

Analysis of accessibility of medical care at a specialized center in the capital for people with thyroid diseases

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ABSTRACT

Aim: To analyze the availability of medical care at a capital's specialized center for patients with thyroid diseases according to their demographic and socio-economic characteristics.

Materials and Methods: There was conducted a survey of a representative sample of 600 people with thyroid diseases – patients of the capital's specialized endocrinology center.

Results: The most accessible services of the capital's specialized endocrinology center were for urban residents (76.0%), including the capital's ones (46.3%), of working age (84.8%) with university education (64.8%), and, accordingly, less accessible – for rural residents (24.0%). Up to 40% of the patients of the capital's specialized endocrinology center were representatives of vulnerable groups: retirees (16.6%), unemployed (12.5%) and people with disabilities (12.2%), more so among women and rural residents. This emphasizes the importance of any form of universal coverage and the prospect of further access to health care improvement with the inclusion of such specialized centers in the State Medical Guarantee Program 2025. The use of specialized care could be influenced by wartime and the need to confirm readiness for military service, as indicated by the higher proportion of young people among male patients (26.7% aged 30-39 years vs. 19.8% among women) and their lower level of education (59.3% with university education vs. 66.5%, respectively).

Conclusions: The obtained data should be taken into account in developing organizational measures to improve access to specialized care for people with thyroid diseases at the state, regional and community levels.

KEY WORDS: Thyroid diseases, accessibility, medical care, specialized care, health care management

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INTRODUCTION

Thyroid diseases are the most common endocrine disorders after diabetes, affecting about 2% of the world's population [1].

Hypo- and hyperthyroidism, thyroiditis, nodular and non-nodular goiter, cancer and other thyroid diseases are chronic non-communicable diseases, the morbidity, disability and mortality from which tend to increase worldwide [2-4]. The need for long-term treatment, often surgical, and rehabilitation requires high progressive expenditures of medical resources [5], and, accordingly, puts a significant burden on health care systems [6-11]. In particular, according to Sahli ZT et al, the financial burden on hospitals associated with thyroid treatment continues to grow by 4.3% annually [12].

In Ukraine, the number of thyroid diseases has increased fivefold in recent years [13, 14]. Scientists explain this as a natural iodine deficiency in many regions

of the country [14-16], as well as the consequences of the Chernobyl accident in 1986 [17, 18].

It is well known that reducing the burden of disease requires integrated efforts of all stakeholders and comprehensive management measures aimed at prevention, early detection, adequate treatment and rehabilitation. Their results directly depend on the availability of not only primary but also specialized medical care for the population [19]. Since 2018, the State Medical Guarantee Program (MGP) has been operating in Ukraine, procuring medical and rehabilitation services from communal and private providers [20], as well as the government's reimbursement program "Available Medicines", which includes thyroid drugs [21]. However, highly specialized and high-tech endocrinological care in Ukraine is provided by another state center of the Ministry of Health of Ukraine and two state institutes of the National Academy of Medical

Sciences of Ukraine, which, in addition to diagnostic and treatment, also have supervisory functions to coordinate this type of specialized care in the country, and carry out scientific research [22]. These centers were being financed through a subvention from the state budget until 2025, and thus did not fully cover all their needs. In connection with the transition to new funding mechanisms – procurement of services within the framework of the MGP [23], it is important to understand which segments of the population received care in these highly specialized centers, how accessible it is to all patients who need it. This is especially true in the current socio-economic and political circumstances, when the availability of all types of care in Ukraine has significantly decreased as a result of the full-scale invasion of the Russian Federation [24].

AIM

To analyze the availability of medical care at a specialized center in the capital for patients with thyroid diseases according to their demographic and socioeconomic characteristics.

MATERIALS AND METHODS

During 2023–2024, a cross-sectional survey was conducted on the basis of the outpatient department of the V.P. Komisarenko Institute of Endocrinology and Metabolism of the National Academy of Medical Sciences of Ukraine, randomly selected from among the persons who agreed to participate in the study by signing the relevant informed consent.

To obtain a representative sample of the survey, it was determined that the study group would consist of no less than 381 respondents. The size of the research group was calculated taking into account: the estimated size of the fraction: 50%, significance level (α 5%), population size 42714 (based on the annual report of this healthcare facility, 2023), and permissible error 5%.

More than a sufficient number of people responded to the survey – 600. The inclusion criteria were: non-toxic multinodular goiter, non-toxic nodular goiter, toxic adenoma, Graves' disease, chronic autoimmune thyroiditis, thyroid malignancies, primary hyperparathyroidism. Exclusion criteria were: patients without pathological changes in the thyroid gland according to ultrasound and with normal levels of thyroid and parathyroid hormones.

A specially designed author's program was used to conduct the survey. The questionnaire was initially validated on 15 people to evaluate the clarity and comprehensibility of the questions, the required sur-

vey duration, and to make necessary corrections. The questionnaire contained issues related to demographic, socioeconomic, socio-psychological, behavioral, internal determinants, patient's medical pathway, etc.

The design and program of the study were reviewed and approved by the Bioethics Committee of the V.P. Komisarenko Institute of Endocrinology and Metabolism of the National Academy of Medical Sciences of Ukraine (Protocol No. 52-KE of 22.10.2024).

The data were processed on the basis of a database created using Microsoft Excel. The rate of signs per 100 respondents and its standard error ($\pm m$) were calculated. The reliability of their differences in observation groups (men-women, urban-rural, age groups) was assessed by the chi-square (χ^2) test.

RESULTS

It was found that three quarters of the examined patients of the specialized endocrinology center with thyroid diseases were women (75.7%), the rest were men (24.3%).

The same ratio was observed by place of residence in favor of urban residents: 76.0% vs. 24.0% of rural residents. Moreover, according to the annual report of this facility for 2023, almost half (46.3%) of the patients were residents of the capital.

Most patients of the highly specialized endocrinology center were of working age – 84.8% (Fig. 1).

In particular, the largest shares were in the age groups of 40–49 (28.5%), 50–59 (22.3%) and 30–39 (21.6%).

There was a significant difference in the age distribution of men and women ($p < 0.001$) and urban and rural residents ($p < 0.05$). Thus, among men, the proportion of people aged 30–39 was significantly higher (26.7% vs. 19.8% among women). In the age distribution of rural residents, the share of people aged 50–59 was the highest (30.6% vs. 19.7% among urban residents) and the lowest – under 30 (6.3% vs. 14.5%, respectively).

The interviewed patients had a fairly high level of education (Fig. 2).

About 65% (64.8%) had a university graduation, another 23.1% had a college degree, and 12.1% had a high school education.

There were also significant differences in the level of education by gender ($p < 0.01$) and residence ($p < 0.01$). Among women, the proportion of people with university degrees was significantly higher (66.5% vs. 59.3% of men) and the proportion of people with high school educations was lower (9.7% vs. 20.0%, respectively). Among urban residents, there were significantly more people with university degrees (70.5% vs. 47.2% of rural residents), and among rural residents – with high

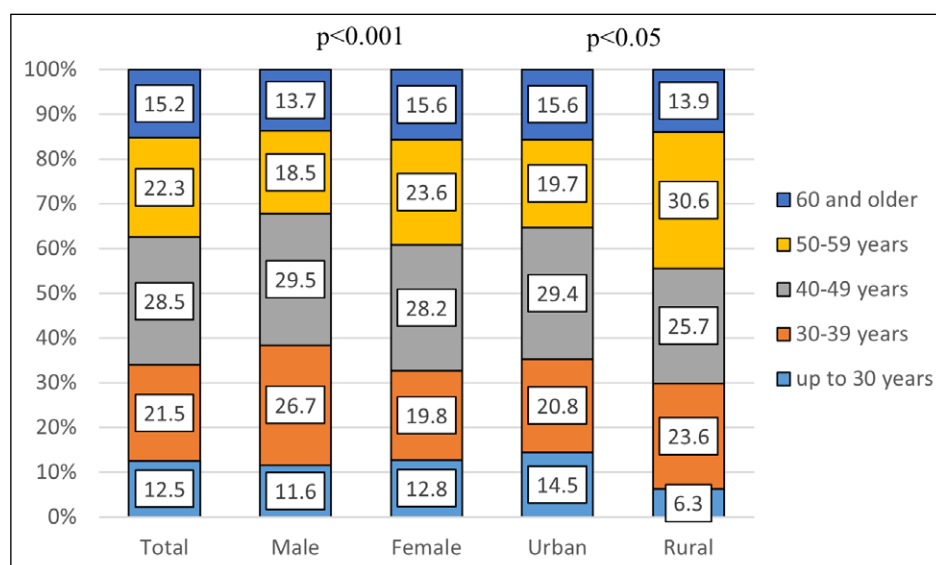


Fig. 1. Distribution of respondents by age

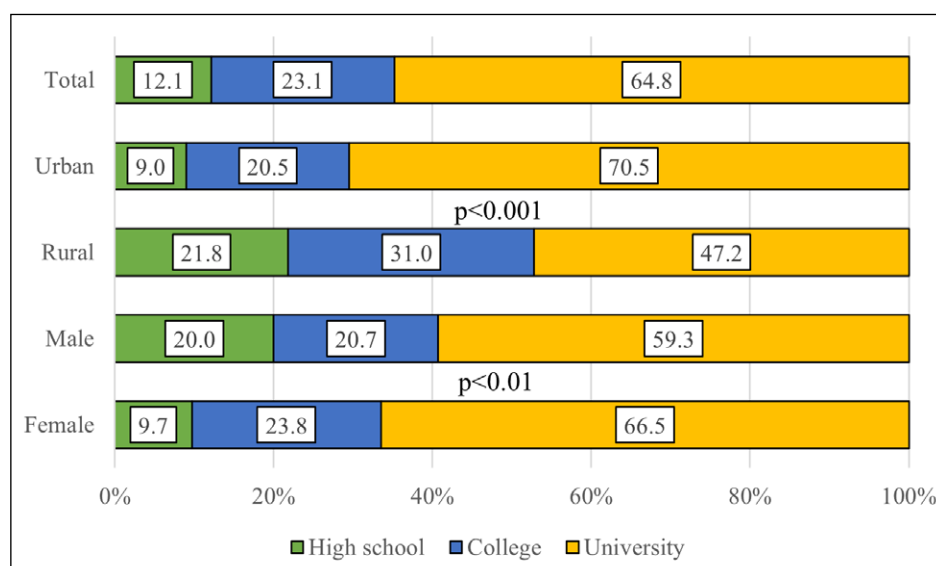


Fig. 2. Distribution of respondents by education

school education (21.8% vs. 9.0% of urban residents) and college education (31.0% vs. 20.5%, respectively).

Employment and social categories of respondents are presented in Table 1.

More than half of the respondents had civilian jobs (56.7 ± 2.1 per 100 respondents), and another 4.2 ± 0.9 per 100 respondents were military servicemen. At the same time, the rest, which is almost 40% of patients, belonged to vulnerable groups: retirees ($16.6 \pm 1.6\%$), unemployed ($12.5 \pm 1.4\%$), people with disabilities ($12.2 \pm 1.4\%$) and internally displaced persons ($4.2 \pm 0.9\%$).

The employment rate differed by gender ($p < 0.001$) and place of residence ($p < 0.001$). Among men, there were more employed and military servicemen, and among women, more retirees, unemployed and people with disabilities. The proportion of employed people in urban and rural areas was almost the same, but urban residents had higher shares of military servicemen and internally displaced persons, and rural residents had

higher shares of retirees, unemployed, and people with disabilities.

The majority of the surveyed patients (67.5%) had an income per family member higher than the government-approved minimum wage. However, in 8.1% of cases, it was below the subsistence minimum, and in 24.5% of cases, it was above the subsistence level but below the minimum wage (Table 2).

At the same time, when asked to estimate their income level, 8.3% of respondents recognized it as low, which is almost identical to the percentage of those who objectively have income per family member below the subsistence level. In the rest of the answers, respondents subjectively evaluated their incomes better than the objective data indicated. Thus, only 13.1% considered their income to be below average. The share of those who considered themselves middle class was the highest (67.8%). 9.5% of respondents estimated their incomes to be higher than average, and only 1.2% – as high.

Table 1. Employment and social categories of respondents

| Social category | Male | | Female | | Urban | | Rural | | Total | |
|------------------------------|--------|-----|--------|-----|--------|-----|-------|-----|-------|-----|
| | % | ±m | % | ±m | % | ±m | % | ±m | % | ±m |
| employed people | 61.9 | 4.3 | 55.2 | 2.4 | 57.5 | 2.5 | 54.4 | 4.3 | 56.7 | 2.1 |
| military servicemen | 14.3 | 3.1 | 1.2 | 0.5 | 5.2 | 1.1 | 1.5 | 1.0 | 4.2 | 0.9 |
| retired people | 13.5 | 3.0 | 17.5 | 1.9 | 15.2 | 1.8 | 20.6 | 3.5 | 16.6 | 1.6 |
| unemployed | 9.5 | 2.6 | 13.4 | 1.7 | 10.1 | 1.5 | 19.9 | 3.4 | 12.5 | 1.4 |
| people with disabilities | 5.6 | 2.0 | 14.1 | 1.7 | 11.3 | 1.6 | 14.7 | 3.0 | 12.2 | 1.4 |
| internally displaced persons | 4.0 | 1.7 | 4.3 | 1.0 | 5.4 | 1.1 | 0.7 | 0.7 | 4.2 | 0.9 |
| p | <0.001 | | | | <0.001 | | | | | |

Table 2. Distribution of respondents by income (%)

| Characteristics of respondents' income | Male | Female | Urban | Rural | Total |
|---|-------|--------|--------|-------|-------|
| Income per family member | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| below the subsistence minimum | 8.5 | 7.9 | 6.8 | 11.7 | 8.1 |
| below the minimum wage, but above the subsistence level | 22.6 | 25.1 | 19.7 | 37.8 | 24.5 |
| above the minimum earnings | 68.9 | 67.0 | 73.5 | 50.5 | 67.5 |
| p | >0.05 | | <0.001 | | |
| Respondents' assessment of their own income | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| low | 6.4 | 8.9 | 5.4 | 17.8 | 8.3 |
| lower than average | 13.6 | 13.0 | 13.1 | 13.3 | 13.1 |
| average | 70.7 | 66.9 | 70.2 | 60.0 | 67.8 |
| above average | 7.9 | 10.0 | 9.7 | 8.9 | 9.5 |
| high | 1.4 | 1.1 | 1.6 | 0.0 | 1.2 |
| p | >0.05 | | <0.001 | | |

As can be seen from Table 2, there was no difference in income between men and women ($p>0.05$). However, there were significant differences between urban and rural residents. The income of urban residents was significantly higher both objectively and subjectively (according to self-assessment) ($p<0.001$).

DISCUSSION

The study confirms that women are three times more likely to suffer from thyroid pathology than men [13]. It was also confirmed that the territorial accessibility of medical care is important [25, 26]. The hypothesis is supported by the three times lower proportion of rural residents among patients of the capital's specialized center. In addition, half of the center's patients were from the capital. The study reveals that the vast majority of patients at the capital's specialized endocrinology center were of working age and had a high level of education. On the one hand, this confirms the burden that chronic thyroid

disease poses to society [2-4]. 3 On the other hand, the 5.6 times smaller share of elderly people (15.2% vs. 84.8%), who are known to be vulnerable, indicates that this type of care is likely to be less accessible to them. At the same time, there were slightly fewer employed people among the patients of this specialized center than people of working age (61.0%), and the share of all vulnerable groups (pensioners, unemployed, people with disabilities, internally displaced persons) reached almost 40%. The highest proportions of retirees, unemployed, and people with disabilities were observed among women and rural residents, who also belong to vulnerable groups at risk of inequality in access to health care. At the same time, the higher proportions of men aged 30-39, employed and military servicemen against the background of a lower level of education than women are most likely related to the need to undergo an enhanced medical check-up for military readiness in wartime [24]. It was found that 32.5% of respondents were low-income, which is slightly less than the total share of the

unemployed. The highest proportion of low-income people was recorded among rural residents, which coincides with their lower employment rates than urban residents and higher shares of retirees, unemployed and people with disabilities.

In general, the fairly significant percentage of vulnerable groups among the patients of the capital's specialized endocrinology center emphasizes the importance of any form of universal coverage to ensure access to health care [20, 23, 25, 26]. Therefore, the inclusion of such facilities in the State Medical Guarantee Program from 2025, in our opinion, will contribute to even better access to specialized care, in particular for vulnerable groups of the population [23].

LIMITATIONS

The study was conducted during the full-scale invasion of the Russian Federation, which could have had a negative impact on the availability of medical care in general, on the structure of patients and their motivation for treatment.

Prospects for further research will be to develop a set of organizational measures to improve the availability of endocrinological care for people with thyroid disease at the state, regional and community levels.

CONCLUSIONS

It was found that the most accessible services of the capital's specialized endocrinology center were for urban residents (76.0%), including the capital's ones (46.3%), of working age (84.8%) with university education (64.8%), and, accordingly, less accessible – for rural residents (24.0%).


It was established that up to 40% of the patients of the capital's specialized endocrinology center were representatives of vulnerable groups: retirees (16.6%), unemployed (12.5%) and people with disabilities (12.2%), more so among women and rural residents. This emphasizes the importance of any form of universal coverage and the prospect of further access to health care improvement with the inclusion of such specialized centers in the State Medical Guarantee Program 2025.

It was shown that the use of specialized care could be influenced by wartime and the need to confirm readiness for military service, as indicated by the higher proportion of young people among male patients (26.7% aged 30–39 years vs. 19.8% among women) and their lower level of education (59.3% with university education vs. 66.5%, respectively).

The obtained data should be taken into account in developing organizational measures to improve access to specialized care for people with thyroid diseases at the state, regional and community levels.

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CONFLICT OF INTEREST




The Authors declare no conflict of interest




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