Turk J Phys Med Rehab 2025;71(4):539-547
DOI: 10.5606/tftrd.2025.15458
Available online at www.turkishjournalpmr.com

Original Article

Reliability and validity of the Turkish version of the Composite Autonomic Symptom Score in patients with fibromyalgia

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ABSTRACT

Objectives: This study aims to determine the Turkish validity and reliability of the Composite Autonomic Symptom Score (COMPASS-31) in patients with fibromyalgia.

Patients and methods: The study included 117 patients (113 females, 4 males; mean age: 43.0±11.0 years; range, 20 to 61 years) diagnosed with fibromyalgia between November 2021 and February 2023. The COMPASS-31, Revised Fibromyalgia Impact Questionnaire (FIQR), and the 36-item Short-Form Health Survey (SF-36) were used to collect data. The reliability of the scale was tested with internal consistency and test-retest reliability, and the validity was determined with construct validity. For test-retest reliability, 31 individuals (27 females, 4 males; mean age: 42.0±10.0 years; range, 21 to 60 years) were reassessed after one week. To establish the construct validity of COMPASS-31, its correlation with FIQR and SF-36 was assessed.

Results: Cronbach's alpha value was 0.912, and the intraclass correlation coefficient was 0.838, indicating high reliability and internal consistency. According to the construct validity analysis, COMPASS-31 showed a good positive correlation with FIQR ($r=0.451$, $p<0.001$), and good negative correlations were observed between COMPASS-31 and vitality, mental health, and general health subscales of SF-36 ($r=-0.402$, $p>0.001$; $r=-0.404$, $p<0.001$; $r=-0.455$, $p<0.001$).

Conclusion: The Turkish version of the COMPASS-31 is valid and reliable to assess autonomic symptoms in patients with fibromyalgia.

Keywords: Autonomic nervous system diseases, fibromyalgia, validity and reliability.

Fibromyalgia (FM) is a prevalent primary pain disorder affecting 2 to 4% of the global population.[1] Although the exact cause of FM remains unknown, it is widely accepted that the condition arises from multiple factors, with central sensitization being the most significant contributor to its development.[2]

Over the past decade, there has been an increase in studies reporting the involvement of autonomic nervous system dysfunction in the etiopathogenesis of FM.[3] This provides more insight into the causes of symptoms and the physiological and psychological aspects of the disease. It is stated that autonomic dysfunction is inherent in FM. Increased sympathetic hyperactivity, decreased parasympathetic activity, and abnormal sympathovagal balance have been reported in patients.[4] One of the most common autonomic abnormalities is postural orthostatic tachycardia. It has been noted that the sympathetic system shows hyperactivity in heart rate variability and tilt table tests. Autonomic nervous system dysfunction is proposed to account for all the multisystem characteristics of FM.[5]

The methods used to assess autonomic function include heart rate variability analysis, noradrenaline release rate, measurement of neurotransmitter levels, sudomotor function test with radioisotope techniques, and tests such as sympathetic skin response.[6] Patient-reported outcome measures

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Received: July 18, 2024 **Accepted:** February 12, 2025 **Published online:** November 11, 2025

Cite this article as: Bal İ, Pala ÖO, Polat M. Reliability and validity of the Turkish version of the Composite Autonomic Symptom Score in patients with fibromyalgia. Turk J Phys Med Rehab 2025;71(4):539-547. doi: 10.5606/tftrd.2025.15458.

are also used. These scales offer the clinician the opportunity to assess autonomic function without the need for invasive intervention. Moreover, they guide the triage of patients in terms of autonomic function and the need for more in-depth examination.[7]

The Composite Autonomic Symptom Score (COMPASS-31) is a scale that assesses autonomic function by evaluating the autonomic nervous system across six domains: orthostatic intolerance, vasomotor, secretomotor, pupillomotor, gastrointestinal, and bladder control.[8] In addition to FM, COMPASS-31 is used to assess autonomic dysfunction in diseases with autonomic involvement, such as Parkinson disease, diabetic neuropathy, multiple sclerosis, and polyneuropathy with small nerve involvement.[9-12]

Other scales for assessing autonomic dysfunction include the Scales for Outcomes in Parkinson's Disease-Autonomic Dysfunction (SCOPA-AUT) and the Small Fiber Neuropathy-Symptom Inventory Questionnaire.[13-15] Among these scales, only the SCOPA-AUT has undergone a Turkish validity and reliability study.[16]

The existing literature reveals that the validity and reliability of the Turkish version of the COMPASS-31 in patients with FM have not previously been evaluated. We propose that the Turkish version of the COMPASS-31, which is an easy-to-understand and comprehensive scale assessing autonomic dysfunction, will provide great convenience to clinicians in the evaluation of disorders with autonomic system symptoms such as FM. Therefore, this study aimed to evaluate the reliability and validity of the Turkish version of COMPASS-31 in Turkish patients with FM.

PATIENTS AND METHODS

The observational study was conducted with outpatients diagnosed with primary FM according to 2016 American College of Rheumatology diagnostic criteria by the physical medicine and rehabilitation clinic of the Sivas Cumhuriyet University Faculty of Medicine between November 2021 and February 2023. In this study, 168 individuals were evaluated. Patients with a differential diagnosis of FM syndrome or diseases that affected the autonomic nervous system were excluded. Fifty-one patients with vitamin D deficiency, inflammatory rheumatic diseases such as systemic lupus erythematosus, metabolic diseases such as diabetes mellitus, hypothyroidism, anemia, previous cancer history or history of chemotherapeutic use, those younger than 18 years or older than 60 years, and pregnant women were excluded from the study.[17] Hence, 117 individuals (113 females, 4 males; mean age: 43.0±11.0 years; range, 20 to 61 years) diagnosed with FM participated in the study. For test-retest reliability, 31 individuals (27 females, 4 males; mean age: 42.0±10.0 years; range, 21 to 60 years) who participated in the study and accepted the retest answered the questionnaires again after one week.[18] Written informed consent was obtained from the participants. The study protocol was approved by the Sivas Cumhuriyet University Non-Interventional Clinical Research Ethics Committee (Date: 20.10.2021, No: 2021-10/29). Written permission for the Turkish version of COMPASS-31 was obtained from Mayo Clinic member and the author of the original version of COMPASS-31. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Sociodemographic information such as sex, age, height, weight, occupation, educational status, marital status, known diseases, and previous surgeries were recorded. Afterward, the Turkish version of COMPASS-31, the Revised Fibromyalgia Impact Questionnaire (FIQR), and the 36-item Short-Form Health Survey (SF-36) were administered to the participants.

The Turkish version of COMPASS-31, shared with us by the Mayo Clinic, was used without any new translation. The COMPASS-31 is a 31-item scale assessing autonomic symptoms in six domains: orthostatic intolerance, vasomotor, secretomotor, gastrointestinal, bladder, and pupillomotor. This scale includes seven questions with yes/no responses, eight questions with 3- and 4-point Likert-type responses, two questions with 5- and 7-point Likert-type responses, and four questions with 6-point Likert-type responses. The scores of each subdimension are multiplied by a weighting factor determined by the study, and a total score in the range of 0 to 100 is calculated. A higher score indicates the presence and severity of autonomic dysfunction.[8]

The Revised Fibromyalgia Impact Questionnaire (FIQR) is a questionnaire that assesses limitations and functional disability in individuals diagnosed with FM. It analyzes FM in three subdimensions (function, overall, and symptoms) and consists of 21 questions in total. All questions are graded on

a scale of 0 to 10. The higher the score obtained from the questionnaire, the greater the FM-related disability. The Turkish validity and reliability study of this scale was conducted by Ediz et al.[16]

The SF-36, which has a general characteristic in scales assessing the quality of life and offers a wide range of scales, was developed and made available for use by the Rand Corporation in 1992.[19] The Turkish validity and reliability study of the scale was conducted by Koçyiğit et al.[20] It consists of eight dimensions and 36 items, including physical functioning, role limitation due to physical problems, role limitation due to emotional problems, energy and vitality, social functioning, bodily pain, general perception of health, and mental health. The score ranges from 0 to 100, and a lower score represents a lower health-related quality of life.[19]

Statistical analysis

The sample size was calculated using G*Power version 3.1 software (Heinrich-Heine Universität Düsseldorf, Düsseldorf, Germany). Based on the expected reliability level (0.75-0.90; ρ1=0.85), the minimum acceptable reliability level (ρ0=0.75), an alpha of 0.05, and a beta of 0.20, the required sample size was determined to be 80. For convergent validity, assuming a high correlation coefficient (r=0.70) and a negligible correlation coefficient (r=0.30), a sample size of 22 was determined for the relationship between COMPASS-31 and one measurement tool, and 44 for its relationship with two measurement tools. Therefore, the target sample size was determined to be at least 80 individuals based on these analyses.[21]

Data were analyzed using IBM SPSS version 22.0 software (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean ± standard deviation (SD), and categorical variables were expressed as number and percentage. The conformity of the variables to normal distribution was analyzed by the Kolmogorov-Simirnov test.

The reliability of COMPASS-31 was assessed by test-retest reliability and internal consistency. Intraclass correlation coefficient (ICC) for test-retest reliability and Cronbach's alpha for internal consistency were calculated. An ICC value ≥0.75[22] and Cronbach's alpha value ≥0.80[21] were considered sufficient.

The validity of COMPASS-31 was assessed in terms of construct validity. Construct validity was analyzed by convergent validity. Convergent validity was assessed according to SF-36 and FIQR scales. Pearson correlation coefficient was used for this analysis and interpreted as follows: 0.81-1.00, excellent; 0.61-0.80, very good; 0.41-0.60, good; 0.21-0.40, poor; 0-0.20, poor.[23] Additionally, COMPASS-31 items were evaluated in terms of face validity, considering participants' feedback on the clarity and comprehensibility of the scale, the reflection of the target group's characteristics, and the style and format of writing.[21] A p-value <0.05 was considered statistically significant.

RESULTS

The demographic characteristics and p-values of both groups are shown in Table 1. When the demographic characteristics of the individuals in both test and retest groups were considered, there was no statistically significant difference in age, weight, height, and BMI values since p>0.05.

The test-retest was analyzed with the ICC method. The test-retest results of the COMPASS-31 ranged between 0.646 and 0.886 for each part of the scale, as shown in Table 2. The total score was 0.838.

TABLE 1
Test and retest group demographic information and p-values

	Test group (n=117)	Retest group (n=31)	
	Mean±SD	Mean±SD	*p**
Age (year)	43.27±10.78	41.65±10.15	0.41
Weight (kg)	71.13±12.59	70.26±12.25	0.731
Height (m)	1.61±0.07	1.63±0.07	0.083
BMI (kg/m²)	27.66±5.43	26.49±4.99	0.282

SD: Standard deviation; BMI: Body mass index; * Student's t-test.

TABLE 2
Test-retest reliability and internal consistency measurements of COMPASS-31

	Baseline	Retest				Internal consistency
	Mean±SD	Mean±SD	*p*	Test-retest	ICC2,1 and 95% CI	Cronbach's α
Orthostatic intolerance	2.71±2.56	3.29±2.55	0.110	0.704	0.471-0.846	0.827
Vasomotor	0.81±1.47	1.03±1.60	0.229	0.778	0.589-0.887	0.875
Secretomotor	2.19±1.33	2.29±1.42	0.639	0.658	0.401-0.819	0.794
Gastrointestinal	8.39±4.02	7.84±4.27	0.134	0.886	0.777-0.943	0.940
Bladder	1.23±1.28	1.06±1.09	0.378	0.646	0.383-0.812	0.785
Pupillomotor	7.29±2.92	7.42±2.66	0.650	0.843	0.700-0.921	0.915
Total	22.61±7.35	22.94±6.62	0.655	0.838	0.691-0.919	0.912

COMPASS-31: Composite Autonomic Symptom Score; ICC: Intraclass correlation coefficient; SD: Standard deviation; p: Statistical significance.

TABLE 3
Cronbach's alpha values of COMPASS-31

	Mean±SD	Corrected item-total correlation	Cronbach's α if item deleted
Q1	0.66±0.476	0.502	0.845
Q2	0.60±0.831	0.419	0.845
Q3	1.31±1.070	0.538	0.841
Q4	0.82±1.014	0.503	0.842
Q5	0.37±0.484	0.445	0.846
Q6	0.46±0.676	0.425	0.846
Q7	0.32±0.641	0.433	0.846
Q8	0.44±0.548	0.115	0.852
Q9	0.64±0.482	0.324	0.849
Q10	0.52±0.502	0.318	0.849
Q11	1.02±0.851	0.448	0.844
Q12	0.30±0.561	0.085	0.853
Q13	1.15±0.698	0.361	0.847
Q14	0.19±0.472	0.301	0.849
Q15	0.96±0.712	0.402	0.846
Q16	0.40±0.492	0.448	0.846
Q17	0.34±0.697	0.320	0.848
Q18	0.84±1.090	0.446	0.845
Q19	0.25±0.556	0.493	0.845
Q20	0.67±0.473	0.373	0.848
Q21	0.90±1.078	0.292	0.851
Q22	1.37±1.088	0.402	0.847
Q23	0.56±0.687	0.325	0.848
Q24	0.68±0.847	0.207	0.852
Q25	0.27±0.567	0.328	0.848
Q26	0.46±0.714	0.342	0.848
Q27	1.91±1.042	0.336	0.849
Q28	2.09±0.979	0.361	0.848
Q29	1.02±0.871	0.485	0.843
Q30	1.30±0.976	0.460	0.844
Q31	1.23±0.724	0.327	0.848
Total	24.03±10.200	-	0.851

SD: Standard deviation.

The internal consistency analysis of the COMPASS-31 was calculated separately for each section and also for the total score. Cronbach's alpha value of the sections varied between 0.785 and 0.940 and was calculated as 0.912 for the total score, indicating high internal consistency.

When the corrected item-total correlation was examined, all questions except Question 8 showed high correlation with the total score.[24] As demonstrated in Table 3, Cronbach's alpha value of the scale varied between 0.841 and 0.853 when each item was deleted. The total score was 0.851. The items other than Questions 8, 12, and 24 in the COMPASS-31 increased the reliability of the scale.

The relationship between the subparameters of COMPASS-31 and the subparameters of SF-36 and FIQR was analyzed by Pearson correlation analysis for the convergent validity of COMPASS-31 (Table 4). A statistically significant positive correlation (r=0.451, p=0.000) was found between the total score of FIQR and the total score of COMPASS-31. Higher scores on SF-36 indicate low disability, whereas higher scores on the FIQR and COMPASS-31 indicate high disability.[8,16,19]

No negative feedback was received from any participant regarding the clarity and comprehensibility of the scale item statements, writing style, and format.

DISCUSSION

The Turkish version of COMPASS-31 had high internal consistency and had a high degree of consistency and stability over time. The COMPASS-31 scale was analyzed to have a good correlation with

TABLE 4
Convergent validity (n=117)

	C-31 Orthostatic intolerance	C-31 Vasomotor	C-31 Secretomotor	C-31 Gastrointestinal	C-31 Bladder	C-31 Pupillomotor	C-31 Total
FIQR-1							
r	**0.320****	**0.249****	**0.248****	**0.221***	**0.198***	**0.281****	**0.375****
p	**0.000**	**0.007**	**0.007**	**0.017**	**0.033**	**0.002**	**0.000**
FIQR-2							
r	**0.248****	**0.231***	**0.210***	0.127	**0.326****	0.145	**0.291****
p	**0.007**	**0.012**	**0.023**	0.172	**0.000**	0.118	**0.001**
FIQR-3							
r	**0.368****	**0.304****	**0.409**α**	**0.405**α**	**0.331****	**0.360****	**0.511****
p	**0.000**	**0.001**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
FIQR total							
r	**0.339****	**0.298****	**0.376**α**	0.259**α	**0.314****	**0.325****	**0.451****
p	**0.000**	**0.001**	**0.000**	0.005	**0.001**	**0.000**	**0.000**
SF-36 Physical functioning							
r	**−0.320****	−0.172	**−0.238****	−0.149	**−0.334****	**−0.235***	**−0.343****
p	**0.000**	0.064	**0.010**	0.109	**0.000**	**0.011**	**0.000**
SF-36 Role physical							
r	**−0.219****	−0.180	**−0.206****	−0.120	−0.106	−0.170	**−0.246****
p	**0.018**	0.052	**0.026**	0.198	0.255	0.067	**0.008**
SF-36 Role emotional							
r	**−0.184***	−0.149	−0.177	−0.138	−0.121	−0.165	**−0.251****
p	**0.047**	0.108	0.057	0.139	0.194	0.075	**0.006**
SF-36 Vitality							
r	**−0.306****	**−0.209***	**−0.333****	**−0.248****	**−0.267****	**−0.226***	**−0.402****
p	**0.001**	**0.023**	**0.000**	**0.007**	**0.004**	**0.014**	**0.000**
SF-36 Mental health							
r	**−0.263****	**−0.287****	**−0.402****	**−0.270****	**−0.256****	**−0.242****	**−0.404****
p	**0.004**	**0.002**	**0.000**	**0.003**	**0.005**	**0.009**	**0.000**
SF-36 Social functioning							
r	**−0.245****	**−0.225****	**−0.286**α**	−0.159 α	−0.143	**−0.245****	**−0.290****
p	**0.008**	**0.015**	**0.001**	0.074	0.123	**0.008**	**0.002**
SF-36 Bodily pain							
r	**−0.334****	**−0.299****	**−0.236****	−0.118	**−0.219***	**−0.174***	**−0.317****
p	**0.000**	**0.001**	**0.011**	0.206	**0.017**	**0.061**	**0.001**
SF-36 General health							
r	**−0.414****	−0.126	−0.176	**−0.342****	**−0.204***	**−0.269****	**−0.455****
p	**0.000**	0.176	0.057	**0.000**	**0.028**	**0.003**	**0.000**

FIQR: Fibromyalgia Impact Questionnaire; SF-36: Short-form-36; C-31: COMPASS-31; FIQR-1: Function; FIQR-2: Overall; FIQR-3: Symptoms; α: Pearson correlation test; * p<0.05; ** p<0.01; r: Spearman correlation coefficient.

the FIQR and SF-36. In addition, it was found to be valid and reliable for identifying the presence of autonomic dysfunction in FM patients in Turkish-speaking communities.

Considering the prevalence of FM syndrome, it was reported that FM syndrome is more common between the ages of 30 to 50 years, particularly in the fourth decade. Female patients constitute 80 to

90% of patients diagnosed with FM.[25] In our study, the sample included four male and 113 female patients. The mean age was 43.0±11.0 years, and 96.6% of the individuals who participated in the study were female. It can be stated that the sample of this study was in close similarity with the sex and age range in which FM syndrome is frequently observed.

In the original study by Sletten et al.,[8] the sections of COMPASS-31 were analyzed separately, yielding Cronbach's alpha values between 0.71 and 0.93. Treister et al.[12] found a Cronbach's alpha value of 0.919 and 0.886 after retesting. Drulović et al.'s[26] study in Serbian and Croatian patients reported Cronbach's alpha coefficients of 0.844 for Croatian patients, 0.779 for Serbian patients, and 0.785 for the total sample. The current study found a high Cronbach's alpha value of 0.824 for the Turkish version of COMPASS-31, similar to the versions in other languages.

Marx et al.[18] found no statistically significant difference between test-retest intervals of two days and two weeks, suggesting that retesting within this period is sufficient. In our study, a seven-day interval was chosen, consistent with Marx et al.'s findings. The test-retest analysis was evaluated using the ICC method. Pierangeli et al.[27] had 36 participants retake the test after 4±1 week, and Treister et al.[12] had 66 participants retake it after two weeks, both finding a high correlation in retest r values. The retest analyses were statistically studied with Pearson and Spearman correlation analyses and found to be significant. The retest Pearson correlation analysis value of the total score was 0.929.[27] In the study conducted by Drulović et al.[26] with Serbian and Croatian patients, the test was reapplied after two weeks and the results were evaluated using the ICC. The retest ICC value of the total score was found to be close to the high confidence interval. The test-retest results of our study are similar to those of Pierangeli et al.,[27] Treister et al.,[12] and Drulović et al.[26]

There was a strong positive correlation between the total scores of COMPASS-31 and FIQR, and a strong negative correlation between COMPASS-31 total scores and the energy vitality, vitality, mental health, and general health perception scores of SF-36. Pearson correlation analysis confirmed that the Turkish version of COMPASS-31 has good correlation, supporting its validity. Treister et al.[12] reported a correlation of r=–0.754 between SF-36 and COMPASS-31 total scores, and Puri and Lee[28] found a positive correlation of r=0.450 between FIQR and COMPASS-31. The correlation of the COMPASS-31 scale with SF-36 and FIQR was found to be good and valid when correlation values of this study and other studies were analyzed.

This study had some limitations. There is no similar autonomic dysfunction scale specific to FM for correlation, the study was conducted in a single center, the sample was relatively small, the scale evaluator was not blinded to other clinical findings, the extent of autonomic dysfunction in the population was not examined, and participants who participated in the study had low educational levels. As another limitation of the study, factor analyses and divergent validity were not performed due to concerns that these analyses may not yield appropriate and accurate results, as COMPASS-31 is not a standard Likert-type scale. Nevertheless, this study had some strengths. It is the first to assess the validity and reliability of the scale in patients with FM in Türkiye and introduces an easy-to-apply and valid scale to the literature for the evaluation of autonomic dysfunction, a condition that is often overlooked in clinical practice.

In conclusion, the Turkish version of COMPASS-31 is a reliable tool for assessing autonomic dysfunction in Turkish individuals with FM. Further studies on its validity and reliability in other diseases with autonomic dysfunction, such as multiple sclerosis, and its use in pre- and posttreatment assessments, could be beneficial.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions: Idea/concept, critical review: I.B., O.O.P., M.P.; Design: I.B., M.P.; Control/supervision: O.O.P., M.P.; Data collection and/or processing, literature review, writing the article: I.B.; Analysis and/or interpretation: O.O.P., M.P.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

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COMPASS-31 - Türkçe - Versiyon
Kompozit Otonom Semptom Skoru-31

1. Geçtiğimiz yıl içinde, oturur ya da yatar pozisyonun hemen ardından ayağa kalkarken kendinizi hiç bayılacak gibi, sersemlemiş veya "acayip" hissettiniz mi ya da düşünmede güçlük çektiniz mi?
   a. Evet
   b. Hayır (Hayır'ı işaretlediyseniz, lütfen soru 5'e atlayınız)
2. Ayağa kalktığınızda bu duygu veya belirtileri ne sıklıkla yaşadınız?
   a. Seyrek olarak
   b. Bazen
   c. Sıklıkla
   d. Hemen hemen her zaman
3. Bu duygu veya belirtilerin şiddetini nasıl derecelendirirsiniz?
   a. Hafif
   b. Orta
   c. Ciddi
4. Geçen yıl içinde yaşadığınız bu duygu veya belirtiler şimdi:
   a. Çok kötüledi
   b. Bir ölçüde kötüledi
   c. Hemen hemen aynı düzeyde kaldı
   d. Bir ölçüde iyiye gitti
   e. Çok iyiye gitti
   f. Tümüyle ortadan kalktı
5. Geçen yıl içinde derinizde kırmızılık, beyazlaşma veya morlaşma gibi renk değişikliği olduğunu fark ettiniz mi?
   a. Evet
   b. Hayır *(Hayır'ı işaretlediyseniz, lütfen soru 8'e atlayınız)*
6. Bu renk değişikliklerinden vücudunuzun hangi bölümleri etkilendi? (Uygun olanların tümünü işaretleyin)
   a. Eller
   b. Ayaklar
7. Derinizdeki renk değişiklikleri şimdi:
   a. Çok kötüledi
   b. Bir ölçüde kötüledi
   c. Hemen hemen aynı düzeyde kaldı
   d. Bir ölçüde iyiye gitti
   e. Çok iyiye gitti
   f. Tümüyle ortadan kalktı
8. Geçen 5 yıl içinde, eğer olduysa, genel olarak vücudunuzdaki terlemelerde nasıl değişiklikler oldu?
   a. Her zamankinden daha fazla terliyorum
   b. Her zamankinden biraz daha fazla terliyorum
   c. Terlememde herhangi bir değişiklik farketmedim
   d. Her zamankinden biraz daha az terliyorum
   e. Her zamankinden çok daha az terliyorum
9. Gözlerinizde aşırı derecede kuruma hissediyor musunuz?
   a. Evet
   b. Hayır
10. Ağzınızda aşırı derecede kuruma hissediyor musunuz?
    a. Evet
    b. Hayır
11. En uzun süre hissettiğiniz döneme göre, göz kuruluğu veya ağız kuruluğu belirtisi şimdi:
    a. Bu belirtilerin hiçbiri bende yok
    b. Çok kötüledi
    c. Bir ölçüde kötüledi
    d. Hemen hemen aynı düzeyde kaldı
    e. Bir ölçüde iyiye gitti
    f. Çok iyiye gitti
    g. Tümüyle ortadan kalktı
12. Geçtiğimiz yıl içinde, yemek yerken doyma sürenizde herhangi bir değişiklik fark ettiniz mi?
    a. Her zamankinden çok daha çabuk doyuyorum
    b. Her zamankinden daha çabuk doyuyorum
    c. Herhangi bir değişiklik fark etmedim
    d. Her zamankinden daha geç doyuyorum
    e. Her zamankinden çok daha geç doyuyorum
13. Geçtiğimiz yıl içinde, yemekten sonra aşırı doyduğunuz ya da sürekli doygun hissettiğiniz (şişkinlik duygusu) oldu mu?
    a. Hiçbir zaman
    b. Bazı zamanlar
    c. Oldukça sık
14. Geçtiğimiz yıl içinde, yemekten sonra kustuğunuz oldu mu?
    a. Hiçbir zaman
    b. Bazı zamanlar
    c. Oldukça sık
15. Geçtiğimiz yıl içinde, kramp ya da kolik şeklinde karın ağrınız oldu mu?
    a. Hiçbir zaman
    b. Bazı zamanlar
    c. Oldukça sık
16. Geçtiğimiz yıl içinde, hiç ishal nöbeti geçirdiniz mi?
    a. Evet
    b. Hayır *(Hayır'ı işaretlediyseniz, lütfen soru 20'ye atlayınız)*
17. Bu ne sıklıkla olur?
    a. Seyrek olarak
    b. Bazen
    c. Sıklıkla, ayda ..... kere
    d. Her zaman
18. Bu ishal nöbetlerinin şiddeti nasıldır?
    a. Hafif
    b. Orta
    c. Ciddi
19. İshal nöbetleriniz giderek:
    a. Çok daha kötüleşiyor
    b. Biraz daha kötüleşiyor
    c. Aynı kalıyor
    d. Biraz daha iyileşiyor
    e. Çok daha iyileşiyor
    f. Tümüyle ortadan kalktı
20. Geçtiğimiz yıl içinde, kabızlık çektiniz mi?
    a. Evet
    b. Hayır *(Hayır'ı işaretlediyseniz, lütfen soru 24'e atlayınız)*
21. Ne sıklıkla kabızlığınız olur?
    a. Seyrek olarak
    b. Bazen
    c. Sıklıkla, ayda ..... kere
    d. Her zaman
22. Bu kabızlık dönemlerinizin şiddeti nasıldır?
    a. Hafif
    b. Orta
    c. Ciddi
23. Kabızlığınız giderek:
    a. Çok daha kötüleşiyor
    b. Biraz daha kötüleşiyor
    c. Aynı kalıyor
    d. Biraz daha iyileşiyor
    e. Çok daha iyileşiyor
    f. Tümüyle ortadan kalktı

24. Geçen yıl içinde, idrarınızı kontrol edemediğiniz oldu mu?
    a. Hiçbir zaman
    b. Bazen
    c. Sıklıkla, ayda ..... kere
    d. Her zaman
25. Geçtiğimiz yıl içinde, idrar yapmada güçlüğünüz oldu mu?
    a. Hiçbir zaman
    b. Bazen
    c. Sıklıkla, ayda ..... kere
    d. Her zaman
26. Geçtiğimiz yıl içinde, idrar kesenizi tümüyle boşaltmada güçlüğünüz oldu mu?
    a. Hiçbir zaman
    b. Bazen
    c. Sıklıkla, ayda ..... kere
    d. Her zaman
27. Geçtiğimiz yıl içinde, güneş gözlüğü ya da renkli camlı gözlük takmadığınızda, parlak ışık gözlerinizi rahatsız etti mi?
    a. Hiçbir zaman *(Hiçbir zaman'ı işaretlediyseniz, lütfen soru 29'a atlayınız)*
    b. Bazen
    c. Sıklıkla
    d. Her zaman
28. Parlak ışığa olan duyarlılığınız ne kadar şiddetlidir?
    a. Hafif
    b. Orta
    c. Ciddi
29. Geçtiğimiz yıl içinde, görmenizi odaklamada güçlüğünüz oldu mu?
    a. Hiçbir zaman *(Hiçbir zaman'ı işaretlediyseniz, lütfen soru 31'e atlayınız)*
    b. Bazen
    c. Sıklıkla
    d. Her zaman
30. Bu odaklanma sorunu ne kadar şiddetlidir?
    a. Hafif
    b. Orta
    c. Ciddi
31. Gözlerinizdeki en çok sıkıntı veren belirti (yani parlak ışığa duyarlılık ya da odaklanma güçlüğü) giderek:
    a. Bu belirtilerin hiçbiri bende yok
    b. Çok daha kötüleşiyor
    c. Biraz daha kötüleşiyor
    d. Hemen hemen aynı düzeyde kaldı
    e. Biraz daha iyileşiyor
    f. Çok daha iyileşiyor
    g. Tümüyle ortadan kalktı