

BEHAVIOR OF ADOLESCENTS IN THE SPHERE OF HEALTH: METHODS OF MEDICAL AND SOCIOLOGICAL RESEARCH

YAZEPCHYK OKSANA ANTONOVNA¹, SURMACH MARINA YURIEVNA²

¹Senior Lecturer of the Department of Public Health and Health Services, Grodno State Medical University, Grodno, Belarus

²Head of the Department of Public Health and Health Services, Grodno State Medical University, Grodno, Belarus

E-mail: yazepchyk87@mail.ru

Abstract

The purpose of this study is to confirm the program for researching the health of adolescents in the Republic of Belarus, the results of which will allow developing targeted preventive measures. **Materials and methods.** Based on the data of our own research and published works, the analysis of the health problems of Belarusian adolescents in modern conditions is being carried out. The features of this socio-demographic group as a specific object of medical and sociological research have been established. The age classifications of adolescence have been studied. The sociological tools used in various studies of adolescent health have been also analysed. **Results and conclusions.** It has been determined that the main part of the causes of adolescents' health deterioration is of a socio-behavioural nature. The topical areas of research for further study, such as: identifying the specifics of the lifestyle and living conditions of adolescents, their relationship to health; assessment of the prevalence of potential risk factors in the adolescent population; assessment of the role of the family environment and the educational environment in shaping the health of adolescents have been highlighted. It was revealed that the study of the health of adolescents has its own specifics associated with the age factor. A sociological toolkit has been developed that makes it possible to conduct a comprehensive assessment of factors shaping the health of adolescents, to compare the data obtained from adolescents and their parents, and to identify the contribution and opportunities in solving the problem of the health of adolescents in the family and at school.

Key words: adolescent health, attitude to health, lifestyle, risk factors, Republic of Belarus.

DOI: 10.19260/PJAS.2020.6.1.04

Introduction

Today the problem of the relationship between the biological and the social is viewed as the key to understanding the nature of health and disease. This concept determined the approach to considering health as a multidimensional multifactorial phenomenon [1]. WHO experts assess the social component in the definition of public health as significant. The WHO classifies aspects of lifestyle as factors directly affecting health status, while noting that "the reasons for the formation of a lifestyle that entails a low level of health are in the social environment – in the broad sense of this concept" [2]. Most researchers adhere to the social concept of human health, which is based on the fact that the priority in its formation belongs to factors of a social nature, the influence of the environment is considered not only as the effect of the social environment on the biological organism, but also on the attitudes, values and needs of the individual, which form his behaviour patterns in the field of health [3, 4].

Social factors affecting health can manifest themselves at several levels. A.O. Barg and N.A. Lebedev–Nesevrya distinguish the following types of risks: on the societal level – the features of the socio-economic, socio-cultural and socio-political subsystems of society; at the institutional level – the specifics of the functioning of social institutions; as well as at the micro level – the behavioural characteristics of the individual. The factors of a healthy lifestyle can be considered as the main factors of health both at the individual and at the population levels [5].

From a wide range of problems of studying social health factors in the scientific community, the following should be highlighted: the lack of a unified understanding of the essence of social risk factors, the nature of their impact on health; ambiguity in interpretations of the influence of social risk factors on health; a variety of approaches to the classification of these factors; ambiguous assessment of the contribution of social risk factors to health deterioration; the ambiguous nature of their impact on health, the ability to act as both risks and anti-risks; and the lack of a unified

methodology for studying the influence of social risk factors on health [6].

The phenomenon of health is currently considered by such scientific disciplines as sociology, psychology, cultural studies, philosophy, and pedagogy through the prism of social understanding. This fact is reflected in the methodology of research on the formation and preservation of public health. So, at the present stage, the main method for studying the health of the population and its individual social groups is the sociological method, which allows the analysis of behaviour, motives of behaviour, including in relation to health, as well as the determination of approaches to promoting health-saving behaviour among the population, an integral part of which is such a category as a healthy lifestyle.

With regard to adolescents, as a special socio-demographic group, the assessment of lifestyle and behavioural risk factors is a prerequisite for successful work to maintain and improve the health of individuals in this age group, which is due to several reasons. First, the results of numerous studies indicate that in the structure of the factors shaping the health of adolescents, the main risks are shifted towards behavioural ones [7–9]. Secondly, unlike, for example, heredity and the state of the environment, this group of factors is modifiable, while it is in adolescence that the formation of a positive direction of self-preserving behaviour is possible. Thirdly, at this age, health disorders are most often reversible and can be corrected by changing only the lifestyle, living conditions and knowledge. Fourth, having optimal health skills during this period is the key to future health. For example, the Global Strategy for the Health of Women, Children and Adolescents noted that 70% of adult deaths due to noncommunicable diseases are caused by risk factors, the impact of which began in adolescence [10]. And, finally, due to the physiological and psychological characteristics of age, adolescents are extremely susceptible to the influence of the social environment, under the influence of which, mainly, behavioural attitudes are formed.

The study of socio-behavioural factors in the health of adolescents in the Republic of Belarus acquires special social significance and scientific relevance in connection with the observed significant deterioration in the health status of persons of this age, which is confirmed by the results of numerous studies. So, according to the study of the primary morbidity of 15–17-year-old adolescents in the Republic of Belarus in the period 2002–2016, the indicators ranged from 94,801.6 cases per 100,000 15–17-year-old adolescents in 2002 to 155,956.6 cases per 100,000 15–17-year-old adolescents in 2016, showing an increase of 64.5% (versus 29.3% for people 0–14 years old). Over the same period, the level of general morbidity among adolescents increased by 46.9%

(from 152,843.4 per 100,000 to 224,589.1 per 100,000), children under 14 years old – by 19.0% [11].

The purpose of this work is to confirm a program for studying the health of adolescents in the Republic of Belarus, the results of which will allow the development of targeted preventive measures.

Materials and methods

Based on the data of our own research and published works, an analysis of the health problems of Belarusian adolescents in modern conditions has been carried out, which made it possible to identify relevant areas for further study. In 2012, we studied a sample of persons born from 1994–1997, $n = 886$. Information was extracted by copying from primary medical records.

Based on the study of methodological approaches to the study of the lifestyle and attitude of adolescents to health, the features of this socio-demographic group as a specific object of medical and sociological research have been established. The age classifications of adolescence have been studied.

The sociological tools used in various studies of adolescent health have been analysed, and our own questionnaire has been developed, taking into account the specifics of the object and subject of research.

Results and discussion

It should be noted that *the chronological boundaries of adolescence* are not clearly defined. Thus, according to the WHO definition, adolescents are persons of the age group from 10 to 19 years old [12]. There are early adolescence (10–14 years) and late adolescence (15–19 years). The Code on Marriage and Family of the Republic of Belarus defines a teenager as a person between the ages of 14 and 18, and up to 14 years of age – as a minor [13]. At the same time, the Law of the Republic of Belarus "On the Rights of the Child" recognizes a child as a "natural person until he reaches the age of eighteen years (majority), if, according to the law, he has not previously acquired civil legal capacity in full" [14], which is consistent with the UN Convention on the rights of the child. The blurring of the boundaries of this period is due to the use of various criteria for determining adolescence: biological (physical and physiological), socio-economic, cultural, demographic, legal, and medical. The fact that this period of a person's life is interpreted differently by different societies can be explained by the fact that the border of adolescence is more determined by social than biological factors.

Adolescence is a period of 10 years of a person's life, and, taking into account the high intensity of socio-psychological changes in the body at this stage of ontogenesis, one should

take into account the heterogeneity and specificity within the adolescent group. Research data indicate that during adolescence, attitudes towards health and lifestyle characteristics are subject to change [8–15].

The WHO considers adolescence as a separate phase in a person's life, which affects many aspects: from the appearance of secondary sexual characteristics to the acquisition of the ability to effectively perform reproductive function, the development of an adult's personality and his social maturation [12]. Many researchers characterize adolescence as a critical stage in the biological and psychological restructuring of the body, social formation, choice of values and lifestyle [16].

The *international scale of the problem* is confirmed by the results obtained in the study "Health Behavior in School-aged Children (HBSC)" – a project which has been implemented since 1982, the methodological developments of which are considered to be the most objective for characterizing the lifestyle and living conditions of adolescents. The results for adolescents from 45 countries are presented in the report for 2017/2018. These data indicate that the main health problems of adolescents are unhealthy diet, a lack of physical activity and risky behaviour. Thus, less than a fifth of adolescents do not comply with global recommendations on physical activity, most adolescents do not follow nutrition recommendations - 61% of boys and 55% of girls eat breakfast on school days, 48% of adolescents do not include fruits and vegetables in their daily diet, one in four teenagers eats sweets every day, and one in six drinks sugar-sweetened drinks. The consequence of these practices is the high prevalence of overweight adolescents and obesity (in 21% of adolescents). Data concerning the social interaction of adolescents are also of interest. School satisfaction and teachers' feelings of support are declining (28% of adolescents like school), while 36% note that school workload is increasing. Most adolescents report receiving support from family and peers. However, the report emphasizes that all of the above indicators vary significantly depending on the socio-economic conditions in which the child lives, and social inequality is considered as a determining factor in shaping the health of the younger generation [15].

According to official health statistics, 100% of the child population of the Republic of Belarus was examined in a planned order in 2019 [17]. Morbidity rates in children remain high. Thus, the primary incidence rate in 2019 amounted to 175,484.6 cases per 100 thousand children, or an average of 1.76 initially diagnosed diseases per 1 child; the level of general morbidity is 208,079.4 cases per 100 thousand children. Over the period from 2010 to 2019, the level of morbidity increased most significantly for congenital anomalies (by 36.5% and 40.9%, respectively), diseases of the musculoskeletal system and connective tissue

(by 34.3% and 11.9%), ear and mastoid diseases (by 27.3% and 27.1%), neoplasms (by 21.4% and 22.4%), infectious and parasitic diseases (by 18.1% and 12.6%), diseases of the eye and its adnexa (by 16.3% and 23.8%) [17, 18].

At the same time, it should be noted that information about the level and structure of the causes of pathological damage (morbidity according to medical examinations), which takes into account the presence of preclinical, asymptomatic conditions, for which there might not have been reported, allows a more accurate assessment of the health status of adolescents. An in-depth study in 2013 allowed us to reveal that: the pathological prevalence of adolescents was 1344.49 ± 680.72 cases per 1000 adolescents; for one adolescent examined in 2012, there are 1.35 diseases and / or pathological conditions, as well as 3.57 diseases in the anamnesis; the main reasons affecting the health state of 15–18-year-old adolescents of the Republic of Belarus are diseases of the musculoskeletal system and connective tissue – 325.05 cases per 1000 adolescents (60.8% – pathology of posture, 26.3% – flat feet), eye diseases – 273.22 per 1000 adolescents (93.7% – myopia), and diseases of the digestive system – 171.71 per 10,000 (49.69% – gastritis, duodenitis) [19]. This draws attention to the fact that the listed classes of diseases belong to the "school-related" pathology. At the same time, according to official data, 71.6 cases of decreased visual acuity, 6.8 cases of scoliosis, and 38.9 cases of postural disorders were revealed per 1000 students of the 1st grade of schools examined in health care organizations in 2019 [17]. The given data indicate that the pronounced growth of this pathology occurs during the period of schooling.

We have also established the peculiarities of physical development and distribution of adolescents by health groups. So, just over a quarter of 15–18-year-olds are practically healthy, half are placed into the II health group (the risk group for developing diseases). Almost every fifth adolescent aged 15–18 has chronic pathology (group III), 1.13% of adolescents are placed into the fourth health group. The average level of physical development was revealed in 77.06 ± 1.56 per 100 adolescents. The majority of adolescents have harmonious physical development (83.93 ± 1.36 per 100 adolescents). About 16.07 ± 1.36 per 100 adolescents have harmful developments. Normal body weight was found in 82.23 ± 1.41 per 100 adolescents. The prevalence of body weight deficit in the general group was 11.4 ± 1.17 per 100 adolescents, respectively. The frequency of detection of excess body weight was 3.66 ± 0.69 per 100 adolescents. Obesity is observed in 2.7 ± 0.60 per 100 adolescents [20].

The negative trend in the health status of Belarusian adolescents is observed *against the background of a high prevalence of behavioural risk factors* in this age group: 80.4%

of adolescents indicate that they do not follow a balanced diet, 93% lead a predominantly "sedentary lifestyle", 41% spend their leisure time mainly behind the screen TV or monitor, about 50% of students systematically experience feelings of depression and stress. 11% of adolescents smoke, 9.3% use light wines several times a month, 8.5% – consume strong alcoholic drinks, 18.5% – consume beer. About 4% of adolescents have tried narcotic and / or toxic substances [21].

The urgency of the problem of the influence of socio-behavioural factors on the health of the younger generation is obvious, while the empirical study of the strength, the direction of the dynamics of influence and the nature of the relationship of various factors are significantly complicated, and there is also no unified theoretical and methodological basis for their analysis. At the same time, it is obvious that the behavioural conditioning of health disorders is a common feature for adolescents from different countries of the world, influenced by age. At the same time, the importance of the influence of the school factor both in the emergence of health problems for adolescents and in their solution is high.

A prerequisite for compiling questionnaires for adolescents is to take into account the changes occurring in this phase of life, which at the physical level are caused by hormonal changes that affect the emotional state, self-esteem and, as a result, the behaviour of adolescents, including with regard to health. Psychological children's processes develop, which is manifested in the formation of independence, the deepening of introspection, and the desire for self-determination. Contradictions between needs and opportunities lead to distorted forms of self-assertion – risky behaviour. In the social sphere, there is a social self-identification, the perception of vital needs, values and norms of behaviour in various spheres, the transition from complete socio-economic dependence to relative social independence [22]. In addition, the social status of adolescents is of a transitional nature: the desire for adulthood, a departure from parental views and values, and the search for self-identity are combined with a dependence on the social environment.

The uniqueness of this demographic group, which has its own specific characteristics and needs in solving somatic, psychological, and social problems, determines the peculiarities of methodological approaches to studying the health of adolescents, and the indicators significant for adolescent health differ from those of adults.

Thus, there are two main ways of selecting data for studying the health of adolescents [16]. The first approach (the most frequently used) involves the selection of significant indicators of adolescent health from the point of view of adults. The results of studies conducted in this area indicate that adolescents do not have a conscious need to

maintain their health and do not pay enough attention to health risk factors. The second one involves the study of factors that are significant from the point of view of the adolescents themselves. These include characteristics such as medical awareness, adaptation to adulthood, and social support.

It should be kept in mind that the behaviour of adolescents affecting health is conditioned by motives that are often not directly related to health [16]. Thus, when choosing to smoke, striving for adulthood may be a more significant factor for a teenager than the possible deterioration in health. In addition, adolescents assess health risks differently – what adults define as risky behaviour, adolescents may view as a norm [23]. The behaviour of this social group is regulated from the outside and is more determined by generally accepted social norms, values and opinions than by the conscious motivation of the individual [24]. Prof. I.V. Zhuravleva notes that "patterns of behaviour that depend on conscious motivation are less stable ..." [16]. It follows from this that the behavioural habits of adolescents are a reflection of the culture of society's behaviour in the field of health and are the result of the socialization of the individual.

The exposure to the influence of the social environment is manifested in the tendency of adolescents to imitate, including in relation to behaviour in the field of health. The results of numerous studies have proved that the immediate social environment (family society, educational environment, peers) has a huge impact on the behaviour of adolescents in the field of health [7, 16, 25, 26]. It has been proved that there is a dependence of some factors of health and quality of life of adolescents in Belarus with the characteristics of the parental family. Thus, the fullness of the family affects the presence of casual sexual intercourse, alcohol intoxication, and crisis psychological situations in adolescents. Adolescents who rated the material level of the family as low, reliably more often consume strong alcoholic beverages, note the emergence of crisis psychological situations and the presence of drug-using acquaintances [27].

Studying the influence of the educational process on the lifestyle and the level of anxiety of schoolchildren in Gomel, L.G. Soboleva found that the organization of the educational process is of particular importance for children of senior school age [28]. WHO experts also assign an important role to social relations in shaping the health of adolescents. Thus, the report of the international project HBSC noted that positive and supportive social ties in the family and school contribute to the improvement of mental and physical health and reduce the incidence of risky behaviour [15].

This circumstance indicates the need to identify and study the influence of factors of the family and educational environment as significant determinants of the health of

individuals of this age group, without which effective work to improve their health is impossible.

Thus, adolescents are a specific object of medical and sociological research due to their social and legal status and their biological and psychological characteristics, which causes methodological difficulties. These features should be taken into account when conducting medical and sociological research. When constructing the questionnaire, one should refer to the assessment of lifestyle factors and factors of socialization.

Prof. Yu. P. Lisitsyn defines the way of life as "characteristic of a given historical period, the most typical way of activity of a person, a group of people" [4] and distinguishes four categories of lifestyle: economic – "standard of living", sociological – "quality of life", socio-psychological – "lifestyle", and socio-economic – "way of life". Consequently, the condition for the most complete understanding of the way of life is the study of all these categories. At the same time, the concept of quality of life has recently been considered as a mandatory criterion for assessing health status [27].

Since a person is an active participant in situations related to health, and, at the same time, the choice in favour of a healthy lifestyle is based on knowledge and motivation, the preservation and formation of health can be considered within the framework of such a determining factor as attitude to health. The category "attitude" is ambiguous, however, from the point of view of methodology, its consideration within the framework of the concept of attitude of V. N. Myasishchev, according to which the relation is the connection between the subject (individual) and the object (the object of objective reality), as well as the directed influence of the active object on certain aspects of reality [29]. Highlighted by V. N. Myasishchev, such components of attitude as cognitive, emotional and motivational-behavioural are the basis for a structural-functional approach to the study of the concept of "attitude to health", its structure and main characteristics. So, in relation to health, the cognitive component is defined as a person's knowledge about health, as well as his ideas and beliefs about health; the emotional component reflects the value of health, feelings and emotions associated with the state of health; motivational-behavioural determines the motives of the individual's behaviour in relation to health. According to Prof. IV Zhuravleva, the attitude to health "is a system of individual, selective connections of the individual with various phenomena of the surrounding reality, contributing or, on the contrary, threatening the health of people, as well as a certain assessment by the individual of his physical and mental state and "is concretely manifested in actions and deeds, experiences and verbally realized opinions and judg-

ments of people regarding factors affecting their physical and mental well-being" [30].

Taking into account the complexity and multicomponent nature of the concept of "attitude to health", the main methodological problem is the choice of parameters for assessing this category. Traditionally, the indicators of an individual's attitude to one's health include self-assessment of health, the place of health in the system of life values, medical awareness, and activities to preserve health [3]. Attitude to health at the group level includes: assessment of the health status of the group and its members, social norms of attitudes towards health prevailing in the group, as well as actions of the group to improve the state of health [3]. The attitude to health determines the appropriate behaviour of the individual, which is reflected in his lifestyle.

The optimal method for studying the health of adolescents is an anonymous handout sociological survey, the instrument of which is a questionnaire. The advantages of this method are high information content, sensitivity and cost-effectiveness, subject to compliance with the regulatory requirements for the development of the questionnaire, as well as organization and conduct of the questionnaire [31].

In order to collect sociological information to study the socio-behavioural aspect of adolescent health, we have developed two questionnaires: the first – for adolescents aged 15–19 years (figure 1), the second – for parents of 10–14 year old children (figure 2). We proceeded from the assumption that the group of people aged 10–14 is socially and psychologically closer to childhood. Younger adolescents are not always fully capable of reasoning about abstract concepts, consciously explaining their choices, assessing their behaviour and predicting its consequences. We also take into account the legal status of this age group – persons under 14 years of age have limited legal capacity and interviewing minors is possible only with the permission of a legal representative. In addition, it is impossible to fully understand the lifestyle and behavioural risk factors in adolescence without considering the nature of sexual behaviour. Discussion of issues of sexuality in early adolescence should be psychologically and pedagogically regulated. At the same time, parents of adolescents can be reliable sources of accurate information for studying the social aspect of health of persons of a given age, including such areas as lifestyle characteristics, analysis of risk factors, and study of self-preserving behaviour. In addition, the data can be used for a comparative analysis of the lifestyle factors of parents and adolescents, which makes it possible to identify the determinants of the formation of the health of adolescents in the family.

When developing the questionnaire forms, we provided parameters for ensuring the reliability of the survey data: the adequacy of the question structure, the reasonableness

of the form of constructing the questions (relevance), neutrality, and accessibility, which allows us to ensure the representativeness and reliability of the data obtained. The questionnaires are balanced in terms of the number of questions (taking into account the recommended average number of questions – about 50) and are compiled taking into account the phase of the survey [31].

The questionnaire "Lifestyle of parents of 10-14 year old children", developed for parents, (Figure 2) consists of 51 questions, which are conventionally combined into semantic blocks. The first block of questions is aimed at studying the subjective assessments of the health and lifestyle of both parents and children (according to the parents). The second block of questions provides for the study of educational practices used in the family to shape the behaviour of children. The third block is devoted to the study of family relationships and the characteristics of the family microclimate. The fourth block of questions makes it possible to describe the degree and nature of the interaction between the family and the school in shaping the health of adolescents. The fifth block contains questions that allow us to study such parameters of the family's lifestyle as the organization of nutrition, leisure, educational activities, the peculiarities of the day's regimen, the motor regime, and the duration of night sleep. The sixth block is devoted to the study of the behaviour of family members in relation to alcohol, smoking, and the use of psychoactive substances. The final block allows us to obtain data of a socio-demographic nature and study the living conditions of respondents and their children. It should be noted that the questions in the questionnaire are designed in such a way as to obtain comparable data for the analysis of aspects of the lifestyle and attitudes towards the health of parents and their children.

For the survey of older adolescents, a questionnaire was developed "The lifestyle of adolescents and their attitude to health" (Figure 1), consisting of 49 closed, semi-closed and open questions, which are also grouped into blocks that allow us to study the attitude of adolescents to health and a healthy lifestyle, as well as such parameters of the lifestyle of adolescents as nutrition, physical activity, organization of leisure, educational activities, and night sleep, taking into account the time spent on various activities during the day. A separate group of questions allows us to sort the characteristics of the respondents' behaviour in relation to smoking, alcohol consumption, and addiction to psychoactive substances. A number of questions concern risk factors for sexual behaviour. Separate blocks of questions allow us to characterize the psycho-emotional background of the respondents, relationships with parents, the involvement of the school in solving health problems and the lifestyle of adolescents, as well as the prevalence of behavioural risk factors among the closest social environment

(family, classmates, friends). The final block includes questions that make it possible to assess the living conditions of adolescents (such social characteristics as the financial situation and type of family, the childhood of the family, and the employment of parents and their education).

In these questionnaires, certain blocks of questions were duplicated, which would allow getting the opinion of parents and adolescents on the same questions.

It is planned to collect data using an anonymous hand-out survey. The survey of senior adolescents is supposed to be carried out in a children's clinic (or a children's department as part of a polyclinic for the adult population), a children's hospital (or a paediatric department as part of a hospital for an adult population), parents of 10–14-year-old children – in any medical and preventive institution providing medical care on an outpatient or inpatient basis.

To obtain reliable data, it is necessary to take into account the situational nature of the survey. So, when conducting medical and sociological research, a prerequisite is to ensure confidentiality. Questioning of adolescents must be carried out without the presence of parents and other significant adults. It should also be kept in mind that for children from 11 years old, the opinion of their peers becomes more important; therefore, adolescents should be interviewed individually [32].

Conclusions

The given data point to the socio-behavioural nature of main reasons for deterioration of health of the younger generation. The analysis of the health problems of Belarusian adolescents made it possible to highlight the topical areas of research: identifying the specifics of the lifestyle and living conditions of adolescents, their attitude to health; assessment of the prevalence of potential risk factors in the adolescent population; assessment of the role of the family environment and the educational environment in shaping the health of adolescents.

When developing a methodology for studying the lifestyle and attitude of adolescents to health, we proceeded from the fact that this socio-demographic group has its own specifics associated with this age group. As a result, the study of factors affecting the health of adolescents requires an understanding of the motives and needs of this social group in the field of health, as well as the study of the personality of a teenager in the context of his medical and social environment.

The sociological tools we have developed make it possible to conduct a comprehensive assessment of the factors that shape the health of adolescents, to compare the data obtained from the perspective of assessment by both adolescents and their parents, and to identify the contribution and opportunities in solving the health problem of adole-

scents of social institutions that are not directly related to health care, such as the family and school. The data obtained can be used to develop scientifically based approaches to assess and manage the health risks of persons of this age group in the educational process, for planning and conducting targeted interdepartmental preventive measures.

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Received: 2021

Accepted: 2021