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Demographic characteristics and socioeconomic risk factors of thyroid cancer and chronic thyroid diseases

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Демографічні характеристики і соціально-економічні чинники ризику ракових та інших хронічних захворювань щитоподібної залози

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Introduction

The most common diseases of the endocrine system after diabetes are thyroid diseases [1]. The morbidity, disability and mortality from thyroid cancer (TC) and other chronic thyroid diseases (CTD), such as hypothyroidism, hyperthyroidism, thyroiditis, nodular and non-nodular goiter, etc. are characterized by an increasing trend worldwide [1, 2]. As a result, the burden on health care systems is also growing, as their treatment (often surgical in the case of thyroid cancer) and rehabilitation are long-term, resource-intensive and expensive [3–5].

In Ukraine, the number of thyroid diseases has increased fivefold in recent years [7]. Scientists explain this by both natural iodine deficiency in many regions of the country [8–9] and the consequences of the Chornobyl accident in 1986 [10, 11].

It is known that reducing the burden of disease requires integrated efforts of all stakeholders and comprehensive management measures aimed primarily at prevention and early detection [12]. This is especially relevant for countries with limited resources [13], and thus for Ukraine, which has been suffering from the military aggression of the Russian Federation for the last decade [14].

It is almost an axiom that successful primary prevention measures for chronic non-communicable diseases should be focused on combating risk factors [15].

Despite the considerable interest of researchers in the etiology of TC and CTD, most of them are rather fragmented and concentrate mainly on the study of behavioral risk factors. At the same time, there is still a lack of research on the impact of social factors in particular.

The aim of the study is to analyze demographic characteristics and socioeconomic risk factors for thyroid cancer and chronic thyroid diseases.

Object, materials and methods

During 2024, a case-control study was conducted at the Consultative and Outpatient Department of the V.P. Komisarenko Institute of Endocrinology and Metabolism of the National Academy of Medical Sciences of Ukraine.

The specially designed questionnaire was first validated on 15 people to assess the clarity and comprehensibility of the questions, the required length of the survey, and to make adjustments.

The study included those who agreed to participate by signing an informed consent form.

The main group consisted of 600 people with thyroid diseases, 95 of them with thyroid cancer (TC), the remaining 505 with chronic thyroid disease (CTD), such as non-toxic multinodular goiter, non-toxic nodular goiter, toxic adenoma, diffuse toxic goiter, chronic autoimmune thyroiditis, primary hyperparathyroidism.

The control group consisted of 172 people from among the relatives of the patients of the main group, who were recognized as practically healthy based on the results of a comprehensive check-up at the Institute's outpatient department. The control group did not differ from the respondents with TCa and CTD in terms of age, gender, and place of residence ($p>0.05$).

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 presented work was performed as a fragment of the comprehensive research work of the Institute "Improvement of diagnostics, treatment, pre- and postoperative tactics of combined thyroid pathology in residents of Ukraine in wartime" (state registration number 0123U100762, terms of execution 2023–2025).

Data processing was carried out on the database created using Microsoft Excel by calculating rates of characteristics per 100 respondents and its standard error (±m). The reliability of the differences in data in the comparison groups was assessed by the chi-square test (χ^2).

Research results

It was found that the majority of respondents in all comparison groups were of working age (Table 1): 85.3% of respondents with TC, 84.8% – with CTD and 82.0% in the control group (p>0.05).

Three quarters of the respondents were female: 78.9%, 75.0% and 75.6% respectively (p>0.05).

The majority of respondents lived in cities: 80.0%, 75.2%, and 74.4% (p>0.05).

It was found that the comparison groups differed significantly by employment (Table 2).

Thus, at the time of the survey, only about half of the respondents with TC (52.3±5.3%) and about 60% (57.6±2.3%) with CTD were employed, while in the control group those were 73.8±3.4% (p<0.001).

Among non-employees, retirees accounted for the largest proportion: 19.3±4.2% among people with TC, 15.8±1.7% among respondents with CTD, and 14.6±2.8% in the control group. The unemployed accounted for about 10% in the comparison groups: 12.5±3.5%; 12.7±1.6% and 10.4±2.5%, respectively. Logically, the highest number of people with disabilities was in the group of patients with RTC – 28.4±4.8%, compared to 9.0±1.3% among those with TC (p<0.001) and the complete absence within the control group of practically healthy people (p<0.001).

In terms of education, the respondents in the main subgroups also significantly differed from those in the control group (p<0.001). In particular, more than 60% of respondents with TC(63.0%) and CTD (65.1%, p>0.05) versus 35.3% in the control group had university education. Conversely, there were 2-2.5 times fewer people with high school education among the respondents of the main subgroups than in the control group: 8.7% and 12.8%; against 28.8%, respectively.

The study of the financial well-being level showed that the majority of respondents from all groups considered themselves to be middle class: 69.6% in the TC group, 67.4% in the CTD group, and 74.6% in the control group. However, the share of people who considered their income to be low was highest among people with TC (22.4%) and CTD (16.3%, p>0.05) compared to the control group (8.9%, although this difference was significant only in PTC, p<0.01).

The analysis of objective income criteria showed that more than 60% of respondents had an average monthly income per family member higher than the government-approved minimum wage: 61.4% of respondents with TC, 68.3% of respondents with CTD, and 62.7% in the control group. At the same time, the main subgroups had the highest proportions of those with this indicator below the national subsistence level: 11.4% and 7.9%, respectively, vs. 2.6% (p<0.05).

By calculating the odds ratio (Fig. 1), it was proved that thyroid cancer is associated with a high probability of such socioeconomic factors as: unemployment (OR=2.57; 95%CI: 1.49-4.43; p<0.05), university education (3.05; 1.80-5.16) and low income (4.81; 1.40-16.55). There is no sufficient evidence that TC is accompanied

Table 1

Demographic characteristics of the observed groups

The studied parameters	TC			CTD			Control		
	n	%	±m	n	%	±m	n	%	±m
Age	95	100.0		575	100.0		172	100.0	
under 40	30	31.6	4.8	174	34.5	2.1	65	37.8	3.7
40–49	31	32.6	4.8	140	27.7	2.0	50	29.1	3.5
50–59	20	21.1	4.2	114	22.6	1.9	26	15.1	2.7
60+	14	14.7	3.6	77	15.2	1.6	31	18.0	2.9
p_c	0.36837			0.33051					
p_{TC-CTD}	0.21122								
Sex	95	100.0		505	100,0		172	100,0	
male	20	21.1	4.2	126	25.0	1.9	42	24.4	3.3
female	75	78.9	4.2	379	75.0	1.9	130	75.6	3.3
p_c	0.53288			0.88907					
p_{TC-CTD}	0.41663								
Place of residence	95	100.0		505	100,0		172	100,0	
urban area	76	80.0	4.1	380	75.2	1.9	128	74.4	3.3
rural area	19	20.0	4.1	125	24.8	1.9	44	25.6	3.3
p_c	0.30379			0.82825					
p_{TC-CTD}	0.31972								

Note: n – the number of answers to the question; p_c – the reliability of the difference in comparison with the control group, p_{TC}-p_{CTD} – the reliability of the difference between TC and CTD

Table 2

Socio-economic characteristics of the observed groups

The studied parameters	TC			CTD			Control		
	n	%	±m	n	%	±m	n	%	±m
Social category	88	100.0		455	100.0		164	100.0	
employee	46	52.3	5.3	262	57.6	2.3	121	73.8	3.4
unemployed	11	12.5	3.5	58	12.7	1.6	17	10.4	2.4
retiree	17	19.3	4.2	72	15.8	1.7	24	14.6	2.8
person with a disability	25	28.4	4.8	41	9.0	1.3	0	0.0	0.0
internally displaced person	1	1.1	1.1	22	4.8	1.0	4	2.4	1.2
serviceman	4	4.5	2.2	19	4,2	0.9	6	3.7	1.5
p_c	0.00000			0.00039					
p_{TC-CTD}	0.00021								
Education	92	100.0		493	100.0		170	100.0	
high school	8	8.7	2.9	63	12.8	1.5	49	28.8	3.5
college degree	26	28.3	4.7	109	22.1	1.9	60	35.3	3.7
university graduation	58	63.0	5.0	321	65.1	2.1	61	35.9	3.7
p_c	0.00007			0.00000					
p_{TC-CTD}	0.31583								
Self-assessment of financial well-being	92	100.0		487	100,0		169	100,0	
low	15	16.3	3.9	109	22.4	1.9	15	8.9	2.2
moderate	64	69.6	4.8	328	67.4	2.1	126	74.6	3.4
high	13	14.1	3.6	50	10.3	1.4	28	16.6	2.9
p_c	0.46163			0.00154					
p_{TC-CTD}	0.57346								
Monthly income per family member	70	100.0		353	100,0		153	100,0	
below the subsistence level	8	11.4	3.8	28	7.9	1.4	4	2.6	1.3
below the minimum wage	19	27.1	5.3	84	23.8	2.3	53	34.6	3.8
above the minimum wage	43	61.4	5.8	241	68.3	2.5	96	62.7	3.9
p_c	0.02041			0.00709					
p_{TC-CTD}	0.46875								

Note: n – the number of answers to the question; p_c – the reliability of the difference in comparison with the control group, p_{TC}-p_{CTD} – the reliability of the difference between TC and CTD

by dissatisfaction with own financial well-being (2.00; 0.93–4.30; p>0.05).

It has been shown that in the presence of TMD, there are also high chances of unemployment (2.07; 1.40–3.08), university education (3.33; 2.32-4.80), low income (3.21; 1.11–9.31) and subjective dissatisfaction with own financial well-being (2.96; 1.67-5.24).

Discussion of research results

The study focused on the relationship between thyroid disease and demographic and socioeconomic factors.

In particular, our study has confirmed that women (75–79%) are much more likely to suffer from thyroid pathology than men [6, 9, 16].

At the same time, the predominance of urban residents (75-80%) in the structure of respondents (patients of the highly specialized endocrinology center in the capital, where the study was conducted), in our opinion, demonstrates the well-known lower accessibility of such care for rural residents [17].

The fact that most of the respondents were of working age (82–85%) emphasizes the burden of TC and other CTDs on society and health care systems [2–4]. Moreover, as we found out, only half (52%) of the respondents with thyroid cancer and less than 60% (57.6%) of the respondents with CTD were employed. That is, the rest were on partial or full state social security: pension, unemployment, and disability, especially in the case of thyroid cancer. Using the methodology of calculating the odds ratio, we have proved that TC or CTD increases the probability of unemployment, and thus the burden on society, by 1.5–4.4 and 1.4–3.1 times, respectively.

The importance of the problem is also emphasized by the fact that 63-65% of people with TC and CTD had a university degree, and thus their unemployment means

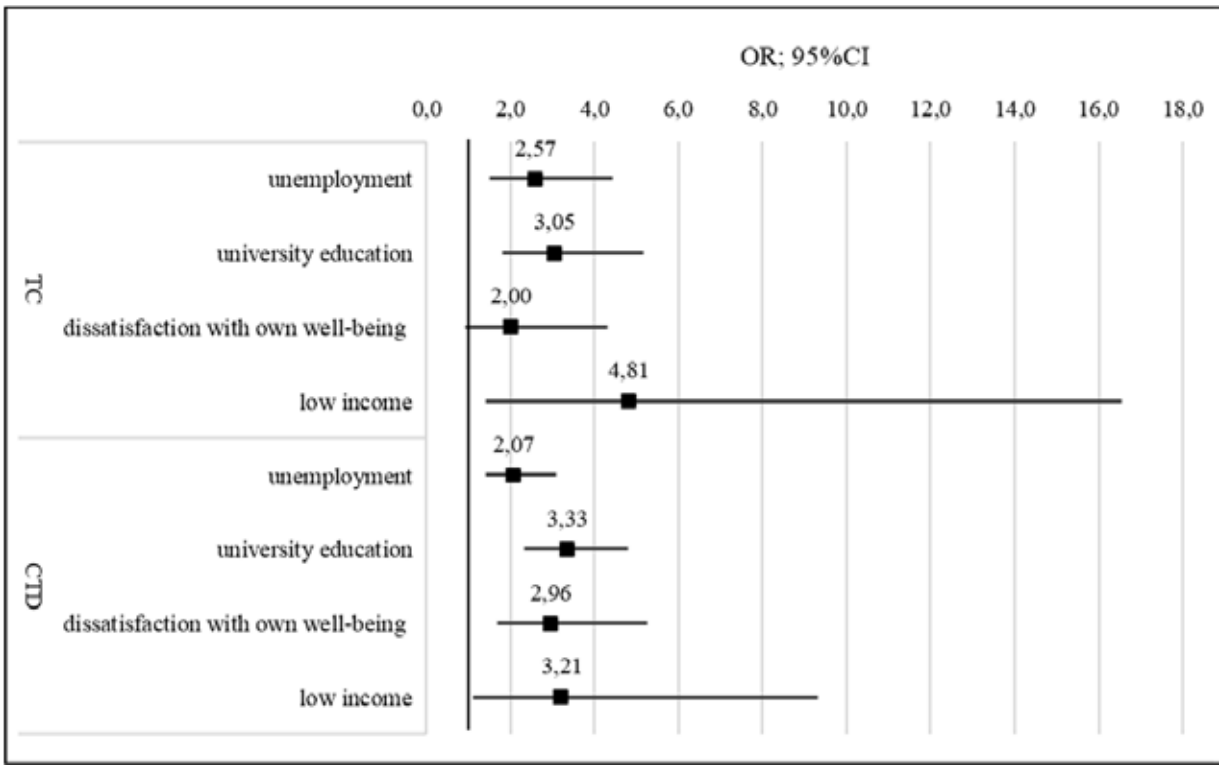

Fig. 1. Socioeconomic factors associated with thyroid cancer and chronic thyroid disease

the loss of highly qualified workers for society. It has been established that TC or CTD is accompanied by 1.8-5.2 and 3.3-4.8 times higher chances of having a university education, respectively. However, the obtained data, in our opinion, require clarification and further study, as they could also reflect the already evident predominance of urban residents in the structure of respondents, who are usually characterized by a higher level of education.

The results of our study also clearly confirm the importance of financial well-being in the formation of population health, in particular with regard to non-communicable diseases [18]. Thus, the study found that TC or CTD is associated with 1.4-16.6 and 3.2-9.3 times higher chances of low (less than the subsistence level per family member) income, respectively. Similar data were obtained from other researchers [19, 20].

At the same time, the relationship between the disease and the subjective feeling of dissatisfaction with the income level was reliably confirmed only in case of CTD (OR=3.0; 95%CI=1.7-5.2), and not in case of TC (2.0; 0.9-4.3). This may be due to the usually longer duration of the chronic thyroid disease and, accordingly, the exhaustion of patients' financial income. Obviously, this issue also requires further more detailed study and clarification.

Limitation. The research was a retrospective case-control study, and therefore its methodology does not allow us to make conclusions about cause and effect, but only about the relationship. After all, it is difficult to say what is primary: whether patients got sick because they are poor or their financial well-being has deteriorated as a result of a chronic disease.

The study was conducted on the basis of a highly specialized center in the capital, which obviously affected the patient contingent: mostly urban residents with a high level of education and average income.

Analyzing the received data, it should also be taken into account that our research was conducted during the full-scale invasion of the russian federation, which could have an additional negative impact on the availability of medical care [14].

Prospects for further research

Prospects for further research will be to develop a set of organizational measures for the prevention of thyroid diseases at the state, regional, individual and community levels, taking into account the results of the study.

Conclusions

It has been established that cancer and other chronic thyroid diseases pose a significant socio-economic burden for the state and the health care system. They affect mainly women (75–79%) and people of working age (82–85%) and are accompanied in thyroid cancer by higher odds of unemployment (OR=2.57; 95%CI: 1.49-4.43) and low – below the subsistence level per family member – income (4.81; 1.40–16.55), and in chronic thyroid disease – unemployment (2.07; 1.40–3.08), low income objectively (3.21; 1.11–9.31) and subjectively (2.96; 1.67–5.24).

It was found that that urban residents (75–80%) with a high level of education (63–65% have

a university degree; OR=3.05; 95%CI: 1.80–5.16 for cancer and 3.33; 2.32–4.80 for chronic thyroid diseases) mostly use highly specialized endocrinological care.

The data obtained should be taken into account when developing organizational measures for the prevention of thyroid diseases at the state, regional, individual and community levels.

Bibliography

1. Wu J, Lin X, Huang X, Shen Y, Shan PF. Global, regional and national burden of endocrine, metabolic, blood and immune disorders 1990–2019: a systematic analysis of the Global Burden of Disease study 2019. Front Endocrinol (Lausanne). 2023 May 8. DOI: 10.3389/fendo.2023.1101627. https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2023.1101627/full
2. Crafa A, Calogero AE, Cannarella R et al. The Burden of Hormonal Disorders: A Worldwide Overview with a Particular Look in Italy. Front. Endocrinol. Sec. Systems Endocrinology. 2021 Jun 16. DOI: 10.3389/fendo.2021.694325. https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2021.694325/full
3. Miru SJ, Libriansyah, Mufarrihah, Nita Y. Cost of Illness Study in Thyroid Patients: A Systematic Review. J Farm dan Ilmu Kefarm Indones. 2023 Apr;10(1):92–102. DOI: 10.20473/jfiki.v10i12023.92-102.
4. Hepp Z, Lage MJ, Espaillat R, Gossain VV. The direct and indirect economic burden of hypothyroidism in the United States: a retrospective claims database study. Journal of Medical Economics. 2021;24(1):440–6. DOI: 10.1080/13696998.2021.190020.
5. Sahli ZT, Zhou S, Sharma AK et al. Rising Cost of Thyroid Surgery in Adult Patients. J. Surg. Res. 2021 Apr;260:28-37.
6. Центр громадського здоров'я міністерства охорони здоров'я України. https://phc.org.ua/news/u-zhinok-problemi-iz-gormonami-schitovidnoi-zalozi-vinikayut-vdesyatero-chastishe-nizh-u [Цитовано19 квітня 2025].
7. Чукур ОО. Динаміка захворюваності і поширеності патології щитоподібної залози серед дорослого населення України. Вісник соціальної гігієни та організації охорони здоров'я України. 2018;4(78):19–25. DOI: 10.11603/1681-2786.2018.4.10020. https://ojs.tdmu.edu.ua/index.php/visnyk-gigieny/article/view/10020
8. Підченко НС. Тиреотоксикоз. Клінічні рекомендації з діагностики та лікування. Частина перша. Український радіологічний та онкологічний журнал. 2020;28(2):154–163. DOI: 10.46879/ukroj.2.2020.154–163.
9. Сиволап ВД, Гура ЄЮ. Основи діагностики захворювань щитоподібної залози. Запоріжжя: ЗДМУ. 2018. 91 с.
10. Басика ДА, Сушко ВО. Основні радіологічні та медичні наслідки аварії на ЧАЕС. Українська національна академія медичних наук. 26.04.2021. https://amnu.gov.ua/osnovni-radiologichni-ta-medychni-naslidky-avariyi-na-chaes/
11.Тронько МД, Гуда ББ, Пушкарьов ВМ, Ковзун ОІ, Терехова ГМ, Пушкарьов ВВ. Рак щитоподібної залози: етіопатогенез, діагностика та лікування. Біла Церква: Час Змін Інформ. 2023. 776 с.
12. WHO Discussion Paper on the development of an implementation roadmap 2023-2030 for the WHO Global Action Plan for the Prevention and Control of NCDs 2023-2030 [Internet]. 2021 [cited 2025 May 29]. Available from: https://www.who.int/publications/m/item/implementation-roadmap-2023-2030-for-the-who-global-action-plan-for-the-prevention-and-control-of-ncds-2023-2030/
13. Thapa R, Zengin A, Thrift AG. Continuum of care approach for managing non-communicable diseases in low- and middle-income countries. J Glob Health [Internet]. 2020 Jun [cited 2025 May 29]. DOI: 10.7189/jogh.10.010337. Available from: https://jogh.org/documents/issue202001/jogh-10-010337.pdf
14. World Health Organization. European Region. Health needs assessment of the adult population in Ukraine. Survey report April 2024. World Health Organization. 2024. 52 p. https://iris.who.int/bitstream/handle/10665/378776/WHO-EURO-2024-6904-46670-75558-eng.pdf?sequence=1 [Accessed 05 March 2025].
15. World Health Organization. Global action plan for the prevention and control of noncommunicable diseases 2013-2020 [Internet]. 2013 [cited 2025 May 29] Available from: https://iris.who.int/handle/10665/94384
16. Mammen JSR, Cappola AR. Autoimmune Thyroid Disease in Women. JAMA. 2021 Jun;325(23):2392–3. DOI: 10.1001/jama.2020.22196.
17. World Health Organization. Health Resources and Services Availability Monitoring System (HeRAMS): external evaluation report, July 2019. World Health Organization. 2021. https://iris.who.int/bitstream/handle/10665/339850/9789240019447-eng.pdf?sequence=1 [Accessed 05 March 2025].
18. United Nations. Transforming our world: the 2030 agenda for sustainable development [Internet]. A/RES/70/1. 2015 [cited 2025 May 21]. Available from: https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf
19. Diez JJ, Iglesias P. Prevalence of thyroid dysfunction and its relationship to income level and employment status: a nationwide population-based study in Spane. Hormones (Athens). 2023 Jun;22(2);243–252. DOI: 10.1007/s42000-023-00435-9. Epub 2023 Feb 20.
20. Palacios SS, Valero ML, Brugos-Larumbe A, Diez JJ, Guillen-Grima F, Galofre JC. Prevalence of thyroid dysfunction in a large Southern European population. Analysis of modulatory factors. The APNA study. Clin Endocrinol (Oxf). 2018;89(3):367–375. DOI: 10.1111/cen.13764.

References

1. Wu J, Lin X, Huang X, Shen Y, Shan PF. Global, regional and national burden of endocrine, metabolic, blood and immune disorders 1990-2019: a systematic analysis of the Global Burden of Disease study 2019. Front Endocrinol (Lausanne). 2023 May 8. DOI: 10.3389/fendo.2023.1101627. https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2023.1101627/full
2. Crafa A, Calogero AE, Cannarella R et al. The Burden of Hormonal Disorders: A Worldwide Overview with a Particular Look in Italy. Front. Endocrinol. Sec. Systems Endocrinology. 2021 Jun 16. DOI: 10.3389/fendo.2021.694325. https://www.frontiersin.org/journals/endocrinology/articles/10.3389/fendo.2021.694325/full

3. Miru SJ, Libriansyah, Mufarrihah, Nita Y. Cost of Illness Study in Thyroid Patients: A Systematic Review. J Farm dan Ilmu Kefarm Indones. 2023 Apr;10(1):92–102. DOI: 10.20473/jfiki.v10i12023.92-102.

4. Hepp Z, Lage MJ, Espaillat R, Gossain VV. The direct and indirect economic burden of hypothyroidism in the United States: a retrospective claims database study. Journal of Medical Economics. 2021;24(1):440–6. DOI: 10.1080/13696998.2021.190020.

5. Sahli ZT, Zhou S, Sharma AK et al. Rising Cost of Thyroid Surgery in Adult Patients. J. Surg. Res. 2021 Apr;260:28–37.

6. Tsentr hromadskoho zdorovia Ministerstva ohorony zdorovia Ukrainy [Public Health Centre of Ministry of Health of Ukraine]. https://phc.org.ua/news/u-zhinok-problemi-iz-gormonami-schitovidnoi-zalozi-vinikayut-vdesyatero-chastishe-nizh-u [Accessed 19 April 2025] (in Ukrainian).

7. Chukur OO. Dynamika zachvoruvanosti i poshyrenosti patolohii shchytopodibnoi zalozy sered dorosloho naselennia Ukrainy [Dynamics of incidence and prevalence of thyroid pathology among the adult population of Ukraine]. Visnyk sotsialnoi hihiieny ta orhanizatsii ohorony zdorovia Ukrainy [Bulletin of Social Hygiene and Health Care Organization of Ukraine]. 2018;4(78):19–25. DOI: 10.11603/1681-2786.2018.4.10020. https://ojs.tdmu.edu.ua/index.php/visnyk-gigieny/article/view/10020 (in Ukrainian).

8. Pidchenko NS. Tyreotoxykoz. Klinichni rekomendacii z diahnostyky ta likuvannia. Chastyna persha. [Thyrotoxicosis. Clinical guidelines for diagnosis and treatment. Part I]. Ukrainskyi radiolohichnyi ta onkolohichnyi zhurnal [Ukrainian Journal of Radiology and Oncology]. 2020;28(2):154–163. DOI: 10.46879/ukroj.2.2020.154–163 (in Ukrainian).

9. Syvolap VD, Hura EYu. Osnovy diahnostyky zahvoruvan shchytopodibnoi zalozy [Basics of diagnostics of thyroid diseases]. Zaporizhzhia: ZDMU. 2018. 91p. (in Ukrainian).

10. Basyka DA Sushko VO. Osnovni radiolohichni ta medychni naslidky avarii na CHAES [Main radiological and medical consequences of the Chornobyl accident]. Ukrainian National Academy of Medical Sciences. 26.04.2021. https://amnu.gov.ua/osnovni-radiologichni-ta-medychni-naslidky-avariyi-na-chaes/ [Accessed 16 February 2025] (in Ukrainian).

11.Tronko MD, Huda BB, Pushkarov VM, Kovzun OI, Terechova HM, Pushkarov VV. Rak shchytopodibnoi zalozy: etiopatohenez, diahnostyka ta likuvannia [Thyroid cancer: etiopathogenesis, diagnosis and treatment]. Bila Tserkva: Chas Zmin Inform [Time of Changes Inform]. 2023. 776 p. (in Ukrainian).

12. WHO Discussion Paper on the development of an implementation roadmap 2023-2030 for the WHO Global Action Plan for the Prevention and Control of NCDs 2023-2030 [Internet]. 2021 [cited 2025 May 29]. Available from: https://www.who.int/publications/m/item/implementation-roadmap-2023-2030-for-the-who-global-action-plan-for-the-prevention-and-control-of-ncds-2023-2030

13. Thapa R, Zengin A, Thrift AG. Continuum of care approach for managing non-communicable diseases in low- and middle-income countries. J Glob Health [Internet]. 2020 Jun [cited 2025 May 29]. DOI: 10.7189/jogh.10.010337. Available from: https://jogh.org/documents/issue202001/jogh-10-010337.pdf

14. World Health Organization. European Region. Health needs assessment of the adult population in Ukraine. Survey report April 2024. World Health Organization. 2024. 52 p. https://iris.who.int/bitstream/handle/10665/378776/WHO-EURO-2024-6904-46670-75558-eng.pdf?sequence=1. [Accessed 05 March 2025].

15. World Health Organization. Global action plan for the prevention and control of noncommunicable diseases 2013-2020 [Internet]. 2013 [cited 2025 May 29] Available from: https://iris.who.int/handle/10665/94384

16. Mammen JSR, Cappola AR. Autoimmune Thyroid Disease in Women. JAMA. 2021 Jun;325(23):2392–3. DOI: 10.1001/jama.2020.22196.

17. World Health Organization. Health Resources and Services Availability Monitoring System (HeRAMS): external evaluation report, July 2019. World Health Organization. 2021. https://iris.who.int/bitstream/handle/10665/339850/9789240019447-eng.pdf?sequence=1 [Accessed 05 March 2025].

18. United Nations. Transforming our world: the 2030 agenda for sustainable development [Internet]. A/RES/70/1. 2015 [cited 2025 May 21]. Available from: https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

19.Diez JJ, Iglesias P. Prevalence of thyroid dysfunction and its relationship to income level and employment status: a nationwide population-based study in Spane. Hormones (Athens). 2023 Jun;22(2);243–252. DOI: 10.1007/s42000-023-00435-9. Epub 2023 Feb 20.

20. Palacios SS, Valero ML, Brugos-Larumbe A, Diez JJ, Guillen-Grima F, Galofre JC. Prevalence of thyroid dysfunction in a large Southern European population. Analysis of modulatory factors. The APNA study. Clin Endocrinol (Oxf). 2018;89(3):367–375. DOI: 10.1111/cen.13764.

The most common diseases of the endocrine system after diabetes are thyroid diseases.

Purpose: to analyze demographic characteristics and socioeconomic risk factors for thyroid cancer and chronic thyroid diseases.

Materials and methods. During 2024, a case-control study was conducted at the capital`s specialized endocrinology center. The main group consisted of 600 people with thyroid diseases, 95 of them with thyroid cancer, and 505 with chronic thyroid diseases. The control group consisted of 172 people who were recognized as practically healthy according to results of a comprehensive check-up at the center`s outpatient department.

Results. It was found that cancer and other chronic thyroid diseases affect mainly women (75–79%) and people of working age (82–85%). They are accompanied in thyroid cancer by higher odds of unemployment (OR=2.57; 95%CI: 1.49–4.43) and low – below the subsistence level per family member – income (4.81; 1.40–16.55), and in chronic thyroid disease – unemployment (2.07; 1.40–3.08), low income objectively (3.21; 1.11–9.31) and subjectively (2.96; 1.67–5.24). It has been established that urban residents (75–80%) with a high level of education (63–65% have a university degree; OR=3.05; 95%CI: 1.80–5.16 for cancer and 3.33; 2.32–4.80 for chronic thyroid diseases) mostly use highly specialized endocrinological care.

Conclusions. Cancer and other chronic thyroid diseases pose a significant socio-economic burden for the state and the health care system. The data obtained should be taken into account when developing organizational measures for the prevention of thyroid diseases at the state, regional, individual and community levels.

Key words: thyroid cancer, chronic thyroid diseases, demographic and socioeconomic characteristics, risk factors, prevention.

Найбільш поширеними ендокринними захворюваннями після цукрового діабету є хвороби щитоподібної залози.

Мета: проаналізувати демографічні характеристики та соціально-економічні чинники ризику раку та інших хронічних захворювань щитоподібної залози.

Матеріали і методи. Упродовж 2024 р. на базі спеціалізованого столичного ендокринологічного закладу провели аналітичне типу «випадок – контроль» дослідження. За оригінальною авторською програмою опитали 95 осіб із раком (РЩЗ) та 505 пацієнтів із хронічними захворюваннями щитоподібної залози (ХЗЩЗ), такими як: нетоксичний багатовузловий зоб, нетоксичний вузловий зоб, токсична аденома, дифузний токсичний зоб, хронічний аутоімунний тиреоїдит, первинний гіперпаратиреоз. Контрольну групу становили 172 практично здорові особи.

Результати. Установлено, що більшість респондентів усіх груп порівняння були в працездатному віці: 85,3% опитаних із РЩЗ, 84,8% – із ХЗЩЗ та 82,0% у контрольній групі ($p>0,05$); жіночої статі: 78,9%, 75,0% та 75,6% відповідно ($p>0,05$) та мешканцями міст: 80,0%, 75,2% та 74,4% ($p>0,05$).

З'ясовано, що на момент опитування лише приблизно половина респондентів із РЩЗ (52,3±5,3%) і близько 60% (57,6±2,3%) із ХЗЩЗ працювали, тоді як у контрольній групі таких було 73,8±3,4% ($p<0,001$). Із тих, хто не зайнятий на роботі, найбільші частки припадали на пенсіонерів: 19,3±4,2% – серед осіб із РЩЗ, 15,8±1,7% – в опитаних з іншими ХЗЩЗ і 14,6±2,8% у контрольній групі. Безробітні становили близько 10% у групах порівняння: 12,5±3,5%; 12,7±1,6% та 10,4±2,5% відповідно. А от осіб з інвалідністю цілком логічно найбільше було в групі РЩЗ – 28,4±4,8% порівняно з 9,0±1,3% серед опитаних із ХЗЩЗ ($p<0,001$) та повною відсутністю в контрольній групі практично здорових осіб ($p<0,001$).

Понад 60% серед респондентів із РЩЗ (63,0%) та ХЗЩЗ (65,1%, $p>0,05$) проти 35,3% у контрольній групі мали вищу освіту ($p<0,001$). І навпаки, осіб із загальною шкільною освітою серед респондентів основних підгруп було у 2–2,5 рази менше, ніж у контрольній: 8,7% та 12,8% проти 28,8% відповідно.

Вивчення рівня матеріального добробуту показало, що більшість опитаних з усіх груп відносили себе до середнього класу: 69,6% у групі РЩЗ, 67,4% у групі ХЗЩЗ та 74,6% у групі контролю. Проте частка осіб, які вважали свої доходи низькими, найвищою була серед осіб із ХЗЩЗ (22,4%) та РЩЗ (16,3%, $p>0,05$) порівняно з контрольною групою (8,9%, хоча достовірною ця різниця була тільки з ХЗЩЗ, $p<0,01$).

Аналіз об'єктивних критеріїв доходів показав, що у понад 60% опитаних середній дохід на одного члена сім'ї на місяць є вищим від затвердженої урядом мінімальної заробітної плати: 61,4% респондентів із РЩЗ, 68,3% серед опитаних із ХЗЩЗ та 62,7% у контрольній групі. Водночас в основній групі найвищими були частки тих, у кого цей показник був на нижчому рівні, ніж прожитковий мінімум у державі: відповідно 11,4% та 7,9% проти 2,6% ($p<0,05$).

За допомогою розрахунку показника відношення шансів доведено, що наявність РЩЗ асоціюється з високою ймовірністю таких соціально-економічних чинників, як: незайнятість (OR=2,57; 95%CI:1,49–4,43), вища освіта (3,05; 1,80–5,16) та низький дохід (4,81; 1,40–16,55). Не отримано достатніх доказів, що РЩЗ супроводжується незадоволеністю власним рівнем матеріального добробуту (2,00; 0,93-4,30; $p>0,05$).

Показано, що за наявності ХЗЩЗ також існують високі шанси незайнятості (2,07; 1,40–3,08), вищої освіти (3,33; 2,32–4,80), низького доходу (3,21;1,11–9,31) та суб'єктивної незадоволеності власним матеріальним добробутом (2,96; 1,67–5,24).

Висновки. Установлено, що рак та інші хронічні захворювання щитоподібної залози становлять значний соціально-економічний тягар для держави та системи охорони здоров'я, оскільки уражають переважно жінок, осіб працездатного віку та супроводжуються при РЩЗ вищими шансами незайнятості і низьких – нижче прожиткового мінімуму на одного члена родини, доходів, а при ХЗЩЗ – незайнятості, низьких доходів об'єктивно та суб'єктивно.

З'ясовано, що високоспеціалізованою ендокринологічною допомогою у більшості користуються міські мешканці з високим рівнем освіти.

Ключові слова: рак щитоподібної залози, хронічні захворювання щитоподібної залози, демографічні та соціально-економічні характеристики, чинники ризику, профілактика.

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