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Cultural Adaptation and Validation of the Turkish Version of the Expanded Prostate Cancer Index Composite

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What's known on the subject? and What does the study add?

With the tests and imaging methods developed in the field of health, prostate cancer (PCa) can be diagnosed at an early stage. PCa detected at an early stage can be successfully treated, and life expectancy is extended after treatment. Quality of life (QoL) is an important aspect in terms of PCa due to the various treatment options after diagnosis and urinary, bowel, hormonal, and sexual dysfunctions that develop depending on the characteristics of each treatment option. These complications occurring in these systems affect the QoL in the patient's social and functional life. Today, QoL scales are used in many countries of the world to evaluate functional disorders that develop due to PCa treatment, and new ones are being developed. There are very few scales that have been validated and are reliable for this purpose in our country. The aim of this study was to culturally adapt the Turkish version of the EPIC questionnaire.

Abstract

Objective: This study aimed to culturally adapt the Turkish version of the expanded prostate cancer index composite (EPIC) questionnaire form, which evaluates post-treatment functions in prostate cancer (PCa) patients, to investigate whether it is reliable, valid, and usable, and to evaluate the quality of life (QoL) characteristics of patients who have used different treatment methods.

Materials and Methods: To create the Turkish version of the EPIC questionnaire form, we used cultural adaptation for language translation and conducted exploratory and confirmatory factor analysis to determine its validity and reliability.

Results: A total of 423 patients diagnosed with PCa who underwent radical retropubic prostatectomy, laparoscopic radical prostatectomy, or robot-assisted laparoscopic radical prostatectomy, and received radiotherapy and/or hormonal treatment in addition to surgery were included in this study. In our study, Cronbach's alpha coefficients were calculated as 0.919 for urinary function, 0.901 for bowel habits, 0.930 for sexual function, 0.940 for hormonal function, and 0.813 for the general questionnaire form.

Conclusion: The EPIC questionnaire was successfully translated into Turkish and was culturally adapted. The resultant Turkish version has high reliability and validity and will be an important tool for QoL research in the population. EPIC was successfully translated, culturally adapted, and validated with high reliability and validity into Turkish. It will be a valuable QoL tool for physicians in clinical and research settings, and for patients in decision-making. It can also be considered an objective reference to compare various treatment modalities related to PCa.

Keywords: Basic science, general urology, urooncology

Introduction

The World Health Organization defines quality of life (QoL) as encompassing individual perception, goals, expectations, concerns, physical health, mental state, level of freedom, individual communication, and beliefs in one's life. QoL for health includes comments and evaluations regarding the functional ability of the patient, the effect on the patient's physical and mental state, the patient's feelings, and their social relationships related to the treatment applied for different diseases, as well as the results of different treatment approaches that impact

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QoL (1,2). The increase in life expectancy due to the early diagnosis of prostate cancer (PCa) has made QoL important in cancer treatment. The variety of treatment methods and some treatment methods are not superior to each other in some cases bring the patient's QoL expectations to the fore in choosing treatment. Different types of questionnaire scales have been created for this purpose. The expanded prostate cancer index composite (EPIC) questionnaire was developed by researchers at the University of Michigan and University of California, Los Angeles (UCLA). The UCLA PCa index was expanded to reflect the symptoms of PCa treatment and their negative effects. The EPIC questionnaire consists of 32 questions in four sections questioning urinary system, bowel, sexual, and hormonal symptoms, and includes a 5-point Likert-type scale (3). Since its development, the EPIC questionnaire has been widely accepted as a useful, systematic and comprehensive tool.

The hypotheses of the study are as follows: It is important to evaluate the patient's QoL expectations when choosing a treatment because of the variety in PCa treatment methods, the fact that some treatments are not superior to others in some cases, and the problems related to treatments, b) It is important to make ethical evaluations in the use and development of QoL scales in the field of health, c) While QoL scales provides positive contributions from an ethical perspective, they can cause ethical problems in some areas, d) With the evaluations, the dysfunctions experienced by patients during and after receiving PCa treatment can be determined, e) Different dysfunctions experienced during the PCa treatment process affect the QoL.

This study aimed to culturally adapt the Turkish version of the EPIC questionnaire form, which evaluates post-treatment functions in PCa patients, to investigate whether it is reliable, valid and usable, and to evaluate the QoL characteristics of patients who have used different treatment methods.

Materials and Methods

A total of 423 patients diagnosed with PCa who underwent radical retropubic prostatectomy (RRP), laparoscopic radical prostatectomy (LRP), or robot-assisted laparoscopic radical prostatectomy (RLRP) and received radiotherapy (RT) or hormonal treatment (HT) in addition to surgery were included in this study. Patients who were admitted to Eskişehir Osmangazi University, Faculty of Medicine, Department of Urology between March 2015 and December 2018, and were followed up and treated for a diagnosis of PCa were included in this study. In all patient groups, patients receiving treatment with a diagnosis of PCa were asked to complete the self-administered EPIC questionnaire in the hospital in the 3rd month after starting treatment. Approval was obtained from Eskişehir Osmangazi University Ethics Committee (approval number: 02, date: 19.02.2015) and informed consent was obtained for all interviews. Permission for the Turkish validation of the EPIC questionnaire form was obtained from the original authors and the institutions responsible for its development (3). The inclusion criteria included patients with a history of biopsy-proven PCa, a localized PCa diagnosis or clinical stage T1-T3, no previous treatment for PCa, and who had a therapeutic indication for retropubic radical prostatectomy. Patients with a history of chemotherapy, recent surgery, radiation, initiation of androgen deprivation therapy within 4 weeks or who do not fully speak and understand Turkish were excluded from the study. As stated below, our study was translated with the internationally recommended cultural adaptation (4). The methods of translation into Turkish, validity, and reliability were completed in four stages: first translation, translation synthesis, expert committee review, and back translation. The initial translation was done by two independent translators, one of whom, a native English speaker, was informed about the aims of the study. During the translation synthesis phase, two translated versions were evaluated by the researchers, preserving the same basic features of the original query form. The expert committee review board was composed of five urologists who were fluent in English. The committee evaluated semantic, idiomatic, cultural, and conceptual similarities between the original and translated versions of each question. During the back translation, the questionnaire form was translated from Turkish to English by two independent translators who were fluent in English and were blind to the aims and objectives of the study. Inconsistencies between the two languages were evaluated.

Cronbach's alpha coefficient was calculated for reliability analyses. Alpha (α) coefficient $0.60 \leq \alpha \leq 0.80$ was considered reliable, and $0.80 \leq \alpha \leq 1.00$ was considered highly reliable (5).

In our study, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA as a model), as well as one-factor, first-level multi-factor, and second-level multi-factor models, were examined separately by CFA (6). Kaiser-Meyer-Olkin (KMO) and Bartlett's tests were performed to evaluate the suitability of factor analysis of the data. In CFA, a chi-square test was performed to evaluate the goodness of fit. Also, goodness of fit index (GFI), root mean square error of approximation, standardized root mean square residual, and comparative fit index were calculated.

Statistical Analyses

SPSS (22.0, SPSS, Chicago, IL, USA) was used for all statistical analyses of the study. The Amos program (IBM SPSS Amos v27), was used for CFA and EFA. Pearson correlation coefficients were calculated to evaluate each scale in terms of the domain, problem scales, and conceptual independence of each area. With confirmatory factor analysis, the multiple correlation square

(r2) value, which determines the strength of the relationship between each item and the latent variable regarding the scale items, and the t values, which show the relationship and GFIs for the factor structure of the scale items, were calculated.

Results

A total of 423 patients treated with PCa were included in the study. The mean age of the patients was 63.1±6.75. The mean PSA value of all patients was 6.90±4.97 ng/mL. Two hundred and twenty (52%) of the patients received RRP, 39 (9.2%) LRP, 12 (2.8%) RLRP, 66 (15.6%) RT, 86 (20.4%) RT&HT and hormonotherapy. When the correlation analysis results of the significant relationship between the EPIC measurement data averages are examined; there is a linear and statistically significant weak relationship between urinary function measurement data and bowel habits measurement data (r=+0.102, p<0.05). These data show that the improvement in urinary function also improves bowel habits. It is seen that there is a linear and statistically significant relationship between the bowel habits measurement data and the sexual function measurement data (r=+0.264, p<0.01). These data show that the sexual function of patients whose bowel habits improve also improves. It is seen that there is an inverse and statistically significant relationship between the sexual function measurement data and the hormonal function measurement data (r=-0.156, p<0.01) (Table 1). This analysis shows that hormonal dysfunctions cause a decrease in sexual function.

When the one-way analysis of variance results regarding the means of urinary function, bowel habits, sexual function, and hormonal function measurement data were examined according to the treatment groups, it was found that urinary function [$F_{(3, 419)}$=0.665, p>0.05], sexual function [$F_{(3, 419)}$=2.387, p>0.05] and hormonal function [$F_{(3, 419)}$=1.604, p>0.05] did not show a significant difference according to the operation variable. On the other hand, bowel habits measurement scores [$F_{(3-419)}$=7.277, p<0.05] showed a significant difference according to the operation variable (Table 2). Tukey honestly significant difference (HSD) was performed to determine which groups caused the significant differences among the factors. The Tukey HSD analysis results indicated an increase in favor of the RRP and RLRP groups when bowel habits measurement data were assessed according to the type of surgery. These results show that open surgery, LRP, and RLRP are better in terms of affecting bowel habits (Table 3).

When the one-way analysis of variance results related to the means of urinary function, bowel habits, sexual function and hormonal function measurement data according to treatment satisfaction are examined, urinary function measurement data [F(4-418)=1.718, p>0.05], hormonal function measurement data [F(4-418)=1.035, p>0.05] do not show a significant difference according to the satisfaction variable. On the other hand, bowel habits measurement data [F(4-418)=28.310, p<0.05] and sexual function measurement data [F(4-418)=26.900, p<0.05] show a significant difference according to the satisfaction variable (Table 4). Tukey HSD was performed to determine the groups from which the domains, that showed significant differences, originated. When the Tukey HSD analysis results were examined, it was seen that patient satisfaction was not sufficient regarding bowel habits according to the satisfaction variable in the bowel habits measurement data, but patients were satisfied with sexual function (Table 5).

In our study, before performing EFA and CFA, the assumption of multivariate normality in the database (n=423) was checked. According to these results, the data (n=67) were found not to comply with multivariate normality. After excluding these data, the analysis continued with (n=356). In line with the suggestions of Tabachnick and Fidell (7), the number of items was selected with a minimum of 5 and a maximum of 20. Among the 356 data points randomly selected, 191 were used for EFA and 165 for CFA. The reliability analysis results of our study appear to be reliable. The KMO value was found to be high at 0.90, and the Bartlett test was significant. These values show that the EPIC data are very suitable for factor analysis (Table 6).

When the factor rotation results were examined, it was concluded that it was a valid measurement tool with four factors with high loading values consisting of n=7 (0.679-0.857) items in the urinary function domain, n=9 (0.644-0.771) items in the bowel habits domain, n=9 (0.670-0.795) items in the sexual function domain and n=6 (0.824-0.916) items in the hormonal function domain. In this study, the coefficient of determination was calculated as 2.95E-011 and this value was found to be greater than 0.00001.

Table 1. Evaluation of the relationship between urinary function, bowel habits, sexual function, hormonal function

		(Y_1)	(Y_2)	(Y_3)	(Y_4)
Urinary function (Y_1)	Correlation (r)	1			
Bowel habits (Y_2)	Correlation (r)	0.102*	1		
Sexual function (Y_3)	Correlation (r)	0.017	0.264**	1	
Hormonal function (Y_4)	Correlation (r)	0.053	0.073	-0.156**	1

*: The relationship is significant at p<0.05, **: The relationship is significant at the p<0.01 level

Table 2. Results of one-way analysis of variance associated with urinary function, bowel habits, sexual function, hormonal function and treatment groups

		N	$\bar{X}$	S	F	p
Urinary function	RRP	220	29.43	6.34	0.665	0.574
	LRP&RLRP	51	28.94	6.02		
	RT&HT	85	29.88	6.76		
	RT	67	30.48	7.50		
Bowel habits	RRP	220	28.12	5.22	7.277	**0.000***
	LRP&RLRP	51	28.37	5.47		
	RT&HT	85	31.72	8.60		
	RT	67	28.52	5.92		
Sexual function	RRP	220	41.41	6.79	2.387	0.068
	LRP&RLRP	51	40.41	6.60		
	RT&HT	85	39.41	8.56		
	RT	67	42.12	5.80		
Hormonal function	Rv RP	220	33.04	6.40	1.604	0.188
	LRP&RLRP	51	33.57	6.71		
	RT&HT	85	34.78	7.18		
	RT	67	32.87	6.48		

*: The relationship is significant at p<0.05, RRP: Radical retropubic prostatectomy, LRP: Laparoscopic radical prostatectomy, RT: Radiotherapy, HT: Hormonal, RLRP: Robot-assisted laparoscopic radical prostatectomy

Table 3. Multiple comparison Tukey HSD analysis results associated with urinary function, bowel habits, sexual function, hormonal function and treatment groups

			AD	SD	p
Bowel Habits	RRP	RLRP	-0.25437	0.95974	0.993
		RT&HT	-3.59947*	0.78867	0.000
		RT	-0.40421	0.86170	0.966
	RLRP	RRP	0.25437	0.95974	0.993
		RT&HT	-3.34510*	1.09380	0.013
		RT	-0.14984	1.14758	0.999
	RT&HT	RRP	3.59947*	0.78867	0.000
		RLRP	3.34510*	1.09380	0.013
		RT	3.19526*	1.00888	0.009
	RT	RRP	0.40421	0.86170	0.966
		RLRP	0.14984	1.14758	0.999
		RT&HT	-3.19526*	1.00888	0.009

*: The relationship is significant at p<0.05 significance level, RRP: Radical retropubic prostatectomy, LRP: Laparoscopic radical prostatectomy, RT: Radiotherapy, HT: Hormonal, RLRP: Robot-assisted laparoscopic radical prostatectomy, AD: Average difference, SD: Standard deviation, HSD: Honestly significant difference

Table 4. Results of one-way analysis of variance associated with urinary function, bowel habits, sexual function, hormonal function and treatment satisfaction

		N	$\bar{X}$	S	F	p
Urinary function	Extremely dissatisfied	30	28.50	4.58	1.718	0.145
	Dissatisfied	30	30.07	7.14		
	Uncertain	32	31.72	8.54		
	Satisfied	77	28.47	4.77		
	Extremely satisfied	254	29.80	6.85		
Bowel habits	Extremely dissatisfied	30	33.77	9.82	28.310	**0.000***
	Dissatisfied	30	30.30	6.08		
	Uncertain	32	35.91	9.52		
	Satisfied	77	30.47	7.20		
	Extremely satisfied	254	26.86	3.22		
Sexual function	Extremely dissatisfied	30	35.73	5.97	26.900	**0.000***
	Dissatisfied	30	37.13	4.60		
	Uncertain	32	34.59	9.01		
	Satisfied	77	39.27	7.25		
	Extremely satisfied	254	43.41	5.81		
Hormonal function	Extremely dissatisfied	30	34.57	7.30	1.035	0.389
	Dissatisfied	30	33.53	6.53		
	Uncertain	32	34.94	7.30		
	Satisfied	77	33.84	6.64		
	Extremely satisfied	254	32.96	6.46		

*: The relationship is significant at $p<0.05$ significance level

To test the validity of the scale used in our study, multifactor CFA (level I) was performed. When the GFI data for the multifactor first level scale, GFI data were evaluated, the p value was found to be statistically significant. The value of X^2 (527.021)/df (415) being between 0 and 2 indicates a good fit. The analysis result (X^2/df=1.270) indicates a good fit. It was observed that all comparative fit indices, absolute fit indices, and residual based fit indices fit well (Figure 1).

As a result of multi-factor CFA (level II), the p-value was found to be significant. The value of X^2 (536.635)/df (417), being between 0 and 2, is a good fit. The analysis result (X^2/df=1.287) indicates a good fit. All comparative fit indices, absolute fit indices, and residual-based fit indices have good fit values (Figure 2). In our study, when we look at the model fit criterion GFI reference ranges for level I and level II, we observe that the goodness of fit is quite good.

Discussion

The perception of QoL may show individual differences and also change in the same patient at different times. While the symptoms of the disease seriously impair the QoL in some patients, they are seen as unimportant in others. This situation may also show similarities the treatments applied.

QoL after PCa treatment is an important issue. Moreover, since approximately 16% of patients treated for localized PCa are dissatisfied with their treatment choice, they should be informed as comprehensively as possible before choosing their treatment (8). Although there are many questionnaires evaluating cancer patients, more specific methods are needed to examine the QoL of PCa patients who have received multiple treatment regimens. These cancer scales are unable to fully reflect the severity of symptoms, are inadequate in measuring the life limitations caused by the disease, and have limitations in evaluating QoL due to PCa; despite this, they are still used for these evaluations. In contrast, the EPIC questionnaire attempts to reveal the physical and mental aspects of QoL by systematically asking questions about areas related to frequently seen symptoms (9). Another important feature is that it includes symptom areas related to hormonal status, which are not included in other questionnaires on QoL. The study conducted for the original form of EPIC reported Cronbach alpha coefficients the Cronbach's alpha coefficients for urinary function, bowel habits, sexual function, and hormonal function were reported as 0.88, 0.92, 0.93, and

Table 5. Multiple comparison Tukey HSD analysis results associated with urinary function, bowel habits, sexual function, hormonal function, and treatment satisfaction

			AD	SD	p
Bowel habits	Extremely dissatisfied	Dissatisfied	3.46667	1.45248	0.121
		Uncertain	-2.13958	1.42960	0.565
		Satisfied	3.29913	1.21071	0.052
		Extremely satisfied	6.90446*	1.08602	0.000
	Dissatisfied	Extremely dissatisfied	-3.46667	1.45248	0.121
		Uncertain	-5.60625*	1.42960	0.001
		Satisfied	-0.16753	1.21071	1.000
		Extremely satisfied	3.43780*	1.08602	0.014
	Uncertain	Extremely dissatisfied	2.13958	1.42960	0.565
		Dissatisfied	5.60625*	1.42960	0.001
		Satisfied	5.43872*	1.18317	0.000
		Extremely satisfied	9.04405*	1.05523	0.000
	Satisfied	Extremely dissatisfied	-3.29913	1.21071	0.052
		Dissatisfied	0.16753	1.21071	1.000
		Uncertain	-5.43872*	1.18317	0.000
		Extremely satisfied	3.60533*	0.73182	0.000
	Extremely satisfied	Extremely dissatisfied	-6.90446*	1.08602	0.000
		Dissatisfied	-3.43780*	1.08602	0.014
		Uncertain	-9.04405*	1.05523	0.000
		Satisfied	-3.60533*	0.73182	0.000
Sexual function	Extremely dissatisfied	Dissatisfied	-1.40000	1.63191	0.912
		Uncertain	1.13958	1.60620	0.954
		Satisfied	-3.53939	1.36027	0.072
		Extremely satisfied	-7.67612*	1.22018	0.000
	Dissatisfied	Extremely dissatisfied	1.40000	1.63191	0.912
		Uncertain	2.53958	1.60620	0.510
		Satisfied	-2.13939	1.36027	0.516
		Extremely satisfied	-6.27612*	1.22018	0.000
	Uncertain	Extremely dissatisfied	-1.13958	1.60620	0.954
		Dissatisfied	-2.53958	1.60620	0.510
		Satisfied	-4.67898*	1.32933	0.004
		Extremely satisfied	-8.81570*	1.18558	0.000
	Satisfied	Extremely dissatisfied	3.53939	1.36027	0.072
		Dissatisfied	2.13939	1.36027	0.516
		Uncertain	4.67898*	1.32933	0.004
		Extremely satisfied	-4.13672*	0.82223	0.000
	Extremely satisfied	Extremely dissatisfied	7.67612*	1.22018	0.000
		Dissatisfied	6.27612*	1.22018	0.000
		Uncertain	8.81570*	1.18558	0.000
		Satisfied	4.13672*	0.82223	0.000

*: The relationship is significant at $p<0.05$ significance level, HSD: Honestly significant difference, AD: Average difference, SD: Standard deviation

Table 6. Results of reliability and factor analysis suitability tests for the EPIC form			
Scale dimention	**Original proposition number**	**Number of remaining propositions**	**Cronbach's alfa coefficient**
Urinary function	7	7	0.919
Bowel habits	9	9	0.901
Sexual function	9	9	0.930
Hormonal function	6	6	0.940
General	31	31	0.813
Kaiser-Meyer-Olkin and Bartlett's test			
Kaiser-Meyer-Olkin measure of sampling adequacy			0.901
Bartlett's test of sphericity	Approx. chi-square		3705.816
	df		465
	Sig.		0.000
EPIC: Expanded prostate cancer index composite			

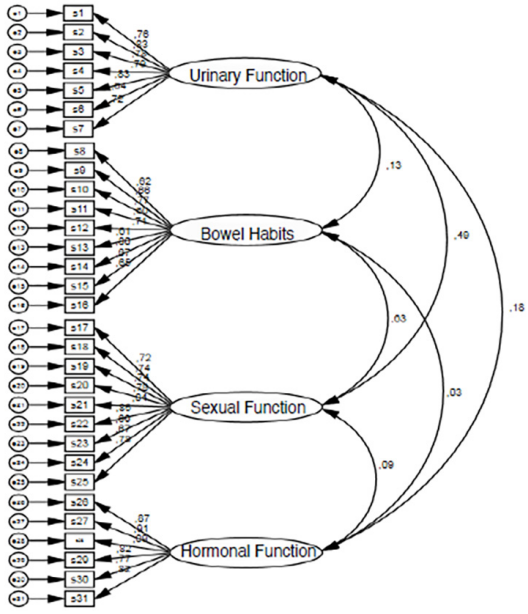

Figure 1. Multifactor confirmatory factor level I model and multifactor level I scale goodness of fit indices

Scale model*	ΔX²	SD	p	ΔX²/sd	GFI	CFI	RMSEA	RMR
Level II	527.021	415	0.000	1.270	0.852	0.970	0.038	0.002
GFI: Goodness of fit index, RMSEA: Root mean square error of approximation, RMR: Standardized root mean square error root mean square residual, CFI: Comparative fit index, X2: Chi-square, SD: Standard deviation								

0.82, respectively. In the reliability and validity study in the Korean study, Cronbach's alpha coefficients were calculated as 0.86 for urinary function, 0.84 for bowel habits and sexual function, and 0.82 for hormonal function; in the Spanish study, the values were 0.73 for urinary function, 0.75 for bowel habits, 0.89 for sexual function, and 0.66 for hormonal function; in the French study, the values were 0.88 for urinary function, 0.92 for bowel habits, 0.93 for sexual function, and 0.82 for hormonal function; and in the Punjabi study, the values of the urinary, bowel, sexual, and hormone function were 0.88, 0.91, 0.91, and 0.95, respectively. In our study, the internal consistency of all functions and domains was very high according to Cronbach's alpha coefficients, and when compared with the literature, this was consistent with the literature (3,10-15).

Hormonal therapy for PCa also significantly affects QoL. Erectile dysfunction is reported to be present in 50-100% of these patients, gynecomastia in 13-70%, and hot flashes in 55-80% (16). Although there are numerous scales to assess QoL, such as FACIT, short form-36, and functional assessment of cancer therapy (FACT)-G for chronic diseases or cancer patients, a more specialized approach to examine the QoL of patients with PCa treated with multimodality has not been found. These

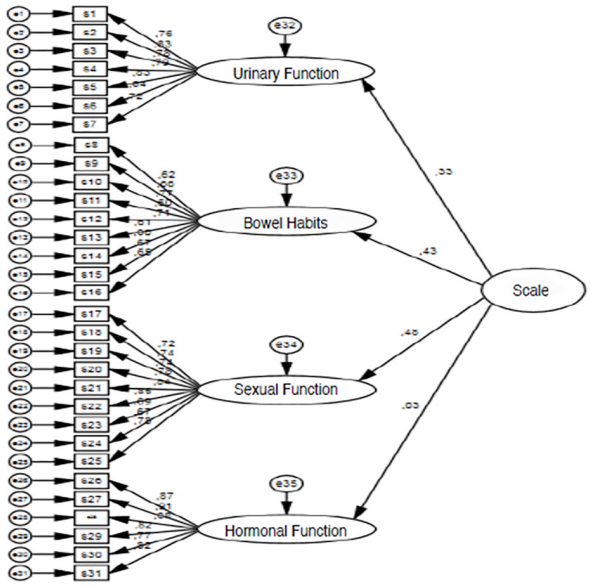

Figure 2. Multifactor confirmatory factor level II model and multifactor level II scale goodness of fit indices

Scale model*	ΔX^2	sd	p	ΔX^2/sd	GFI	CFI	RMSEA	RMR
Level II	536.635	417	0.000	1.287	0.851	0.968	0.039	0.002

GFI: Goodness of fit index, RMSEA: Root mean square error of approximation, RMR: Standardized root mean square error root mean square residual, CFI: Comparative fit index, X2: Chi-square, SD: Standard deviation

approaches have been used to investigate QoL despite the lack of evaluation of symptom severity, disability, life-limiting issues, and QoL specifically after PCa treatments. FACT-P, a questionnaire developed to overcome this limitation, was intended to provide objective and consistent data on cancer treatment by enhancing FACT-G with prostate-related symptoms. However, this scale did not provide sufficiently detailed information on QoL related to symptoms after PCa treatment. The EPIC questionnaire, on the other hand, systematically organizes areas related to common symptoms and attempts to separate physical and mental aspects of QoL.

Our study also shows that when the data of the EPIC questionnaire form, is evaluated, the sexual function of patients whose bowel habits are not affected is good. Hormonal dysfunctions cause a decrease in sexual function. While there is no difference between urinary and hormonal functions according to age groups, the bowel habits of patients aged 69 and over are more affected. On the other hand, in the sexual function measurement data, the data show that the 48-58 age group has better sexual function compared to other age groups. No difference was found in terms of urinary, hormonal, and sexual functions according to the type of operation. However, LRP & RLRP surgeries show a better outcome in terms of affecting bowel habits. When patients' satisfaction with the treatments they received is examined, there is no difference in terms of urinary function and hormonal functioning. It was observed that satisfaction with bowel habits was not sufficient, but satisfaction with sexual function was. A small number of patients who filled out the Turkish version of the EPIC questionnaire said that they had difficulty answering some questions. However, when these patients were examined, it was understood that the reason was not because of linguistic and cultural problems. It was observed that symptoms resulting from different treatment methods were not present in these patients. For example, patients who only received surgical treatment had difficulty answering the questions because they did not experience symptoms related to HT (10-14).

Schroeck et al. (17) concluded that there was a high correlation between the scores of the International Index of Erectile Function (IIEF-5) and the EPIC questionnaire the sexual function subgroup in their comparative study, and that these results may help in the interpretation of sexual function outcomes in patients with PCa (17).

Acar et al. (18) reported that 144 patients with low-risk PCa who were followed for at least one year were divided into brachytherapy, RRP, and active surveillance groups, and their QoL was examined. All patients were asked to complete the European Organization for Research and Treatment of Cancer-quality of life questionnaire (EORTC-QLQ)-C30, EORTC-QLQ-prostate module 25, IIEF-5 and ICIQ-SF scales at baseline

and 12 months. During the follow-up periods, patients who received brachytherapy treatment had significantly lower QoL scores in terms of urinary and sexual function. In the RLRP group, significant changes were observed in sexual function, urinary incontinence, and erectile dysfunction parameters. The deterioration in sexual function was found to be 71% in the RLRP arm and 59% in the brachytherapy arm. It was found to be 30% in the active surveillance arm. However, in the measurements of QoL, no significant decrease in QoL scores was found among the RLRP, brachytherapy and AS groups during the follow-up period (18).

Study Limitations

The study's limitations concern the general use of the EPIC questionnaire form, which is used by urologists and oncologists, but it does not seem to have found adequate space yet. This situation can be explained by the large number of questions and the advanced age of the patient. The large number of questions in the EPIC questionnaire may make it difficult for some elderly or debilitated patients who have difficulty maintaining concentration and complying with the questionnaire. In addition, a pilot study was not conducted in our study.

Conclusion

The Turkish validity and reliability study of the EPIC questionnaire form was developed to reflect the original version. It was adapted to Turkish culture and language. Since its reliability and validity have been established, it can be used to assess treatment-related QoL in Turkish-speaking PCa patients. In addition, it can be considered an objective reference to compare various treatment methods for PCa. The results obtained in this study are compatible with the original form, show equivalence with the Turkish version, and have sufficient reliability and high sensitivity.

Ethics

Ethics Committee Approval: Approval was obtained from Eskişehir Osmangazi University Ethics Committee (approval number: 02, date: 19.02.2015).

Informed Consent: Informed consent was obtained for all interviews.

Footnotes

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