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The Reliability and Validity of Prostate Cancer Fatalism Inventory in Turkish Language

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Abstract This study aimed to conduct the reliability and validity study of the Prostate Cancer Fatalism Inventory in Turkish language. The study carried out in methodological type and consisted of 171 men. The ages of the participants ranged between 40 and 82. The content validity index was determined to be 0.80, Kaiser–Meyer–Olkin value 0.825, Bartlett's test $X^2 = 750.779$ and $p = 0.000$. Then the principal component analysis was applied to the 15-item inventory. The inventory consisted of one dimension, and the load factors were over 0.30 for all items. The explained variance of the inventory was found 33.3 %. The Kuder–Richardson-20 coefficient was determined to be 0.849 and the item-total correlations ranged between 0.335 and 0.627. The Prostate Cancer Fatalism Inventory was a reliable and valid measurement tool in Turkish language. Integrating psychological strategies for prostate cancer screening may be required to strengthen the positive effects of nursing education.

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Introduction

Prostate cancer is the second most common cancer type, and it is reported that there were 1.1 million new prostate cancer cases in 2012. Although the occurrence rate of prostate cancer is greatly different throughout the world, its incidence is the highest in countries such as Australia/New Zealand and North America. The reason why the incidence is high in these countries is that the rate of prostate specific antigen (PSA) test and biopsy administration is high. Prostate cancer incidence is the lowest in Asia with 10.5 out of 100.000. It is reported that the number of prostate cancer-bound deaths was 307.000 in 2012, and it was the fifth leading cause of death among men (WHO 2012). Prostate cancer ranks second after lung cancer among men, and its incidence is reported to be 36.1 out of 100.000 (The Ministry of Health 2014). It is recommended that for early diagnosis of prostate cancer, men 50 or over should have PSA test. Men whose blood PSA level is under 2.5 ng/ml should have the test every 2 years, and those who have 2.5 ng/ml blood PSA level or over should have the test every year. In addition, it is also recommended that digital rectal examination (DRE) should be administered as part of the screening (American Cancer Society 2015). There is not any prostate cancer national screening program in Turkey. Public health agency makes some planning toward the development of new policies by making interviews with national and international stakeholders and following scientific literature, current data, and cancer statistics in Turkey.

Studies show that practices of early prostate cancer diagnosis are inadequate and that prostate cancer knowledge does not have an effect on attitudes toward the illness (Çapik 2012; Watson et al. 2006; Çapik and Gözüm 2012; Partin et al. 2004). In a study conducted in Jamaica, although 97 % of the participants knew that PSA and DRE were effective in the early diagnosis of prostate cancer, 41 % reported they had never had them. It was determined as a result of the study that though there was a strong positive relationship between attitudes toward prostate cancer and early diagnosis attitudes, there was not a relationship between awareness and attitude (McNaughton et al. 2011).

Among the factors affecting the early prostate cancer diagnosis attitudes are lack of knowledge, inadequate social support, deficiencies in transport and communication, high cost, low quality of care, and fear. In addition to these factors, the culture of individuals has an influence on early prostate cancer diagnosis attitudes as well. Culture means everything for a nation and religion is one of the most important elements of culture. Culture and religious beliefs play an important part in attitudes and behaviors of individuals regarding health illness and death. This effect can end up positively or negatively. Fatalism has an important role in Islamic belief, and it means that God already knows the time and place of everything and ordains everything. Believing in fate is one of the requirements of faith in Islam. Man knowing everything comes from God and believing this "accepts everything bittersweet willingly coming from God." The view "What can I do? this is God's will, this is my fate" is common. The view "I can never escape from death if God has already predestined it" arises from Muslim societies' excessive faith in external controls regarding health (Bahar 2012).

That the religious belief common in Turkish society supports fatalistic approach and the existence of fate concept in Islamic belief makes fatalistic approach widespread among people (Sülü Ugurlu and Basbakkal 2013). Extreme fatalism in some individuals hinders the treatment of an illness (Dennis and Duncan 2012). However, the thought in Islam that a person

should show respect to their body and be responsible for the care of it can establish the balance in a Muslim person's pessimistic fatalistic attitudes against cancer (Taylor 2001). In studies conducted in different cultures, the perception of fatalism is reported to be a barrier to early diagnosis attitudes (Myers et al. 1996; Powe and Johnson 1995; Woods et al. 2004). Cancer fatalism is the belief that death is inevitable and it has been defined as a barrier to early diagnosis of cancer, participation in screening and treatment. Cancer fatalism is a multi-dimensional concept characterized by feelings of hopelessness, weakness, and worthlessness, and it is affected by many factors such as poverty, fear of hospital, distrust of medical institutions, fear of being used as a tester, and limited access to health system (Powe and Johnson 1995; Cobran et al. 2014). While studies investigating the effect of fatalism perception on the early prostate cancer diagnosis attitudes report that fatalism affects attitudes negatively, there are research findings concluding otherwise (Myers et al. 2000). Myers et al. (1996) reported in their study on Afro-American men that fatalism was negatively correlated with early prostate cancer diagnosis attitudes. It was suggested in a study carried out by Cobran et al. (2014) on black individuals from different ethnic groups that ethnic group differences affected fatalism perceptions, but fatalism perception and prostate cancer knowledge did not have any effect on early diagnosis attitudes. Unlike these studies, Tingen (1996) determined that fatalism perception was not an influential variable on early diagnosis of prostate cancer. To promote cancer screening attitudes, the effects of prostate cancer fatalism should also be evaluated in other cultures. The place of culture and religion can be important in cancer fatalism perception. This variable needs investigating and debating in studies to be carried out to increase the participation in early diagnosis practices. It was shown in Christman et al. (2014) that there was a relationship between religious devotion, fatalism and fear. Mayo et al. (2001) reported that Afro-American women were more fatalist than Caucasian women, and that women with high cancer fatalism had less mammography screening. Fatalism in Afro-American men reduced participation in prostate cancer screening, and it even affected going to follow-up on abnormal findings (Myers et al. 2000).

Although the notion of fatalism has generally been identified in qualitative studies in the literature, there are various instruments used in quantitative studies and this entails the necessity of a measurement tool for cancer fatalism. The fatalism inventory developed by Powe (PFI) is used to measure fatalism perception in prostate cancer. Of the validity and reliability studies of the inventory in different languages, the one carried out in Spain found Cronbach's alpha value of the inventory as 0.81. In addition, the internal validity coefficient of the original form of the inventory was determined to range between 0.84 and 0.89 in previously conducted studies (Powe 1995b; Powe and Weinrich 1999). There is no research in Turkey investigating the relationship between early prostate cancer diagnosis attitudes and fatalism perception. Carrying out the validity and reliability studies of fatalism inventory in Turkish language will help compare the findings from different countries, as well as understanding patterns of fatalism and participation in screening in Turkey. Therefore, this study aimed to determine the validity and reliability of Prostate Cancer Fatalism Inventory in Turkish language.

Materials and Methods

Type of the Research

Carried out methodologically, this study was completed between 2013 and 2014. The stages of the study were as follows: (1) Turkish language adaptation of the Prostate Cancer

Inventory and its translation back to English, (2) testing the content validity of the inventory by an expert group, (3) administering the psychometric analysis (factor analysis, validity coefficient and item-total correlation).

Participants

The sampling group of the study was made up of 171 men living in four different regions of Turkey with no previous prostate cancer diagnosis. The provinces from which the data were collected were Kars ($n = 50$), Urfa ($n = 42$), İzmir ($n = 35$), and Tokat ($n = 44$). In the study, two materials, Prostate Cancer Fatalism Inventory and demographic form, were administered to all participants. After the translation process and content validity stages were completed, principal component analysis was used to evaluate the factor structure and Kuder–Richardson-20 coefficient and item-total correlations were examined to determine the internal validity. Data were collected from men volunteering to participate in the study in Family Health Centers and hospital waiting rooms.

Conditions of Inclusion in the Study

All men 40 and over with no communication problems were taken into the scope of the study. The exclusion conditions of the study were as follows: having a known mental disorder and having been diagnosed to have prostate cancer. Table 1 presents the demographic characteristics of the participants included in the study.

The ages of the participants ranged between 40 and 82 and mean age was 51.42 ± 9.74. Participants consisted of men with no previous prostate cancer diagnosis.

As seen in Table 1, 32.7 % of the participants were university graduates or higher. 90.6 % were married, 96.5 % had health insurance, and 50.9 % had equal income and expenses. 85.4 % did not have any other prostate disorders other than prostate cancer, and 81.9 % did not have any family members or relatives with prostate cancer diagnosis.

The location of the provinces where the data were collected is as follows: Kars, East Anatolian Region of Turkey; Urfa, South-East Anatolian Region; Tokat, Central Anatolian Region; and İzmir, Aegean Region. Family health centers are the first application places where basic health care service is delivered.

Translation Process and Internal Validity

Measuring items were translated from original language into Turkish separately by four academic member experts in public health nursing who know Turkish and English well. While translating, it was paid attention to use the most appropriate sentence structure and phrases in the language. Then these translations were evaluated by the researchers, and Turkish form of measuring was reorganized. This form was translated into English again by two independent linguistic experts, and this translation was compared with its original in its original source language, and then Turkish phrases of the items, which are not the same as their originals, were revised. Then the conformation of the scale with the culture and the content validity was evaluated by 10 academician nurses.

Table 1 Demographic characteristics of the participants ($n = 171$)

	n	%
Education		
Illiterate	4	2.3
Literate	7	4.1
Primary school	40	23.4
Secondary school	23	13.5
High school	56	32.7
University+	41	24.0
Marital status		
Married	155	90.6
Single	16	9.4
Health security		
Yes	165	96.5
No	6	3.5
Income		
Income less than expenses	52	30.4
Equal income and expenses	87	50.9
Income more than expenses	32	18.7
Family member/relative with prostate cancer diagnosis		
No	140	81.9
Yes	31	18.1
Diagnosed to have another prostate illness other than prostate cancer		
No	146	85.4
Yes	25	14.6

Content Validity

After the translation was complete, the inventory was presented to a group of experts consisting of 10 nursing/midwifery academics. The experts whose opinions were taken through e-mail assessed the inventory in terms of comprehensibility and cultural appropriateness. Davis technique was used in content validity administration, which was based on expert opinions (Gozum and Aksayan 2002). According to the Davis technique, in which quartet rating is used, the experts assessed the items of the inventory as follows:

1. Not convenient,
2. The item needs improving for appropriateness,
3. Convenient, yet needs minor changes,
4. Very convenient.

Following this assessment, content validity index (CVI) was obtained by dividing the sum of the first two ratings by the number of experts. When CVI was greater than 0.80, it was considered sufficient in terms of the content validity of the item (Gozum and Aksayan 2002).

After the translation and content validity process was completed, the final version of the inventory was piloted to a group of 15 subjects.

Data Collection Tools

All the participants in the study were administered two forms, the Prostate Cancer Fatalism Inventory (PFI$_{TR}$-CaP) and a demographic form. The inventory and the form were filled in about 5 min by each participant.

The demographic form consisted of eight items investigating age, education, marital status, income, health insurance, previous prostate cancer history, diagnosis of other prostate illnesses except for prostate cancer, and prostate cancer history in the family/among relatives.

The Fatalism Inventory (PFI): This inventory was used by Powe (1995a) to determine fatalism in colorectal cancer at the beginning; however, it was later modified to determine fatalism in prostate cancer. The inventory has been used in different answering forms in different literatures. Some authors applied five-point Likert (Cobran et al. 2014; Christman et al. 2014), some three-point scale (Powe 1995b), and some two dichotomous forms (Powe 1995a, Powe et al. 2009) to the inventory. The prostate cancer-revised form of Powe's Fatalism Inventory was used in this study (PFI$_{TR}$-CaP). The inventory consisted of 15 items, and it was in dichotomy form responded as yes/no. A "yes" response meant 1 point and a "No" 0 (Powe 1995a). Increasing scores from the inventory indicated increased fatalism. The scores that could be obtained from the inventory ranged between 0 and 15 as there were 15 items (Powe 1995b). The inventory had one subdimension and could be completed in 5–10 min. Powe (1995a) reported that during the development of the inventory, the items were created following focus group interviews, literature reviews, conceptual analysis, and many revisions. The items in the inventory are on cancer fear, early symptoms, pessimism, and despair. The internal validity coefficient of the original form of the inventory is reported to range between 0.84 and 0.89 in previous studies (Powe 1995b; Powe and Weinrich 1999).

Evaluation of the Data

The demographic characteristics of the individuals were determined using descriptive statistics. Percentages were used in categorical data, and mean and standard deviations were utilized in continuous data. The data were analyzed using SPSS software (version 11.5, SPSS Inc). The principal component analysis was conducted to provide more accurate findings in the study. Prior to factor analysis, Kaiser–Meyer–Olkin (KMO) and Bartlett's tests were administered to determine sampling adequacy and appropriateness for factor analysis. Kuder–Richardson-20 coefficient and item-total correlations were employed to determine the internal validity. Since the inventory had one-dimensional structure, the data were not subjected to any rotation method.

Ethics of the Study

To start the study, a written permission was taken from Powe, and the permission of Ethics Committee of Harran University Medical Faculty was obtained. During data collection process, verbal consents of all the participants were taken, and they were informed that they could quit the study whenever they wanted.

Results

Translation Process and Content Validity

Four nursing academics from the research team translated the inventory into Turkish independently and got similar results. Two linguists translating the inventory back to its original language obtained similar results and they reached a common consensus on the translations. After the translation, the inventory was submitted to ten nursing/midwifery academics for reviewing in terms of content validity and cultural properties. After this evaluation, CVI was determined to be 0.80. The final form of the inventory was obtained by making some statement changes in accordance with expert opinions. Then the inventory was piloted to a group of 15 people. Following the pilot study, psychometric measurements were initiated without any modification on the items.

Structure Validity

Kaiser–Meyer–Olkin (KMO) and Bartlett's test were administered to evaluate the appropriateness for sampling adequacy and factor analysis prior to the factor analysis. As a result of the analysis, KMO value of PFI$_{TR}$-CaP was determined to be 0.825, and this value conformed principal component analysis. Similarly, the results of the Bartlett's test ($X^2 = 750.779$, $p = 0.000$) indicated that the data were interrelated and conformed the factor analysis (Gozum and Aksayan 2002; Pett et al. 2003). The inventory, whose KMO and Bartlett's test values were appropriate, was later administered principal component analysis. As a result of the analysis, the factor loads of PFI$_{TR}$-CaP were determined to be over 0.30 for all items, and the explained variance was found to be 33.3 %. The original and Turkish form of the inventory consisted of a single dimension. Items, factor loads, and explained variance are presented in Table 2.

Internal Validity

KR-20 coefficient of the Turkish version of prostate cancer fatalism inventory was estimated to be 0.849 (Table 3). As shown in Table 3, item-total correlations of PFI$_{TR}$-CaP ranged between 0.335 and 0.627.

The mean score the participants obtained from PFI$_{TR}$-CaP was 5.20 ± 3.91, and it ranged between 0 and 15 (Table 4). The scores that could be taken from each item varied between 0 and 1. The lowest score was obtained from items 6 and 11 with a mean score of 0.18 and the highest score from item 10 with a mean score of 0.60 ± 0.35 (Table 3). In addition to psychometric measurements, the study also involved some classical test comparisons. As a result of Spearman's Rho correlation analysis conducted for this purpose, a positive significant relation was determined between age and fatalism ($r = 0.213$, $p = 0.005$). This finding indicated that as age increased, fatalism score increased as well. The change in fatalism score based on the other variables is presented in Table 4.

According to Table 5, the mean fatalism scores of the men based on their education levels showed differences ($p < 0.05$). In the Mann–Whitney U post hoc test conducted to determine which education level the difference stemmed from, it was determined that the mean fatalism score of men whose education level was high school, university or higher was significantly lower than that of men whose education level was literate, primary school and secondary school. The fatalism scores did not show a difference regarding other

Table 2 Factor structure of prostate cancer fatalism inventory

Items		Factor load
1	I think if someone is meant to have prostate cancer, it doesn't matter what kinds of food they eat, they will get prostate cancer anyway	0.561
2	I think if someone has prostate cancer, it is already too late to get treated for it	0.414
3	I think someone can eat fatty foods all their life, and if they are not meant to get prostate cancer, they won't get it	0.442
4	I think if someone is meant to get prostate cancer, they will get it no matter what they do	0.614
5	I think if someone gets prostate cancer, it was meant to be	0.670
6	I think if someone gets prostate cancer, their time to die is soon	0.587
7	I think if someone gets prostate cancer, that's the way they were meant to die	0.564
8	I think getting checked for prostate cancer makes people scared that they may really have prostate cancer	0.442
9	I think if someone is meant to have prostate cancer, they will have prostate cancer	0.706
10	I think some people don't want to know if they have prostate cancer because they don't want to know they may be dying from it	0.418
11	I think if someone gets prostate cancer, it doesn't matter whether they find it early or late, they will still die from it	0.681
12	I think if someone has prostate cancer and gets treatment for it, they will probably still die from the prostate cancer	0.533
13	I think if someone was meant to have prostate cancer, it doesn't matter what doctors and nurses tell them to do, they will get prostate cancer anyway	0.616
14	I think if someone is meant to have prostate cancer, it doesn't matter if they eat healthy foods, they will still get prostate cancer	0.716
15	I think prostate cancer will kill you no matter when it is found and how it is treated	0.562
	Explained variance	33.29 %
	KMO	0.825
	Bartlett (X^2)	750.779
	p	0.000

variables such as marital status, health insurance, income, and diagnosis of any other prostate disorders except for prostate cancer and family member/relative with prostate cancer diagnosis ($p > 0.05$).

Discussion

The validity and reliability studies of an assessment tool are necessary so that it can be used in another language (Gozum and Aksayan 2002).

The inventory which we investigated in our study was used by Powe (1995a) to determine fatalism in colorectal cancer at the beginning. However, it was later modified to determine fatalism in prostate cancer (Powe et al. 2009; Cobran et al. 2014; Christman et al. 2014). For the validity of PFI$_{TR}$-CaP, the inventory was first translated into Turkish by four nursing academics. The back-translation was carried out by two academics from English language and literature department after the four academics reached a consensus on the English–Turkish translation. Translators have a significant role when inventories are adapted to different cultures (Gozum and Aksayan 2002). The academics translating the

Table 3 Item-total correlations of the Turkish version of prostate cancer fatalism inventory

Items		Mean	Item-total correlation	When the item is deleted KR-20
1	I think if someone is meant to have prostate cancer, it doesn't matter what kinds of food they eat, they will get prostate cancer anyway	0.4211	0.467	0.841
2	I think if someone has prostate cancer, it is already too late to get treated for it	0.3450	0.335	0.848
3	I think someone can eat fatty foods all their life, and if they are not meant to get prostate cancer, they won't get it	0.2632	0.364	0.846
4	I think if someone is meant to get prostate cancer, they will get it no matter what they do	0.4035	0.526	0.837
5	I think if someone gets prostate cancer, it was meant to be	0.4211	0.593	0.833
6	I think if someone gets prostate cancer, their time to die is soon	0.1754	0.502	0.840
7	I think if someone gets prostate cancer, that's the way they were meant to die	0.3275	0.482	0.840
8	I think getting checked for prostate cancer makes people scared that they may really have prostate cancer	0.5263	0.381	0.846
9	I think if someone is meant to have prostate cancer, they will have prostate cancer	0.3801	0.619	0.832
10	I think some people don't want to know if they have prostate cancer because they don't want to know they may be dying from it	0.5965	0.353	0.848
11	I think if someone gets prostate cancer, it doesn't matter whether they find it early or late, they will still die from it	0.1754	0.590	0.836
12	I think if someone has prostate cancer and gets treatment for it, they will probably still die from the prostate cancer	0.2749	0.439	0.842
13	I think if someone was meant to have prostate cancer, it doesn't matter what doctors and nurses tell them to do, they will get prostate cancer anyway	0.2398	0.506	0.839
14	I think if someone is meant to have prostate cancer, it doesn't matter if they eat healthy foods, they will still get prostate cancer	0.3392	0.627	0.832
15	I think prostate cancer will kill you no matter when it is found and how it is treated	0.2749	0.462	0.841
KR-20				0.849

Table 4 Total scores obtained from Turkish prostate cancer fatalism inventory

Province	n	Min	Max	Mean	SS
Kars	50	0.00	12.00	3.70	3.28
Urfa	42	0.00	12.00	5.48	3.68
İzmir	35	1.00	14.00	7.31	3.49
Tokat	44	0.00	15.00	4.98	4.37
Total	171	0.00	15.00	5.20	3.91

Table 5 The change in fatalism score means based on demographic variables

Variables	n	Mean	SD	Significance
Education				
Illiterate	4	5.75	4.35	$X^2_{KW} = 25.279$
Literate	7	7.57	3.78	$p = 0.000$
Primary school	40	6.75	3.32	
Secondary school	23	6.87	4.63	
High school	56	3.80	3.47	
University+	41	4.22	3.68	
Marital status				
Married	155	5.35	3.93	$U = 924.000$
Single	16	3.75	3.44	$p = 0.092$
Health security				
Yes	165	5.17	3.93	$U = 393.000$
No	6	6.17	3.31	$p = 0.390$
Income				
Income less than expenses	52	4.71	3.33	$X^2_{KW} = 3.754$
Equal income and expenses	87	4.97	3.87	$p = 0.153$
Income more than expenses	32	6.66	4.61	
Diagnosed to have another prostate illness other than prostate cancer				
No	146	5.18	3.97	$U = 1712.000$
Yes	25	5.36	3.62	$p = 0.620$
Family member/relative with prostate cancer diagnosis				
No	140	5.21	3.91	$U = 2148.000$
Yes	31	5.16	3.963	$p = 0.929$

PFI$_{TR}$-CaP were very good at the language, and they had already carried out many inventory adaptation studies.

The clarity of inventory items, appropriateness for the target audience, and expert opinions are all used as prediction quality for content or structure validity (Gozum and Aksayan 2002). Following the translation process, the items of the inventory were submitted to ten nursing academics to get their opinions on content validity of the inventory. As a result of this evaluation, CVI was determined to be 0.80. This value indicated that the items were appropriate for the language and adequate in terms of culture. The pre-form obtained after the translation and expert opinion process were piloted to a group of 15 people, and the clarity of the items was tested for the target audience.

All the steps taken so far involved the optimization studies so that PFI$_{TR}$-CaP could be clearly understood in Turkish language. After this stage, factor analysis was carried out to determine the factor structure of the inventory and similarities and differences between the original inventory and the new version. The Bartlett's test value of PFI$_{TR}$-CaP, the test which was used to evaluate whether the dataset was appropriate for the factor analysis, was found suitable for the use of factor analysis ($X^2 = 750.779$, $p = 0.000$). The KMO index, comparing the scale of the observed correlation coefficient with the size of partial correlation coefficient, is considered a fine value when it varies between 0.80 and 0.89. The KMO value was determined to be 0.825 in this study, and it can be considered a very good value

(Pett et al. 2003). In the principal component analysis in which the factor structure of PFI_{TR}-CaP was evaluated, the inventory was determined to consist of a single subdimension, the factor loads of all of the items were over 0.30, and the explained variance was 33.3 %. The original version of PFI_{TR}-CaP was made up of a single subdimension (Powe 1995a). It is reported that the factor loads of the items in the original inventory, except for two items, were 0.40 or over. The factor loads of the two items were 0.33 and 0.29 (Powe 1995a, b). The internal validity coefficient of the original inventory is reported to range between 0.84 and 0.89 in previously conducted studies (Powe 1995b; Powe and Weinrich 1999). Kuder–Richardson coefficient is used instead of Cronbach's alpha coefficient in binary data (Şencan 2005). In this study, KR-20 internal validity coefficient was evaluated. In our study, KR-20 coefficient of PFI_{TR}-CaP was determined to be 0.849, and item-total correlations ranged between 0.335 and 0.627. It is reported in the literature that a KR-20 coefficient of 0.50 or over can be considered reliable when the number of inventory items are between 10 and 15 (Şencan 2005). The KR-20 coefficient in this study was considered reliable.

The mean score of the participants obtained from PFI_{TR}-CaP was found 5.20 ± 3.91, and it varied between 0 and 15. Powe (1995b) reported in a study that cancer fatalism was common among Afro-American women with 66 mean age and that mean fatalism score was 10. In another study carried out by Powe et al. (2009) on Afro-American and Spanish individuals, prostate cancer fatalism score was determined to be 5.35. The score obtained by Powe et al. (2009) in their second study was highly close to the fatalism score obtained in this study. This finding suggests that prostate cancer fatalism in Afro-American and Spanish culture is similar to that in Turkish culture. However, future studies to be carried out after this study, thought to be the first in our country and investigating prostate cancer fatalism, will yield more reliable results.

Powe (1995b) reported that there was a negative correlation between fatalism score and education level and that fatalism score increased as the education level decreased. In our study, the mean fatalism score of the subjects showed a statistical difference in terms of education level. In the Mann–Whitney U post hoc test carried out to determine which education level the difference stemmed from, it was determined that the mean fatalism score of the men whose education level was high school or university or higher was significantly lower than that of men whose education level was literate, primary school, and secondary school. These findings suggested that the change in fatalism score based on change in education levels showed a similarity to that of Powe (1995a, b).

Powe (1995b) determined that while income indicated a negative correlation with fatalism score, age did not show a correlation with it. It was determined in Spearman's Rho correlation analysis in our study that there was a positive significant relationship between age and fatalism score ($r = 0.213$, $p = 0.005$). This finding meant that as the age increased, fatalism score increased as well. In our study, the fatalism scores did not yield a statistical difference with respect to other variables such as marital status, health insurance, income, and diagnosis of any other prostate disorders except for prostate cancer and family member/relative with prostate cancer diagnosis ($p > 0.05$).

Apart from the demographic variables, Powe et al. (2009) reported in a study that fatalism perception showed a negative correlation with prostate cancer awareness level, and therefore as this awareness increased, fatalism could be decreased. Christman et al. (2014), on the other hand, determined that prostate cancer fear indicated a negative correlation with prostate cancer fatalism, and that general fear showed a positive correlation with prostate cancer fatalism. These variables can be investigated in other studies for Turkish culture.

Conclusion

As a result of the validity and reliability analysis conducted in this study, Powe's prostate cancer fatalism inventory (PFI$_{TR}$-CaP) was determined to be a usable material. It will be useful to re-analyze the internal validity of the inventory with different samples. In conclusion, this inventory can be used in Turkish language for evaluating the fatalism levels of men regarding prostate cancer screening.

Compliance with Ethical Standards

Conflict of interest None.

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