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Screening and diagnosis for mood and anxiety disorders in epilepsy: Polish population reference values

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ABSTRACT

Introduction. Epilepsy is one of the world's most prevalent noncommunicable diseases and tends to have a chronic course, often with comorbid psychiatric disorders, of which depressive disorders (DDs) and anxiety disorders (ADs) are the most common.

Background. As anxiety and depressive disorders are underdiagnosed and so undertreated in people with epilepsy (PWE), this could have implications for the course of both of these medical conditions and the response to treatment and health outcomes. Thus it is crucial to perform screening for psychiatric disorders in populations with epilepsy using specific psychometric screening instruments optimised for that group of patients. Polish versions of the Hospital Anxiety and Depression Scale (HADS), the Hamilton Rating Scale for Depression (HRSD), the Hamilton Anxiety Rating Scale (HARS), the Beck Depression Inventory (BDI), the State-Trait Anxiety Inventory (STAI) and the Neurological Disorders Depression Inventory for Epilepsy (NDDI-E) were validated against 'gold standards' in a Polish population with epilepsy.

Clinical implications. Using well-validated screening instruments that can be easily implemented in a clinical setting may contribute to better diagnosis, and consequently treatment, of comorbid psychiatric disorders, which would have a great impact on the course and prognosis of epilepsy management.

Conclusions. Based on the outcomes of Polish studies aimed at validating psychometric instruments for screening for mood and anxiety disorders, HADS is recommended as a first-choice screening tool.

Key words: epilepsy, mood disorders, anxiety disorders, screening tools

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Introduction

Epilepsy is a noncommunicable disease of the brain that affects approximately 50 million people globally, leading to poor health-related quality of life and a deterioration in psycho-social everyday functioning. Epilepsy tends to have a chronic course, often with comorbid psychiatric disorders of which depressive disorders (DDs) and anxiety disorders (ADs) are the most common, occuring with a prevalence ranging from 5–25% [1, 2] (ADs) and from 11–62% [3] (DDs). Anxiety and depressive disorders are commonly underdiagnosed and undertreated in people with epilepsy (PWE), which could have adverse effects on the course and prognosis of epilepsy management, with lower overall health-related quality of life and increased risk of suicidal ideation and suicide attempts [4].

The 'gold standard' tools used in the recognition of anxiety and depressive disorders are different types of psychometric instruments based on structured interviews [5–13]. Semi-structured interviews, e.g. the Structured Clinical Interview for DSM (SCID), are designed to be administered by clinically trained professionals with experience in diagnosis [5–8]. The output of the SCID is a record of the presence or absence of each of the disorders being considered for current episode (past month) and for lifetime occurrence. Fully structured interviews, on the other hand, such as the Composite International Diagnostic Interview (CIDI) [6, 9], have been designed specifically to address the high cost of using clinician-administered interviews in epidemiological surveys and can be administered by trained lay interviewers. The Mini-International Neuropsychiatric Interview (M.I.N.I.) is a very

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brief, fully structured, diagnostic interview for Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) psychiatric disorders [10, 11]. With an administration time of approximately 15 minutes, it meets the need for a short but accurate structured psychiatric interview for clinical trials and epidemiology studies, and can be used as a screening instrument in clinical settings [10, 11]. Undoubtedly the main advantage of using gold standard tools such as MINI, SCID or CIDI is that they are structured interviews to be performed by a specialist, and thereby a proper psychiatric diagnosis can be determined. The detection of mood and anxiety disorders is of vital clinical importance in patients with epilepsy. Measures of severity must also be assessed against population-specific criteria. Several factors, including antiepileptic drug (AED) side effects as well as atypical symptomatology can affect the accuracy of psychiatric diagnosis in PWE. In particular, screening instruments lacking reference to a standardised structured psychiatric interview may not produce a credible diagnosis, as tools used in the general population may not be valid and reliable in PWE [12, 13].

Therefore, defining PWE specific cut-off scores is of prime importance. A psychometric instrument may exhibit substantial variability for the targeted population. Thus, with limited data and some conflicting results, there is a need for validation studies against the gold standard, such as standardised structured psychiatric interviews, in order to produce a conclusive cut-off with valid diagnosis points for specific psychometric screening instruments that are optimised for PWE [13].

The aim of this study was to present and discuss screening tools for mood and anxiety disorders in a Polish population with epilepsy.

Materials and methods

A PubMed and Scholar Google literature search was performed to identify articles regarding Polish validations of depression and anxiety screening tools in people with epilepsy.

Results and discussion

This review includes seven articles regarding Polish validations of HARS, STAI-T, BDI, HRSD, HADS-A, HADS-D and NDDI-E. Before we discuss the results of our review, we would like to mention factors to be considered when validating screening tools, as well as to briefly describe depression and anxiety screening psychometric instruments.

Population-specific factors and rationale for cultural adaptation

When validating screening tools, it is important to consider the fact that they were developed in different cultures and languages from that in which they have been applied. Differences between the psychometric properties of the original and adapted versions may be encountered. Therefore it is necessary to acquire normative data to make the translated tools useful. Maters et al. drew attention to the fact that cross-culturally valid, but literally translated, versions of HADS may not be obtainable and specific cut-off points may not be valid across cultures and languages. It is crucial to take this into consideration and to remember that optimal cut-offs may differ between the general population and specific populations such as PWE.

Screening tools in mood disorders

Screening psychometric tools for depression in PWE include the Beck Depression Inventory (BDI) [15–18], the Hospital Anxiety and Depression Scale (HADS-D) [15–17, 19], the Hamilton Rating Scale for Depression [20] and the Neurological Disorders Depression Inventory for Epilepsy (NDDI-E) [18, 21]. NDDI-E is a screening instrument developed specifically for use in PWE and is designed to minimise the potential for confounding factors related to AEDs or epilepsy itself. In the original version, a score above 15 points has a high predictive value for major depression [21]. The BDI-I contains 21 items on a 4-point scale from 0 (symptom absent) to 3 (severe symptoms) and is a self-report inventory for evaluating the severity of depression in normal and psychiatric populations. It assesses depressive symptoms within the preceding week, with high scores reflecting a more severely depressed mood (range 0–63) [18, 22, 23]. The Hospital Anxiety and Depression Scale (HADS) was developed by Zigmond and Snaith in 1983 [19] to identify possible and probable anxiety disorders and depression among patients in non-psychiatric hospital clinics. It has been broadly used in the general population and in many populations with different somatic illnesses. The tool includes 14 items, seven related to anxiety (HADS-A) and seven related to depression (HADS-D). Zigmond and Snaith recommended that a score > 8 on an individual scale should be considered as a possible case, and this threshold value has been found to be optimal for HADS-A and HADS-D in the general population [4, 17, 19, 24].

Screening tools in anxiety disorders

Screening instruments for anxiety disorders comprise the Hamilton Anxiety Rating Scale (HARS) [13, 25], the State-Trait Anxiety Inventory (STAI) [26, 27] and the Hospital Anxiety and Depression Scale (HADS) [4, 19]. STAI [26, 27] consists of 40 items measuring respectively transient and enduring levels of anxiety and includes two separate self-report scales for assessing the distinct concepts of state and trait anxiety. This is used as an indicator of general anxiety, general psychological distress, and general emotional distress. Wiglusz et al. [27] used the Polish version of the original Spielberger STAI, usually referred to as the STAI-X [26, 28]. STAI-X is a self-administered inventory of two sections containing 20 items each, designed to explore anxiety in its temporary

condition of 'state anxiety' (STAI-S) and the more general and persistent 'trait anxiety' (STAI-T) [26]. STAI-S evaluates how respondents feel 'right now, at this moment', while STAI-T estimates how respondents 'generally feel'. A total score of 40 or more specifies an anxious condition. The higher the score, the more severe the anxiety [26, 27].

HARS was one of the first rating scales developed to assess the severity of anxiety symptoms, and is still widely used today in both clinical and research settings. The scale includes 14 items, each defined by a number of symptoms, measuring both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety) [13, 25]. As there has been a constant need for validation studies against the gold standard, in order to produce conclusive cut-off points for specific psychometric screening instruments that are optimised for PWE, attempts were made to validate the screening tools in Polish populations [4, 13, 17, 18, 27, 29, 30]. Wiglusz et al. [4, 13, 17, 18, 27, 30] in their study on a Polish population with epilepsy validated the Polish versions of HADS, HRSD, HARS, BDI and STAI against 'gold standards'. A Polish version of NDDI-E was validated as well by Gmaj et al. [29], as set out in Table 1.

Among the presented scales, HARS and HRSD are clinician-rated while the others are self-reported. The scales validated by Wiglusz et al. (HARS, STAI-T, HADS-A, HADS-D, BDI and HRSD) are of high NPV so perform better in terms of ruling out depression or anxiety than in confirming the diagnosis. It is noticeable that, except for HARS, the cut-off scores for PWE differ from those established for the general population i.e. are lower in PWE for STAI-T, HADS-D, P-NDDI-E (compared to the original study), for BDI (for any depressive disorder) and for HADS-A (for definite cases). In HADS-A (for possible cases), BDI (for MDD) and HRSD, the cut-off scores are higher in PWE. The highest sensitivity was found in HRSD (100%), BDI and HADS-D (90.5%) as well as in STAI-T and HADS-A (81.3%), while HRSD, HARS and P-NNDI-E (89.3%, 87.5% and 85.8% respectively) presented the highest specificity. Wiglusz et al. [4, 13, 17, 18, 27, 30] in their study used data collected as part of a larger study reported elsewhere [2]. 96 PWE from a tertiary epilepsy centre were

Table 1. Review of Polish research study

Validated tool	Authors	Year of research	Cut-off score for general population	Cut-off score for PWE	Sensitivity [%]	Specificity [%]	PPV [%]	NPV [%]	Comment
HARS	Wiglusz et al.	2019	≥ 17	≥ 17	68.8	87.5	52.4	93.3	Clinician-rated evaluation, performs better in ruling out anxiety
STAI-T	Wiglusz et al.	2019	≥ 54	≥ 52	81.3	77.5	41.9	95.4	Self-reported symptom scale, performs better in ruling out anxiety
P-NDDI-E	Gmaj et al.	2018	15 (in the original study)	9	76.6	85.8	No data	No data	Self-reported symptom scale, standard for depressive disorders screening in PWE
HADS-A	Wiglusz et al.	2018	≥ 8 possible case ≥ 11 definite case	≥ 10	81.3	70.0	31.5	94.9	Self-reported symptom scale, performs better in ruling out anxiety
BDI	Wiglusz et al.	2017	14	18 (MDD) 11 (any depressive disorder)	90.5	70.7	46.3	96.4	Self-reported symptom scale, performs better in ruling out depression
HRSD	Wiglusz et al.	2016	≤ 6 remission for depression	11 (MDD)	100	89.3	72.4	100	Clinician-rated evaluation, performs better in ruling out depression
HADS-D	Wiglusz et al.	2016	≥ 8	≥ 7	90.5	70.7	46.3	96.4	Self-reported symptom scale, performs better in ruling out depression

BDI — Beck Depression Inventory; HADS-A — Hospital Anxiety and Depression Scale for Anxiety; HADS-D — Hospital Anxiety and Depression Scale for Depression; HARS — Hamilton Anxiety Rating Scale; HRSD — Hamilton Rating Scale for Depression; MDD — major depressive disorder; NDDI-E — Neurological Disorders Depression Inventory for Epilepsy; NPV — negative predictive value; PPV — positive predictive value; PWE — people with epilepsy; STAI — State-Trait Anxiety Inventory

enrolled. Subjects who had received a diagnosis of active epilepsy according to the International League Against Epilepsy criteria [4, 13, 17, 18, 27, 30], who had been receiving stable antiepileptic treatment in the past two months, and who were aged 18–65 were included. It is worth mentioning that in the study to validate HARS in a Polish population of PWE [13], Wiglusz et al. also compared HARS and HADS-A validation data on the same study sample [4, 13]. The authors highlighted several important differences between the two scales. The first is a different approach (self-rated vs. observer-rated) and time of administration (2–5 min *vs.* 10–15 min). In the study, HADS-A showed higher sensitivity than HARS. Another distinction in both scales is the presence of somatic symptoms. HADS was designed in a way to avoid somatic items [15–17, 19] that may help minimise the risk of false positives in PWE. On the other hand, half of the items on HARS assess somatic symptoms of anxiety [13, 25], which makes it sometimes difficult to determine whether the ratings reflect symptoms of anxiety or the side effects of common epilepsy medication [13]. Lastly, each HADS-A question concentrates on the evaluation of one symptom, whereas each item on the HARS scale includes multiple symptoms [13]. In epilepsy, symptoms such as fear are part of the seizure itself, and anxiety often accompanies aura of epilepsy attack. Thus, the physiological and cognitive symptoms of epilepsy could be indistinguishable from symptoms of psychiatric anxiety disorders in individuals with epilepsy.

It has to be emphasised that screening for depression in PWE should cover not only major depressive disorder (MDD) but also all subthreshold forms of depression and atypical mood disorders specific to epilepsy, namely interictal dysphoric disorder (IDD) [17, 32, 33], which may not be precisely identified with DSM-IV criteria [16] or may also overlap with Depressive Disorder Not Otherwise Specified (DD-NOS) criteria [17, 34]. In psychiatric studies, it is very important to perform a whole psychiatric examination in order to exclude other psychiatric disorders which may significantly influence the HADS results.

Limitations

The key limitation of Polish validation studies is the methodology as the study results refer to the small sample size of the population and selection bias due to the tertiary reference centre being associated with a risk of a complicated course of epilepsy. In order to minimise the influence of peri-ictal and ictal psychiatric symptoms, subjects with a seizure within 24 hours of examination and those experiencing more than 10 seizures in the last month before participation were excluded. Thus, the results may underscore in the depressive symptomatology and 'atypical' presentations of depression [18]. Also, the presentation of anxiety disorder may be confounded with seizure phenomena. Also, the relatively low anxiety rates for a tertiary clinic population may reflect this exclusion criterion as patients with frequent seizures would generally be expected to have higher anxiety levels [13]. Because of the small sample size, the analysis was performed in all subjects with anxiety disorders regardless of the type of disorder, including those with comorbid major depression [4]. As far as the BDI is concerned, it has to be pointed out that the BDI cut-off score of 11 for any depressive disorder is of low clinical significance as it represents a broad spectrum of depressive symptoms and should be approached with caution [18].

As the study procedures occurred during a single visit at the interview site and were completed by one rater, no test–retest reliability measure for the test results' consistency was performed. Thus, the observations may be biased and no conclusions may be drawn regarding the stability and reliability of the instrument over time. The independent raters might reduce the inflation bias with regard to the concordance between psychometric results. There was also no control group of patients with non-epileptic mood or anxiety disorders, or a control group with non-epileptic neurological disorders. Another important study limitation pointed out by Wiglusz et al. is psychiatric assessment with SCID-I for DSM-IV-TR, which is now updated to version 5 (SCID-5-CV for DSM-5) [13, 35, 36]. The use of an outdated instrument could affect the diagnosis rates and the resulting predictive values.

However, considering the anxiety disorder diagnoses profile in the study sample, we assumed that this would not have a huge impact on our study results. All these limitations together mean that the results of the studies cannot be generalised to the entire population of PWE.

Conclusions

As there is a frequent comorbidity of anxiety or/and depressive disorders with epilepsy, which may have implications for the course of both medical conditions, responses to treatment and health outcomes, it is of vital importance to perform screening for psychiatric disorders in a population of PWE using proper, well-validated instruments that could be easily implemented in a clinical setting. Based on the outcomes of Polish studies aimed at validating the psychometric instruments for screening for mood and anxiety disorders, HADS is recommended as a first-choice screening tool.

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References

1. Brandt C, Schoendienst M, Trentowska M, et al. Prevalence of anxiety disorders in patients with refractory focal epilepsy — a prospective clinic based survey. Epilepsy Behav. 2010; 17(2): 259–263, doi: 10.1016/j.yebeh.2009.12.009, indexed in Pubmed: 20075009.
2. Wiglusz MS, Landowski J, Cubała WJ. Prevalence of anxiety disorders in epilepsy. Epilepsy Behav. 2018; 79: 1–3, doi: 10.1016/j.yebeh.2017.11.025, indexed in Pubmed: 29223931.

3. Kanner AM, Barry JJ. Is the psychopathology of epilepsy different from that of nonepileptic patients? Epilepsy Behav. 2001; 2(3): 170–186, doi: 10.1006/ebeh.2001.0192, indexed in Pubmed: 12609362.
4. Wiglusz MS, Landowski J, Cubała WJ. Validation of the Polish version of the hospital anxiety and depression scale for anxiety disorders in patients with epilepsy. Epilepsy Behav. 2018; 84: 162–165, doi: 10.1016/j.yebeh.2018.04.010, indexed in Pubmed: 29803946.
5. First MB, Gibbon M. The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II). In: Hilsenroth MJ, Segal DL. ed. Comprehensive handbook of psychological assessment. Personality assessment. John Wiley and Sons Inc., Hoboken 2004: 134–143.
6. Wu Y, Levis B, Sun Y, et al. Probability of major depression diagnostic classification based on the SCID, CIDI and MINI diagnostic interviews controlling for hospital anxiety and depression scale—depression subscale scores: an individual participant data meta-analysis of 73 primary studies. J Psychosom Res. 2020; 129: 109892, doi: 10.1016/j.jpsychores.2019.109892, indexed in Pubmed: 31911325.
7. Brugha TS, Bebbington PE, Jenkins R. A difference that matters: comparisons of structured and semi-structured psychiatric diagnostic interviews in the general population. Psychol Med. 1999; 29(5): 1013–1020, doi: 10.1017/s0033291799008880, indexed in Pubmed: 10576294.
8. Brugha TS, Jenkins R, Taub N, et al. A general population comparison of the Composite International Diagnostic Interview (CIDI) and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN). Psychol Med. 2001; 31(6): 1001–1013, doi: 10.1017/s0033291701004184, indexed in Pubmed: 11513368.
9. Robins LN, Wing J, Wittchen HU, et al. The Composite International Diagnostic Interview. An epidemiologic Instrument suitable for use in conjunction with different diagnostic systems and in different cultures. Arch Gen Psychiatry. 1988; 45(12): 1069–1077, doi: 10.1001/archpsyc.1988.01800360017003, indexed in Pubmed: 2848472.
10. Sheehan DV, Lecrubier Y, Sheehan KH, et al. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. J Clin Psychiatry. 1998; 59(Suppl 20): 22–33; quiz 34–57, indexed in Pubmed: 9881538.
11. Lecrubier Y, Sheehan DV, Weiller E, et al. The Mini International Neuropsychiatric Interview (MINI). A short diagnostic structured interview: reliability and validity according to the CIDI. European Psychiatry. 2020; 12(5): 224–231, doi: 10.1016/s0924-9338(97)83296-8.
12. Fiest KM, Patten SB, Jetté N. Screening for depression and anxiety in epilepsy. Neurol Clin. 2016; 34(2): 351–361, vii–viii, doi: 10.1016/j.ncl.2015.11.003, indexed in Pubmed: 27086983.
13. Wiglusz MS, Landowski J, Cubała WJ. Psychometric properties of the Polish version of the Hamilton Anxiety Rating Scale in patients with epilepsy with and without comorbid anxiety disorder. Epilepsy Behav. 2019; 94: 9–13, doi: 10.1016/j.yebeh.2019.02.017, indexed in Pubmed: 30884410.
14. Maters GA, Sanderman R, Kim AY, et al. Problems in cross-cultural use of the hospital anxiety and depression scale: "no butterflies in the desert". PLoS One. 2013; 8(8): e70975, doi: 10.1371/journal.pone.0070975, indexed in Pubmed: 23976969.
15. de Oliveira GN, Lessa JM, Gonçalves AP, et al. Screening for depression in people with epilepsy: comparative study among neurological disorders depression inventory for epilepsy (NDDI-E), hospital anxiety and depression scale depression subscale (HADS-D), and Beck depression inventory (BDI). Epilepsy Behav. 2014; 34: 50–54, doi: 10.1016/j.yebeh.2014.03.003, indexed in Pubmed: 24681386.
16. Fiest KM, Patten SB, Wiebe S, et al. Validating screening tools for depression in epilepsy. Epilepsia. 2014; 55(10): 1642–1650, doi: 10.1111/epi.12754, indexed in Pubmed: 25169800.
17. Wiglusz MS, Landowski J, Michalak L, et al. Validation of the hospital anxiety and depression scale in patients with epilepsy. Epilepsy Behav. 2016; 58: 97–101, doi: 10.1016/j.yebeh.2016.03.003, indexed in Pubmed: 27064829.
18. Wiglusz MS, Landowski J, Michalak L, et al. Validation of the polish version of the Beck depression inventory in patients with epilepsy. Epilepsy Behav. 2017; 77: 58–61, doi: 10.1016/j.yebeh.2017.09.023, indexed in Pubmed: 29111504.
19. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand. 1983; 67(6): 361–370, doi: 10.1111/j.1600-0447.1983.tb09716.x, indexed in Pubmed: 6880820.
20. Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry. 1960; 23(1): 56–62, doi: 10.1136/jnnp.23.1.56, indexed in Pubmed: 14399272.
21. Gilliam FG, Barry JJ, Hermann BP, et al. Rapid detection of major depression in epilepsy: a multicentre study. Lancet Neurol. 2006; 5(5): 399–405, doi: 10.1016/S1474-4422(06)70415-X, indexed in Pubmed: 16632310.
22. Parnowski T, Jernajczyk W. Beck's depression inventory in the rating of mood in normal subjects and in patients with affective disturbances [article in Polish]. Psychiatr Pol. 1977; 11(4): 417–421, indexed in Pubmed: 594229.
23. Grabowska-Grzyb A, Jedrzejczak J, Nagańska E, et al. Risk factors for depression in patients with epilepsy. Epilepsy Behav. 2006; 8(2): 411–417, doi: 10.1016/j.yebeh.2005.12.005, indexed in Pubmed: 16466966.
24. Snaith RP. The hospital anxiety and depression scale. Health Qual Life Outcomes. 2003; 1: 29, doi: 10.1186/1477-7525-1-29, indexed in Pubmed: 12914662.
25. Hamilton M. The assessment of anxiety states by rating. Br J Med Psychol. 1959; 32(1): 50–55, doi: 10.1111/j.2044-8341.1959.tb00467.x, indexed in Pubmed: 13638508.
26. Spielberger CD, Gorsuch RL, Lushene RE. Manual for the state-trait anxiety inventory. Consulting Psychologist Press, Palo Alto 1970.
27. Wiglusz MS, Landowski J, Cubała WJ. Psychometric properties and diagnostic utility of the State-Trait Anxiety Inventory in epilepsy with and without comorbid anxiety disorder. Epilepsy Behav. 2019; 92: 221–225, doi: 10.1016/j.yebeh.2019.01.005, indexed in Pubmed: 30690323.
28. Wrześniewski K, Sosnowski T, Matusik D. Inwentarz stanu i cechy lęku STAI. Polska adaptacja STAI (State-Trait Anxiety Inventory STAI). Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego, Warszawa 2002.
29. Gmaj B, Majkowski J, Szczypiński J, et al. Validation of the Polish version of the neurological disorders depression inventory for epilepsy (P-NDDI-E). Journal of Epileptology. 2018; 26(1–2): 59–64, doi: 10.21307/jepil-2018-007.
30. Wiglusz MS, Landowski J, Michalak L, et al. Validation of the Polish version of the hamilton rating scale for depression in patients with epilepsy. Epilepsy Behav. 2016; 62: 81–84, doi: 10.1016/j.yebeh.2016.06.030, indexed in Pubmed: 27450310.
31. Proposal for revised classification of epilepsies and epileptic syndromes. Commission on Classification and Terminology of the International League Against Epilepsy. Epilepsia. 1989; 30(4): 389–399,

doi: 10.1111/j.1528-1157.1989.tb05316.x, indexed in Pubmed: 2502382.
32. Blumer D, Montouris G, Davies K. The interictal dysphoric disorder: recognition, pathogenesis, and treatment of the major psychiatric disorder of epilepsy. Epilepsy Behav. 2004; 5(6): 826–840, doi: 10.1016/j.yebeh.2004.08.003, indexed in Pubmed: 15582829.
33. Amiri M, Hansen CP. The interictal dysphoric disorder in patients with epilepsy: A doubtful disorder lacking diagnostic tools. Seizure. 2015; 24: 70–76, doi: 10.1016/j.seizure.2014.08.009, indexed in Pubmed: 25246233.
34. Wiglusz MS, Landowski J, Michalak L, et al. Reevaluating the prevalence and diagnostic subtypes of depressive disorders in epilepsy. Epilepsy Behav. 2015; 53: 15–19, doi: 10.1016/j.yebeh.2015.09.029, indexed in Pubmed: 26515153.
35. First MB, Williams JBW, Karg RS, Spitzer RL. Structured clinical interview for DSM-5 disorders, clinician version (SCID-5-CV). American Psychiatric Association, Arlington 2016.
36. American Psychiatric Association. DSM-5 Task Force. Diagnostic and statistical manual of mental disorders: DSM-5™. 5th ed. American Psychiatric Publishing, Inc, Arlington 2013.