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Validation of the Arabic version of the oral hypoglycemic agent questionnaire version 2 (OHA-Q ver. 2) in Tabuk, Saudi Arabia: A pilot study

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Abstract: Diabetes mellitus is common globally, and the Arab countries are no exception. Oral hypoglycemic agents are major pillars of diabetes management. The Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2) is unavailable in Arabic. Therefore, the study's goal was to validate the questionnaire for use among patients with diabetes in Saudi Arabia. Thirty patients with diabetes were randomly selected from those attending regular follow-ups at the King Fahd Specialist Hospital - Diabetes Center in Tabuk, Saudi Arabia. The study took place in March and April 2023. A structured questionnaire was utilized, incorporating sociodemographic data and the OHA-Q ver. 2. The questionnaire's validity and reliability were evaluated through forward and backward translation, expert review, and Cronbach's Alpha analysis. The results showed that a total of 30 diabetic patients participated in the questionnaire validation, with 60% being female, a mean age of 51.1 ± 14.056 years, and 94% diagnosed with type 2 diabetes. The internal consistency of the OHA-Q ver. 2 was highest for the "treatment convenience" subscale (0.83) and lowest for "satisfaction" (0.78). The overall content validity score was 0.875, and Cronbach's Alpha for reliability was 0.88. The Arabic version of the OHA-Q ver. 2 has proven to be a valid and reliable tool for diabetic patients in Arab countries.

Keywords: *Internal consistency, Oral hypoglycemic Agent questionnaire version 2, Reliability, Type 2 diabetes, Validity.*

1. Introduction

Diabetes mellitus is a lifelong chronic disease with a significant impact on the patient's quality of life and is a major health problem. Various measures are available for quality of life, including the Arabic version validated in Jordan [1]. Currently, 529 million are affected, and more than one in ten adults are expected to suffer from this severe disease globally. The Middle East and North Africa region has one of the highest diabetes prevalence rates globally, and the Arab World is part of that region, including Qatar, the Gulf country with the highest prevalence worldwide [2].

Type 2 diabetes is the most prevalent type of diabetes and constitutes 90-95% of diabetes cases. Although 50% of beta cell loss was reported at diagnosis, the cell's inability to respond to insulin is predominant. Therefore, the majority of patients are prescribed oral therapy, with few exceptions (admission HbA1c ≥ 10% and random blood glucose ≥ 300 mg/dl) [3].

Oral hypoglycemic drugs are associated with side effects, including gastrointestinal adverse effects, hypoglycemia, and weight gain. Although usually transient, gastrointestinal side effects are the most common. However, they could lead to medication non-adherence [4]. Compliance with oral hypoglycemic medication is essential to achieving glycemic goals and avoiding diabetes complications [5].

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Many instruments are available to assess the patient's satisfaction with diabetes medications, and few are available for oral hypoglycemic agents [Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2), Satisfaction with Oral Anti-Diabetic Agent Scale (SOADAS), and Diabetes Tablet Treatment Questionnaire (DTTQ)]. Although any instrument can assess the patient's satisfaction with diabetes medications, SOADAS and DTTQ are not recommended [6]. Therefore, OHA-Q ver. 2 was chosen for Arabic validation.

The Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2) comprises closed-ended questions designed to comprehensively cover all potential responses expected from the participants. Several versions of this questionnaire are available in different languages and are helpful in diverse cultural settings. Our study aimed to build upon this foundation by validating the questionnaire in the Arabic language to ensure its reliability and applicability for this particular context. The English versions of OHA-Q ver. 2 were already validated for use among patients with Diabetes Mellitus and adapted from Ishii and Oda [7] (copyright license no. 1489261-1) and [8]; no version is available for use in Arab countries. This study is unique because it is the first to assess the validity of the Arabic version of the Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2). Therefore, this study is designed to validate an Arabic version of the Oral Hypoglycemic Agent Questionnaire Version 2.

2. Materials and Methods

This pilot study was carried out with a systematic, randomly chosen group of 30 diabetic patients who attended their routine follow-up visits at KFSH-DC, located in Tabuk City, Saudi Arabia, between March and April 2023. The Diabetes Center is the primary facility in Tabuk City that specializes in diabetes care and management. It serves approximately 5,000 diabetic patients every month. For this reason, it was chosen as the study site.

2.1. Inclusion Criteria

Participants recruited at KFSH-DC were chosen based on critical factors that ensure the reliability and validity of the collected data. The eligible participants were 18 years or older, fluent in Arabic, had a confirmed diagnosis of type 2 diabetes mellitus, and were on oral hypoglycemic agents. All participants consistently attended follow-up appointments at KFSH-DC during the entire study duration. These criteria ensured consistent care and monitoring, allowing for a reliable assessment of the questionnaire's use in different clinical interactions. Finally, participants must provide written informed consent, underscoring their voluntary agreement to participate in the study. This is critical for upholding ethical standards and ensuring informed participation.

2.2. Exclusion Criteria

Any patient who did not meet the inclusion criteria, including those on insulin or non-oral diabetic medications, was excluded. Patients who could not complete or understand the questionnaire due to cognitive impairments or psychological disorders were also excluded. Additionally, all pregnant women were excluded, as insulin is the primary treatment for diabetes during pregnancy. Lastly, to ensure accurate data collection and the reliability of the study outcomes, we excluded any patient who did not provide written consent, was unwilling to participate, or had inconsistent follow-up appointments.

2.3. Sample Size Rationale

The pilot study aims to validate an Arabic version of the Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2), primarily evaluating its feasibility, validity, and reliability. This will be a starting point for assessing the pliability of the study design, tools, and methods for a more extensive study that could draw definitive conclusions. Accordingly, we collected a small, diverse sample size across all subgroups within the targeted population [9, 10].

The sufficient sample size in the validation study usually ranges from twenty to fifty participants, which is enough to evaluate the reliability of the questionnaire using Cronbach's Alpha, which indicates

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the internal consistency among the questionnaire's items. Therefore, the considered sample size of thirty participants was appropriate for this pilot study to achieve the aim of the study. It allows the researchers to identify any issues with the questionnaire, assess its reliability, and make necessary adjustments before potentially conducting a larger study with a more extensive sample size [11, 12].

2.4. Measures

The designed questionnaire, comprising sociodemographic data (SBL-R) and the Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2), was used in the study. The SBL-R collected includes the following data: age, gender, body measurements, duration of diabetes, current diabetes medication list, fasting insulin, the homeostatic model assessment for insulin resistance, and lipid profile. The OHA-Q ver. 2 includes 23 items distributed in 3 subscales: the treatment convenience subscale, which comprises nine items; the somatic symptom subscale, which contains 11 items; and the satisfaction subscale, which includes three items. Scores were calculated by converting the answers for each question into values ranging from 0 to 3. Specifically, answer options 1, 2, 3, and 4 were assigned scores of 3, 2, 1, and 0, respectively, with higher scores indicating better satisfaction [7, 8].

2.5. Statistical Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS, version 29, New York). The following tests were used to evaluate the questionnaire's validity: content validity, face validity, and reliability. A p-value of less than 0.05 was considered statistically significant.

3. Results

3.1. Content Validity

Content validity ensured the questionnaire items were pertinent and comprehensively addressed all facets of the studied issues. This process involved choosing the right measurement tool and eliminating errors, unclear wording, technical jargon, confusing questions, combined questions, or complicated terms before administering the questionnaire.

In formulating a multi-item questionnaire, content validity can be assessed through focus groups, an expert panel, or in-depth interviews with participants. These methods ensure that the questionnaire accurately captures the relevant concepts and is appropriately designed for the target population [13]. A content review was conducted for the English version of the questionnaire by a team of four experts with substantial expertise and knowledge in this field. The team was recruited from the Faculty of Medicine, University of Tabuk, Saudi Arabia, including a consultant in Epidemiology and Biostatistics, two assistant professors of Family Medicine, and a professor of Internal Medicine and Endocrinology. Additionally, English language experts from the Institute of English Language, University of Tabuk, Tabuk, Saudi Arabia, were also recruited to review the questions and phrases used in the questionnaire. Their feedback and modifications were incorporated.

The evaluation criteria of the questionnaire used by the experts included the following: relevance, clarity, simplicity, and ambiguity. Each expert provided a score for each item on a scale of 1 to 4, where scores ≤ 2 indicated "disagree" and scores ≥ 3 indicated "agree," as outlined in Table 1. The expert panel's evaluation results are presented in Tables 2 and 3.

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Table 1.
Content of the Experts' Evaluation.

Score	Relevance	Clarity	Simplicity	Ambiguity
1	Not relevant	Not clear	Not simple	Doubtful
2	The item needs some revision	The item needs some revision	The item needs some revision	The item needs some revision
3	It is relevant, but it needs some revision	It is clear, but it needs minor revision	Simple, but it needs minor revision	No doubt, but it needs some revision
4	Very relevant	Very clear	Very simple	Meaning is clear

Source: Score of Agreement: 1, 2 (Disagree); 3,4 (Agree).

Table 2.
Content Validity for SBL-R.

Criteria	Expert 1	Expert 2	Expert 3	Expert 4	No. of Agreements
Relevance	✓	✓	✓	✓	4
Clarity	✓	✓	✓	✓	4
Simplicity	✓	✓	✓	✓	4
Ambiguity	✓	✓	✓	✓	4
Overall Experts	1	1	1	1	-
Content Validity Index	**1**				

Source: (✓): Agree; **(×):** Disagree.

Table 3.
Content Validity for OHA-Q ver. 2.

Criteria	Expert 1	Expert 2	Expert 3	Expert 4	No. of Agreements
Relevance	✓	✓	✓	✓	4
Clarity	✓	✓	✓	✓	4
Simplicity	✓	✓	✓	×	3
Ambiguity	✓	✓	×	✓	3
Overall Experts	1	1	0.75	0.75	-
Content Validity Index	0.875				

Note: (✓): Agree; **(×):** Disagree.

Our findings indicated that the content validity index for the SBL-R was 1, and for the OHA-Q ver. 2, it was 0.875. These results suggest that the English version of this instrument is a valid tool for use among patients with diabetes in Arab countries [14].

3.2. Translation of the Questionnaire

The English version of the questionnaires was translated into Arabic using several steps to ensure the accuracy and cultural relevance of the translation. This process was conducted by a trusted expert fluent in Arabic and English from the Institute of English Language, University of Tabuk, Tabuk, Saudi Arabia. This process included three steps: 1st step: forward translation of the questionnaire into simplified Arabic. 2nd step: review and reconciliation of the translated version by a second expert to compare the translated version with the original to ensure that the meaning is preserved. Any discrepancies or ambiguities are addressed and clarified. 3rd step: back translation into English by another expert who was not involved in the initial translation to ensure consistency and preserve the original meaning. This back-translation process confirmed that the meaning was preserved in both language versions. The translated English and Arabic questionnaire versions are provided in the appendices (Appendices A and B, respectively).

3.3. Face Validity

Face validity is a pre-testing phase that involves a subjective assessment to ensure the questionnaire's questions are on topic and relevant. It was conducted by distributing the questionnaire to the same target population. This phase helped identify any potential issues during the distribution and completion of the questionnaire. Additionally, it confirmed that the questions were valid and that participants could easily comprehend and answer all items in the Arabic version of the questionnaire. The pre-testing also assessed the questionnaire's clarity, readability, and cultural appropriateness and measured the time required for the face-to-face interviews with each participant.

The phase was conducted at KFSH-DC, Tabuk, Saudi Arabia. A group of fifteen participants, selected based on their responsiveness, cooperation, and willingness to engage, was chosen using a consecutive convenience sampling method. Participants were encouraged to ask if they had difficulty understanding any questions or terms or if any items needed further clarification. A face-to-face interview was conducted to test the questionnaire. The questions were reviewed and adjusted after each interview based on participant feedback and queries. By the time of the fourth interview, it became clear that the questions were well understood, with no further requests for clarification.

The interview process initially took a considerable amount of time. However, as the interviews continued, the time needed decreased. On average, each face-to-face interview took approximately 15 minutes, ranging from 10 to 20 minutes.

3.4. Reliability Measurements

The questionnaire's reliability was tested to ensure that the data collected in a single session remained consistent and stable over time, achieving the study's goal. The questionnaire items were evaluated for test-retest reliability. The participants were asked to return for a follow-up interview conducted by the same interviewer one week after the initial session, with a maximum interval of four weeks.

A total of 30 participants were selected for the pilot study using a systematic, random sampling of willing individuals to participate and were included until the desired sample size was reached. The sample was balanced to ensure equal representation of males and females. All 30 participants completed the initial interview and were invited to voluntarily return for a follow-up interview or after being contacted by phone. Of these, 28 participants (93.33%) returned for the re-interview, with the majority being female (18 participants, or 64.29%). The median time for participants to return for the re-interview was 22 days, ranging from 9 to 27 days.

The internal consistency reliability of the Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2) was evaluated using Cronbach's Alpha coefficient, which ranges from 0 to 1. Values above 0.7 are generally considered acceptable for indicating reliable internal consistency [15]. The overall Cronbach's Alpha for the OHA-Q ver. 2 was 0.88 (Table 4). This indicates that the OHA-Q ver. 2 demonstrates reliable internal consistency for use among patients with diabetes in Arab countries.

Table 4.
Internal Consistency of OHA-Q ver. 2.

Subscale	No. of Items	Cronbach's Alpha
Treatment convenience	9	0.83
Somatic symptom	11	0.79
Satisfaction	3	0.78
Overall Cronbach's Alpha	23	0.88

4. Discussion

In the present study, all four experts who assessed the Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2) agreed on the content validity of the sociodemographic part and found that the questionnaire was relevant and precise. However, three out of the four experts agreed regarding simplicity and ambiguity, with a final content validity index of 0.875. The questionnaire's internal

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consistency was very good, with overall Cronbach's Alpha of 0.88 and 0.83, 0.79, and 0.78 for treatment convenience, somatic symptom, and satisfaction subscales, respectively. The above findings align with the original version of the questionnaire, in which 597 participants from 45 institutions in Japan were enrolled. The questionnaire showed intraclass (somatic symptoms, treatment convenience, and satisfaction score) correlation coefficients ≥ 7 with high reproducibility [7].

Oral hypoglycemic agents are the mainstay for treating patients with type 2 diabetes. In addition, sodium-glucose co-transporter inhibitors are used over the counter for type 1 diabetes [16]. The recommendations for use varied significantly across the globe. In Western countries, the prescription is based significantly on cardiovascular and renal failure prevention. However, the practice might differ considerably because of less reliance on cardiorenal protection in other parts of the world [17]. The Oral Hypoglycemic Agent Questionnaire was developed in Japan in 2012 [7] and showed good reproducibility in all three subscales with intraclass correlation coefficients ≥ 7.

The patient's satisfaction with the prescribed medications is the key to treatment success. In addition, the patient's views regarding oral hypoglycemic drugs are an essential issue for stakeholders and drug manufacturers [18]. Notably, 50% of patients with diabetes mellitus are solely on oral medications, and oral hypoglycemic drugs are continuously available [19, 20]. Therefore, a measure for oral hypoglycemic agents in the diabetes super-region, including the Arab World, is highly relevant. Diabetes Tablet Treatment Questionnaire (DTTQ) and Satisfaction with Oral Anti-Diabetic Agent Scale (SOADAS) are the only two available instruments for use among patients on oral therapy; DTTQ was not chosen because it lacks the floor and ceiling effect because of the true variability in patients' responses could be obscure. In addition, the questionnaire is suggested when tablet taking and medication non-compliance are issues [21, 22]. The Arabic version of diabetes treatment satisfaction has been previously validated in the State of Qatar with good reliability [23] but we focused on oral hypoglycemic measures. Because of that, the Oral Hypoglycemic Agent Questionnaire was chosen for translation as it is more specific and highly relevant regarding drug attributes [19]. The questionnaire is valid and reliable for use in the Arab population. Notably, the prescription of the oral semaglutide, glucagon-like peptide-1 agonists, which was approved for diabetes management, is limited in Tabuk City. Therefore, patients on oral semaglutide might need special modification of the Arabic version of the questionnaire [24].

5. Conclusion

All four experts who assessed the Oral Hypoglycemic Agent Questionnaire Version 2 (OHA-Q ver. 2) agreed on the content validity of the sociodemographic part and found that the questionnaire was relevant and clear. However, three out of the four experts agreed regarding simplicity and ambiguity. In addition, the internal consistency of all questionnaire's subscales was very good. Based on the findings above, the OHA-Q ver. 2 appears to have undergone sufficient validity and reliability processes. Therefore, the Arabic version of the OHA-Q ver. 2 is considered a valuable tool for assessing patients with diabetes in Arab countries, demonstrating good sensitivity and consistency.

6. Study Limitations

The study was limited by the predominance of female participants in the sample and was conducted at a single center. As a result, the findings may not be generalizable to the entire population.

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Abbreviations:

The following abbreviations are used in this manuscript:

OHA-Q ver. 2	Oral Hypoglycemic Agent Questionnaire Version 2
KFSH-DC	King Fahd Specialist Hospital - Diabetes Center
HbA1c	Glycated hemoglobin
mg/dL	Milligrams per deciliter
SOADAS	Satisfaction with Oral Anti-Diabetic Agent Scale
DTTQ	Diabetes Tablet Treatment Questionnaire
SBL-R	Sociodemographic, Body Measurements, and Lab. Parameters Report
SPSS	Statistical Package for the Social Sciences

Institutional Review Board Statement:

The participants' informed consent was obtained before responding to the questionnaire. Ethical clearance was obtained from the ethical committee of the University of Tabuk, the ethical committee of the Ministry of Health, Saudi Arabia, and the ethical committee of the Universiti Putra Malaysia (Ref.: UT-190-46-2022, TU-077/022/137, and JKEUPM-2022-860; Date: March 16, 2022, June 14, 2023, and March 7, 2023, respectively).

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Appendices

Appendix A.
OHA-Q ver. 2 - English Version.

OHA-Q ver. 2 **Oral Hypoglycemic Agent Questionnaire Version 2.**		
Respondent's Code :		
Q1	Do you ever forget to take your diabetes medication? (How many times a week?)	
	1. Never	2. Almost never
	3. Once or twice a week	4. At least three times a week
Q2	Are you concerned about the size of the tablets, difficulty swallowing the tablets, etc., when taking diabetes medication?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned

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Q3	Is handling/carrying/preparing to taking diabetes medication troublesome?	
	1. Not troublesome at all	2. Hardly troublesome
	3. Sometimes troublesome	4. Very troublesome
Q4	Are you concerned about being seen by others when taking diabetes medication outside of your home?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q5	Is it burden to eat meals at regular times in order to take diabetes medication?	
	1. Not a burden at all	2. Almost no burden
	3. Sometimes a burden	4. Very much of a burden
Q6	Is being punctual in taking your diabetes medication and your meals troublesome?	
	1. Not troublesome at all	2. Hardly troublesome
	3. Sometimes troublesome	4. Very troublesome
Q7	Is it burden to take diabetes medication at predetermined times?	
	1. Not a burden at all	2. Almost no burden
	3. Sometimes a burden	4. Very much of a burden
Q8	Is the dosing frequency for diabetes medication a hassle?	
	1. Not a hassle at all	2. Almost no hassle
	3. Sometimes a hassle	4. Very much of a hassle
Q9	Is it difficult to take diabetes medication outside of your home?	
	1. Not difficult at all	2. Hardly difficult
	3. Sometimes difficult	4. Very difficult
Q10	Do you want to continue to take your current diabetes medication?	
	1. Yes, definitely	2. Yes
	3. Not very much	4. No, I would like to stop
Q11	Are you concerned about passing gas or rumbling in your stomach?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q12	Are you concerned about diarrhea?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q13	Are you concerned about constipation?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q14	Are you concerned about weight gain?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q15	Are you concerned about readily becoming hungry?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q16	Are you concerned about having an upset stomach?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q17	Are you concerned about swelling of your body?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q18	Are you worried about hypoglycemia?	
	1. Not worried at all	2. Hardly worried
	3. Sometimes worried	4. Very worried

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Q19	Are you concerned about frequent urination?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q20	Are you concerned about thirsty?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q21	Are you concerned about discomfort with urination or genital pruritus?	
	1. Not concerned at all	2. Hardly concerned
	3. Sometimes concerned	4. Very concerned
Q22	Are you satisfied with your current blood glucose control?	
	1. Very satisfied	2. Generally satisfied
	3. Not very satisfied	4. Dissatisfied
Q23	Are you satisfied with your current treatment with the diabetes medication?	
	1. Very satisfied	2. Generally satisfied
	3. Not very satisfied	4. Dissatisfied

Appendix B.
OHA-Q ver. 2 - Arabic Version.

OHA-Q ver. 2
استبيان علاج التحكم بمستويات السكر في الدم عن طريق لقاحات الفم

رمز المشارك :.....

Q1	هل تنسى أخذ جرعات علاج السكر؟ كم مرة في الأسبوع؟	
	2. بالكاد يحدث	1. أبداً لا يحدث
	4. يحدث على الأقل ثلاث مرات بالأسبوع	3. يحدث مرة أو مرتين أسبوعياً
Q2	عند تناولك لعلاج السكري، هل تقلق حيال حجم الكبسولة، أو صعوبة ابتلاعها؟	
	2. بالكاد مؤثر	1. غير مؤثر بتاتاً
	4. مؤثر جداً	3. أحياناً مؤثر
Q3	هل تعاطي أو حمل أو تجهيز جرعات علاج السكري تسبب لك المشقة؟	
	2. بالكاد يسبب المشقة	1. لا يسبب المشقة أبداً
	4. كثيراً يسبب المشقة	3. يسبب المشقة أحياناً
Q4	هل تتأثر برؤية الأخرين لك وأنت تأخذ جرعات علاج السكري خارج منزلك؟	
	2. بالكاد مؤثر	1. غير مؤثر بتاتاً
	4. مؤثر جداً	3. أحياناً مؤثر
Q5	هل تحس بعبء لتناول وجبات بسبب حاجتك لأخذ جرعات علاج السكري؟	
	2. بالكاد يسبب عبء	1. لا يمثل عبء أبداً
	4. يسبب عبء واضح	3. أحياناً يسبب عبء
Q6	هل الحاجة في الالتزام بالمواعيد لأخذ جرعات علاج السكري يسبب لك المشقة؟	
	2. بالكاد يسبب المشقة	1. لا يسبب المشقة أبداً
	4. كثيراً يسبب المشقة	3. يسبب المشقة أحياناً
Q7	هل أخذ جرعات علاج السكري في أوقات محددة مسبقاً يسبب لك عبء؟	
	2. بالكاد يسبب عبء	1. لا يمثل عبء أبداً
	4. يسبب عبء واضح	3. أحياناً يسبب عبء
Q8	هل يشكل عدد الجرعات لعلاج مرض السكري لك مشقة؟	
	2. بالكاد يسبب المشقة	1. لا يسبب المشقة أبداً
	4. كثيراً يسبب المشقة	3. يسبب المشقة أحياناً
Q9	هل تجد صعوبة بأخذ جرعات علاج السكري خارج المنزل؟	
	2. بالكاد صعب	1. أبداً غير صعب
	4. صعب جداً	3. أحياناً صعب

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Q10	هل تود الاستمرار بأخذ علاج السكري الحالي الذي تداوم عليه؟	
	1. نعم، وبكل تأكيد	2. نعم
	3. ليس كثيراً	4. لا، وأرغب بالتوقف
Q11	هل تتأثر نفسياً نتيجة قلقك حيال طرد الغازات من جسمك أو الأصوات المعوية؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q12	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية الإسهال؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q13	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية الإمساك المعوي؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q14	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية زيادة الوزن؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q15	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية الجوع غير المنضبط؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q16	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية آلام المعدة؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q17	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية انتفاخ الجسم؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q18	هل تقلق بشأن انخفاض السكر بالدم؟	
	1. غير قلق أبداً	2. بالكاد قلق
	3. أحياناً قلق	4. قلق جداً
Q19	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية التبول المفاجئ؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q20	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية العطش؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q21	هل تتأثر نفسياً نتيجة قلقك حيال احتمالية الآلام نتيجة التبول؟	
	1. غير مؤثر بتاتاً	2. بالكاد مؤثر
	3. أحياناً مؤثر	4. مؤثر جداً
Q22	هل أنت راض عن مدى السيطرة على نسبة السكر في الدم؟	
	1. راضي جداً	2. راض بشكل عام
	3. غير راضي بشكل تام	4. غير راضي
Q23	هل أنت راض عن علاجك الحالي لمرض السكري؟	
	1. راضي جداً	2. راض بشكل عام
	3. غير راضي بشكل تام	4. غير راضي

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