TOOLS FOR DIAGNOSTICS OF NEUROLOGICAL DISEASES: QUESTIONNAIRES FOR TATAR-SPEAKING PATIENTS

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Abstract: The paper describes the creation of neurological questionnaires for Tatar-speaking patients on the territory of the Republic of Tatarstan. The authors analyze the specifics of elaboration, translation and adaptation of the English-language and Russian-language diagnostic materials into Tatar language and their validation. The material was processed in the laboratory "Clinical Linguistics" (Kazan Federal University) using modern methods of translation, adaptation and validation of clinical tests. The paper contains the information on three baseline types of neurological batteries and questionnaires which have already been translated into Russian and Tatar languages: cognitive function assessment batteries (Mini-Mental State Examination – MMSE, Montreal Cognitive Assessment test – MoCA-test, Frontal Assessment Battery – FAB), tools for the assessment of anxiety and depression (Hospital Anxiety and Depression Scale, Geriatric Depression Scale – Short form, Anxiety Sensitivity Index-3), tools for pain assessment (Migraine Disability Assessment, Diagnostic criteria of fibromyalgia, Pain Scale, Oswestry Disability Index etc). The results of the study can be used in clinical practice.

Keywords: clinical linguistics, neurology, test, questionnaire, MMSE, FAB, HADS, Geriatric Depression Scale, Migraine Disability Assessment, Oswestry Disability Index

1 Introduction

Despite the rapid development of modern medical diagnostic technologies, the achievements of scientific and technological progress, there is a group of diseases, the nature of which has not yet been entirely explored. As a result, the objective instrumental studies (MRI, electroencephalography, ultrasound, laboratory tests, liquor examination, etc.) are not the reliable diagnostic criteria for them. Such diseases are cognitive impairment, pain, depression, anxiety. The medical specialists can receive the information about presence or absence of such disorders only by the results of patients' reports. The questionnaires are the most common diagnostic tools. They include a set of subtests created to unify and standardize the results for the possibility of comparison. Questionnaires are scales, tests and batteries of tests that are designed to measure subjective data received from a patient, to speed up the assessment process itself, to standardize the evaluation of the clinical situation in general and the neurological status in particular.

On the territory of the Republic of Tatarstan, the main percentage of the population is bilingual (native speakers of the Tatar and Russian languages). However, it is very often necessary to interview patients who understand Russian only as a second language and are not able to describe their problems and sensations in Russian. In this regard, it is necessary to translate the tests used in neurological practice into Tatar language and to adapt them.

In neurological practice there are several areas where it is necessary to use batteries of tests, questionnaires and tests:

1. The assessment of cognitive functions (especially speech) for the diagnosis and treatment of a wide group of neurological diseases.

Doctors of various specialties, especially neurologists, are increasingly confronted with the symptom complex of cognitive impairment. This problem is very acute due to the growth of the requirements to the speed and scope of intellectual activity of an individual in various professional fields. Cognitive impairment is one of the leading medical and social problems. On the one hand, this is explained by the increase of the number of diseases associated with age (Alzheimer's disease, hypertension, diabetes mellitus, strokes, Parkinson's disease, etc.), which cause the progression of cognitive decline. On the other hand, cognitive problems appear in relatively young patients. Poor memory, reduced ability to concentrate attention, low working capacity, difficulties in changing the type of cognitive activity (so-called intellectual rigidity) – all these symptoms are quite common in many patients. In the Republic of Tatarstan, there are no speech and cognitive therapists who work with Tatar patients using their own language in the process of diagnosis and correction of cognitive functions.

2. The assessment of the level of anxiety and depression.

Anxiety and depression, which have a very high prevalence among the population, are one of the most important problems of modern healthcare. The manifestations of depression and anxiety are very diverse and vary depending on the form of the disease. These disorders have emotional, physiological, behavioral, mental and speech manifestations. Depression can often affect the perception of information by a patient, increase or decrease the sensitivity to any effect, and also influence on memory, concentration, cognitive functions and speech status. In the Republic of Tatarstan, there is a lack of neurologists who work with Tatar patients using their own language in the process of diagnosis and treatment of anxiety and depression.

3. The assessment of various pain characteristics for accurate diagnosis and successful treatment.

The correct diagnosis for the patients with pain complaints largely depends on the subjective assessment of the patient's report. To assess the presence, localization, and degree of pain, the neurologists use different psychological, psychophysiological and neurophysiological methods. It is worth considering that the description of pain and health status is closely related to the personality traits of the patient. The reaction of a person to his/her pain is to some extent based on his/her subjective perception of the disease. Therefore, it is probably not correct to rely on the unambiguity and objectivity of patients' answers, especially if they have the features of alexithymia (Esin 2014). In this situation, phrase descriptors and word-descriptors become a useful tool. In the Republic of Tatarstan, there is a lack of neurologists who work with Tatar patients using their own language in the process of diagnosis and treatment of pain.

2 Materials And Methods

The material for the study is presented by questionnaires, which can be divided into three groups: cognitive function assessment batteries (Mini-Mental State Examination – MMSE, Montreal Cognitive Assessment test – MoCA-test, Frontal Assessment Battery – FAB), tools for the assessment of anxiety and depression (Hospital Anxiety and Depression Scale, Geriatric Depression Scale – Short form, Anxiety Sensitivity Index-3), tools for pain assessment (Migraine Disability Assessment, Diagnostic criteria of fibromyalgia, Pain Scale, Oswestry Disability Index etc).

The material was processed in the laboratory "Clinical Linguistics" (Kazan Federal University) using modern methods of translation, adaptation and validation of clinical tests. Methods of translation usually present the ways to implement the author's strategy or the strategy of the text. Medical texts have specific aims, that is why the main objective of translation defines its basic features as: a) adapting translation: the translator

replaces the realities and stimulus materials on the realities of the language he/she translates into (Russian or Tatar); b) semantic translation (it is necessary to reflect the sense of a subtest in general in order to score the results better, not concrete words and concrete syntactic structures).

The results of the study can be used in clinical practice (in diagnosis and treatment of diseases which influence on cognitive functions, cause pain, anxiety and depression).

3 Results

The end point of the translation is not the equivalent reproduction of the original, but the functional correspondence. Especially it touches upon medical and psychometric questionnaires and batteries of tests. Often to achieve adequacy and to transfer the basic idea, the translator has to change the structure of the text, to add or even replace the words. It is possible to distinguish such basic methods of translation as loan translation, descriptive translation, translation by variant correspondence, translation by equivalent. In medical texts, the translator should pay extra attention on stimulus material, descriptors, lexical units.

Till nowadays Russian batteries, questionnaires and scales which are used in neurological practice have been translated not by the linguists, but by the doctors – it results in different mistakes. For instance, the desire to translate everything verbatim often leads to errors, especially in touch upon stimulus material. In the original version of the Mini-Mental State Examination test it is suggested to name the letters contained in the word "*world*" in the reverse order. This subtest is given to assess the concentration of attention. In Russian version this word is translated verbatim – "*мир*", and it is not a problem to name the letters in the reverse order. To estimate the ability of concentration, in the Russian version it is better to use such words as "*вброс*", "*крест*" or something like that – they will have the adequate complexity. The word "*world*" is translated into Tatar as "*җир*", and it is not relevant to the task in the original version, too. In the Tatar language, there are only few words with a combination of three consonants at the beginning or at the end. So, in the Tatar version of the subtest, the word "*world*" should be replaced with "*шомырт*", although they are not similar in meaning, structure, or phonetic characteristics.

Also, there were difficulties in translating the reproduction subtest – the sentence "*No ifs, ands or buts*" in MMSE. The verbatim translation into Russian: "*Никаких если, и или но*", into Tatar – "*Бернинди дә әгәр, һәм яки әмма*". The instructions for MMSE indicate that a patient should clearly reproduce the phrase, retaining the plural of *ifs*, *ands* and *buts*. Since in the Russian language (as well as in the Tatar language) the morphological expression for conjunctions is impossible (the idea of the number is transmitted with the help of syntax), it is obvious that the final result of the translation of the test phrase does not completely correspond to the purposes of the initial test from the articulatory point of view (these conjunctions are pronounced easily in Russian and in Tatar), as well as from the semantic point of view (there is no such idioms in Russian and Tatar).

Our analysis has shown that at the moment the most convenient tests for the screening of depression and anxiety are the *Hospital Anxiety and Depression Scale* (*Госпитальная шкала тревоги и депрессии* / *Шомлану һәм депрессиянең (торгынлыкның) госпиталь шкаласы*) and the Geriatric Depression Scale Short form (*Краткая гериатрическая шкала депрессии* / *Төшенкелекнең кыскача гериатрик шкаласы*) in the elderly patients. The *State-Trait Anxiety Inventory (STAI)*, an introspective psychological inventory consisting of 40 self-report items pertaining to anxiety affect, is widely used in Russian neurological practice. It consists of two parts: the first one determines the patient's sensations at the moment, and the second part describes his/her usual state. Each part contains 20 short statements and 4 response variants that determine the

intensity of manifestation anxiety and depression signs. The Russian editor of this inventory was Yu.L.Khanin. Linguistic analysis of the questionnaire showed that not all the statements given in the questionnaire can be unambiguously and correctly perceived by patients. Some of them require more clarification and prevalence. Most likely this was influenced by the fact that Yu.L.Khanin used polysemic language units. In the questionnaire there are descriptions that reflect practically the same sensations. This complicates the construction of the questionnaire. "*I feel strained*" and "*I feel tense*" – a feeling of tension, constriction, "*I feel ease*" and "*I feel comfortable*" – a sense of freedom, comfort, "*I feel nervous*" etc. In addition, the questionnaire does not cover all aspects of anxiety and depression, since it is aimed only at identifying behavioral characteristics.

4 Discussion

According to the World Health Organization, pain syndromes are one of the leading causes (from 11 to 40%) of calls to a doctor in the primary health care system. Precise description of pain can determine its pathophysiological basis. Descriptive words can clearly indicate the nociceptive and neuropathic nature of pain. Patients with pain syndromes, as a rule, find it difficult to describe verbally their pain or begin to list their diagnoses: osteochondrosis, chondrosis, arthrosis, disc hernia, autonomic dystonia, migraine, high blood pressure, etc. The simplest and most common method of measuring pain is to record the intensity of pain using rank scales. The simplicity and high sensitivity of the methods of rank-based scaling make them very useful, and sometimes irreplaceable in clinical practice. There are no special difficulties in translating the ranking scales of pain, but it is really difficult to translate and adapt the scales that contain specific descriptors. The most famous such test is the McGill Pain Questionnaire, the translation of which is not yet completed. The greatest difficulty is the search for units adequate to the original which describe the symptoms according to the degree of their intensity.

5 Conclusions

In the study, the authors gave the detailed analysis of the problems connected with creation, translation, adaptation and validation of neurological questionnaires, batteries of tests and scales for diagnosis and treatment of diseases which cause cognitive impairments, anxiety, depression and pain syndromes for Russian-speaking and Tatar-speaking patients.

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