

# Effect of Two Educational Methods on Knowledge and Health Beliefs Regarding Prostate Cancer Screening

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**Abstract** Prostate cancer is a common health problem that in the majority of cases starts to develop at the age of 50 years, reaching its peak at 60–70 years of age. One way to decrease the burden of prostate cancer is early detection through screening. **Aim:** The aim of this study was to evaluate the effect of two different of education methods on knowledge and health belief regarding prostate cancer screening. **Design:** experimental and comparative approach design was utilized. Setting; the study was conducted at different administration departments enter the cordon of Suez Canal University. **Sample:** A purposive sample of 240 of men over 50 years and accepted in participating in the study and divided into two groups randomly (a group education and multimedia education). **Tools:** Data were collected through two main tools; **I-**A self-administered questionnaire to assess socio demographic characteristic and knowledge regarding prostate cancer prevention, questionnaire to assess participates in prostate cancer screening. **II-** health belief model to assess change in health beliefs during baseline, first and second post-test. Results; During the study, group education has participated in prostate cancer screening more than multimedia group. The group education raised the susceptibility perception on prostate cancer screening and while decreasing the barrier perception. **Conclusion:** the group education had a significant difference in the knowledge and health beliefs for prostate cancer screening more than multimedia education. **Recommendation:** Dissemination of prostate cancer screening through multimedia education based on HBM among men over 50 years to prevent the risk of prostate cancer.

**Keywords:** prostate cancer screening, group education, multimedia education

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## 1. Introduction

Prostate cancer is a common health problem that in the majority of cases starts to develop at the age of 50 years, reaching its peak at 60–70 years of age [1,2,3]. Prostate cancer is considered the third most common cancer worldwide with approximately 1.128 million cases. The incidence of prostate cancer was reported to be about 3.1, 3.3 and 6.5/100.000 men in Saudi Arabia, Oman and Kuwait [6]. Prostate cancer is among the 30 most common causes of death in the Egypt [4]. Where the rate of deaths from the disease in Egypt, 2.81 cases per 100,000 men. The most prominent concern among specialists in the treatment of tumors and urinary tract is that males do not realize the seriousness of the symptoms, which means that they do not resort to medical consultation only in the late stages of the disease [5].

A way to decrease this disease is early detection of it through screening. Screening program includes through the prostate-specific antigen blood test (PSA) and the digital rectal exam (DRE) are procedures used for screening, besides increasing knowledge and awareness about prostate cancer detection is essential to reduce

prostate cancer mortality [6,7]. The purpose of screening is to detect prostate cancer at its earliest stages, before any symptoms have developed because some of the symptoms experienced by men might indicate the presence of prostate cancer and these symptoms can be related to other prostate disorders, such as Benign Prostate Hyperplasia (BPH) or prostatitis requiring a more thorough work up [2,8,9].

The health belief model is a useful conceptual framework that may be used for understanding and estimating health-related behaviors [10,11]. Several researchers have previously carried out interventions based on the health belief model for the early diagnosis of prostate cancer and have reported improvements in its various components [2,6,12]. The barrier perception, an important component of the health belief model in individuals' participation in prostate cancer screening, may affect their participation in screening [13].

Based on this model, if people believe that they are susceptible to disease such as prostate cancer (perceived susceptibility), understand the risk depth and severity of its different complications in their life (perceived severity), consider proposed ways including PSA useful in decreasing risk or severity of the disease (perceived benefits), and be able to overcome obstacles for action,

including cost and pain (perceived barriers), they will be more likely to contribute to health improvement programs [10,11].

On the other hand, performing educational programs in order to change one's health belief through different methods including group education and multimedia education is possible. In multimedia education, or computer-based instruction as a new educational method is performed by conveying the concepts and educational materials in an easier, more wide and attractive along with text, sound, pictures and video and has a special capacity and potential to convey information for patients and especially those with low literacy [14].

Group education is one of the most common education strategies to promote positive changes in attitudes and behaviours amongst men. Group education can be employed by itself or it can be used as one element in a strategy that might include communication efforts, mass media, training and other strategies [15]. Group education allow to each member to compare their experiences with other members, learn from each other and receive support [16] The group may also contribute to greater social interaction and making new friends, which is important for good health [10].

This new education programs can facilitate decision-making process by motivation [10,17]. Health motivation refers to a generalized state of intent that results in behaviors to maintain or improve health [1,10,18].

Prostate cancer knowledge would affect individuals' participation in screening and that the health belief model would be an appropriate model for examining the participation behavior of individuals in prostate cancer screening. Subsequent nursing interventions will increase the participation in prostate cancer screening. Besides giving standard information, web-assisted education based on the health belief model may create awareness in individuals and influence their participation in prostate cancer screening [2,14,19].

## 1.1. Aim of the Study

This study was undertaken to evaluate the effect of different educational methods based on health beliefs model on knowledge and Prostate Cancer Screening Behaviors. This aim achieved through:

- 1) Assessing the participants' knowledge and behaviors regarding prostate cancer screening based on health beliefs model.
- 2) Constructing two methods of multimedia and group education based on health belief model according to participants needs.
- 3) Implementing the two selected educational methods.
- 4) Evaluate the effect of multimedia and group education on changing men knowledge and behaviors regarding cancer prostate screening test.

## 1.2. Research Hypothesis

1. Applied different educational has better effect on knowledge and health beliefs regarding prostate cancer screening.
2. Men after application of educational methods will participate in prostate cancer screening.

## 2. Methods

### 2.1. Design and Setting

The study was conducted at different administration department enter the cordon of Suez Canal university, the number was ten departments. They were chosen because men in that department have the ability to use the computer and the Internet, which helps to facilitate communication with them. The design is an experimental study design.

### 2.2. Sampling

A purposive sample of 240 out of (985) Men working in different administrative departments in Suez Canal University, Ismailia Governorate, Egypt.

#### 2.2.1. Inclusion Criteria

(1) Men aged from 50 - 60 years (2) not having prostate cancer or other types of cancers, (3) not having prostate biopsy experience, (4) free from any kidney diseases and (5) accepted to participate in the research.

#### 2.2.2. Sample Size

Sample size was calculated according to the following equation [12] considering 25% improvement for group education and 10% for multimedia education On this basis, 120 individuals were selected for each group for power 80%.

#### 2.2.3. Sample technique

1) Males at the age of fifty or older who work in permanent administrative jobs and have health insurance and have the skill of using the computer and the Internet. The researcher used the record of employment to find the intended males' employment.

2) 240 employees selected and divided into two groups randomly. 120 employees participated in multimedia education group and another 120 employees participated in group education method.

## 2.3. Data Collection

### 2.3.1. Instrument

**Tool 1: prostate cancer interview questionnaire** which was developed by the researchers in Arabic language after reviewing of related literature. It included;

- (1) Socio-demographic characteristics, such as age, education level, marital status, monthly income residence area.
- (2) Knowledge of the studied men about prostate cancer used as pre-posttest and follows up for both of group education and multimedia education. Definition of prostate cancer, causes of prostate cancer, signs and symptoms of prostate cancer, and prevention of cancer prostate and the results were categorized as incomplete correct answer (0) and complete correct (1).
- (3) Prostate cancer screening test. Important of prostate cancer screening, types of screening test, meaning of PSA screening, who need PSA screening, purpose, time of beginning prostate cancer screening, what meant by abnormal PSA test, and follow up after

abnormal PSA test. In case done screening test (PSA) the results categorized as test done (1) and test not done (0).

**Tool 2:** Health belief questions based on the Health Belief Model was adopted from [12,20], modified and translated into Arabic language by the researchers. The HBM sub constructs which used in this study were perceived susceptibility (five items), perceived severity to prostate cancer (four items), perceived barriers of performing prostate cancer screening (ten items), and perceived benefits of prostate cancer screening (five items). The results were categorized as 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Subscale mean scores were obtained by summing and averaging the items (range 1-5). Each subscale was calculated separately, and therefore four different scores were obtained for each subject.

#### 2.4.2. Validity and Reliability of the Tools

The tools were reviewed for comprehensiveness, appropriateness, and legibility by an expert panel consisting of five experts' in community health nursing. The panel ascertained the face and content validity of the tools. The reliability was done by Cronbach's Alpha coefficient test which revealed that each of the two tools consisted of relatively homogenous items as indicated by the moderate to high reliability of each tool. The internal consistency of knowledge was 0.81. The total 24-items HBM was 0.91, with breakdowns by category: 0.72 (perceived susceptibility to the disease), 0.86 (perceived severity of the disease), 0.83 (perceived benefits of prostate cancer screening), 0.73 (perceived barriers of performing prostate cancer screening), and intention to practice prostate cancer prevention behaviors was 0.76.

#### 2.5. Pilot Study

A pilot study was carried out on 10% from the total number of sample (24) men excluded from total sample. To detect any ambiguity in the tools, clarity of the items, as well as, to determine the time consumed for data collection. Necessary modifications were carried out based on finding of the pilot study to develop the final form of the tool. However, they were given a copy of the educational intervention booklet.

#### 2.6. Ethical Considerations

Each participant in both groups was informed about the purpose and benefits of the study then oral consent was obtained before starting the data collection. Strict confidentiality was ensured throughout the study process. The participants were assured that all data was used only for research purpose and each participant was informed of the rights to refuse or withdraw at any time with no consequences. After the completion of the study, the meeting with the multimedia group and the explanation of the program and answer any question.

#### 2.7. Procedure and Data Collection

A reviewing of past and current literature covering the various aspects of the problem was done using books,

articles periodicals, magazines and studies related to Health Belief Model and prostate cancer.

##### 2.7.1. Approval

- A written official letter was obtained from the Dean of the Faculty of Nursing, Suez Canal University and delivered to the Secretary General of Suez Canal University to get the statistical numbers of men over 50 years within each administrative department of the university.
- Another written official letter was taken and delivered to each department director for ten departments selected, to get their approval for conduction of the research after explaining its purpose.

##### 2.7.2. Field of Work

- The study was carried out through four phases: assessment, planning, implementation, and evaluation. These phases were carried out from beginning of June 2016 to the end of March 2017, covering along a period of nine months.
- **Assessment phase:** Before starting the data collection, the agreements and the aim of the study were explained to each department director to gain their cooperation.
- The researcher met the participants in the waiting room, in each selected department. The researcher introduced herself and explained to the participant the aim of the study and their consent to participate was obtained.
- Each participant personally interviewed and sometimes groups of participants (minimum one participant and maximum six participants) in the Department.
- The researcher was used tools to get the baseline data about knowledge level and health beliefs regarding early detection of prostate cancer. Based on education intervention to improve knowledge and health beliefs was designed, developed and used two educational approaches for program implementation after dividing men's under study into two homogenous groups; namely group education and multimedia education.
- The interview lasted for from 9:30–11:30 AM, three times per week. The average time to complete each interview was approximately 30-45 minutes. The number of participants interviewed / week ranged from 16 to 18.

##### 2.7.3. Program Construction

- Program development phase: based on the results obtained from the interviewing questionnaire, literature review and following education principles. The development of the group education and multimedia education were designed by the researcher and revised by supervisors and experts from Faculty of Nursing (Community health Nursing Department) under title "education program for changing men knowledge and beliefs regarding early detection of cancer prostate"
- The general goal of education program improve knowledge and behaviors regarding prostate cancer

screening through identify prostate cancer, discuss causes of prostate cancer, explain prostate cancer prevention, and discuss early detection and screening tests related prostate cancer.

- The researcher starts to implementation the educational program for both group by group education method and multimedia education method.
  - (1) Implementation educational program by Multimedia method of teaching. The researcher distributed prostate cancer screening program on CD-ROM for this group. CD contains syllabus out line, suitable audiotapes and illustrated pictures with animation. In addition this was linked by hypertext to the content questions and software exercise. After that, it was based on the results of the baseline questionnaire; the researcher explained then effect of multimedia education methods on knowledge and health beliefs based on HBM.
  - (2) Implementation educational program by group education method. The researcher divided this group into ten education group each group which include 10 to 12 participants. Meet with them in Thursday of each week during the period of implementation educational program to the participants in this group. The group education was held in the training unit at the Faculty of Nursing Suez Canal University after taking the approval of the Dean of the College, which consists of three sessions. The first session was to explain the anatomical position and their function of the prostate gland. Second session was defined as prostate cancer, causes, symptoms and signs and how to prevent prostate cancer. Third session was explained prostate cancer screening, types of screening test, meaning of PSA screening, who need PSA screening, purpose, time of beginning prostate cancer screening, what meant by abnormal PSA test, and follow up after abnormal PSA test.
- The researcher evaluate outcome of educational program through:
  - (1) The first post-test of multimedia education group was conducted three days after the distribution of the CD to the baseline questionnaire took about 15-20 minutes to answer the questions about susceptibility, seriousness, benefits, and barriers constructs to evaluate the effect of multimedia education methods on changing health beliefs regarding prostate cancer early detection.
  - (2) First posttest of group education methods was done after the end of workshop immediately who answered questions about susceptibility, seriousness, benefits, and barriers constructs to compare two different education methods changing health beliefs regarding prostate cancer early detection.
  - (3) After three months, second post-test was administered took about 35 minutes for assessing their knowledge and evaluating the effectiveness of different of educational

methods based on health model on knowledge and prostate cancer screening behaviors.

## 2.8. Statistical Analysis

Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 20.0) was used for that purpose, followed by data analysis and tabulation. Descriptive statistics were applied (e.g., mean, standard deviation, frequency and percentages). Test of significance (chi-square and independent t test) were used to test the homogeneity of the outcome variables between the groups and to test the study hypothesis. Pearson correlation coefficients were used. A statistically significant difference was considered at  $p \leq 0.05$ , and a highly statistically significant difference was considered at  $p \leq 0.001$ .

## 3. Results

Figure 1, displayed the distribution of knowledge level between two groups of the sample baseline; there was no difference during the study period in all the sample's responses. As regards knowledge level between two groups during 1<sup>st</sup> and 2<sup>nd</sup> post test was changed both groups.

Figure 2 illustrates that subjects in multimedia group had better susceptibility perception related to PCS during baseline, and 1<sup>st</sup> post-test. Otherwise, subjects in the group education were not currently adopting healthy susceptibility perception related to PCS in baseline. as regards the 1<sup>st</sup> post-test there was better improvement in the attitudes all over both groups. In the 2<sup>nd</sup> post-test, there was decline in both groups.

Figure 3, demonstrate the distribution of subjects' seriousness of PCS perception. There was a decline in the seriousness at the 1<sup>st</sup> post-test in both groups. In the 2<sup>nd</sup> post-test, there was a continuous decline in the multimedia group, otherwise, there was increase seriousness of PCS in group education subjects.

Figure 4 demonstrated that there was increase in the health motivation among both groups and the higher increase was for group education subjects in the 1<sup>st</sup> and 2<sup>nd</sup> post-test.

Figure 5 shows that there was a significant decrease in barrier perception of PCS in the subjects of group education in the 1<sup>st</sup> and 2<sup>nd</sup> post-test. While, there was no changes occurred in the multimedia group.

Figure 6 illustrates that the participants in both groups there was changes occurred in benefits perception attitudes related to prostate cancer screening during baseline, 1<sup>st</sup> posttest and 2<sup>nd</sup> posttest.

Figure 7 illustrates that the rate of participation in the screening increased prominently following the implementation. This finding indicates that group education participated in PSC more than multimedia group in first and second posttest.

Table 1, Showed that the outcomes of the comparison between two groups during baseline and first post-test, there were significant difference increase in knowledge and health beliefs subscales in group education than multimedia group.

Table 2, Showed that the outcomes of the comparison between two groups during baseline and 2<sup>nd</sup> post-test, there were significant increase in knowledge and health beliefs subscales in group education than multimedia group.

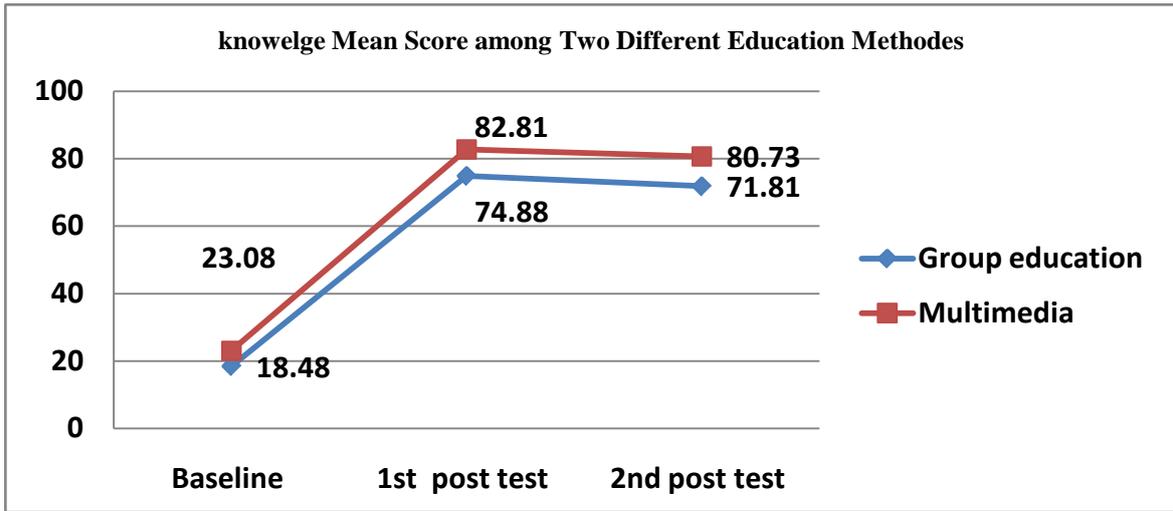


Figure 1. Distribution of subjects' knowledge regarding PCS base line, 1<sup>st</sup> post test, ad 2<sup>nd</sup> post test

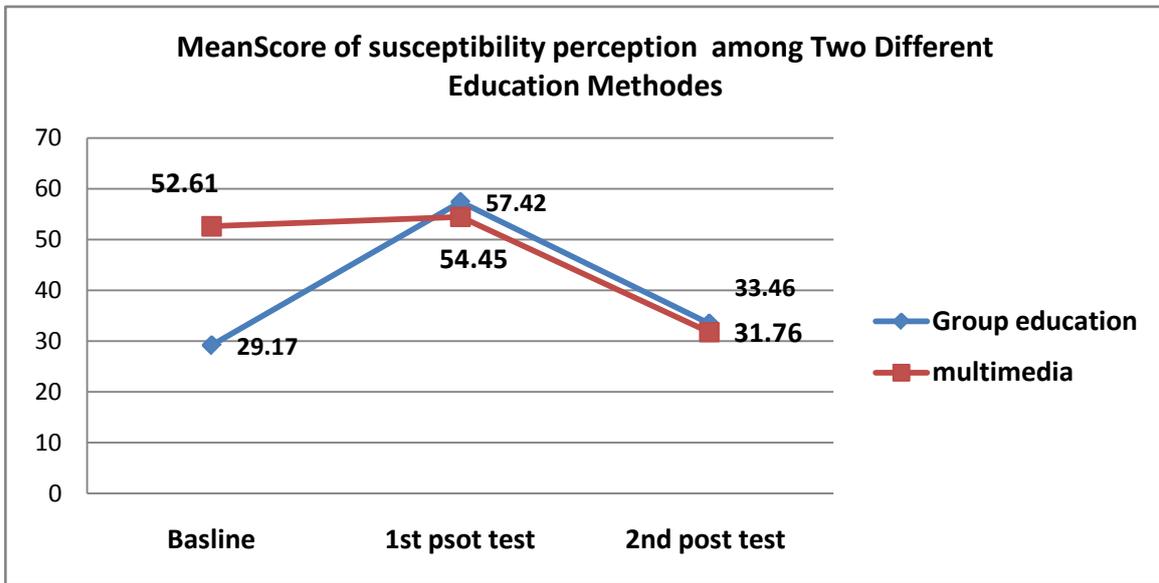


Figure 2. Distribution of subjects' susceptibility to PCS perception base line, 1<sup>st</sup> post test, ad 2<sup>nd</sup> post test

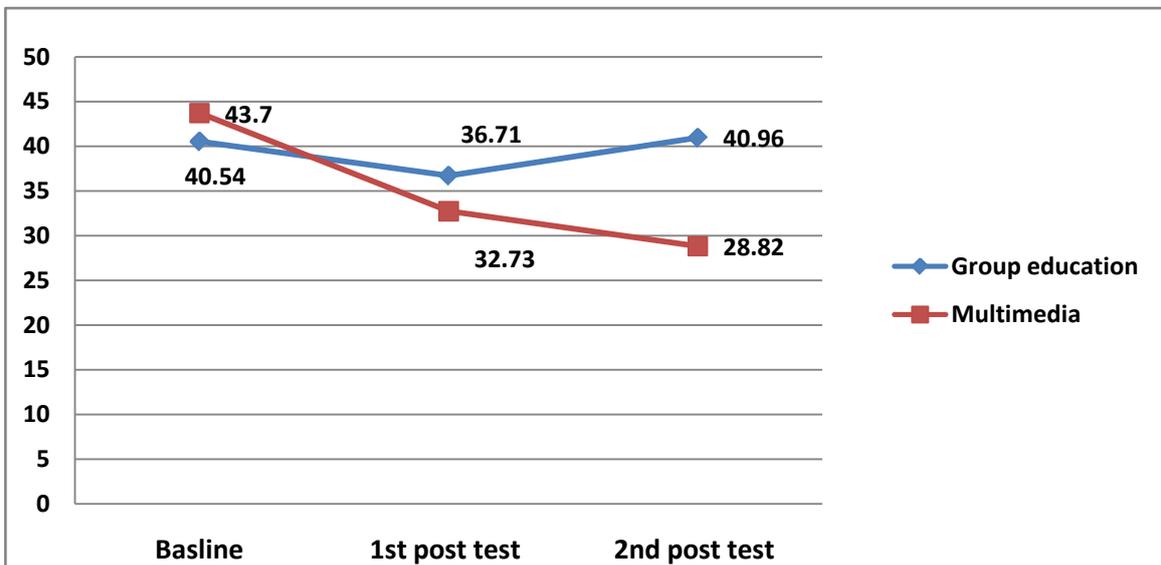


Figure 3. Distribution of subjects' seriousness of PCS perception base line, 1<sup>st</sup> post test, ad 2<sup>nd</sup> post test

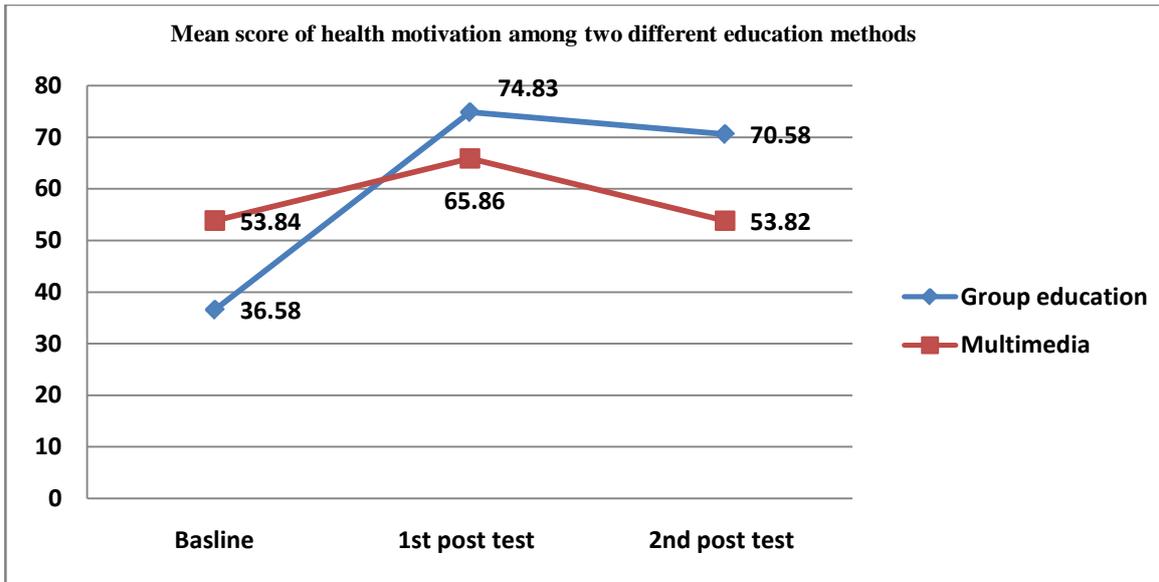


Figure 4. Distribution of subjects' health motivation of PCS base line, 1<sup>st</sup> post test, and 2<sup>nd</sup> post test

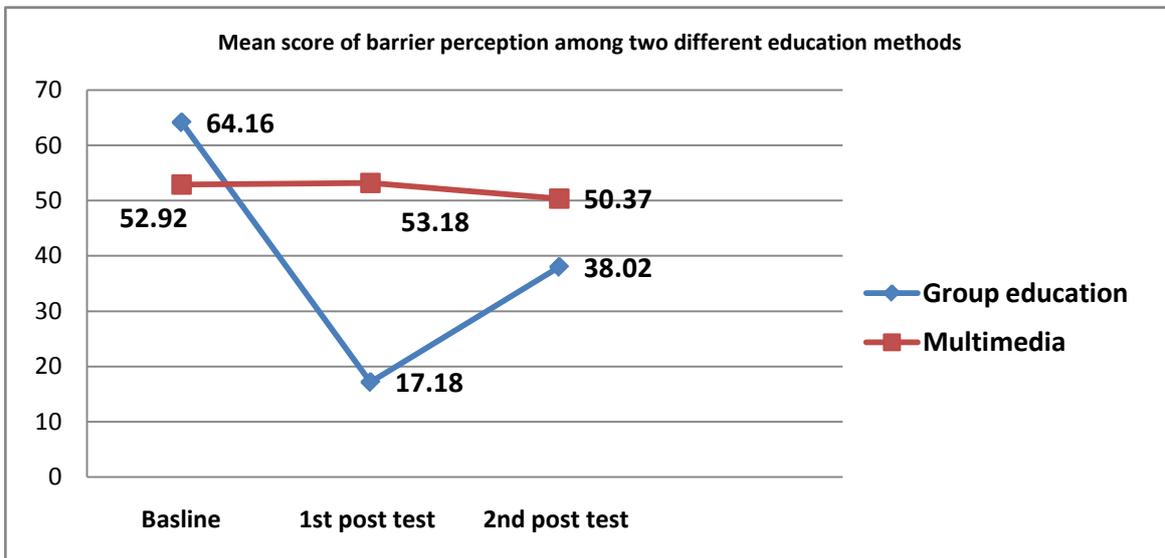


Figure 5. Distribution of subjects' barrier perception of PCS base line, 1<sup>st</sup> post test, and 2<sup>nd</sup> post test

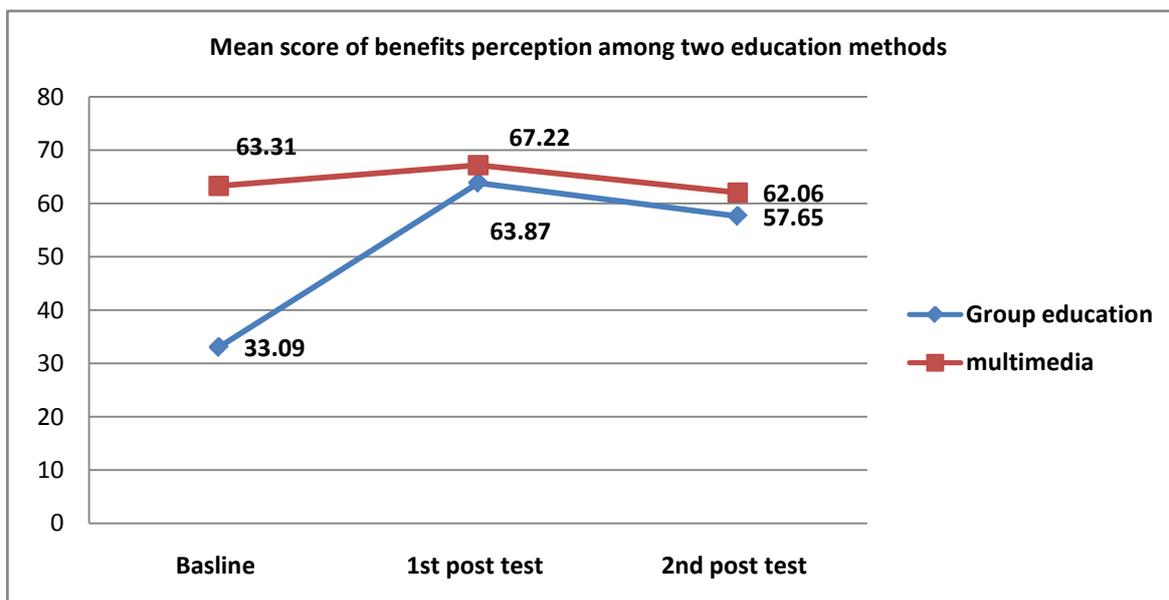


Figure 6. Distribution of subjects according to their benefits perception average scores regarding prostate cancer screening

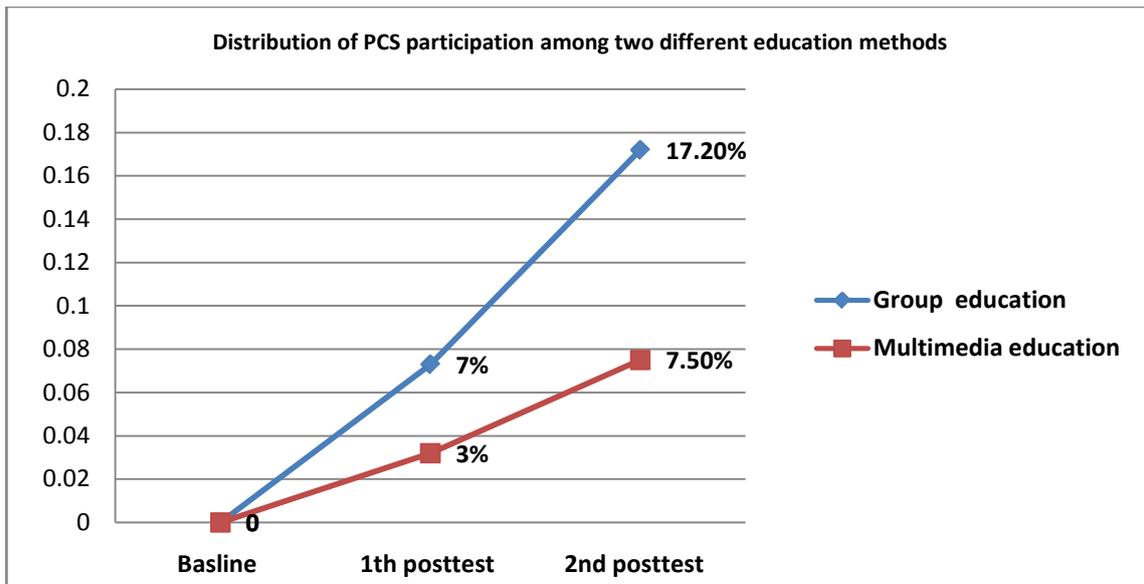


Figure 7. Distribution of PCS participation among subjects

Table 1. Mean difference of two educational methods for the sample baseline and 1<sup>st</sup> post-test (t test)

	Group	Mean	Std. Deviation	Mean Difference	t	P value
<b>Knowledge</b>	Group Education	64.34	12.00	12.52	6.35	0.00000*
	Multimedia Education	51.82	17.94			
<b>Susceptibility perception</b>	Group Education	28.25	25.64	26.40	7.86	0.00000*
	Multimedia Education	1.85	26.26			
<b>Seriousness perception</b>	Group Education	-3.83	19.68	7.13	2.40	0.01728*
	Multimedia Education	-10.97	25.92			
<b>Health motivation</b>	Group Education	38.25	15.21	26.23	12.21	0.00000*
	Multimedia Education	12.02	17.91			
<b>Barriers perception</b>	Group Education	-46.97	19.43	-47.24	-17.41	0.00000*
	Multimedia Education	0.27	22.43			
<b>Benefits perception</b>	Group Education	30.77	10.82	26.84	15.73	0.00000*
	Multimedia Education	3.93	15.21			

Table 2. Mean difference of two educational methods for the sample baseline and 2<sup>nd</sup> post-test (t test)

	Group	Mean	Std. Deviation	Mean Difference	t	P value
<b>Knowledge</b>	Group Education	62.26	15.41	13.52	6.17	0.00000*
	Multimedia Education	48.74	18.35			
<b>Susceptibility perception</b>	Group Education	4.29	21.39	25.13	8.71	0.00000*
	Multimedia Education	-20.84	23.21			
<b>Seriousness perception</b>	Group Education	0.42	20.91	15.29	5.23	0.00000*
	Multimedia Education	-14.87	24.20			
<b>Health motivation</b>	Group Education	34.00	16.01	34.02	22.77	0.00000*
	Multimedia Education	-0.02	3.06			
<b>Barriers perception</b>	Group Education	-26.14	25.95	-23.61	-8.50	0.00000*
	Multimedia Education	-2.53	15.70			
<b>Benefits perception</b>	Group Education	24.56	12.55	25.78	13.75	0.00000*
	Multimedia Education	-1.23	16.22			

### 4. Discussion

Prostate cancer is one type of cancer that can be prevented and cured if detected early enough [12]. The Egyptian people deny their susceptibility to cancer

prostate because of the beliefs of cancer. Current study is meaningful in having suggested basic materials by two different education methods to improve knowledge and change health beliefs regarding prostate cancer screening.

In the present study, men knowledge regarding PCS, there was no difference during the study period in all the sample's responses, while the first post-test increased knowledge in group education more than multimedia group. While men knowledge in 2nd posttest was decrease in group education less than multimedia group. These finding supported by Gursoy et al., [21] who studied "A Comparison of Three Educational Interventions on Breast Self-Examination Knowledge and Health Beliefs in Turkey" they found All of the training methods used in the study produced a significant increase in the participants' BSE knowledge, but group education women scored higher than others methods of education. Also, the current study findings were in agreement with Hossaini et al. [20] who studied "Comparing the Effects of Individual and Group Training Methods Based on Health Belief Model on the Belief and Practice of Bushehr Women Regarding Pap Smear Test" they found also individuals and groups education change in women knowledge regarding cervical cancer and pap smear.

In study by Çapık et al [11], who studied "The effect of Web-assisted education and reminders on health belief, level of knowledge and early diagnosis behaviors regarding prostate cancer screening" they found that the level of knowledge remained very low despite all interventions. However, it is remarkable that the level of knowledge about screening tended to rise as a result of the education given to the individuals.

HBM was one of the first and remains one of the best known social cognition models. HBM was one of the first models used to predict and explain variations in prostate cancer screening behavior among men [22].

In the present study, group education and multimedia group about prostate cancer and prostate cancer screening resulted in a significant change in the susceptibility perception, in the posttest compared to the pretest, while in the 2nd post-test there was acceptance decline in both groups. The reason for the lack of change after the training is that unknown future event is accepted as part of the traditional approach. Although the teachers might be living on the middle or upper level of socioeconomic conditions, they may have been affected by the more traditional attitudes based on God locus of control in their current daily lives. Therefore long term education may be required to change this traditional approach. This finding is consistent with the result of Avci et al [23] study with two educational methods through model and video education on teachers' knowledge, beliefs and behaviors regarding breast cancer screening.

In study by Blalock et al [24] who studies "Effects of educational materials concerning osteoporosis on women's knowledge, beliefs, and behavior" they found a significant change in the susceptibility perception at the end of their interventions by group education rather than self-learning methods.

In the present study, significant change was determined in seriousness of PCS perception after implementation planned group education more than multimedia group. The opposite of the results of the study by Çapık et al [11], who studied "The effect of Web-assisted education and reminders on health belief, level of knowledge and early diagnosis behaviors regarding prostate cancer screening"

they found no significant change was determined in seriousness perception in both studied groups.

In previous studies, significant changes were reported in the seriousness perception, after planned education in th in the studies conducted by Blalock et al [24] on osteoporosis, Heydari et al [10] on breast cancer and mammography. The number of available studies on health beliefs prostate cancer screening in men is rare, and the components have generally been used separately in descriptive studies. In addition, the sample groups in the present study include asymptomatic healthy individuals, in general, with only a few individuals with prostate cancer history in their families, friends and contact people. This condition may have been why there was absence of adequate seriousness among participants.

In this study, a significant difference was found in two important health belief components one begin benefits perception and barriers perception in group education subjects had increase in benefits perception and decrease in barriers perception after implementation program. On another side in the multimedia group had changed in benefits perception but less than changed in group education as for the barrier perception for these group had no changed during baseline, 1th posttest, and 2nd posttest.

These finding supported by Gursoy et al [21]. Who studied "Comparison of three educational interventions on breast self-examination knowledge and health beliefs" they found women's perceived benefits and confidence increased significantly in group education, whereas perceived barriers decreased in individually and pamphlet-trained groups. These finding opposite with study by Aein et al [25]. Who studied "comparing the effect of two different methods of education on breast self-examination: text messaging and lecturing" they found text message higher effect on changed barrier regarding self-breast examination to detect breast cancer more than lecture methods. Powell et al [26] who studied "A community-based randomized controlled trial of three different educational resources for men about prostate cancer screening" reported that informative education would remove the barriers in men and lead them to take a step for early diagnosis. Beside educational activities can help to minimize anxiety for men of such disease.

In the study by Heydari et al [10]. Who studied "comparison of two different educational methods for teachers' mammography based on the health belief model in Iran" they found multimedia education method did not make any changes in perceived benefits to mammography behavior during the time, but the group education with the discussion could promote the understanding from the benefits of mammography

The study results founded that there was increase in the health motivation among both groups after implementation of planned program. These results supported by Hossaini et al [20]. Who studied "Comparing the Effects of Individual and Group Training Methods Based on Health Belief Model on the Belief and Practice of Bushehr Women Regarding Pap Smear Test" they found improved in health motivation to be higher at the group education compared to multimedia group.

In the study by Demircelik et al [14]. Who studied Effects of multimedia nursing education on disease-related

depression and anxiety in patients staying in a coronary intensive care unit” reported that the positive change observed in the health motivation in both groups, especially in first three months. This is because any teaching method was occur change in health motivation and decrease anxiety level regarding disease risk.

In the present study found that group education participated in PCS more than multimedia group. This refers to the rate of participation in the screening increased prominently following the interventions. This finding indicates that reminders such as CD and the mobile message may be effective in promoting participation in the PCS. These results similar with Krist, et al [27]. Who studied “Patient education on prostate cancer screening and involvement in decision making “found that the experimental group was significantly higher compared to the control group participated in PCS. Also in the study by Wakefield et al [28]. Who studied “Development and pilot testing of an online screening decision aid for men with a family history of prostate cancer: reported that the individuals educated through the Internet participated in screening and stated that the information on the internet encouraged them to participate.

## 5. Conclusion

In conclusion, improvements in the knowledge score for prostate cancer screening in both different education methods. The positive change observed in the health belief components as susceptibility, seriousness, health motivation and benefits in both group but there was no change regarding barrier perception in multimedia. Similarly, increase rate of participation in both groups in the three months after implementation.

## 6. Recommendations

Based on the findings of the current study, the following recommendations can be suggested:

- Dissemination of prostate cancer screening through multimedia education based on HBM among men over 50 years to prevent the risk of prostate cancer.
- Periodic examination of the men health beliefs is crucial in any intervention program planning.
- Further researches: replication of the research on a large probability sample is recommended to achieve more generalization.

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