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The relationship between staffing of the obstetrics and gynecology service and indicators of detection of cervical dysplasia in Ukraine

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Cervical dysplasia is one of the leading precancerous pathologies of the female reproductive system and an important marker of the effectiveness of cervical cancer prevention. Timely detection of cervical intraepithelial neoplasia depends not only on biological and behavioral factors, but also on organizational aspects of medical care, in particular, the staffing of obstetrician-gynecologists.

Aim – to assess the relationship between the number of obstetrician-gynecologists and cervical dysplasia detection rates in Ukraine in 2020–2024.

Materials and methods. The research was conducted using official depersonalized statistical data. The material was summarized in tables on the incidence of cervical dysplasia and the number of obstetrician-gynecologists in Ukraine. The analysis covered the period 2020–2024, with 2020 (II–IV quarters) and 2025 (I quarter) considered as incomplete reporting periods. Statistical data processing was carried out using methods of descriptive statistics with the calculation of absolute and relative indicators and the load indicator - the number of cases of dysplasia per doctor.

Results. During the period from 2020 to 2024, the absolute number of registered cases of cervical dysplasia in Ukraine increased from 20,852 in 2020 II–IV quarters to 67,620 in 2024. Mild forms of cervical intraepithelial neoplasia CIN I – 48.0–52.5%, moderate CIN II – 18.9–21.5%, severe CIN III – 8.5–10.3% prevailed in all years, with no pronounced upward trend. Against the background of increasing morbidity, there was a reduction in the number of obstetrician-gynecologists by more than 14%, which was accompanied by an increase in the burden of cervical dysplasia per doctor from 1.9 cases in 2020 to 7.2 cases in 2024.

Conclusions. The results of the study indicate a relationship between staffing of the obstetrics and gynecology service and indicators of cervical dysplasia. A decrease in the number of obstetrician-gynecologists combined with an increase in the burden on doctors can negatively affect the availability and completeness of diagnosis, especially for severe forms of cervical dysplasia.

The author declares the absence of a conflict of interest.

Keywords: cervical dysplasia, cervical intraepithelial neoplasia, obstetricians-gynecologists, personnel support, physician workload, health care organization.

Взаємозв'язок між кадровим забезпеченням акушерсько-гінекологічної служби та показниками виявлення дисплазії шийки матки в Україні

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Дисплазія шийки матки є однією з провідних передракових патологій жіночої репродуктивної системи та важливим маркером ефективності профілактики раку шийки матки. Своєчасне виявлення цервікальної інтраепітеліальної неоплазії залежить не тільки від біологічних та поведінкових факторів, а й від організаційних аспектів медичного забезпечення, зокрема укомплектованості акушерів-гінекологів.

Мета – оцінити взаємозв'язок між чисельністю акушерів-гінекологів та показниками виявлення дисплазії шийки матки в Україні у 2020–2024 роках.

Матеріали та методи. Дослідження виконано з використанням офіційних знеособлених статистичних даних. Матеріалом слугували зведені таблиці щодо захворюваності на дисплазію шийки матки та чисельності акушерів-гінекологів в Україні. Аналіз охоплював період 2020–2024 років, водночас 2020 рік (II–IV квартали) та 2025 рік (I квартал) враховувалися як неповні звітні періоди. Статистичну обробку даних здійснювали з використанням методів описової статистики з розрахунком абсолютних і відносних показників та показника навантаження – кількості випадків дисплазії на одного лікаря.

Результати. За період із 2020 по 2024 роки в Україні відбулося зростання абсолютної кількості зареєстрованих випадків дисплазії шийки матки з 20 852 у 2020 році II–IV квартали до 67 620 у 2024 році. У структурі захворюваності в усі роки переважали легкі форми цервікальної інтраепітеліальної неоплазії CIN I – 48,0–52,5%, помірні CIN II – 18,9–21,5%, тяжкі CIN III – 8,5–10,3%, без вираженої тенденції до зростання. На тлі зростання захворюваності відбулося скорочення чисельності акушерів-гінекологів більш ніж на 14%, що супроводжувалося підвищенням навантаження дисплазією шийки матки на одного лікаря з 1,9 випадка у 2020 році до 7,2 випадка у 2024 році.

Висновки. Результати дослідження вказують на взаємозв'язок між кадровим забезпеченням акушерсько-гінекологічної служби та показниками виявлення дисплазії шийки матки. Зменшення чисельності акушерів-гінекологів у сукупності з ростом навантаження на лікаря може негативно позначитися на доступності та повноті діагностики, особливо важких формах дисплазії шийки матки.

Автор заявляє про відсутність конфлікту інтересів.

Ключові слова: дисплазія шийки матки, цервікальна інтраепітеліальна неоплазія, акушери-гінекологи, кадрове забезпечення, навантаження лікаря, організація охорони здоров'я.

Dysplasia of the cervix, or cervical intraepithelial neoplasia, occupies a leading place among precancerous diseases of the female reproductive system and is considered a key stage in the carcinogenesis of cervical cancer [1,6]. Despite the significant progress in understanding the etiopathogenesis of the disease, the introduction of virological screening and the improvement of cytological and histological diagnostic methods, the problem of early detection of dysplasia remains relevant for most countries of the world, in particular for Ukraine.

According to international epidemiological studies, cervical cancer is among the three most common malignant neoplasms among women of reproductive age, and mortality rates largely depend on the effectiveness of national screening programs and the availability of specialized medical care [2,8]. In this sense, cervical dysplasia is considered not only a medical, but also a socially significant problem, which reflects the level of organization of the health care system, staffing, and preventive orientation of medical care.

The role of human papillomavirus with high oncogenic risk, age, hormonal, and behavioral factors in the development of cervical neoplasia is widely covered in the scientific literature [3,5]. At the same time, much less attention is paid to organizational aspects, in particular, the influence of the personnel potential of the obstetrics and gynecology service on the indicators of cervical dysplasia detection. It is the obstetrician-gynecologist who is the key figure in conducting preventive examinations, interpreting the results of cytological screening, and timely referring patients for in-depth examination [4,7].

In Ukraine, the health care system has undergone significant transformations in recent years, which were accompanied by a reduction in the number of medical personnel, an uneven distribution of specialists between regions, and the impact of the COVID-19 pandemic and military events. In such conditions, the analysis of the relationship between the staffing of the obstetrics and gynecology service and indicators of cervical dysplasia becomes especially relevant.

Based on the given data, a hypothesis was formulated that the level and structure of detection of cervical dysplasia depend not only on biological factors, but also on the quantitative and qualitative characteristics of medical staff.

The aim of the study was a comprehensive study of the relationship between the number of obstetrician-gynecologists and indicators of cervical dysplasia in Ukraine.

Materials and methods of the study

The study was performed in the form of a retrospective analytical cross-sectional study using official depersonalized statistical data. Two generalized tables served as research material: statistical data on cervical dysplasia and data on the number of obstetrician-gynecologists in Ukraine.

Data on the incidence of cervical dysplasia for the period 2020–2024 are included in the analysis. At the same time, the year 2020 was considered incomplete, as it included only II–IV quarters, which was clearly recorded in the methodological notes and taken into account when interpreting the results. Data for 2025 (Q1) were deliberately excluded from the analysis due to the incompleteness of the reporting period. Dysplasia indicators were analyzed according to the degrees of cervical intraepithelial neoplasia: CIN I, CIN II, and CIN III.

Data on staffing of the obstetrics and gynecology service covered the period 2020–2024 and included the total number of obstetrician-gynecologists as individuals without taking into account rates. Due to the lack of data for 2021 in the table of doctors, the integrated analysis was conducted for the comparable years: 2020, 2022, 2023, and 2024.

The main indicators of the analysis were: the total number of cases of cervical dysplasia, the structural distribution by degrees of CIN, the number of obstetrician-gynecologists, and the workload indicator – the number of cases of dysplasia per doctor. The burden of severe forms of dysplasia (CIN III) per one obstetrician-gynecologist was calculated separately.

Statistical data processing was carried out using methods of descriptive statistics with the calculation of absolute and relative values, average values, and indicators of dynamics. The nature of the distribution of the sample was normal. Since the study was based on the analysis of aggregated depersonalized statistical data, it complied with the principles of bioethics and did not require informed consent from patients.

Results of the study and discussion

As a result of the analysis of official statistical data, the essential features of the dynamics of cervical dysplasia in Ukraine during 2020–2024 were established, as well as the trends in staffing of the obstetrics and gynecology service were clearly outlined. The comparison of

Table 1

Dynamics of cervical dysplasia (CIN) in Ukraine in 2020–2025

Year	Total number of CINs	CIN I, n (%)	CIN II, n (%)	CIN III, n (%)	CIN Unspecified, n (%)
2020*	20852	10962 (52.5)	4495 (21.5)	2165 (10.3)	3230 (15.4)
2021	51559	25773 (49.9)	11128 (21.5)	5326 (10.3)	9332 (18.0)
2022	52193	26826 (51.3)	10404 (19.9)	4572 (8.7)	10391 (19.9)
2023	67649	34651 (51.2)	12817 (18.9)	5799 (8.5)	14382 (21.2)
2024	67620	32487 (48.0)	13667 (20.2)	6205 (9.1)	15261 (22.5)
2025**	20437	9551 (46.7)	3718 (18.1)	1962 (9.6)	5206 (25.4)

Notes: * – 2020 included only II–IV quarters, ** – 2025 included only I quarter.

morbidity indicators and the number of medical personnel made it possible to estimate not only the absolute volumes of registered pathology, but also the integral load on one doctor, which is an important indicator of the functioning of the system of specialized medical care.

Dynamics and structure of cervical dysplasia. As shown in Table 1, the total number of registered cases of cervical dysplasia in 2020 (II–IV quarters) was 20,852. Already at this stage, the incidence structure was characterized by the dominance of mild forms of dysplasia (CIN I), the share of which was 52.5%, while the share of severe forms (CIN III) was equal to 10.3%. This distribution corresponds to generally accepted epidemiological ideas about the course of cervical intraepithelial neoplasia, in which mild forms prevail in the general structure of the pathology.

In 2021–2022, there was a significant increase in the absolute number of cases of cervical dysplasia – up to 51,559 in 2021 and 52,193 in 2022 (Table 1). At the same time, the incidence structure remained relatively stable. The share of CIN I varied between 49.9–51.3%, CIN II – 19.9–21.5%, and the share of CIN III did not exceed 10.3%. This indicates the preservation of the ratio between different degrees of dysplasia against the background of the increase in the total number of detected cases.

In 2023, a further increase in the total number of registered cases of cervical dysplasia was recorded to 67,649 (Table 1), which became the maximum indicator during the observation period. Structural analysis showed that the proportion of CIN I remained high (51.2%), while the proportion of CIN II decreased to 18.9% and CIN III to 8.5%. The decrease in the specific weight of severe forms of dysplasia occurred against the background of the general increase in morbidity, which may reflect both the peculiarities of the routing of patients and the limitation of the possibilities of in-depth diagnosis.

In 2024, the total number of cases of cervical dysplasia remained almost at the level of the previous year and amounted to 67,620 (Table 1). At the same time, the incidence structure underwent some changes: the share of CIN I decreased to 48.0%, while the share of CIN II and CIN III increased to 20.2% and 9.1%, respectively. This may indicate a partial restoration of the health care system's ability to detect more severe forms of dysplasia.

The dynamics of unspecified forms of dysplasia (CIN Unspecified) deserve special attention. Their share increased from 15.4% in 2020 to 22.5% in 2024 (Table 1), which may reflect the growth of diagnostic uncertainty against the background of increased workload on doctors and limitations in the use of histological verification.

Staffing of the obstetrics and gynecology service. In parallel with the analysis of dysplasia indicators, an assessment of the number and qualification structure of obstetrician-gynecologists in Ukraine was carried out (Table 2). In 2020, the total number of doctors in this specialty was 10,871. In subsequent years, a gradual reduction of the personnel potential was observed – to 9,777 in 2022, 9,565 in 2023, and 9,311 in 2024.

The overall decrease in the number of obstetrician-gynecologists during the study period exceeded 14%, which is a critically important indicator for the women's health system. The fact that the reduction occurred against the background of growth or maintenance of high incidence rates of cervical dysplasia deserves special attention.

The total decrease in the number of obstetrician-gynecologists during the study period exceeded 14%, which is a significant challenge for the women's health system, especially given the

Table 2

Number and qualification structure of obstetricians-gynecologists in Ukraine in 2020–2024

Year	All doctors	Higher category, n (%)	I, n (%)	II, n (%)	Specialist, n (%)
2020	10871	4879 (44.8)	3173 (29.1)	1168 (10.7)	1651 (15.1)
2022	9777	4673 (47.7)	2395 (24.4)	864 (8.8)	1845 (18.8)
2023	9565	4384 (45.8)	2263 (23.6)	799 (8.3)	2119 (22.1)
2024	9311	4096 (43.9)	2030 (21.8)	744 (7.9)	2441 (26.2)

simultaneous increase in the number of registered cases of cervical dysplasia. The analysis of the qualification structure showed the relative stability of the share of doctors of the highest category, while the share of doctors of the I and II categories decreased, and the share of doctors without a qualification category increased. Such changes can potentially affect the quality of preventive examinations and the interpretation of the results of screening studies.

Integral analysis: burden on one doctor. The most revealing is the integrated analysis, which combines data on cervical dysplasia and the number of obstetrician-gynecologists (Table 3). In 2020, there were an average of 1.9 cases of cervical dysplasia per doctor, which is partly explained by the incompleteness of the reporting year. In 2022, this indicator increased to 5.3 cases, and in 2023–2024 – to 7.0–7.2 cases per one obstetrician-gynecologist.

The increase in the total workload was accompanied by an increase in the number of cases of individual forms of dysplasia per doctor. Thus, the burden of CIN I increased from 1.0 in 2020 to 3.4–3.6 in 2023–2024, while the burden of CIN III increased from 0.19 to 0.6 cases per physician. At the same time, there was an increase in the burden of unspecified forms of dysplasia, which is consistent with an increase in their specific weight in the structure of morbidity.

The obtained results indicate that the indicators of cervical dysplasia in Ukraine in 2020–2024 largely depend on organizational factors, in particular, the staffing of the obstetrics and gynecology service. The reduction in the number of doctors is accompanied by an increase in the burden on one specialist, which can limit the possibilities of timely and comprehensive diagnosis, especially of severe forms of cervical intraepithelial neoplasia.

The results of the study confirm the feasibility of considering cervical dysplasia not only as a clinical problem, but also as an indicator of the functional state of the health care system and the effectiveness of the organization of specialized obstetric and gynecological care.

Conclusion

The conducted research made it possible to establish that the staffing of the obstetrics and gynecology service is an important factor that affects the indicators of cervical dysplasia detection in Ukraine. During 2020–2024, there was a significant reduction in the number of obstetrician-gynecologists, which was accompanied by an increase in the workload per doctor.

Table 3

The ratio of cervical dysplasia and the number of obstetrician-gynecologists in Ukraine in 2020–2024

Year	Total CIN	CIN I, %	CIN II, %	CIN III, %	CIN Unspecified, n (%)	Obstetricians and gynecologists, n	CIN per 1 doctor	CIN I for 1 doctor	CIN II for 1 doctor	CIN III for 1 doctor	CIN Unspecified per 1 doctor
2020	20852*	52.5	21.5	10.3	15.4	10871	1.9	1.0	0.41	0.19	0.29
2022	52193	51.3	19.9	8.7	19.9	9777	5.3	2.7	1.06	0.46	1.06
2023	67649	51.2	18.9	8.5	21.2	9565	7.0	3.6	1.3	0.6	1.5
2024	67620	48.0	20.2	9.1	22.5	9311	7.2	3.4	1.4	0.6	1.6

Notes: * – 2020 included only II–IV quarters.

The highest burden of both general and severe forms of dysplasia was recorded in 2022. Further declines in the absolute number of reported cases, particularly CIN III, should be seen in light of the limited availability of diagnostics, rather than as a real reduction in the prevalence of the disease.

The obtained results emphasize the need to improve personnel policy, preserve and develop specialized medical personnel, as well as strengthen the preventive focus of the obstetrics and gynecology service. A promising direction for further research is the inclusion of regional analysis and individual clinical data for a deeper understanding of the relationship between personnel and epidemiological indicators.

The author declares the absence of a conflict of interest.

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