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SURVEY OF TOOLS AND TECHNOLOGIES FOR PSYCHOEMOTIONAL SCREENING AND DETERMINING THE STATUS OF PATIENTS WITH DEPRESSION

The article is devoted to a comprehensive analysis of the current state and prospects for the development of information technologies for psychoemotional screening of patients with depressive disorders. The relevance of the study is due to the global increase in the prevalence of mental disorders, which in the conditions of modern challenges, in particular martial law, is becoming a critical threat to public health and economic stability. The work systematizes scientific sources, which made it possible to identify key trends in the field of digital psychiatry. The main attention is paid to a comparative analysis of existing methods according to eight fundamental criteria that determine the suitability of the technology for real clinical implementation. Among them, the availability of decision-making algorithms, patient routing mechanisms in the primary care setting, the use of validated psychometric tools, integration with electronic medical records, real-time notification systems, adaptation to the individual user norm, ethical transparency, and research on objective behavioral markers. The results of the analysis indicate a significant fragmentation of existing solutions - with a high interest of researchers in the use of biomarkers (voice, eye tracking, electroencephalography and locomotor activity) and artificial intelligence, there is an almost complete absence of systems integrated into the state medical infrastructure. It was found that most of the existing mobile applications and cyber-physical systems operate in isolation from the primary care level, which complicates timely diagnostics and continuity of treatment. The work places special emphasis on the importance of digital phenotyping, which allows objectifying the patient's condition through monitoring motor activity, but it is proven that such data must necessarily be combined with classical clinical protocols. It is substantiated that the lack of integration with electronic medical records and formalized routing algorithms are the main barriers to creating an effective national screening system. Based on the identified "blank spots" in world scientific practice, the author has proven the need to develop a unified information technology that would act as a full-fledged link in the medical process. The analytical basis of the article serves as a theoretical basis for designing a new information technology capable of providing a closed cycle of "monitoring - diagnostics - routing - treatment". The scientific novelty of the work lies in the systematic approach to evaluating screening technologies, which allows us to clearly identify the vectors of further research in the direction of creating information technology adapted to the needs of the modern healthcare system.

Keywords: depression, psychoemotional screening, digital psychiatry, information technology, locomotor activity, digital phenotyping, primary care, patient routing, electronic medical record, decision-making algorithms, artificial intelligence, mobile monitoring, biomarkers, validated questionnaires, cyber-physical systems.

Introduction

The rapid spread of psycho-emotional disorders, among which depressive and anxiety disorders, PTSD and professional burnout occupy a key place, has transformed into a global challenge for the global health system [1]. Depression, as one of the most destructive pathologies, has a negative impact on social integration, work capacity and general well-being of the individual [2, 3]. WHO statistics confirm the criticality of the situation - every eighth inhabitant of the planet has a mental disorder. Today, depressive states have been diagnosed in about 970 million people, and for 129 million this has led to a permanent loss of work capacity. The tragic consequence of such dynamics is the annual increase in the number of suicides (almost 1 million cases), and the prevalence of the problem is such that mental disorders affect the interests of every fourth family in the world

[1]. According to the conclusions of the World Health Organization, depression is one of the leading factors that cause a decrease in the quality of life and loss of working capacity of the population [1]. Modern researchers note a rapid increase in the prevalence of depressive disorders on a global scale, covering different social strata and age categories. Such a scale of spread transforms the problem from a purely clinical one into an acute social one, since the high level of disability resulting from these conditions creates a significant burden on society [1].

In Ukraine, the mental health crisis is significantly deepening under the influence of full-scale military operations, massive internal displacement of the population and prolonged economic instability, which together create an extreme stress load on the nation [3, 4]. Modern military realities make the problem of depressive disorders critically urgent - according to statistical estimates, about 15 million Ukrainians need qualified psychological assistance, and 3-4 million people need comprehensive support with the involvement of drug therapy [4]. The category of veterans and their families requires special attention, where the need for psychological support reaches 90%. Such an unprecedented level of collective trauma and chronic psycho-emotional pressure creates extremely complex challenges for the national healthcare system, requiring the implementation of the latest screening and rehabilitation methods.

A significant part of depressive states remains unnoticed by specialists or is diagnosed at late stages, since patients often ignore the first manifestations of the disorder. Timely identification of psycho-emotional disorders is a fundamental condition for preventing their chronicity and minimizing negative health consequences [5-7]. Delaying medical intervention or establishing an erroneous diagnosis not only aggravates symptoms and causes functional impairment, but also significantly reduces the effectiveness of subsequent therapy [6, 8]. In contrast, early recognition of mental health problems is strategically important, as it allows reducing suicidal risks, increasing the effectiveness of treatment measures and ensuring the implementation of cost-effective methods of relieving the disorder [9, 10].

The availability of qualified psychiatric care remains a critical issue due to the global shortage of specialized specialists, which in Ukrainian realities significantly slows down the processes of timely diagnosis. The modern medical model suffers from limited human and time resources - primary care physicians are physically unable to devote enough time to a deep psycho-emotional analysis of each patient [11, 12]. Statistics confirm this gap - despite general recommendations for screening, only 4% of outpatient clinic visitors are tested for depression [13]. In this context, automated information systems are a necessary innovative tool that allows for objective and prompt risk assessment using international scales (PHQ-9, GAD-7, PSS) [14, 15]. Integration of such solutions with electronic medical records provides not only monitoring of the patient's condition in dynamics, but also clear routing to specialized specialists, including a system of instant notifications in critical situations [16]. In addition to subjective manifestations, depression is characterized by clear behavioral markers, among which hypodynamia plays a key role [17, 18]. Indicators such as reduced physical activity, prolonged periods of statics, as well as deformation of circadian rhythms and sleep patterns are recognized as validated indicators of depressive states [19-21]. In this context, the use of wearable devices (smart watches, fitness trackers) opens up opportunities for continuous and non-invasive monitoring of the patient's vital activity. This allows identifying latent signs of psychoemotional destabilization at early stages and objectively assessing the effectiveness of therapy.

Given the critical increase in psycho-emotional pressure and the shortage of resources in the medical field, the development of tools and technologies for psycho-emotional screening and determining the condition of patients with depression becomes a response to the urgent needs of modern healthcare and is of strategic importance for Ukraine in the context of martial law and the future post-war rehabilitation of the nation.

Survey of Tools and Technologies for Psychoemotional Screening and Determining the Status of Patients with Depression

Discussion [22] concerns four possibilities of computer psycho-diagnostics: direct "provocation" of behavior using various stimuli, study of cognitive representations, systematic observation of behavior in natural living conditions, and the use of auxiliary systems in decision-making.

Study [23] explores the basic principles of automated mobile detection of neurodevelopmental disorders (NDs) in typically developing Greek children using the serious game "Apsou," developed as part of the SmartSpeech project, designed to assess 18 areas of development (speech, language, psychomotor, cognitive, psychoemotional, and auditory abilities) using principal component analysis.

Study [24] focuses on technological solutions that have been applied to patient monitoring/assessment (behavior, mental disorders, psychosomatics) and treatment (electronic and mobile medical care), such as the use of biological and behavioral sensors linked to users' smartphones, and digital interventions in mental health.

Papers [25, 26] discuss how smartphones and wearable technologies improve understanding of mental disorders by informing psychological treatments, as patients can provide regular, longitudinal, and high-quality data, allowing for the quantification of previously inaccessible and untapped streams of behavior, mood, activity, and thoughts of a particular patient. Smartphones and wearable technologies provide new insights into mental disorders, enabling the refinement and personalization of current treatments, as well as their use for remote therapy.

Study [27] examines how technology can balance mental health in the digital age by exploring mental health apps in conjunction with issues such as digital addiction and information overload.

The Anima project is a neuroscience test that combines AI tracking technology with well-known

psychometric tests and analyzes attention biomarkers. This combination allows for the assessment of various psycho-emotional states, such as depression, anxiety, and stress levels. Anima's unique approach not only identifies potential mental health issues but also offers individual strategies for improving mental well-being, personalized analysis, and recommendations [28].

The study [29] is divided into four sections, each of which discusses the advantages and limitations of a particular type of psychological assessment and measurement using information technology: outpatient assessment, social networks, gamification, and forced-choice testing. The use of information technology has been shown to provide greater validity in the assessment process and eliminate the bias associated with retrospective assessment.

Large-scale Internet-based psychological screening conducted in [30] using four well-known psychological scales, PHQ-9, GAD-7, ISI, and PSS, has become an important tool for accurately determining the incidence rate and promoting early diagnosis of mental disorders.

Studies [31-33] present the results of online surveys using screening tools for symptoms of depression (Patient Health Questionnaire PHQ-9), anxiety (General Anxiety Disorder GAD-7), sleep disorders (ISI-2), perceived stress (Cohen's Perceived Stress Scale PSS-4), alcohol abuse (CAGE), Maslach Burnout Inventory-General Survey (MBI-GS), and Vaccination Attitudes Examination (VAX) scale. Multivariate logistic regression revealed higher adjusted odds of exceeding threshold values for clinically significant symptoms of depression, anxiety, and insomnia.

Paper [34] presents an image-based method (AgileBrain) that is a useful screening tool for detecting impaired well-being in terms of construct validity and offers a promising approach to monitoring treatment effectiveness. This tool is based on the Center for Epidemiological Studies Depression Scale (CESD-10), the Patient Health Questionnaire (PHQ-9), the Generalized Anxiety Disorder Scale (GAD-7), the UCLA Loneliness Scale, the Neuroticism Scale (BFI-S), the Brief COPE-28 coping styles scale, the Perceived Stress Scale (PSS-10), self-diagnosed conditions, symptoms of neurodiversity, and trauma history.

Study [35] presents Text4Hope, an online mental health service. People who used this service showed a reduction in psychological symptoms, including thoughts of suicide, death wishes, or self-harm.

Paper [36] presents the use of SPSS statistical software, IBM version 24, to collect and analyze data related to stress, anxiety, and depression using the PSS, GAD-7, and PHQ-9 psychological instruments.

Study [13] evaluates the effectiveness of machine learning technology for identifying and analyzing voice biomarkers corresponding to moderate and severe depression, potentially improving the detection and provision of primary care for such patients.

Study [37] presents a screening tool for postpartum depression using the Edinburgh Postnatal Depression Scale (EPDS) and the Patient Health Questionnaire-9 (PHQ-9).

Paper [38] presents a nonverbal game based on artificial intelligence with working memory (1 and 2 repetition tasks) from Thymia, a company that develops AI solutions for assessing mental health and well-being, using two established AI models designed to detect high scores for symptoms of depression and anxiety.

Study [39] offers an effective and specific practical tool for the effective screening of anxiety disorders in hemodialysis patients based on the AI-MHD self-assessment scale, which contains 12 items and is based on existing screening scales for general anxiety disorders and common patient symptoms.

Research [40] highlights electroencephalography as one of the most promising methods for early identification of depressive states. The scientific concept is based on the registration of patient-specific patterns of neural dynamics, which are structured in the form of characteristic cluster microstates.

Research [41] applied machine learning algorithms and explanatory artificial intelligence tools to study the correlation between chronic pain and psychological distress in young people. The use of explanatory AI made it possible to identify subjective perception of health and sleep quality as fundamental factors common to both conditions. It was found that in the comorbid manifestation of these conditions, factors can interact nonlinearly, forming specific patterns that differ from cases of isolated development of pain or distress.

In the context of diagnosing depressive disorders, digital versions of the Patient Health Questionnaire (PHQ-9), as well as its adapted versions PHQ-8 and PHQ-2, have become particularly widespread, functioning as effective online tools for initial screening. The work [42] examines in detail the issues of design and practical application of psychoemotional state monitoring systems, the methodological basis of which is the mentioned psychometric scales.

A systematic review [43] developed a tool for monitoring how patients and doctors adhere to evidence-based treatment protocols for depression. The study identified key barriers to effective therapy and formulated strategies to overcome them. The presented comprehensive analysis of current treatment practices outlines vectors for future initiatives aimed at significantly improving the standards of care for depressive disorders.

In a longitudinal mobile study [44], which included 428 people, the seasonal dynamics of depression and its correlation with meteorological factors and physical activity were analyzed. The results of the mediation analysis showed that temperature indicators and the duration of daylight hours have a significant effect on the intensity of depressive symptoms, which, in turn, act as a mediator and determine the level of daily physical activity of the respondents.

In the study [45], a consolidated CLARION approach was developed, designed to adapt therapeutic interventions that stimulate self-management skills in depression. A key advantage of CLARION is the detailed verification of the basic components of the intervention before making any modifications. The effectiveness of the

approach is ensured by the involvement of a multidisciplinary committee, which includes patient partners and the authors of the original methods. The decision-making process in this model is based on clear criteria and the rule of "qualified majority" (75% of votes), which guarantees the balance and validity of each change.

The study [46] was devoted to the development and evaluation of specialized mobile solutions aimed at providing psychological support to medical personnel. The authors found that regular use of mobile medical applications for self-help significantly reduces the level of anxiety among health care workers. In addition to the positive impact on the emotional background, the effectiveness of the selected digital strategies in relieving symptoms of stress and depression, as well as in minimizing the risks of developing addictions to psychotropic substances in the professional environment was recorded.

The concept of digital phenotyping is becoming increasingly important in the field of remote monitoring of mental health. In the work [47], a personalized model for predicting relapses in individuals with psychotic disorders is presented, which is based on neural networks for clustering and anomaly detection. The study confirmed the high effectiveness of self-learning algorithms in recognizing atypical behavioral patterns. This was made possible by analyzing granular biosignals continuously collected using comfortable wearable devices.

The study [48] aimed to identify hidden patterns between the intensity of symptoms (according to the BSI scale) and the level of social maladjustment of patients (according to the PROMIS questionnaire). The authors were able to identify four specific clinical profiles that allow differentiating patients by the degree of psychosocial dysfunction, in particular by such critical markers as suicidal intent and ability to engage in professional activities. The identification of these common characteristics creates the basis for the precise allocation of medical resources and personalization of therapeutic goals depending on the individual patient profile.

The study [49] analyzed the determinants that determine the willingness of individuals with depression to interact with AI-based medical assistants. The authors found that the key factor in the adoption of the technology is the level of trust, which directly correlates with the expected effectiveness of the system and forms a positive behavioral intention. At the same time, an inverse relationship has been established: a high level of perceived risk becomes a significant barrier to the use of AI assistants, while strengthening trust allows users to eliminate concerns about the safety of the technology.

The study [50] studied the impact of various sources and formats of emotional support on the dynamics of depressive and anxiety states in the elderly. It was found that identifying the most accessible and effective aspects of social interaction allows for a more accurate prediction of the mental health status of patients. This approach serves as a reliable basis for making clinical decisions and optimizing the choice of therapeutic strategies adapted to the individual social context of the person.

The work [51] investigated the complex interaction between depression, medical literacy, social integration and the phenomenon of self-neglect in the elderly. Health literacy and social network density were found to mediate the effects of depressive symptoms on the patient's propensity to neglect their own needs. These findings support the idea that preventive strategies aimed at cognitive education and strengthening social support are effective tools for mitigating the negative consequences of depression and preserving quality of life in old age.

The literature analysis showed that most of the known tools and technologies are aimed at studying the occurrence and recording of depression manifestations for various reasons, but not all of them provide decision-making algorithms (data interpretation logic), not all of them are aimed at routing patients at the primary medical level (next steps for the patient), not all of them use validated tools for interviewing patients, preferring author's questionnaires for which sensitivity and specificity have not been proven, not all of them are integrated with electronic medical records, not all of them have a real-time notification system (crisis monitoring), not all of them are adapted to a specific user, preferring to compare the patient's indicators with average statistical indicators, not all of them provide for the patient's informed consent for use, and not all of them pay attention to the study of objective behavioral markers, one of which is a decrease in motor activity, and require daily active actions from the patient (filling out questionnaires, for example), which is an obstacle due to low motivation (aboulia) of patients with depression.

Results & Discussion

So, from the perspective of providing psychoemotional screening and determining the state of patients with depression, we are interested in whether known tools and technologies provide: decision-making algorithms – *criterion 1*, routing of patients at the primary medical level – *criterion 2*, use of validated tools for interviewing patients – *criterion 3*, integration with electronic medical records – *criterion 4*, real-time notification system – *criterion 5*, adaptation to a specific user – *criterion 6*, informed consent of the patient to use the tool – *criterion 7*, research of objective behavioral markers (for example, decreased motor activity) – *criterion 8*.

Let us conduct a study of the considered tools and technologies for psychoemotional screening and determining the state of patients with depression for the purpose of satisfying the specified 8 criteria – Table 1.

Table 1

Results of a study of tools and technologies for psychoemotional screening and determining the condition of patients with depression

Tool / Technology	Criterion 1	Criterion 2	Criterion 3	Criterion 4	Criterion 5	Criterion 6	Criterion 7	Criterion 8
Computer-aided psychodiagnostics [22]	Yes	No	Yes	No	No	No	Yes	No
Apsou game [23]	Yes	No	Yes	No	Yes	No	Yes	Yes
Solutions for monitoring and treating patients [24]	Yes	No	No	Yes	Yes	No	Yes	Yes
Wearable technologies for understanding mental disorders [25]	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Smartphones for remote therapy [26]	Yes	No	Yes	No	No	Yes	Yes	Yes
Programs for mental health balance [27]	Yes	No	Yes	No	No	No	Yes	No
Anima project [28]	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Technology for psychological assessment and measurement [29]	Yes	No	Yes	No	No	Yes	Yes	Yes
Psychological screening [30]	No	No	Yes	No	No	No	Yes	Yes
Online survey based on depression screening tools [31-33]	No	No	Yes	No	No	No	Yes	No
AgileBrain method [34]	No	No	Yes	No	No	No	Yes	Yes
Text4Hope online service [35]	Yes	Yes	Yes	No	Yes	No	Yes	No
Statistical software [36]	No	No	Yes	No	No	No	Yes	No
Voice biomarker analysis technology [13]	No	No	Yes	Yes	Yes	No	Yes	Yes
Postpartum depression screening tool [37]	No	No	Yes	No	No	No	Yes	No
Nonverbal game [38]	Yes	No	Yes	No	No	Yes	Yes	Yes
Anxiety disorder screening tool [39]	No	No	Yes	No	No	No	Yes	No
Early depression identification tool based on electroence-phalography [40]	Yes	No	Yes	No	No	Yes	Yes	Yes
Explanatory AI tools for distress detection [41]	Yes	No	Yes	No	No	Yes	Yes	Yes
Psychoemo-tional state monitoring system [42]	Yes	No	Yes	No	No	No	Yes	No
Depression treatment protocol monitoring tool [43]	Yes	Yes	Yes	No	No	No	Yes	No
Analysis of seasonal dynamics of depression [44]	Yes	No	Yes	No	No	Yes	Yes	Yes
CLARION consolidated approach [45]	Yes	No	Yes	No	No	Yes	Yes	No
Mobile solutions for supporting healthcare personnel [46]	Yes	No	Yes	No	Yes	No	Yes	No
Relapse prediction model [47]	Yes	No	No	No	Yes	Yes	Yes	Yes
Tools for differentiating patients by degree of psychosocial dysfunction [48]	Yes	No	Yes	No	No	Yes	Yes	No
Tools for determining willingness of people with depression to interact with AI-based medical assistants [49]	Yes	No	Yes	No	Yes	No	Yes	No
Research on the impact of emotional support on the dynamics of depressive states [50]	No	No	Yes	No	No	No	Yes	No
Research on the interaction between depression, medical literacy, social integration and the phenomenon of self-neglect [51]	No	No	Yes	No	No	No	Yes	No
Cyberphysical system for determining the state of patients with depression based on the recording of motion activity [52]	Yes	No	No	Yes	Yes	Yes	No	Yes

The conducted study of known tools and technologies for psycho-emotional screening and determining the condition of patients with depression demonstrates the rapid evolution of digital psychodiagnostic methods, but reveals significant fragmentation in the implementation of system requirements for medical screening of depression. Most modern developments are focused on the high technological capabilities of individual components, in particular, on the implementation of complex decision-making algorithms and the study of innovative objective behavioral

markers, such as voice parameters, eye tracking, electroencephalography and locomotor activity. At the same time, there is a critical shortage of comprehensive solutions that would combine these engineering achievements with organizational and ethical aspects of clinical practice. The criteria for integration with electronic medical records and ensuring clear routing of patients at the primary medical level remain the least satisfied, which makes most existing tools isolated from the real state healthcare system.

Even the most advanced cyber-physical systems that demonstrate successful fixation of motor activity and implementation of real-time notification systems often ignore the need to use classic validated survey tools and formalize procedures for obtaining informed consent, which is mandatory for a certified medical opinion. Existing mobile self-help applications and neural network models usually focus either on subjective assessment of the condition through digital questionnaires or on purely technical detection of anomalies, without creating an adaptive environment that would take into account the individual norm of the patient in combination with clinical protocols.

This state of scientific and technical development determines the urgent need to develop a unified information technology for psycho-emotional screening, which would not simply record the patient's condition, but act as a full-fledged link in the medical process. The creation of information technology that will simultaneously satisfy all eight specified criteria – from the collection of objective biometric data to automated routing in the state primary health care network in compliance with all ethical and legal norms – will allow to bridge the gap between theoretical developments and their practical implementation, ensuring timely diagnosis and continuity of treatment of depressive disorders in modern conditions.

Conclusions

A systematic review of tools and technologies for psycho-emotional screening and assessment of patients with depression confirms the rapid digitalization of depression screening methods, but reveals a significant gap between technical innovations and their clinical implementation. The review showed that most current developments focus on identifying objective behavioral markers through AI algorithms and sensory data, but they remain fragmented. The main shortcomings of existing solutions are the lack of comprehensive integration with state electronic health record systems and transparent patient routing mechanisms in primary care.

The results of the review show that even the most technologically advanced cyber-physical systems and neural network models often ignore the need to combine automated data collection with classical validated psychometric tools. It was found that ethical aspects, in particular, the procedures for informed consent and protection of sensitive data in real time, are often overlooked by researchers, which creates barriers to the certification of such methods as official medical tools. This emphasizes the problem of the isolation of digital phenotyping from real protocols for providing psychiatric and psychological care.

The general conclusion of the analysis is the justification of the critical need for the development of a unified information technology for psycho-emotional screening, which would simultaneously satisfy all eight defined criteria. Such technology should act not just as a means of fixing the condition, but as a full-fledged link in the medical process, ensuring the continuity of the "monitoring - diagnostics - routing - treatment" cycle. The creation of such a systemic approach is strategically important for increasing the effectiveness of early detection of depressive disorders, especially in conditions of mass psycho-traumatic factors that are characteristic of the modern social context.

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ОГЛЯД ІНСТРУМЕНТІВ ТА ТЕХНОЛОГІЙ ДЛЯ ПСИХОЕМОЦІЙНОГО СКРИНІНГУ ТА ВИЗНАЧЕННЯ СТАНУ ПАЦІЄНТІВ З ДЕПРЕСІЄЮ

Стаття присвячена комплексному аналізу сучасного стану та перспектив розвитку інформаційних технологій для психоемоційного скринінгу пацієнтів із депресивними розладами. Актуальність дослідження зумовлена глобальним зростанням поширеності психічних порушень, що в умовах сучасних викликів, зокрема воєнного стану, набуває масштабів критичної загрози для суспільного здоров'я та економічної стабільності. У роботі проведено систематизацію наукових джерел, що дозволило ідентифікувати ключові тренди у сфері цифрової психіатрії. Основну увагу приділено порівняльному аналізу існуючих методів за вісьмома фундаментальними критеріями, які визначають придатність технології до реального клінічного впровадження. Серед них виділено наявність алгоритмів прийняття рішень, механізми маршрутизації пацієнтів на первинній ланці медичної допомоги, використання валідованих психометричних інструментів, інтеграцію з електронними медичними картками, системи сповіщень у реальному часі, адаптацію під індивідуальну норму користувача, етичну прозорість та дослідження об'єктивних поведінкових маркерів. Результати аналізу свідчать про значну фрагментарність існуючих рішень – при високій зацікавленості дослідників у використанні біомаркерів (голосу, айтрекінгу, електроенцефалографії та локомоторної активності) та штучного інтелекту, спостерігається майже повна відсутність систем, інтегрованих у державну медичну інфраструктуру. Виявлено, що більшість існуючих мобільних застосунків та кіберфізичних систем функціонують ізольовано від первинної ланки медичної допомоги, що ускладнює своєчасну діагностику та безперервність лікування. Особливий акцент у роботі зроблено на важливості цифрового фенотипування, яке дозволяє об'єктивізувати стан пацієнта через моніторинг рухової активності, проте доведено, що такі дані мають обов'язково поєднуватися з класичними клінічними протоколами. Обґрунтовано, що відсутність інтеграції з електронними медичними записами та формалізованих алгоритмів маршрутизації є головними бар'єрами на шляху до створення ефективної системи національного скринінгу. На основі виявлених «білих плям» у світовій науковій практиці автором доведено необхідність розробки уніфікованої інформаційної технології, яка б виступала повноцінною ланкою медичного процесу. Сформований аналітичний базис статті слугує теоретичним підґрунтям для проєктування нової інформаційної технології, здатної забезпечити замкнений цикл «моніторинг – діагностика – маршрутизація – лікування». Наукова новизна роботи полягає у системному підході до оцінювання технологій скринінгу, що дозволяє чітко визначити вектори подальших досліджень у напрямку створення інформаційної технології, адаптованої до потреб сучасної системи охорони здоров'я.

Ключові слова: депресія, психоемоційний скринінг, цифрова психіатрія, інформаційні технології, локомоторна активність, цифрове фенотипування, первинна медична допомога, маршрутизація пацієнтів, електронна медична картка, алгоритми прийняття рішень, штучний інтелект, мобільний моніторинг, біомаркери, валідовані опитувальники, кіберфізичні системи.