Validation of the Patient-Doctor Relationship and Patient Satisfaction Questionnaire for An Arabic Adult Population in an Egyptian Sample

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ABSTRACT

Background: Patient-doctor relationship and patient satisfaction are important engines that improve patient compliance and hence the health outcome. There are widely used instruments to measure patient-doctor relationship and patient satisfaction for primary health care purposes. Researchers lack a validated Arabic instrument that is tailored to the Arab population. So, it is important to translate and validate Patient-Doctor Relationship (PDRQ9) and patient satisfaction (PSQ 18) questionnaires into the Arabic language.

Objectives: Is therefore to develop, evaluate, and validate a self-reported measure of Patient-Doctor Relationship (PDRQ9) and patient satisfaction (PSQ 18).

Subject and Method: The Arabic version of PDRQ-9 and the PSQ-18 was translated from the English one with back to back translation. They were pilot tested statistically to ensure the psychometric properties (reliability and validity) and the appropriateness for the adult participants in the Arab countries. The Arabic questionnaires were administered to 434 adult participant attending primary health care facilities and hospitals in Suez Governorate, Egypt.

Results: Exploratory factor analysis suggested two factors, comprising of 27 items in total. Good model fit was demonstrated through confirmatory factor analysis, with measurement invariance analyses demonstrating equivalent factor structures across. Internal consistency for the PDRQ-9 ranged between (α= 0.981-0.975) for the total scores and that for PSQ-18 ranged between (α = 0.986-0.984).

Conclusion: Initial testing of the Arabic versions of the PDRQ-9 and PSQ-18 suggests that these questionnaires have satisfactory psychometric properties.

Keywords: Arabic version, Egypt, Patient-doctor relationship, Patient satisfaction, Questionnaires.

INTRODUCTION

The patient-doctor relationship and the patient satisfaction are important concepts in health care, especially primary care[1]. A good physician-patient relationship is associated with better treatment adherence, higher patient satisfaction, and a better prognosis[2]. So it's important for these concepts to be involved in the medical education curriculum[3]. As a result, interpersonal communication skills have been designated as one of the six areas of professional competence for doctors by the Accreditation Council for Graduate Medical Education[4].

Several aspects of the PDR have commonalties with the helping alliance in psychotherapy, i.e., high levels of trust, helpfulness, empathic understanding, and interpersonal openness[5]. Both the patient's and the physician's perspectives must be considered to understand the PDR[6]. Substantial efforts have been made to develop instruments to assess the PDR from the patient's point of view[7]. A systematic review found 19 instruments that assess the PDR. These instruments assessed a variety of dimensions and used diverse conceptual models for the PDR [8]. The authors stated that in the primary care setting, a research instrument is preferably concise and easy to use. They suggested the use of the Patient-Doctor Relationship Questionnaire (PDRQ-9) as a brief (9 items) questionnaire with excellent overall internal consistency[9]. The (PDRQ-9) was originally developed in the Netherlands as a short assessment of the relationship between the primary care physician (PCP) and the patient from the patient's perspective[10].

Assessment of patient satisfaction allows general practitioners to investigate the extent to which their service meets the needs of their client group [11]. Questionnaires that assess specific aspects of service provision will enable the practitioner to identify aspects of the service where patients are less satisfied, and potentially improve these aspects of care[12]. The patient satisfaction questionnaires must fulfill, among other requirements, certain psychometric properties, especially if the aim is to generalize the information to the target population[13].

The Patient Satisfaction Questionnaire Short Form (PSQ-18), is a concise, validated tool that may be applied to various settings, as well as comparing interventions[14]. To assess patient satisfaction, there are a variety of questionnaires[15]. However, one such questionnaire 'the Patient Satisfaction Questionnaire

Short Form (PSQ18) has been validated for use in different settings. This was developed through rigorous research and abbreviated from much larger questionnaires maintaining internal consistency and reliability[16]. The team behind this Likert scale questionnaire proposed seven dimensions of patient satisfaction directed toward their doctors. These are general satisfaction, technical quality, interpersonal manner, communication, financial aspects, time spent with doctor, and accessibility and convenience. Each domain is tested through different related questions[17].

In this paper we aim to describe the process of translating these questionnaires from English into Arabic and to assess the reliability and validity of the new Arabic version of the questionnaires.

SUBJECT AND METHODS

The study was a cross sectional study conducted on 434 patients attending the outpatient family health clinics and hospitals of Suez Governorate, Egypt during the period starting from 1st of March 2019 to the end of April 2020.

The sample size was calculated based on the prevalence of paient satisfaction (42%)[18] with 80% power of the study and 5% error by using online epi-onfo program. Patients were selected by systematic random sampling technique along six months of data collection.

Process of translation:

The PDRQ-9 and the PSQ-18 were adapted to Arabic by translating them from their primarily published and used English version. The adaptation to Arabic was performed according to the state-of-the-art procedure of forward-backward translation by two medical doctors and one English-Arabic bilingual translator. Two forward translations into Arabic were independently completed by 2 medical doctors, both of them are native speakers of the Arabic language and are fluent in English. The 2 Arabic versions were compared, and an updated Arabic forward version was compiled. This version was translated back into English by a professional translator with experience in medical translation. This translator had not been involved in the forward translation. The primarily published version and the back-translated version – both in English – were compared by the medical doctor and the expert translator. Thus, an optimized Arabic version was generated. Additionally, in a final reconciliation process, the final Arabic versions (PDRQ-9 Arabic) and (PSQ_18 Arabic), were generated and approved by all parties. Preliminary changes to the original questionnaires were made after piloting the tools and were reviewed.

The Arabic version of Patient–Doctor Relationship Questionnaire (PDRQ-9) [19] and the Patient Satisfaction Questionnaire (PSQ-18)[20] were adminstered to the patients.

The PDRQ-9 contains the following nine items :
1. My doctor helps me.
2. My doctor has enough time for me.
3. I trust my doctor.
4. My doctor understands me.
5. My doctor dedicates himself to help me.
6. My doctor and I agree on the nature of my symptoms.
7. I can talk to my doctor.
8. I feel comfortable towards treatment of my doctor.
9. I can access easily to my doctor.

The PSQ_18 contains the following 18 items :
1. Doctors are good about explaining the reason for medical tests.
2. I think my doctor's office has everything needed to provide complete medical care.
3. The medical care, provided to me, is excellent.
4. Sometimes my doctor makes me wonder if his diagnosis is correct or not.
5. I feel confident that I can get the medical care I need without financial troubles.
6. When I go for medical care, my doctor is careful to check and treat everything completely.
7. I have to pay for my medical care more than I can afford.
8. I have easy access to medical specialists I need.
9. I have to wait too long for emergency treatment.
10. My doctor treats me in a very practical way, not in a personal way.
11. My doctor treats me friendly and politely.
12. Sometimes my doctor examines and diagnoses quickly.
13. Sometimes my doctor ignores what I tell him.
14. I have some doubts about my doctor's medical abilities.
15. My doctor spends too long time with me.
16. I find difficulty to set a date for check with my doctor.
17. I am not satisfied with the service provided by my doctor.
18. I can get doctor service at any time.

The response options required the patients to rate each item using a 5-point rating scale. Answers would be ranked on a scale from 1-5 as 1 equivalent to totally disagree and 5 is equivalent to totally agree. so that higher scores indicate a better patient doctor relationship or better patient satisfaction. Patients were asked to give feedback about their frequent visits to their physicians using the two questionnaires' items.

Ethical consideration:
The study was approved by the Ethical Committee of the Faculty of Medicine, Menoufia University. An official permission letter was obtained from the authorities and directed to health administration in Suez Governorate. All participants were volunteers. Written concent was taken from health care workers and their patients in health facilities with explaining the purpose of this study to each participant and assuring confidentiality. Also an ethical permission to conduct interviews and administer questionnaires was obtained from the local Ethics Committee of the Ministry of Health and Population.

Statistical analysis:
The data were analyzed using the Statistical Package for the Social Sciences (SPSS) and the results were extracted. Internal consistency reliability was determined using Cronbach's alpha coefficient. A Cronbach's alpha coefficient of 0.6–0.7 indicates acceptable reliability and 0.8 or higher indicates good reliability [21].

RESULTS
Sample characteristics: The demographic characteristics of the study population are presented in table 1.

Table (1): Summarizes the characteristics of the patients involved in the study

	No (434)	%
Age (Mean ±SD)	36.75± 11.87	
Sex:		
Female	244	56.2
Male	190	43.8
Education:		
Primary	92	21.2
Preparatory	45	10.4
Secondary or equivalent	159	36.6
University	138	31.8
Occupation:		
Not working	219	50.5
Working	215	49.5
Socioeconomic score:		
Low	100	23.0
Moderate	218	50.2
High	116	26.7

Acceptance: The acceptance was high. none of the participants had more than 1 missing item, and there were no items that were predominantly missing.

Validity: The validity of internal consistency was calculated by Pearson correlation coefficient between the scores of each statement and the total score of the questionnaire to which the statement belongs from patient doctor relationship questionnaire and patient satisfaction questionnaire, as the results are illustrated in table 2 and 3.

Table (2): Pearson correlation coefficients between the scores of each statement and the total score of the questionnaire to which the statement belongs to PDRQ9 questionnaire

Item Number	Correlation Coefficient	Item Number	Correlation Coefficient	Item Number	Correlation coefficient
1	0.945	4	0.912	7	0.946
2	0.915	5	0.847	8	0.901
3	0.816	6	0.964	9	0.943

Table (3): Pearson correlation coefficients between the scores of each statement and the total score of the questionnaire to which the statement belongs in patient satisfaction questionnaire

Item Number	Correlation Coefficient	Item Number	Correlation Coefficient
1	0.920	10	0.866
2	0.918	11	0.889
3	0.857	12	0.869
4	0.806	13	0.880
5	0.832	14	0.913
6	0.829	15	0.909
7	0.979	16	0.945
8	0.920	17	0.831
9	0.837	18	0.969

Reliability
Also Cronbach alpha reliability coefficient was calculated for the patient doctor relationship questionnaire, the patient satisfaction questionnaire and the total score of each questionnaire, as the results are illustrated in table 4 and 5.

Table (4): Cronbach alpha stability coefficient for statements and total score of the patient doctor relationship Questionnaire

NO.	Statements	Statements No.	Cronbach Alpha Coefficient
1	My doctor helps me		0.975
2	My doctor has enough time for me		0.977
3	I trust my doctor		0.981
4	My doctor understands me		0.977
5	My doctor dedicates himself to help me	9	0.979
6	My doctor and I agree on the nature of my symptoms		0.975
7	I can talk to my doctor		0.975
8	I feel comfortable towards treatment of my doctor		0.977
9	I can access easily to my doctor		0.975
Total Score			**0.979**

Table (5): Cronbach alpha reliability coefficient for statements and total degree of the patient satisfaction questionnaire

No.	Statement	Statements No.	Cronbach Alpha Coefficient
1	Doctors are good about explaining the reason for medical tests		0.985
2	I think my doctor's office has everything needed to provide complete medical care		0.985
3	The medical care, provided to me, is excellent		0.985
4	Sometimes my doctor makes me wonder if his diagnosis is correct or not		0.986
5	I feel confident that I can get the medical care I need without financial troubles		0.985
6	When I go for medical care, my doctor is careful to check and treat everything completely		0.985
7	I have to pay for my medical care more than I can afford		0.984
8	I have easy access to medical specialists I need	18	0.985
9	I have to wait too long for emergency treatment		0.985
10	My doctor treats me in a very practical way, not in a personal way.		0.985
11	My doctor treats me friendly and politely		0.985
12	Sometimes my doctor examines and diagnoses quickly		0.985
13	Sometimes my doctor ignores what I tell him		0.985
14	I have some doubts about my doctor's medical abilities		0.985
15	My doctor spends too long time with me		0.985
16	I find difficulty to set a date for check with my doctor		0.984
17	I am not satisfied with the service provided by my doctor		0.985
18	I can get doctor service at any time		0.984
Total score			**0.986**

DISCUSSION

Summary of the main findings: We examined the validity of the PDRQ-9 and the PSQ – 18 Arabic in a representative cross sectional Egyptian population survey. The validity of the new Arabic versions was good.

Acceptance: The acceptance of the PDRQ-9 and the PSQ - 18 Arabic were good, as only a few items were missing in the total sample. The acceptance rate of 99%.

Reliability:

For the PDRQ9 questionnaire: The high internal consistency verified in this study, either by the self-administered or interview method in the different populations (a= 0.979), can also be observed in the other evaluations of this instrument, such as the Dutch ($\alpha = 0.94$)[22], Germany ($\alpha = 0.95$)[23], Spanish ($\alpha = 0.95$)[24], American ($\alpha = 0.96$)[25], and Turkey ones ($\alpha = 0.91$)[26]. As in the studies in other countries, the PDRQ-9 reached moderate or high scores in the evaluation of the DPR in Arabic.

For the PSQ_18 questionnaire: We found that the scale was internally reliable and construct valid when tested on a sample of patients in a pilot study. These results show that the questionnaire satisfies the criteria of Baker for an adequate scale[27]: it has construct validity, is internally reliable, the internal consistency of the PSQ-18 Arabic was high (a= 0.986), whereas Cronbach's alpha values of reliability in Malaysia's study ranged between 0.63 and 0.79 [28]. In Manchester University's study Cronbach alpha coefficient ranged from 0.74 to.0.95[29]. These values were consistent with the original psychometric properties concluded by **Grogan et al.** [30] where the internal consistency reliabilities was between 0.77 and 0.88.

CONCLUSIONS

The Arabic versions of the PDRQ-9 and the PSQ-18 are brief and useful measures of the patient doctor relationship and the patient satisfaction from the patient's perspective. They have good psychometric properties and can be used for research in primary care, public health research and population surveys.

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