

Primary outcomes of mhGAP program implementation in higher medical education institutions

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ABSTRACT

Aim: To investigate the effectiveness of introducing a course based on the mhGAP program into the curriculum of students at Bogomolets National Medical University, with the aim of improving the quality of primary medical and psychological care, promoting early identification of mental disorders, and justifying the need for implementing similar educational programs in other medical universities.

Materials and Methods: The study involved 340 fifth-year students from Bogomolets National Medical University, who provided consent for the processing of their data. To assess the effectiveness of the course implementation, a survey method was used. Students were asked to complete the questionnaire twice: at the beginning of the course and after its completion. The survey included questions aimed at determining the initial and final level of knowledge about mental, neurological, and substance use disorders, in order to evaluate the learning outcomes of the mhGAP program.

Results: The study results demonstrated a significant improvement in the level of knowledge among medical faculty students regarding mental disorders and methods of primary psychological intervention after completing the five-day course based on the mhGAP program. The increase in the average score from 9.029 ± 2.805 to 13.568 ± 1.594 ($p < 0.001$) confirms the effectiveness of the course in enhancing students' awareness, reducing the variability of results, and ensuring successful material comprehension. These findings underscore the importance of the mhGAP program in preparing medical professionals to work with mental disorders at the primary care level.

Conclusions: The study confirmed the high effectiveness of the mhGAP program in preparing medical specialists to work with patients with mental disorders. The obtained results can be used to implement educational programs in medical universities, which will improve the quality of primary medical and psychological care and contribute to more effective early identification of mental disorders.

KEY WORDS: mhGAP, mental health, intervention guide, implementation

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INTRODUCTION

The issue of mental and neuropsychiatric disorders is gaining increasing importance within the global medical community, especially in the context of contemporary global challenges, such as the COVID-19 pandemic, armed conflicts, and ongoing stress factors that impact the mental health of populations. The World Health Organization (WHO) predicts that by 2030, mental disorders will be one of the leading causes of disability worldwide [1]. In this regard, it is crucial to ensure the training of medical professionals capable of effectively responding to challenges in mental health care.

The mhGAP (Mental Health Gap Action Programme) was developed by WHO in 2008 to reduce the gap between the need for psychiatric services and their availability, particularly in low- and middle-income countries [2]. This program aims to provide basic mental health care training to general practitioners and other healthcare professionals who are not psychiatrists [3]. It covers a

range of disorders, such as depression, anxiety, epilepsy, substance use disorders, as well as suicide and other critical conditions. One of the key features of mhGAP is the provision of clear and practical guidelines, enabling healthcare workers to offer necessary assistance even in regions with limited access to psychiatric services [3-4].

In Ukraine, the mhGAP program has been actively implemented in recent years, particularly in the context of providing assistance to those affected by the military conflict in the east of the country and due to the increasing number of post-traumatic stress disorder (PTSD) cases among the population. The Ministry of Health of Ukraine, together with partners, including the WHO, is actively working on expanding mhGAP implementation within training programs for general practitioners. This includes the preparation of specialists capable of integrating psychiatric care at the primary healthcare level, which is especially important for regions with limited access to specialized care.

mhGAP has already proven effective in several countries, including Africa, South Asia, and Latin America, where there is a significant shortage of mental health professionals [4-6]. For example, in Zambia, Ethiopia, and Pakistan, the program has significantly expanded access to treatment for patients with depression, epilepsy, and other mental disorders. These successful cases demonstrate that the program's tools are effective in resource-limited environments, and their implementation has a positive impact on treatment outcomes.

The implementation of the WHO-developed mhGAP program in higher medical education institutions is one of the current solutions for preparing doctors who will be able to identify and treat neuropsychiatric disorders at various levels of medical care [7]. The mhGAP program aims to reduce the gap between the need for psychiatric services and their availability, especially in conditions of a shortage of mental health professionals, which is also relevant for Ukraine [8-10].

Given that most physicians graduating from medical institutions may choose specialties not directly related to the treatment of mental disorders, it is crucial to provide them with basic knowledge and skills in this field. This will enable them not only to recognize the primary symptoms of mental disorders in their practice but also to appropriately refer patients to specialists and provide primary psychological support.

The mhGAP program also helps students develop essential communication skills for interacting with patients with mental disorders, which is a necessary component of both primary and specialized medical care. Future doctors, regardless of their specialization, will be better equipped to engage with various population groups, including those suffering from mental disorders, significantly improving the overall quality of healthcare services.

Moreover, the implementation of mhGAP enables medical students to gain a better understanding of the socio-economic and cultural factors that affect mental health, thus fostering a more holistic approach to patient care. Training physicians who recognize the importance of mental health and its impact on a patient's overall well-being is critical for the advancement of the modern healthcare system.

Thus, integrating the mhGAP program into higher medical education institutions is a crucial step in ensuring the appropriate level of training for healthcare professionals who can effectively respond to mental health challenges and contributes to the overall improvement of healthcare quality.

AIM

To investigate the effectiveness of introducing a course based on the mhGAP program into the curriculum of students at Bogomolets National Medical University, with the aim of improving the quality of primary medical and psychological care, promoting early identification of mental disorders, and justifying the need for implementing similar educational programs in other medical universities.

MATERIALS AND METHODS

To evaluate the effectiveness of the implementation of the World Health Organization's global «Mental Health Gap Action Programme» (mhGAP) at the Bogomolets National Medical University, a survey was conducted at the beginning and upon completion of the academic course titled «Fundamentals of Clinical Practice in Mental Health.» The study was conducted at the Department of Medical Psychology, Psychosomatic Medicine, and Psychotherapy of the Educational and Research Institute of Mental Health at the Bogomolets National Medical University. It involved 340 fifth-year students majoring in «Medicine» who consented to the processing of their data. All data were stored in Microsoft Excel 365 and analyzed using the medical research statistical analysis software «JASP» v0.19.1.0 [11]. The level of statistical significance was set at $p < 0.05$, and the confidence interval was 95%.

STUDY DESIGN

The study design was a quasi-experimental «pre-test/post-test» design without a control group, which involved conducting surveys at the beginning of the course «Foundations of Clinical Practice in Mental Health Care» and at the end of the course.

In the first phase, students completed a questionnaire that assessed their initial level of knowledge regarding mental and neurological disorders, as well as substance use-related disorders, in terms of the basic principles of assistance and clinical practice in the field of mental health, diagnostic criteria, and management of patients with mental, neurological, and substance-related disorders.

The second phase included practical sessions focused on developing practical skills, presented through role-playing, clinical cases, and group work methods about Mental, Neurological, and Substance-related disorders (MNS Disorders). Given that the course spans 2 years (on the fifth and sixth years of study), the topics for the first year included: «Mental Health Gap Action Programme (mhGAP)», «Basic Principles of Assistance and Clinical Practice», «Basic Principles of Assistance and Clinical Practice. Stages

of Management of MNS Disorders», «Managing Patients with MNS Disorders Using the mhGAP Tools: Depression», «Managing Patients with MNS Disorders Using the mhGAP Tools: Suicides and Self-Harm», «Managing Patients with MNS Disorders Using the mhGAP Tools: Stress, Acute Stress Disorder, Grief, and Post-Traumatic Stress Disorder» and «Managing Patients with MNS Disorders Using the mhGAP Tools: Anxiety Disorders».

The third phase involved a follow-up survey after the course to assess the level of knowledge gained about mental disorders, according to the mhGAP program modules presented in the second phase.

The surveys at the first and third phases consisted of 15 test questions, which were previously formulated based on the mhGAP modules mentioned in the second phase and were identical in both phases to ensure the reliability of the study results.

IMPLEMENTATION OF THE mhGAP PROGRAM IN THE THEMATIC AREA

Mental health is an integral component of medical education, as the effectiveness of providing care to patients with neuropsychiatric and mental disorders depends on the level of training of future doctors. Considering the importance of this topic, the course was spread over two years, with the fifth year focused on studying the key aspects of the mhGAP program and principles for managing patients with mental, neurological, and substance use disorders.

MENTAL HEALTH GAP ACTION PROGRAMME (mhGAP)

This topic allowed students to become familiar with the WHO's mhGAP program aimed at expanding access to quality psychiatric care, especially in countries with limited resources. The relevance of mental, neurological, and substance use disorders, their prevalence, socio-economic consequences, and impact on public health were discussed. Special attention was given to terminology, diagnostics, methods of initial patient assessment, and management principles in resource-limited settings. The structure and algorithms of mhGAP were also thoroughly studied, which allow doctors to make quick decisions. The development of practical skills helped prepare students for further study of specialized topics.

BASIC PRINCIPLES OF ASSISTANCE AND CLINICAL PRACTICE

Students familiarized themselves with the principles of providing mental health care, including ethical aspects,

communication skills, and methods of supporting patients with mental and neuropsychiatric disorders. Techniques for de-escalation, diagnostic assessment algorithms, and approaches to working with comorbid conditions were studied. Special attention was given to the impact of violence on mental health and strategies for helping victims. The IASC pyramid for structuring psychosocial support in crisis and emergency situations was also discussed.

BASIC PRINCIPLES OF ASSISTANCE AND CLINICAL PRACTICE. STAGES OF MANAGEMENT OF MNS DISORDERS

Students studied the key principles of managing patients with mental, neurological, and substance use disorders, including condition assessment, treatment strategy selection, and an interdisciplinary approach. Special focus was given to psychosocial interventions, psychoeducation, cognitive-behavioral therapy, and family support. Algorithms for referring patients to specialized professionals and social services were explored. The main groups of medications, principles of their safe prescription, and the importance of informing patients about therapy were also studied. This topic helped students acquire a comprehensive approach to treating and supporting such patients.

MANAGING PATIENTS WITH MNS DISORDERS USING THE mhGAP TOOLS: DEPRESSION

Students became familiar with the management of patients with depression according to the WHO mhGAP recommendations, focusing on diagnosis, treatment, and follow-up care. They studied the key symptoms, risk factors, and socio-economic consequences of depression, as well as differential diagnosis with other disorders. Special attention was given to psychosocial interventions, including psychoeducation, stress management techniques, and cognitive-behavioral therapy, as well as the principles of pharmacotherapy, antidepressant selection, and treatment monitoring. Students acquired a comprehensive approach to therapy and long-term support for patients.

MANAGING PATIENTS WITH MNS DISORDERS USING THE mhGAP TOOLS: SUICIDES AND SELF-HARM

Students studied the key principles of managing patients with suicidal and self-harming behavior according to mhGAP, focusing on risk assessment, differential diagnosis, and effective interventions. They explored the differences between suicidal intentions and non-suicidal

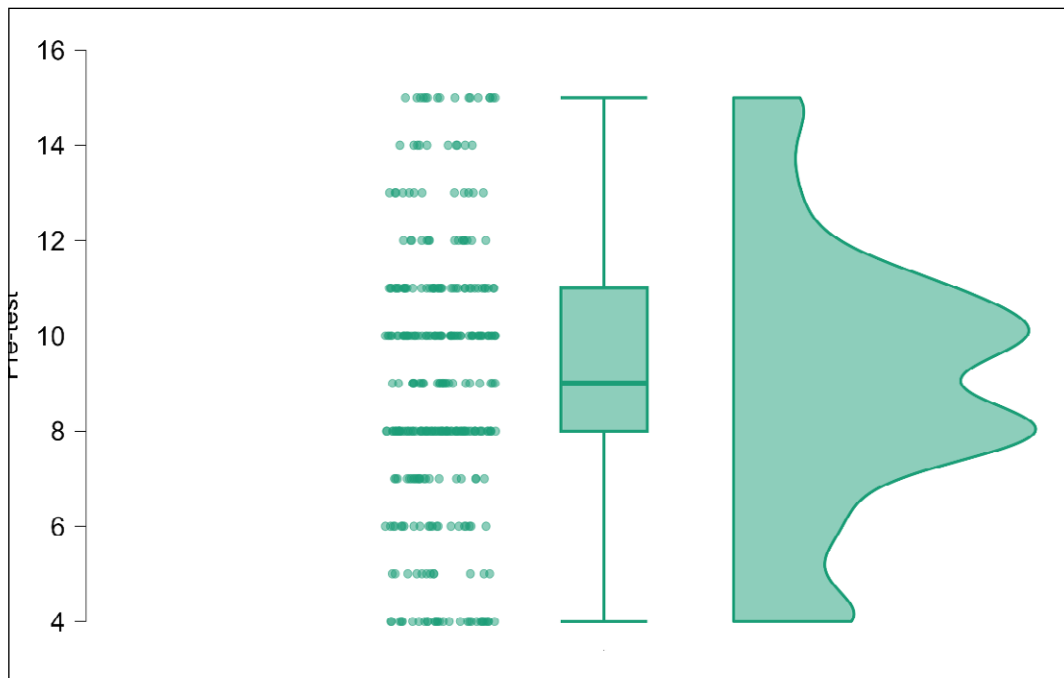


Fig. 1. Distribution of the pre-test results for students (Pre-test)

Table 1. Statistical indicators of the pre-test results for students (Pre-test)

N	Lower Whisker	25th Percentile	Median	75th Percentile	Upper Whisker
340	4.000	8.000	9.000	11.000	15.000

self-injury, key risk factors, and protective factors. They mastered algorithms for assessing suicidal risk and crisis interventions, methods of emergency care, and psychosocial support. Special attention was given to long-term follow-up, relapse prevention, and involving the family and community in the recovery process.

MANAGING PATIENTS WITH MNS DISORDERS USING THE MHGAP TOOLS: STRESS, ACUTE STRESS DISORDER, GRIEF, AND POST-TRAUMATIC STRESS DISORDER

Students studied the management of patients with acute stress disorder, grief, and PTSD, focusing on their clinical presentation, impact on mental and public health, and diagnosis using WHODAS 2.0. They explored psychosocial and pharmacological interventions, including psychoeducation, stress reduction, social support, and medication when necessary. Special attention was given to adaptation strategies and relapse prevention through long-term support for patients to improve their quality of life.

MANAGING PATIENTS WITH MNS DISORDERS USING THE mhGAP TOOLS: ANXIETY DISORDERS

Students examined the key aspects of diagnosing and managing patients with anxiety disorders using

mhGAP. They discussed common symptoms, the impact on quality of life, risk factors, and differential diagnosis. Emphasis was placed on a comprehensive treatment approach, including psychosocial interventions (psychoeducation, self-regulation techniques, social support) and pharmacotherapy (antidepressants, anxiolytics). Ongoing patient support was highlighted as essential for maintaining stability and improving long-term treatment outcomes.

RESULTS

Based on the results of the first stage of the study, we were able to assess the baseline level of knowledge among students regarding mental disorders and primary psychological intervention methods according to the mhGAP modules previously mentioned. The analysis of the pre-test showed that the average score of the students was 9.029 ± 2.805 , indicating a moderate level of awareness before the start of the course (Fig. 1).

At the same time, the significant variability in the results (Table 1) demonstrates the heterogeneity of the students' knowledge levels, which may be related to individual previous learning experiences or self-study of the topic.

The obtained data indicate that a significant portion of students possess only basic knowledge regarding the principles of assistance for mental, neurological, and

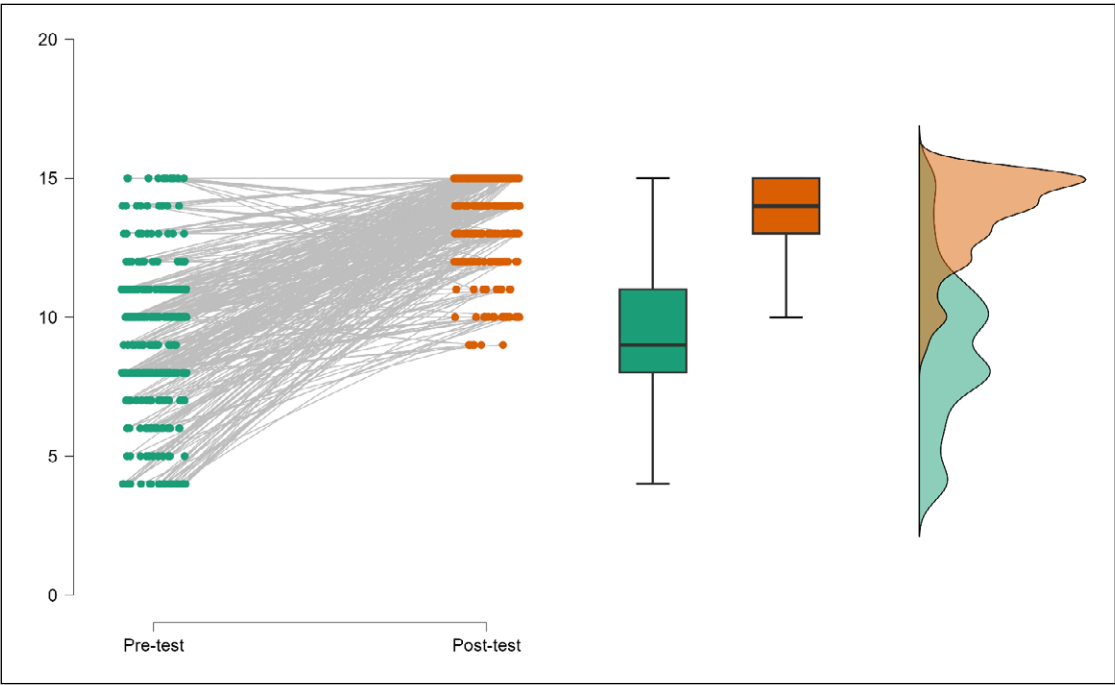


Fig. 2. Dynamics of changes in awareness indicators in the field of mental health according to mhGAP modules at the 1st and 3rd stages

behavioral disorders. This suggests potential gaps in understanding diagnostic criteria and the management of patients with such conditions, despite the importance of this aspect in medical education. The presence of students with high results may be explained by an interest in psychiatry or personal experience.

According to the second stage, students underwent a five-day study of the mhGAP modules, after which a survey was conducted, with results based on post-testing (Post-test). The final evaluation showed a significant improvement in students' knowledge after completing the course. The average score in the final test was 13.568 ± 1.594 , indicating a high level of knowledge after completing the course. The minimum score was 9, and the maximum was 15, suggesting a reduction in the variability of the results and a more homogeneous level of knowledge among students (Table 2).

The comparison of pre-test and post-test results showed a statistically significant improvement ($t = -27.141$, $p < 0.001$), which confirms the effectiveness of implementing the course based on the mhGAP program into the educational process (Fig. 2). The significant increase in the average score indicates the positive impact of the course on students' awareness of mental and neurological disorders and the skills necessary for providing psychological assistance.

DISCUSSION

The implementation of the mhGAP program is not only a mechanism for increasing awareness of mental health

but also an essential tool in reducing the stigma associated with mental disorders. One of the key aspects of the program is the development of essential communication skills among medical university students in their interactions with patients with mental disorders. This is particularly crucial for future doctors, regardless of their specialization, as high-quality medical care requires not only clinical competence but also empathy and an understanding of the unique needs of patients with mental health conditions [6].

Early diagnosis of mental disorders, facilitated by the mhGAP program, can significantly improve the quality of medical and psychological care. The timely identification and assessment of mental disorders in the early stages of their development contribute to more effective intervention and reduce the risk of symptom chronicity. Furthermore, supporting patients with mental and neurological disorders decreases the likelihood of their condition worsening and reduces the risk of social isolation, which often results from societal prejudices against such individuals.

A vital component of mhGAP is the possibility of implementing low-intensity psychological interventions that provide primary psychological support. These interventions not only promote improvements in patients' mental health but also positively impact their overall quality of life, both at the community level and on a national scale [7].

However, certain limitations of this study must be acknowledged. This research covered only the first part of the mhGAP program modules, which presents chal-

Table 2. Statistical indicators of post-test results for students (Post-test)

N	Lower Whisker	25th Percentile	Median	75th Percentile	Upper Whisker
340	10.000	13.000	14.000	15.000	15.000

lenges in comprehensively evaluating its effectiveness. For a more thorough analysis, further studies should be conducted, encompassing all program modules and including long-term follow-up assessments. In particular, an important direction for future research is evaluating the impact of the program one year after its implementation. This would allow for an assessment of the sustainability of the obtained effects and the effectiveness of the educational process in the long-term perspective.

Thus, the mhGAP program opens new opportunities for medical university students, contributing to their professional training and improving the quality of psychiatric care at various levels of the healthcare system. However, further research is necessary to ensure a comprehensive evaluation of its effectiveness and to identify potential ways to optimize the program's implementation.

CONCLUSIONS

The results of the study indicate a significant improvement in the level of knowledge among medical faculty

students regarding mental disorders and primary psychological intervention methods after completing a five-day course based on the mhGAP program. The initial test results (Pre-test) showed an average level of knowledge among students (9.029 ± 2.805), with significant individual differences in the results, suggesting an uneven level of preparation among students before studying the topic.

After the course, a significant improvement in knowledge was observed, as confirmed by the post-test results (Post-test), where the average score increased to 13.568 ± 1.594 ($t = -27.141$, $p < 0.001$). These results indicate the effectiveness of the training course in enhancing students' understanding of the basics of mental disorders and primary medical-psychological assistance methods.

Overall, the study confirmed the high effectiveness of the mhGAP program in preparing medical professionals to work with patients with mental disorders. The results obtained can be used for implementing educational programs in medical higher education institutions, which will improve the quality of primary medical-psychological care and contribute to more effective identification of mental disorders at early stages.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

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