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Self-reported health needs and use of primary health care services by adolescents enrolled in post-mandatory schools or vocational training programmes in Switzerland

Swiss Multicenter Adolescent Survey on Health 2002 (SMASH02)

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Summary

Background: The second Swiss Multicenter Adolescent Survey on Health (SMASH02) was conducted among a representative sample (n = 7428) of students and apprentices aged 16 to 20 from the three language areas of Switzerland during the year 2002. This paper reports on health needs expressed by adolescents and their use of health care services over the 12 months preceding the survey.

Methods: Nineteen cantons representing 80% of the resident population agreed to participate. A complex iterative random cluster sample of 600 classes was drawn with classes as primary sampling unit. The participation rate was 97.7% for the classes and 99.8% for the youths in attendance. The self-administered questionnaire included 565 items. The median rate of item non-response was 1.8%. Ethical and legal requirements applying to surveys of adolescent populations were respected.

Results: Overall more than 90% of adolescents felt in good to excellent health. Suffering often or very often from different physical complaints or pain was also reported such as headache (boys: 15.9%, girls: 37.4%), stomach-ache (boys: 9.7%, girls: 30.0%), joint pain (boys: 24.7%, girls: 29.5%) or back pain (boys: 24.3%, girls: 34.7%). Many adolescents reported a need for help on psychosocial and lifestyle issues, such as stress (boys: 28.5%, girls: 47.7%) or depression (boys: 18.9%, girls: 34.4%). Although about 75% of adolescents reported having consulted a general practitioner and about one-third having seen another specialist, reported reasons for visits do not correspond to the expressed needs. Less than 10% of adolescents had visited a psychiatrist, a family planning centre or a social worker.

Conclusions: The reported rates of health services utilisation by adolescents does not match the substantial reported needs for help in various areas. This may indicate that the corresponding problems are not adequately detected and/or addressed by professionals from the health and social sectors.

Key words: adolescence; health survey; methodology; Switzerland; health needs; health care services

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Introduction

Adolescence is characterised by the conjunction of a wide range of opportunities in all domains of life, the growing capacity to make individual choices which may have long-lasting effects on health, and the permeability to external influence and advice [1–5]. The planning of health care and preventive services intended for adolescents should be based not only on traditional measures

such as mortality or morbidity rates [6], but also on health care needs as expressed by the adolescents themselves. Among the various ways to measure adolescents' needs, their own reports of their health-related behaviour and lifestyles, as well as their utilisation of health services, are especially valued as this method allows them to be heard, as opposed to adult professionals making judgements on them [7–9]. Youth surveys have therefore been conducted in several countries and among various adolescent age groups over the last ten years. During the 80's they were essentially focused on so-called "deviant behaviour" and related risk factors. More recently, they have included topics such as health-enhancing activities or behaviour, and resources in their environment [14–18]. This responds to the necessity of identifying positive elements on which prevention and health promotion programmes could be based, given the largely acknowledged failure of "Don't do" messages.

In Switzerland three major cross-sectional surveys are periodically carried out among adolescents: the Swiss Health Survey conducted by the Federal Office for Statistics [19] every five years, the Health Behaviour of School Children (HBSC) survey conducted by the Swiss Institute for the Prevention of Alcoholism [20] every four years and the Swiss Multicenter Adolescent Survey on Health (SMASH) survey conducted for the first time in 1992–93 by the Lausanne Institute for Social and Preventive Medicine [21] and in 2002 as reported here. The Swiss Health Survey targets the general population aged 15–75, but is not designed to specifically investigate adolescent health. The HBSC survey pertains to 11–15 years old teenagers who are still enrolled in mandatory schools. The second SMASH survey (SMASH02) was organised the same year as the other two national surveys, as a complement focusing on young people aged 16 to 20 attending post-mandatory schools or vocational training programmes.

In Switzerland, the education system is mostly public; private schools account for only 5% of the school-age population [22]. Post-mandatory education covers the ages from 15 or 16 to 19, i.e. International Standard Classification of Education (ISCED) level 3 [22]. Most adolescents in this age group attend post-mandatory education; about one-third of them as full-time students and the others as apprentices attending part-time courses at vocational training schools. This paper presents the second SMASH study, which was conducted during the year 2002 among a large representative sample of students and apprentices of the three language areas of Switzerland. Its main objectives are to present data related to the health needs of adolescents aged 16 to 20, and to examine their reported use of health care services in the year before the study.

Methods

Questionnaire

The SMASH02 questionnaire (available on request in French, German and Italian at www.umsa.ch) is a self-administered anonymous form of 565 items which builds upon the 1992 SMASH survey instrument updated with the large body of research on adolescent health conducted during the last decade [7, 11, 13, 23–38]. The questionnaire uses closed, pre-coded items to provide self-reported information covering the following main topics:

- Health determinants: socio-economic background, current educational programme, family structure, relationship towards family and peers, leisure activities, physical activity, risk-taking;
- Health status: representation of one's health, well-being and self-image, health needs, physical and mental health, disability and chronic conditions, abuse;
- Health behaviour: sexual life (including sexual activity, contraception, pregnancy), substance use (tobacco, alcohol, illicit drugs), eating disorders, violent or law-breaking behaviour, suicidal events;
- Health care utilisation: awareness and use of medical and health services, use of medication.

The questionnaire was first constructed in French, then translated into German and Italian. Each version was pre-tested in one class of students attending college and one class of apprentices. Adolescents first completed the questionnaire and then discussed the interest and relevance of the topics, the wordings of the questions, the length and any problems encountered in answering the questions. Relevant modifications were then incorporated into the final version. The questionnaire form was prepared for automated data entry by optical scanning. Previous tests using the same technology had yielded a < 0.1% rate of transcription error.

Sampling

All 26 Swiss cantons were offered the opportunity to take part in the study for a moderate fee. All Cantonal Physicians were contacted in 2001 and 19 cantons agreed to participate. Refusals were based on cost considerations or lack of interest, even after active lobbying for the study. The participating cantons cover the three language areas and account for 80% of the resident population in the country. The participating cantons provided the investigators with an official and comprehensive list of schools and courses belonging to the secondary, post-mandatory education system. All public educational institutions – vocational training schools and colleges – were included. Private schools were excluded. Classes were included if at least 6 persons registered for the class, if students fell within the age group of interest (i.e. 16 to 20), and if the class attributed to a known course. A total of 1319 classes were excluded from the lists because they did not meet these criteria. All students from each selected class were included. The 13758 classes included 215693 students. The sampling frame was made out of the aggregated lists containing information on canton, type of school or apprenticeship, year of study, main language and number of people of each gender. Language area (n = 3), type of school (n = 2) or apprenticeship (n = 9) and year of study (up to 4) were used as stratification criteria. A complex iterative random cluster sample of classes was drawn without replacement, with the classes as primary sampling

units. Each class was attributed a unique identifier and was given a probability of selection based on the type of course, the vocational classes receiving a higher probability of selection. This sampling process was run three times. Once a class (cluster) was selected, all pupils in it were included. Respondents outside the target ages were to be excluded at the analysis stage; however, some field workers still decided not to give them the questionnaire, with unknown effect on the sampling. The resulting probabilities of selection were 0.037 for classes from the German-speaking region, 0.054 for the French-speaking region and 0.085 for the Italian-speaking region, and 0.044 for apprentices and 0.047 for students. A total of 600 classes were drawn comprising 10679 students, ie a sampling fraction of 0.0440 for classes and 0.0495 for students.

After determination of the classes included in the sample, each school director was asked for his/her agreement to the survey and for provision of the required time. For classes which could not be reached at interview time, the following replacement procedure was used by the regional coordinators in charge of the fieldwork in the cantons: the final year classes unable to participate due to proximity of graduation exams were to be replaced by an equivalent class from the preceding grade; other classes unable to take part were to be replaced by a randomly drawn candidate parallel class of the same school, course and grade (in that order).

Data collection and analysis

Cantonal school authorities granted an agreement to the survey and to the provision of the required time (ie the equivalent of two courses, about 90 minutes). After selection of the schools, each school director with at least one class in the sample was asked to organise the best class time with the relevant teachers. The survey was conducted over a three-month period (April to June 2002) during class time, by trained health professionals external to the school/training centre systems, in the absence of the teachers.

Some 116 classes did not participate. Reasons were the proximity of exams, the lack of common courses for the whole class, or in three instances the refusal of the school director. In total, 79 classes (1450 pupils) were replaced in the same school and 23 classes (447 pupils) with a class in another school (2 of which in another canton of the same language area); 14 classes could not be replaced despite all efforts. Finally 586 classes (97.7%) participated, including replaced classes. Only 16 persons refused to participate and very few invalid questionnaires were discarded. 8740 completed questionnaires were returned, yielding a participation rate of 99.8% for the persons in the participating classes. Due to the heterogeneity of the class types and of the school population in post-mandatory education, the age range of the respondents was 13 to 50, those between 16 and 20 representing 89.3% of them.

Item non-responses were analysed in order to detect the items which elicited the largest numbers of non response (i.e. the "bad" items), and to identify the respondents with the highest rates of non responses (i.e. the "bad" respondents). The median item non-response rate was 1.8% and 7.1% of items had a non-response rate of 20% or more. The inter-participant median proportion of item non-response was 2.4% and 1.2% of subjects did not respond to 20% or more of the items.

The data set retained for the analyses was made of the respondents aged 16 to 20 who had less than 20% of non responses and for whom full information was available regarding age, gender and track. The age criterion by itself led to the exclusion of 690 questionnaires and 4.1% of questionnaires had to be discarded for not fulfilling the data completeness criteria, a proportion similar to the one found in the SMASH 1992–93 survey. In the retained questionnaires, the rate of missing values was 5% or less for 82.4% of the items. Data were weighted by the inverse of the probability of selection. The final weighted number of adolescents included in the analyses was 7428 (3384 girls and 4044 boys).

Statistical analyses were performed using SPSS 11 (Spss Inc., Chicago, Illinois 60606) on weighted data. Differences between subgroups were ascertained using cross-tabulations and chi-square tests or 95% confidence limits computed by normal approximation.

Ethical aspects

Ethical and legal requirements for collecting data in an adolescent population were taken into account [29–31]. Participants were clearly told about the purpose of the study and the fact that the survey was completely independent from school and that their participation and answers were entirely voluntary. The research staff was instructed to provide participants with the names of key persons or institutions where they could seek help in case questions dealing with intimate matters such as sexuality, suicide or depression raised preoccupations for them. Completed questionnaires were inserted by the respondents themselves into a sealed anonymous envelope that was transmitted directly to the cantonal coordinators. This procedure guaranteed anonymity and confidentiality, and aimed at increasing the participation rate by building trust. This was completed by the promise of a feedback, which was done in the spring 2003 by sending to all participating schools a four-page summary of the main results which was displayed in the common areas and discussed in class (available at www.umsa.ch).

Results

The main socio-demographic characteristics of the sample are displayed in table 1. There are significant differences between apprentices and students. Among apprentices, the mean age is 17.9 for girls and 18.0 for boys (95% confidence interval (CI) for the difference: –0.18; –0.05); among students there is no statistically significant difference in mean age: 17.7 for girls and for boys (95% CI for the difference: –0.09; 0.11). The proportion of Swiss nationals is significantly higher (95% CI for difference: 5.3%; 8.6%) among students (89.7%) than among apprentices (82.7%). A higher proportion of students (48.9%) than apprentices (40.0%) is living in urban settings (95% CI for difference: 6.5%; 11.5%).

More than 90% of respondents felt in good or excellent health. A higher proportion of boys (19.9%) than girls (7.7%) reported that their global health is excellent ($p < .001$). Participants reported that they had suffered often or very often from different physical complaints or pain over the last twelve months: headache (boys 15.9%, girls 37.4%), back pain (boys 24.3%, girls 34.7%), stomach-ache (boys 9.7%, girls 30.0%), joint pain

Table 1

SMASH 2002: main socio-demographic characteristics of the sample.

	apprentices		students		total		
	girls N = 2131	boys N = 3183	girls N = 1252	boys N = 861	girls N = 3384	boys N = 4044	all N = 7428
Age							
16 years	9.3	11.2	12.9	15.8	10.7	12.2	11.5
17 years	28.0	24.1	33.1	30.1	29.8	25.4	27.4
18 years	34.7	29.4	28.4	28.1	32.4	29.1	30.6
19 years	17.5	20.7	18.8	18.4	18.0	20.2	19.2
20 years	10.5	14.6	6.8	7.7	9.1	13.1	11.3
Nationality							
Swiss	83.4	82.3	89.6	89.9	85.7	83.9	84.7
Other	16.6	17.7	10.4	10.1	14.3	16.1	15.3
Area of residence							
City, town, suburbs	39.3	40.4	46.0	53.0	41.8	42.8	42.3
Countryside	59.5	58.4	53.6	45.8	57.3	55.8	56.5
Unknown	1.2	1.6	0.4	1.2	0.9	1.5	1.2
Parents' situation							
Live together	73.7	76.6	77.6	80.8	75.1	77.5	76.4
Separated or divorced	21.2	18.9	16.5	15.3	19.4	18.2	18.8
Father or mother deceased, other	4.6	4.1	5.8	3.6	5.1	4.0	4.5
Unknown	0.6	0.3	0.1	0.2	0.4	0.3	0.3

Percentages by type of education and gender. Percentages do not always add to 100.0% due to rounding errors.

Table 2

Different areas of reported needs among adolescents.

	girls		boys		95% CI diff*
	(n = 3385)	95% CI	(n = 4040)	95% CI	
Stress	47.7	(46.0; 49.3)	28.5	(27.1; 29.9)	(17.0; 21.4)
Depression	34.4	(32.8; 36.0)	18.9	(17.7; 20.2)	(13.5; 17.5)
Love life	32.8	(31.2; 34.4)	22.5	(21.2; 23.7)	(8.3; 12.3)
School / work	27.3	(25.8; 28.8)	23.2	(21.9; 24.5)	(2.1; 6.1)
Nutrition	27.1	(25.6; 28.6)	12.0	(11.0; 13.0)	(13.3; 16.9)
Sleep	23.7	(22.2; 25.1)	14.0	(13.0; 15.1)	(7.9; 11.5)
Future job	22.5	(21.1; 23.9)	17.3	(16.1; 18.5)	(3.4; 7.0)
Tobacco smocking	18.1	(16.8; 19.3)	21.6	(20.3; 22.8)	(–5.3; –1.7)
Relations with parents	17.0	(15.7; 18.2)	12.0	(11.0; 13.0)	(3.4; 6.6)
Relations with friends	9.1	(8.1; 10.1)	8.2	(7.4; 9.1)	(–0.4; 2.2)
Sports activities	8.8	(7.9; 9.8)	8.1	(7.3; 9.0)	(–0.6; 2.0)
Sexuality and contraception	6.4	(5.6; 7.2)	7.0	(6.2; 7.7)	(–1.7; 0.5)
Substances	4.4	(3.7; 5.1)	9.8	(8.9; 10.7)	(–6.5; –4.3)
Alcohol	3.7	(3.0; 4.3)	10.5	(9.5; 11.4)	(–7.9; –5.7)

Percentages by gender with 95% confidence interval.
* 95% confidence interval for the difference in proportions between Girls and Boys.

(boys 24.7%, girls 29.5%), gynaecological problems (girls 25.3%), sleep problems (boys 16.6%, girls 24.4%), acne (boys 20.5%, girls 23.6%), weight problems (boys 8.2%, girls 23.4%), air ways (boys 16.7%, girls 19.7%), eyesight (boys 13.2, girls 19.7%), faintness (boys 4.6%, girls 16.5%), legs pain (boys 11.8%, girls 11.9%), eczema (boys 6.4%, girls 11.4%), hearing problems (boys 5.3%, girls 4.7%). Except for hearing problems and legs pain, these gender differences are significant at least at the 0.05 level.

Closed, pre-coded items were used to ask about problems for which the participants felt they needed help ("in which of these domains do you think you may need to be helped?"). The concerns and needs expressed by the respondents were mainly psychosocial and lifestyles issues (table 2) such as stress (girls: 47.7%, boys: 28.5%), depression (girls: 34.4%, boys: 18.9%) or use of psychoactive substances (girls: 4.4%, boys: 9.8%). Generally, a higher proportion of girls than boys expressed these concerns (differences statistically

Table 3

Different health care professionals or social workers being consulted by adolescents over the last 12 months.

	girls (n = 3385)			boys (n = 4044)		
	never	1–2 times	>2 times	never	1–2 times	>2 times
General practitioner	21.7	55.0	22.5	24.6	58.1	16.5
Gynaecologist	47.4	47.3	4.0	n.a.	n.a.	n.a.
Other specialist	62.0	27.4	9.1	65.2	25.3	6.3
Psychiatrist or psychologist	89.7	4.0	4.2	90.6	2.6	2.1
Family planning centre	91.1	5.3	1.2	92.3	3.4	0.7
Social worker	94.6	2.1	1.1	93.7	1.8	0.9

Percentages by gender. Totals do not add up to 100.0% because non responses have been omitted.
n.a.: not applicable.

Table 4

Different reasons for consulting health care professionals by adolescents over the last 12 months.

	doctor		psychologist		other health professionals*		telephone help line	
	girls n = 3380	boys n = 4040	girls n = 3380	boys n = 4040	girls n = 3380	boys n = 4040	girls n = 3380	boys n = 4040
Contraception	17.8 ± 1.3	0.3 ± 0.2	0.1 ± 0.1	0.1 ± 0.1	4.0 ± 0.7	0.4 ± 0.2	0.3 ± 0.2	0.0 ± 0.0
Gynaecological problems	17.5 ± 1.3	0.0 ± 0.0	0.3 ± 0.2	0.0 ± 0.0	3.8 ± 0.6	0.0 ± 0.0	0.3 ± 0.2	0.3 ± 0.2
Fatigue	6.0 ± 0.8	2.2 ± 0.5	0.9 ± 0.3	0.4 ± 0.2	1.3 ± 0.4	0.5 ± 0.2	0.2 ± 0.2	0.0 ± 0.0
STIs (incl. HIV test)	4.9 ± 0.7	1.8 ± 0.4	0.1 ± 0.1	0.0 ± 0.0	1.1 ± 0.4	0.7 ± 0.3	0.2 ± 0.2	0.1 ± 0.1
Chronic condition	4.6 ± 0.7	2.6 ± 0.5	0.2 ± 0.2	0.1 ± 0.1	1.4 ± 0.4	0.6 ± 0.2	0.1 ± 0.1	0.1 ± 0.1
Nervousness, depression	3.2 ± 0.6	1.0 ± 0.3	3.3 ± 0.6	1.3 ± 0.4	1.5 ± 0.4	0.5 ± 0.2	0.1 ± 0.1	0.1 ± 0.1
Sleep problems	2.7 ± 0.5	1.2 ± 0.3	0.7 ± 0.3	0.3 ± 0.2	0.7 ± 0.3	0.4 ± 0.2	0.1 ± 0.1	0.0 ± 0.0
Nutrition problems	2.7 ± 0.5	0.6 ± 0.2	1.4 ± 0.4	0.2 ± 0.1	0.7 ± 0.3	0.3 ± 0.2	0.1 ± 0.1	0.1 ± 0.1
Tobacco problems	0.6 ± 0.3	0.9 ± 0.3	0.1 ± 0.1	0.4 ± 0.2	0.3 ± 0.2	0.7 ± 0.3	0.0 ± 0.0	0.2 ± 0.1
Suicidal conduct/ideation	0.4 ± 0.2	0.2 ± 0.1	1.4 ± 0.4	0.2 ± 0.1	0.1 ± 0.1	0.1 ± 0.1	0.0 ± 0.0	0.1 ± 0.1
Substance use (incl. alcohol)	0.3 ± 0.2	0.6 ± 0.2	0.1 ± 0.1	0.6 ± 0.2	0.4 ± 0.2	0.8 ± 0.3	0.1 ± 0.1	0.1 ± 0.1

Percentages by gender with 95% confidence interval computed by normal approximation.
* School nurse, dietetician, physiotherapist, etc.

Table 5

Reasons for hospitalisation among adolescents hospitalised over the last 12 months.

	girls N = 422	95% CI	boys N = 328	95% CI
Injury (or follow-up care of an injury)	41.1	(36.3; 45.9)	68.3	(63.0; 73.3)
Gynaecological problem	12.4	(9.3; 15.8)	n.a.	n.a.
Chronic condition*	9.7	(7.1; 12.9)	4.9	(2.8; 7.8)
Suicide attempt	5.9	(3.9; 8.6)	1.8	(0.7; 3.9)
Other causes	40.0	(35.3; 44.9)	29.5	(24.7; 34.8)

Percentages by gender with 95% confidence interval. Several responses were possible.
n.a.: not applicable.
* defined as a disease or a handicap having lasted at least 6 months and requiring health care/medication.

significant at p <0.001), except for problems related to sexuality and contraception, sports activities and difficulties in relationships with friends where there were no differences.

We examined the extent to which the health care system addresses these problems and issues. Table 3 shows the proportion of respondents who reported having consulted in the preceding 12 months various health professionals who are expected to address the kind of problems outlined above. Three quarters of the respondents had seen a general practitioner at least once. Additionally, one third of both boys and girls had been treated by a specialist and half of the girls had seen a gynaecologist. Nearly one out of twelve girls and one out of twenty boys had seen at least once a psychologist or a psychiatrist. School health services and family planning centres also represented a significant source of health care or counselling. Although females were more likely to use all forms of health care than males, the differences are small and most likely of limited substantive importance.

Consultations of different health professionals for specific health problems are shown in table 4. Compared to the needs expressed in table 2, only a small proportion of respondents were actually able to address psychosocial issues in the ambulatory health care setting. Far fewer boys than girls addressed the issue of contraception. Finally, 10.6% of girls and 11.7% of boys had been hospitalised over the last twelve months, mostly for an injury or a chronic condition, and among girls for gynaecologic problems (table 5).

Discussion

In summary, while the majority of adolescents report to be in good to excellent health, many of them mention various complaints or problems in the areas of psychosocial and physical health. Moreover, despite the fact that most adolescents (75–80%) do see a practitioner within any given year, few of them address the kind of complaints reported in the present survey. An important proportion of respondents report a need for help mostly for psychosocial problems such as stress or depressive mood. Our figures are comparable to the previous 1992–93 survey [21] as well as to other surveys conducted in Europe [11, 13, 23]. Although a reported need for help does not necessarily mean an indication for a medical intervention, it calls at least for some form of support which physicians – and other health professionals such as school nurses – could appropriately provide or organise. Differences between girls and boys are found in nearly all surveys carried out among adolescents [3, 13, 23] and probably reflect a disparity in the way they interpret and express their health concerns. In the area of tobacco, alcohol and drug use, the proportions of adolescents who feel that they need help has nearly doubled in the last ten years, particularly among boys [21]. This, on the one hand, corresponds with the increased reported use of psychoactive substances [32, 33]. On the other hand, this may indicate an increased awareness of the necessity for some adolescents to decrease or quit their consumption.

Most adolescents have had one or several contacts with a health professional in the year preceding the study, most of them with a general practitioner. Even for adolescents, hospitals are an important source of care, as one out of ten respondents has spent at least one night in a hospital during the preceding year. In Switzerland, unlike in other countries such as the USA [34, 35], access to health care does not seem to be a problem. This applies also to France, were the rate of health services utilisation is fairly the same as in Switzerland [36–38]. Gender differences regarding the rate of use of ambulatory health care services are small whereas a striking difference is noted in the use of psychotherapeutic treatments (table 3). This difference may be linked to the discrepancy of reported mental health problems already discussed, but also to the fact that boys tend to have more difficulties than girls in seeking and accessing proper health care [39] and tend to act out their difficulties [40]. The high proportion of respondents that mention mental health problems (table 2), and the low rate of teenagers that report to have consulted a health professional for these problems (table 3) suggests that general practitioners and the health care services in general are not well prepared to meet these needs.

There are a number of methodological issues that need to be addressed. The sample is representative of the students and apprentices in Switzerland but not of the entire population of this age group [41]. Approximately 20% of this age group does not attend college (students) or a vocational training school (apprentices). Some of them are attending private schools or another form of educational programme (au pair, practical courses) and may have had the same profile as the respondents. However, most of them – in unknown proportions –are either unemployed, looking for a job or already in the job market, usually in unskilled positions. These adolescents are known to be at higher risk of several adverse physical and mental health outcomes [42]. Therefore SMASH02 probably underestimates the health needs of the population of 16- to 20-year olds in Switzerland. This is amplified by the underrepresentation of immigrant adolescents in our sample (table 1). However, results may be generalised to the adolescent population enrolled in public post-mandatory education.

It is known that about 5% of adolescents are absent from class on any one day in Switzerland [43]. These absentees do not differ significantly from those at school on demographic or health-related characteristics, but only on having a more hedonistic lifestyle. Consequently, absenteeism from school on the survey day presumably does not have any bearing on the results presented in this paper.

Most authors agree that adolescents tend to give valid answers to self-administered questionnaires, as long as ethical and strategic precautions are taken [29–31], such as those that were implemented in SMASH02. The questionnaire was well accepted as attested by the very low number of people who refused to participate.

What are the implications of this study? The findings which have been presented bring a contrasting view of adolescent health and reveals a real gap: on the one hand, adolescents report to feel in good health, but on the other hand, when asked more precise questions on their specific needs, they indicate complaints and problems in many areas, particularly in the field of mental health. This gap is apparently not linked with the under use of health care services, as our survey shows that most adolescents do see a primary care physicians at least once a year. In fact, the problem probably lies much more in the way the health care system addresses adolescents' health needs. Primary care physicians should be aware that many adolescents, especially girls, are apparently not able to share the true extend of their problems, which often belong to the psychosocial area. They should therefore extend traditional history taking and actively invite their young patients to discuss their psychosocial situation as well as their lifestyles and health habits [27, 28, 44]. In fact, there are circumstances under which this proves particularly effective, such as injuries or alcohol intoxication [45, 46]. A survey carried out recently among a representative sample of

Swiss primary care physicians has shown that these professionals have indeed an interest in developing specific skills and strategies to better address their adolescent patients' needs [47] and there are now programmes which have been developed to address these specific training needs [48].

Finally, we would like to add that doctors are not the only persons who can effectively address the health needs and concerns of young people: school nurses, especially in the French speaking part of Switzerland where they are largely available, can also play a pivotal role in identifying and addressing major health concerns and /or helping young people to find relevant and adequate health care resources [49].

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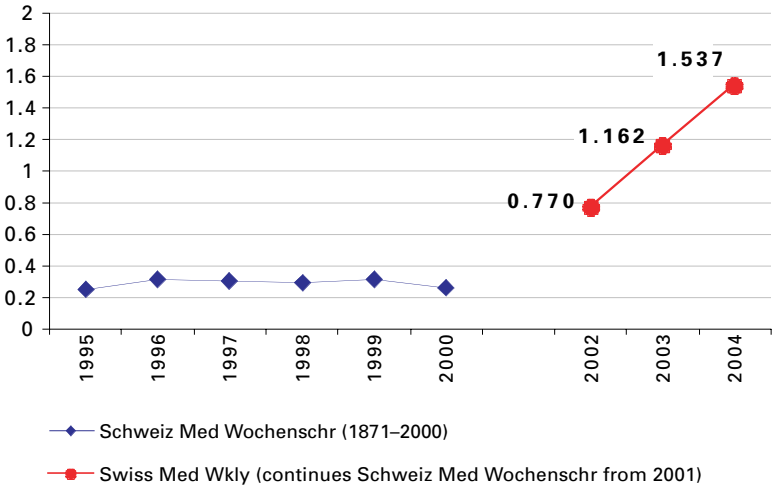

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