

Access of Infertile Men to Urological Care

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Abstract: Aim: Dynamic study and analysis of the provision of urologists and urological services to the population in Uzbekistan during 2017-2021. **Materials and methods:** Statistical and analytical methods were used in the research. The official statistical data of the Ministry of Health of the Republic of Uzbekistan on the urology service for 2017-2021 were studied and analyzed. **Results:** In 2017-2021, the supply of urologist-doctors in our republic decreased from 0.2 to 0.19 per 10,000 population. This indicator slightly increased by 2021 compared to 2017 in Jizzakh (+0.08), Kashkadarya (+0.02), Surkhandarya (+0.04), Syrdarya (+0.03) and Tashkent (+0.02) regions. The decrease was observed in other regions. The availability of urologists is high in Bukhara and Khorezm regions and is 0.27 and 0.29 per 10,000 population, respectively, and the lowest in Kashkadarya and Tashkent regions is 0.12. In 2021, there were 693 urology posts in our republic, of which 654 (94.4%) were filled. **Conclusion.** During the studied years, the supply of urologists-doctors increased in some administrative regions of the Republic, while in others it decreased. The provision of urologists-doctors also differs sharply among regions.

Keywords: Infertility, male infertility, supply of urologists, urological care, dopplerography of the scrotum, urologist, andrologist

Introduction. The level of availability of urologists differs between nations, according to a review of the literature. The number of urologists in the Russian Federation is dynamically increasing, and in 2019 there were 0.47 urologists for every 10,000 people. This metric was 0.4 in the United States in 2020. The number of urologists per 10,000 people varies, even in industrialized European nations; in 2016 [1,2,3], it was 0.15 in Great Britain, 0.21 in France, and 0.50 in Spain. It is evident from the data above that the availability of urologists differs from nation to nation based on the health system and policies in place.

The primary incidence of urological diseases is 3149.2 cases per 100,000 population in Moscow (2015) [4]. Research conducted in our republic shows that 21% of the population has various urological pathologies [5], and the primary incidence of diseases of the urogenital system in 2016 was equal to 3227.27 per 100,000 population.

Among the total diseases, urinary tract infection (11%), benign tumors of the prostate gland (6%), urolithiasis (1.4%), and male infertility are common [5, 6].

Prevention, diagnosis and treatment of the above-mentioned diseases depend not only on the organization of the health care system, but also on the availability of urologists. All this became the basis for analyzing the availability of urologists in our republic.

Promoting the positive aspects of having children at an optimal age for reproduction among the population will help to create a healthy generation. In addition, the use of reproductive technologies that help the quality of having children, improving living conditions has a great impact on the quality of life of patients. [7, 8, 9, 10]. In order to optimize the medical care provided to infertile men, studying the treatment process of men and the level of supply of urologists who treat them will greatly help to solve these problems.

Purpose. Study of the state of use of urological services of the population, Dynamic study and analysis of the provision of urologists and urological services to the population in Uzbekistan during 2017-2021.

Materials and methods.

A survey was conducted among 300 infertility men who consulted a urologist/andrologist at the Republican Specialized Obstetrics and Gynecology Scientific and Practical Medical Center in order to study the level of use of urological services by the respondents and their opinions on this matter. As a control group, 300 healthy men who accompanied their women for examination were taken. In order to study the level of supply of urologists, the official statistics of the Ministry of Health of the Republic of Uzbekistan on the field of urology for 2017-2021 were studied.

Statistical methods.

Case-control method. To analyze the obtained data, extensive indicators and their errors were calculated. Odds ratio was used to compare rates in the case and control groups. The difference between indicators was assessed by Student's test ($p < 0.05$). Correlation between indicators was also determined.

Indicators such as the number of urological cases, their employment, the number of urological doctors, changes in the dynamics of the supply of urologists were analyzed.

Result.

Today, when talking about the quality of medical care, much attention is paid to the subjective evaluations of customers. Studying the opinions of clients about medical services, the level of satisfaction with services, and the attitudes of medical personnel allows to improve the quality of services for this category of patients.

59.3±2.8% of the respondents to the question "Have you been treated with the intention of having a child" stated that they first applied to district hospitals, 22.3% to the center of the region, and the remaining 8.3±1.6% directly to state medical institutions at the republic level.

The remaining 10±1.7% of respondents initially applied to private medical institutions. The reasons why patients do not refer to the primary medical institution were studied. As a result, 87.7±1.9% of men said that there is a lack of urologist/andrologist doctors and necessary medical equipment. The remaining 12.3±1.9% of respondents reported that most of the doctors working in the primary link of regional medical institutions are women and they did not apply because they were ashamed of them. Based on the obtained data, it can be concluded that the medical care for the protection of men's reproductive health is not systematically organized.

Analysis of respondents' answers to the question "How many years have you been receiving treatment" (Figure 1).

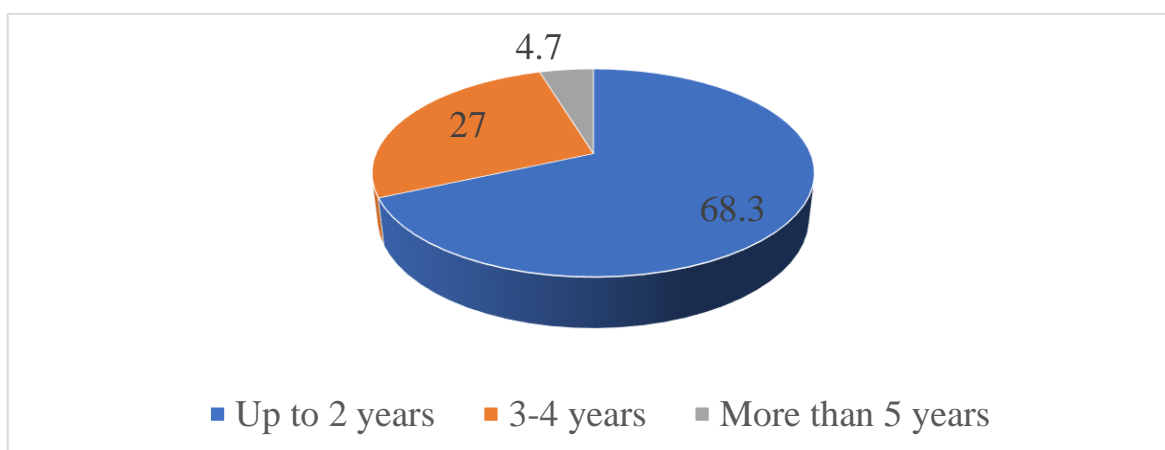


Figure 1. Time elapsed since initiation of treatment for men intending to have children.

We studied the number of referrals to medical services by the respondents with the intention of having a child. 52.7±2.9% of the respondents answered the question "How many times a year do you consult a doctor" 1-2 times a year, 44.7±2.9% 3-5 times. the remaining 2.6±0.9% of respondents consulted a doctor 6 or more times. When analyzing those who turn to medical help 3-5 times a year, most of them (87.3±2.9%) are men who have been married for up to 2 years. An inverse correlation ($r=-0.57$) was found when examining the relationship between the duration of childlessness and the number of requests for medical help. It can be concluded that in the first years of family life, men have a high desire to have children, and a certain part of them will have children over time. It can be said that over the years, the number of requests for medical help will also decrease due to the fact that men are better aware of the possibilities of having children.

When we analyzed the answers given by the respondents to the question "How much do you spend for each treatment", we got the following results: 1 mln. 65.3±2.7% of those who spend up to soums, 1-3 mln. - 27±2.5%, 3 million and more - 7.7±1.5%. 70.3±2.6% of the men who went to the doctor reported that they were treated together with their women. When asked how much your women spend for each treatment, 52.7±2.9% of the respondents said that they spend up to 1 million soums, 42.3±2.8% 1-3 million soums, and 5±1.3% more than 3 million soums. To the question "Do you face financial difficulties for treatment?", the respondents answered as follows: 10.7±1.8% said no, 59.7±2.8% said they would face financial difficulties, the remaining 29.6±2.6% answered that it is not always. The high percentage of men facing financial difficulties is due to the following reasons. Payment of medical care in primary diagnosis, not covered by social protection in terms of receiving medical care in the case of infertility.

In accordance with Appendix 5 of Order No. 273 of the Ministry of Health of the Republic of Uzbekistan (November 30, 2021), the standard of diagnosis and treatment of male infertility requires examinations listed in Table 1 in the pre-hospital period. As can be seen from the data presented in table 1, the analysis of spermogram, which should be carried out in all patients in the diagnosis of male infertility and is important, is not available in the primary medical and sanitary care institutions, where the population first turns to. As a result, patients are not referred to the primary joint. those who apply will continue their diagnosis and treatment in private or specialized centers. This prevents high-quality and efficient dispensary and control work due to the lack of contact with the men being treated.

Table 1. Costs of pre-hospital diagnosis and treatment of male infertility (suum)

	Medical examination procedures 1. Laboratory 2. Functional 3. Consultation	State medical institutions						Private medical institutions		
		Percentage of patients requiring investigation	Number of check-up	Family polyclinic, family doctor's office	Multidisciplinary central polyclinic	District/City Central Hospital	Republican specialized scientific and practical medical centers		Urologic Complex	Doctor-D
							Republican specialized center of obstetrics and gynecology scientific and practical medicine	Republican specialized center of urology scientific and practical medicine		
1	Urologist/andrologist	100	6	Free	Free	Free	50000	96000	100 000	130000
2	Dopplerography of the scrotum	60	2	-	-	-	100000	79000	100 000	220000
3	Examination of sex and other hormones	50	1	-	-	-	112000	106000	155 000	220000

	in the blood									
4	Biochemical analysis of blood	60	1	Free	Free	Free	44500	45000	170 000	363000
5	A general urine analysis	100	1	Free	Free	Free	25500	57000	35000	48000
6	Spermogram	100	3	-	-	-	62500	90000	130000	462000
	Total						394500	473000	690000	1443000

Men with fertility problems can use diagnostic and treatment services in specialized scientific and practical medical centers as well as in private medical institutions. When analyzing the prices of medical services, the prices of medical services in state medical institutions (specialized centers) were 1.5-2 times cheaper than in private ones (Table 1).

In this case, the medical activity of patients is of great importance. "Who would you turn to first when you had a complaint about your genitals?" The answers given by the respondents to the question are presented in Figure 2.

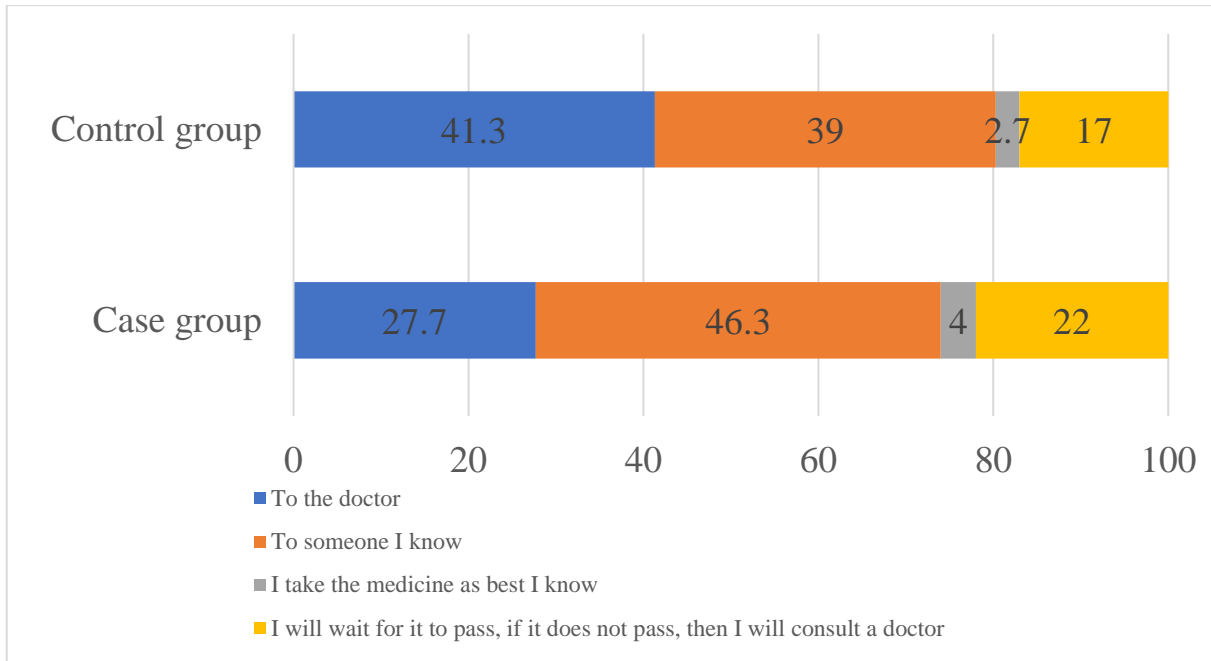


Figure 2. Respondents' first appeals when they have complaints about their sexual organs (%).

"Have you had problems getting help from a urologist (andrologist)?" and the answers given by the respondents in the event group: 24.3±2.5% - no, 75.7±2.5% - yes. This indicator is 46.7±2.9% and 53.3±2.3% in the control group, respectively (p<0,01). Almost 2 times less respondents answered no in the control group than in the event group. but this could be explained not by their lack of problems in obtaining urology/andrology services, but also by the fact that they were less likely to seek urology/andrology services than the incident group.

"After the advice of urologist (andrologist) you?" the answers of the respondents to the question were as follows: in the main group, 86.7±2.0% of those who answered that they would get answers to the questions that interested me, 13.3±2.0% of those who said that they could not get answers to the questions that interested me; and in the control group, this indicator is 84.0±2.1% and 16.0±2.1%, respectively. The fact that there is almost no difference between these indicators indicates that most of the doctors who provide services in the field of urology have professional knowledge and conduct sufficient explanatory work with patients during admission.

At this point, it should be noted that "Have you consulted unlicensed healers specialists for the treatment of urological (andrological) diseases?" 34.7±2.7% of the patients in the main group answered yes to the question, while in the control group this indicator is 6.3±1.4%. The case group had 5.5 times more unlicensed healers visits than the control group (p<0.01). This is evidenced by the fact

that people are more likely to turn to unlicensed healers for urological diseases, including infertility. We believe that it is necessary to study the quality and efficiency of the work of unlicensed healers serving this category of patients.

When we analyzed the supply of urologists in our republic in 2017-2021, it was found that they decreased.

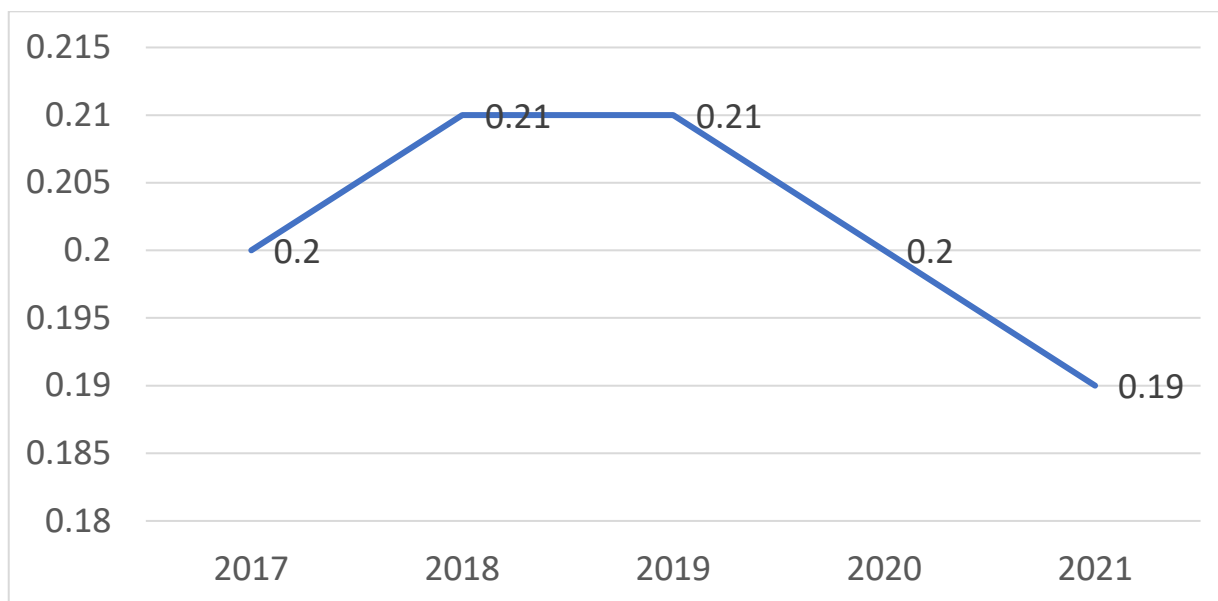


Figure 3. The dynamics of the supply of urologist-doctors in the Republic of Uzbekistan (per 10,000 inhabitants).

Availability of urologists in Jizzakh (+0.08), Kashkadarya (+0.02), Surkhandarya (+0.04), Syrdarya (+0.03) and Tashkent (+0.02) regions by 2021 compared to 2017 increased, while a decrease was observed in all other administrative regions of our republic. It was found that the supply of urologist-doctors in most administrative regions will change irregularly between 2017-2021. It can be concluded that the issue of strategic planning on the supply of urologists is neglected. When training urologists and determining their number, diseases among the population and the needs of the population are not taken into account. Although the indicators of the primary incidence of diseases of the genitourinary system are similar to those of the above-mentioned countries, the fact that the supply of urologists is almost 2 times less requires timely attention and optimization in the Republic of Uzbekistan, where major reforms are being carried out in the field of health care.

The level of provision of urologists in the republic differs between administrative regions. The number of urologists working in medical institutions of the Ministry of Health is 0.27 and 0.29 per 10,000 population in Bukhara and Khorezm regions, respectively, which is almost 1.5 times higher than the average level of prosperity of the Republic. In Kashkadarya and Tashkent regions, this indicator is 0.12, and the supply of urologists in the republic remains the lowest.

We got the following results when we studied the existing state units for the profile of urology.

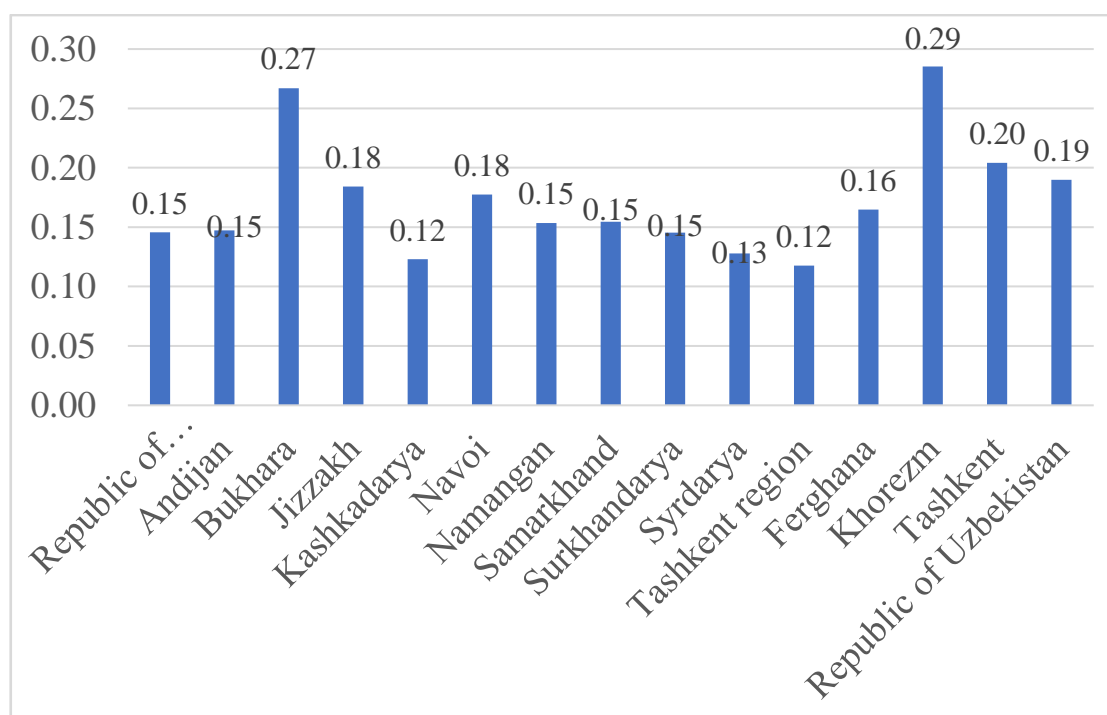
In 2021, there were 693 urology posts in our republic, of which 654 (94.4%) were filled. A total of 617 urologists were involved. 79 urologists worked in republican institutions, 3 worked in the medical and sanitary department of the Navoi Mining and Metallurgical Combine. Almost 60% of the allocated states are accounted for by outpatient polyclinic institutions.

Table 2. Status of existing urologists and their employment in the Republic of Uzbekistan

Position Name	Total			Including polyclinic, dispensary, consultations		
	in state	employment %	natural persons	in state	employment %	natural persons
Andrologist-sexopathologist	10.00	82.5	12	9.00	80.6	eleven
Oncourologist	16.25	96.9	16	8.25	93.9	7
Urologist	586.25	94.3	533	374.25	92.3	307
Pediatric urologist	53.50	94.9	35	14.00	89.3	10
Endourologist	9.25	100.0	6	0.00	0.0	
Phthisiourologist	15.75	88.9	eleven	5.00	70.0	2
Total	693	94.4	617	415.5	92.0	344

59.6±1.9% of urologists working in the health care system are experts with qualification category. Almost half (49.6±2.5%) of doctors with a total qualification category have a higher category. 14.0±1.4% of urologists with less than 5 years of experience, 10.8±1.2% of retired urologists. The percentage of women working in the field of urology is 2.3±0.6%. In addition, 2 andrologists and sexopathologists in Jizzakh, 2 in Kashkadarya and 1 in Navoi are working in institutions of the health care system. Despite the fact that the supply of urologists in the Republic of Karakalpakstan and Syrdarya regions is lower than the national average, there are no doctors with less than 5 years of experience. It can be concluded that the formation of staff reserves in these regions is not properly planned.

The indicator of provision of urologists in the regions is presented in figure 1.

**Figure 4. Availability of urologists-doctors in the republic and regions (per 10,000 inhabitants).**

Summary.

1. In the first years of family life, men's desire to have children is high. Almost all men who did not have children in the first year of family life seek medical help, and $59.7 \pm 2.8\%$ reported that they face financial difficulties during treatment. The prices of medical services in public medical institutions (specialized centers) providing urological/andrological care are 1.5-2 times cheaper than in private ones.
2. There is a high probability of turning to unlicensed healers for urological diseases such as infertility. We believe it is important to study the effectiveness and caliber of work performed by unlicensed healers for this group of patients.
3. In 2017-2021, the supply of urologists-doctors in our republic decreased from 0.2 to 0.19 per 10,000 population. During these years, the supply of urologists-doctors increased in some administrative regions of the Republic, while in others it decreased. The provision of urologist-doctors also differs sharply among regions. Irregular changes in the supply of urologist-doctors between years and administrative regions indicate that the issue of staffing this service is not strategically planned, and requires timely attention and optimization to this issue in the Republic of Uzbekistan, where major reforms are being carried out in the field of health care.

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