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DISABILITY AS A CONSEQUENCE OF MENTAL DISORDERS: NEW METHODOLOGICAL APPROACHES FROM THE STANDPOINT OF THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING

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As of the beginning of 2017, about 300 thousand people with mental disorders in the country had a disability group, while the annual increase in persons with disabilities due to mental disorders is approximately 10 thousand people annually. It is important to develop methodological approaches to the classification of mental disorders from the standpoint of the social approach. The aim of the study was to determine the violations of vital activity criteria in persons with disabilities due to mental illness and their compliance with certain domains of the ICF to determine the feasibility of using this classifier in conducting medical and social expertise. The results showed a significant correlation between impairments of functions in the ICF domains and impairments of vital activity categories depending on the disability group. For the first time, new methodological approaches that combine medical criteria for disability and social approaches of the ICF are proposed. The application of this approach will improve the provision of expert assistance to the population from the standpoint of evidence-based medicine.

Key words: disability and health; international classification of functioning; disability, mental disorders.

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ІНВАЛІДНІСТЬ ЯК НАСЛІДОК ПСИХІЧНИХ РОЗЛАДІВ: НОВІ МЕТОДОЛОГІЧНІ ПІДХОДИ З ПОЗИЦІЙ МІЖНАРОДНОЇ КЛАСИФІКАЦІЇ ФУНКЦІОНУВАННЯ

Станом на початок 2017 р. в державі близько 300 тис. хворих на психічні розлади мали групу інвалідності, при цьому щорічний приріст осіб з інвалідністю за рахунок розладів психіки щорічно становить приблизно 10 тис осіб. Актуальним є розробка методичних підходів до класифікації проявів порушень психіки з позицій соціального підходу. Метою дослідження було визначення порушень критеріїв життєдіяльності в осіб з інвалідністю внаслідок захворювань психіки і їх відповідність певним доменам МКФ для визначення доцільності використання даного класифікатора при проведенні медико-соціальної експертизи. Результати показали достовірний кореляційний зв'язок між порушеннями функцій за доменами МКФ та порушеннями категорій життєдіяльності залежно від групи інвалідності. Вперше запропоновано нові методичні підходи, які поєднують медичні критерії інвалідності та соціальні підходи МКФ. Застосування даного підходу дозволить удосконалити надання експертної допомоги населенню з позицій доказової медицини.

Ключові слова: інвалідність і здоров'я; міжнародна класифікація функціонування; обмеження життєдіяльності, психічні розлади.

Today, mental disorders are becoming the most widespread ailments of our time [15]. Mental disorders are found in all categories of the population and in all age categories of mankind. Epidemiological studies conducted at the initiative of the WHO say that by 2025, mental illnesses will be among the top five diseases leading in the number of human labor costs, leaving behind even cardiovascular diseases and will become one of the main causes of disability of the global population [15]. In 2019, one in eight people, or 970 million people worldwide, suffered from a mental disorder. At the same time, more than 25.0 % of adults suffer from one or more mental disorders during their lifetime [13]. US statistics show that there are about 46 million people over 18 have mental disorders, which is 20 % of the country's population; another 11.4 million people (5 %) have serious functional disorders that prevent their daily functioning [6, 13].

The report of the Ministry of Social Policy says that Ukraine ranks first in Europe in terms of the number of mental disorders (3 % of the population suffer from mental disorders). Almost 2 million become patients of psychiatric hospitals every year. 1,673,328 residents of Ukraine were registered with mental and behavioral disorders at the beginning of 2017. In 2016, 182,415 patients were hospitalized in psychiatric care institutions and stayed there for an average of 53.4 days. There are 261,240 patients with mental disorders who have disabilities in Ukraine, 8.5 % of them are children under 17. The annual increase of persons with disabilities due to mental disorders is approximately 10,000 people. The mortality rate of the Ukrainian population from intentional self-harm in 2015 was 17.7 per 100,000 [1]. The prevalence rate of disability due to mental and behavioral disorders in 2019 and 2020 was 1.9 per 10,000 [11].

Thus, the relevance of the mental illnesses problem is undeniable. At the same time, the understanding and development of methodological approaches to the classification of manifestations of mental disorders from the standpoint of a social approach are also relevant today. In 2022, a new classifier was approved in Ukraine (ICF) [5]. This system can be successfully used in the diagnosis and description of clinical manifestations of the main disabling diseases of the psyche, as well as in the process of examination of psychotic disorder when determining disability.

The purpose of the study was to determine the main violations of the criteria of vital activity (social signs of disability) in persons with disabilities due to mental illnesses and their correspondence to certain domains of the International Classification of Functioning, Violations of Vital Activities and Health and to determine the expediency of using this classifier when conducting a medical and social examination of persons with psyche disorders with the addition of the impaired functions description according to the impairment degree.

Materials and methods. The study was conducted on the basis of the Communal Institution "Regional Clinical Center of Medical and Social Expertise of the Dnipropetrovsk Regional Council" 2019–2024. It was approved by the University's Biomedical Ethics Committee. The study was a single-centre, cohort study and was conducted in two stages. At the first stage of our study, we retrospectively analyzed 5,631 medical and social cases and referrals for medical and social examination (Form 088/o) of persons with mental illnesses; the search depth was 3 years. According to the current regulatory documents of Ukraine [3, 4]. At the second prospective stage, 144 persons who were first assigned a disability group in 2022 were detailed with certain social signs of impaired functioning and qualified in accordance with the new National Classifier NC 030:2022 [5]. At the prospective stage, we formed a research group of 144 people. The inclusion criteria were: age from 18 to 60 years (able to work), for whom the disability group was defined for the first time during 2020–2022. There were no restrictions on disability groups in our study. We included persons of I (24 persons), II (77 persons) and III (43 persons) disability groups. Exclusion criteria were: incapable patients; and patients in closed specialized institutions. Statistical in the software packages STATISTICA 6.1 (StatSoftInc., serial number AGAR909E415822FA) [2]. The scientific hypothesis was to determine the similarity of the legislatively recognized signs of disability to the main domains of the ICF with the help of the Pearson correlation coefficient.

Results of the study and their discussion. The results of the study showed that in 2020–2022, 5,631 patients were examined, including 490 primary and 5,141 repeat patients. Disability was established in 4,009 patients; among the primary patients – 445 patients; among the repeat patients – 3,554. Characteristics of the patients are presented in Table. 1.

Table 1

Characteristics of the patient's study group

Number of patients, n	Year			Total
	2020	2021	2022	2020–2022
Total	1776	1844	2011	5631
Patients who primary applied	174	155	161	490
Recognized as disabled:	156	139	150	445
I group	29	25	25	79
I – A group	15	17	13	45
I – B group	14	8	12	34
II group	94	81	82	257
III group	33	33	43	109
Patients who have applied repeatedly:	1602	1689	1850	5141
Recognized as disabled:	1099	1105	1350	3554
I group	12	17	9	28
II group	690	714	759	2163
III group	397	380	583	1360

The largest group consisted of patients with III group disability – 1,469 patients (109 – primary and 1,360 – recurrent); 2,420 patients were assigned to the II group (257 and 2,163, resp.); group I was established in 107 patients (79 and 28, resp.). Disability for life was established in 29 % of patients, which amounted to 1,633 patients during 2020–2022.; disability for 2 years – 65 % (3,660 patients); for 3 years – 7 % (395 patients).

The results of the study on the existing disorders of the vital activity of patients in the study group revealed the following. Persons of the III group more often had violations of the ability to work, self-care, and the ability to control their behavior (100 %, 88 %, and 55 %, respectively). Persons of the II group had more frequent violations of self-care, ability to work, ability to communicate and ability to control their behavior (81.5 %; 76.5 %; 72.6 % and 68.4 %, respectively). The persons in the group I had violations in their ability to work, self-care, and control their behavior (100 %, 93.5 %, and 100 %, respectively).

To describe these violations according to the ICF classification, it is necessary to describe the domains listed in Table. 2.

Table 2

Correspondence of vital activity criteria to the domains of the International Classification of Functioning, Violations of Vital Activity and Health

Vital criteria, WHO, 2001.	Domains of ICF, WHO, 2011.
Ability to work	d7 Interpersonal interactions and relationships d2 General tasks and requirements
Self-service	d5 Self-service d6 Involvement in everyday life
Mobility (ability to move)	d4 Mobility
Ability to study	d1 Learning and applying knowledge
Orientation ability	d7 Interpersonal interactions and relationships
Ability to communicate	d3 Communication
Ability to control behavior	d8 The main spheres of life d7 Interpersonal interactions and relationships d9 Community, social and public life

At the same time, the peculiarity of the course and clinical manifestations of mental disorders requires attention to be paid to other functional disorders, which must be taken into account when determining the severity of the group and the terms of disability. Thus, the ability to self-care for this cohort of patients must be supplemented with a description of the following capabilities of a person: care for appearance, compliance with personal hygiene, housekeeping, and the ability to prepare and eat food. According to the requirements of the ICF, it is possible to offer the following description of violations with 1st, 2nd, 3rd and 4th qualifiers of the ICF.

Appearance care. Described by domains: d510, d520, d530, d570.

0 – no violations. The person's appearance is within the limits of social norms, the patient dresses taking into account the weather conditions, spends a reasonable amount of time and energy on this. There are no worries and concerns for others. Independently maintains a neat appearance, the scope of skills is complete; there is no need for help.

1 – Minimal violations (0–4 %). Disdain for appearance, which does not go beyond social norms, is periodically observed. Family members can express complaints, take care of the patient's clothes. In general, the patient independently maintains a neat appearance, the scope of skills is complete, but there is a need for observation.

2 – Mean, significant, moderate violations (24–49 %). The patient makes an unpleasant impression on others. He despises his appearance, does not support a neat appearance on his own, the scope of his skills is not complete, he needs observation and encouragement. For example: does not change clothes, dresses only sometimes.

3 – Serious, severe violations (50–95 %). The patient does not worry about appearance and cleanliness. He cannot cope with maintaining a neat appearance on his own, the amount of skills is sharply reduced, he needs periodic help. For example: wears torn clothes. It is established if the consequences are harmful, there is a serious threat to the patient's physical health (infection, pediculosis, skin diseases).

4 – Maximum violations (95–100 %). Indifferent to appearance. Independently does not maintain a neat appearance, the amount of skills is minimal, needs constant help. The appearance of the patient is not included in the acceptance of the social norm. Often there are situations associated with a significant risk for the physical existence of such a patient, provided that he is not provided with constant external assistance. Patient neglect or decreased self-preservation is observed within 1 month.

Personal hygiene are described by ICF domains: d510; d52; d530; d570.

0 – No violation. Hygiene skills are within social norms, a reasonable amount of time is spent on self-care, and there is no concern within the family. Self-fulfills hygienic requirements, the scope of skills is complete, he does not need help.

1 – Minimal. There are cases of neglect of hygiene skills, but this does not go beyond social norms. Family members can express complaints and remind the patient about the need to observe hygiene. In general, independently fulfills hygienic requirements, the scope of skills is complete, needs observation. For example: does not regularly wash hands, take a bath, shave, etc.

2 – Obvious, average, significant, moderate violations. Neglect of hygiene skills makes an unpleasant impression on others. Does not cope independently, the scope of skills is not complete, needs encouragement. For example: tooth decay, skin diseases, etc. are observed.

3 – Serious, severe violations. Does not worry about appearance, which causes negative attitude of others. He cannot cope with hygienic requirements on his own, he needs prompting, observation and periodic help. For example: the patient has an unpleasant smell; washes if forced, etc.

4 – Maximum violations. An indifferent attitude to personal hygiene and appearance, which causes a negative attitude toward others. He cannot cope with the skills on his own, he needs constant help. For example: it is necessary to wash, take to the toilet, etc.

Household management (ICF domain d640).

0 – no violation. Skills within social norms, use of which takes a reasonable amount of time and energy, no complications for other people and no concern from family. Independently copes with household management, the scope of skills is complete, there is no need for help.

1 – Periodic disregard for housekeeping. Family members can express complaints and remind the patient about the need to follow the rules. The patient needs observation. For example: irregularly cleans his room, etc.

2 – Disregard for housekeeping affects family members and makes a negative impression on others. The initiative is formal, does not cope on its own, the scope is not complete, it needs encouragement. For example: formally participates in cleaning, does not monitor the cleanliness of personal belongings, etc.

3 – Patient doesn't worry about running a household, which affects the attitude of family members and others. He cannot cope on his own, the amount of skills is sharply reduced, he needs periodic help. For example: declining household skills with health risks that limit independent living.

4 – Patient is indifferent and unintuitive, does not participate in household management. The scope of skills is minimal, needs observation and constant help from others. For example: someone need to do for the patient.

Ability to prepare and eat food. ICF domain: Food preparation d640.

0 – The patient prepares and takes food independently, the skills are fully within the limits of social norms, he does not need help.

1 – Patient prepares and takes food independently, the skills are fully within the limits of social norms, but needs encouragement.

2 – Patient prepares and takes food independently, the skills are sufficient, but he needs prompting and observation. For example: bad table manners.

3 – Patient takes food independently, prepares partially, skills are not in full, needs encouragement, observation and periodic help. For example: the patient eats only if he is told to eat.

4 – Patient does not cope with eating on his own, does not cook. The amount of skills is minimal. If there is not enough supervision, there is a threat to the patient's life, needs constant help. For example: the patient needs to be fed.

Interpersonal interactions and relationships: d710; d729; d250. When describing this type of disorder, the patient's ability to independently control behavior within the framework of accepted social norms, to orientate and behave in accordance with the situation must be taken into account. The patient's need for appropriate care should also be assessed. But first of all, it is necessary to assess the presence and manifestations degree of socially unacceptable behavior (dangerous behavior in everyday life and conflict in relationships with others).

0 – No violation. Patient is able to control his behavior, comprehensively oriented, and does not need help. There are no difficulties in treating other people, he understands and treats other people well. The person leads an active social lifestyle. Behavior in everyday life is adequate, corresponds to socio-cultural norms and does not require increased attention or special observation.

1 – Minimal temporary functional impairment. Slight violations of control over behavior, sometimes loss control, which manifests itself in conflicts, and inappropriate behavior, but does not need help. The behavior is adequate. The patient is not in immediate danger but requires increased attention.

2 – Obvious, average, significant, moderate violations (24–49 %). Able to control his behavior, but needs periodic assistance when moving. There are difficulties in personal relationships, without serious conflicts. Behavior in everyday life is inadequate and does not correspond to social and cultural norms. The patient is a direct danger to others, and requires increased attention and observation.

3 – Serious, severe violations. Periodic loss of control over behavior. Conflicts, and wrong or aggressive behavior force the intervention of official organizations (medical, social, legal). The patient's condition does not completely exclude him from public life, but there is a need for periodic outside help. During communication, serious conflict situations arise that disrupt the perception of the patient by others. The patient is hostile to those around him, prone to conflict behavior when those around him avoid communication with him. Problems arise in connection with pronounced conflicts with other people or open violence. Behavior in everyday life is inadequate, poses a danger to others, requires special supervision. The circle of communication is narrowed, the patient is periodically excluded from social life, there is a need for the intervention of official medical and/or social or legal organizations.

4 – Maximum violations. The inability to independently control behavior leads to constant outside help and care. There are serious and long-lasting conflicts, and open violence against one or more people. Behavior in everyday life is inadequate, poses a danger to others, and requires special supervision. To control the patient's behavior, the almost constant intervention of official organizations (medical, social, legal) is necessary, which leads to the exclusion of a person from public life.

Very important for persons with progressive mental illness is the frequency of involvement in administrative or criminal liability, which characterizes the severity of such a violation with reference to socially dangerous actions. It is very important to separate such manifestations in the social behavior of patients, because their characteristics can become the basis for recognizing a patient or a person with a disability as incapacitated. It should be taking into account the patient's administrative or criminal liability, fines, the convictions number and/or compulsory treatment throughout his life. From the ICF position, it can be described by domains: d729, d750, d779, d798.

0 – No violation. The patient was not subject to administrative or criminal liability, there was no criminal record or forced treatment. The patient does not have conflicts with others, hooliganism, offenses related to narcotic substances.

1 – Minimal temporary functional impairment (4-24 %). During the last 12 months, the patient had conflicts with others or inappropriate behavior was observed. He could be subject to administrative liability, a fine, could be detained by the police without initiating a criminal case, had hooliganism or violation of public order. May have a one-time criminal liability, criminal record or compulsory treatment for life. Refers to: inappropriate or aggressive behavior, detention while intoxicated, etc.

2 – Obvious, average, significant, moderate violations. During the last 6 months, the patient had conflicts with the environment or had inappropriate behavior, did socially dangerous actions related to narcotic substances. The patient was repeatedly subjected to administrative liability and a fine. May have repeated criminal liability or two forced treatments. Refers to: illegal acquisition, use, manufacture or sale of narcotic substances.

3 – Serious, severe violations. The patient was repeatedly brought to administrative responsibility, fined, detained by the police without initiating a criminal case. Multiple criminal liability – three convictions or three compulsory treatments. There are conflicts with the environment or inappropriate behavior are observed during last 3 months. The patient was subject to administrative or criminal liability, crimes against state or personal property. These include: theft, robbery, embezzlement.

4 – Maximum violations. The patient leads an antisocial lifestyle, has repeatedly been subject to administrative and/or criminal liability (four or more convictions or forced treatment), a fine, and been detained by the police. During the last month, he was in conflict with his environment or inappropriate behavior was observed, he committed violent acts, crimes against the life and health of citizens. These include: murder, bodily harm, sexual offenses.

Learning ability and cognitive functions – d130–d159, b163, b164, d132. The most important criterion that causes problems in learning is a quantitative decrease in intelligence, which is expressed through IQ level.

0 – No violation. Reasonably busy and active during the day, interests correspond to social norms and do not need control and encouragement.

1 – Minimal temporary, minor functional impairment. Interest and awareness of events is reduced, the patient is not interested in receiving and searching for information, rarely – once a week he reads newspapers, listens to the radio, watches TV, communicates, including through a computer. Activity is reduced, aimlessness or useless activity is noted. The IQ level is slightly reduced and is 50–69. A person may need more time to learn a skill.

2 – Moderate violations. The learning disability degree is determined by moderate decline of IQ – 35–49. Low intellectual abilities lead to problems in learning and developing new skills, especially professional ones. A person may not have language or communication limitations, but a significantly reduced ability to form and learn new skills, requiring support in daily activities such as dressing and eating.

3 – Serious, severe violations. The learning disability degree is determined by severe decline of IQ – 20–34. A noticeable decrease in activity and interests, actions are often meaningless: aimlessly walking on the streets, sitting in front of the TV. Despite efforts, it is not possible to involve in family life.

4 – Maximum violations. It's learning disability or intellectual disability. He is not interested in and does not know local and world events, he does not communicate with those around him. The level of activity is extremely limited, he has no interests or hobbies. For a significant part of the day, the patient is not occupied with anything, he must be forced to fulfill the basic requirements of family life.

In our study we described the functioning of 144 people from the research group from ICF point of view. We determined the trend of a reliable connection between the domains and the disturbed categories of life activities ($p \leq 0.10$), which are evaluated today in the disability examination in accordance with regulatory documents [3, 4, 5]. In the groups, we determined a direct high correlation between "impairment of self-care" and domains of ICF and d520 (Care of body parts): 0.67; 088 and 0.95, respectively. A similar trend was found with the domains d530 Hygienic measures for physiological needs and d570 Taking care of one's health and between the "Ability to control one's own behavior" and the ICF domains: d798 Interpersonal interactions and relationships, other specified and d250 Managing one's own behavior. Interestingly, high correlation coefficients were also associated with Learning Ability and the ICF domain d155 Practical Skills Acquisition.

The WHO developed International Classification of Functioning as a common framework for understanding health and describing the impact on functioning. Today, it is actively implemented in descriptive medicine. Thus, from 2001 to 2012, 268 articles were found in the MEDLINE, PsycINFO, and PubMed databases, 27 % of which were from the United States [6], of which only 64 related to mental disorders [9]. More often, ICF is used in rehabilitation, but there are also attempts to use it to describe the functioning of people with mental disorders [10, 11, 12].

In our work, we compared the criteria of life activities and high correlation coefficients were obtained. This proves the possibility of using these domains in describing the functioning of people with mental disorders. The authors did not propose descriptive approaches for determining violations that occur during professional work. However, there are known attempts to solve this issue in separate scientific studies by using a mini-set of ICF domains for the assessment of professional functioning (Mini-ICF-P) [10, 12].

There are a few scientific studies devoted to use of the ICF in medical and social expertise in Ukraine [7]. In the study, we made the first step to use the ICF in the examination of disability in persons with mental disorders in Ukraine.

The determination of a reliable correlation between impaired functions according to the domains of the ICF and impaired categories of vital activities proves the possibility of using certain qualifiers of this classification to detail the description of the condition of persons with disabilities with mental disorders in medical and social examination.

Some foreign authors share our opinion with the addition of the fact the medical model with an emphasis on the pharmacological treatment of persons with mental disorders dominates in the examination of disability in most countries of the world [8]. It is necessary to realize one more important reason, which today stands in the way of the use of ICF in clinical and expert practices. This is the lack of regulated tools that would allow to reduce the number and scope of diagnostic work, which is that according to the ICF, even for basic or mini sets, it is necessary to evaluate a very large number of domains, hundreds of functions, anatomical structures and manifestations of activity and implementation. In order not to turn the ICF into a cumbersome and inconvenient mechanism, it is necessary to focus on the development of unified approaches, scope of examination and diagnostic algorithms for describing the functioning of persons with various disabling conditions.

Conclusions

1. The life activity criteria proposed by the WHO and used today in the regulatory documents of Ukraine for medical and social examination of persons with mental disorders allow to reliably determine the signs of disability and the corresponding group and term of disability. These criteria make it possible to reliably determine the group and term of disability.

2. The results of the prospective stage of the study confirmed the presence of a reliable correlation ($p \leq 0.10$) between impaired functions according to the ICF domains and impaired categories of life activities depending on the disability group. Thus, the additional application of the International Classification of Functioning to describe the problems faced by persons with mental disorders in everyday life will allow more detailed definition of their functioning impairment, which can be used in medical and social examination.

3. In our research, for the first time, new methodological approaches were proposed, which combine the medical criteria of disability and the social approaches of the ICF from the standpoint of functioning disorders according to the qualifiers with their interpretation. The application of this methodical approach will improve the provision of expert assistance to the population in determining the disability of persons with mental disorders from the standpoint of evidence-based medicine.

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