ministries for authorising the HBSC study in the respective federal states, so that representative data could be collected nationwide. At the international level, we would like to thank the International Coordinating Centre (ICC) at the University of Glasgow (headed by Dr. Jo Inchley) and the HBSC Data Management Centre (DMC) at the University of Bergen under the direction of Prof. Dr. Oddrun Samdal

No conflict of interest

# FIRST YEAR EXPERIENCE OF SCREENING FOR FAMILIAL HYPERCHOLESTEROLEMIA IN CROATIA

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## BACKGROUND AND AIMS

Cardiovascular diseases (CVD) are among leading causes of morbidity and mortality globally. Familial hypercholesterolemia (FH) is the most common inherited lipid metabolism disorder characterized by markedly elevated level of low-density lipoprotein (LDL) and high total cholesterol level in blood, leading to early onset of CVD. The prevalence of heterozygous FH is 1:200-1:500, in Croatia it affects 10,000 - 18,000 people, out of that 2,000 children. FH screening was initiated in Croatia in 2023. FH screening is conducted in county institutes of public health in school and adolescent medicine service for all children before elementary school enrollment by measuring total cholesterol level in venous blood sample. The aim of this study was to present the results of FH screening implementation in Zagreb County.

## MATERIALS AND METHODS

A retrospective analysis of FH screening data was conducted in medical records of children (N=3210, 47.6% females) examined for school enrollment in school year 2023/24. FH screening was considered positive if total cholesterol level was equal to or greater than 6.1 mmol/L or between 5.1 mmol/L and 6.0 mmol/L with a positive family history. FH screening was considered borderline if total cholesterol was between 5.1 mmol/L and 6.0 mmol/L with a negative family history. The data were analyzed using descriptive statistical methods.

## RESULTS

Positive FH screening was found in 2.3% of children, with a higher prevalence in girls (2.8%) than boys (1.8%). Borderline screening was found in 2.2% of children, also with a

higher prevalence in girls (3%) than in boys (2%). Seven children (six boys and one girl) with positive FH screening were overweight ( $\geq$  85th centile).

## CONCLUSION

The results showed high frequency of positive FH screening in children, with higher prevalence in girls than boys. Children with a positive FH screening were referred for further evaluation to pediatric specialists for metabolic diseases at secondary healthcare level. Treatment would be initiated for children with confirmed disease. Children with borderline FH findings were included in follow-up, counseling on proper nutrition and adequate levels of physical activity in school and adolescent medicine service. FH screening would be repeated after six months. The results of the analysis indicate presence of cardiovascular risks in school-age children and need for intervention to prevent early development of atherosclerosis and subsequent morbidity and mortality from CVD. School setting, along with activities of school and adolescent medicine service, provide opportunities for promoting and adopting healthy lifestyle habits.

Key words: familial hypercholesterolemia, school enrollment, school health service

No conflict of interest

# CHILDREN'S AND PARENT'S EXPERIENCES OF SCREENING METHODS IN PREVENTIVE HEALTH CARE

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## Background and aims

In public health, general and preventive health checks are important for the early identification of health risks and diseases. In the Netherlands, Preventive Youth Health Care (YHC) plays an important role in supporting children to develop to their full potential, so that they become healthy, resilient, active and independent adults. However, the routine health assessments in preventive youth health care (YHC) could be improved by giving children a voice. The aim of this study is to explore how children and their parents experience the routine health assessments in preventive youth health care and how these can be adapted, so that services are accessible and better adopted to all children's preferences and needs.

## Methods

We conducted focus groups with children aged 9-12 years from various schools who recently had an routine health assessment. During these focus groups we asked children what they think of the routine health assessment, what are strengths, points of improvements, and what is needed in order to give children a bigger voice. In addition, we conducted focus groups and interviews with parents from children aged 9-12 years old, who did or did not use YHC services. We asked parents about their motivation to visit the routine health assessment or not. Besides, we asked how parents experience the routine health assessments in YHC, and how these can be adapted, so that YHC services are better accessible and tailored to the needs of all children and parents.

## Preliminary results

Our first results indicate that children consider routine health assessments important and should be offered more often. Children think it is important that YHC professionals spend time introducing themselves to children so that children also get to know the professional. Moreover, children would prefer using games to address health and wellbeing instead of only talking and using questionnaires. Further results will be presented during the conference.

## Conclusion with take home messages

The insights gained from our study can inform YHC services to better adapt to children's and parent's needs and preferences. Public health care services could actively involve children in designing their services, striving for shared decisions making and services that are best for children's health and wellbeing.

## Acknowledgements

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No conflict of interest

# ENHANCING AWARENESS OF THE COMPLEXITY OF VACCINE HESITANCY CONCERNING CHILDHOOD VACCINES BY DEVELOPING A REUSABLE LEARNING OBJECT FOR HEALTHCARE PROFESSIONALS

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Background: Vax Trust e-learning is a RLO to enhance awareness of the complexity of vaccine hesitancy among healthcare professionals in Flanders that are involved in childhood vaccination.

Aim: provide sociological insights on the complexity of vaccine hesitancy to healthcare professionals involved in childhood vaccination, by facilitating awareness through reflection.

Method: An asynchronous e-learning consisting of 5 modules was designed in 2023.

The introductory module explained the goals and the setup of the RLO.

The three thematic modules each focused on a different aspect of vaccine hesitancy: the role of trust in the vaccination process, vaccination as an informed decision and vaccine hesitancy linked to a preference for natural immunity.

The concluding module provided sources with extra information on vaccine hesitancy and related topics.

The modules included videos, written information, and interactive interfaces. Experts on vaccination, the sociology of health and illness, and communication techniques shared their knowledge in the videos. Users could choose different fictitious types of parents to understand their feelings about vaccines and the reasons behind them. These scenarios illustrated how healthcare professionals could communicate with hesitant parents. Each thematic module included a downloadable summary sheet, providing healthcare professionals with a quick reference after completing the RLO. The RLO also featured a forum where users could ask questions and share tips and insights regarding vaccine

hesitancy. A quantitative pre- and post-questionnaire (N=19), administered immediately before and after the healthcare professionals completed the RLO, assessed changes in learning objectives and behavior determinants.

## Results

The intervention was particularly successful in:

1. Raising awareness among healthcare professionals about the different reasons for vaccine hesitancy.
2. Increasing confidence in tailoring their approach based on the profile of the hesitant parent.
3. Making them more comfortable discussing the concerns and doubts of hesitant parents.
4. Raising reflexivity among healthcare professionals that they share the same goal as hesitant parents: the wellbeing of the child.
5. Increasing self-rated knowledge regarding vaccine hesitancy and communication techniques for consultations with hesitant parents.

## Conclusion with Take Home Messages:

The RLO of the Vax Trust project is a user-friendly en successful tool to enhance awareness of vaccine hesitancy, increase confidence in the approach of hesitant parents and ameliorate communication techniques in the interaction with them.

The RLO (Vaccinatietwijfel) is available in Dutch on the platform Catalogus (opgroeien.be)

No conflict of interest

# CHILDREN AND SICK LEAVE – WHAT APPLIES AND HOW DO WE DO IT

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Abstract EUSUHM Congress Potsdam 2024

Topic: School Absences & School Health Services. Preferred presentation type – Poster.

CHILDREN AND SICK LEAVE – WHAT APPLIES AND HOW DO WE DO IT

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Background and aims

In Sweden, compulsory schooling prevails for all children in primary school, regardless of health status. The principal is responsible for ensuring that the student's right to education is met. In the event of illness, it is also the responsibility of the principal and principal to adapt the teaching to the child's current needs. Children cannot therefore be taken out sick according to the regulations that apply to adults. Despite that, there are today sick certificates for individual students to an unclear extent, and with arbitrary processing. This project aims to map the incidence of sick leave of students in municipal elementary schools in Haninge municipality and surrounding municipalities during the school years 2019/20, 2020/21, 2021/22, and to investigate through interviews the handling patterns of sick leave doctors based on frequency and indication. The hypothesis for this project is that the occurrence of "sick leave" does not include the majority of students who due to illness (medical or psychiatric) lack the ability to attend school, and that internal reporting routines for "sick leave" of children are missing. The hypothesis also includes a notion that "sick writing" conditions in children are to a greater extent based on somatic rather than psychiatric conditions and that the gender distribution between girls and boys is even. We hope that our results will contribute to clarifying the responsibilities of various actors, clarify current regulations and stimulate the development of quality-assured handling and standardized processes for schools, student health care, health care and other relevant authorities.



## Methods

We have conducted interviews with Haninge municipality and surrounding municipalities during the school years 19/20, 20/21, 21/22. The sick writing units, where applicable pediatric or child and adolescent psychiatric specialties/care units, were mapped and contacted. We have carried out a descriptive observational study with information collection from three professional groups: A) Principals at all 17 municipal primary schools in Haninge municipality. B) The school doctor network Stockholm southeast, consisting of school doctors in Nynäshamn, Södertälje, Tyresö, Nacka, Huddinge, Botkyrka and Haninge. C) Specialist doctors in paediatrics (N=3) and child psychiatry (N=3) respectively.

## Results

Our results show that in Haninge municipality (Group A) there were 16 sick leaves, medical diagnoses only, with an even gender distribution. Of these, only one sickness certificate (1) has come to the attention of the school doctor. In the school doctor network (group B), there were a total of 8 certificates, of which 3 were medical (37.5%) and 5 psychiatric (62.5%). Uneven gender distribution, 5 girls (62.5%), 3 boys (37.5%). These were distributed among 5 municipalities, three therefore lacked certificates. No correlation between the number of sick leave and the municipality's number of pupils. In group C, a difference emerges between healthcare providers' attitude to issuing sickness certificates. Only sick leave is reported via private healthcare providers, all of which are on psychiatric grounds. The publicly run care units deny any form of sick leave with reference to the regulations. The gender distribution of sickness certificates appears to be even locally in Haninge municipality (group 1), as well as in the school doctor network (group 2). But in group 3, sick leave has only been issued for girls, thus unevenly, which rejects our hypothesis of equal gender distribution.

## Conclusions

The issue of children and sick leave has been investigated and problematized in this study, with a compilation of sick leave within Haninge municipality, regional municipalities and care neighbors. The results show that children are taken sick in violation of the regulations and that school doctors are not involved. Our hypothesis about failing reporting routines and sick leave on somatic grounds are fulfilled. The results also show that sick leave was only applied by private actors. In summary, the results have shown discrepancies, ignorance and failing reporting, so that regulations and practices are out of step. In summary, the security system is not adapted for children with illness, as there is a lack of a link between the healthcare system and the

school. The actual resources needed to improve collaboration between principals, i.e. the school's highest educational body, and school doctors with the corresponding medical role, are already available, but not used. It is a dark figure for the number of students with school absences due to illness, and there is ignorance of the regulations and a structural inability to manage the gap between pedagogy and illness, which risks major consequences in both the short and long term for the individual child. In order to ensure equality, a review of both the central regulatory framework and local procedures is needed, with the aim of achieving cooperation that enables the individual's rights to be fulfilled and removes obstacles to ensure the children's statutory right to both schooling and healthcare.

### Take Home Messages

Our results show discrepancies between regulations and practice, failing reporting and ignorance of current regulations. Overall, this highlights the importance of the issue of children who cannot go to school due to illness. That issue seems to be overlooked at all levels within responsible authorities, both within the school world and in healthcare.

This study has shown a gap in the Swedish security system regarding sick children who cannot participate in education. They are thus left without a robust regulatory framework that safeguards both their right to education and their medical needs.

No conflict of interest