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Results of Evaluating Early Diagnostic Indicators at the Primary Level of the Armed Forces

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Abstract Today, the medical support system in military units is organized in a multi-level form, in which the correspondence of the processes of prevention, diagnosis, treatment, and rehabilitation is of great importance. From this point of view, analyzing the needs of military personnel in medical provision, assessing the level of their satisfaction, is considered important in assessing the state of medical provision in the military unit. The results of statistical analysis show a clear correlation between the factors influencing the effectiveness of diagnostics in the primary level, and it was established that the qualification of personnel (p=0.0017) and the state of provision with medical equipment (p=0.005) have a statistically significant influence on the effectiveness of diagnostics, while the lack of time (p=0.19) does not show a statistically significant correlation. These results, obtained during our research, confirm that in order to improve the quality of diagnostics at the primary level, the main attention should be paid to improving the qualifications of medical personnel and providing them with modern diagnostic equipment.

Keywords Primary health care level, Diagnostic effectiveness, Quality of medical services, Satisfaction estimate, Qualification of medical personnel, Provision of medical equipment

1. Introduction

The results of numerous global studies in this field have demonstrated that the diagnostic process at the primary healthcare level has a hierarchical structure [3,5,6,7], with the variation in clear effectiveness emerging as the main trend. In this context, the application of clinical examinations, laboratory tests, and instrumental diagnostics (ECG, ultrasound) is significant due to their relatively high effectiveness. It is acknowledged that these methods are primarily used for military personnel presenting with specific pathologies [1]. While the use of psychophysiological tests and telemedicine methods in the army is also crucial for improving diagnostics at the primary level, the current neglect of these areas, the shortage of qualified specialists in these fields, and their developed potential and role in specific clinical situations are having an impact [4,2,8,9].

2. Purpose of the Research

The purpose of this study is to evaluate early diagnostic indicators at the primary care level.

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3. Materials and Method

The study employed analytical, retrospective, sociological, organizational-experimental, medical-statistical, and statistical methods.

4. Results and Discussion

Early diagnosis is one of the important areas in the system of protecting the health of military personnel at the tactical level. This system is crucial not only for diagnosing diseases but also for reducing the risk of their development, implementing preventive measures, and increasing the effectiveness of treatment. Of course, the ability to quickly and accurately perform diagnostic processes in the activities of medical centers at this level largely depends on the qualifications of medical personnel, the level of provision with medical equipment, and the effectiveness of the information exchange system. Therefore, an in-depth analysis of early diagnostic indicators and assessment of their effectiveness is an important part of our research.

We assessed the diagnostic processes carried out at the primary level using statistical and scientific methods, and analyzed the diagnostic indicators of medical centers. In particular, the coverage, effectiveness, and level of satisfaction of military personnel with the stages of diagnostics at the primary level were analyzed (Table 1).

Table 1. Analysis of the coverage and effectiveness of diagnostic stages in primary care, and the satisfaction level of military personnel

Diagnostic stage	Coverage (%)	Performance (points)	Satisfaction (%)
Initial examination	96,5	4,7	92,0
Laboratory analysis	78,2	3,5	76,5
Instrumental diagnosis	63,4	3,1	68,3
Follow-up / monitoring	59,8	3,8	65,0

Table 2. Statistical analysis of the correlation of factors influencing the effectiveness of diagnostics

Indicators	X^2	df	p-value	Conclusion
Performance - Skill	12,84	2	0,0017	Important
Efficiency - Provision of medical equipment	10,46	2	0,005	Important
Efficiency - Lack of Time	3,24	2	0,19	Unimportant

Focusing on the data presented in Table 1, the table reflects the analysis of the level of coverage, effectiveness, and level of patient satisfaction of the main diagnostic stages carried out at the primary level, and made it possible to conduct a comparative assessment of the level of quality and effectiveness at different stages of the diagnostic process during the study.

In particular, the primary examination at medical stations recorded the highest result in all indicators, the high level of coverage, i.e., 96,5%, indicates that this stage is mandatory for almost all military personnel who applied to the medical station for illnesses, and a high efficiency of 4,7 points and a level of satisfaction of 92,0% confirmed that the primary examination occupies a key place in the diagnostic process. At the same time, it was found that although the laboratory tests had significantly lower indicators compared to the initial examination, they were assessed at an average level with a coverage level of 78.2%, an efficiency indicator of 3.5 points, and a satisfaction indicator of 76,5%.

In the main diagnostic measures carried out in the primary level, instrumental diagnostics showed the lowest results in all indicators, with a coverage level of 63.4%, an efficiency indicator of 3.1 points, and a satisfaction level of 68,3%.

Although the re-examination stage, which is considered a painful problem in the Armed Forces system and is often ignored, showed the lowest result in terms of coverage – 59,8%, it had a higher score than instrumental diagnostics with an efficiency indicator of 3,8 points.

The results of this survey conducted by us indicate the need to focus on expanding the possibilities of instrumental diagnostics and improving the re-examination system to improve the quality of diagnostics in the primary level.

During the work, a statistical analysis of the factors influencing the effectiveness of diagnostics in the primary level was conducted (Table 2).

Focusing on the data in the table above, we can see the level of statistical significance of three main factors influencing the effectiveness of diagnostics at the primary level. In particular, the p-value below 0,05 (0,0017 < 0,01) indicates a high degree of significant correlation between personnel qualifications and diagnostic effectiveness, and also means that the professional qualifications of specialists at the primary level have a direct impact on the effectiveness of the diagnostic process. Also, a p-value below 0,05 (0,005 < 0,01) indicates a significant correlation between the level of provision with medical equipment and the effectiveness of diagnostics. This confirms the problem of the shortage of medical equipment, identified in the analysis presented in the previous chapters of the dissertation, and shows the relevance of equipment provision in improving the quality of diagnostics.

5. Conclusions

Thus, the results of statistical analysis reveal clear correlations between factors influencing the effectiveness of diagnostics at the primary care level. It was established that the qualifications of personnel (p=0,0017) and the availability of medical equipment (p=0,005) have a statistically significant impact on diagnostic effectiveness, while time constraints (p=0,19) do not demonstrate a statistically significant correlation. These findings from our research confirm that to enhance the quality of diagnostics in primary care, the main focus should be on improving the qualifications of medical personnel and providing them with modern diagnostic equipment.

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