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Risk behaviours as a dimension of mental health assessment in adolescents

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Summary

Aim. An assessment of the health status in adolescence includes, among other variables, risk behaviours that may involve either direct or potential mental health risk. In the study two categories were introduced in the mental health assessment, defined as externalising (problem behaviour) and internalising (emotional disturbances) indicators. The first aim of the study was to estimate problem behaviour prevalence among students beginning secondary school, while the second objective was to analyse the relationships between internalisation and externalisation indicators.

Material and method. The participants of the study were first grade students (N = 1123) of secondary schools in the City of Warsaw area. They responded to a Polish adaptation of a self-report Canadian questionnaire monitoring the adolescents' mental health. The following externalising indicators of risk behaviours were used: getting drunk, problems due to alcohol drinking, drug use, problems caused by drug use, violence, law-breaking. The following internalising indicators were analysed: depressive symptoms (as measured by the CES-D scale), psychological distress (the GHQ–12 questionnaire by Goldberg), self-rated poor mental health, suicidal thoughts.

Results. The presence of at least one of the risk behaviours was reported by a half of the sample (52%), more often by boys (59.9%). A high percentage of those manifesting problem behaviour were characterised by a higher intensity of experienced psychological stress, more severe depressive symptoms and worse self-rated psychological functioning. Those who reported symptoms of poor mental health, together with two or more problem behaviours constituted 14.9% of the sample.

Conclusion. The group at risk for mental health constituted about a third of the sample studied, irrespective of gender.

mental health / **risk behaviours** / **adolescents**

INTRODUCTION

In studies on adolescents' health, what is analysed among its various aspects is the occurrence of behaviours which are either favourable for health or – directly or potentially – dangerous for it [1, 2, 3, 4, 5]. Such behaviours are sometimes known as "health behaviours" or "pro-health behaviours", "behavioural health indicators" or, on the other hand, "problem behaviours" or "risk behaviours", which are the focus of researchers dealing with mental health issues.

In earlier studies on mental health of adolescents (in the USA and Canada) there were attempts at arranging the wide range of currently used indicators of health disorders by introducing the division into two basic categories, known as externalising and internalising indicators [1, 2]. The first category includes aggres-

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sive or violent behaviours, obvious violation of social norms, delinquent behaviours and use of psychoactive substances. The other group of indicators describes internal problems related to emotions, mainly depression and anxiety disorders, elevated stress and other problems.

It is mainly thanks to works by Jessor [6, 7], but also by other researchers [4, 5, 8, 9, 10], that some regularities in problem behaviours have become generally known. Firstly, it has been discovered that in some adolescents various types of problem behaviours tend to co-occur, which is known as the problem behaviour syndrome. In longitudinal studies some attempts have been made at assessing the changes of the problem behaviour syndrome during the life time. Research revealed that during adolescence, the central element of the "syndrome" is alcohol abuse only to be replaced by marijuana use during the stage of young adulthood [4, 5, 8]. Problem behaviour syndrome is not necessarily permanent and in some individuals it ceases to be visible as soon as they become fully mature and ready to set up a family [5, 8].

Numerous researchers have emphasised the functional importance of problem behaviours in the context of developmental tasks typical for the adolescence period [5, 6, 8, 9, 10]. Problem behaviours allow young people to fulfil their important needs, such as achieving peers' acceptance, independence or approaching adulthood. Consequently, it should be acknowledged that the occasional occurrence of some problem behaviours during adolescence is not a sign of mental health disorders, but, on the contrary, is typical, or even standard, for this stage of human life. On the other hand, intensified and frequent risk behaviours can cause notable damage, both in health and social functioning, and they can hinder the complete development of a young individual's personality and potential. For the above reasons, it is alcohol abuse which is perceived as symptomatic, rather than simply alcohol drinking which becomes more and more common and "standard" among adolescents as they grow up. Adolescents' abuse of alcohol or other psychoactive substances is understood as a frequent use or use which has serious consequences (e.g. for health or social functioning) [11]. It seems that other types of problem behaviours should be defined in a similar way, so that behaviours which occur frequently or which can have obvious negative consequences are perceived as symptomatic. It is, however, difficult to create absolutely precise and narrow definitions of behaviours described as "problem" or "risk". That is why in various studies such behaviours are used in slightly different ways.

One of the main sources of statistical knowledge of adolescents' mental health status and risk behaviour prevalence is the international survey carried out by HBSC (Health Behaviour in School-Aged Children). The most important data related to risk behaviours in adolescents, obtained in the latest Polish edition of the survey in 2002 [12], are as follows: approximately 29 percent of individuals aged 11–15 have ever abused alcohol; 39 percent of the students participated in a fight at least once in the past year; among 15-year-old students, 18 percent reported using marijuana or cannabis in the past year. Compared with the countries constituting the "old" European Union which participated in the survey, Polish adolescents were characterised by slightly lower indicators of alcohol abuse and using marijuana; on the other hand, Polish boys reported violent behaviours against others more often [13].

Furthermore, the authors of the Polish edition of the HBSC survey attempted a general description of problem behaviours, differentiating such behaviours as: everyday tobacco smoking, more than 3 episodes of getting drunk, use of other psychoactive substances, sexual initiation, frequent violence against others and frequent participation in fights. According to the data obtained in 2002 in the group of 15-year-olds, 31 percent of girls and 56 percent of boys reported at least one problem behaviour. Problem behaviour syndrome (the co-occurrence of at least 2 types of behaviours), on the other hand, was characteristic for approximately Ľ th of the sample: 14 percent of girls and 32 percent of boys [14].

The latest edition of the HBSC survey has also provided some information on the general assessment of Polish adolescents' health and mental well-being. Over 80 percent of students aged 11–15 described their health generally as good or very good, and they were also happy with their present lives. At the same time, however, about 18 percent of the students reported a frequent sense of being depressed (more often than once a week in the past

6 months), 15 percent reported frequent problems with falling asleep, and 35 percent reported a frequent experience of anxiety [12].

AIM OF THE STUDY

As our study was to expand the diagnosis of adolescents' mental health status, the study methods needed to include both health self-assessment and more objective indicators.

The first aim of the study was to estimate risk behaviour prevalence among first-grade students of secondary schools. The other aim was to analyse relationships between internalising and externalising indicators in male and female groups. The research questions were as follows:

1) what percentage of the subjects reports any of the analysed risk behaviours?
2) what percentage of the subjects is characterised by the co-occurrence (intensification) of various risk behaviours?
3) is the occurrence of risk behaviours contingent on the sex of the subjects?
4) is there any relationship between the occurrence of risk behaviours and other mental health indicators, such as intensified depression symptoms, psychological stress and the frequency of the occurrence of worse mental functioning?
5) what are the relationships between the internalising and the externalising indicators of mental health in male and female groups?

MATERIAL AND METHOD

Subjects

The random sample was selected from all of first grades of secondary schools classes located in the part of Warsaw named as "Gmina Warszawa-Centrum". About 13 percent of classes from each of the seven administrative districts were selected, which gave a total of 40 classes. Out of 34 classes from non-public secondary schools belonging to the district, additional 7 classes were separately selected, also on a random basis.

The questionnaire surveys were conducted by the Department staff members at the end of May and the beginning of June 2002. They were carried out in conditions guaranteeing anonymity of both the subjects and the data related to classes and schools.

The study included the total number of 1128 students, which constituted 90 percent of the selected sample. Questionnaires completed by 5 of the subjects were eliminated from the analyses due to numerous questions left unanswered. Finally, in statistical analyses the data obtained from 1123 students were examined. 46.5 percent of the group were boys and 53.5 percent were girls. The average age of the subjects was 138.

Study methods

The questionnaire which the students were asked to complete was an adaptation of the Canadian questionnaire, made available for us by its authors; it is used to monitor the state of mental health in adolescents [2]. The final adaptation of the questionnaire to the study was preceded by its pilot study in a few classes. As far as problem behaviours are concerned, a number of changes were introduced. This was mainly because a lot of the questions were irrelevant, due to either early age of the subjects (Canadian studies include a far larger group concerning age: the subjects are between 12 and 18) or cultural differences. Besides this, ethical aspects of the study were taken into consideration.

The Canadian questions assessing alcohol drinking and using psychoactive substances were replaced by others, taken from Polish questionnaires which have been successfully used for many years [15, 16]. A number of questions, assessing in a detailed way the use of particular drugs as well as sexual initiation, were omitted, as they seemed irrelevant. For the same reason, the Polish questionnaire did not cover the issues of various forms of bet-making and gambling. On the other hand, questions concerning mental health self-assessment, tested previously in numerous population studies, were added [17].

Taking all the above-mentioned reasons into account, on the basis of the survey questions, the following indicators of various types of risk behaviours were defined:

1) getting drunk – the indicator was reporting by the subject at least one case of getting drunk in the past year as an answer to

the question: "How many times (if at all) did you get drunk on an alcoholic drink, i.e. beer, wine or vodka, in the past 12 MONTHS?"

2) problems due to alcohol drinking – the indicator referred to the occurrence of at least one out of 11 serious problems or risk behaviours which directly result from alcohol drinking, such as: accident or body injury, loss of money or valuables, damaging goods or clothes, problems with parents, problems with friends, problems with teachers, poorer results at school, unwanted sexual experiences, driving a car/motorbike under the influence of alcohol, being the victim of robbery or theft, problems with the police.
3) drug use, at least once in the past year;
4) problems caused by drug use – experiencing at least one of the following three problems due to using drugs: problems with the police, medical appointment or stay at hospital, and interventions of a specialist (educationalist or psychologist);
5) violence – active participation in violent behaviours against others or frequent experience of violence; the indicator referred to the occurrence of at least one out of four types of experience: participation in a scramble or fight after alcohol drinking, deliberate hitting or injuring someone, frequent – at least once a week – participation in violent behaviours against others or experiencing violence from others;
6) delinquent behaviours – at least one out of six behaviours: taking a car for a drive without the owner's permission, deliberate damaging somebody's property, drug dealing, minor thefts, escaping from or being thrown out of home.

Such indicators made it possible to analyse the occurrence of any of the six types of risk behaviours as well as of risk behaviour syndrome (i.e. at least two different types of behaviours). The indicators were main behavioural mental health indicators, known as externalising indicators. Other mental health indicators, known as internalising, have been described in greater detail in separate works presenting selected aspects of the conducted research [18]. In this study the following internalising indicators were used:

1 Depression symptoms – short CES-D scale consisting of 4 questions; range = 4–16; reliability: Cronbach's alpha coefficient = 0.86. "Always" or "often" answers to all 4 questions were defined as the indicator of depression symptoms [19].
2 Mental distress – short Goldberg's GHQ–12 scale; range = 12–48; reliability: Cronbach's alpha coefficient = 0.86. The occurrence of at least 3 out of 12 symptoms of worse mental functioning was defined as the indicator of elevated distress (the adaptation of the Canadian questionnaire, which is different from that by B. Dudek [20]).
3 Self-evaluation of mental health – the number of days of worsening mental functioning in the past month; a single question, range = 0–30: "Thinking about your mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was your mental health not good?" [17]. Persons who reported that their mental health was not good for greater than or equal to 14 of the preceding 30 days were defined as having FMD. The answer of 14 days or more was defined as the indicator of worse mental state.
4 Suicidal thoughts – at least once in the past 12 months.

The group of subjects reporting any symptoms of poor mental health status (elevated mental distress, depression symptoms or suicidal thoughts) was divided into two subgroups according to the duration of worse mental condition in the past month. In this way, two main indicators of mental health disorders were defined:

– relatively permanent symptoms of poor mental health status – this category includes subjects who described their mental health status as poor for at least 14 days in the past month as well as subjects taking medication due to anxiety or depression;
– Short-lived symptoms of poor mental health status – this category includes subjects assessing their mental health status as poor for less than 14 days in the past month.

Although such criteria are not clinical in nature, they describe relatively permanent symptoms of poor mental health status, and thus help define a "high-risk" group, i.e. individuals at particular risk due to internalising mental health disorders. On the other hand, the risk behaviour co-occurrence (i.e. syndrome) defines a high-risk group from the perspective of externalising disorders.

Statistical analyses

In order to asses the differences in the occurrence of risk behaviours between male and females groups the chi-square statistics was used; the relationships between the symptoms of internalising mental health disorders and risk behaviour occurrence were analysed by means of Student's t-test for independent groups.

RESULTS

Assessing risk behaviour prevalence

The occurrence of any of risk behaviours which are dangerous for mental health was characteristic for half (52 percent) of all the subjects.

Boys reported risk behaviours and experiences more often than girls (59.9 percent and 45 percent, respectively; $chi^2=24.8$; $p<0.001$). One-fourth of the adolescents are in particular danger due to the co-occurrence of risk behaviours. Risk behaviour syndrome was more often characteristic for boys (30 percent) than for girls (20 percent; $chi^2=17.1$; $p=0.001$).

The relationship between types of risk behaviours and sex is presented in table 2.

The dominating behaviours were those related to violence, which were reported by one-third of the subjects altogether. They were definitely more often reported by boys (46.6 percent) than by girls (23.3 percent). The behaviours included deliberate hitting or injuring someone (20 percent of the subjects), frequent participation in violent behaviours against others (11 percent), frequent experience of violence from others (13 percent), and, finally, participation in fights after alcohol drinking (3 percent).

Among other problems which were analysed, the following were also considerably important: getting drunk (19.9 percent of subjects got drunk in the past year), and experiencing various problems due to alcohol drinking (15.1 percent). Delinquent behaviours were also relatively frequent (17.3 percent).

A very small percentage of subjects reported drug use (5.9 percent) and problems caused by it (3.2 percent). However, it should be remembered that in the population of adolescents such problems increase very rapidly as students grow up.

A slightly larger number of girls, as compared with boys, abused alcohol, while boys more often broke the law (table 2).

Risk behaviours vs. other indicators of mental health disorders

The occurrence of any risk behaviours was strongly related to other mental health indicators. Namely, subjects reporting risk behaviours, as compared with other subjects, were characterised by more elevated psychological distress as well as depression symptoms and they more often suffered from a worse mental condition (table 3).

Similar results were achieved as far as risk behaviour syndrome is concerned, where the differences between the groups were even more clear-cut (as confirmed by higher values of Student's t-test).

Table 1. Main behavioural mental health indicators. Percentages of students reporting problem behaviours

	Percentages of students reporting:					
	Any problem behaviours			Risk behaviour syndrome (at least two types of behaviours)		
	YES	NO	χ^2 test values	YES	NO	χ^2 test values
Males	59.9%	40.1%	24.75***	30.5%	69.5%	17.07***
Females	45.0%	55.0%		19.8%	80.2%	
total	51.9%	48.1%		24.8%	75.2%	

*** – level of significance $p<0.001$

Table 2. Particular types of risk behaviours vs. students' sex

	Percentages of students who:					
	Got drunk (at least once in the past year)			Experienced problems caused by alcohol drinking		
	YES	NO	χ^2 test values	YES	NO	χ^2 test values
Males	17.3%	82.7%	4.19*	16.3%	83.7%	1.17
Females	22.2%	77.8%		14.0%	86.0%	
Total	19.9%	80.1%		15.1%	84.9%	
	Used drugs (at least once in the past year)			Experienced problems caused by drug use		
	YES	NO	χ^2 test values	YES	NO	χ^2 test values
Males	6.0%	94.0%	0.00	3.8%	96.2%	1.23
Females	5.8%	94.2%		2.7%	97.3%	
Total	5.9%	94.1%		3.2%	96.8%	
	Experienced violent behaviour or participated in it			Delinquent behaviours		
	YES	NO	χ^2 test values	YES	NO	χ^2 test values
Males	46.6%	53.4%	67.35***	20.5%	79.5%	7.1**
Females	23.3%	76.7%		14.5%	85.5%	
Total	34.2%	65.8%		17.3%	82.7%	

*** – level of significance $p<0.001$; ** – $p<0.01$; * – $p<0.05$

Table 3. Occurrence of risk behaviours vs. other mental health indicators and correlates

	Students reporting:					
	Any problem behaviours			Risk behaviour syndrome (at least two types of behaviours)		
	YES	NO	t-Student's test values	YES	NO	t-Student's test values
Psychological stress (GHQ)	24.0266	22.3053	5.20***	25.2697	22.5220	7.24***
Depression	7.2552	6.2978	5.75***	7.7004	6.4934	6.29***
Number of days of worse functioning in the past month	6.0768	4.0529	4.53***	6.9805	4.4963	4.78***

*** – level of significance $p<0.001$

Relationships between internalising and externalising indicators of poor mental health status

The majority of subjects characterised by risk behaviour syndrome at the same time experienced more or less permanent symptoms of a worse mental condition. It was the case of only some of the subjects (10 percent of the whole group) that risk behaviours were rather not related to worse mental functioning (fig. 1).

Subjects manifesting relatively permanent symptoms of worse mental functioning (for at least 14 days in the past month) or those characterised by risk behaviour syndrome constitute altogether about 34 percent of the sample group. It can be claimed that they constitute a "risk

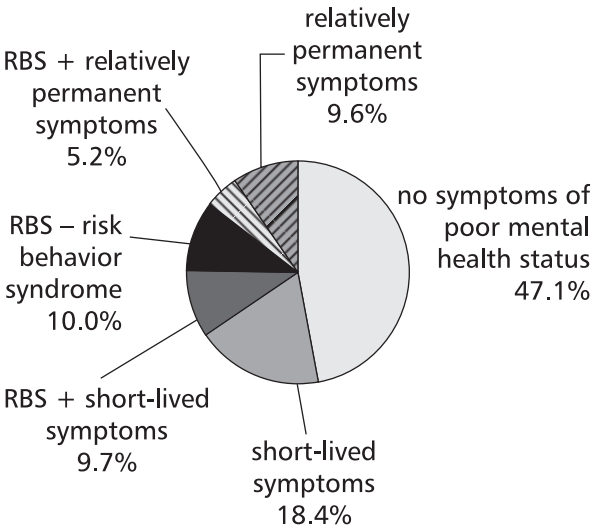

Fig. 1. Relationships between the indicators of mental health and of problem behaviours

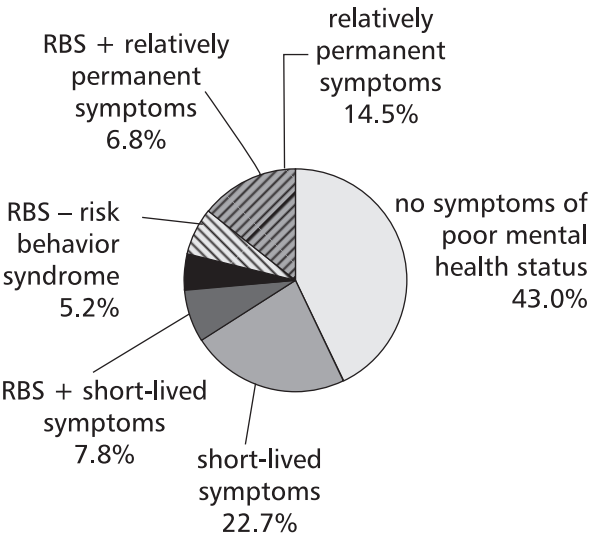

Fig. 3. Relationships between indicators – girls

group", i.e. a subgroup of the subjects who manifest internalising or externalising symptoms of poor mental health status.

If the results are analysed separately for boys and girls (fig. 2 and 3) the risk group remains equally large, at the level of about 34 percent.

The only difference lies in the nature of the disorders: among girls internalising disorders, i.e. symptoms of relatively permanent worse mental functioning, are slightly more frequent than externalising disorders (21.3 percent and 19.8 percent, respectively), while among boys externalising disorders, i.e. problem behaviours, are definitely dominating (30.6 percent). Besides, the female group manifesting symptoms of both internalising and externalising disorders is larger than the analogical male group (6.8 percent and 3.3 percent, respectively).

Subjects manifesting any symptoms of poor mental health status (both short- and long-lived) and at the same time characterised by risk behaviours (at least two such behaviours) constituted 14.9 percent of the sample group. This value was similar for both boys (15.2 percent) and girls (14.6 percent).

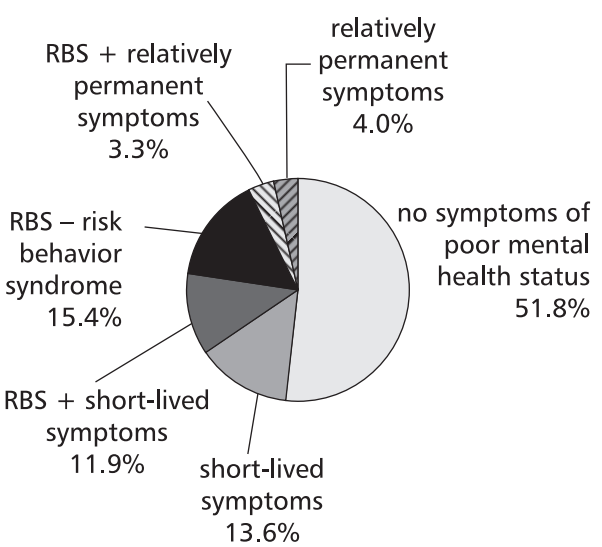

Fig. 2. Relationships between indicators – boys

DISCUSSION

While comparing the study with the surveys carried out by HBSC [12], what should be noted is the fact that the estimation of the percentage of subjects belonging to the risk group due to internalising disorders resulted in similar values (about 15–20 percent). In both studies the basis for the estimation was the self-assessment of mental health status. This similarity may be influenced by the fact that both studies were conducted in identical periods of time, i.e. in March and April 2002 as well as by the fact that our study included the medium ("average") age group out of 11-, 13- and 15-year-olds participating in the HBSC surveys. Unfortunately, an accurate comparison of the findings of both studies is impossible due to the differences in the indicators used

as well as in the definitions of particular types of risk behaviours. In the HBSC surveys the range of risk behaviours covered also sexual initiation and everyday tobacco smoking, which were not included as indicators in the Polish study. Furthermore, in the HBSC surveys other scales of abusing psychoactive substances were used: "4 or more episodes of ever getting drunk", "using other psychoactive substances at least once in the past year, and in the case of marijuana more than 3 times in the past year".

So far it has been known that problem behaviours occur more often in male rather than the female population, whereas emotional problems are more typical for girls. The findings of this study provide further information: namely, the percentages of boys and girls whose mental health is at risk are very similar and the difference between the groups lies only in the nature of the disorders. Analogical results (though the indicators were slightly different) were achieved by T. Wolańczyk [21] in his study of an all-Poland sample of 12- to 19-years-olds.

Interpreting the results, it can be claimed that the difference between male and female groups in the nature of the problems reflects different ways of reacting to the "stress of living", experienced by the adolescents in excess. What is meant by the "stress of living" is both daily hassles described by Lazarus and Folkman [22] and also, more generally, developmental crisis typical for the stage of adolescence. Long-lived states of worse mental functioning (dominating among girls) and problem behaviours (dominating among boys) can be perceived as inefficient (or non-constructive) attempts at dealing with tension which is triggered by stressors, like it is described, for example, by Antonowsky in his model of salutogenesis [23].

Among numerous factors which can possibly account for the differences between boys and girls in the mental health indicators, cultural norms, which are different for both sexes, can be of considerable importance; they define which patterns of reaction to stress, suffering or trouble are socially acceptable [12]. Furthermore, taking into account the biological perspective, girls run the risk of special periodic ailments resulting from the hormonal cycle. Some girls suffer from pains, elevated tension and stress, mood depression or changing mood (the increase of what is known as emotional liability) [24]. These factors in an obvious way contribute to the higher values of internalising mental health indicators which can be observed in the female group.

As the study has shown, mental health indicators (mental distress, depression symptoms, suicidal thoughts and the number of days of worse mental functioning) co-occur with the indicators of problem behaviours in approximately 15 percent of the studied population (fig. 1). Subjects who manifested intensified risk behaviours not accompanied by mental health problems constituted only 10 percent. This can suggest that among 13-year-olds, a considerable part of the manifested risk behaviours has the emotional origin, i.e. results from mental distress, mood depression or worse mental functioning. A more complex phenomenon, however, is also possible: risk behaviours, such as violence, delinquent behaviours or the abuse of psychoactive substances, can lead to difficulties in mental functioning and contribute to the development of depression symptoms, distress or even long-lived worse mental functioning.

Being aware of the fact that a large number of young people manifesting risk behaviours at the same time suffer from considerable mental distress can be important for both understanding the reason of such behaviours and also planning actions that would aim at preventing problematic behaviours. Taking into consideration that these people suffer from depression and anxiety symptoms as well as mental discomfort may help understand behaviour disorders better, and, as a result, can make it possible to prepare prevention programs that would be more relevant.

The conducted study has some limits and deficiencies. The arbitrary choice of certain mental health indicators, including also risk behaviour indicators, could have been decisive for the achieved results. To give an example, in our study, unlike in other studies of this type, risky sexual behaviours were not considered. The reason was actually mundane – such behaviours very seldom occur in Poland in the early period of adolescence. According to the 2002 HBSC survey [12], adolescents in Poland experience sexual initiation later, as compared with other countries. It can be estimated that before being 14 years of age (which was the age of the subjects in the study), about 3 percent of the teenagers have crossed the threshold of sexual ini-

tiation [13]. Therefore, including this aspect of behaviour in the study was perceived as largely irrelevant and controversial from the ethical perspective.

Well-founded doubts can be raised by the fact that in the study both frequent participation in violent behaviour against others on school premises and frequent experience of violence from others were combined within one indicator, while it seems that these two types of experiences are qualitatively different. Analysing these variables separately could indeed have resulted in a clearer picture of risk behaviours. On the other hand, though, there was a need of certain arrangement of analysed variables because of their large number. For this purpose, complex indicators were defined and groups of variables describing similar areas were created. Furthermore, such a form of indicators was to some extent justified by empirical data, which confirmed a clear relationship ($p<0.001$ in a chi-square test) between using violence against others and experiencing violence: the majority of perpetrators of violent behaviour (56 percent) were also its victims, while half of the victims acted also as perpetrators. Thus, it can be observed that to a large extent both indicators overlap. It seems that further studies should focus on the experience of violence itself, as well as its conditioning and consequences for mental health.

To conclude, it is worth noticing that the study did not include an all-Poland population of adolescents but only the local population of secondary-school students from Warsaw; as a result, the possibility of drawing any general conclusions from the study is quite limited. Moreover, a part of Warsaw's population of adolescents (a small percentage) was not included in the school surveys at all, either because the students do not belong to the educational system or because they fulfil the obligation of school attendance in a way different from that of the majority of students.

CONCLUSIONS

1. Risk behaviours were reported by a very large number of students (secondary-school first-graders): about half of the subjects.
2. In the area of risk behaviours, the dominating problems were experiences related to violence, which were reported by one-third of the subjects altogether, significantly more often by boys than by girls.
3. One-fourth of the adolescents from the age group included in the study is at particular risk because of the symptoms of problem behaviour syndrome, i.e. the co-occurrence of various behaviours or experiences, the consequences of which can be potentially dangerous for the process of maturation. High risk was more characteristic of boys (30 percent) than of girls (20 percent).
4. The occurrence of risk behaviours was significantly related to mental health indicators, such as elevated psychological stress, depression symptoms or worse mental functioning. The co-occurrence of problem behaviours and mental health disorders can suggest the necessity for a more detailed diagnosis of individuals manifesting such behaviours.
5. In general, the group at risk for mental health constituted about one-third of the studied sample; this value was identical for both girls and boys.

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