

## ANNOTATION

of the thesis of Ayazbekov Ardak Kerimkhanovich on the topic: "Improving the provision of obstetric and gynecological care to pregnant adolescents in the Turkestan region", for the degree of Doctor of Philosophy (PhD) in the specialty 6D110200 "Public Health"

### **Relevance of the problem**

Currently, the problem of adolescent pregnancy and childbirth remains relevant, despite a large number of studies conducted around the world. First, this is due to the complexity and versatility of the problem, which is not purely medical, but rather reflects the social and economic well-being of society, and therefore, according to Novikova G.A. and Solovyov A.G., it splits into two components - social and medical, which are closely related to each other.

The decline in the number of women of reproductive age is often aggravated by the deterioration of their health, which leads to a decrease in reproductive potential [3,4], as well as infertility problems, the beginning of which is often laid in adolescence. Thus, in the works of Kuligina M.V. with coauthorship, Illarionova E.N., Turdalieva B.S. it is shown that abortions, unplanned pregnancy and pathological childbirth in adolescents are the background for the termination of women's reproductive activity. There is little coverage in the literature of the problems associated with the influence of the peculiarities of physical development of adolescents on pregnancy and childbirth. Meanwhile, population studies conducted by many both domestic and foreign authors demonstrate a significant variation in physical parameters and timing of puberty among adolescents.

According to the coordinator of the national programs of the United Nations Population Fund (UNFPA) Gaziza Moldakulova, over the past five years, an average of about 1,200 girls under the age of majority have been getting married in Kazakhstan every year. The share of early marriages in the total number of marriages concluded in the country is about 7%. Early marriages are primarily caused by issues of upbringing and traditions of some diasporas and residents of rural areas of Turkestan and Almaty, as well as West Kazakhstan regions.

The study of the causes of the occurrence and spread of pregnancy and childbirth among adolescents has shown that modern pregnant adolescents are characterized by early onset of sexual activity, low educational level and lack of awareness about modern methods of contraception. In Kazakhstan, in 2019, the birth rate among adolescent girls ranged from 12.77 (Almaty) to 39.81 (Mangystau region) per 1000 women, with the average of 24.93 in the country, which is equivalent to the level of adolescent fertility in developing countries.

These data show that the problem of adolescent pregnancy and childbirth is currently not a closed, well-established topic, but a dynamically developing process that demonstrates dependence on many external and internal factors, in particular regional characteristics of adolescent housing and the level of medical support for pregnancy and childbirth.

**The purpose of the study:** To improve the provision of obstetric and gynecological care to adolescent girls, depending on somatometric and sexual development, to develop an organizational model of pre-conception care counselling and health promotion of pregnant adolescents in the Turkestan region.

**Objectives:**

1. To give a comprehensive assessment of the peculiarities of somatometric and puberty of adolescent girls, taking into account their place of residence in the Turkestan region.
2. To study the epidemiology of adolescent childbirth in the region for 5 years (the period from 2015 to 2019) and their features depending on the somatometric and sexual development of adolescent girls.
3. To identify the features of preventive medical examinations of adolescent girls in the region, in order to increase its effectiveness.
4. To develop a model of measures aimed at improving the provision of obstetric and gynecological care to pregnant adolescents.

**Research methods:** epidemiological, analytical, statistical, sociological, morphometric, clinical, instrumental.

**Scientific novelty**

The scientific novelty and theoretical significance of the research are determined by the following features:

- the features of somatometric and puberty of adolescent girls in the Turkestan region were studied for the first time, the main functional groups of adolescent girls' development were identified,

- the dynamics of childbirth among adolescent girls in the Turkestan region for 5 years was studied for the first time,

- for the first time, the features of preventive medical examinations of adolescent girls in the Turkestan region were studied and a number of the following facts were revealed: low availability of services and confidential assistance for reproductive health protection, insufficient quality of reproductive health services provided,

- for the first time, the reasons for the low coverage of pregnant adolescents with pre-conception care counseling, such as social status, low awareness of adolescent girls about their somatic condition, about the negative consequences of chronic extragenital diseases on the course of pregnancy and childbirth were studied,

- for the first time, the results of the analysis of obstetric and gynecological care for pregnant adolescent girls were proposed and an organizational model (algorithm) for conducting pre-conception care counseling of adolescent girls in the Turkestan region was developed and implemented, with the participation of specialists from youth health centers.

## **Theoretical and practical significance of the work**

### **Practical significance of the research**

The revealed features of somatometric and sexual development of adolescent girls in the region can serve as a basis for targeted preventive work among these contingents in order to reduce the level of extragenital diseases, reduce the number of persons with impaired disproportionate development and the formation of harmoniously developed adolescent girls entering fertile age.

The results of the research of the effectiveness of preventive medical examinations of adolescent girls in the region should be used to improve these measures in order to increase the access of adolescent girls to obstetric and gynecological care.

Data on the social and physiological characteristics of young puerparants in the region, as well as the developed algorithm of pre-conception care counseling is recommended to be used by medical specialists of obstetrician-gynecologists' offices when registering and carrying out purposeful work on improving the health of adolescents and their pre-conception care counseling.

The obtained data on the somatic and social status of adolescent puerperants are recommended to be used by specialists of the youth center to increase the medical awareness of adolescents and their medical literacy in planning and managing pregnancy in order to give birth to healthy newborns.

The issues covered in this thesis may be of interest to organizations involved in providing preventive and educational work in the field of adolescent health to improve their work from the standpoint of solving the existing problems of the adolescent population.

### **Theoretical significance of the study**

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 the further study of the scientific basis of strengthening the somatic and reproductive health of adolescent girls in the region.

The study of the problem of adolescent pregnancy from the point of view of reproductive potential, the course of pregnancy and childbirth, taking into account the regional characteristics of the somatic and somatometric development of adolescent girls in the region has been further developed in the theory of public health and healthcare.

All the data obtained on the peculiarities of sexual and physical development of adolescents in the region, the peculiarities of pregnancy and childbirth among adolescents can be used in training courses for students of medical universities and advanced training courses for obstetricians and gynecologists, general practitioners, and pediatricians.

The analysis carried out and the results of the study are intended for use by health authorities of various levels, heads of primary care and hospital medical organizations, health management, as well as the educational sphere aimed at improving intersectoral, team, interdisciplinary cooperation in providing comprehensive care focused on the needs of pregnant adolescents.

### **Provisions submitted for defence**

1. The analysis of somatometric and sexual development of adolescent girls of Turkestan region revealed a regional feature that every second adolescent girl has one of the variants of disharmonious development (disharmonious, sharply disharmonious).
2. An integrated approach to the study of pregnancy in adolescent girls allowed us to establish that the peculiarities of the course of pregnancy and childbirth are due to the high background prevalence of extragenital diseases; at the same time, the frequency of pathological childbirth in adolescents reached 71.3% and every fifth birth was premature.
3. Carrying out preventive medical examinations of adolescent girls, their quality, requires significant changes in the organizational plan, such as the inclusion of obstetricians and gynecologists in the team of a specialized stage, strengthening control over the filling of pubertograms as a method of assessing the sexual development of an adolescent.
4. The algorithm of pre-conception care counseling for pregnant adolescents and involvement in the information work of the youth center of the polyclinic was an effective tool for monitoring and registering of pregnant adolescents.

### **Approbation of the work**

The main provisions of the thesis were reported on:

1. The Thirteenth International Conference on Biology and Medical Sciences, Vienna, Austria 15th March, 2017.
2. Proceedings of the Third International Conference of European Academy of Science. C.51. 20-30 December 2018. Bonn. Germany.
3. VIII Annual International Scientific and Practical Conference "Topical issues of medicine. Satellite Forum on Public Health and Health Policy" April 10-12, 2019. "Young Doctors of Azerbaijan" Baku, Azerbaijan.
4. International scientific and practical conference "Actual problems and trends of innovations in modern science and education" 26-27.01.2017 Kh.A.Yassawi IKTU, Turkestan, Kazakhstan.
5. X Anniversary regional scientific and educational forum "Mother and Child". June 28-30, 2017 Gelendzhik, Russia.
6. III International Scientific and Educational Forum "Ana men Bala 2020" 02-03 October 2020. Almaty, Kazakhstan.
7. Regional Scientific and educational Forum "Ana men Bala" on October 03, 2019. Turkestan, Kazakhstan.
7. Meeting of the Society of Obstetricians and Gynecologists of Turkestan region dated 06/16/2021 Protocol No. 3. Shymkent.

### **Personal contribution of the author of the thesis**

The work was carried out within the framework of the grant research program 217 "Development of science" (subprogram 102 "Grant financing of scientific

research"), the priority "Science of Life", on the topic: "Rehabilitation and prevention of pathology of the reproductive system of girls and adolescent girls born and living in ecologically unfavorable regions of South Kazakhstan region" (number state registration No. 0115RK00694).

The author of the thesis independently carried out the collection of material, conducted a clinical examination of pregnant adolescents and the delivering childbirth in them, participated in conducting a survey of pregnant adolescents, medical workers, participated in a joint preventive examination of adolescent girls by specialized specialists with morphometric studies.

Independently carried out the analysis and generalization of the obtained data, their statistical processing, and also collected literature data on the topic of the dissertation.

### **Implementation into practice**

The results of the thesis were put into practice at the SME "Regional Perinatal Center № 3", SME on REM "Turkestan City Polyclinic", "Rauan Medical Center" LLP, at the department of Obstetrics and Gynecology, the Medical Faculty of Kh.A.Yassawi International Kazakh-Turkish. There are 6 acts of implementation. By order of the head of the Health Department 2 gynecological beds for minors under 18 years old were deployed at the SME on REM "RPC № 3".

### **Publications**

17 scientific papers were published on the topic of the thesis; 8 of them are in publications recommended by the Committee for Quality Assurance in the Sphere of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan, 5 articles are at international scientific and practical conferences, 4 articles are in journals indexed by the Web of Science and Scopus databases, 1 textbook "Otbasyn zhosparlau", 1 methodological manual for doctors "Extragenitaldy aurulary bar bosanu zhasyndagy ayelderin zhuktilik aldy dayindygy".

5 copyright certificates were received, issued by the RSE "National Institute of Intellectual Property" (including 3 scientific works, 2 literary works):

1. "Algorithm of pre-conception care counseling of adolescent girls (from 15 to 19 years) of fertile age with extragenital pathology planning pregnancy." State registration of rights to object No. 11452.
2. "Peculiarities of the methodology of epidemiological, clinical, laboratory, environmental research in the framework of a comprehensive assessment of the health status of girls, adolescent girls living in an ecologically unfavorable region of Kazakhstan." State registration of rights to object No. 8632.
3. "Fundamentals of juvenile obstetrics. Issues of contraception in adolescence". The working program of advanced training of doctors. State registration of rights to object No. 9318.
4. "Topical issues and problems of pediatric gynecology". The working program of advanced training of doctors. State registration of rights to object №9059.

5. "Method of applying compression sutures to the uterus." State registration of rights to object No. 17208.

### **Conclusions**

1. It was established that the population of adolescent girls in the Turkestan region was heterogeneous:

- 51.4% refers to persons with a harmoniously developed somatotype;
- 45.8% - to persons with disharmonious development
- 2.8% - to persons with impaired disharmonious development

while the physical development of adolescents in rural areas is slower than in the city due to body weight.

2. An analysis of the epidemiology of adolescent childbirth over a 5-year period (from 2015 to 2019) in the Turkestan region showed that the proportion of births among adolescents ranged from 2.1%-3.1% with a tendency to increase, while:

- the average age of adolescent puerperants was  $16.9 \pm 1,7$  years,
- BMI in 43.6% of them exceeded the norm in the direction of overweight,
- was characterized by a high level of extragenital diseases of 1.4 nosology per puerperant versus 0.7 in the control group.

- the proportion of pathological childbirth among underage puerperants was 71.3%,

- significantly higher frequency of premature birth 19.3%,
- the presence of a low weight of newborns ( $3111.7 \pm 249g.$ ) compared with sexually mature puerperants.

3. The study of the peculiarities of somatometric and sexual development of adolescent girls in the region, the organization of preventive medical examinations of adolescent girls in the region revealed the need for

- inclusion of obstetricians and gynecologists in the team of the specialized stage conducting preventive medical examination, to ensure specialized assessment and training of the target contingent,

- as well as the need to strengthen control over the filling of pubertograms as a method of assessing the sexual development of an adolescent.

4. An analysis of the work of the obstetric and gynecological service of the region showed the presence of unused structural and professional resources to improve the quality of obstetric and gynecological care for pregnant adolescents during preventive medical examinations, as well as the need to create an algorithm for pre-conception care counseling for adolescents of fertile age and involvement in the information work of the youth center of the polyclinic allowed to increase the total number of registered pregnant adolescents by 2.4 times, including up to 12 weeks - 1.9 times; those who have been examined for the presence of EGD - 2.6 times; those who have undergone pre-conception care counseling - 3.2 times ( $p < 0.001$ ).

### **Volume and structure of the thesis**

The thesis is presented on 124 pages and consists of an introduction, 5

chapters of own research, conclusions, outcomes and practical recommendations and 10 appendices. The work is illustrated with 24 tables and 15 figures. The bibliographic index includes 234 sources (136 in the native language, 98 in English).