

CONTRACEPTIVE BEHAVIOR AS RISK FACTOR FOR REPRODUCTIVE HEALTH OF JUNIOR STUDENTS ATTENDING A MEDICAL UNIVERSITY

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1–3 year students attending medical and preventive faculty of a medical university were our research object. Our research had many stages, and at the first one our goal was to examine and to assess basic behavioral risks for reproductive health of students attending medical and preventive faculty of a medical university. We conducted a sociological examination via questioning. 428 students were questioned as per materials collecting program which included 74 parameters; they accounted for 91.6 % out of the overall official number of students, 45.0 % male students and 40.0 % female students combined work and studies.

We detected that, as per questioning results, the specific weight of students who took care of their health amounted to 79.2 % boys and 95.2 % girls. However, the students tended to have bad habits, i.e. constant alcohol intake or smoking. And although information on diseases prevention and on how to pursue healthy lifestyle was perfectly available to them, students didn't try to use it and preserve their health. All the respondents said they were against abortion. Girls were likely to adopt a complex approach when choosing a contraceptive, they resorted to hormonal agents, and, with their partners' consent, to condoms. But they often took hormonal agents without any consultations with a gynecologist or an endocrinologist. Contraceptives were rarely applied, and students appeared to have no knowledge on risk factors causing reproductive health deterioration. They also tended to be negligent and too self-confident when it came to reproductive health protection. A risk of abortions was very high for girls who didn't use contraceptives, and also all students ran rather high risk of catching sexual diseases.

Sexual education is needed to correct contraceptive behavior; medical workers are a main source of information on reproductive health of young people in 7–10 % cases only. We need to create interactive educational programs on health protection at university level and to involve specialists from health centers and ante-natal clinics to participate in them.

Key words: *health self-assessment, students, behavioral risk factors, contraceptive behavior, healthy lifestyle, medical activity, organization of specialized medical aid, prevention, reproductive health protection program, management.*

There are 5 million students in HEE all over the RF. Without any doubt, students are our country's intellectual potential and it is quite understandable that they are to have strong physical and mental health. We are now conducting pilot medical and social research at the Public Health and Healthcare department; its subject is "Assessment of basic behavioral risks for health of medical university students". The research goal is to study and to assess basic behavioral health risks for students of a medical-prevention faculty; it is also

meant to create grounds for working out a program on HEE students' healthy lifestyle.

A part of our research deals with assessing students' reproductive health and contraceptive behavior. Later on we plan to compare the obtained data with the results of medical examinations.

In spite of positive trends which have occurred over the last five years, reproduction of population in the RF, and in Perm region and Perm city as well, is still characterized with high mortality and low birth rate. Reproduc-

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tion depends on population health and on the state of their reproductive system.

WHO describes reproductive health as a state of complete physical, mental, and social wealth in all matters concerning reproductive system functioning as well as psychosocial relations at any age [6].

Reproductive health (RH) is a significant part of health as a whole; it takes a leading role in human development and matters a lot for personal and valued aspect of youth lives. Reproductive health is a true reflection of children' and teenagers' health; it stimulates reproduction and it also gives grounds for good health in older age when reproductive years both for a man and a woman are over [1, 5].

To achieve simple reproduction of population, it is necessary to have two or three children in each family. Besides, a specific weight of middle-ages and old people is growing every year. Therefore, availability of young qualified specialists reduces and it leads to problems in our economy. One of the tasks which our state considers to be a top priority is to create such social and economic conditions which are truly favorable for giving birth to healthy children, including support provided for a young student family.

Contraception is a tool for preventing an unwanted pregnancy, abortion and its consequences; it also helps to prevent sexual diseases. Contraceptive behavior is a set of behavioral reactions which accompany heterosexual activities and are aimed at protection from an unwanted pregnancy and sexual infections. This behaviors differs greatly from reproductive one as per its functions and properties. Reproductive behavior is a whole system of actions and relations which in the end all lead to a childbirth or to a refusal to have a child, both for a married couple or a single person. Contraceptive culture comprises all sexually mature people. Contraceptive culture matters a lot for students as they study at a HEE at such an age when human sexual activity is at its peak. Reproductive behavior norms in young age are different from those of an older man.

Data and methods. There are totally 3,568 students attending 5 faculties of Vagner's Perm State Medical University.

At the first stage of our work we organized and conducted sociological research via questioning. Data collection program consisted of 74 criteria; we questioned 428 students attending the medical-prevention faculty (out of 467 enlisted in the Dean's Office) or 91.6% of the total number of students. Respondents as per sex and years were distributed as follows: 84.0 % of the 1st year students; 97.4 % of the 2nd; 95.1 % third-year students; 89.0 %, the 4th; 93.3 %, the 5th; and 91.6 % the 6th. Average per cent was 91.6. Questioned students ratio as per sex at the faculty as a whole is 1:3. Such gender ratios are also characteristic for I, III and V year students (1:2.8; 1:2.9; 1:3.4 correspondingly). Second-year-students sex ratio is a bit different and is equal to 1:2; IV and VI year students are 1:4. Average sex ratio is 1:3. Consequently, we can consider our sampling to be quite representative, both in qualitative and in quantitative terms.

We chose the medical-prevention faculty as our research ground. A great part of the educational program for these students is dedicated to such matters as healthy lifestyle formation, studying and assessing risk factors which cause various diseases, as well as their prevention. We wanted to find out how students applied their academic knowledge and skills in preserving their own health, including reproductive one.

Results and discussion. Within the framework of our research we analyzed scientific literature on issues of studying reproductive behaviors of students in the RF. Such studies have been conducted in our country since the very beginning of this century.

Reproductive behavior of students in the RF is formed under influence of the following behavioral risk factors:

- start of sexual relations at a young age;
- a considerable number of students have experienced sexual relations but they don't think such relations imply getting married and childbirth [2];

– protection of students' reproduction health during a postponed childbirth period is inefficient [13];

– students tend to be not aware of reproductive behavior as a whole [3];

– high level of sexual diseases is detected: 8.5 cases as per 100 examined. There is strong correlation between sexual diseases and gynecological morbidity among female students. Average annual gynecological morbidity amounted to 19.3 ‰ [17];

– sexual attitudes are rather liberal now and female students tend to often change sexual partners; it leads to growth in gynecological morbidity and later on to problems with childbirth (infertility, miscarriages, giving birth to sick or disabled children) [14,15];

– as per data given in the review by the "RF Statistics" Scientific Research Institute of the Federal State Statistic Service, in 2012 74.3% young women had gynecological diseases [12].

Students' reproductive behavior has the following peculiarities:

– number of births per 1000 HEE female students is equal to 3.8; number of abortions, 3.4 [17];

– most students use contraceptives and have negative attitude towards abortion;

– they plan to have a family in the future but, as a rule, they think of a family with one or two children; they also think it possible to have children without getting married [15,17];

– smoking, drinking alcohol, taking drugs and steroids, and also a habit to constantly wear skin-tight underwear which a lot of young males have lead to problems in their reproductive system;

– bad habits are more typical among first-year students even in a higher medical school [8];

– each third young woman in the RF has bad habits and she acquired them during her student years [12];

– lifestyle which students tend to have nowadays doesn't make for health preservation. They value their health but are often neglectful and light-minded in their attitudes towards it. They think that taking care of their

health is their parents', doctors', or the state responsibility [7];

– a very important feature which characterizes students' attitude towards their health is occurrence or absence of bad habits. Apart from smoking, alcoholism, drug addictions or toxicomania, here we can mention addiction to coffee, bear, fast food, gaming, computer, extreme leisure, as well as addiction to digital and audiodrugs. They are often used among young people to fight stress [4, 7, 11];

– students tend to have low sanitary and medical activity. They apply for medical assistance "only in case of necessity" [2, 11];

– there is a problem of unwanted pregnancies and abortions. Students usually have very little knowledge on most efficient contemporary contraception tools [10];

– students most often get information about contraception from their friends and partners, and more rarely from medical workers (7-10% cases) [9, 14];

– despite female students start their sexual life rather early and usually have several sexual partners, they possess very little knowledge on such matters as protection from unwanted pregnancies, protection from sexual diseases, and protection from cervical carcinoma [11];

– young men's health forms within the time range from a moment when a zygote appears and to a moment when a biological function of reproduction is realized. And it is important to draw their attention to reproduction function during their studies as well as to diseases which can cause its disorders [16];

– stress and over exhaustion, imbalanced nutrition, and poor ecological situation are all risk factors which can cause students' health disorders, including those of their reproductive system;

– creation of predictive program for assessing morbidity risks among socially-adapted young people proved that reproductive performance of a young student family is determined mostly by a health of a female partner [2];

– if we include courses on healthy lifestyle formation and family planning in HEE curricula it will secure better students' aware-

ness on reproductive health protection [2, 4, 10, 14];

- creation of interuniversity multi-field outpatient departments and medical education centers will help to increase quality of medical aid rendered to students [2, 13];

- control over quality of medical aid rendered to students in the sphere of reproductive health is not efficient [1].

Analysis of works focused on the results of studying students' reproductive health proves our research is vital.

So, here are the results of the sociological questioning conducted among junior students of the medical-prevention faculty. The total number of students is 252; 231 of them took part in the questioning (91.7% of all 1-3 year students and 53.9% of all the students enlisted at the faculty). Students during their 1-3- years are officially called junior students. Assistant to Dean responsible for junior years supervises their learning, scientific work and their educational activities.

The respondents ratio as per age was 1:2,5. Sampling was considered to be representative as per its main properties. The questioning program contained 74 criteria. There were ten questions on reproductive health protection. We personally distributed, collected, processes and analyzed all the materials.

We studied a very significant parameter of students' health, namely, health self-assessment; we also obtained and assessed a range of behavioral risks influencing its formation. Here are some of our conclusions:

- specific weight of junior students, male and female, who took care of their health amounted to 79.2 and 95.2% correspondingly;

- 49.2 male students and 46.4 female students assessed their health as "being good";

- there are gender-based discrepancies in assessing one's health as per all sub-groups and all reasons to preserve it.

Having bad habits is the most important feature that characterizes students' attitude towards their health. Health-preserving behavior includes giving up smoking, alcohol, and psychoactive substances. Prevalence of bad habits among students tends to grow steadily. It re-

sults in their health deterioration, including reproductive one. Smoking is considered to be a factor which causes immunity disorders both at cellular and humoral levels. And it can lead to inflammatory processes in small pelvis organs, infertility, and ectopic pregnancy.

Our research results revealed that frequency of smoking per 100 males amounted to 28.6 among the 1st year students; 36.4, among the 2nd year students; 100.0, among the 3rd year ones; as for females, 13.8 among the 1st year students; 7.5, among the 2nd year students; 15.8, among the 3rd year ones. Prevalence of this bad habit changes depending on an avademic year. We detected statistically authentic discrepancies in prevalence of smoking as per a year among male students: they smoke more often than girls ($t > 2$). Most smoking respondents are heavy smokers as they tend to smoke up to 20 cigarettes a day.

To assess reproductive health we wanted to get better insight into peculiarities of our respondents' contraceptive behavior:

- sexual relations occurrence (in the past and now);

- use of contraceptives (types, consistency);

- reasons why students don't use contraceptives;

- necessity of providing information on contraceptive behavior correction.

Number of 1st year students who had sexual relations at least once in their life amounted to 80.9% among males and 43.1% females; 68.0 % of male 2nd year students and 63.0% of female 2nd year students admitted having them; and among the 3rd year students, 75.0% and 70.0%, correspondingly. On average the number amounted to 74.6% males and 58.7% females. As a rule, they started sexual relations before they entered the university.

At present on average each second male student (55.0%) has sexual relations (55.0% 1st year students, 54.0% second year students and 55.0% third year students). 24.0% 1st year female students are sexually active; 42% among the 2nd year ones, and 65.0%, at the 3rd year (44.0% on average). Our data correlate with the results obtained by T.P. Reznikova (2012)

When asked if they used contraceptives, 1st year male students answered "yes" in 18.0% cases; 2nd year students, in 8.0%, and 3rd year students, in 15.0%. As for females, in 82.3, 28.0 and 42.0% cases correspondingly. Parameters for males as per all academic years were lower than among females ($t > 2$). It proves that female students are more responsible when it comes to their reproductive health. Only each 10th male student uses condoms as a contraceptive.

Birth rate in the RF amounted to 13.3 per 1,000 people in 2014 and for the first time since 90ties last century it exceeded death rate. Women in the RF actively use contraceptives as a tool to plan childbirth. Hormonal contraception tends to become more widely used in most regions in our country as intrauterine contraceptives are used more rarely. Experts state it happens because living standards become lower and medical assistance gets more expensive. Hormonal contraception level in Volga-Vyatskiy region is equal to 6.8 per 100 women; In Zapadno-Sibirskiy, 11.8 [12].

Our questioning revealed that female students constantly took hormonal pills except 1st year ones; 3 out of 100 among the 2nd year females, and 21 out of 100, among 3rd year ones.

Frequency of using condoms with a partner's consent amounted to 8.6 out of 100 among the 1st year students; 32 out of 100, among the 2nd year ones; 36.8 out of 100, among the 3rd year students. The older the students, the more often girls use condoms. Choice of contraceptives is not made after consulting a gynecologist from an antenatal clinic or a doctor from a polyclinic for students.

As we questioned students who didn't use condoms we detected some reasons for doing that; on average, 73.0% males and 64.0% females didn't answer this question; 9.2 and 5.4% correspondingly told "they were self-confident"; on average, 4.5% females "were planning to have children" (0.0% among boys); 14.0% males and 15.5% females "didn't know why". Even these reasons persuade us that young people really don't give a lot of thought to their reproductive health.

The total number of abortions in the RF amounted to 814,162 in 2014: there was a 7.6% decrease in comparison with the previous year. This parameter dropped by 6.5% among women aged 15-49 and it amounted to 22.9 per a 1,000 women; there was a 20.5% decrease among young females aged 15-17 [12]. Our questioning revealed that students attending our faculty has negative attitude towards abortions.

On average, 13.3% males and 18.7% females gave a positive answer to a question "do you need any information on how to improve your sexual health?". Information on such matters is most often discussed with peers; any consultations with medical specialists are sporadic.

Practically all respondents apply for medical aid only in case of emergency. Visits to doctors at a polyclinic for students are not made for prevention reasons. No one knows about medical consultations which are provided by health centers. In students' opinion, paid-for medical aid is not affordable.

Conclusions. As we studied literature on our research theme and conducted our questioning among students attending the medical-prevention faculty, we revealed that:

- students' health, including reproductive one, is a significant parameter of the society intellectual potential;
- specific weight of male and female students who took care of their health amounted to 79.6 and 95.2 % correspondingly;
- number of males and females with health self-assessment as "good" amounts to 49.2 and 46.4 % correspondingly;
- there are gender-based discrepancies in health self-assessment as per all sub-groups and reasons for its preservation;
- 45.0 % males and 40.0 % females with different health self-assessment combined work and studies;
- students tend to have bad habits, including constant alcohol drinking and smoking;
- despite a lot of information on diseases prevention and healthy lifestyle formation is quite available, students don't try to use it and to preserve their health;

– basic problems of students' lifestyle are irrational nutrition, insufficient physical and medical activity.

Basic peculiarities of contraceptive culture which junior students have are as follows:

– considerable number of them pursue unhealthy lifestyle;

– students prefer condoms among all contraceptives as they are reliable and quite available;

– all respondents reject abortions;

– female students tend to have more complex approach to choice of contraceptives and they use both hormones and condoms;

– girls take hormones without any consultations with gynecologists and endocrinologists. Besides, we don't have such specialists in our students' polyclinic;

– a paid-for consultation in a private polyclinic where students can get highly qualified medical assistance is very expensive;

– most sexually active students don't plan to have children in the nearest future;

– frequency of using contraceptives is rather low;

– students are now aware of risks factors which deteriorate reproductive health;

– students tend to be neglectful and too self-confident when it comes to reproductive health protection;

– girls who don't use contraceptives run very high risks of abortions; all students who don't do it run high risks of sexual diseases;

– junior students need knowledge on sexual education matters to correct their contraceptive behavior;

– gynecology and andrology are included in the senior courses curricula;

– medical workers are the primary source of information on protection of young people's reproductive health only in 7-10% cases.

Our research results indicate that:

– junior students of the medical-prevention faculty at our university have problems with protection of their reproductive health;

– contraceptive behavior is a health risk factor for medical students;

– it is necessary to create a set of educational programs on students' health protection on the university level with participation of experts from health centers and antenatal clinics.

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HYGIENIC ASSESSMENT OF WORKING CONDITIONS AND OCCUPATIONAL RISK FOR WORKERS HEALTH AT RAILWAY TRANSPORT OBJECTS

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We performed hygienic assessment of working conditions at railway transport over 2011–2015. We detected a decreasing trend in specific weight of working places where physical factors were higher than hygienic standards and where steam and gases content in working area air was higher than maximum permissible concentrations (MPC). Working conditions of locomotive teams remain most unfavorable as per risk factors. We detected that a priori occupation risk for locomotive teams was characterized with parameters varying from moderate to considerable ones. Occupational noise was determined as a priority risk factor making working conditions category a hazardous one and it corresponded to occupational morbidity structure. We detected that sensorineural hearing loss took a leading place in morbidity both in the branch in general and among locomotive team workers. We also clarified that such workers as engine drivers and their assistants (up to 43 %) had the greatest specific weight among railway workers with occupational diseases; occupational morbidity among locomotive team workers amounted to 3.0 per 10,000 workers in 2015 while average morbidity among all railway workers amounted to only 1.32 per 10,000 workers. We revealed that occupational diseases were most frequently detected in workers aged 51–60 (51.9 % in 2014) who had worked under hazardous occupational factors influence for longer than 15 years. While there was an overall decreasing trend in occupational morbidity in the branch in 2011–2015 from 1.68 to 1.32 per 10,000 workers, we detected a brunch peculiarity in the risk group, namely, an unsatisfactory trend for growing share of workers with occupational diseases aged 31–40 (from 2.6 % in 2011 to 12 % in 2014) and it requires special attention in terms of risk management.

Key words: working conditions; hazardous occupational factors; occupational diseases; railway transport; occupational noise; occupational risk.

Occupational pathology risks in professional activity are greatly affected by a complex of occupational factors at working place. Studies show that occupational environment factors have an adverse effect on worker's organism, and are the risk factors contributing to diseases development [7, 8, 16, 17].

Assessing the harmful effects on an employee due to certain factors in labor process for the occupational period, and working out mechanisms to manage these factors in order to reduce to acceptable risk levels allows for

employees occupational health, and leads to saving labor resources. The specifics and nature of occupational activity at railway transport facilities are such that a considerable number of harmful occupational factors have effect on employees, leading to deterioration in their health and occupational morbidity [3, 6, 9, 10, 15].

The research goal was to study dynamics in sanitary and epidemiological situation at railway transport objects with assessment of a priori occupational risk to workers health and

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indices of occupational morbidity.

Materials and methods. Based on the data of state statistical reporting of Rosпотребнадзор bodies and institutions for railway transport over 2011-2015, we studied the dynamics in the sanitary-epidemiological situation and occupational morbidity at railway transport facilities. We analyzed occupational environment and labor process factors, carried out general hygienic assessment of the working conditions in accordance with G.2.2.2006-05 "Guidelines for hygienic assessment of the occupational environment and labor process factors. Criteria for working conditions and their classification" [14]. We made an assessment of a priori occupational risk, according to G.2.2.1766-03 "Guidelines for assessment of occupational health risk for personnel. Organizational and methodological background, principles and criteria for assessment" [13].

Results and discussion. For the period under study, 2011-2015, among the objects related to railway traffic (such as factories, locomotive and wagon repair depots, railway service facilities, communications, power supply), we noted a decrease in the proportion of objects classified to Group III, in terms of sanitary and epidemiological well-being (extremely unsatisfactory): from 23.1% in 2011 to 19.0% in 2015. We detected a decreasing trend in the specific weight of working places that do not meet hygienic standards in terms of noise level: from 28.1 to 22.5%; by the level of vibration: from 24.2 to 12.0%; as per microclimate parameters: from 6.3 to 3.4%; per lighting parameters: from 19.3 to 17.1% [2].

According to laboratory data for air in the working area, over 2011-2015, there is a tendency to decrease in the specific weight of the steams and gases samples with the exceeded maximum permissible concentrations (MPC), both in general, as well as per substances belonging to the 1st and 2nd hazard category, from 4.6 to 2.9% and from 4.2 to 2.3% respectively. At the same time, the specific weight of the working area samples of air with dust and aerosols above the MPC increased from 13.6 to 16.8%, including substances of the 1st and 2nd hazard categories: from 14.2 to 20.9% [2].

The review of control and surveillance activities showed that the main reasons for unsatisfactory working conditions at production facilities are long operating periods and high deterioration in machine tools and other equipment (metalworking, woodworking, forging machines, etc.); absence or disruption of ventilation at working places, or ventilation inappropriate to production processes (incorrect technical solutions); unbalanced thermal conditions (not enough heaters in the shops, operating air curtains are not interlocked with opening gates); damages to ventilation during gas welding at non-fixed working places, lack of insulation for the most harmful processes.

The most unfavorable working environment is working conditions of locomotive crews: those who work on diesel locomotives, electric locomotives, electric trains and self-powered railway equipment. Data analysis for 2006-2015 showed the exceedance of hygienic standards in physical factors. At the same time, during the last 5 years (2011-2015) there has been an improvement in the working environment in locomotives: the specific weight of cabins where physical factors do not meet standards decreased from 53 to 26%; according to the noise level non-compliant with hygienic standards, the number of cabins in different years ranged from 20.2 to 45.1% of the total cabins under survey. It should be noted that the specific weight of cabins with the noise level exceeding the maximum permissible one (MPL) by up to 5 dB (of those which do not correspond to hygienic noise standards) ranged from 69.0 to 96.4%. The noise level excess by 5-10 dBA was observed in 13.4-3.01% of the surveyed cabins, by 10-15 dBA in 2.3-11.0%. As per vibration level, the proportion of cabins with MPL excess made 3.9 to 35.6%. The number of cabins (of those that did not meet hygienic requirements in terms of vibration) exceeding the vibration MPL by up to 5 dB made 67.2 to 90.0%; exceeding the vibration MPL by 5-10 dB: from 2.7 to 87.5%; by 10-15 dB: from 5.6 to 30.1%.

According to hygienic criteria [14], the greatest share of working places in locomotive cabins, in terms of noise and vibration levels,

corresponds to the category of hazardous working conditions of the 1st and 2nd class. Depending thereon, according to G. 2.2.1766-03 [13], a priori occupational risk for locomotive teams staff is characterized as small (moderate) and medium (considerable), and requires measures to reduce risk [1].

According to risk assessment methodology applied in Rospotrebnadzor bodies and institutions, all occupational factors and health disorders are subject to compulsory recording and assessment, which is used as the basis for "Assessment criteria for occupational risks to the Russian Railways staff, directly involved in trains traffic" [16]. In line with this document, at final assessment, the occupational risk for engine drivers and their assistants is set at a very high level [7].

The occupational morbidity level has a pronounced dynamics to decrease. From 2011 to 2015, the number of detected occupational diseases decreased from 152 to 104 cases or, in other words, decreased from 1.68 to 1.32 per 10 thousand employees (with the Russian national average of 1.65 per 10 thousand employees in 2015) [10].

For the analyzed period, occupational morbidity structure by nosological forms did not change significantly. The highest specific weight is made up of engine drivers and assistants to engine drivers: 32.9 - 43.0%, as well as track workers: 19.3 - 24.3%. Among the diseases, sensorineural hearing loss takes the leading place (up to 73%); the second – diseases of dust etiology (up to 13%); the third is for vibration disease (up to 5%). Diseases of peripheral nervous system (PNS) and musculoskeletal system rank fourth (up to 9%).

The occupational morbidity structure for locomotive crews has some specific features, which is determined by the nature of working conditions. Among the diseases, the major share belongs to neurosensory hearing loss (93.4%), vibration disease (9.4%), peripheral nervous system and musculoskeletal system diseases (1.3%) [6].

Occupational diseases among all personnel employed at JSC "Russian Railways" are most often registered in the age group of 51-60

with the occupational time-period under influence of hazardous factors for longer than 15 years. In 2011-2015, the proportion of workers in this group ranged from 51.9% in 2014 to 63.5% in 2015. One of the reasons thereto one can consider the workers intention to keep their jobs until retirement, which is explained by the desire to get compensation for work under harmful working conditions. However, there is an unsatisfactory trend to increasing share of workers with occupational diseases in the age group of 31-40 (in 2011: 2.6%, in 2014: 12.0%). This may indicate a significant impact of harmful occupational factors at a relatively short occupational period under harmful working conditions [2]. A special feature of occupational pathology is the detection of occupational diseases in late, neglected and clinically pronounced stages, which disrupt employee's working ability [13].

The detection of occupational diseases takes place mainly during medical examinations (81.5-94%). This suggests that workers do not seek medical help at first manifestations of a disease eventually related to occupation. Workers with a long occupational period under harmful working conditions are subject to in-depth medical examination. Such an examination is carried out in specialized medical organizations according to cl. 37, Appendix No.3 to the Order No.302n by the Ministry of Healthcare and Social Development of Russian Federation ddt. 12.04.2011 "On Approving Lists of Harmful and/or Hazardous Occupational Factors and Works in Performance of which the compulsory preliminary and regular medical examinations (medical screenings) are conducted, and the order of mandatory preliminary and regular medical examinations (screenings) for employees involved in heavy works and works under harmful and (or) hazardous working conditions". For 2013-2015, within the railways system, 1,556 workers exposed to harmful occupational factors for more than 5 years were subject to in-depth medical examination, only 57 of them, that made 3.7%, were actually examined.

Conclusions. Despite the fact that railway transport objects (both the facilities related to

train traffic maintenance, as well as passenger trains cabins (including motor-car) and cargo rolling stock), detect the decreasing trend in the specific weight of the working places where physical factors exceed hygienic standards and MPC levels in terms of steams and gases content in the working area air, as well as such physical factor as occupational environment noise, one can determine the category for working conditions as harmful, and identify the structure of occupational pathology.

The leading place belongs to sensorineural hearing loss – up to 73%, the second place falls to diseases of dust etiology – up to 13%, vibration sickness ranks third – up to 5%, peripheral nervous system (PNS) and musculoskeletal disorders rank fourth – up to 9 %.

The occupational morbidity structure for locomotive crews has some peculiarities, which is determined by the nature of working conditions. In the structure of occupational diseases, among workers of locomotive crews, the largest share belongs to neurosensory deafness - 93.4%.

The most unfavorable occupational environment is working conditions of locomotive

crews: those who work on diesel locomotives, electric locomotives, electric trains and self-powered railway equipment. A priori occupational risk here is characterized from moderate to considerable. This determined the greatest specific weight of diseases in locomotive teams in the overall structure of occupational diseases among workers in the railway branch (occupational morbidity index in 2015 made 3.0 per 10 thousand workers at the overall index for the whole railways system of 1.32 per 10,000 workers).

With the general decreasing number of occupational diseases in the railway branch from 2011 to 2015, from 1.68 to 1.32 per 10 thousand employees, there is a markedly unsatisfactory tendency to increasing share of workers with occupational diseases aged 31-40: from 2.6 % (in 2011) to 12.0% (in 2014). The decrease in the registered occupational pathology under a slight improvement in the occupational environment hygienic conditions speaks for a low quality of regular medical examinations and failure of the preventive focus in occupational medicine.

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