Construction of standardized Arabic questionnaires for screening of neurological disorders

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Abstract:

The epidemiological information of the major neurological disorders are deficient in Arabic speaking countries and the available data are limited mainly to hospital-based populations that may not be totally representative of the community. Surveillance studies in which screening questionnaires are used in large scale population studies with clinical evaluation of those identified with potential disease by a neurologist has been proven to be accurate and provide accurate data about the prevalence of neurological disease in the community. This screening instrument to be applied in our community must be both feasible and valid. It must be accepted by the community and easily understood, easily applied by a nonmedical trainee, and brief. It must be sensitive enough so that all participants with neurological disorders are detected for referral to the neurologist, but specific enough so as not to overwhelm these physicians. An excessive number of false positives could make the survey logistically impossible to perform. This latter point is the greatest challenge for epidemiologists in resource-poor settings. A screening questionnaire and its validation are not easily transferable between different populations due to cultural and social influences and must in all cases be piloted and validated for each population. Development of a brief Arabic screening tool for neurological disorders will facilitate epidemiological studies in Arabic speaking countries and translation into English language may facilitate the epidemiological studies worldwide. This study aims at the development of different Arabic screening questionnaires for screening of different neurological disorders. After the opinion of our referees, application of the questionnaires on both cases and controls and calculation of construct validity, reliability, sensitivity, specificity, PPV and NPV; an Arabic questionnaires for screening of major neurological disorders were validated; for screening for dementia, stroke, epilepsy, movement disorders, muscle and neuromuscular junction disorders. The questionnaires were brief (administration time 1-3 minutes), feasible, easily applied by a nonmedical trainee, with the language easily understood by different Arabic accents. As regard the sensitivity and specificity, we aimed at reaching a balance; not to miss any suspected case but also not to overwhelm our resources which is most important in our area. (1) The dementia screening questionnaire: Have you ever noticed that any one of your family members had any of the following symptoms??. Forgetfulness of recent events. Intend to mention and repeat the remote events especially the important ones. Repeat orders more than once per day (as repeating questions, asking for food or medicine). Difficulty finding objects he placed by himself. Difficulty finding the right words while talking. Misuse the words while talking. Difficulty knowing the current date (month, year, season) and trying to find it through papers or calendars more than once per day. Become confused in unfamiliar places as while travelling or outside his house. Difficulty in handling finances (retirement salary, paying bills, house budget, and doing mathematical processes related to money). Difficulty using his usual public transportations. Difficulty using tools (remote control, mobile or alarm clock). Difficulty in doing the household activities (cooking, cleaning or house maintenances). Difficulty in doing his usual activities (reading, writing, eating, dressing, personal hygiene, and others). Change in sleep pattern. Became less interested in his usual hobbies or activities. Personality changes (temperament, delusions, suspicion, or lack of concern). Misjudgment and difficulty making decisions or planning for a task. The stroke screening questionnaire: Have you or any one of your family members ever had any of the following symptoms that occurred suddenly and lasted for more than 24 hours? Deviation of the angle of the mouth. Heaviness or paralysis or sudden weakness of one part or one side of the body. Paresthesia or anesthesia of one part or one side of the body including the face. Dysarthria or difficulty of articulation of speech. Sudden severe headache, continuous vomiting and lower neck pain. Loss of balance and swaying to one or either sides during walking.
ever had a stroke or cerebral hemorrhage (3) The epilepsy screening questionnaire Have you or any one of your family members had temporary and recurrent episodes of 1. Loss of Consciousness. 2. Loss of contact or response to the surroundings 3. Convulsions or involuntary movements in any part of the body or the face 4. Involuntary movement of the hand associated with falling of objects from the hand or falling on the ground without loss of consciousness 5. Numbness in one part or side of the body or the face In case of occurrence of seizure ask about any of the following symptoms 6. Occurrence of injuries during the seizure (including tongue biting, shoulder dislocation, limb or rib fracture 7. Up rolling of the eye or its deviation to any side 8. Mouth frothing 9. Occurrence of headache, body aches or deep sleep following the seizure 10. Have any of these symptoms occurred during sleep 11. Have you ever had an EEG 12. Has your case ever been diagnosed as epilepsy(4) The movement disorder screening questionnaire Have you or any one of your family members had any of the following symptoms 1. Tremors while using the hands (as writing on the keyboard, sewing, hair combing, using scissors, knife, spoon, buttoning, or unbuttoning) provided that there is no weakness or arthritis 2. Tremors in the extremities, head, neck, face or mouth 3. Swaying or frequent falling while walking (during the day time or in dark places 4. Gait changes (as walking in short steps, leaning forwards while walking, difficulty controlling the speed of walking “propulsion” or difficulty changing the direction of movement 5. Changes in handwriting as writing in smaller, larger font or in irregular manner than previously used to 6. Involuntary movements in the muscles, fasciculation, or repeated twisting in limb, trunk or neck.