

# Evidence Based Practical Guideline for Promoting Testicular Cancer Preventive Behavior among Nursing Males' Students

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**Abstract:** Testicular cancer is the most common form of urogenital system cancers among young men aged 20–40 years. The incidence of testicular cancer is rapidly increasing. It is highly curable when detected and treated early. This study aimed to assess the effect of evidence based practical guideline on promoting testicular cancer preventive behavior among nursing males' students. A quasi-experimental study conducted at technical institute of Helwan university through academic year (2017-2018). A convenient sample of (117) male students were included in the study. Tools of data collection: 1<sup>st</sup> Self administrative questionnaire sheet, 2<sup>nd</sup> Champion health belief model scale, 3<sup>rd</sup> Observational checklist and 4<sup>th</sup> follow up card. finally there was a supportive material "Evidence based practical guideline with scientific film CD for technique of testicular self-examination (TSE). Results: Mean age of students was  $20.45 \pm 2.65$ . The study showed that there was a significant increase in the mean score of correct complete knowledge about TSE from 2.6% pre to 89.7% during follow up post application of guideline ( $p=0.001$ ), furthermore, a positive improvement in the practices of the students toward TSE was observed through that the majority 94% of sample had incorrect performance for TSE pre training and application of guideline changed to 9.7% during follow up post application of guideline ( $p=0.001$ ). depend on these findings the researchers concluded that evidence based practical guideline designed based on health belief model has a positive effect on promoting testicular cancer preventive behavior on nursing students by improving their knowledge level self-efficacy practices and positive attitude regarding to TSE. So the researchers recommended that disseminate the TSE guideline application among males at different stage of life started from adolescents age is highly recommended to reduce risk of testicular cancer and its consequences on males reproductive health. Integrate the concept of TSE as screening procedure to early detection of testicular cancer and other testicular disorders into undergraduate curriculum of nursing faculties. Further research on large scale is required to investigate barriers influencing of TSE practice among Egyptian males.

**Keywords:** Testicular self -examination - Testicular cancer - evidence based practical guideline health belief model.

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## 1. INTRODUCTION

Testicular cancer (TC) develops in the testicles, a part of the male reproductive system. Despite improved treatment modalities, (TC) still remains the third leading cause of cancer deaths among men aged 18 to 50 years<sup>[1]</sup>. (TC) incidence rates are increasing worldwide making it the most common malignancy in males with the majority of those cases affecting males aged 35 years and younger<sup>[2]</sup>. Germ cell tumor which develops in the sperm producing cell is the most common type of testicular cancer by accounting around 95%. Painless lump swelling in the testicles, a dull ache in scrotum and feeling of heaviness in the scrotum are the most common symptom of TC. Men with family history of testicular cancer and being born with undescended testicles are expected to increase the risk of developing TC<sup>[3]</sup>. The stigma of weakness attributed to men who seek help or a lack of awareness and knowledge about the risks and warning signs of male specific diseases, such as testicular cancer<sup>[4]</sup>.

According to World Health Organization, the burden of any type of cancer can be controlled and reduced through implementation of evidence based strategies for prevention, early detection and management of the patient<sup>[5]</sup>. Although early detection through regular screening is utmost importance for recovery and survivorship of the disease, including both screening by a primary care physician and testicular self-examination (TSE), but there are barriers for men as generally lack of the knowledge and awareness necessary to discuss testicular health in an informed manner with their primary care physician or nurse to perform TSE<sup>[6]</sup>.

Screening is one of three important components of preventive intervention categories. Screening has been defined as the identification among apparently healthy individuals of those who are sufficiently at risk of specific disorders to justify a subsequent diagnostic test or procedure<sup>[4]</sup>. Furthermore, Screening is aimed at the earlier detection of life threatening disease in asymptomatic stage. Health providers use the disease prevention strategy of risk appraisal and risk reduction to help individuals and groups maximize their self-care activities. Self-examination is one of the self-care activities for health promotion, which increase the man's awareness about the importance of screening procedures and the benefits of early detection for diseases and proper treatment, less complication and better health status<sup>[7]</sup>. So nurses have a significant role in integrating this strategy into contemporary practice, while continually advancing and maximizing TSE education programs to reduce the mortality and morbidity caused by testicular cancer<sup>[8]</sup>.

Testicular self-examination (TSE) is a form of early diagnosis for TC which is recommended to be done by men's above 15 years of age once a month after warm bath or shower<sup>[9, 10]</sup>. The scrotal skin is most relaxed at this time and the testicles can be felt more easily. Start by placing the index and middle fingers on the underside of the testicle and the thumb on top. Gently roll the testicle between the thumb and fingers feeling for any small lumps about the size of a pea, continue by examining the vas deferens, the tube that runs along the back of the testicle. Repeat this procedure for both sides to find any abnormality as firm area on the front or on side of the testicle. Also examine the inguinal lymph nodes. Using the pads of two fingers, gently but firmly press along the inguinal crease<sup>[11]</sup>.

Testicular self-examination has got advantages such as being easily learnt and applied, being safe, inexpensive and noninvasive, not necessitating any special equipment, no carcinogenic risk and not taking much time Evidence suggests that early detection of TC improve in the reduction of morbidity and mortality<sup>[12]</sup>.

Early detection of abnormalities through regular self- examination is the key to maintaining men's health and reducing chance of testicular cancer. (TSE) is a simple procedure that can reduce the poor outcomes of cancer if men are properly instructed and encouraged to use it regularly<sup>[13]</sup>. Furthermore self-examination is a health promotion behavior that creates awareness and can guide the early diagnosis of TC. Nurses play a significant role in teaching the early symptoms of cancer and the ways to identify these symptoms. Nurses can also research patient attitudes , health behaviors, and nursing initiatives can be developed to change these attitudes and increase beneficial health behaviors through the health belief model scale (HBMS) application , The HBMS used in TC screenings for males to measure susceptibility, seriousness, health motivation, barriers, benefits, and self-efficacy<sup>[14]</sup>. The HBMS explains the relationship between a person's beliefs, behaviors and the effect of personal motivation on health behaviors<sup>[12]</sup>.

The Champion Health Belief Model Scale (CHBMS) is the most commonly used framework to understand health behavior. HBM is a conceptual model that has been given a direction to explaining health related behaviors. The model assure that to plan effective educational intervention, the individual's Perceived severity refers to subjective assessment for severity of health problem and its potential consequences. Perceived susceptibility refers to subjective assessment of risk for developing a health problem. Perceived benefits regarding health-related behaviors are also influenced by the perceived benefits of taking action. Perceived barriers refer to an individual's assessment of the obstacles to behavior change<sup>[14]</sup>.

Nurses play a key role in promoting health and wellness. Through health promotion and risk reduction, the individual develops behavior patterns that promote a healthy lifestyle and reduce the risk of disease. The challenge for nurses is to find ways to motivate clients and families to develop health-promoting behaviors. Client teaching is a major intervention for promoting health .So the nursing role should develop and adapt to a simple method to facilitate implementation of healthy behavior as leaflets and guidelines for standard of care. Nursing education is an important aspect of self-management to increase public knowledge and awareness of TC and TSE amongst male populations<sup>[15]</sup>.

Guidelines are essential for all healthcare professionals to ensure safe and high-quality care. It has been demonstrated that structured implementation material supported nurses in the guidance of patients with a complex treatment regimen. Guidelines have been found to support nurses' clinical decision-making skills with regard to assessment and treatment, referral, supplementary prescription, and therefore contribute to evidence-based nursing and holistic care <sup>[16]</sup>.

#### **Justification of the study:**

The incidence of testicular cancer is estimated to have doubled in the past 40 years. The cancer burden is felt more acutely in developing countries where there are limited resources for prevention, diagnosis, and treatment of cancer <sup>[4]</sup>. Despite this growing burden, testicular cancer continues to receive low public health priority in Egypt. So the men need to health education campaigns to increase awareness about TC risk and to empower them to value their testicular health through preventive, screening and early detection measures to reduce morbidity and mortality rate. Moreover, it is necessary for nursing students to have the necessary skills and attitude towards TSE to be able to carry out the procedure on male patients and encourage the patients to examine their testes. These prompted the researchers to embark on assessing awareness and practice of TSE among male nursing students.

#### **Aim of the study:**

This study was aimed to assess the effect of evidence based practical guideline on promoting testicular cancer preventive behavior among nursing males' students through the following objectives:

- Assess nurses' male student's knowledge, practices and behavior regarding to testicular cancer preventive behavior as testicular self-examination.
- Design evidence based practical guideline for testicular self-examination.
- Investigate effect of evidence based practical guideline application on nurses' male student's knowledge, practices and behavior regarding to testicular self-examination.

#### **Research Hypothesis:**

Testicular self-examination evidence based practical guideline has a positive effect and will enhance nurses' male student's knowledge, practice and behavior regarding TSE for prevention and early detection of testicular cancer.

## **2. SUBJECTS AND METHODS**

#### **Research Design:**

A quasi-experimental study conducted in technical institute of Nursing at Helwan University through academic year (2017-2018) the data collection beginning in September 2017 and completed at the end of June 2018. A convenient sample of (117) male students was included in the study. The sample size was (132) male students. The researchers were excluded 13 students of pilot study from sample. in addition, two students in first year withdrawal from study during follow up period may be due to the research out of their interest or their loaded by clinical area duties.

#### **Tools of Data Collection:**

Four tools of data collection were used:

**I.** Self administrative questionnaire sheet that developed for the current study depend on relevant books and articles. It consists of three parts. 1<sup>st</sup> part: to assess socio-demographic characteristics of the studied sample. 2<sup>nd</sup> part: to assess family history related to testicular abnormalities. 3<sup>rd</sup> part: to assess males' students' knowledge regarding testicular cancer and testicular self-examination. It was consisted of (9 items) questions related to TSE and testicular cancer as age, high risk group, signs & symptoms of testicular cancer, concept of TSE, importance of TSE and suitable time of TSE, it evaluated on the basis of (incorrect scored as =1, incomplete correct scored as=2, and complete correct scored as=3) (possible score 1–27). The reliability was evaluated on the basis of the test-retest method, the correlation coefficients (r) obtained from the test-retest evaluations were 0.90. The time allowed to fill questionnaire was 15 minutes.

**II.** Champion Health belief model scale for testicular cancer self-examination it was adopted from <sup>[14, 17]</sup>. It was consisted of 37 items each item was scored on 5-points likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). point Likert scale was further reduced to a 3-points scale by collapsing 'agree' and 'strongly agree' into one category ('agree') and collapsing 'disagree' and 'strongly disagree' into another category ('disagree'). The health belief model scale was subdivided into six subscale which are perceived susceptibility (five items), perceived seriousness of testicular cancer (ten items), perceived barriers of performing testicular cancer screening (nine items), and perceived benefits of testicular cancer screening (six items), self-efficacy (four items), and motivation (three items). The range for the total scale was 1-185. A reliability coefficient for internal consistency was 0.90.

**III.** Observational checklist adopted from <sup>[4]</sup>. It was used to assess students' accuracy of practicing for TSE. It consisted of (10) steps, each step has two categories were score (2) for correct technique, but score (1) for incorrect technique Scoring system for this part; (1 < 10) Incorrect and (10 – 20) Correct. Items were summed-up then total mean score were done for each category and for total. Finally, total pre and post- and follow up practice mean scores were compare to evaluate the effects of guideline on nurses' college practice related to TSE. A reliability coefficient for internal consistency was 0.88.

**IV.** Follow up card: to report abnormal findings detected by male students self- report with their reaction for disorders and referral to medical consultation to prescribe treatment

Tools validity and reliability: The quantitative face validity and the qualitative content validity of the questionnaire were assessed through jury consist of 3 expert faculty members in obstetric and gynecological nursing beside endrology field to test its contents and face validity. Accordingly their comments some statements are rephrased, adding and deleting some questions were done.

A supportive material: "Evidence based practical guideline it was designed by researchers in simple Arabic-language in the light of relevant literature <sup>[11, 18]</sup>, then reviewed by jury of 3 expertises in the field of obstetric and gynecological nursing, beside andrology field to test its contents and face validity. Accordingly their comments some statements are rephrased, adding and deleting some questions were done. The guideline divided into 3 parts as follows: Part one: concerned with the essential information included illustration to anatomy of male reproductive system, risk factors ,and warning signs of testicular cancer Part two: about concept of testicular self-examination(TSE) importance and illustration technique Part three: involved to copy of check list. Beside scientific film CD for technique of (TSE).

### **Ethical consideration**

Oral consent was obtained from nurses' college .they had a right to withdrawal from the study at any time. Confidentiality of students' information was secured by using code number for sheets without name of student. The study methodology is safe with no harmful for students. Also researchers informed the students, that they had right to refuse participation in the study or withdrawal at any time. The information obtained used only for scientific research.

### **Pilot study:**

Total of (13) students were chosen randomly from the studied sample as representing 10% of the total. These students were excluded from the total sample of the study. It was conducted to evaluate the efficiency and validity of the tools. The tools and guideline were modified accordingly and select scientific terminology more simple in addition translates the guideline to Arabic language to maximizing the applicability.

### **Data collection technique:**

Steps of data collection divided into 3 phases:

1<sup>st</sup> Phase (implementation): An official permission was obtained approval letter clarifying the title, purpose and setting of the study was obtained.

- 1<sup>st</sup> session: the researchers attended at primary sessions with students at classroom. The data collection was conducted through 2 days per week from 9 am to 2 pm for each grad of students (depending on free or break time of students).

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- The researchers explain the aim of study and obtain the oral approval to participate in the study depend on the schedule with head manger of scientific department permission.
- Researchers divided studied students randomly into 4 groups each group included 25 or 30 students.
- Tools were distributed and explained to students to fill them the questionnaires related to the health belief model was distributed to assess socio-demographical data, knowledge and attitude toward testicular cancer and TSE in the presence of the researchers to answer any student's questions.
- The researchers collect each group separately for data collection pre -intervention depends on their schedule.
- 2<sup>nd</sup> session related to the practical part after completing the pre-test, the students were attended an educational & training sessions was implemented for each group separately. Each session took 45 minutes in the following technique: related to the knowledge provided which aimed to enhance the awareness about risk of testicular cancer and early detection preventive behavior as TSE. Visual aids were used as video for TSE technique then the researchers explained it to students through group discussion & clinical training on simulator at lab to help students in understand and how applied proper technique of TSE. At the end of the sessions evidence based guideline, follow up card and check list were distributed on the students.

2<sup>nd</sup> Phase (Evaluation): The researchers assess accuracy of performance about TSE for students and re-demonstration technique if needed to students about TSE on simulator model at lab. Researchers conduct several interviews with selected students for filling tools of data collection post- intervention immediately to evaluate the effectiveness of the practical evidence guideline

3<sup>rd</sup> Phase (follow up): on subsequent follow up session post assessment was conducted after 3 months to assess changes in student's knowledge, behavior and practice regarding TSE to early detection of testicular cancer. Data have been collected, follow up and analysis.

**Data analysis:**

The collected data was coded and analyzed by researchers through using in tables and figures. Data were analyzed by using numbers and percent for qualitative variables, mean and standard deviation used for quantitative variables, pearson correlation used to find out the correlation between quantitative variables, paired t- test used to compare mean scores of quantitative variables pre and post intervention, and wilcoxon test used to compare mean scores of quantitative variables that not following normal distribution curve pre and post intervention. Statistical significance of the results was considered as follows:  $P \leq 0.001$  highly significant  $\leq 0.05$  significant  $> 0.05$  not significant.

**3. RESULTS**

Table (1): Percent distribution of nurses' males' regarding to Socio-demographic characteristics (n=117):

**Table (1) shows that nurses students mean age (20.45 ± 2.65) years, while (71.8) of them came from urban area.**

Items	No	%
Place of residence:		
Urban	84	71.8
Rural	33	28.2
Age:		
Mean ± SD	20.45 ± 2.65	

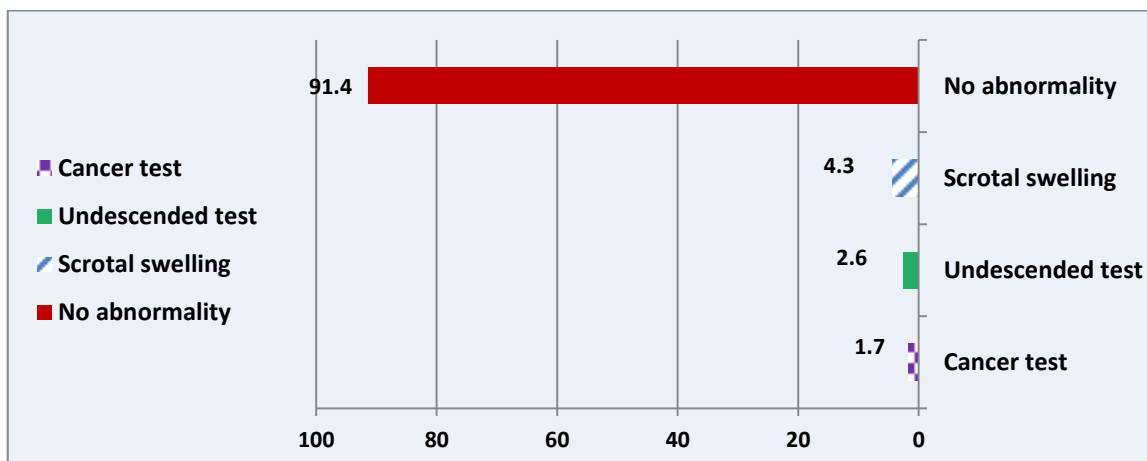


Figure (1): Percent distribution of nurses' males' regarding to family history of testicular abnormalities:

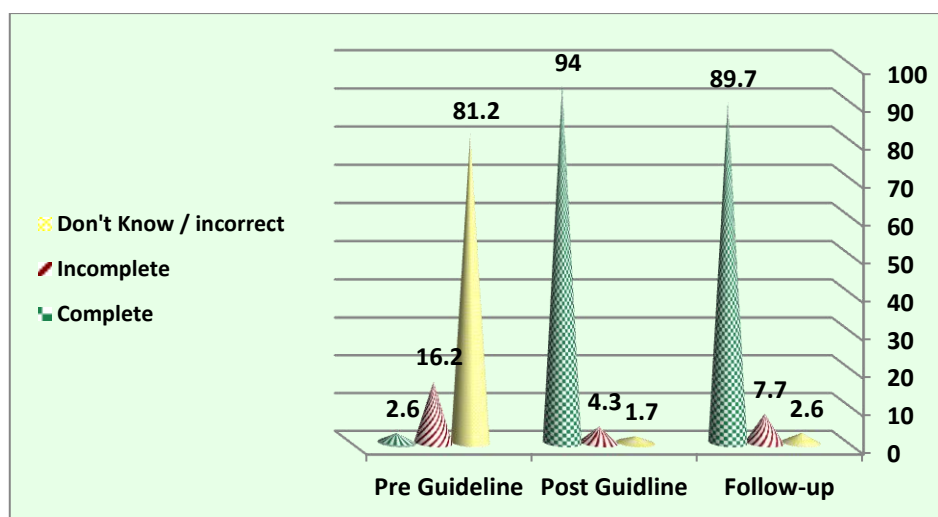


Figure (2): Percent distribution of nurses' males' knowledge about testicular cancer (TC) and testicular self-examination (TSE) through 3phases of the study:

#  $X^2 = 12.03$  P value= 0.001\*

@  $X^2 = 13.22$  P value= 0.001\*

# Nurses males' knowledge Pre versus post @ Nurses males' knowledge Pre versus follow-up

Table (2): Comparison of nurses' males' student's health belief scale for testicular cancer and preventive behavior (TSE) through 3 phases of the study:

Health belief subscale dimensions:	Pre-guideline	Post-guideline	Follow up ( 3 months)	ANOVA test (F)	P value
	Mean ± SD	Mean ± SD	Mean ± SD		
Susceptibility(sensitiveness)	5.68 ± 1.07	19.66 ± 1.98	23.12 ± 1.03	11.54	0.001**
Perceived severity for TC	10.06 ± 2.15	38.98 ± 2.45	46.05± 2.32	13.36	0.001**
Barriers to TSE	42.89± 1.04	36.25 ± 2.33	9.62 ± 2.03	12.44	0.001**
Benefits of TSE	6.72 ± 0.93	24.57 ± 2.89	28.67 ± 2.14	13.72	0.001**
Self-efficacy of TSE	4 .87 ± 1.64	15.22 ± 0.82	18.33 ± 1.64	12.87	0.001**
Motivation of TSE	3.62 ± 0.68	10.01 ± 0.27	13.63 ± 0.95	12.43	0.001**

Table (2): illustrates that there was a highly statistical significant change (p= 0.001) in male students' health believes and behaviors regarding testicular cancer preventive behavior (TSE) barriers, benefits, self- efficacy and motivation level pre and post intervention immediately and after (3months).

Table (3): Nurses male's students' frequency and accuracy of practice regarding testicular self-examination through 3 phases of the study:

Items	Pre-guideline		Post-guideline		Follow up	
	N= 117	%	N= 117	%	N= 117	%
Practice of TSE:						
• Regular monthly practicing	2	1.7	80	68.4	94	80.3
• Irregular practicing	17	14.5	18	15.3	18	15.3
• Never practiced	98	83.8	19	16.3	5	4.4
Wilcoxon test	@ Z = 12.52 P= 0.001**					
P value	# Z = 15.13 P= 0.001**					
Accuracy of practice:						
- Incorrect technique	110	94.0	12	10.3	10	9.7
- Correct technique	7	6.0	105	89.7	107	90.3
X <sup>2</sup>	@ X <sup>2</sup> = 14.25 P = 0.001**					
P value	# X <sup>2</sup> = 17.06 P = 0.001**					

\*\* Highly statistical significant @Nurses males' practice of TSE Pre versus post

#Nurses males' practice of TSE Pre versus follow-up

Table (3): revealed the majority of students 83.8% never practiced to TSE, also the large percent 94% of sample had incorrect performance for TSE pre application of guideline changed to 9.7% during follow up post application of guideline. Also the table clarify there was a highly statistical significant change in male students' practices regarding testicular self-examination (TSE) pre and post intervention immediately and follow up after (3months).

Table (4): Percent distribution regarding to abnormal findings reported by males' students needed to medical consultation:

Items	Pre-guideline		Post-guideline		Follow up	
	N= 8	%	N= 28	%	N= 30	%
-Scrotal swelling	3	37.5	11	39.4	12	40.0
-Tenderness & heaviness of testicle	3	37.5	9	32.2	10	33.3
-collection of fluid in scrotum						
-Decrease size of one testis	2	25.0	4	14.2	4	13.3
	0	-	4	14.2	4	13.3

Table (4) reveals causes of seeking medical consultation pre utilization of guideline are scrotal swelling, Tenderness & heaviness of testicle and collection of fluid in scrotum represented 37.5 %, 37.5 % and 25% respectively. While, seeking causes post utilization of guideline added a new abnormalities as decrease size of one test represented 14.2 %. All nurse's colleges who discovered abnormal findings post utilization of booklet have seeking medical consultation

Table (5): Correlation between total scores of Nurses male's students' knowledge, practice and behavior through phases of the study:

Items	Practice	Behavior
Knowledge Pre-guideline	r =76.7 p=0.001**	r=78.2 p=0.001**
Post-guideline	r = 92.4 p=0.001**	r=90.3 p=0.001**
Follow-up	r =94.6 p=0.001**	r =96.2 p=0.001**

\*\* Highly statistical significance (p=0.001)

Table ( 5 ) reveals that there was a highly statistical significance correlation between nurses male's total score of practices and behavior (p=0.001)with total score of knowledge at pre-intervention, post and follows up for application of evidence based practical guide line.

#### 4. DISCUSSION

Nurses play important advanced and extended roles in health promotion. These include self-management support, patient's education and counseling, referral to other health professionals, monitoring disease and treatments <sup>[19]</sup>, nurses should provide care that is based guidelines according to national and local contexts. So, this study was conducted to evaluate the effect of evidence based practical guideline on promoting testicular cancer preventive behaviors among nursing males' students.

The results of the study showed that the average age of the studied sample was ( $20.45 \pm 2.65$  years) the researchers select this age stage, which is the late stage of adolescence due to the importance of raising awareness about the risk of testicular cancer due to (TC) remains the most commonly occurring cancer in young men (aged 15-35 years). Early detection of abnormalities through regular self -screening is the key to maintaining men's health and reducing chance of testicular cancer. Figure 1 shows that there is no family history of testicular cancer among most of the study sample. 91.4% while a limited percentage has this problem in the family does not exceed 1.7.

The present study reveals that total score of correct complete knowledge for nurse's colleges regarding TSE ,it was limited percentage of student 2.6% had a correct complete information, this knowledge may be they received from internet which considered very beneficial & powerful way to disseminate information among educated population. But this percentage changed to reach 94.0% post- utilization of evidence based practical guideline then changed to 89.7% after 3 months. While more than three quarters of them had an incorrect knowledge before utilization of guideline, this percentage decrease to reach 1.7%, this changes resulting from effect of receipt the explaining information of guideline on nurses' college knowledge.

The present findings in the same line with <sup>[15, 20]</sup> who studied testicular self -examination among young adult men emphasized that knowledge of self-examination increases significantly for the intervention group receiving the training. Moreover the present results agree with <sup>[21]</sup> who mentioned that the most students had never heard of TC or TSE, they had limited knowledge of common symptoms of testicular cancer (TC). There were contraindicated for the current results with the study for <sup>[22]</sup> among Male Medical Students of University of Nigeria, the findings revealed that the majority 110(64%) of the respondents have good knowledge level of testicular cancer and testicular self-examination

The current findings is partly surprising the researchers and put light on the importance of instructional practical guideline effect on students behavior, The result illustrates there was a highly statistical significant change in male students' health believes and behaviors these clarify in health belief subscale items regarding testicular cancer preventive behavior (TSE) pre, post- intervention and follow up after (3months) especially self- efficacy and motivation level. Also there are a big changes in perceived severity about TC among participant students from (10.06% to 46.05%) pre and after 3months for application of practical guideline This result may be explained by participants according to their belief that cancer only affects older age groups, therefore, they do not need to avail themselves of prevention information or practice self-examination at their current age. Also, lack of knowledge about testicular cancer, TSE, beside a lack of motivation contribute to perform TSE regularly .but a positive improvement in the behavior of the students toward TSE was observed after education through guideline. The current results agree with <sup>[23]</sup> study results showed there was a significant increase in the self-effectiveness, and a significant decrease in the scores related to the obstacles regarding TSE education post TSE training.

Regarding to practicing of TSE, the present study shows the male nurse's students were reported TSE regularly practice was limited percentage only 1.9% of sample pre-application of guideline but these percentages changed to reach (72.5%and 80.3%) post and after 3months respectively. on other hand the researchers of current study observed that limited participants (10.3%, 4.3%) post utilization of guideline and after 3months respectively not performed the TSE due to poor of competent to perform technique and some of them perceived TSE is embarrassing procedure.

Despite the researchers cannot confirm about the accuracy of performance or the abilities of students to detect any testicular abnormalities through TSE with them selves', but the findings of study clarify 28 cases of abnormalities were detected by self- report of students as (scrotal swelling, tenderness, heaviness of testicle, collection of fluid in scrotum and Decrease size of one) and these cases referral to medical consultation to follow up. These cases considered less than



quarter of total sample, but this may be due to some causes as students failed to perform TSE or embarrassment to report about their testicular abnormalities. Despite that, these findings confirmed the great effect of practical guideline application on student's behavior, beliefs and practices.

The present results in the same line with the study for the effect of TSE education on knowledge, performance, and health beliefs of Turkish men for <sup>[23]</sup> study results showed that TSE training is effective in the young men, but should be repeated periodically for the better efficacy. But the present results contraindicated with <sup>[20]</sup> study findings for 323 male students in university of Uganda. Most participants (87%) reported a lack of skill for performing TSE, 80% perceived TSE as embarrassing and 79% perceived TSE as time consuming. In addition the study for <sup>[22]</sup>, has shown that while students have received adequate teaching on TSE and have adequate knowledge, they have not translated this into practice as only 33 (34%) of them have performed TSE. The major reason, as revealed in our study, is that few students do not feel competent to carry out TSE.

the present study shows a highly significant correlation between nurse's students' knowledge, practice and attitude pre & post and during follow up utilization of evidence based practical guideline of TSE. This correlation clarifies through (r) value which increased post intervention and during follow up (3months). These findings put highlights on the importance of awareness issue through different methods of nursing healthy education to undertaking successful self-screening examination to early detection of testicular cancer and other disorders.

Finally the researchers concluded that male nurse's students have a general lack of knowledge regarding TC and TSE reflect on their practices and behavior. but this results positively changed due to application of evidence based practical guideline designed based on health belief model which has a positive effect on promoting testicular cancer preventive behavior among nursing students. The present study draws attention about important point that evidence based practical guideline was positively effective on improvement of nurses' students' knowledge, practice and attitude towards TSE to prevention and early detection of testicular disorders or cancer.

Accordingly the researchers recommended that disseminate the application of evidence based TSE guideline among males at different stage of life started from adolescence age is highly recommended to reduce risk of testicular cancer and its consequences on male reproductive health. Integrate the concept of TSE as screening procedures to early detection of testicular cancer and other disorders into undergraduate curriculum of nursing. Further research on large scale is required to investigate barriers influencing of TSE practice among Egyptian males.

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