

ABSTRACT
of the dissertation submitted for the degree of Doctor of Philosophy (PhD)
in the specialty 6D110200 – «Public Health»
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“Improvement of Preventive Programs for the Preservation of Reproductive
Health of Young People”

Relevance of the study: Reproductive health of youth is a key component of public health, determining the demographic potential and socio-economic development of the state. In the Republic of Kazakhstan, despite the implementation of state youth policy measures, an unfavorable trend in the deterioration of reproductive health among adolescents and student youth persists.

The increase in gynecological morbidity, the prevalence of sexually transmitted infections, as well as the rising number of menstrual disorders and inflammatory diseases of the pelvic organs indicate insufficient effectiveness of existing preventive programs. An additional problem is the low level of awareness among young people regarding reproductive health, delayed seeking of medical care, and the presence of behavioral risk factors that negatively affect health outcomes.

The existing reproductive health care system is primarily focused on women of reproductive age, while adolescents and student youth remain insufficiently covered by preventive measures and youth-friendly services. Furthermore, gaps in intersectoral coordination, limited accessibility of counseling services, and insufficient integration of educational and healthcare initiatives contribute to the persistence of these challenges.

Under these conditions, there is a clear need to develop scientifically grounded and integrated preventive programs aimed at improving the reproductive health of youth. The relevance of the study is обусловлена the need for a comprehensive assessment of the reproductive health status of youth and the development of effective organizational and preventive measures, taking into account modern socio-demographic, behavioral, and systemic factors influencing health and healthcare accessibility.

Aim of the study: To develop a comprehensive set of measures aimed at improving preventive programs for youth reproductive health, focused on optimizing intersectoral interaction and enhancing the referral (routing) system for student youth to access medical care.

Objectives of the study:

1. To assess the dynamics of medico-demographic indicators of youth reproductive health in the Republic of Kazakhstan for the period 2014–2024.
2. To analyze the regulatory and legal framework and preventive programs in the field of youth reproductive health protection.
3. To evaluate the level of knowledge and awareness of student youth regarding reproductive health issues.
4. To develop a set of measures for improving preventive programs.

Study design:

For the first objective – an epidemiological study (retrospective analysis of the dynamics of medico-demographic indicators of youth reproductive health in the Republic of Kazakhstan for 2014–2024, with assessment of trends and risk factors).

For the second objective – a content analysis of the regulatory and legal framework of the Republic of Kazakhstan in the field of youth reproductive health, with evaluation of its completeness and compliance with modern international approaches.

For the third objective – a descriptive and analytical study (a sociological survey of student youth, assessment of the level of knowledge and awareness regarding reproductive health, identification of key gaps and risk factors).

For the fourth objective – an applied (experimental) study aimed at developing and testing a set of organizational and preventive measures, including standard operating procedures, a referral (routing) model, and tools for assessing the level of knowledge.

Object of the study: The object of the study is the youth population of the Republic of Kazakhstan, including adolescents and student youth, representing a key demographic group in terms of reproductive health formation, health behavior patterns, and future demographic development. This population group is characterized by specific age-related, social, and behavioral features that influence reproductive health outcomes and access to preventive and healthcare services.

Subject of the study: The subject of the study encompasses the state of reproductive health among youth, including a comprehensive assessment of the dynamics of medico-demographic indicators, patterns and levels of morbidity, and their underlying determinants. It also includes the evaluation of the level of knowledge and awareness regarding reproductive health issues, as well as the analysis of behavioral risk factors influencing reproductive health outcomes. In addition, the study examines the regulatory and organizational framework of preventive activities, including the availability and accessibility of youth-friendly health services and the effectiveness of referral (routing) pathways for obtaining medical care. Particular attention is given to the identification of organizational barriers, the level of trust in the healthcare system, and socio-behavioral and systemic factors influencing the formation of reproductive behavior among youth.

Main provisions submitted for defense:

1. An unfavorable trend in the reproductive health indicators of adolescent girls in Almaty has been identified in the context of changes in the size and structure of the youth population in the Republic of Kazakhstan, characterized by an increase in inflammatory diseases of the lower and upper genital tract and a rise in the prevalence of abnormal uterine bleeding.

2. The regulatory and legal framework of the Republic of Kazakhstan in the field of youth reproductive health is characterized by insufficient regulation of key areas of prevention, including access to contraception and family planning, development of youth-friendly services, digitalization of preventive communications, and monitoring of the effectiveness of preventive programs.

3. The level of awareness of student youth regarding reproductive health is characterized by a discrepancy between self-assessed and actual knowledge, as well

as significant gaps in family planning, modern prevention, and the correct use of contraceptive methods.

4. A set of measures aimed at improving preventive programs for youth reproductive health can increase students' awareness and contribute to the formation of safe reproductive behavior.

Scientific novelty: As a result of the conducted study, a comprehensive assessment of medico-demographic indicators of youth reproductive health in the Republic of Kazakhstan for the period 2014–2024 was carried out for the first time, which made it possible to identify unfavorable trends and key risk factors; a systematic analysis of the regulatory and legal framework in the field of youth reproductive health was performed, revealing existing gaps and inconsistencies with modern international approaches; for the first time, the level of awareness of student youth regarding reproductive health issues was examined, demonstrating a discrepancy between self-assessed and actual knowledge and identifying key deficiencies in prevention and family planning; based on the obtained results, a scientifically grounded set of organizational and preventive measures was developed, including standard operating procedures for interaction between youth health centers and educational institutions, a student referral (routing) model, and tools for assessing the level of knowledge, aimed at improving the system of prevention and preservation of youth reproductive health.

Theoretical significance of the study: The developed methodology for a comprehensive assessment of youth reproductive health, including the analysis of medico-demographic indicators, the level of awareness, and behavioral risk factors, complements existing scientific approaches in public health and can be applied in undergraduate and postgraduate educational programs. The results of the analysis of the regulatory and legal framework and the identified organizational barriers expand theoretical understanding of the mechanisms for the development and implementation of preventive programs in the field of youth reproductive health and are used in the training of specialists in healthcare organization and medical management. In addition, the obtained data on the level of knowledge and characteristics of reproductive behavior among youth can be integrated into preventive programs and continuing professional development of healthcare workers, thereby providing a scientific basis for improving preventive strategies and intersectoral collaboration within the healthcare system.

Practical significance of the study: A set of organizational and preventive measures has been developed and implemented, including a standard operating procedure entitled “Algorithm for interaction between Youth Health Centers and university curators in Almaty on reproductive health prevention” (implementation acts: Municipal State Enterprise “City Center of Human Reproduction”, Almaty); a validated questionnaire for assessing the level of knowledge and awareness of student youth on reproductive health issues has been developed, tested, and implemented in educational and preventive practice (implementation acts: Department of Epidemiology, Biostatistics and Evidence-Based Medicine, Al-Farabi Kazakh National University); the educational manual “Abnormal uterine bleeding in adolescent girls” has been introduced into the educational process of

medical organizations and universities; in addition, the developed youth referral (routing) model and study materials are used in the healthcare and education systems to improve the effectiveness of preventive programs and the accessibility of medical care for youth.

Author's contribution: All stages of the study were independently carried out by the author. This included a comprehensive review and critical analysis of the scientific literature, as well as the design of the study and development of the research methodology. The author conducted a systematic content analysis of the regulatory and legal framework in the field of youth reproductive health, identifying key gaps and inconsistencies with international approaches. The author was also responsible for data collection and processing and for applying appropriate statistical methods for data analysis. The sociological survey was conducted personally by the author, including the development of research instruments, data collection, and interpretation. In addition, the author developed and scientifically substantiated the proposed organizational and preventive measures and carried out the interpretation, synthesis, and presentation of the study results.

Conclusions:

1. The main unfavorable trends in the reproductive health of adolescent girls in Almaty include an increase in inflammatory diseases of the lower genital tract (from 10.7% in 2019 to 54.8% in 2024), a rise in the prevalence of abnormal uterine bleeding (from 13.0% to 31.8%), as well as an increase in inflammatory diseases of the upper genital tract in the post-COVID period (up to 8.3–9.3% in 2021–2022), indicating a negative trend in gynecological morbidity among adolescents. These trends are of particular significance in the context of the demographic situation in the Republic of Kazakhstan, characterized by a 28.0% decrease in the population aged 15–19 years compared to the 25–29 age group, which creates a risk of a reduction in the number of women of active reproductive age and a potential decline in fertility rates.

2. The main gaps in the regulatory and legal framework of the Republic of Kazakhstan in the field of youth reproductive health include insufficient regulation of access to contraception and family planning (only 3 out of 12 analyzed documents, 25%), weak regulatory support for the digitalization of preventive communication and youth-friendly services (average score – 0.21), as well as fragmented representation of mechanisms for monitoring the effectiveness of preventive programs (0.25). At the same time, measures for the prevention of sexually transmitted infections, HIV, and HPV are more extensively represented and are considered a priority area (average score – 0.58).

3. The main problems in the level of awareness of student youth regarding reproductive health are characterized by a discrepancy between self-assessed and actual knowledge (only 41.2% of respondents demonstrated a high level of knowledge, while 22.3% had a low level), as well as significant gaps in family planning and modern prevention (the fertile window was correctly identified by 54.3% of resident students and 32.0% of non-residents; knowledge of emergency contraception was 46.8% and 24.0%, respectively; awareness of HPV vaccination was 40.4% and 20.0%; $p < 0.01$), along with the prevalence of misconceptions about

contraceptive methods (only 47.9% of residents and 36.0% of non-residents know that hormonal contraceptives do not protect against sexually transmitted infections; $p < 0.05$). The highest level of awareness was observed in the area of infection safety, where more than 95% of respondents correctly identified HIV transmission routes and the impact of harmful habits on reproductive health.

4. The obtained results made it possible to develop practical recommendations, including a standard operating procedure entitled “Algorithm for interaction between Youth Health Centers and university curators in Almaty on reproductive health prevention,” a model for routing students from universities to Youth Health Centers based on the mechanism of needs identification, as well as the educational manual “Abnormal uterine bleeding in adolescent girls.”

Publications: A total of 18 scientific publications were produced based on the dissertation, including 2 articles in journals indexed in the Scopus database, 2 articles in journals recommended by the Committee for Quality Assurance in Education and Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan, 3 articles in international journals, 11 in conference proceedings, and 1 учебное пособие; additionally, 3 certificates of registration in the State Register of intellectual property objects were obtained.

Structure and scope of the dissertation: The dissertation consists of 130 pages and includes an introduction, a review of the current state of the problem, research methodology, five chapters of original research, conclusions, practical recommendations, and a list of references. The dissertation contains 21 tables, 32 figures, and 165 references.