

The Oslo Health Study (HUBRO) – The Youth part (UNGHUBRO)

Aims, materials and methods

By Anne Johanne Sjøgaard and Tove Eide, Norwegian Institute of Public Health

Background

The National Health Screening Services (SHUS) has for many years conducted systematic health screening surveys among adults in all of the Norway's counties with the exception of Oslo. These data have been used by the county municipalities for planning health-related activities. Until 2001, only data on aggregate level has been used to describe the state of health among adults in Oslo. The report "Oslohelse" (1) was such an overview of the health status in Oslo, documenting large contrasts for a number of illnesses and health conditions within the city.

In order to obtain identifiable data on individual level the Oslo Health Study (HUBRO) was conducted in 2000-2001 (2). To gain more knowledge about the health of children and adolescents, 15-16 year olds were also invited. This study was named the youth part of HUBRO (UNGHUBRO).

In 1996 the Norwegian Institute for Research on Adolescence, Welfare and Aging (NOVA) had carried out a survey of 11,425 youth aged 14-17 years in Oslo (3). Their data was, however, anonymous and the focus was more on well-being than on health and illness. Thus the health authorities wanted more information that could contribute to improved health services for youth in Oslo.

The other aims of UNGHUBRO were to investigate whether or not there were large geographic, ethnic and social differences in health and illness also among youth, in addition to differences in factors that can influence health and illness later in life.

HUBRO was a collaborative project between Oslo Municipality, the University of Oslo and the SHUS (now the Norwegian Institute of Public Health). A separate description of the materials and methods has been written for the adult part of HUBRO (2). In addition, an analysis of non-responders (4) and an evaluation of the effect of sending reminders to non-responders (5) have been published.

The aims of the health survey among youth were to:

- Investigate what is important for the health and well-being of youth
- Provide a better basis for designing health services for youth
- Obtain more knowledge about the causes of illness and health

The invited sample

All students attending the 10th grade in Oslo during the school years 1999/2000 and 2000/2001 were invited to participate in the health screening survey. A total of 8,435 students were enrolled. Not all of the students received the invitation because some had moved after the student information was collected and before the survey was conducted. More information concerning the number of invited participants, the special schools that did not participate or participated partially, a discussion of the number of participants, etc. can be found in a separate report (6). A total of 8,316 students received an invitation to participate in the study. The number of invited boys and girls distributed between the 2 classes is presented in Table 1.

Questionnaires

A group including representatives from the National Institute of Public Health, the University of Oslo, the Norwegian School of Sport Sciences, Oslo Municipality and SHUS designed the

questionnaires. It was emphasized that the questions should be validated and preferably used in previous youth surveys. Two 4-page questionnaires (named U and U/T) were designed. All questions on questionnaire U/T were suggested and paid by associated researchers. They had projects presented for and accepted by the board of HUBRO. A summary of supplementary projects, questionnaires, letter of invitation, etc is available on the HUBRO website (7). Questionnaires included questions concerning health, physical activity, smoking, intoxicants, use of medicines, sexual behaviour and contraception, food and drink, education and plans for the future, adolescence and sense of belonging. There was also a focus on strong and weak sides, concerns, the situation at school, culture and contact, relationship to family and friends, mourning and war experiences (7, 8).

Approval

The study was submitted to the Regional Committee for Ethics in Medical Research and approved by the Data Inspectorate of Norway. Additional concession has been granted for the linkage of data between UNGHUBRO and Statistics Norway concerning parents' education and income.

The Data Inspectorate of Norway accepted that the informed consent form could be signed by the student under the condition that the youth was 16 years of age by the day of the study and that the parents/guardians were informed about the study. When these criteria were not met the parents were contacted and asked to provide a separate informed consent form.

The authority to grant permission to perform the survey in the schools in Oslo was delegated to the management of each school. Following a recommendation from SHUS, the Director of Schools in Oslo sent a letter to all schools. In the letter the Department of School Administration and the City Council of Oslo Municipality emphasized the importance of the study and stated that the participation of all schools with 10th grade students was important. Thereafter SHUS contacted all schools and arranged to have a contact person designated for the project at each school. Contact persons from the Department of School Administration and SHUS were also designated.

Plans and information

In contrast to the adult part of HUBRO that also included collection of biological material, the youth study consisted solely of questionnaires that were conducted at all public and private high schools in Oslo.

Pilot study

A pilot study was conducted among 64 students in two 10th grade classes in one municipality in a different county than Oslo. The pilot study was conducted according to the design that was planned for the questionnaire study in the Oslo Municipality. Results from the pilot study indicated that it was necessary to improve some of the questions.

Contact with different institutions

A letter was sent to all public health centres in the city districts and information meetings with school health services were held before the study commenced. The study was described and researchers provided information concerning additional studies at these meetings.

Contact with the Red Cross was established and information concerning the possibility of contacting the Child and Youth Information Telephone Service was included in the information brochure that was sent to the homes of all students.

Contact with the schools

There was extensive contact with all of the schools in the municipality prior to the youth study. The contact person was preferably the teacher in charge with responsibility for the 10th grade class or the guidance counsellor at the school. The school was asked to provide information concerning the number of classes, to send over class lists and if the study could be conducted collectively or separately for each class. Furthermore, the schools were asked if there were problems with language or need for translation etc., about the possibility of receiving help from language teachers specializing in mother tongues, reading and writing difficulties among students, special problems that might warrant attention, travel plans, contact dates and a suggested date on which the study could be performed. The date on which the study was to be performed was confirmed by letter.

The school contact person was responsible for sending the information to the school/students. The contact person was also to ensure that the students were in the classroom at the time of the study. One teacher was also to be present in the classroom while the questionnaires were being completed but had otherwise no responsibilities in connection to the study.

Information to parents/guardians

Parents/guardians received via post an information brochure describing the youth study. The brochure included information concerning why and how the study would be conducted, about the topics addressed in the questionnaire, the voluntary nature of the study and how the results would be used.

Execution of the study in the school

Oslo is the Norwegian municipality with the greatest concentration of foreign students who do not have Norwegian as their mother tongue, and some of these students have difficulty understanding all Norwegian words. However, it was decided that the forms should be translated to English only and used as an aid when needed. Answers to the questions should be written on the Norwegian questionnaire. Individual students with writing/reading difficulties received extra help from a SHUS fieldworker or a language teacher. The person providing assistance could not see the student's answers.

The first part of UNGHUBRO was conducted during March 22 to June 21, 2000 and February 8-19, 2001. This is the busiest time of the year for 10th graders due to the final exams for high school students. The study was conducted during the spring semester due to the age of the students. Students who, for example, participated in the school year 1999/2000 should in theory have passed their 15th birthday before December 31, 1999. Therefore the best chance of including as many students as possible who were 15 years of age or older, and thus able to provide informed consent themselves, was during the spring semester.

A total of 8 University-students were employed to conduct the study and assist in the classes, 4 in 2000 and 4 in 2001. These students received instruction with emphasis on proper conduct before they visited the schools (see Protocol section B (8)). A list was prepared with "standard" explanations for words and concepts that school students had previously not understood. In this way all students who asked received the same answer regardless of the school they attended or the assistant present during the study.

The participating students were given instruction in the classes according to accepted procedures prior to the study. They were informed about the background of the study, why the

study was important and how the answers would be used. It was especially important to inform the students that all information collected was anonymous and that the researchers would not be able to identify any of the participants. Two consecutive school hours were set aside for the study.

It was arranged with the school authorities that students not wishing to participate in the study should do regular school assignments during while the study was being performed.

Reminders

Questionnaires, informed consent forms and two addressed/stamped envelopes, one for the completed questionnaire and one for the consent form, were left at schools where students were not present during the time at which the study was performed. In this was it was not possible to connect the student providing consent with the completed questionnaire. A separate instruction was prepared for teachers responsible for these students. Students who did not return the completed questionnaire during the course of the school year were contacted by letter sent to their home. They were encouraged to answer the enclosed questionnaire and sign the enclosed informed consent form, and return the completed forms in the respective enclosed envelopes.

Data entry and analysis

Informed consent forms were registered separately. A separate list of codes was prepared for injuries, contraception, birth control pills, mourning and "other physical activities". Country of birth was registered according to Statistic Norway standards and classification of occupation was based on ISCO-88. A database was designed for the registration of medicines based on the ATC codes in the Norwegian Medicines Agency catalogue, WONCA standards and ICPC codes. The forms were manually punched. Double punching was performed for 200 forms, including both U and U/T forms, selected arbitrarily. In relation to the total number of variable values double punched (366 variables and 197 forms), incorrect registration was between 0.1-0.3% (9).

Following the completion of the data file from UNGHUBRO, this information was linked to additional information obtained from the Statistics Norway concerning parents' highest completed education, collective income and assessed income tax at the time the answer was provided by the responder. All personal identifiers were removed from the research file.

Participants

Sixty two schools participated in 2000 and 60 schools participated in 2001. A summary of the schools that participated/did not participate and why some schools did not participate is presented in a separate report (6). A total of 7,343 (88.3%) of the 8,316 students who received the invitation to participate in the study answered at least one question on one of the questionnaires. A summary of the number of participants and the percent of boys and girls distributed among the 2 years is presented in Table 1.

Information after the study

A health profile for children and youth in Oslo commissioned by the Oslo Municipality was prepared following the completion of the study (10). A brochure entitled "How are you?" including some of the results from UNGHUBRO was prepared in 2002 (11). This brochure was distributed to the classes that participated in the study, to 10th grade students in 2002, to schools and health stations in the city districts.

Acknowledgement

Many thanks to Carol Holm-Hansen for the translation of this manuscript.

References

1. Rognerud M, Stensvold I. Oslohelse. Utredning om helse, miljø og sosial ulikhet i bydelene 1998 (In Norwegian). Oslo: Oslo kommune, Ullevål Universitetssykehus, 1998.
2. Sjøgaard AJ, Selmer R. The Oslo Health Study. Objectives, material and methods. Oslo: Norwegian Institute of Public Health, 2004. <http://www.fhi.no/prosjektweb/hubro>
3. Bakken A. Ungdomstid i storbyen. Rapport 7/98. (In Norwegian). Oslo: Norsk institutt for forskning om oppvekst, velferd og aldring (NOVA), 1998. <http://www.isaf.no/~aba.nova/littuio96artikler.htm>
4. Sjøgaard AJ, Selmer R, Bjertness E, Thelle D. The Oslo Health Study. The impact of self-selection in a large, population-based survey. *Int J Equity Health* 2004; 3:3. Online: <http://www.equityhealthj.com/content/3/1/3>.
5. Selmer R, Sjøgaard AJ, Bjertness E, Thelle D. The Oslo Health Study. Reminding the non-responders – effects on prevalence estimates. *Nor J Epidemiol* 2003;13:89-94.
6. Haugstvedt Y. Materiale og metode, UNGHUBRO kohorten. Rapport. (In Norwegian). Oslo: Statens helseundersøkelser 2002.
7. Helseundersøkelsen i Oslo. Nasjonalt folkehelseinstitutt. <http://www.fhi.no/tema/helseundersokelse/oslo/index.html>
8. Helseundersøkelsen i Oslo. Protokoll B – Ungdom. (In Norwegian). Oslo: Nasjonalt folkehelseinstitutt, 2004.
9. Sagatun Å. Fysisk aktivitet og psykososial helse, en tverrsnittsstudie blant 15-16 åringer i Oslo. Hovedoppgave. (In Norwegian). Oslo: Norges Idrettshøgskole 2003.
10. Grøtvedt L, Gimmetstad A. Helseprofil for Oslo – Barn og unge. (In Norwegian). Oslo: Nasjonalt folkehelseinstitutt, Oslo kommune, program for storbyrettet forskning, juli 2002. <http://www.fhi.no/tema/helseundersokelse/oslo/>
11. "Hvordan har du det". Folder med noen resultater fra ungdomsdelen av HUBRO. (In Norwegian) <http://www.fhi.no/dav/2828A9BD4CAA447980D402C0E5025B55.pdf>

Table 1.

| UNGHUBRO | Number invited | | | | Number participating | | | | Participant % | | | |
|----------------------|----------------|------|----------------------|------|----------------------|------|----------------------|------|---------------|------|----------------------|-------|
| | Girls | Boys | Unknown [*] | All | Girls | Boys | Unknown [*] | All | Girls | Boys | Unknown [*] | All |
| 2000 | 2052 | 2030 | 11 | 4093 | 1828 | 1689 | 9 | 3526 | 89,1 | 83,2 | 81,8 | 86,1 |
| 2001 | 2027 | 2163 | 27 | 4217 | 1867 | 1923 | 21 | 3811 | 92,1 | 88,9 | 77,8 | 90,4 |
| Unknown [*] | | | 6 | 6 | | | 6 | 6 | | | 100,0 | 100,0 |
| Total | 4079 | 4193 | 44 | 8316 | 3695 | 3612 | 36 | 7343 | 90,6 | 86,1 | 81,8 | 88,3 |

^{*}Gender and year of participation was not registered for some participants due to a mistake