

Original Article

Implementation of the theory of planned behavior to testicular self-examination among young men in Tehran

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Abstract

Background: Testicular Cancer (TC) is the most common cancer among men between 20 and 40 years old. Treatment for TC is highly effective when detected before the metastatic stage. Although screening of TC through self-examination is recommended, it seems that many men do not do self-examination routinely, so the current study aimed to evaluate the Theory of Planned Behavior (TPB) as a framework for considering Testicular Self-Examination (TSE) intention among a sample of 20- to 34-year-old men.

Methods: A cross-sectional study was designed and 50 young men were randomly selected. A questionnaire was administered to young men, referring to one of the hospitals in Tehran in 2016. The data were analyzed using SPSS software 16 (SPSS Inc., Chicago, IL, USA), running descriptive tests, chi-square, Pearson correlation, and linear regression analysis.

Results: Mean (SD) age of participants was 30 (3.77) years old. The majority were married (29), followed by single (19), divorced (2). The correlation tests showed a statistically significant relationship between self-efficacy with intention ($P<0.001$, $r=0.585$) and PBC ($P=0.006$, $r=0.359$). In a linear regression analysis, TPB components could predict 36.4% of the variance in TSE intention and self-efficacy was found to be the independent predictor of TSE intention ($P<0.001$, $\beta=0.55$).

Conclusion: The structures of TPB might be useful for increasing TSE. So, educational interventions based on TPB could be effective for the primary prevention of testicular cancer.

Keywords: Testicular cancer; Testicular Self-Examination; Theory of Planned Behavior

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Introduction

One of the most common cancers in the young adult males between the ages of 15 and 35 years, with an increase in the incidence in the same population, is Testicular Cancer (TC) (1-3). When diagnosed at an earlier stage, TC has a survival rate of 95%; however, over 50% of the young adult males are diagnosed after the tumor has spread. It is believed that awareness about the symptoms of TC is important for early stage diagnosis, and

therefore, treatment will be more effective (4). Also, treatment of an early or regional Testicular Self-Examination (TSE) is 50% the cost of an advanced case (5). However, TC is not preventable. McGiligan et al. study recommended that young males examine their testicles at least monthly for abnormal lumps or swellings (6). Recommendations about preventive care services for patients without symptoms or recognized signs are made by the U.S.

Preventive Services Task Force (USPSTF) but there is no recommendation on screening for TC in asymptomatic adolescent or adult males (7). An effective approach to identify early signs of cancer is screening (8). A study by Onyiriuka et al. on 540 students showed that only 1.3% of the participants had heard about TSE and 98.7% of them had never heard of TSE (9). Moreover, other studies have shown that regular TSE is infrequently performed (10-12).

The theory of Planned Behavior (TPB) assumes a causal sequence that links normative beliefs, behavioral beliefs, and control beliefs to behavioral intentions and behaviors via attitudes, subjective norms, and perceived control (13-15). The TPB identifies the intention as preceding behavior changes, and attitude (such as an attitude toward cancer), subjective norm (important individuals approve or disapprove of performing the behavior), and perceived behavioral control (to report for factors outside individual control that may influence intentions and behaviors) as the socio-cognitive determinants of intention (13, 15).

Some studies have used the theory of planned behavior, health belief model, and reasoned action model to predict the intention to do a testicular self-examination (6, 10, 11). Some studies have found factors associated with TSE (16) including having heard of testicular cancer, knowing about TSE (17), knowledge of TC and performance of TSE (18), as well as health education teaching methods (19). Although screening of TC through self-examination is recommended, it seems that many men do not routinely do self-examination, so the current study aimed to evaluate the Theory of Planned Behavior as a framework for considering TSE intention among a sample of 20- to 34-year-old men.

Methods

In the present cross-sectional study, 50 young men aged between 20-34 years old,

referred to Payambar hospital in Tehran, Iran, in 2016. A simple random sampling was applied to select young men. Participation was voluntary and participants were informed that they could leave at any time and that their responses would be anonymous. A questionnaire was designed to measure the components of the TPB with the items developed based on a TPB- based study on TSE (4). Each component was measured by means of multiple items. The items measuring the TPB were attitude (4 items, 4-20 points), intention (3 items, 3-15 points), subjective norms (3 items, 3-15 points), perceived behavior control (PBC) (2 items, 2-10 points), and self-efficacy (4 items, 4-20 points) all of which were measured on five-point Likert scales as strongly agree (5 points), agree (4 points), no opinion (3 points), disagree (2 points), and strongly disagree (1 point).

The validity of the instrument was examined by faculty members (10 persons) and then the questionnaire was revised accordingly. Also, the reliability was estimated through test re-test and a pilot study (10 young men). The reliabilities of the items for each of the scales (Cronbach's alpha) were high and ranged from 0.83 to 0.97 (Table 1). The statistical analysis was performed using SPSS software 16 (SPSS Inc., Chicago, IL, USA), running descriptive tests, chi-squared, Pearson correlation, and linear regression analysis. P values of less than 0.05 were considered statistically significant.

Results

Participants age ranged from 21 to 34 years with the means and Standard Deviation (SD) of 30 ± 3.77 years old. As for marital status, the majority were married (29), followed by single (19), divorced (2). The means and Standard Deviations (SD) for all variables and Cronbach's alpha are presented in Table 1.

In the present study, the self-reported frequency of self-examination during the previous year indicated that almost more than half of the participants (32), never self-

examined, 8 self-examined once a month, 5 self-examined twice a month, 1 self-examined three a month, and 2 self-examined 12 times per year. Also, 30 reported that they knew how to perform TSE. The findings showed that 39 participants had a history of physician visits due to testicular problems and 1 had a history of testicular cancer among the family members.

The relationship between demographic variables such as age, education level, marital status, and history of testicular cancer among family members with testicular self-examination behavior was assessed using chi-square test. The results showed that there were no statistically significant difference between the variables and the behavior of testicular self-examination. In addition, correlation tests revealed a significant difference between self-efficacy and intention ($P<0.001$, $r=0.585$) and PBC ($P=0.006$, $r=0.359$) (Table 2).

Moreover, linear regression analysis was used to determine the predictive value of the TPB structures toward the intention of TSE. Linear regression analysis indicated self-efficacy as the independent predictor of TSE intention ($P<0.001$). Overall, 36.4% of the variance in TSE intention was explained by regression model (Table 3).

Discussion

The purpose of the present study was to test the utility of the TPB as a framework for considering TSE intention. The results obtained justify the current low level of TSE. In our study, 16 (33.3%) participants reported that they had performed TSE during the past year. Our results are in line with the findings reported in several studies (16, 20-22) although in a study conducted among genitourinary medicine clinic attendees, 79.2% had previously performed TSE and most of them had heard about TSE (23). The best explanation for the low level of TSE is probably lack of knowledge about TC and TSE.

Table 1. Mean and standard deviations of the TPB variables

Variables	Mean (SD)	Alpha
Attitude	12.9 (4.07)	0.96
Intention	9.7 (3.18)	0.96
Subjective Norms	9.5 (3.47)	0.94
PBC	7.2 (1.66)	0.95
Self-efficacy	14.6 (4.15)	0.97
Behavior	1.6 (0.47)	0.83

Table 2. Pearson correlation among the TPB variables

Variables	1		2		3		4		5		6	
	P	r	P	r	P	r	P	r	P	r	P	r
1. Attitude												
2. Intention	0.12	0.225										
3. Subjective norms	0.18	0.192	0.23	0.175								
4. PBC	0.89	-0.019	0.17	0.197	0.79	0.038						
5. Self-efficacy	0.17	0.198	<0.001	0.585	0.37	0.13	0.01	0.359				
6. Behavior	0.11	-0.229	0.63	0.069	0.45	0.111	0.47	0.106	0.86	0.025		

Table 3. Linear regression analysis for prediction of TSE intention

	Coefficient				ANOVA			
	B	β	P	95% CI	Partial Correlation	R	R ²	P
Attitude	0.08	0.1	0.4	- 0.118	0.288	0.128		
Subjective Norms	0.07	0.07	0.52	- 0.158	0.304	0.097		
PBC	0.01	-0.008	0.95	- 0.522	0.491	-0.009		
Self-efficacy	0.42	0.55	<0.001	0.216	0.632	0.531		
Behavior	0.33	0.05	0.65	- 1.180	1.847	0.068		
(Constant)	1.29	0.1	0.62	- 3.944	6.533		0.603	0.364
								0.001

In our study, 61% of the participants reported that they knew how to perform TSE. In another study, it was reported that the majority of participants were unaware of TSE and did not do TSE before the health education intervention (8). Also, Brown et al. found that health education and knowledge on TC and TSE leads to increasing TSE (24,25). Likewise, Muliira et al. reported participants' common reasons for not doing TSE; they stated that they did not have the skill for performing TSE, they felt embarrassed, and they believed it was time-consuming (26).

In another study, it was reported that TC concern and doctors' advice are factors associated with regularly performing TSE (16). One possible explanation for this discrepancy is that knowledge together with others factor, such as positive attitudes, can increase the likelihood of performing TSE. Also, correlation tests showed that there was a significant difference between self-efficacy and intention and PBC. High self-efficacy leads to increased positive intention and PBC. Using the model of reasoned action, Brubaker et al. found that attitudes and subjective norms and self-efficacy were significantly correlated with intention of TSE and the results showed that awareness of TSE could improve and predict the intention (11). Another study conducted on knowledge, attitudes, and practices of TSE

confirmed the relationship between attitudes and behavior of TSE. In this study, it was found that people who had a more positive attitude towards TSE had more intention to do this behavior (9). Increasing knowledge regarding the risk of the disease leads to a change in intention and behavior (27).

In addition, the linear regression analysis indicated self-efficacy as an independent predictor of TSE intention ($p < 0.05$). This is possibly due to the positive attitude to performing TSE and the belief to have the ability to perform TSE, which was also observed in the previous studied (6, 10).

Although the present study was the first study on TPB about TSE in Iran, there are some limitations which should be taken into consideration prior to generalizing the findings. One limitation of the study was that only 50 young adult male participants took part in the study. The other limitation was self-reported data, which increases the possibility of carelessness in response to the questions.

The present results indicate that TPB is a useful model for prediction of TSE intention and a useful framework for plan interventions aimed at promoting TSE. We recommend further studies using a larger sample in two groups of case and control in an interventional study so as to achieve better results.

Conflict of interest

Authors declare no conflict of interests.

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