

ADDIS ABABA UNIVERSITY  
COLLEGE OF HEALTH SCIENCES  
SCHOOL OF ALLIED HEALTH SCIENCES  
DEPARTMENT OF NURSING AND MIDWIFERY

KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS TESTICULAR SELF EXAMINATION AMONG REGULAR UNDERGRADUATE NON-HEALTH SCIENCES UNIVERSITY STUDENTS, DEBRE TABOR, AMHARA REGIONAL STATE, NORTH WEST ETHIOPIA

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ADDIS ABABA, ETHIOPIA

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## Approval by the Board of Examiners

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## **ACRONYMS**

<b>AAU</b>	Addis Ababa University
<b>ACS</b>	American Cancer Society
<b>BC</b>	Breast Cancer
<b>BSC</b>	Bachelor of Science
<b>BSE</b>	Breast Self- Examination
<b>CI</b>	Confidence Interval
<b>DTU</b>	Debre Tabor University
<b>HIV</b>	Human Immunodeficiency Virus
<b>KAP</b>	Knowledge Attitude and Practice
<b>OR</b>	Odds Ratio
<b>SD</b>	Standard Deviation
<b>SPSS</b>	Statistical Package for Social Sciences
<b>SRS</b>	Stratified Random Sampling
<b>TC</b>	Testicular Cancer
<b>TSE</b>	Testicular Self- Examination
<b>UK</b>	United Kingdome
<b>USA</b>	United States of America

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## **ABSTRACT**

**Background:** Testicular self-examination is a screening technique that involves inspection and palpation of the testes for early detection of testicular cancer. The incidence of testicular cancer among 15-35 aged males have been increased worldwide despite being rare in the general population. A significant number of adult men presented with advanced stage of testicular cancer due to lack of information, knowledge and awareness of early detection measurements. Despite of increasement, nine out of ten testicular cancer cases can be detected by testicular self-examination and almost 90% can be cured if earlier detected.

**Objective:** To assess knowledge, attitude and practice of Testicular-self-examination and associated factors among non- health sciences Debre Tabor University undergraduate regular students, North West Ethiopia,2017

**Methods:** An institution based cross - sectional quantitative study among 422 Debretabor University students was done. Study participants were stratified based on their year and field of study and selected by simple random sampling method. Pretested structured self-administered questionnaire on March 13/2017 was applied. The data was entered using Epi data version 3.1statistical software and analyzed using statistical package for social sciences version 22.0. Univariate, bivariate and multivariate analyses were carried out.

**Results:** A total of 422 respondents were participated with a response rate of 415(98.3%). Out of the respondents 132 (31.8%) had good knowledge, half 213(51.3%) of respondents had favorable attitude and 49 (11.8%) had good practice. The major reason 227(62.0%) for not to perform testicular self- examination was not having knowledge about testicular self- examination. Family history of testicular cancer and cues to action were the predictor for knowledge, religion and self-efficacy were predictor for attitude and history of testicular cancer and self-efficacy were predictor for practice of testicular self- examination at  $P < 0.05$ .

**Conclusion and recommendations:** Testicular self- examination knowledge and practice among respondents were inadequate due to lack of health promotion for testicular self- examination, but their attitude towards TSE was optimal. Debre Tabor University needs to organize workshops, seminar and conference to educate students on knowledge, attitude and practice of TSE. Ministry of health also recommended to advocate early detection of TC through TSE for young adult.

**Key words:** Testicular self-examination, knowledge, attitude, practice, student, Ethiopia

# 1. INTRODUCTION

## 1.1. Background Information

Testicular-self-examination (TSE) refers to the procedure in which a man checks the appearance as well as the consistency of his testicles. It is a simple, painless procedure, easy-to-learn and requiring about three minutes to complete. It is an important clinical tool for early detection of TC (1, 2). TSE offers adolescent boys and young men the opportunity to routinely and systematically examine their testicles. In this regard, it has been recommended that young men between the ages of 15 - 35 years should practice TSE every month (3). This recommendation is supported by the fact that nine out of every ten testicular cancer ( TC) is first found by the individual by himself (4). The rising global incidence of malignant diseases found to be a serious of health concern, particularly in developing countries where the increase is occurring at a faster rate (5). Cancer is among the leading malignant diseases and is also the second highest cause of mortality in Africa (6).

Worldwide ,Testicular Cancer accounts for approximately 1% of all cancers in men and it is increased with two fold in the last 40 years (7). The incidence of TC among 15-35 aged males have been increased worldwide in recent years despite being rare in the general population (8). About 8820 men received new TC diagnosis and 380 died from this disease in 2014 in United States of America (USA) (9). In England, it was reported that nearly 2200 men were diagnosed with TC and 70 died from the disease in 2015 (2, 10). The prevalence and incidence of TC in Africa become rising and also the mortality rate of TC in Sub-Saharan Africa being increased due to poor public knowledge and awareness about TSE and TC (11).

In Ethiopia, testicular cancer case report accounts 5.4% among all new male cancer patients age greater than 15 years in oncology unit of Black Lion Specialized Hospital; the only oncology unit in Ethiopia (12). So, Early diagnosis and treatment is very important in TC. One of the ways to early detection of TC is regular self-exam of testicles (13). Men starting from puberty should examine their testes after a hot shower or bath, when the scrotum is looser and while standing. Performing a self-exam monthly allows you to become familiar with your normal anatomy and can eerily detect if you have encountered with problems (14).

Most TC can be found at an early stage. It is highly recommended to seek medical help if one experiences some of the following symptoms. These are a lump in one testis or a hardening of one of the testicles , an increase or in some cases a significant decrease in the size of one testis, abnormal sensitivity, loss of sexual activity, blood in or watery semen, generally feeling tired and buildup of fluid within the scrotum Most of the time a lump on the testicle is the first symptom or the testicle might be swollen or larger than normal (15).

The American Cancer Society (ACS) recommends a testicular exam as part of a routine cancer-related checkup. The ACS also advises men to be aware of TC and to see a health professional right away if they find a lump in a testicle. And also to appreciate whether there is abnormality or not all men should examine their testicles by themselves monthly after puberty (16).

## 1.2. Statement of the problem

Testicular cancer is relatively rarely diagnosed disease across the world (17). Even-though TC accounts for only 1% of all male cancers in the world, it is the most common cancer in younger men aged 15–35 years old (1, 18). Despite improved treatment modalities, TC is the most frequent type of cancer and third leading cause of cancer deaths among young men age of high-risk groups (19).

The Two cancers which can be identified by regular self-examination are breast cancer (BC) for women and TC for men. But, breast self-examination (BSE) is gaining much attention among women in the sub-Saharan region, in the same region TSE in men remains very poor. Different literature revealed that the lump is easily detected at an early stage through frequent self-examination and can be effectively and safely managed (20). Scientists have found few risk factors that make someone more susceptible to TC. These are undescended testicle, family history of testicular cancer, HIV (human immunodeficiency virus) infection, carcinoma in situ of the testicle, having had testicular cancer before, race/ethnicity and body size (21).

A recent study in the world reported that 89% of the risk groups in particular young population such as university students below age 35 had never performed TSE and only 4% knew that men in 15 - 35 years old age group should perform TSE every month (22). For instance, in Iran 5% had knowledge of TSE and 10% were practicing TSE (23), in Uganda 14% of university students performed TSE regularly (24), in Malaysia 65.0% of male students have never performed TSE (25) and in Ethiopia as far as my knowledge is concerned, no research is done that shows the knowledge, attitude and practice of TSE among young adult males but, a significant number of adult men presented with advanced stage of testicular cancer due to lack of information, knowledge and awareness of early detection measurements. Recommended preventive techniques to reduce testicular cancer mortality and morbidity include TSE and clinical testicular examination. But, clinical testicular-examination requires hospital visit and expertise whereas TSE is an inexpensive tool that can be carried out by men themselves (26). So, an attempt have been made to increase public knowledge, attitude and practice of TSE among male population (27). The major factors for knowledge, attitude and practice (KAP) of TSE includes media information, culture, health professionals, friends, teachers, leaflets, guidelines and publication of health information (28). The researcher observed patients have presented with testicular cancer at Black Lion Specialized Hospital, with recorded deaths following the condition while

others were in severe pain and distress with advanced stage of TC disease. It is therefore necessary that young adult male specially university students to have necessary knowledge, attitude and practice towards TSE for early detection of TC. These prompted the researchers to embark on assessing knowledge, attitude and practice of TSE among male University students.

### **1.3. Significance of the study**

In Ethiopia, although much attention has been given to BSE, no studies have been done about TSE regardless of TC cases. Because the university students are mostly in 15-35 years of age who are the most susceptible group for TC, this study was planned to determine the knowledge, attitude and practice on TSE and factors affecting KAP of TSE among this age group. As far as my knowledge is concerned no research is done regarding with this topic in Ethiopia so, it can be a base line for future researcher. It also helps for policy makers to give much attention for TSE like that of BSE to detect TC earlier. Furthermore, in education it helps to prepare implementation plan to enhance the knowledge, attitude and practice of testicular self-examination in young adult.

## 2. LITERATURE REVIEW

### 1.1. Knowledge of Testicular Self Examination

Study conducted in Turkey on TC awareness and TSE among University Students with a total sample of 634 from different faculty showed that only 5.9% respondents have TSE Knowledge. Of the students who know about TSE they received this information from health professionals (43%) and internet (18%). Only 12.2 % of the students visited the physician for testicular examination. 4.9 % of students had a history of health problem with their testes like varicocele, cryptorchidism and hydrocele. Of the students 1.8 % had a family history of testicular cancer (29).

A research conducted about knowledge of TSE among male university students from low income (Bangladesh, Madagascar), middle income (South Africa, Turkey) and emerging economy (Singapore) countries using structured questionnaires about 2,061 male from 5 universities in 5 countries across Asia and Africa undergraduate university students with age range of 16-30 (mean age 21.4, SD=2.4) showed that 17.6% of males knew how to perform TSE; this knowledge proportion was above 20% in Bangladesh and Singapore, while it was the lowest (12.2%) in Madagascar (30). A research done on TSE a test of the health belief model and the theory of planned behavior in Ireland among 198 undergraduate male participants showed that almost half of the sample 61% reported that they knew how to perform TSE (31).

Research done on knowledge of TSE among Nigerian adolescent secondary school boys with a total sample size of 594 with quantitative cross sectional study design showed that only seven (1.3%) respondents have heard about TSE and the information was obtained from friends and peers. None of the students received information on TSE from healthcare providers (32). Across-sectional study conducted in Nigeria again on knowledge of TSE among 18-50 years age of male university students with a total sample of 920 showed 48% of respondents haven't prior knowledge about TSE (18). Institutional based descriptive cross sectional research design was conducted regarding to Awareness and Practice of TSE among male University Students of Nigeria Enugu Campus about 172 participants revealed that majority 116 (67.4%) of the respondents said men who have blood relatives with testicular cancer are more likely to get TC. Respondents knowledge level for TC showed that 110(64%) have good knowledge (33). A research done among 323 male students in Uganda university with self-administered questionnaire about Knowledge, perceived risk and barriers to TSE showed that majority of

participants (87%) did not know which age group was most at risk for TC, when to perform TSE (71%) or whether testicular lumps are a sign of TC (77%) (34).

## **1.2. Attitudes of Testicular Self- Examination**

A study done on TSE health belief model and the theory of planned behavior in Ireland among 198 undergraduate male participants showed that more than half of the sample 62% demonstrated a positive intention to do so after questionnaire administered (31). Research conducted on TSE among Nigerian adolescent secondary school boys revealed that nearly half (47.2%) of the students had a positive intention to start performing TSE regularly after hearing of TSE (through the questionnaire) (32). A research done among 323 male students in Uganda University showed that most of participants perceived their risk for TC are low (32%), moderate (58%). The mean perceived risk for TC was (  $1.8 \pm 0.61$ ) (34).

## **1.3. Practice of Testicular Self -Examination**

A descriptive research was done at Ireland on TSE health belief model and the theory of planned behavior among 198 undergraduate male participants showed that almost half of the sample (41%) never practice TSE, 5% self- examined once a month and 5% self -examined 10 or 11 times per year (31). A probability cross sectional quantitative study conducted at Turkey on TC awareness and TSE among University Students from different faculty revealed that only 17.7% respondents performed TSE (29). TSE among male university students from low income, middle income and emerging economy countries showed that 86.4% of respondents had never practiced TSE in the past 12 months, 7.1% 1-2 times, 3.5% 3-10 times, and monthly TSE was 3.1%. The proportion of past 12 month TSE was the highest (17.6%) among male university students in South Africa and the lowest (7.3%) among students in Singapore (30). Research done on TSE among Nigerian adolescent secondary school boys: KAP with cross sectional study designs about 594 participants showed that none of them have done TSE in the last three months (32). Across-sectional study conducted in Nigeria on practice of TSE among 18-50 years age of male university students with a total sample of 920 showed only 1.0% ever performed TSE(18). Institutional based descriptive cross sectional research design was conducted regarding to Awareness and Practice of TSE among Nigeria University undergraduate students out of 172 participants revealed that 79(45.9%) respondents ever done TSE, majority 71(89.9%) did TSE by themselves. From students who were done TSE 20(25.3%) of respondent performed TSE every

month whereas 35(44.4%) respondents performed every year (33). A research conducted at Uganda University among 323 male students regarding to TSE few participants (14%) were performed TSE regularly (34).

#### **1.4. Factors Affecting Knowledge, Attitude and Practice of Testicular Self-Examination**

Study conducted at South Australia on a study of knowledge and behaviors of young men regarding to TC and TSE among 15-34 year old males with a sample of 119 showed that psychosocial factors such as maleness and inadequate utilization of available health services were underlying cause for not to performing TSE (35). Cross-sectional study conducted at Florida, USA to assess factors associated with TSE among unaffected men from multiple-case testicular cancer families with 99 participants revealed that physician recommendation for performing TSE/cue to action (OR = 6.6, 95% CI 2.0, 21.1) and having higher levels of cancer worry about TC (OR = 1.6, 95% CI 1.1, 2.3) were significantly associated with practice of TSE at  $P < 0.05$ . Factors not significantly associated with regular performance of TSE included marital status, level of education and having a prior testicular abnormality (36).

A cross-sectional study was conducted in a convenience sample of 203 male high school students in USA on adolescent males' knowledge and attitudes toward TC and TSE figure out among the study participants, 139 (68.5%) correctly identified the age group when TC most commonly occurred. In a logistic regression model, students who have never heard of TSE were more likely to report intention to delay health care seeking with symptoms of testicular cancer (AOR, 2.83; 95% CI(1.33-6.05);  $p = .007$ ) (37). A research done at Texas State University, USA on understanding of cancer: analysis of ethnic group variances among white, Hispanic, and black university students ( $n=958$ ) showed that all students know very little about cancer and their perceptions of cancer are bad with many students thinking that cancer and death are synonymous. Moreover, university students are unlikely to perform monthly or even yearly self-examinations for testicular cancers; black students have the lowest rate of self-examinations (38).

A cross sectional quantitative study conducted at Turkey on TC awareness and TSE among University Students from different faculty identified reasons of not practicing TSE were not having knowledge 83.4%, not seen as important 55.7%, anxiety 10.9%, feeling sinful 6.1% and guilty 3.1% (29). A quasi-experimental follow-up study was conducted in Turkish university students about 174 sample to evaluate the efficacy of TSE education on the knowledge,

performance, and health beliefs of young men which was performed at two stages: before and 3 months after education showed, there is a difference to practice TSE before and after education. Before education, 66.2% of the students did not know anything about TSE and the main reason for not to perform TSE was the lack of knowledge prior to education. The results showed a significant increase in the perceived benefits in terms of TSE after education ( $p < 0.05$ ) (39). A study conducted in United Kingdom (UK) about the role of social-cognitive and emotional factors on TSE among risk groups with a sample of 115 showed that perceived control and anticipated relief positively predicted with TSE within the last month and both these factors also positively predicted the intention to self-examine in the future (40). Experimental research design again conducted in Liverpool University, UK to assess early detection of testicular cancer: revisiting the role of self-efficacy in TSE among young asymptomatic males about 100 participants revealed that high self-efficacy increased motivation to perform TSE and also facilitated subsequent TSE (41)

A research conducted among undergraduate young male students with a sample of 159 in UK to assess the performance ability of TSE which was a prospective, randomized controlled design measured knowledge of TC, prior experience with TSE and intention to perform TSE within a 3-week period showed that responders and non-responders did not differ on any of the measures assessed at time 1. At time 2, 30 (65%) participants in the intervention reported performing TSE compared with 12 (40%) in the control condition, and chi-squared analyses revealed that the difference was significant (42). A research conducted in Swedish to identify barriers in giving information about TC and TSE to adolescent males among school nurses showed that about 6% of the school nurses had provided information on TC and 9% on TSE. The major reason reported for not providing this guidance was insufficient knowledge about the subject (43).

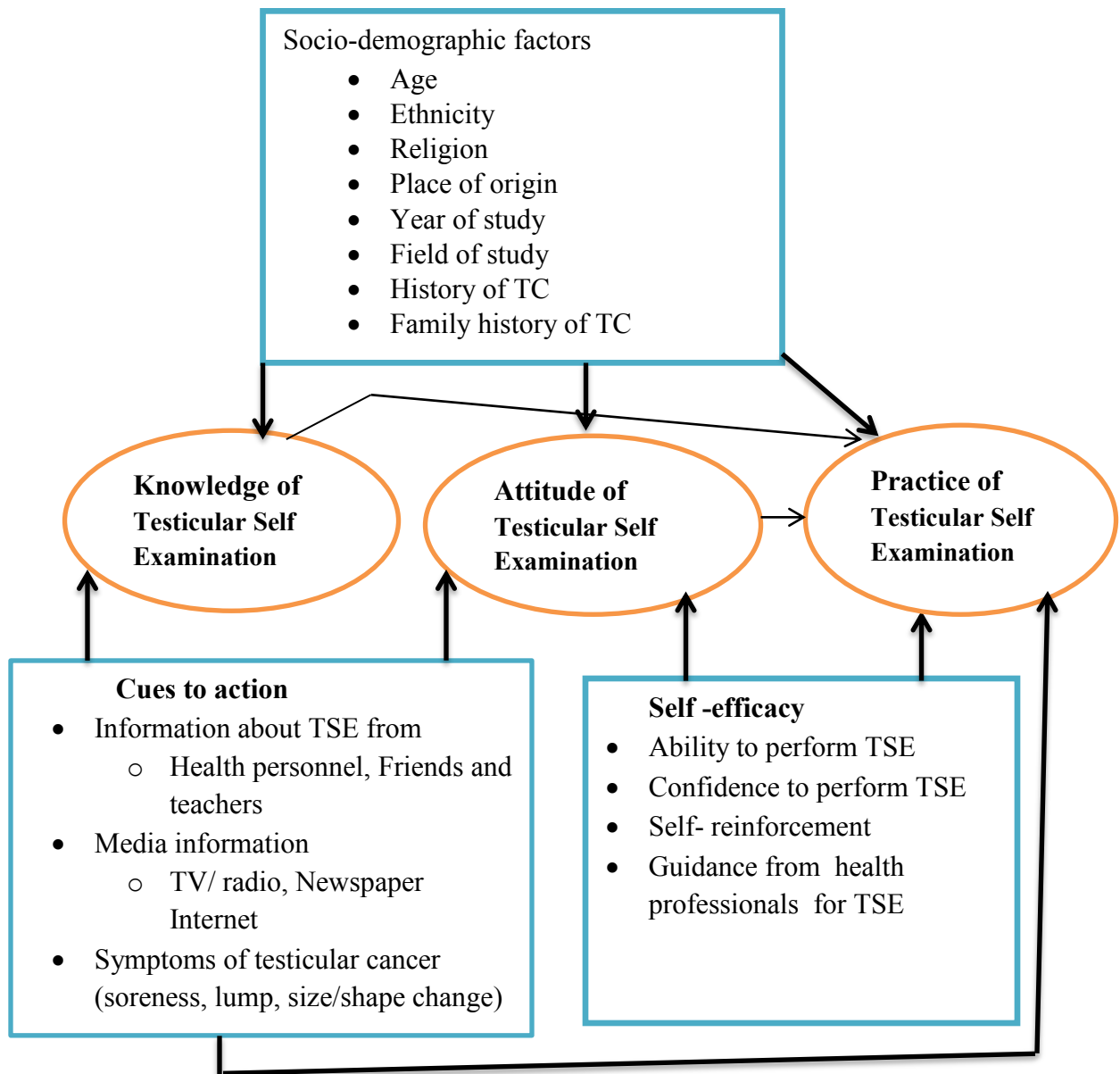
A research conducted among Duchy young men 15-35 years old on assessment of the determinants of intention to do TSE showed that self-efficacy is a predictor for the performance of TSE (AOR,1.2;95% CI(1.07,1.31)) (44). Study conducted among Iranian men on determinants of TSE using health belief model as a conceptual framework showed that positive association between TSE and self-efficacy (45).

Cross-sectional study conducted at Malaysia with a total sample size of 250 men revealed that marital status, residence, regular exercise, awareness about testicular cancer, belief that TC can detect early, belief that early detection improves the chance of survival and family history of

testicular cancer are significantly influenced the practice of TSE. Race also found to be significantly associated with the practice of TSE. However, age, smoking and drinking alcohol did not influence significantly the practice of TSE (46). Institutional based descriptive cross-sectional research design was conducted regarding to awareness and practice of TSE among male Students of University of Nigeria Enugu Campus about 172 participants reasons for not performing TSE showed that majority of the respondents 52(55.9%) perceived TSE as embarrassing and 37(39.8%) said they are not competent to perform TSE (33). A research which was done in Uganda university undergraduate male students on assessment of factors for TSE showed that most participants (80%) reported a lack of skill for performing TSE as well as perceiving TSE as embarrassing (87%) and time consuming (79%). The finding showed that having good knowledge about TC is associated with performing TSE ( $P = 0.01$ ) (34)

## 2.6. Conceptual Frame Work

Many studies in different parts of the world reviewed that KAP of TSE is associated to different factors. For this study according to the health believe model the main factors are identified as socio-demographic factors, cues to action and self- efficacy. The next conceptual frame work illustrates the possible relationship among the variables under the study. It helps to summarize the determinant factors and to analyze the association between dependent and independent variables.



**Figure 1.**Conceptual frame work of knowledge, attitude and practice of testicular self-examination adapted from health belief model

### **3. OBJECTIVES**

#### **3.1. General Objectives**

To assess knowledge, attitude and practice towards TSE and associated factors among non-health sciences regular undergraduate university students, DTU, Amhara, North West Ethiopia, 2017

#### **3.2. Specific objectives**

- ✓ To determine the knowledge level of students towards TSE among non-health sciences regular undergraduate university students
- ✓ To determine the attitude of students towards TSE among non-health sciences regular undergraduate university students, DTU , Amhara, North West Ethiopia, 2017
- ✓ To determine the practice of students towards TSE among non-health sciences regular undergraduate university students, DTU , Amhara, North West Ethiopia, 2017
- ✓ To identify factors affecting TSE among non-health sciences regular undergraduate university students, DTU , Amhara, North West Ethiopia, 2017

## **4. METHODS AND PROCEDURES**

### **4.1. Study Area and Setting**

The study was conducted in Debre Tabor University South West Gondar, Amhara region, North West Ethiopia. Debre Tabor is the capital city of South Gondar Zone which is located 50 kilometers East of Lake Tana, 100 kilometers from the capital city of Amhara region, Bahirdar and 666 kilometers from the capital city of Ethiopia, Addis Ababa. This historic town has a latitude and longitude of 11°51' N 38°1'E with an elevation of 2,706 meters (8,878 ft.) above sea level (47). Debre Tabor University has one main campus which consists of five faculties and one college with a total of 33 departments. The campus has a total of 10324 regular undergraduate students out of these 6070 are male non- health sciences students.

### **4.2. Study Design and Period**

Institutional based descriptive cross-sectional quantitative study was conducted in Debre Tabor University among Non- health sciences regular male undergraduate students on March 13, 2017

### **4.3. Population**

#### **4.3.1. Source Population**

All non -health sciences regular undergraduate male students in Debre Tabor University

#### **4.3.2. Study Population**

All selected non- health sciences regular undergraduate male students

### **4.4. Eligibility Criteria**

#### **4.4.1. Inclusion Criteria**

All non -health sciences regular undergraduate male students in Debre Tabor University who were enroll during the data collection time

#### **4.4.2. Exclusion Criteria**

Those students who were seriously ill and unable to communicate during data collection time

### **4.5. Sample Size and sampling procedures**

#### **4.5.1. Sample Size determination**

A single population proportion formula was used to estimate the sample size and the following assumptions were made. Since there is no similar study done on this topic to the study setting,

nearby areas of the study and as well as in Ethiopia proportion of KAP of TSE was 50% ( $p = 0.5$ ), level of significance 5% ( $\alpha = 0.05$ ), 95 % confidence level ( $Z_{\alpha/2} = 1.96$ ) and absolute precision or margin of error was 5% ( $d = 0.05$ ).

$$n = \frac{(Z_{\frac{\alpha}{2}})^2 p (1-p)}{d^2} \quad \text{Where, } N_i = \text{initial sample size}$$

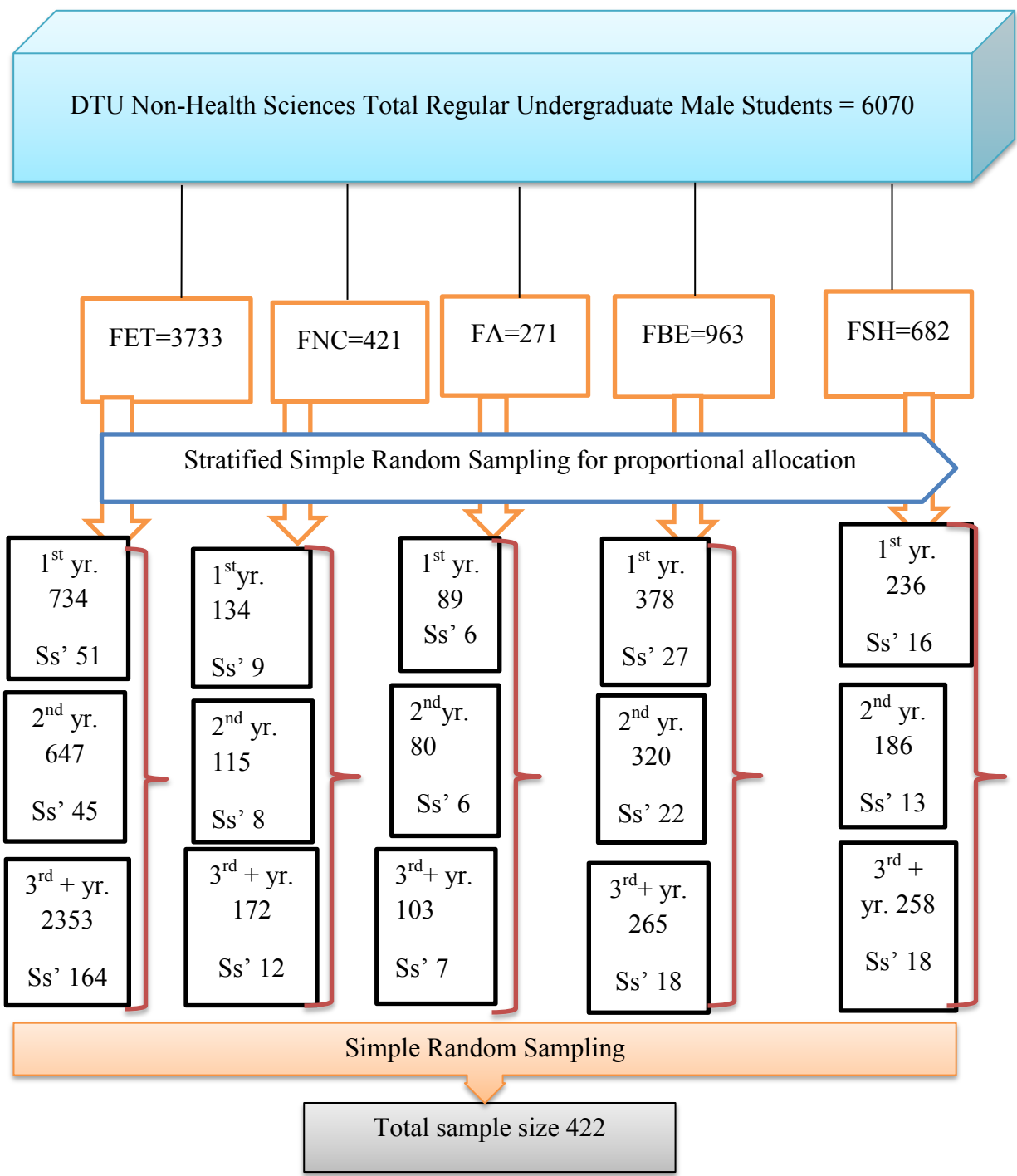
$Z_{\frac{\alpha}{2}} =$  standard normal distribution curve value for the 95% confidence interval (1.96)

$$n = (1.96)^2 \times 0.5(1-0.5) / (0.05)^2 = 384$$

By assuming non-response rate 10% of the sample size, the total sample size was **422**

#### **4.5.2. Sampling Procedures**

Students in each field of study were stratified based on their year of study as first, second and third+ year (third year and above) assuming that their field of study and duration of stay in the campus affect their KAP of TSE. Finally, proportional numbers of participants (students) were selected with their identification number by computer generating simple random sampling techniques from each field and year of study (Fig 2).



**Figure 2. Sampling procedure of study participants in assessment of knowledge, attitude and practice of TSE and associated factors among Debretabor University Non-health sciences undergraduate regular students, North West Ethiopia, 2017**

*Note:* FET (Faculty of Engineering and Technology), FNC (Faculty of Natural and Computational Sciences), FA (Faculty of Agriculture), FBE (Faculty of Business and Economics), FSH (Faculty of Social Science and Humanities), Ss' ( Sample size in each year with respective field of study), 3<sup>rd</sup> + yr. ( three and above year).

## 4.6. Methods of Data Collection Tools, procedures and Quality control

### 4.6.1. Data collection tools

Data were collected by self-administered structured questionnaire which was adopted and adapted from literatures (29-31,36, 44 48) and health belief model. The questionnaire was prepared in English language and then translated to the national language Amharic with second person and then it was also back translate to original language English with third person to see its consistency. The questionnaire contains four sections. These are:

**Section 1:** Socio-demographic characteristics of respondents contain 08 questions.

**Section 2:** Knowledge of respondents on Testicular Self Examination; there are seven questions in this part. A correct answer was given 1 score and 0 score for a wrong answer. The sum score was classified into 2 levels (good and poor knowledge).

**Section 3:** Attitude of respondents towards Testicular self-examination. This part contains twelve statements which included both positive and negative statements and measured by using Likert's five points scale. The rating scale was measured as follows:

Positive Statement		Negative Statement	
Choices	Scores	Choices	Scores
Strongly agree	5	Strongly agree	1
Agree	4	Agree	2
Neither agree nor disagree	3	Neither agree nor disagree	3
Disagree	2	Disagree	4
Strongly disagree	1	Strongly disagree	5

The sum score was classified into 2 levels (favorable attitude and unfavorable attitude).

**Section 4:** Practice related questions towards TSE of students. Six questions are included in this part. A correct answer was given 1 score and 0 score for a wrong answer and the sum score was classified into 2 levels (good practice and poor practice).

### 4.6.2. Data collection procedures

Four supervisors were recruited from MSC degree from DTU and eight data collectors were also recruited among Assistance lecturers from DTU. The study participants were filled the questionnaire at the same time or simultaneously in 8 lecture hall and 53 students were sit in six lecture hall and 52 students in 2 lecture hall. This prevents information dissemination to the sampled students before data collection. The principal investigator and the supervisors were

made frequent checks on the data collection process to ensure the completeness & consistency of the gathered information.

#### **4.6.3. Data Quality control**

The questionnaire was checked thoroughly for its objective and variable based before it was distributed to the respondents. To test reliability pre-test was given about 21 (5%) of sampled students in Addis Ababa University Amist kilo campus undergraduate regular male students. This was used because students in each universities share many similarities. This also have given a feedback on whether the intended study objectives were captured well, any omissions and any need for additional items so that appropriate modifications were made after viewing the pre- test result. Half day training was given to the data collectors and the supervisors on the objective, relevance of the study, confidentiality of information, respondent's right and informed consent.

### **4.7. Study Variables**

#### **4.7.1. Dependent Variables**

- Knowledge of Testicular self-examination
- Attitude of Testicular self-examination
- Practice of Testicular self-examination

#### **4.7.2. Independent Variables**

- Age
- Place of origin
- Religion
- Ethnicity
- Year of study
- Field of study
- History of TC
- Family history of TC
- Symptoms of TC
- Media Information
- Education
- Ability to perform TSE
- Guidance from health professionals for TSE

## **4.8. Operational Definitions**

Testicular self-examination: inspection and palpation of his testis by himself

Knowledge: Factual information that the respondents knows regarding with TSE.

- Good knowledge: Those students/respondents who scored above mean score of the knowledge questions.
- Poor knowledge: Those students/respondents who scored below mean score of the knowledge questions.

Attitude: The feeling and beliefs of respondents regard with TSE

- Favorable attitude: Those students/respondents who scored above mean score with Liker five points scale of attitude questions.
- Unfavorable attitude; Those students/respondents who scored below mean score with Likert five points scale of attitude questions

Practice: The intended actions that the respondents done TSE

- Good practice; Those students/respondents who scored above mean score of the practice questions
- Poor practice; Those students/respondents who scored below mean score of the practice questions

Cues to action: Refer to motivators that could prompt an individual to have knowledge, attitude and practice of TSE.

- Motivated: respondents scored above mean score of cues to action questions and no motivated answered below mean score of cues to action questions

Self- efficacy: Confidence and ability to have TSE practice

- Had self –efficacy: respondents scored above mean score of self-efficacy questions and had no self -efficacy answered below mean score of self-efficacy questions

## **4.9. Data Entry, Analysis and Presentation**

Questionnaire was administered by the data collectors, upon filling the questionnaire, they were checked for completeness. Data was entered into the computer in preparation for data analysis using Epi Data version 3.1 and the entered data was transported to SPSS version 22.0 for analysis. Descriptive statistics such as measurements of central tendency (mean) and variability measures (range and standard deviation) as well as frequency and proportion, table, pie chart and

bar graph were used to present descriptive data. For inferential statistics, test of significance, chi-square test, binary and multiple logistic regressions were used.

#### **4.10. Ethical Consideration**

The thesis proposal was submitted to Addis Ababa University (AAU) ethical review committee for clearance and approval. Ethical clearance was obtained from Addis Ababa University College of Health Sciences School of Allied Health Sciences Department of Nursing and Midwifery. Official letter was written to Debre Tabor University, and then DTU wrote letter for each respective faculties and registrar office. Verbal consent was obtained from each participant and participant's anonymity and confidentiality was kept. The respondents have the right to not participate in or withdraw from the study at any stage.

#### **4.11. Dissemination plan of the Results**

The final result of the research has been presented in AAU College of Health sciences School of Allied Health Sciences Department of Nursing and Midwifery. The copies of this research will be submitted to AAU Nursing and Midwifery department, AAU library, DTU library, Ministry of health and finally with advanced revision the result will be published in known health journals to make available to all readers.

## 5. RESULTS

### 5.1. Socio-Demographic Characteristics of the Study Participants

In this study a total of 422 study subjects were participated with the response rate of 415(98.3%). The mean age (SD±) was 21.9 (SD± 2.2) years with a range of 18 – 38 years. About 341 (82.2%) participants were in the age group of 20-24 years. Majority 374 (90.1%) were orthodox religion followers and 321(77.3%) were Amhara by ethnicity (Table1).

**Table 1. Distribution of socio- demographic characteristics of respondents among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017**

Variable	Frequency (n=415)	Percent (%)
Respondents age group in a year		
15-19	30	7.2
20-24	341	82.2
25-29	41	9.9
30 and above	3	0.7
Respondents religion		
Orthodox	374	90.1
Muslim	15	3.6
Protestant	24	5.8
Catholic	2	0.5
Respondents ethnicity		
Amhara	321	77.3
Oromo	31	7.5
Tigrie	32	7.7
Wolaita	17	4.1
Others*	14	3.4
Respondents place of origin		
Urban	177	42.7
Rural	238	57.3
Respondents year of study		
Freshman	108	26.0
Senior	307	74.0
Respondents field of study		
Engineering and technology	257	61.9
Natural and computational science	29	7.0
Agriculture	18	4.3
Business and economics	66	15.9
Social science and humanity	45	10.8
Respondents history of Testicular cancer		
Yes	6	1.4
No	409	98.6
Respondents family history of Testicular cancer		
Yes	18	4.3
No	397	95.7

Note: \* (Guragie, Gambela, Sidama, Agew and Somalie), freshman means 1<sup>st</sup> year) and senior means 2<sup>nd</sup> and above years

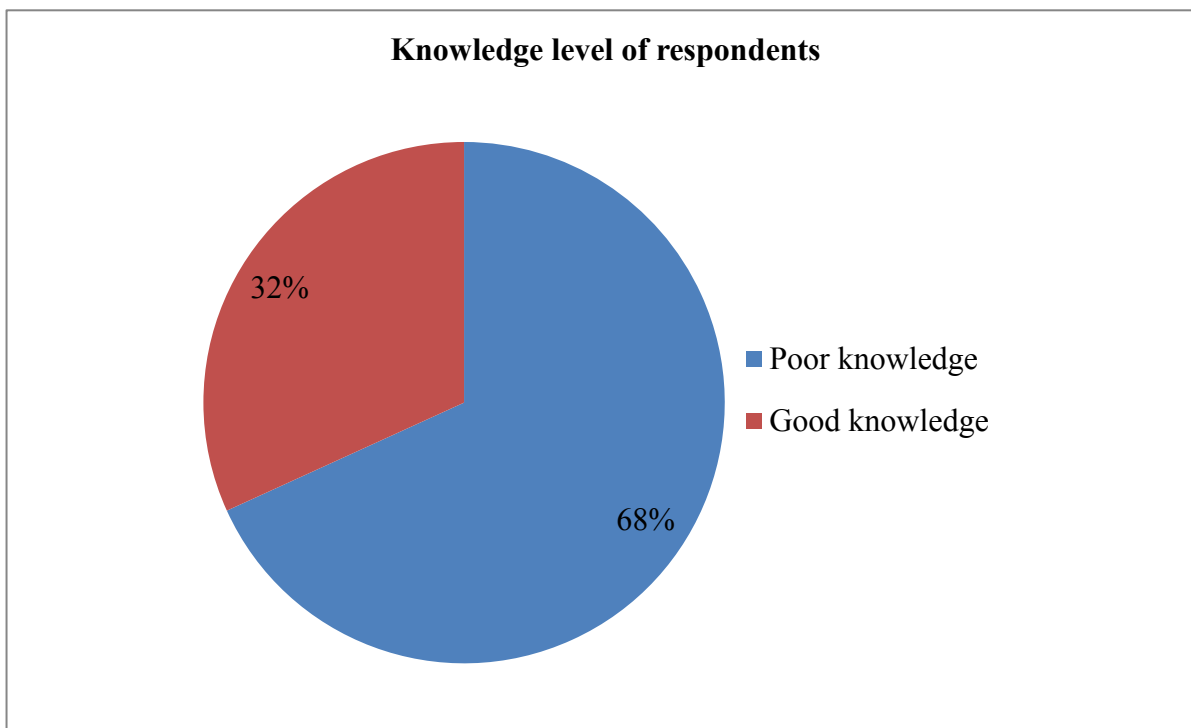
## 5.2. Knowledge of Respondents on Testicular Self -Examination

Out of the total respondents who were participated in the study, only 51(12.3%) were ever heard about TSE. From those students who were heard about TSE the main sources of information 22(43.1%) were health professionals (Table 2).

**Table 2. Knowledge of respondents on testicular self –examination among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017**

Variables	Frequency (n = 415)	Percent (%)
Ever heard about Testicular self-examination		
Yes	51	12.3
No	364	87.7
Source of information		
Media	11	21.6
Friends	11	21.6
Health professionals	22	43.1
Teachers	7	13.7
Importance of doing Testicular self- examination		
For screening	133	32.0
For diagnosing	100	24.1
Don't know	182	43.9
Frequency to perform Testicular self- examination		
Once every month	38	9.2
Once every 3 months	20	4.8
Once every 6 months	5	1.2
Once every year	11	2.7
Don't know	341	82.2
Age groups at risk of testicular cancer		
15-35 years	98	23.6
Below 15 years	15	3.6
Above 35 years	44	10.6
Don't know	258	62.2
Testicular self-examination shall done in the shower		
Yes	54	13.0
No	49	11.8
Don't know	312	75.2
Able to find testicular lump when perform TSE		
Yes	65	15.7
No	42	10.1
Don't know	308	74.2
The risk of TC probability will increase with family history of TC		
Yes	69	16.6
No	55	13.3
Don't know	291	70.1

The overall knowledge score of the study participants revealed that 132 (31.8%) with 95% CI (27.0% - 36%) of students had good knowledge with a mean knowledge score of 1.22(SD  $\pm$  1.38) , maximum and minimum score of 6 and 0 points out of seven respectively (Fig 3).



**Figure 3.Overall knowledge level of respondents towards testicular self- examination among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017**

### **5.3. Attitude of Respondents towards Testicular Self-Examination**

The result of attitude related questions showed that most of the study participants were agreed with the thinking of testicular cancer fears, if I had testicular cancer, my career would be endangered, TC would endanger my marriage, TC would be more serious than other diseases and TSE can help to find lumps in the testicles 250(60.2%), 244(58.8%), 267(64.3%), 255(54.2%) and 227(54.7%) respectively. Also above half of the respondents were disagreed with monthly testicular examinations is embarrassing 236(56.9%) and TSE can be time consuming 214(51.6%) (Table3).

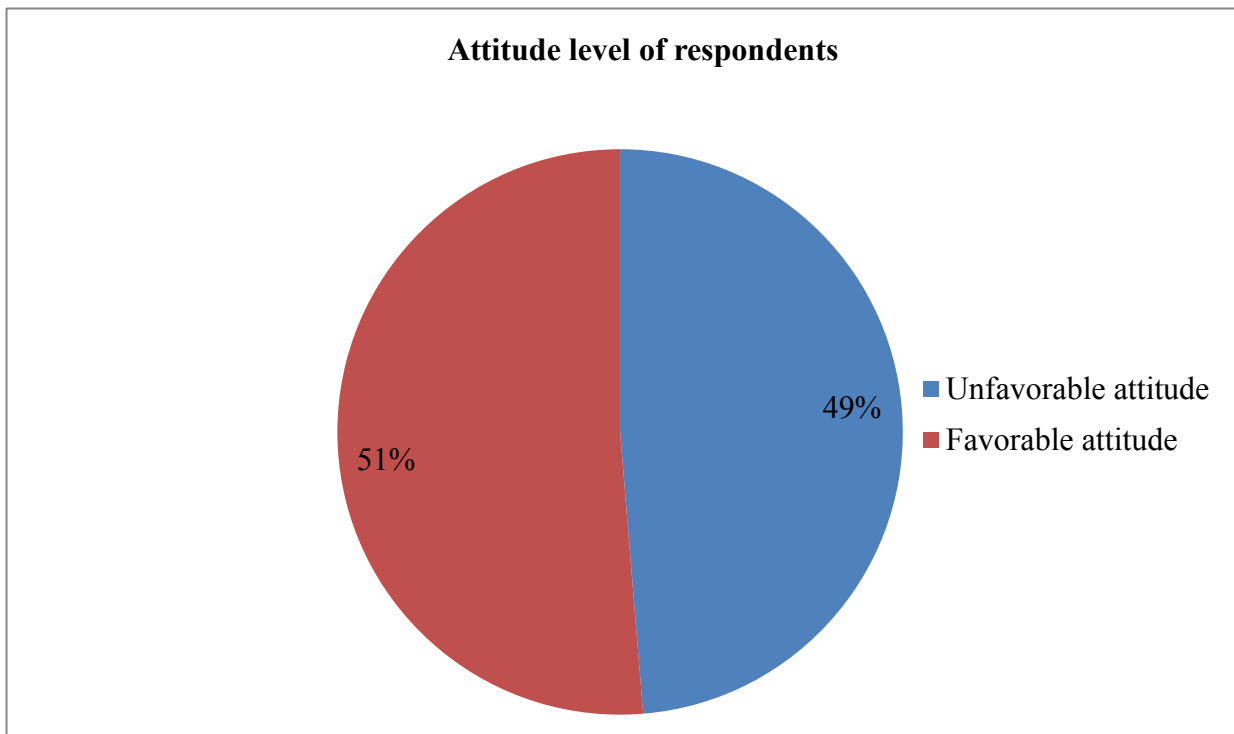
**Table 3. Attitude of respondents towards testicular self –examination among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017 (n = 415)**

Variables	Disagree		Uncertain		Agree	
	N	%	N	%	N	%
My physical health makes it more likely for TC if fail to perform TSE	125	30.1	158	38.1	132	31.8
Chances of getting TC in the future increase if fail to perform TSE	156	37.6	122	29.4	137	33.0
The thinking of testicular cancer fear to me	115	27.7	50	12.0	250	60.2
If I had testicular cancer, my career would be endangered	101	24.3	70	16.9	244	58.8
Testicular cancer would endanger my marriage	90	21.7	58	14.0	267	64.3
Testicular cancer would be more serious than other diseases	83	20.0	107	25.8	225	54.2
TSE can help to find lumps in the testicles	85	20.5	103	24.8	227	54.7
Monthly TSE helps to find lump before discovered by health check-up	97	23.4	228	30.8	190	45.8
It is embarrassing for me to do monthly examinations	236	56.9	78	18.8	101	24.3
TSE can be painful	199	48.0	112	27.0	104	25.1
TSE can be time consuming	214	51.6	103	24.8	98	23.6
Family would make fun of if do TSE	16	39.8	81	19.5	169	40.7

*Note: N = frequency, and % = percentage*

*Remember: - strongly disagree is added to disagree and strongly agree is added to agree since the frequency is small for them*

The overall attitude score of the study participants showed that above half 216 (51.3%) with 95% CI (46% - 56%) of the respondents had favorable attitude with a mean (SD ± ) attitude score 37.19(± 5.38) , maximum & minimum score of 49 and 23 points out of 40 respectively (Fig 4).



**Figure 4. Over all attitudes level of respondents towards testicular self- examination among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017**

#### **5.4. Practice of Respondents towards Testicular Self Examination.**

Regarding with practice of TSE almost all 366(88.2%) students didn't examine their testis in their life time, only 49(11.8%) of students ever examined their testis. From those students who were examined their testis, starting TSE with right age, regularly doing TSE, apply correct techniques, perform in the right time and in the right place were 40(81.6%), 13(26.5%), 35(71.4%), 12(24.5%) and 5(10.2%) respectively. The reason 227(62.0%) why students didn't practice TSE was not having knowledge about TSE (Table 4).

**Table 4. Practice of students towards testicular self- examination among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017 (n = 415)**

<b>Variables</b>	<b>Frequency</b>	<b>Percent (%)</b>
Ever examined their testis		
Yes	49	11.8
No	366	88.2
Age of starting testicular self-examination		
< 15 years	9	18.4
≥15 years	40	81.6
Regularity of doing testicular self –examination		
Daily to weekly	20	40.8
Once a month	13	26.5
Once in three months	8	16.3
Once in six months	3	6.2
Once a year	5	10.2
Techniques of doing testicular self-examination		
Inspection and palpation	35	71.4
Only inspection	14	28.6
Time to perform testicular self- examination		
After showering	12	24.5
Before showering	14	28.6
At any time	23	46.9
Place to perform testicular self- examination		
In front of mirror	5	10.2
In the bath room	23	46.9
Lying on the bed	21	42.9
Reasons for not doing testicular self- examination		
Not caring the examination	73	19.9
Not knowing TSE	227	62.0
Fear of worse result after examination	23	6.3
Thinking the examination as a sin	31	8.5
Others*	12	3.3

*Note: \* Shame, Guilty, Culture*

The overall practice level of the study participants showed that 49 (11.8%) with 95% CI (9.0% -15%) had good practice with a mean practice score of 0.3(SD ± 0.89) , maximum & minimum score of 5 and 0 points out of six respectively (Fig 6).



**Figure 5.Over all practice level of students towards testicular self- examination among Debre Tabor University non-health sciences undergraduate regular students, North West Ethiopia, 2017**

### 5.5. Binary and Multiple Logistic Regression Analysis

According to the result of multiple logistic regression analysis, family history of TC and cues to action were the predictor for knowledge of TSE; those students who had family history of TC and cues to action were found to have 3.17 and 1.5 times more likely had good knowledge of TSE than those who had not family history of TC and cues to action {AOR,3.169; 95% CI (1.189, 8.442)} and {AOR,1.549; 95% CI (1.006, 2.384)} respectively (Table 5). In multiple logistic regressions analysis of practice, respondents history of TC , self- efficacy, Knowledge and attitude were the predictor for the practice of TSE; those respondents who had history of TC 15.9, had self-efficacy 1.5 and had good knowledge 1.3 times had more likely good practice than those respondents who had no history of TC, hadn't self- efficacy and poor knowledge of TSE {AOR, 15.94, 95% CI (2.546, 99.73)} , {AOR,1.47;95% (1.08, 2.17)}, {AOR ,1.35;95% CI(1.18,2.66)} respectively (Table 6).

**Table 5. Logistic regression model for knowledge of students towards TSE with determinant factors among Debre Tabor University non-health science undergraduate regular students, North West Ethiopia, 2017**

Variables	Knowledge level				OR (95% CI)	
	Poor knowledge		Good knowledge		COR	AOR
	N	%	N	%		
Respondent religion						
Orthodox	253	67.6	121	32.4	1	1
Muslim	10	66.7	5	33.3	1.05(0.39 , 3.13)	1.45(0.45, 4.66)
Protestant	19	79.2	5	20.8	0.55(0.20, 1.51)	0.664(0.19, 2.23)
Catholic	1	50.0	1	50.0	2.09(0.13 , 33.71)	1.409(0.08, 24.85)
Respondent ethnicity						
Amhara	218	67.9	103	32.1	1	1
Oromo	24	77.4	7	22.6	0.62(0.26, 1.48)	0.62(0.24, 1.61)
Tigrie	18	56.3	14	43.8	1.65(0.79 , 3.44)	2.0861(0.36,4.66)
Wolaita	12	70.6	5	29.4	0.88(0.30 , 2.57)	1.124(0.33, 3.82)
Others**	11	78.6	3	21.4	0.58(0.16 ,2.11)	0.56(0.13, 2.40)
Respondents place of origin						
Urban	126	71.2	51	28.8	1.26(0.836 , 1.94)	1.393(0.89, 2.18)
Rural	157	66.4	81	34.0	1	1
Respondents year of study						
Freshman	75	69.4	33	30.6	1	1
Senior	208	67.8	99	32.2	1.08(0.67 , 1.74)	1.17(0.71, 1.94)
History of TC						
Yes	3	50.0	3	50.0	2.17(0.43 , 10.90)	2.39(0.42, 13.70)
No	280	68.5	129	31.5	1	1
Family history of TC						
Yes	8	44.4	10	55.6	2.818(1.09 , 7.31)*	3.17(1.19,8.44)*
No	275	69.3	122	30.7	1	1
Cues to action						
Yes	121	63.4	70	36.6	1.512(1.02, 2.29)*	1.55(1.06, 2.38)*
No	162	72.3	62	27.7	1	1

*Note: \* Reminded the significance of the variable (P value <0.05), \*\*Guragie, Gambela, Sidama, Agew and Somalie*

*OR - Odds Ratio, COR - Crude odds ratio and AOR –Adjusted odds ratio*

**Table 6. Logistic regression model for TSE practice with determinant factors among Debre Tabor University Non-health science undergraduate regular students, North West Ethiopia, 2017 (n =415)**

Variables	Practice level				OR (95% CI)	
	Poor practice		Good practice		COR	AOR
	N	%	N	%		
Respondent ethnicity						
Amhara	284	88.5	37	11.5	1	1
Oromo	27	87.1	4	12.9	1.13(0.37,3.43)	1.13(0.327,3.93)
Tigris	28	87.5	4	12.5	1.09(0.36,3.30)	1.23(0.383,3.95)
Wolaita	16	94.1	1	5.9	0.48(0.062,3.723)	0.69(0.078,6.18)
Others**	11	78.6	3	21.4	2.09(0.56,7.85)	1.59(0.30,8.26)
Respondents place of origin						
Urban						
Rural	154	87.0	23	13.0	0.821(0.45,1.49)	1.361(0.72,2.57)
Respondent year of study	212	89.1	26	10.9	1	1
Freshman students						
Senior students	98	90.7	10	9.3	1	1
History of TC	268	87.3	39	12.7	1.42(0.68,2.96)	1.30(0.59,2.82)
Yes						
No	2	33.3	4	66.7	16.178(2.88,20.83)*	15.94(2.55,19.70)*
Family history of TC	364	89.0	45	11.0	1	1
Yes						
No	15	83.3	3	16.7	1.53(0.43, 5.47)	1.30(0.32,5.26)
Cues to action	351	88.4	46	11.6	1	1
Yes						
No	170	89.0	21	11.0	1.156(0.63, 2.11)	1.23(0.61,2.48)
Self- efficacy	196	87.5	28	12.5	1	1
Yes						
No	151	87.8	19	12.2	1.41(1.03, 2.04)*	1.47(1.08,2.17)*
Knowledge	215	88.8	30	11.2	1	1
Good knowledge						
Poor knowledge	106	80.3	26	19.7	1.36(1.19,2.54)*	1.35(1.18,2.66)*
	260	91.9	23	8.1	1	1

Note: \* Reminded the significance of the variable (P value <0.05)

- OR - Odds Ratio, COR - Crude odds ratio and AOR –Adjusted odds ratio

## 6. DISCUSSION

In this study out of the total respondents participated, 12.3% of the respondents have heard about TSE. This figure is slightly higher than a study done at Turkey and Nigeria which were 5.9% and 1.3 respectively (29, 32). This discrepancy might be due to socio-demographic factors for students and sample size. From respondents who were heard about TSE most of students 43.1% heard from health professionals. This result is in line with study at Turkey 43% of students were heard from health professionals (29) but inconsistency with study done at Nigeria in which none of respondents get information from health professionals(32). The research finding regarding with overall knowledge level of respondent showed that 32.0% had good knowledge for TSE, this figure is lower than a research conducted at Nigeria and Ireland which were 52% and 61.0% respectively(18,31) This discrepancy might be due to health promotion for early detection of TC is not much provoked in our context. The finding on age group at risk for TC showed only 23.6% knew in which the age groups majorly affected with TC. These findings are slightly higher than research conducted at Uganda which was 13.0% (34) and lower than research conducted at USA which was 68.5% (37). This research also showed when to perform TSE 9.2% of respondents said after showering and able to find testicular lump when performing TSE 13.0% said yes. These findings are lower than research done at Uganda which was 29.0% and 23.0% respectively (34). This discrepancy might be due to lower information dissemination about TSE in our context.

About 16.6% respondents said TC probability will increase with family history. This result is much lower than the research conducted at Nigeria revealed that 67.4% of the respondents said men who have blood relatives with testicular cancer are more likely to get TC (33). This huge discrepancy might be due to differences with field of study i.e. our study is on non-health sciences students. Half of 51% of respondents have favorable attitude for TSE. This finding is lower than research done at Ireland and Nigeria which were 62% and 57.2% of respondents were had favorable attitude respectively (31,32).This discrepancy may be due to of socio-demographic character such as religion ,family history of TC and culture.

In this study only 11.8% of respondents ever had practice of TSE. This finding is lower than the researches which were conducted at Turkey, Ireland, Nigeria and Uganda were 17.7%, 59.0%, 45.9% and 14.0% respectively (29,31,33,34) This finding is also lower than with the finding of low income (Bangladesh, Madagascar), middle income (South Africa, Turkey) and emerging

economy (Singapore) countries was 13.6% (30). This difference might be due to lack of health promotion for early detection of TC in our context and socio-demographic factors and sample size. Regarding with regularity of TSE in this research only 3.1% of respondents examined their testis regularly (every month). This figure is consistency with low income, middle income and emerging economy countries which were 3.1% respondents examined their testis regularly (30), and lower than research findings revealed at Ireland and Nigeria were 5.0% and 25.3% respectively (31,33). This difference might be due to lack of students awareness how and when to perform TSE. Level of education was not significantly associated with practice of TSE in this research as well as research conducted at USA (36). In this study ethnicity also was not significantly associated with performance of TSE. This result is contradicted with research done at Malaysia had significant association (46). In this research result with multiple logistic regression analysis students who had self- efficacy were 1.5 times more likely to have good practice of TSE than those students hadn't self- efficacy AOR, 1.473; 95% CI (1.008, 2.171). This result is similar with research done at Duchy, students who had self-efficacy were 1.2 times more likely to have good practice of TSE than those students hadn't self- efficacy with (AOR,1.21, 95% CI (1.07, 1.31) (44).

The present research revealed that history of TC had predict 16 times to have good practice than those who hadn't history of TC at AOR, 15.9378; 95% CI (2.5476, 99.7). This finding has contradicted with a research conducted at USA which indicated having history of testicular abnormality hadn't association and didn't predict the performance of TSE (36). This difference might be due to small number of TC case respondents (only 4 students had TC history). And also in this research cue to action haven't predict performance of TSE at AOR, 1.2275; 95% CI (0.6086, 2.4758), but predictors of performance in the above research at AOR, 6.6; 95% CI (2.0, 21.1). The difference might be because of lack of attention for TSE even students with access to cues to action. In this research the main reason 62% not to perform TSE was not having TSE knowledge and sinful 8.5%. This result is consistency with a research conducted at Turkey was 83.4% and 6.1% respectively (29). But another research conducted at Nigeria and Uganda showed that the main reason not to perform TSE were 55.9% considering TSE as embarrassing and 80% not competent to perform TSE respectively (33,34).

## **6.1. Strength & Limitations of the Study**

### **Strengths of the Study**

Since this topic is the first research in Ethiopia, it is a base line for future researcher.

### **Limitations of the Study**

Since the questionnaire is self- administered, there may be response bias. The other limitation of this study is qualitative method to support the quantitative findings was not used. Therefore, there was a risk that students may report what was expected of them but their actual practices may be different.

## **7. CONCLUSION AND RECOMMENDATION**

### **7.1. Conclusion**

Results showed that TSE knowledge and practice among this sample of male undergraduate university students were inadequate due to low level of health promotion for TSE whereas half of students showed favorable attitude towards TSE. The major reason not to perform TSE, as revealed in the study was not having knowledge about TSE and not caring the examination. Most of socio-demographic variables were not associated with KAP of TSE, this shows there is a little health promotion for early detection of TC in Ethiopia. Therefore, the benefits of early detection of TC through TSE for reduction mortality associated with the disease and a reduction in the health care expenditure associated with treating people in the end stages of the disease shall be promoted.

### **7.2. Recommendations**

Based on the study findings the following are recommended.

- It is important that efforts should be made to develop educational programs that can increase knowledge and attitude related to TC and TSE as well as the practice of testicular self-examination.
- Debre Tabor University need to organize workshops, seminar and conference to enlighten students on the practice of TSE.
- Ministry of health also should advocate early detection of TC through TSE and shall give attention like that of BSE.
- Young age male students shall use cues of action such as Medias, internet and health personnel's to enhance their knowledge and practice about TSE. Further community based quantitative with qualitative research design is recommended.

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## ANNEXS

### Annex I. Participants Information Sheet

Questionnaire Identification Number \_\_\_\_\_

My name is \_\_\_\_\_. I am working as a data collector in the research conducted by Shegaw Zeleke, who is conducting this research for the partial fulfillment of his Master degree in Adult Health nursing specialty track in Addis Ababa University. We are trying to assess Knowledge, attitude and practice and associated factors among non- health science regular undergraduate students towards testicular self -examination. We would like your honest opinion concerning to the questions.

Name of advisors Mr. Zeleke Argaw (MSCN) and Daniel Mengistu (MSCN, A/professor and PHD fellower)

Name of the organization: Addis Ababa University, College of health sciences, School of Allied health sciences, Department of nursing and midwifery

Name of the Sponsor: Addis Ababa University

**Introduction:** Information sheet is prepared for students who will participate in research project, a cross-sectional study of assessment of knowledge, attitude and practice of Testicular Self –Examination and associated factors among non- health science undergraduate regular students in Debre Tabor University. Please read carefully and ask any questions about the study before you agree to join. You may ask questions at any time after joining the study.

**Purpose of Research Project:** The purpose of this research is to assess Knowledge, Attitude and Practice of Testicular Self –Examination and associated factors among non- health science regular undergraduate university students. The study will be helpful in determining the current level of knowledge, attitude and practice of TSE and contribute much to design appropriate intervention strategies. It will also serve as a foundation for subsequent studies in the country.

**Procedure:** To assess knowledge, Attitude and Practice of TSE and associated factors, we invite you to take part in this project. If you are willing to participate in this project, you need to understand and give written informed consent. Then after, you will be given self-administered questionnaire to give your response. You do not need to tell your name to the data collector and

all your responses and the results obtained will be kept confidentially by using coding system whereby no one will have access to your response.

**Risk/ Discomfort:** By participating in this research project, you may feel that it has some discomfort especially on wasting time about 30 minutes. We hope you will participate in the study for the sake of the benefit of the research result. There is no risk in participating in this research project.

**Benefits:** If you participate in this research project, there may not be direct benefit to you but your participation is likely to help us in assessing the knowledge, Attitude and Practice of male university students. Ultimately, your participation will contribute in improving the health delivery system service provided to young male person in the future.

**Incentives:** You will not be provided any incentives or payment to take part in this project

**Confidentiality:** The information that we will collect from this research project will be kept confidential. Information that we will be collected from the study will be stored in a file, which will not have your name on it, but a code number assigned to it and it will not be revealed to anyone except the principal investigator.

**Right to refuse or withdraw:** Your participation is entirely voluntary and up to you to decide. There is no penalty if you do not agree to participate. Also you have the right not to answer any questions you do not want to. You may also withdraw from the study at any time. If in the middle you decide to stop filling questions and no longer participate, you can stop without worry.

**Person to contact:**

If you have any question to ask, please contact

Shegaw Zeleke; Cell phone: +251(0)9-18-05-79-66; E-mail: [shegawzn@gmail.com](mailto:shegawzn@gmail.com)

## **Annex II. Participants Consent Form**

I undersigning this document, I am giving my consent to participate in the study entitled as “Assessment of knowledge, attitude and practice of Testicular Self –Examination and associated factors on non-health sciences regular undergraduate DTU students ,North West Ethiopia.” I have been informed that the purpose of this study is to assess knowledge, attitude and practice of Testicular Self –Examination and associated factors on non-health sciences regular undergraduate DTU students, North West Ethiopia. I have understood that participation in this study is entirely voluntarily. I have been understood that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in any way. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks. I also understood that Shegaw Zeleke is the contact person if I have questions about the study. Do you have any question?

Do I have your agreement to proceed?

If yes continue, if no stop, Thank you!

- Name of institution/University: \_\_\_\_\_
- Date: \_\_\_\_/\_\_\_\_/\_\_\_\_
- Name of data collector \_\_\_\_\_ Signature\_\_\_\_\_
- Supervisor’s Name \_\_\_\_\_ Signature\_\_\_\_\_

### Annex III. English Version Questionnaire

Instruction: The questionnaire contains closed ended questions so encircle the numbers of your choice.

<i>Tick appropriate response</i>			
<b>Section 1: Socio-Demographic Characteristics of respondents</b>			
<b>NO.</b>	<b>Questions</b>	<b>Responses</b>	<b>Skip to</b>
101	Age of respondent in year	.....	
102	Respondent religion	1) Orthodox 2) Muslim 3) Catholic 4) Protestant 5) Others (specify).....	
103	Ethnicity	1) Amhara 2) Oromo 3) Tigrie 4) Other (specify).....	
104	Place of origin	1) Urban 2) Rural	
105	Respondent year of study	1) 1 <sup>st</sup> year 2) 2 <sup>nd</sup> year 3) 3 <sup>rd</sup> + year ( 3 <sup>rd</sup> and above)	
106	Respondent field of study	1) Engineering and technology 2) Natural and computational science 3) Agriculture 4) Business and economics 5) Social science and humanity	
107	Have you history of Testicular cancer?	1) Yes 2) No	
108	Do you have family history of testicular cancer?	1) Yes 2) No	

<b>Section 2: Knowledge of respondents on Testicular Self Examination.</b>			
201	Have you ever heard about Testicular self- examination	1) Yes 2) No	If No to 203
202	If your answer to Q # 201 is yes, from where did you heard?	1) Media 2) Friends 3) Health professions 4) Teachers 5) Other specify.....	
203	What is the importance of doing Testicular self- examination	1) For screening 2) For diagnosing 3) I don't know	
204	How often should be Testicular self- examination performed?	1) Once every month 2) Once every 3 months 3) Once every 6 months 4) Once every year 5) I do not know	
205	In which age groups the risk of testicular cancer is highest?	1) 15-35 years 2) Below 15 years 3) Above 35 years 4) I don't know	
206	Testicular self-examination should be done in the shower or shortly after shower	1) Yes 2) No 3) Not knows	
207	I am able to find testicular lump when I perform Testicular self- examination	1) Yes 2) No 3) I don't know	
208	The effect of testicular cancer probability will increase if family history of testicular cancer is present	1) Yes 2) No 3) Not knows	

**Section 3: Questions related to attitude of students towards Testicular self-examination and determinant factors for KAP of TSE**

		Strongly disagree	Disagree	Uncertain	Agree	Strongly agree
<b>3.1. Questions related to attitude of students towards Testicular self-examination</b>						
301	My physical health makes it more likely that I will get testicular cancer if I fail to perform testicular self-examination					
302	I feel that my chances of getting testicular cancer in the future are increase if I fail to perform testicular self-examination					
303	The thinking of testicular cancer fear to me					
304	If I had testicular cancer, my career would be endangered					
305	Testicular cancer would endanger my marriage (or significant relationship)					
306	If I got testicular cancer, it would be more serious than other diseases					
307	Testicular self-examinations can help me to find lumps in my testicles					
308	If I do monthly self-examinations, I may find a lump before it is discovered by regular health check-up					
309	It is embarrassing for me to do monthly examinations					
310	Testicular self-examinations can be painful					
311	Testicular self-examinations can be time consuming					

312	My family would make fun of me if I did testicular self –examinations					
<b>3.2. Determinant factors for Knowledge, Attitude and Practice of Testicular self- examination</b>						
<b>Cues to action</b>						
313	Health professionals recommendation prompted me to do testicular self-examination					
314	Campaigns (e.g. posters, media -press, TV, radio, internet etc.) prompted me to do testicular Self-examination.					
315	Symptoms (e.g. soreness, size/shape change) prompted me to do testicular self-examination					
<b>Self -efficacy</b>						
316	I am confident that I can perform testicular self-examination in the next time					
317	I can perform testicular self-examination even if I have to seek out information about how to do it correctly.					
<b>Section 4: Practice of respondents for Testicular Self Examination</b>						
401	Have you ever examined your testis?	1) Yes 2) No				If NO to 407
402	When you start testicular self-examination?	1) <15years 2) >=15 years				
403	How often do you examine your testis?	1) Daily to weekly 2) Once a month 3) Once in three months 4) Once in six months 5) Once a year				
404	How do you examine your testis?	1) I look and feel my testes 2) I only look at my testes				
405	At what time do you normally perform testicular self-examination	1) Before showering 2) After showering 3) Any time				

406	Where do you usually perform testicular self- examination	<ol style="list-style-type: none"> <li>1) In front of mirror</li> <li>2) In the bath room</li> <li>3) Lying on the bed</li> </ol>	
407	Reasons for not doing testicular self- examination	<ol style="list-style-type: none"> <li>1) Not caring the examination</li> <li>2) Not knowing TSE</li> <li>3) Fear of worse result after examination</li> <li>4) Thinking the examination as a sin and feeling guilty</li> <li>5) Other specify.....</li> </ol>	

**Annex IV. የተሳታፊዎች መረጃ መስጫ ቅጽ**

የጥያቄ መለያ ቁጥር .....

እኔ ስሜ .....ይባላል ። አቶ ሸጋው ዘለቀ በአዲስ አበባ ዩኒቨርሲቲ በአዋቂዎች ጤና ነርሲንግ ለሁለተኛ ዲግሪ መመረቁያ ማሟያ ፅሁፍ በሚሰራው ጥናት መረጃ ሰብሳቢ ነኝ። ይህ የሚካሄደው ወጣት ወንዶች የዘር ፍሬዎቻቸውን/ቆለጥ በራስ የመመርመር እውቀት ፣አመለካከት እና ክህሎት እንዲሁም ለመመርመርና ላለመመርመር ምክንያት የሆኑትን ነገሮች ለማጥናት ነው። ስለሆነም የርስዎን ግልፅ የሆነ ትብብር እንፈልጋለን።

**የጥናቱ አማካሪ ስም:-** ዘለቀ አርጋው (ኤም ኤስ ሲ ነርሲንግ) እና ዳንኤል መንግስቱ ( ረዳት ፕሮፌሰር)

**የድርጅቱ ስም:-** በአዲስ አበባ ዩኒቨርሲቲ የጤና ሳይንስ ኮሌጅ ነርሲንግና ሚድዌረር ትምህርት ቤት

**የገንዘብ ድጋፍ ያደረገው ደርጅት ስም:-** አዲስ አበባ ዩኒቨርሲቲ

**መግቢያ:-** የዚህ ምርመራ ማብራሪያና የስምምነት ቅጽ አላማ አሁን እርስዎ እንዲሳተፉበት የምንጠይቆትን የምርመራ ጥናት ምንነት ማብራራት ነው። በዚህ የምርመራ ፕሮጀክት ለመሳተፍ ከመወሰንዎ በፊት ይህንን የማብራሪያ ቅጽ በጥንቃቄ በማንበብ ጥያቄ ካለዎት ይጠይቁ። በጥናቱ መሳተፍ ከጀመሩ በኋላም በማንኛው ጊዜ ጥያቄ ካለዎት መጠየቅ ይችላሉ።

**የምርመራ ፕሮጀክቱ ዓላማ:-**

የዚህ ጥናት ዓላማ ወጣት ወንዶች የዘር ፍሬዎቻቸውን/ቆለጥ በራሳቸው የመመርመር እውቀት ፣አመለካከት እና ክህሎት እንዲሁም ለመመርመርና ላለመመርመር ምክንያት የሆኑ ነገሮችን ለማወቅ የሚደረግ ጥናት ነው።ይህ ጥናት በአሁን ወቅት ያለውን የወጣቶች የዘር ፍሬ በራስ የመመርመር እውቀት ፣አመለካከት እና ክህሎት ለማወቅ የሚረዳ ሲሆን ውጤቱም ለቀጣይ አቅጣጫ ለማስቀመጥና እንዲሁም ቀጣይ ተጨማሪ ጥናት ለሚሰሩ ሰዎች መሰረት እንዲሆን በማሰብ ነው።

**የጥናቱ የአሰራር ሂደት:-** በዚህ ጥናት ውስጥ መሳተፍ ከተስማሙ ስምምነቱን በደንብ መረዳትና እንዲሁም መፈረም ይገባዎታል። ከዚህ በመቀጠል በጥናቱ መረጃ ሰብሳቢዎች አማካኝነት ለሚሰጡት የጥያቄ ወረቀት መልስ እንዲመልሱ ፍቃደኛነቶትን ይጠየቃል። ስምዎትን ለመረጃ ሰብሳቢዎች መናገር የለብዎትም እንዲሁም ከጥያቄ ወረቀቱ ላይ መፃፍ የለብዎትም ።እርስዎ የሰጡት መልስ በኮድ ስለሚቀመጥ ማንም ሰው መረጃውን ሊያየው አይችልም።

**ሊከሰቱ የሚችሉ ስጋቶችና ምችት መጓደሎች፡-**

በዚህ ጥናት በመሳተፍዎ ምክንያት ምናልባት ለሰላሳ ደቂቃ ያህል ጊዜ ሊያጠፉ ይችሉ ይሆናል፤ ነገር ግን እርስዎ በመሳተፍዎ ምክንያት ከሚመጣው ለውጥ አንጻር ምንም አይደለም። በዚህ ጥናት በመሳተፍዎ ምንም አይነት ስጋት (ችግር) አያጋጥምዎትም።

**ጥቅሞች፡-** በዚህ ጥናት በመሳተፍዎ የተለየ ጥቅም አያገኙም፤ ነገር ግን የእርስዎ በጥናቱ መሳተፍ ወጣቶች ስለዘር ፍሬ/ቆለጥ በራስ ስለመመርመር ያላቸውን እውቀት ፣ አመለካከትና ክህሎት እንዲሁም ለመመርመርና ላለመመርመር ምክንያት የሆኑትን ነገሮች ለማወቅ ስለሚረዱ እርስዎም ከሚገኘው ውጤት ተጠቃሚ ይሆናሉ ።

**ማካካሻ፡-** በዚህ ጥናት በመሳተፍዎ ምንም አይነት ማካካሻ አይሰጥዎትም። ነገር ግን በጥናቱ በመሳተፍዎ ምስጋናችን ከፍተኛ ይሆናል።

**ሚስጢር ስለመጠበቅ፡-** ከዚህ ጥናት የሚገኘው መረጃ ሁሉ በሚስጥራዊነት ይጠበቃል። ለዚህ ጥናት የሚሰበሰቡ እርስዎን የሚመለከት መረጃ በማህደር የሚቀመጥ ሲሆን ማህደሩም በስም ሳይሆን በተለየ ኮድ ሲቀመጥ ከዱም ከዋናው ተመራማሪ ውጭ ለማንም አይገለጽም።

**በጥናቱ ያለመሳተፍ ወይም የማቋረጥ ሙብት**

በዚህ ጥናት ያለመሳተፍ፣ ከጀመሩ በኋላ ማቋረጥ እንዲሁም ከአንድ በላይ ወይም ሁሉንም ጥያቄዎች አለመመለስ ይቻላሉ። በዚህ ጥናት ባለመሳተፍ ወይም በከፊልም ሆነ በሙሉ ጥያቄዎችን ባለመመለስ እንደተማሪነትዎ የሚያጡት አገልግሎት ወይም የሚደርስብዎ መድሎ አይኖርም።

**የሚገናኙባቸው ሰዎች፡-** በጥናቱ ዙሪያ ማንኛውም አይነት ጥያቄ ካልዎት

አቶ ሸጋው ዘለቀ, ስልክ ቁጥር +251(0)918-05-79-66, ኢሜል [shegawzn@gmail.com](mailto:shegawzn@gmail.com) ማግኘት ይችላሉ።

**Annex V. የተሳታፊዎች የስምምነት መግለጫ ፎርም**

የተሰጠኝ መረጃ ግልፅ ነው። ስለሆነም ከጤና ሳይንስ ውጭ የሆኑት የደብረ ታቦር ዩኒቨርሲቲ የቀን ተማሪዎች የዘር ፍሬያቸውን/ቆለጥ በራስ የመመርመር እውቀት ፣ አመለካከትና ክህሎት እንዲሁም ለመመርመርና ላለመመርመር ምክንያት የሆኑትን ነገሮች በተመለከተ ለሚደረገው ጥናት ፍቃደኝነቴን እሰጣለሁ። ጥናቱም ከጤና ሳይንስ ውጭ የሆኑት የደብረ ታቦር ዩኒቨርሲቲ የቀን ተማሪዎች የወንድ ዘር ፍሬያቸውን በራስ የመመርመር እውቀት ፣ አመለካከትና ክህሎት እንዲሁም ለመመርመርና ላለመመርመር ምክንያት የሆኑትን ነገሮች ለማወቅ በተመለከተ እንደሆነ በሚገባ ተረድቻለሁ። በጥናቱ መሳተፍም በሙሉ ፍቃደኝነት ላይ የተመሰረተ እንደሆነ በሚገባ ተረድቻለሁ። እኔ የምሰጠው መረጃም ማንም ሰው እንደማያየውና የእኔን ማንነት የሚገልፅ ነገርም እንደማይኖርበት ተረድቻለሁ። በጥናቱ ባልሳተፍም ሆነ ጥናቱን ከጀመርሁ በኋላ አቋርጬ ብዎጥ እኔ ላይ ችግር እንደማይመጣ በሚገባ ተረድቻለሁ። በጥናቱ በመሳተፍ ምንም አይነት ጉዳት እንደማያገጥመኝም ተገንዝቤአለሁ። በማንኛውም ጊዜ ለሚኖረኝ ጥያቄ ማግኘት ያለብኝ ሰው አቶ ሸጋው ዘለቀ እንደሆነም አውቄአለሁ። ተጨማሪ ጥያቄ አልዎት?

በመጥይቁ ለመሳተፍ ፍቃደኛ ነዎት? አዎ.....ይቀጥሉ!

አይደለሁም.....ያቁሙ! እናመሰግናለን!!!

**Annex VI. የአማርኛ መጠይቅ.**

**መመሪያ:-** ሁሉም ጥያቄ ምርጫ አለው፤ ስለዚህ መልሱን ማክበብ ይቻላል።

<b>ክፍል 1:- ሥነ ህዝብና ማህበራዊ ጉዳዮች</b>			
ተ.ቁ	ጥያቄ	ምላሽ	ወደሚቀጥለው ይሂዱ
101	እድሜዎ ምን ያህል ነው?	.....ዓመት	
102	ሀይማኖትዎ ምንድነው?	1) ኦርቶዶክስ 2) ሙስሊም 3) ካቶሊክ 4) ፕሮቴስታንት 5) ሌላ ካለ ይጥቀሱ .....	
103	ብሔርዎ ምንድነው?	1) አማራ 2) ኦሮሞ 3) ትግሬ 4) ሌላ ካለ ይጥቀሱ .....	
104	ከየት ነው የመጡት?	1) ከተማ 2) ገጠር	
105	የስንተኛ አመት ተማሪ ነዎት?	1) አንደኛ ዓመት 2) ሁለተኛ ዓመት 3) ሶስተኛና ከዚያ በላይ ዓመት	
106	የሚማሩበትን የትምህርት መስክ የቱ ነው?	1) እንጅነሪግ ና ቴክኖሎጂ 2) ተፈጥሮ ሳይንስ 3) ግብርና ሳይንስ 4) ቢዝነስና ኢኮኖሚክስ 5) ማህበራዊ ሳይንስ	
107	በቆለጥ ካንሰር ታመው ያውቃሉ።	1) አዎ 2) የለም	
108	ከቤተሰብ ወይም ከዘመድ በቆለጥ	1) አዎ	

	ካንሰር ታሞ የሚያውቅ ሰው አለ?	2) የለም	
<b>ክፍል 2:- ቆለጥን በራስ ስለመመርመር ተማሪዎች ያላቸውን እውቀት የሚያሳይ መጠይቅ</b>			
201	ቆለጥን በራስ ስለመመርመር ሰምተው ያውቃሉ?	1) አዎ 2) የለም	መልስዎ የለም ከሆነ ወደ ተ.ቁ 203 ይሂዱ
202	ለጥያቄ ቁጥር 201 መልስዎ አዎ ከሆነ ከየት ነው የሰሙት?	1) ከመገናኛ ምንጮች 2) ከጓደኛ 3) ከጤና ባለሙያዎች 4) ከመምህራን 5) ከሌላ (ይጥቀሱ).....	
203	ቆለጥን በራስ መመርመር ለምን ይጠቅማል ብለው ያስባሉ?	1) ቶሎ ምልክቶችን ለማዎቅ 2) በሽታን ለመመርመር 3) አላውቀውም	
204	ቆለጥን በራስ መመርመር በየስንት ጊዜ ይካሄዳል?	1) በየወሩ 2) በየሶስት ወሩ 3) በየስድስት ወሩ 4) በየአመቱ 5) አላውቀውም	
205	በየትኛው የዕድሜ ክልል ውስጥ የቆለጥ ካንሰር ተጋላጭነት ይጨምራል::	1) 15-35 ዓመት 2) ከ15 ዓመት በታች 3) ከ35 ዓመት በላይ 4) አላውቀውም	
206	ቆለጥን በራስ መመርመር የሚከናወነው ሻወር ቤት ውስጥ ወይም ከሻወር በኋላ ወዲያውኑ ነው::	1) አዎ 2) አይደለም 3) አላውቀውም	
207	ቆለጤን በራሴ በምመረምርበት ወቅት እብጠት ላገኝ አችላለሁ::	1) አዎ 2) አይደለም	

		3) አላውቀውም	
208	ከቤተሰብ ወይም ከዘመድ በቆለጥ ካንሰር ታሞ የሚያውቅ ሰው ቢኖር በቆለጥ ካንሰር የመያዝ ዕድል ይጨምራል።	1) አዎ 2) አይደለም 3) አላውቀውም	

**ክፍል 3:- ቆለጥን በራስ ለመመርመር ተማሪዎች ያላቸውን አመለካከት እንዲሁም ለእውቀት ፣ አመለካከትና ክህሎት ወሳኝ ስለሆኑ ምክንያቶች የሚያሳይ መጥይቅ (መልሱን ቲክ (✓) ያድርጉ)**

		በጣም አልስማማም	አልስማማም	እርግጠኛ ፍላጎት አይደለም	እስማማለሁ	በጣም እስማማለሁ
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**3.1. ቆለጥን በራስ ለመመርመር ተማሪዎች ያላቸው አመለካከት**

301	ቆለጤን በራሴ መመርመር ካቆምሁ አካላዊ ጤንነቴ ለቆለጥ ካንሰር አጋላጭነቱ ከፍተኛ ነው።					
302	ቆለጤን በራሴ መመርመር ካቆምሁ ወደፊት በቆለጥ ካንሰር የመያዜ አድል ከፍተኛ ነው።					
303	ስለቆለጥ ካንሰር ሳስብ አፈራለሁ ።					
304	ቆለጥ ካንሰር ቢይዘኝ ስራዬ አዳጋ ላይ ይዎድቀል።					
305	ቆለጥ ካንሰር ቢኖርብኝ ትዳሬ ( ከሴት ጋር ያለኝ ግኑኝነት ) አዳጋ ላይ ይዎድቀል።					
306	የቆለጥ ካንሰር ቢይዘኝ ከሌላ በሽታ ይልቅ የሚብስ ይመስለኛል።					
307	ቆለጥን በራስ መመርመር የቆለጥ እብጠት መኖር አለመኖሩን ለማወቅ ይረዳል።					
308	ሁልጊዜ በየወሩ ቆለጤን በራሴ የምመረምር ከሆነ በጤና ባለሙያዎች ከመታየቴ በፊት የቆለጥ እብጠት ላገኝ እችላለሁ።					
309	በየወሩ ቆለጥን በራስ መመርመር ያሻማቅቃል።					

310	ቆለጥን በራስ መመርመር ሊያሳምም ይችላል።					
311	ቆለጥን በራስ መመርመር ጊዜ ሊወስድ ይችላል።					
312	ቆለጤን ስመረምር ቢያዩኝ ቤተሰቦቼ/ጓደኞቼ ይስቁብኛል።					

**3.2. ስለቆለጥ በራስ መመርመር እውቀት ፣**

**አመለካከትና ክህሎት ወሳኝ ምክንያቶች**

**ቆለጥን በራስ ለመመርመር አነሳሽ ነገሮች**

313	የጤና ባለሙያ ድጋፍ ቆለጤን በራሴ እንድመረምር ያበረታታኛል።					
314	የተለያዩ መረጃ ማግኛ መንገዶች (ፖስተሮች፣ ጋዜጣ፣ ራዲዮ፣ ቴሌቪዥን፣ እንተርኔት) ቆለጤን በራሴ እንድመረምር ያበረታታኛል።					
315	ቆለጤ ላይ የሚታዩ ምልክቶች (የቆለጥ ሽፋን መሰነንጠቅ፣ የቆለጥ እብጠት) ቆለጤን በራሴ እንድመረምር ያበረታታኛል።					

**ቆለጥን በራስ የመመርመር ብቃት**

316	በቀጣይ ጊዜያት ቆለጤን በራሴ እመረምራለሁ።					
317	ቆለጤን በራሴ በትክክል ለመመርመር መረጃ የምፈልግ ቢሆንም መመርመር እችላለሁ።					

**ክፍል 4:- ቆለጥን በራስ ስለመመርመር ተማሪዎች ያላቸውን ክህሎት በተመለከተ መጥይቅ**

401	ቆለጥዎን በራስዎ መርምረው ያውቃሉ	1) አዎ 2) የለም	መልስዎ አይደለም ከሆነ ወደ 407 ይሂዱ
402	መቼ ነው ቆለጥዎውን መመርመር የጀመሩት?	1) ከ15 ዓመት በፊት 2) ከ15 ዓመት በኋላ	
403	ቆለጥዎን በየስንት ጊዜ ይመረምራሉ?	1) በየቀኑ 2) በየወሩ 3) በየሶስት ወሩ	

		4) በየስድስት ወሩ 5) በየአመቱ	
404	ቆለጥዎን እንዴት ነው የሚመረምሩት ?	1) በመመልከትና በመዳሰስ 2) በመመልከት ብቻ	
405	በምን ሰዓት ነው ቆለጥዎን የሚመረምሩት?	1) ከሻወር በፊት 2) ከሻወር በኋላ 3) በማንኛውም ጊዜ	
406	አብዛኛውን ጊዜ የት ሆነው ነው ቆለጥዎን የሚመረምሩት?	1) ከመስታዎት ፊትለፊት 2) ሻወር ቤት 3) አለጋ ላይ ተኝቶ	
407	በምን ምክንያት ነው ቆለጥዎን በራስዎ የማይመረምሩት?	1) ምርመራውን ስለማልችለው 2) ምርመራውን ስለማላውቀው 3) ከምርመራው በኋላ ችግር ይገጥመኛል ብዬ ስለማስብ 4. ምርመራው ኃጢአትና ብልግና ነው ብዬ ስለማስብ 5. ሌላ ካለ ይጥቀሱ.....	

## DECLARATION

I, the undersigned, senior MSC student declare that this thesis is my original work in partial fulfillment of the requirement for the degree of Master of Adult Health Nursing.

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This thesis work has been submitted to Department of Nursing and Midwifery with our approval as university advisor and examiner.

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