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ARAŞTIRMA-RESEARCH

WHICH QUESTIONS ARE IMPORTANT IN THE GERIATRIC DEPRESSION SCALE IN DEPRESSION AMONG THE ELDERLY ?

YAŞLILARDA GÖRÜLEN DEPRESYONDA GERİATRİK DEPRESYON SKALASINDA HANGİ SORULAR DAHA DEĞERLİDİR ?

ÖZ

Amaç: Geriatrik Depresyon Skalası Türkçe versiyonunu (GDS-T) kullanarak polikliniğe başvuran hastalarda depresyon semptomlarını değerlendirmek.

Yöntem ve Gereç: Trakya Üniversitesi Tıp Fakültesi Fiziksel Tıp ve Rehabilitasyon polikliniğine başvuran 79 geriatrik hasta 1 yıllık dönemde değerlendirildi. Tüm hastalar GDS-T'nun 30 maddesini cevaplandırdı. Bu bilgilerin istatistiksel değerlendirilmesi Fisher's—analysis, Pearson—analizi ve Pearson korelasyon analizi ile yapıldı. Depresyon yönündeki en değerli cevaplar spesivite ve sensitivite açısından en yüksek GDS-T toplam skoru ile tanımlandı.

Sonuçlar: Bizim çalışmamıza yaş ortalaması 71.20 ± 4.67 yıl (65-84) olan 79 geriatrik hasta (60 kadın ve 19 erkek) dahil edildi. GDS-T kullanılarak 35 hastaya depresyon tanısı konuldu. GDS-T toplam skor aralığı 0-30, ortalaması 10.22 ± 4.92 idi. Çalışmamızda 4, 6, 16, 18, 24, 25 ve 30 numaralı soruların depresyonlu hastaları ayırt etmede önemli özelliği olduğu saptandı.

Tartışma: GDS-T skalası depresif hastalar için oldukça etkili tarama testidir. Bazı sorular çıkartılarak hazırlanan kısa versiyonlarının sadece zaman açısından bir yararı olacağı fakat tanı ile ilgili sorunlar çıkartabileceği düşüncesindeyiz.

Anahtar sözcükler : Geriatrik Depresyon Skalası, Depresyon, Yaşlılık.

ABSTRACT

Objective: To measure depressive symptomatology in patients undergoing outpatient geriatric assessment, using a Turkish version of the Geriatric Depression Scale (GDS-T).

Methods: Seventy-nine geriatric patients participated to the outpatient clinics of Physical Medicine and Rehabilitation of the University of Trakya Medical School were evaluated in a 1-year period. All patients completed the 30-item GDS-T. Fisher's x^2 analysis, Pearson x^2 analysis and Pearson correlation analysis were used for the evaluation of the data. An optimal cut-off was identified which was the total score on the GDS with the highest combined sensitivity and specificity.

Results: We included 79 geriatric patients (60 women and 19 men) with a mean age of 71.20 ± 4.67 years (Min=65, Max=84). Using the GDS, 35 subjects (44.30%) were diagnosed with depression. The range of total GDS-T scores in the overall sample was from 0 to 30, with a mean (SD) of 10.22 ± 4.92. In this study, we determined that the 4, 6, 16, 18, 24, 25 and 30th questions were important to distinguish patients with depression.

Conclusions: GDS-T version is efficient for diagnosis of depressed patients. Shortening of the questionnaire is only useful for shortening of time necessary but the problem concerned with diagnosis can be occurred.

Key words: Geriatric Depression Scale, Depression, Elderly.

INTRODUCTION

As the world's population is getting older, there is a growing interest in the prevalence and significance of depressive symptoms and disorders in the elderly. Untreated depression may lead to early death and worsening in general health. However, proper evaluation and appropriate treatment will enhance the quality of life in the elderly people with depression (1, 2, 3, 4).

The best approach to improve the under-recognition of depression is routine screening, ideally using an instrument that is highly effective and easy to administer (5, 6).

The GDS-30, which has been developed by Yesavage, is a suitable screening test for depressive symptoms in the elderly. It is ideal for evaluating the clinical severity of depression, and therefore for monitoring treatment. It is easy to administer needs no prior psychiatric knowledge and has been well validated in many environments - home and clinic. The original GDS was a 30-item questionnaire - time consuming and challenging for some patients (5, 7).

Later versions include only the most discriminating questions; their validity approaches to that of the original form. The most common version in the general geriatric practice is the 15-item version (8, 9).

The GDS is generally performed well, replicating earlier findings from a different population. The GDS, specifically developed for older populations, has been successfully translated into many languages (Chinese, Dutch, French, Germen, Hebrew, Italian, Japanese, Portuguese, Rumanian, Russian, Spanish and Yiddish) and is used in several countries around the world extensively validated in many types of elderly populations and settings. This 30-item scale was translated into Turkish by a bilingual clinician. The scale was named the Geriatric Depression Scale- Turkish version (10, 11).

It, however, could not be found any published report regarding the importance of the frequencies of the answered questions in the GDS-T and the other translated languages versions.

We aimed to measure the depressive symptomatology in patients with undergoing outpatient geriatric assessment by using a Turkish version of the Geriatric Depression Scale (GDS-T).

MATERIALS AND METHODS

We decided to investigate cross sectional prevalence and diagnosis of geriatric patients who visited the outpatient clinics of Physical Medicine and Rehabilitation in period form 2001 to 2002.

We included 79 geriatric patients (60 women and 19 men) with a mean age of 71.20± 4.67 years (Min=65, Max=84). All of the patients in this study were followed with generalized forms of osteoarthritis. Metabolic diseases (such as Diabetes Mellitus), anaemia, chronic parenchyma diseases (such as chronic liver indeficiency, chronic renal indeficiency), and cerebrovascular diseases were excluded from the study.

Patients answered a questionnaire that included the GDS-T and demographic information. We used a Turkish version of the widely developed GDS to screen depressive symptoms.

The GDS-T has previously been demonstrated as a reliable and valid in elderly populations and has been shown to be both sensitive and specific for depressive disorders. We therefore assumed that the GDS-T would serve our purpose of assessing depressive symptomatology among the elderly.

We took into consideration the total illiteracy of the majority of our subjects, their lack of familiarity with pencil-and-paper forms and questionnaires, and the high frequency of visual impairment in this population, so therefore, we used the GDS-T as an interviewer-administered questionnaire, reading each question loud to the subjects and recording their oral responses. We thus retained the essential subjective self-report quality of the responses while ensuring that the subjects understood the question and left no responses blank and that the screening did not take an excessive length of time.

On the GDS-T, there are 30 depressive symptoms each of which is scored as 1 if present and 0 if absent. Items, which reflect the absence rather than the presence of depression, are subject to reverse coding. A higher score therefore reflects a greater number of symptoms; a perfectly non-depressed score should be 0. Depressed respondents were further subdivided into cases of "severe" (GDS-T score >21) and "mild/moderate" (11<GDS-T score <20) depression based on the GDS-T distribution. We examined the distribution of total scores in all subjects, among men and women, summing the item scores for a total score of 30.

Fisher's x^2 analysis, Pearson x^2 analysis and Pearson correlation analysis were used for the evaluated data. An optimal cut-off was identified which was the total score on the GDS with the highest combined sensitivity and specificity.

RESULTS

79 subjects were enrolled in the study; 60 females and 19 males. Socio-demographic characteristics were obtained for all subjects.

Depressed and non-depressed subjects were similar with regard to demographics, educational level and comorbid conditions.

The mean (SD) age of this group was 71.20 ± 4.67 years with a range of 65-84 years. The group was 49.0% female. The mean (SD) age of female group was 70.86 ± 4.26 (65-80), the mean (SD) age of male group was 72.26 ± 5.79 (65-84).

Following the completion of the GDS questionnaire forms, their scores were evaluated. Sensitivity and specificity of the GDS at various cut-off points were calculated. Using the GDS, 35 subjects (44.30%) were diagnosed with depression. At baseline, 35 individuals had high or medium scores on the GDS-T. The group with depression consisted of 30 females and 5 males. The mean score of GDS-T of this group was 10.22 ± 4.92. While the 44 non-depression subjects had a lower mean score of 10.22 ± 4.92, it increased to 14.71 ± 3.44 in 35 subjects with depression.

The answers given to the questionnaire were shown in figure 1 for all participants, in figure 2 for women (Figure 1, 2).

The most commonly endorsed symptom in (82.9% of all subjects) was a negative response to the question 'Is your mind as clear as it used to be?'. The second most commonly
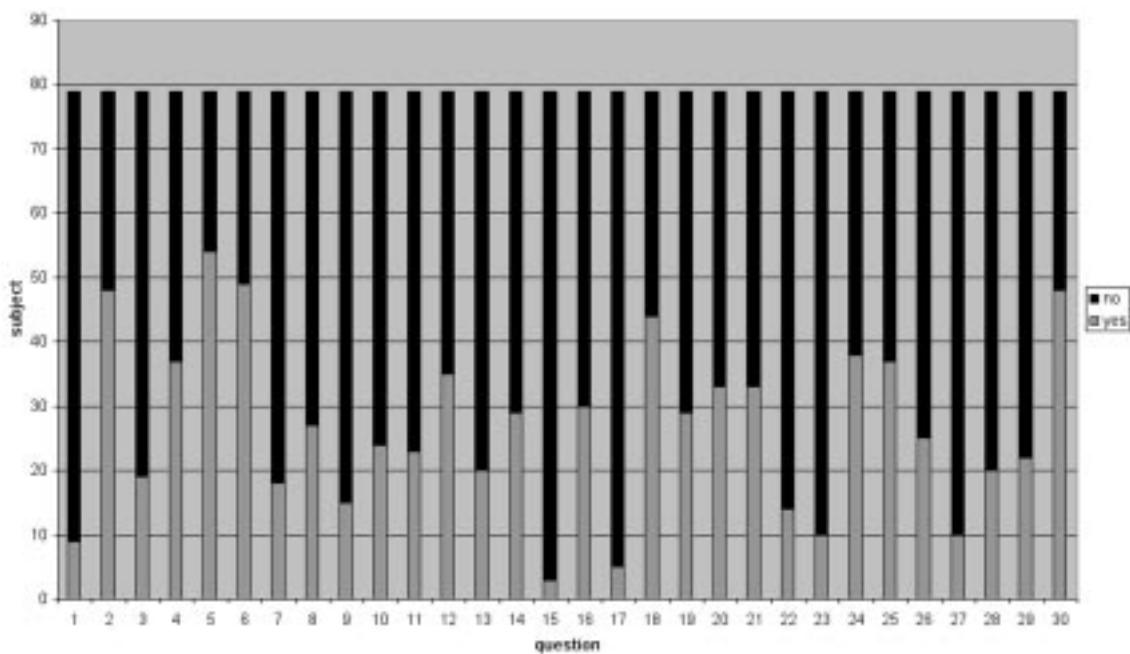
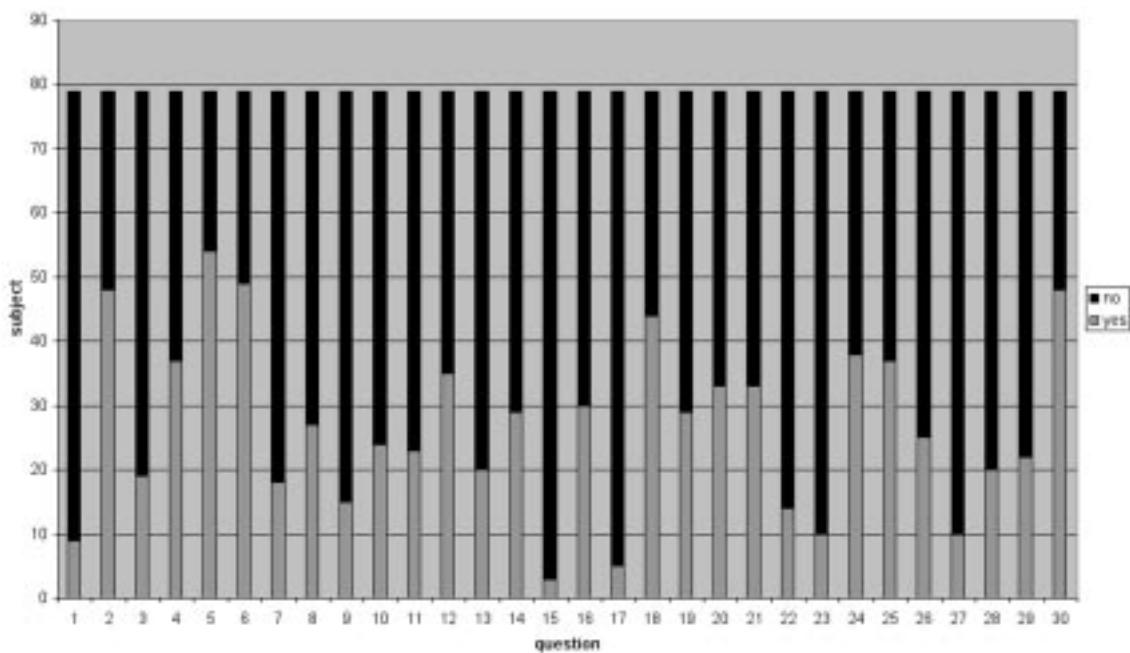**Figure 1.** The answers given to the questionnaire for all subjects

Figure 2. The answers given to the questionnaire for women

endorsed symptom was positive responses to the questions 'Do you often get bored?' and 'Do you frequently feel like crying?' (77.1%) (Table 1).

According their answers to the questionnaire, the result of general assessment of patients:

It was found statistically significant that the answers of the group with depression focused on the questions 4, 6, 16, 18, 24, 25 and 30th.

When both groups are assessed together 1, 4, 16, 17, 23, 24, 25, 27th questions were more meaningful since they give

results from both sides on the other hand in 12th and 20th questions, since in both groups no effective results were obtained; the importance of these questions may be discussed.

In depressed patient's group, the GDS questionnaire's the result were assessed according their sex; 5th and 16th questions were statistically found meaningful in Fisher x^2 analyses assessment. While in 5th question the validity of men's answers out-numbered those of women's (p=0.04), in 16th question women's answers were more valid (p=0.02).

The mean (SD) age was 71.82 ± 4.32 of group with depression and 70.70 ± 4.92 of group with non-depression. No correlation was observed between these scores and patient's ages. There was no correlation between increasing age of pa-

tients with depression and non-depression scores. Moreover when the sex was concerned no statistical link was found (Table 2).

DISCUSSION

In developing countries, the proportion of elderly population is steadily increasing. Depression is one of the most common psychiatric disorders influencing this group of the population and is a major public health problem. It has a high prevalence, is frequently co-morbid with medical illnesses, has negative impacts on quality of life, increases the number of visits to different medical services, and leads to a high risk of su-

Table 1: List of individual GDS-T items rank ordered in respect to frequency and percentage of subjects reporting that symptom in the total sample.

Questions	Non-depressive (n=44) %	p	Depressive (n=35) %	p
1. Are you basically satisfied with your life?	2.3	0.01	22.9	0.01
2 Have you dropped many of your activities and interests?	68.2	0.01	51.4	0.87
3 Do you feel that your life is empty?	6.8	0.01	45.7	0.61
4. Do you often get bored?	22.7	0.01	77.1	0.01
5. Are you hopeful about the future?	81.8	0.01	51.4	0.87
6. Are you bothered by thoughts that you just cannot get out of your head?	54.5	0.54	71.4	0.01
7 Are you in good spirits most of the time?	9.1	0.01	40.0	0.24
8 Are you afraid that something bad is going to happen to you?	22.7	0.01	48.6	0.87
9. Do you feel happy most of the time?	4.5	0.01	37.1	0.13
10 Do you often feel helpless?	4.5	0.01	62.9	0.13
11 Do you often get restless and fidgety?	15.9	0.01	45.7	0.61
12 Do you prefer to stay home at night, rather than go out and do new things?	36.4	0.07	54.3	0.61
13 Do you frequently worry about the future?	15.9	0.01	37.1	0.13
14 Do you feel that you have more problems with memory than most?	29.5	0.01	45.7	0.61
15 Do you think it is wonderful to be alive now?	0	0.01	8.6	0.01
16 Do you often feel downhearted and blue?	13.6	0.01	68.6	0.03
17 Do you feel pretty worthless the way you are now?	6.8	0.01	5.7	0.01
18 Do you worry a lot about the past?	40.9	0.22	74.3	0.01
19 Do you find life very exciting?	20.5	0.01	57.1	0.39
20 Is it hard for you to get started on new projects?	38.6	0.13	45.7	0.61
21 Do you feel full of energy?	22.7	0.01	65.7	0.06
22 Do you feel that your situation is hopeless?	2.3	0.01	37.1	0.12
23 Do you think that most people are better off than you are?	4.5	0.01	22.9	0.01
24 Do you frequently get upset over little things?	27.3	0.01	74.3	0.01
25 Do you frequently feel like crying?	22.7	0.01	77.1	0.01
26 Do you have trouble concentrating?	13.6	0.01	54.3	0.61
27 Do you enjoy getting up in the morning?	2.3	0.01	25.7	0.01
28 Do you prefer to avoid social gatherings?	13.6	0.01	40.0	0.24
29 Is it easy for you to make decisions?	18.2	0.01	40.0	0.24
30 Is your mind as clear as it used to be?	43.2	0.36	82.9	0.01

Table 2 : Correlation between GDS-T score and age in all subjects

	r	p
All subjects (n=79)	0.118	0.30
Non-depressed (n=44)	0.173	0.26
Depressed (n=35)	-0.096	0.58
Female (n=60)	0.095	0.47
Male (n=19)	0.431	0.06

GERİATRİK DEPRESYON SKALASI TÜRKÇE VERSİYONU

1) Yaşamınızdan temelde memnun musunuz?
2) Kişisel etkinlik ve ilgi alanlarınızın çoğunu halen sürdürüyor musunuz?
3) Yaşamınızın bomboş olduğunu hissediyor musunuz?
4) Sık sık canınız sıkılır mı?
5) Gelecekten umutsuz musunuz?
6) Kafanızdan atamadığınız düşünceler nedeniyle rahatsızlık duyduğunuz olur mu?
7) Genellikle keyfiniz yerinde midir?
8) Başınıza kötü birşey geleceğinden korkuyor musunuz?
9) Çoğunlukla kendinizi mutlu hissediyor musunuz?
10) Sık sık kendinizi çaresiz hissediyor musunuz?
11) Sık sık huzursuz ve yerinde duramayan biri olur musunuz?
12) Dışarıya çıkıp yeni birşeyler yapmaktansa, evde kalmayı tercih eder misiniz?
13) Sıklıkla gelecekten endişe duyuyor musunuz?
14) Hafızanızın çoğu kişiden zayıf olduğunu hissediyor musunuz?
15) Sizce şu anda yaşıyor olmak çok güzel birşey midir?
16) Kendinizi sıklıkla kederli ve hüzünlü hissediyor musunuz?
17) Kendinizi şu andaki halinizle değersiz hissediyor musunuz?
18) Geçmişle ilgili olarak çokça üzülüyor musunuz?
19) Yaşamı zevk ve heyecan verici buluyor musunuz?
20) Yeni projelere başlamak sizin için zor mudur?
21) Kendinizi enerji dolu hissediyor musunuz?
22) Çözümsüz bir durum içinde bulunduğunuzu düşünüyor musunuz?
23) Çoğu kişinin sizden daha iyi durumda olduğunu düşünüyor musunuz?
24) Sık sık küçük şeylerden dolayı üzülür müsünüz?
25) Sık sık kendinizi ağlayacakmış gibi hisseder misiniz?
26) Dikkatinizi toplamakta güçlük çekiyor musunuz?
27) Sabahları güne başlamak hoşunuza gidiyor mu?
28) Sosyal toplantılara katılmaktan kaçınır mısınız?
29) Karar vermek sizin için kolay oluyor mu?
30) Zihniniz eskiden olduğu kadar berrak mıdır?

icide, especially in men. Imaging studies in the elderly have increased our understanding of the biological mechanisms of depression that is sometimes difficult to diagnose. It should be differentiated from apathetic states (negative syndrome), and its treatment requires knowledge of specific physiological changes that occur in this age group. Geriatric depression is more somatic than depression in other age groups (1, 4, 12, 13, 14, 15).

An elevated level of depressive symptoms was associated with an increased risk of incident cognitive decline, after adjustment for age, sex, race, education, income, housing type, functional disability, cardiovascular profile, and alcohol use, family history, being single, being divorced, losing spouse, job being retired and lack of communicative competence. Depressive symptoms, particularly dysphoric mood, presage prospective cognitive losses among elderly persons with moderate cognitive impairments. However, the data do not provide support for the hypothesis that depressive symptoms are associated with the onset or rate of cognitive decline among cognitively intact elderly persons (2, 3, 13, 14, 16, 17).

It is reported that in certain studies the major depression was seen widely in elderly above 65, with a rate of 1-3%. Evans and Katone by using Geriatric Depression Scale found depression symptoms in 30% of male and in 40% female patients who were admitted to first step medical services. Furt-

hermore, it was reported that the rate among hospitalised patients was 30% (18).

For elderly population the scales that are based on self report which consist of easily understandable and answerable questions and which ignore physical symptoms must be used.

In fact, it is more appropriate to use geriatric depression scale that is specially designed in order to identify depression in the elderly. Ertan tested the validity and reliability of geriatric depression scale in Turkish elderly population (10, 11).

Our study has many strengths, most notably a prospective design with multiple direct assessments of depressive symptomatology.

Cannon used the Geriatric Depression Scale (GDS) twice, using both oral and written administration formats in forty-four female nursing home residents. Test-retest reliability analysis revealed a significant correlation between oral and written administrations for higher cognitive functioning participants, but no correlation for impaired participants. Therefore, the use of the GDS in a cognitively impaired elderly population was questioned. Additionally, oral versus written administration formats were found to be not equivalent in the higher functioning group (19).

The objective of Sutcliffe was to develop a new short-form Geriatric Depression Scale (GDS-12R) suitable for older people living in nursing and residential care settings, including tho-

se persons with significant cognitive impairment. A 12-item version of the GDS was shown to have greater internal reliability than the 15-item version, because of the context-dependent nature of the deleted items. There was close agreement between the GDS-12R items and another indicator of depressed mood. Furthermore, moderate to high levels of cognitive impairment did not affect the performance of the new version of the scale. The GDS-12R provides researchers and clinicians with a brief, easy-to-administer depression scale that is relevant to residential and nursing home populations (20).

Ganguli and Gupta measured depressive symptomatology in a largely illiterate elderly population in India, using a new Hindi version of the Geriatric Depression Scale (GDS-H), and to examine its distribution and associations with age, gender, literacy, cognitive impairment and functional impairment. Greater numbers of depressive symptoms, as measured by higher scores on the GDS-H, were associated with older age and illiteracy. Among the illiterate, there was no gender difference while among the literate, higher GDS-H scores were found among women. Cognitive impairment and functional disability were independently associated with higher scores on the GDS-H after adjustment for age, gender and literacy. In conclusion, Ganguli found that depressive symptoms as measured by the GDS-H were prominent in this elderly illiterate northern Indian population and strongly associated with both cognitive and functional impairment (21, 22).

Hoyl wanted to test the effectiveness of the 5-item version of the Geriatric Depression Scale (5-GDS) for depression screening in a community-dwelling Chilean elderly population. He suggested that the 5-item GDS seems to be a promising screening tool for depression. If revalidated against clinical evaluation, it might be the preferred screening tool for depression in the Chilean community-dwelling elderly (23).

In our study, under the lights of the data that we gathered through the application of GDS Turkish version, questions 4, 6, 16, 18, 24, 25 and 30th became important for the short form which has been obtained from the shortening of the original form. Through the assessment of 12 and 20th questions, no significant result was observed.

Burke prospectively evaluated the Geriatric Depression Scale (GDS) in cognitively intact and impaired patients undergoing outpatient geriatric assessment. In conclusion, Burke suggested that this study provides further evidence that the GDS is as accurate a screening test for depression in cognitively impaired as in intact patients (24).

However few studies have included subjects older than 85 years to evaluate the GDS-15 as a screening instrument for depression. Craen wanted to assess the sensitivity and specificity of the GDS-15 in a community sample of the oldest. He concluded that the GDS-15 was a suitable instrument to diagnose depression in the general population of the oldest old. This might influence the sensitivity and specificity of the 15-item Geriatric Depression Scale (GDS-15). The optimal cut-off point depends on its intended use. Cognitive impairment is common in the oldest old. In subjects with cognitive impairment the accuracy should be investigated further (9).

McGivney demonstrated validity of the GDS among ambulatory elderly but found it to be less useful in nursing home populations, probably because of high rates of cognitive impairment (25).

When the data in our study is examined 4, 6, 16, 18, 24, 25 and 30th questions that were answered by the majority of patients with depression can be used in a short form for the GDS Turkish version. It is assumed that in order to reach a right diagnosis and distinction, to fill in the form GDS-30 question. Questionnaire form is more efficient than shortened forms.

We have shown in this study that the 30-question form of GDS-T version is more efficient and shortening of the questionnaire adds nothing to its validity except for shortening of time necessary to fill it out.

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