

ABSTRACT

of the dissertation of doctoral student Kenzhegul Zhanysbayevna Ryskeldieva on the topic: "Socio-medical aspects of improving the reproductive health of adolescent girls living in unfavorable ecological area (on the example of Turkestan region)", submitted for the degree of Doctor of Philosophy (PhD) in the educational program "8D10111 –Public Health"

Relevance of the Research Topic

The preservation of adolescent girls' reproductive health is one of the top priorities for the state, the healthcare system, and society as a whole. Data from the last decade show a clear decline in health indicators and a deterioration in reproductive health among adolescent girls. According to assessments by World Health Organization experts, the decline in reproductive health is influenced by lifestyle, genetic predisposition, the quality of healthcare services, and the ecological condition of the living environment. Therefore, it is important to conduct a comprehensive assessment of adolescent girls' reproductive health and determine the degree of risk posed by social factors that threaten reproductive function.

The organizational framework of a system of interconnected and complementary medical, social, and environmental measures to address functional disorders of the reproductive system in adolescent girls has not been fully developed. Thus, the complex and multi-layered issues related to reproductive health, considering the social and medical conditions of adolescent girls' living environments, highlight the relevance of evaluating and improving the formation of their reproductive health.

Research aim

Scientific substantiation of social and medical measures to improve it with a comprehensive assessment of the reproductive health of adolescent girls in ecologically disadvantaged areas of the Turkestan region.

Research objectives

1. Ecological and medical characteristics of ecologically unfavorable areas of the Turkestan region.
2. Dynamic assessment of reproductive health disorders of adolescent girls living in ecologically disadvantaged areas of the Turkestan region.
3. Assessment of the risk share of adolescent girls based on morbidity rates due to the main environmental and social causes that have a harmful effect on reproductive health.
4. To propose a set of measures aimed at improving the reproductive health of adolescent girls living in a zone of unfavorable ecology.

Research methods

Various methods were used to test statistical hypotheses. In particular, the Chi-square (χ^2) test was applied to assess the relationship between categorical variables. The Student's t-test was used to compare the mean values of quantitative variables

between two groups. In addition, a correlation analysis was conducted to identify the interrelation between two or more variables. A multiple regression analysis was carried out to determine the dependence of adolescent girls' health status on medical-biological and socio-hygienic factors.

The scientific novelty

1. The main environmental and social risk factors leading to reproductive health disorders of adolescent girls living in the ecologically unfavorable zone of the Turkestan region have been comprehensively identified.

2. For the first time, an assessment of the criticality of the main socio–environmental causes that have a harmful effect on the reproductive health of adolescent girls is given.

3. The morbidity rate of somatic and reproductive health of adolescent girls living in an unfavorable ecological zone was monitored.

4. An algorithm of actions is proposed to improve measures to prevent the causes of harmful effects on the reproductive system of adolescent girls living in an ecologically unfavorable area of the Turkestan region.

Theoretical Significance

The theoretical significance of the scientific work lies in the fact that the results of the research part of the work can be used in further study of the scientific foundations of strengthening the somatic and reproductive health of adolescent girls in the region.

- The patterns of formation of reproductive activity of adolescent girls living in ecologically favorable and disadvantaged areas of the Turkestan region have been comparatively assessed.

- A quantitative assessment of the degree of risk of the main harmful environmental, socio-hygienic causes leading to the development of disorders of the reproductive system is given.

- The algorithm of actions for improving preventive measures through environmental monitoring and medical control of reproductive disorders is scientifically and theoretically substantiated.

Practical Significance

The analysis and research results are intended for use in health authorities at various levels, heads of inpatient medical organizations, health departments, as well as in the field of education aimed at improving intersectoral, collective, interdisciplinary relationships and providing comprehensive care based on the needs of pregnant adolescents.

The system of monitoring the reproductive health of adolescent girls living in a zone of unfavorable ecology and the organization of prevention of disorders – application in the organization of the work of obstetric and gynecological zones in a medical and preventive organization, opened the way for early detection of reproductive disorders in adolescent girls and helped to stop their occurrence of complications.

Socio-medical and organizational measures aimed at improving reproductive activity have been developed and put into practice.

These issues are of interest to specialists in solving problems and improving their work among adolescent girls in organizations engaged in preventive and educational work in the field of youth health.

Main Provisions Submitted for Defense

1. The malignant effect of environmental inconveniences and harmful socio-hygienic reasons in the residential area on reproductive health disorders arising in adolescent girls living in the Turkestan region is obvious.

2. The level of morbidity of somatic and reproductive health of adolescent girls depends on the severity of the main environmental, socio-hygienic reasons that have a harmful effect.

3. Monitoring of the reproductive health of adolescent girls determines the effectiveness of measures for socio-medical improvement in the Prevention of reproductive health disorders.

Approbation of the dissertation results

The main principles and materials of the dissertation work were presented and discussed at the following conferences and scientific seminars:

1. III International Scientific and educational forum "motherhood and childhood 2020". 02-03 October 2020 Almaty, Kazakhstan.

2. Regional scientific and educational forum "Mother and Child". October 03, 2019 Turkestan, Kazakhstan.

3. Meeting of Obstetricians and Gynecologists in Turkestan region 16.06.2021 in Shymkent

The obtained data were presented and widely discussed at the Department of Social Medicine, Public Health and healthcare, at a scientific seminar on theoretical disciplines (Turkestan 2021). It was discussed at the expanded scientific seminar of the Department of Public Health and scientific research of Khoja Ahmed Yasawi IKTU (Protocol №2, 19.03.2025).

The personal contribution of the doctoral candidate

Development of a plan and program of the dissertation work, Literary Review, determination of the level of diseases caused by adverse environmental, social, family, unfavorable living conditions, in the course of studying the reproductive health of adolescent girls in a region with poor ecology, reproductive health of adolescent girls living in an unfavorable ecological zone, identification of the lifestyle and customs of girls, collection of sanitary-hygienic, laboratory, social, statistical, medical-demographic materials necessary for research, processing of data obtained, their examination, he actively participated in the presentation of the dissertation through tables and figures, drawing up conclusions, conclusions, summaries, and the introduction of scientific and practical recommendations in the field of healthcare.

Introduction into practice

The results of the study were implemented in the organization of classroom lessons at the Departments of Public Health and Obstetrics and Gynecology of Khoja Akhmet Yassawi International Kazakh-Turkish University. In addition, they were introduced into practice at three medical care centers located in the city of Turkestan, as well as at the “Asykata” Zhetysai District Hospital and the “Shubarsu” Medical Center. The results were also incorporated into three medical education centers in Turkestan city.

Published works based on the dissertation research

8 scientific papers were published on the topic of the dissertation, including 4 articles in publications recommended by the committee for quality assurance in the field of Education and science of the Ministry of education and science of the Republic of Kazakhstan, 3 articles were published at international scientific and practical conferences, 1 article was published in the journals Web of Science and Scopus indexed databases

Conclusion

1. In the ecologically disadvantaged areas of the Turkestan region, the living environment was found to be highly contaminated with toxic pesticides, particularly hexachlorocyclohexane, at concentrations exceeding the maximum permissible concentration (MPC) by 7.55–9.38 times. Among adolescent girls residing in these ecologically unfavorable areas, menarche was more frequently delayed (31.88% vs. 10.71%, $p<0.05$), occurred at an earlier age (10.5% vs. 2.86%, $p<0.04$), showed prolonged menstrual duration (40.43% vs. 12.41%, $p<0.05$), and was accompanied by increased menstrual pain (46.56% vs. 21.76%, $p<0.01$).

2. A higher prevalence of somatic pathologies ($401.79\pm0.96\%$) was observed among adolescent girls living in ecologically disadvantaged regions. The main contributors to this elevated morbidity rate included: respiratory system diseases ($156.77\pm1.54\%$), circulatory system disorders ($58.72\pm0.42\%$), hematological and hemopoietic organ pathologies ($57.0\pm0.51\%$), endocrine system diseases ($40.0\pm0.88\%$), and disorders of the urinary and reproductive systems ($12.53\pm0.13\%$).

The leading causes of gynecological morbidity were identified as menstrual dysfunctions (114.75%), inflammatory diseases (43.47%), and congenital malformations of the reproductive organs (37.44%).

3. A quantitative assessment was conducted to evaluate the harmful impact of social and environmental factors on the development of reproductive disorders in adolescent girls. The main risk factors included: the ecological condition of the residential area, duration of residence in the region, place of residence, family status, socioeconomic status, harmful habits, and dietary patterns. The relative contribution of these factors to reproductive health issues was as follows: 25.27% for menstrual disorders, 4.27% for dysmenorrhea, and 2.81% for inflammatory diseases.

According to the results of the specially developed “Adolescent Girls' Questionnaire,” 54.7% of respondents were identified as belonging to the low-risk group, 31% to the medium-risk group, and 14.2% to the high-risk group.

4. Based on the research findings, an algorithm was developed for improving the reproductive health of adolescent girls. The algorithm includes the implementation of the “Adolescent Girls' Questionnaire” during preventive medical examinations to assess reproductive health status. This approach enables the identification of girls at high risk, who require follow-up care by an obstetrician-gynecologist, and emphasizes the importance of intersectoral collaboration to strengthen ecological protection measures.

The structure and volume of the dissertation

The dissertation consists of 130 pages, including: an introduction, a literary review, a section of research materials and methods, the results of the work, conclusions, conclusions, practical recommendations and a list of used literature (45 domestic and 129 foreign literature) and appendices.