Original Article

Prostate Cancer Fatalism and Prostate Cancer Health Beliefs of Turkish Men

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Abstract

Backround: Many factors have an effect on prostate cancer screenings. Fatalism is analyzed as a psychosocial barrier for screening behaviors.

Aim: The aim of this study was to evaluate the effect of the effect of prostate cancer fatalism and other factors on prostate cancer health beliefs of Turkish men.

Methods: This cross-sectional studywas conducted with 500 men who visited three family health centers in a Turkish city center between March and May 2019.Data were collected by Personal Information Form, Prostate Cancer Fatalism Inventory and Health Beliefs Model Scale for Prostate Cancer Screenings.

Results: Seriousness, health motivation and PCS benefits perceptions of the men were moderate, and their perceptions of susceptibility and PSC barriers were low. Health beliefs of the men regarding prostate cancer were affected by prostate cancer fatalism ($p < .05$). It was also determined that health beliefs of the men were affected by age, education level, employment status, child status, income, social assurance, familial history of cancer, familial history ofprostate cancer, knowledge on prostate cancer, having a prostate problem, having a PSA test, having a prostate examination and having a prostate screening in the near future.

Conclusions: According to the results of the study, it is recommended to evaluate prostate cancer fatalism among men and their health beliefs for increasing the awareness for prostate cancer and providing early diagnosis behaviors and to arrange education programs accordingly.

Key Words: cross-sectional studies, men's health, prostate cancer, health beliefs, health behaviors,

Background

Prostate cancer is ranked as second one among the common cancer types seen in menwith a ratio of 14.1% (World Health Organization [WHO], 2023a)and as fifth among the causes of death worldwide (WHO, 2023b).The incidence rates are also increasing rapidly; and prostate cancer is ranked as second among the most incident cancer types in men with a ratio of 13.4% in Turkey(Ministry ofHealth of Turkey,2023)

In order to improve prostate cancer outcomes and survival, early diagnosis and screening are critical (Ceyhan, Goris, Demirtas, & Kilic, 2018; Charkazi et al., 2013; Morrison, Aiken, Mayhew, Gordon, & Odedina,2017; Odedina et al., 2011; Tayhan, 2016). For early detection, it is recommended for men aged 50 years and older to carry out blood tests for PSA measurement, and to repeat this test once in two years if blood PSA levelis below 2.5 ng/ml and once a year when the level is 2.5 ng/ml and above. Moreover, Digital Rectal Exam (DRE) is recommended as a part of the screenings (American Cancer Society, 2021).However, several research reports on prostate cancer address the inadequacy of behaviours for early diagnosis (Aydogdu, Capik, Ersin, Kissal, & Bahar, 2017; Ceyhan et al., 2018; Kinyao& Kishoyian, 2018; Morenoa et al., 2019; Morrison et al., 2017;Tayhan, 2016; Wachira, Meng'anyi, & Ruth, 2018).Many factors such as cultural

factors, health/disease beliefs, knowledge about the disease, media sources, family cancer history, disease risk perception, ongoing urinary complaints, fear of having cancer and other psychosocial factors have an effect on prostate cancer screenings (Capik & Gozum, 2011; Ceyhan et al. 2018; Christman, Abernethy, Gorsuch, & Brown, 2014; Ghodsbin, Zare, Jahanbin, Ariafar, &Keshavarzi, 2014; Kinyao & Kishoyian, 2018; Machirori, Patch, & Metcalfe, 2018;Morenoa et al., 2019; Mutua, Pertet, & Otieno, 2017; Wachira et al., 2018).

Fatalism is analyzed as a psychosocial barrierforscreening behaviors (Aydogdu et al., 2017; Bustillo et al., 2017; Charkazi et al., 2013; Cobran et al., 2014; Cobran, Hall, & Aiken, 2018; Wachira et al., 2018). Fatalism is the belief that all events are fated to happen and that human beings have no control over their futures and are unable to change their outcomes(Charkazi et al., 2013; Morenoa et al., 2019).Personal outcomes are controlled by external forces such as luck, destiny, powerful people, or divine intervention. In this context, death is inevitable when cancer is present (Cobran et al., 2014; Cobran et al., 2018; Morenoa et al., 2019; Odedina et al., 2011).

In the literature, there are some studies examining the effect of prostate cancer fatalismon early diagnosis behaviors of prostate cancer.Although prostate cancer fatalism and prostate cancer health beliefs have been studied in various populations as a means of identifying other strategies to help promoting prostate cancer screening programs (Christman et al., 2014; Cobran et al., 2014; Morenoa et al., 2019; Wachira et al. 2018),we could not find any studies in which prostate cancer fatalism and prostate cancer health beliefs of Turkish men were evaluated together.The results of this study may shed a light on increasing the efficiency of prostate cancer-related education and promoting prostate cancer screening programs. Therefore, this current study was conducted to evaluate the effect of prostate cancer fatalism perception and other factors on prostate cancer health beliefs of Turkish men.

Methodology

Study design and sample:This was a cross-sectional study. The population consisted of men who visitedthree family health centers in a Turkish city centerbetween March and May 2019 (N= 586).Of these men, 36 were younger than 40 years, and 50 refused participation. The sample consisted of 500 men. The participation rate was 85%.

The inclusion criteria were: 1) aged 40 years and older, 2) independent in maintaining daily life activities, and 3) agreed to participate in the study. The exclusion criteria were: 1) visually and hearing impaired and, 2) having prostate cancer, and 3) having any neuropsychological disease.

Data collection tools:Data were collected via personal information form, Prostate Cancer Fatalism Inventory(PFITR-CaP) and, Health Beliefs Model Scale for Prostate Cancer Screenings (HBM-PCS).

Personal Information Form.In the form, there were questions evaluating the personal characteristics, family cancer history, prostate cancer knowledge and practice of the men.

Prostate Cancer Fatalism Inventory(PFI_{TR}-CaP).In this study,a version of Powe Fatalism Scale, which was revised for prostate cancer, was used. Scale is composed of 15 questions; and it is dichotomous typeanswered as yes/no. “Yes” response isscoredas 1 point and “No” response is scored as 0 point (Powe, 1995a). The increase in the score taken from the scale shows that fatalism is increased. The scores that can be obtained from the scale range between 0 and 15 since there are 15 items in the scale(Powe, 1995b).The scale has one subscale; and can be completed in 5-10 minutes. The questions included in the scale are associated with fear for cancer, preliminary symptoms, pessimism and despair. Internal consistency coefficient of the original form of scale was reported between .84-.89 in the previous studies(Powe, 1995b; Powe & Weinrich, 1999). Validity and reliability study of its Turkish version was carried out by Aydogdu et al. (2017). Cronbach’s alpha was calculated as.85 in Turkish adaptation. In this study, Cronbach’s alpha of the scale was found as.81.

Health Beliefs Model Scale for Prostate Cancer Screenings (HBM-PCS).Validity and reliability of the scale which was developed based on health belief theory was tested by Capik and Gozum (2011). The scale includes a total of 41 items and five subscales including susceptibilityperception(items 1-5, 5 items), seriousnessperception (items 6-9, 4

items), health motivation perception (items 10-19, 10 items), PCS barriers perception (items 20-34, 15 items) andPCS benefits perception (items 35-41, 7 items) and it is responded as 5-point Likert type (1-Strongly disagree, 2-Disagree, 3-Neither agree nor disagree, 4-Agree, 5-Strongly agree). While increased scores from the scale indicate a positive state for susceptibility, seriousness, health motivation and PCS benefits subscales, it indicates a negative state for PCS barriers perception meaning that barriers are perceived as high. In the study by Capik and Gozum (2011),Cronbach alpha coefficients of the scale were found as.86 in susceptibility perception,.83 in seriousness perception,.90 in health motivation perception,.90 in PCS barriers perception and.94 in PCS benefits perception. In the study by Kahraman (2015), Cronbachalpha coefficients were reported as.88 for susceptibility perception, .94 for seriousness perception, .79 for health motivation, .92 for PCS barriers perception and .88 for PCS benefits perception.Also in this study,Cronbach alpha coefficients were found as .84 in susceptibility perception, subscale, .76 for seriousness perception subscale, .87 for health motivation subscale, .86 for PCS barriers perception subscale and .90 for PCS benefits perception subscale.

Data collection: Men were instructed about the aim and importance of the study. Data collection instruments were applied to the men who agreed to participate in the study by face-to-face interviewing technique.The application of the data collection instruments took an average of 20-25 minutes.

Data analysis: Data were analyzed by using Statistical Package for Social Sciences 16.0 (SPSS Inc., Chicago, IL, USA). Numbers and percentage values were used for categorical variables. Descriptive statistics for numerical variables were expressed as mean ± standard deviation. Mann–Whitney U test, Kruskal–Wallis test and Spearman correlation analysis were used. Results were evaluated within a confidence interval of 95%, and $p<.05$ was considered as statistically significant.

Ethical considerations: The study protocol was approved by ethics committee of Zonguldak Bulent Ecevit University University (14/12/2018-457). In order to conduct the study at family health centers, a written approval was obtained from X Provincial Directorate of Health (39330677-799-E.373). Verbal consent was taken from the men who approved to participate in the study.

Results

Mean age of men was 54.63 ± 9.91 years old. Of the men,33.6% were graduated fromprimary school, 61.8% were employed, 82.8% were married, 94.8% had a child, 67.8% had an equal income and expenseand majority of them (92.4%) had social assurance (Table 1).

Families of 48.2% of the men had a history of cancer and 23.0% had a history of prostate cancer. More than half of the men (59.6%) had knowledge about prostate cancer. Nearly 11.6% of the men had prostate problems, 28.4% had a PSA test, 23.8% had prostate examination and 70.8% reported that they would have prostate screening in the near future.

The mean scores of PCFI and HBM-PCS subdimensions are given in Table 2. According to Table 3, mean susceptibility, seriousness, health motivation and PCS benefits scores of the men who were 50 years old and more were significantly higher ($p < .05$). There was a significant difference between mean scores of HBM-PCS subdimensions of the men based on their education levels ($p < .05$).

In this study, susceptibility, seriousness, PCS barriers and PCS benefits mean scores of employed men were significantly lower($p < .05$); mean health motivation and PCS benefits scores of married men weresignificantly higher($p < .05$); mean health motivation scores of the men who had a child were significantly higher; mean health motivationscores of the men who had social assurance were significantly higherand their mean PCS barriers scores were lower($p < .05$).It was also determined that there was a significant difference between mean health motivation, PCS barriers and PCS benefits scores of the men based on their economic incomes($p > .05$)(Table 3).

It was determined that mean susceptibility and health motivation scores of the men who had a cancer history within the family were significantly higher and and their mean PCS barriers score was lower compared to the men who did not have a cancer history ($p <$

.05).Mean susceptibility, health motivation and PCS benefits scores of the men who had prostate cancer in the family were significantly higher and their mean PCS barriers score was lower than the men who did not have a prostate cancer history in the family ($p < .05$). Mean susceptibility, seriousness, health motivation and PCS benefits scores of the men who had knowledge about prostate cancer were higher and their mean PCS barriers scores were lower($p < .05$). In the study, it was also found that mean susceptibility, seriousness and health motivation scores of the men who experienced prostate problems, who had a PSA test and who had a prostate examination were significantly high and their mean PCS barriers scores were low ($p < .05$). Besides, it was detected that mean susceptibility, seriousness, health motivation and PCS benefits scores of the men, who reported that they would have a prostate screening in the near future, were high; and their mean PCS barriers scores were low ($p < .05$) (Table 4).

When the relationship between PCFI andHBM-PCSsubdimensions was examined, it was found thatprostate cancer fatalism had a positive and weak correlation with HBM-PCSsubdimensions *(.20 < r <.3, p*= .0000).

Discussion

The current study was found that seriousness, health motivation and PCS benefits perceptions of the men were moderate, and their perceptions of susceptibility and PSC barriers were low. This finding shows that men are ready for early diagnosis behaviors for prostate cancer; but there may be a lack of adoption and practice of early diagnosis behaviors for prostate cancer since they do not see the possibility of developing disease as a threat. Therefore; it is necessary to make men believe that this disease may exist more or less in their lives.Ghodsbin et al. (2014) determined that health motivation and PCS benefits perceptions of the men were high, their perceptions of PCS barriers and susceptibility were intermediate and their perceptions of seriousness were low. In another study by Capik and Gozum (2011), it was found that seriousness, health motivation, PCS barriers and PCS benefits perceptions of the men were moderate, and their perceptions of susceptibility were low.

Fatalistic approach is an important factor that is effective on attitudes and behaviors for early diagnosis (Aydogdu et al., 2017; Charkazi et al., 2013; Kinyao & Kishoyian, 2018; Mutua et al., 2017; Wachira et al., 2018). In the study, prostate cancer fatalism perception of the men was found to be low. In the literature, prostate cancer fatalism perception was also found to be low in some studies (Aydogdu et al., 2017; Cobran et al., 2014; Odedina et al., 2011),whereas it was found high in some others (Kinyao & Kishoyian, 2018; Mutua et al., 2017; Wachira et al., 2018).In this study, it was also determined that prostate cancer fatalism perception had a positive and weak correlation with HBM-PCSsubdimensions. Morenoa et al. (2019) stated that lower cancer fatalism was marginally associated with greater adherence to screening for prostate cancer.The study results demontrate that fatalism perception is important in behavioral change. For this reason, it is important to evaluate fatalism perception of the men by healthcare professionals and to plan education programs by considering fatalism perceptions of the men in order to create changes in positive attitudes and behaviors among them. In the study, it was determined that health eliefs of the men were affected by age, education level, employment status, child status, income, social assurance. The study by Morenoa et al. (2019) reported thatsociocultural factors such as health insurance, income, education, and acculturation, have been shown to predict use of preventive services and cancer screening. Odedina et al. (2011) determined that ethnicity, age, income, employment status, education status, marital status and social assurance were associated with health beliefs of the men. Susceptibility and health motivation perceptions of the men who had a cancer/prostate cancer history in the family and had a prostate problem were high and their perceptions of PCS barriers were low. This study results showed that men, whohad individuals suffering from cancer/prostate cancer and who had a prostate problem in their families, might consider themselves under risk of developing prostate cancer, perceive the consequences of the disease seriously as vital threats and become more sensitive against prostate cancer.

Table 1: Characteristics of the men

Variables	Mean ±SD	Min-Max
Age (years)	54.63±9.91	40-88
	n	**%**
Age		
40-49	196	39.2
50 and above	304	60.8
Education level		
Illiterate	57	11.4
Primary school	168	33.6
Secondary school	144	28.8
High school	79	15.8
University	52	10.4
Marital status		
Married	414	82.8
Single	86	17.2
Employment status		
Employed	309	61.8
Not employed	191	38.2
Child status		
Have a child	474	94.8
No child	26	5.2
Income		
Less than expenses	110	22.0
Equal to expenses	339	67.8
More than expenses	51	10.2
Social assurance		
Yes	462	92.4
No	38	7.6

Table 2: Mean scores of Prostate Cancer Fatalism Inventory and Health Beliefs Model Scale for Prostate Cancer Screenings

	Number of Items	Range of Score	Mean±SD	Min-Max Scores of Men
Prostate Cancer Fatalism Inventory	15	0-11	3.39±2.94	0-15
Health Beliefs Model Scale for Prostate Cancer Screenings				
Susceptibility	5	5-25	13.55±3.36	5-25
Seriousness	4	4-20	13.18±2.85	4-20
Health motivation	10	10-50	34.16±6.57	14-50
PCS*barriers	15	15-75	38.79±8.04	15-65
PCS* benefits	7	7-35	25.17±5.33	7-35

**PCS*Prostate Cancer Screening

Table 3: Comparison of some characteristics with mean scores of Health Beliefs Model Scale for Prostate Cancer Screenings

	Susceptibility Mean±SD	Seriousness Mean±SD	Health Motivation Mean±SD	PCS* Barriers Mean±SD	PSC* Benefits Mean±SD
Age					
40-49	12.81±3.19	12.54±3.07	32.86±7.66	38.17±8.54	24.13±6.36
50 and above	14.03±3.38	13.59±2.63	35.00±5.61	39.20±7.68	25.84±4.43
U/p	***-4.027/.000***	***-3.723/.000***	***-3.108/.002***	*-1.110/.267*	***-2.732/.006***
Education level					
Illiterate	14.88±3.30	13.70±2.34	32.49±5.90	42.60±7.72	24.75±4.20
Primary	14.01±3.30	13.46±2.76	34.31±5.39	40.14±6.69	25.59±4.63
Secondary	12.68±2.87	12.41±2.84	31.67±6.94	38.62±7.20	23.35±6.34
High school	13.51±3.67	13.20±3.19	36.20±6.61	36.47±9.93	26.84±4.89
University	13.10±3.72	13.75±2.79	39.31±5.77	34.31±8.56	26.77±4.76
KW/p	***20.034/0.000***	***18.385/0.001***	***69.837/0.000***	***42.932/0.000***	***27.370/0.000***
Employment status					
Employed	13.19±3.46	12.76±3.06	33.80±7.42	38.27±8.44	24.52±6.10
Not employed	14.13±3.09	13.84±2.34	34.75±4.85	39.65±7.28	26.22±3.55
U/p	***-2.982/.003***	***-4.146/.000***	*-0.902/.367*	***-2.096/.036***	***-2.654/.008***
Marital status					
Married	13.46±3.35	13.14±2.91	34.60±6.48	38.56±8.13	25.40±5.31
Single	14.01±3.35	13.37±2.55	32.06±6.65	39.93±7.54	24.08±5.34
U/p	*-1.513/.130*	*-0.363/.716*	***-3.360/.001***	*-1.554/.120*	***-2.628/.009***
Child status					
No child	13.96±3.74	13.58±2.32	31.00±7.53	40.58±8.21	24.85±5.68
Have a child	13.53±3.34	13.15±2.88	34.33±6.48	38.70±8.03	25.19±5.32
U/p	*-0.881/.379*	*-0.403/.687*	***-2.103/.035***	*-1.367/.0172*	*-0.619/.536*
Income					
Less than expenses	13.94±3.85	13.69±2.91	34.18±6.35	42.45±8.27	25.53±4.82
Equal to expenses	13.42±3.19	12.99±2.77	33.65±6.75	37.70±7.79	24.69±5.70
Morethan expenses	13.55±3.28	13.29±3.13	37.47±4.73	38.18±6.93	27.57±2.44
KW/p	*2.292/.318*	*5.712/.057*	***18.192/.000***	***32.065/.000***	***9.086/.011***

Social assurance					
Yes	13.52±3.36	13.19±2.84	34.48±6.48	38.61±8.08	25.30±5.31
No	13.92±3.27	12.95±2.99	30.29±6.53	41.00±7.31	23.63±5.44
U/p	*-0.589/.556*	*-0.323/.747*	***-4.189/.000***	***-2.033/.042***	*-1.837/.066*

**PCS*Prostate Cancer Screening

Table 4: Comparison of health history and behaviors with mean scores of Champion's Health Belief Model Scale for Prostate Cancer Screenings

	Susceptibility Mean±SD	Seriousness Mean±SD	Health Motivation Mean±SD	PCS* Barriers Mean±SD	PCS* Benefits Mean±SD
Family cancer history					
Yes	14.19±3.38	13.39±2.94	34.67±6.48	37.74±7.58	25.26±5.32
No	13.03±3.26	13.01±2.77	33.72±6.63	39.69±8.30	25.06±5.33
U/p	***-2.888/.004***	*-1.192/.233*	***-2.072/.038***	***-3.318/.001***	*-0.311/.756*
Family prostate cancer history					
Yes	14.19±3.63	13.46±2.99	37.67±4.73	35.87±7.80	26.85±3.87
No	13.36±3.25	13.09±2.81	33.11±6.68	39.67±7.91	24.67±5.61
U/p	***-2.048/.041***	*-1.033/.301*	***-6.551/.000***	***-4.834/.000***	***-2.573/.010***
Knowledge on prostate cancer					
Yes	14.04±3.61	13.67±2.70	36.83±5.09	37.25±8.07	26.98±3.98
No	12.84±2.81	12.45±2.92	30.22±6.54	41.08±7.45	22.50±5.94
U/p	***-4.027/.000***	***-4.423/.000***	***-11.008/.000***	***-5.437/.000***	***-8.192/.000***
Having a prostate problem					
Yes	16.07±3.11	14.71±1.94	37.26±5.72	36.29±5.87	26.17±3.23
No	13.22±3.25	12.98±2.89	33.75±6.57	39.12±8.23	25.04±5.54
U/p	***-5.998/.000***	***-4.455/.000***	***-3.476/.001***	***-3.001/.003***	*-0.712/.477*
Having PSA test					
Yes	15.01±3.39	14.19±2.54	37.62±4.90	35.35±6.37	26.35±3.24
No	12.97±3.16	12.77±2.87	32.77±6.65	40.17±8.23	24.70±5.91
U/p	***-5.910/.000***	***-5.057/.000***	***-7.778/.000***	***-6.836/.000***	*-1.691/.091*
Having a prostate examination					
Yes	15.08±3.32	14.00±2.67	38.05±4.82	34.99±7.03	26.36±3.70
No	13.08±3.23	12.92±2.86	32.94±6.58	39.98±7.97	24.80±5.70
U/p	***-5.790/.000***	***-3.755/.000***	***-7.801/.000***	***-6.570/.000***	*-1.452/.147*
Having a prostate screening in the near future					
Yes	14.01±3.39	13.71±2.71	36.79±5.04	38.22±8.20	26.98±3.93

No	12.45±2.99	11.88±2.77	27.78±5.37	40.18±7.47	20.78±5.73
U/p	***-5.181/.000***	***-6.691/.000***	***-13.613/.000***	***-2.717/.007***	***-11.022/.000***

**PCS*Prostate Cancer Screening

Discussion contin.

The level of having knowledge about prostate cancer was moderate.Besides; it was found that susceptibility, seriousness, health motivation and PCS benefits perceptions of the men, who had knowledge about prostate cancer, were high and their perceptions of PCS barriers were low.Also in the studies related with this subject, it was reported that knowledge of men regarding prostate cancer and its screenings was inadequate and knowledge level affected their attitudes and behaviors towards prostate cancer screenings (Capik & Gozum, 2011; Ceyhan et. al., 2018; Ghodsbin et al., 2014; McNaughton, Aiken, & McGrowder, 2011; Morrison et al., 2017; Wachira et al., 2018). The findings obtained from the studies are important since they show that education is an important factor in creating a behavioral change. Therefore; information of men at every turn may significantly contribute to increase the awareness for prostate cancer and to provide behaviors for early diagnosis of prostate cancer.

Awareness of the men about prostate cancer is important for its early diagnosis. Educating men may increase their awareness and motivations about this subject. Prevention of prostate cancer at early period in men will be possible by informing them about this subject througha health education and implementing early diagnosis behaviors. However, another important point is that education can not be sufficient alone in the implementation of prostate cancer early diagnosis behaviors in some conditions (Aydogdu et al., 2017; McNaughton et al., 2011). Although the ratio of men, who had knowledge about prostate cancer, was 59.6%, only 28.4% of them had a

PSA blood test and 23.8% of them had a prostate examination. This result also showed that education was not sufficient alone in providing behavioral change. Therefore, evaluation of knowledge and behaviours of the men about prostate cancer and determination of barriers which are effective in participating prostate cancer screening programs seem very important.

Due to cultural beliefs of Turkish society, testes are considered as an intimate region of the body, and prostate examination is regarded as an uncomfortable situation. Therefore, many Turkish men do not go to hospital for routine control as long as they do not experience any important problems, and they may sometimes delay it even they experience a problem. In the study, 28.4% of the men had a PSA test and 23.8% of them had a prostate examination. When other studies related to this subject in Turkey were examined, it was seen that participation of men in prostate cancer screening programs was at a low level (Aydogdu et al.,2017; Ceyhan et al., 2018; Tayhan, 2016)These findingsfrom the studies reflect the structure of Turkish society. The finding of this study stating that PCS barriers perceptions of the men, who did not have a PSA test and prostate examination,were high also supports our idea.

Conclusion: The main conclusion of this study was that health beliefs of the men regarding prostate cancer were affected by prostate cancer fatalism. It was also determined that health beliefs of the men were affected by age, education level, employment status, child status, income, social assurance, familial history of cancer, familial history ofprostate cancer, knowledge on prostate cancer, having a prostate problem, having a PSA test, having a prostate examination and having a prostate screening in the near future.According to the results of this study, it is recommended to evaluate the prostate cancer fatalism among men and their health beliefs for increasing the awareness for prostate cancer and providing early diagnosis behaviors and to arrange education programs accordingly. However, further studies with random sampling and larger sample size should be conducted with men.

Limitations: The results of this study cannot be generalized to places with different cultural

values and religions owing to the small sample size drawn from one city.

Acknowledgements: The authors would like to thank all the men who participated in the study.

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