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KNOWLEDGE, ATTITUDE AND PRACTICE OF TESTICULAR SELF-EXAMINATION AMONG MALE UNDERGRADUATE STUDENTS OF COMPUTING AND ENGINEERING SCIENCES IN BABCOCK UNIVERSITY, ILISHAN-REMO, OGUN STATE

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ABSTRACT: *Testicular cancer is the most common cancer among young men and early detection improves its prognosis. Meanwhile, testicular self-examination (TSE) is a secondary prevention measure that is easy to perform and helps in the early detection of testicular cancer. There are limited studies to report the level of knowledge and practice of testicular self-examination. Therefore, this study is aimed to assess the knowledge, attitude and practice of testicular self-examination among male undergraduate students of Computing and Engineering Sciences in Babcock University, Ilishan Remo, Ogun State. A descriptive cross-sectional research with a sample of 290 undergraduate students was used for the study. The students offering a course in Computer school were purposively selected from the School of Computing and Engineering Sciences, a multistage sampling technique was used and they were stratified based on their educational levels. A simple random sampling technique was used to select the respondents. A self-structured online questionnaire was used for data collection. Ethical clearance to conduct the study was obtained from Babcock University Ethical Review Committee. Permission to conduct the study was sought from the School of Computing and Engineering Sciences in Babcock University and an informed consent form was attached to the questionnaire. Data were analysed using descriptive statistics. Results show that most of the participants (88.3%) were within the ages of 15-20. The majority (54.1%) had good knowledge of TSE, 41.0% had a positive attitude, but only 14.8% had ever practiced TSE and only 11.4 % had ever had their testicles examined by medical personnel. Despite good knowledge of TSE in this study, the findings revealed that knowledge is not commensurate to attitude and practice. This underscores the need to increase the awareness of TC and TSE among young men. Clinical testicular examination and education needs to be incorporated into routine examinations of young males.*

KEYWORDS: Testicular self-examination, Testicular cancer, Young male, Knowledge, Attitude, Practice, Babcock University, Nigeria.

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INTRODUCTION

Background to the Study

Testicular self-examination is considered a paramount tool for the early detection of testicular cancer (NCI, 2017). A recent survey by the testicular cancer advocacy group, CACTI (Center for Advocacy for Cancer of the Testes International), found that about 45% of men never or rarely examine themselves for testicular cancer, and nearly half of all men do not know the importance of self-examination. The data is especially troubling given how critical a simple, regular examination of the testicles can help in discovering a lump or other suspicious changes and possibly in helping to improve treatment outcomes by diagnosing the disease early (CTCA, 2018).

Globally, testicular cancer (TC) accounts for approximately 1% of all cancers in men and has doubled in the last 40 years. The incidence varies considerably in different geographical areas, being highest in Scandinavia and Switzerland, intermediate in the United States, Australia, and United Kingdom and lowest in Asia and Africa (Ozturk et al., 2014). Although TC is relatively uncommon compared with other forms of cancer, the incidence has been on the increase in recent years in developing countries and has become one of the leading malignant diseases among males aged 18-50 years and the second highest cause of death in Africa, thereby constituting a serious health concern (Ohaeri et al., 2016).

More than 90% of patients living with TC are cured with surgery, radiotherapy, or chemotherapy alone or a combination of them (Urun et al., 2014). However, success in treatment depends on early detection and accuracy of disease diagnosis (Ozturk et al., 2014). One major way for an early detection and prevention of TC is the acquisition of accurate knowledge, positive attitude, accurate and regular practice of testicular self-examination (TSE).

There is an increasing incidence of testicular cancer among men. Globally, incidence rates of TC are rising among the 15 to 54-year-old males, with the majority of those cases affecting males under the age of 40 years (Kenneth et al., 2016). TC accounts for 1 to 2% of all cancers occurring in males, with approximately 2,000 new cases diagnosed in the UK each year (Mistry et al., 2017). In the United States, about 8,000 men are diagnosed with testicular cancer and about 390 men die of testicular cancer each year (Schroyen et al., 2016).

Education and instruction for men on the normal shape and texture of the testicles, plus information regarding signs and symptoms associated with TC could be a critical component in reducing treatment delay (Chapple & Vasudev et al., 2014). Screening for testicular cancer by a healthcare provider and/or testicular self-examination (TSE) is rarely performed, or underperformed, with little or no documentation regularly. The lack of health education provided in this area by healthcare workers is thought to contribute to delays in diagnosis. Unfamiliarity with the practice of TSE in this part of the world is attributable to professional healthcare providers' lack of attention and activity toward providing TSE education to their patients (Brenner et al., 2013).

In the USA, a 15-year-old male is supposed to be equipped with knowledge to make an informed decision concerning testicular self-examination by physicians or nurses, as recommended by the American Cancer Society (Siegel et al., 2016). Even when TSE is

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recommended at an early age, a study done in the USA by Smith et al. (2017) showed that 46% of the respondents reported performing TSE and 51% reported not performing.

Although being most susceptible, young adult men from different countries have different levels of knowledge of TC. For example, a cross-sectional survey was done in Port Harcourt, Nigeria, with 750 participants aged 18 to 50 years from three tertiary academic institutions. The survey showed low knowledge and awareness of TC. The main cause was that only a small number of participants pointed out that they were ever taught about TSE (Ugboma & Aburoma, 2017). A multicenter study conducted in Turkey to test the public awareness of TC and TSE concluded that the awareness was very low as only 11.1% of participants had knowledge about TC and only 1% of participants were carrying out TSE regularly once a month (Kuzgunbay et al., 2018). Catherine et al. (2019) stated that according to Ugboma et al., the awareness of testicular cancer is poor among Nigerian men and is the main factor for lack of testicular self-examination as they were never taught, neither did they ever hear about it. Uganda as a developing country has high levels of adolescents who lack knowledge about testicular cancer and TSE. Hence, there should be a serious attempt by healthcare providers to enlighten the society about TC and the importance of TSE.

It is recognized internationally that men have an attitude of being reluctant to seek medical help (Rachel & Karen, 2016), often delaying until symptoms become debilitating (Cronholm, Mao, Nguyen, & Paris, 2018). This behavior may be due to traditional masculine gender socialization and social norms that encourage men to put their health at risk (De Visser, Smith, & McDonnell, 2017), the stigma of weakness attributed to men who seek help (Hammer, & Hubbard, 2017), or a lack of awareness and knowledge about the risks and warning signs of male-specific diseases, such as testicular cancer.

Mezie-Okoye, Belgam and Tella (2016) reported that of the 267 respondents, 30 (11.2%) had been taught how to perform TSE while 19 (63.3%) of them were taught by doctors, 5 (16.7%) by parents, 3 (10.0%) by teachers and 3 (10%) by friends. Out of 256 respondents, 23 (9.0%) had performed TSE (representing only 2.7% of the study population). Only 8 of 22 (36.4%) performed monthly as recommended, 10 (45.5%) felt normal, 6 (27.3%) shameful, 3 (13.6%) aroused, and 2 (9.1%) guilty after performing TSE. However, about two-thirds, 166 of 256 (64.8%), indicated that they will perform TSE if taught.

Globally, many studies have reported poor knowledge, attitude and practice of TSE among young men who are mostly at risk of TC (Lechner, Oenema, & De, 2018). Little is known about its practice in sub-Saharan Africa probably because TC is categorized as rare among blacks. Only few studies have been carried out on assessing the knowledge and practice of TSE in Nigeria and they all reported very poor knowledge, attitude and practice of the procedure (Salako et al., 2016). The implication of this is late presentation for treatment with increased cost of treatment, emotional distress, morbidity and mortality (Moul, 2017).

There is still a lacuna regarding the statistics on TSE among males in Nigeria, as scanty and few statistics were found on the knowledge, attitude and practise of this procedure. Same was the case in Ogun State, after thorough literature search. Hence, this study is poised to assess the Knowledge, Attitude and Practice of Testicular Self-Examination among Male Undergraduate Students of Computing and Engineering Sciences in Babcock University, Ilishan-Remo, Ogun State.

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Objectives of the Study

The objective of the study is to assess the level of knowledge, attitude and practice of testicular self-examination among Male Undergraduate students of Computing and Engineering Sciences in Babcock University, Ilishan, Remo, Ogun State. Specifically, the study sought to:

1. Assess the level of knowledge towards testicular self-examination among the respondents.
2. Evaluate the attitude of the respondents towards testicular self-examination.
3. Assess the practice of testicular self-examination.
4. Assess the relationship between knowledge and practice of TSE.

Hypothesis

H_{01}: There is no significant relationship between knowledge and practice of TSE among the participants.

H_{02}: There is no significant relationship between attitude and practice of TSE among the participants.

RESEARCH METHODOLOGY

Introduction

This study reviewed the knowledge, attitude, and practice of testicular self-examination among male undergraduate students in Babcock University, Ilishan-Remo, Ogun State. This chapter deals with methods and procedures that were used in carrying out the research work and it contains study design, research setting, target population, sample size determination, sampling technique, instrumentation, validity and reliability of research instruments, data collection procedure, data analysis procedure, and ethical consideration.

Study Design

Descriptive cross-sectional survey research design will be used for the study and this is because descriptive survey research design will help to identify the problems associated with this study, make comparisons, evaluate and collect information in the study.

Research Settings

Babcock University is a private Christian co-educational Nigerian university owned and operated by the Seventh-day Adventist Church in Nigeria. The university is located at Ilishan-Remo equidistant between Ibadan and Lagos.

To the initial four schools, Babcock University added a postgraduate school in the third quarter of 2010 and a medical school in January 2012. The latest additions are the Music and Educational Foundations departments to the Joel Awoniyi School of Education & Humanities. As at 2013, Babcock hosts the following schools/faculties: They are:

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- Benjamin Carson School of Medicine
- Computing & Engineering Sciences
- Education and Humanities
- Law & Security Studies
- Management Sciences
- School of Nursing Sciences
- Public & Allied Health
- Science & Technology
- Veronica Adeleke School of Social Sciences
- College of Postgraduate Studies.

The faculties of undergraduate studies has a total of 30 departments offering undergraduate programs in the institution. The college of Postgraduate Studies has 3 faculties which are Postgraduate Diploma Programs, Masters Programs and Doctoral Programs.

Target Population

The study population consists of Male Undergraduate Students of Computing and Engineering Sciences in Babcock University, Ilishan-Remo, Ogun State. The study purposively focused on the male undergraduate students offering Computer Science Course in the Computer Science Department of Computing and Engineering Sciences School. The students range from 100 level to 400 level with a total of 773 male students in the four educational levels.

Inclusion Criteria

This includes all male undergraduate students offering Computer Science Course in the Computer Science Department of Computing and Engineering Sciences School in Babcock University that were willing to participate in the study.

Exclusion Criteria

This includes all female undergraduate students offering Computer Science Course in the Computer Science Department of Computing and Engineering Sciences School and all male undergraduate students offering Computer Science Course in the Computer Science Department of Computing and Engineering Sciences School that were not willing to participate in the study would be excluded from the study.

Sample Size Determination

The School of Computing and Engineering Sciences of Babcock University consists of two departments which are the Computer Science Department and the Software Engineering Department. The Computer Science Department offers four Courses which are: Computer Science Course, Computer Information Systems Course, Computer Technology Course and Information Technology Course.

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The male undergraduate students offering Computer Science Course in the Computer Science Department were purposively selected for this study because of their population due to the fact that this faculty has the largest population of male students in Babcock University.

The sample size was determined with the use of Taro Yamane's method: The total male population is 773.

$$n = \frac{N}{1+ N \times (e)^2}$$

where N = Population size, e = margin of error which is usually 0.05 and n = sample size. This is more objective and defendable.

$$n = \frac{773}{1+773 \times (0.05)^2}$$

$$n = \frac{773}{1+1.9325}$$

$$n = 263.5$$

To take care of the attrition, 10% of the calculated sample size will be added to give a new sample of 290.

Sampling Technique

The sampling technique to be used is the multistage sampling technique.

Step 1: The target setting was stratified into four levels within the Computer Science Department offering Computer Science as a course and are represented in the study (see Table 3.1 below).

Step 2: Proportionate stratified random sampling technique was used to calculate the number of male students to be enrolled per level (see Table 3.2 below).

Step 3: Simple random technique was used to enrol respondents into the study.

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Table 3.1: Target Setting Stratified into Levels

Level	Stratum size
100L	**271**
200L	**270**
300L	**121**
400L	**111**
TOTAL	**773**

Table 3.2: Proportionate Sampling Table for Determining the Number of Male Students to be Selected from the Four Levels in the Computer Science Department, Offering Compute Science Course

Proportionate stratified random sample formula = **(Sample size/population size) x stratum**

100 Level =271	**200 Level =270**	**300 Level =121**	**400 Level =111**
290 x 271	290 x 270	290 x 121	290 x 111
773	773	773	773
=102	**=101**	**=45**	**=42**

Method of Data Collection

Data Collection Instrument

Quantitative data will be collected using a semi-structured questionnaire comprising 23 questions with 4 sections (A, B, C and D). This is because the respondents are literate and it will also allow for individual privacy. The instrument was designed after a review of the literature, and consultation with the supervisor. Each respondent will be given a period of 30 minutes to complete the questionnaire after which it would be collected. This is to ensure their true responses are collected and also they will not have the opportunity to read about the topic before giving their responses.

But due to COVID-19 restrictions and the University's distribution of students into Batches, the researcher's supervisor approved the use of an Online Google form questionnaire to be

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administered to the participants via communication with their respective course representatives.

Validity of Instrument

Validity is the ability of a test or an instrument to measure what the investigator wants to measure. A draft of the questionnaire was constructed by consulting relevant literature. Peer review of the instrument was carried out among colleagues in the department of Nursing for criticism and appropriate suggestions. Supervisor's review was used to fine-tune the instrument and content validity.

Reliability of the Instrument

Reliability is the accuracy or precision of a research measuring instrument. The questionnaire will be reviewed for quality and consistency. It will pre-test (26 which is 10% of the sample size) to ascertain the suitability and appropriateness to field situations, determine whether the questions are clear and simple enough for the participants' comprehension, and to determine the trend in the response of the participants and the amount of time it will take to administer the questionnaire. At the end of the exercise, questions that are not easily understood will be reframed; those that were found to be irrelevant will be removed.

Method of Data Analysis

The completed questionnaires will be collected and a coding scheme guide will be developed after carefully reviewing the respondents' responses. Appropriate scoring will be done and data will be coded. Manual data entry will be done using Statistical Package for Social Science Software (SPSS). Quantitative data will be analyzed using descriptive statistics (averages and percentages). The two hypotheses will be tested using T-test with level of significance set at 5%.

Ethical Consideration

Ethical approval will be obtained from the Babcock University Health Research Ethics Committee (BUHREC) Ilishan Remo for approval and to administer. A letter of introduction and permission will be taken to the research unit of Babcock University for an approval to conduct the study to be obtained. The respondents' consent will be obtained by providing adequate, clear and complete information about what the study entails. Ethical standard principles will be adhered to in order to ensure confidentiality. Names of the respondents and any other personal identifiers will not be written on the copies of questionnaires. Participants will be informed that participation is voluntary and that data collected is mainly for research purposes. Anonymity and confidentiality of responses will be ensured.

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DATA ANALYSIS AND PRESENTATION

Socio-demographic Characteristics

Table 4.1: Demographic Characteristics of the Respondents (n= 290)

Variable	Frequency (n)	Percentage (%)
Age group		
15 – 20	256	88.3
21 – 25	31	10.7
26 – 30	3	1.0
Religion:		
Christianity	258	89.0
Islam	19	6.6
Traditionalist	2	0.7
Others	11	3.8
Tribe:		
Hausa	1	0.32
Igbo	86	9.7
Others	85	29.3
Yoruba	118	40.7
Educational Level:		
100	102	35.2
200	101	34.8
300	45	15.5
400	42	14.5

Table 4.1 reveals that 88.3% of the respondents aged 15 to 20 years while the least 1.0% aged between 26 and 30 years, 89.0% were Christians while the least 0.7% were traditionalists, 40.7% are Yoruba while least are Hausa.

Knowledge of Male Undergraduate Students about Testicular Self-Examination

Table 4.2: Knowledge of Testicular Self-Examination (n = 290)

Items	Frequency (n)	Percentage (%)
Awareness of Testicular Self-Examination:		
Yes	84	29.0
No	206	71.0
Tools needed to perform TSE:		
None	47	16.2
Mirror	48	16.6
I don't know	195	67.2
Age range is most at risk of Testicular Cancer:		
15 – 35	114	39.3
35 and above	176	60.7

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Have you ever been taught TSE?		
Yes	24	8.3
No	266	91.7
The conduct of TSE prevents prostate cancer?		
Yes	162	55.9
No	128	44.1
During TSE the discovery of lumps indicate early signs of infection.		
Yes	229	79.0
No	61	21.0
On noticing testicular inconsistency or abnormal growth		
Go to the nearest hospital for check-up	263	90.7
Visit a chemist for medication	12	4.1
Wait for a month and repeat TSE	15	5.2
TSE is the cure for Testicular Cancer		
Yes	75	25.9
No	215	74.1

Table 4.2 reveals that 29.0% of the respondents were aware of testicular self-examination (TSE); 16.6% correctly picked a mirror as a tool needed to perform TSE; 39.3% correctly answered age range that mostly at risk of testicular cancer as 15–35 years; 8.3% of the respondents have been taught TSE; 44.1% of the respondents correctly disagreed that the conduct of TSE prevents prostate cancer; 21.0% correctly disagreed that during TSE the discovery of lumps indicates early signs of infection; 90.7% correctly believed that on noticing testicular inconsistency or abnormal growth one should go to the nearest hospital for check-up; and 74.1% correctly disagreed that TSE is the cure for testicular cancer.

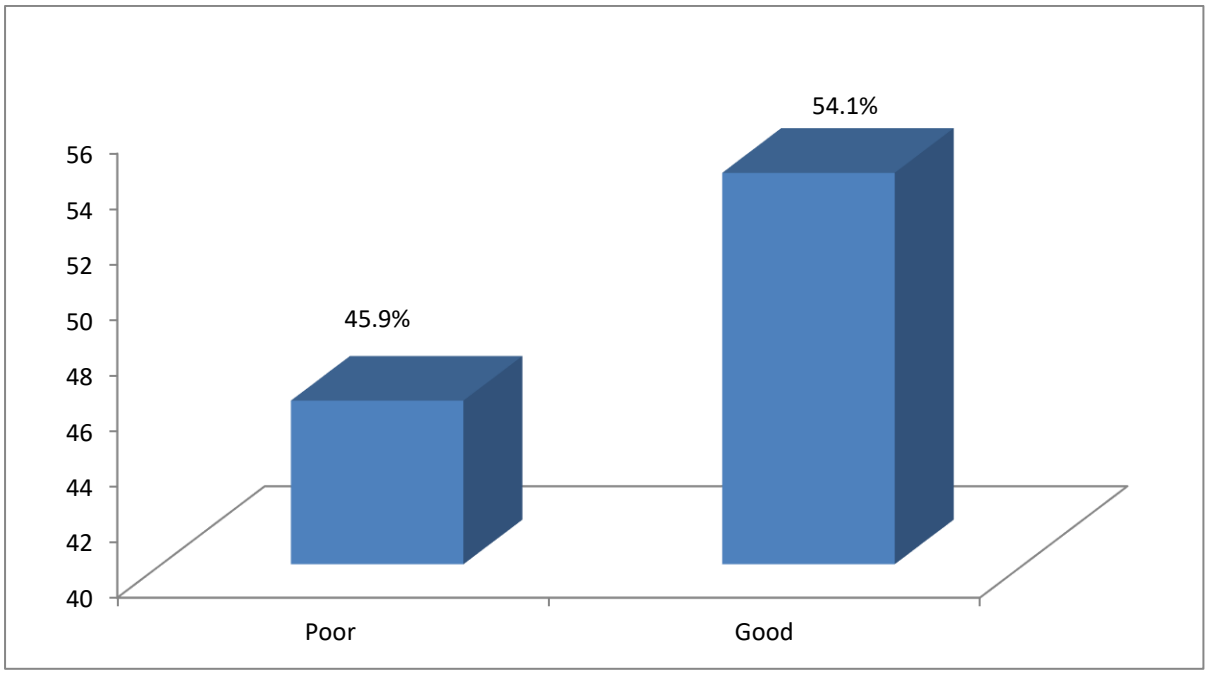

Figure 4.1: Respondents Level of Knowledge of Testicular Self-Examination

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The mean score for the knowledge was 1.6±0.9; 54.1% of the respondents had good knowledge of testicular self-examination.

Attitude of Male Undergraduate Students towards Testicular Self-Examination

Table 4.3: Attitude towards Testicular Self-Examination (n = 290)

	Frequency (%)				
	SA	**A**	**U**	**D**	**SD**
Testicular Self-Examination sounds funny	21 (7.2)	107 (36.9)	72 (24.8)	65 (22.4)	25 (8.6)
Testicular Self-Examination is difficult to perform	11 (3.8)	31 (10.7)	152 (52.4)	72 (24.8)	24 (8.3)
Performing TSE will take too much time	5 (1.7)	37 (12.8)	142 (49.0)	80 (27.6)	26 (9.0)
Performing TSE seems embarrassing/unpleasant	22 (7.6)	59 (20.3)	116 (40.0)	69 (23.8)	24 (8.3)
Testicular Self-Examination is immoral/masturbation	11 (3.8)	19 (6.6)	117 (40.3)	64 (22.1)	79 (27.2)
I believe I'm too young to have testicular cancer	20 (6.9)	70 (24.1)	99 (34.1)	74 (25.5)	27 (9.3)

Table 4.3 reveals that 44.1% of the respondents agreed that testicular self-examination sounds funny; 33.1% disagreed that testicular self-examination is difficult to perform; 36.6% disagreed that performing TSE will take too much time; 32.1% disagreed that performing TSE seems embarrassing/unpleasant; 49.3% disagreed that TSE is immoral/masturbation; and 34.8% disagreed that they are too young to have testicular cancer.

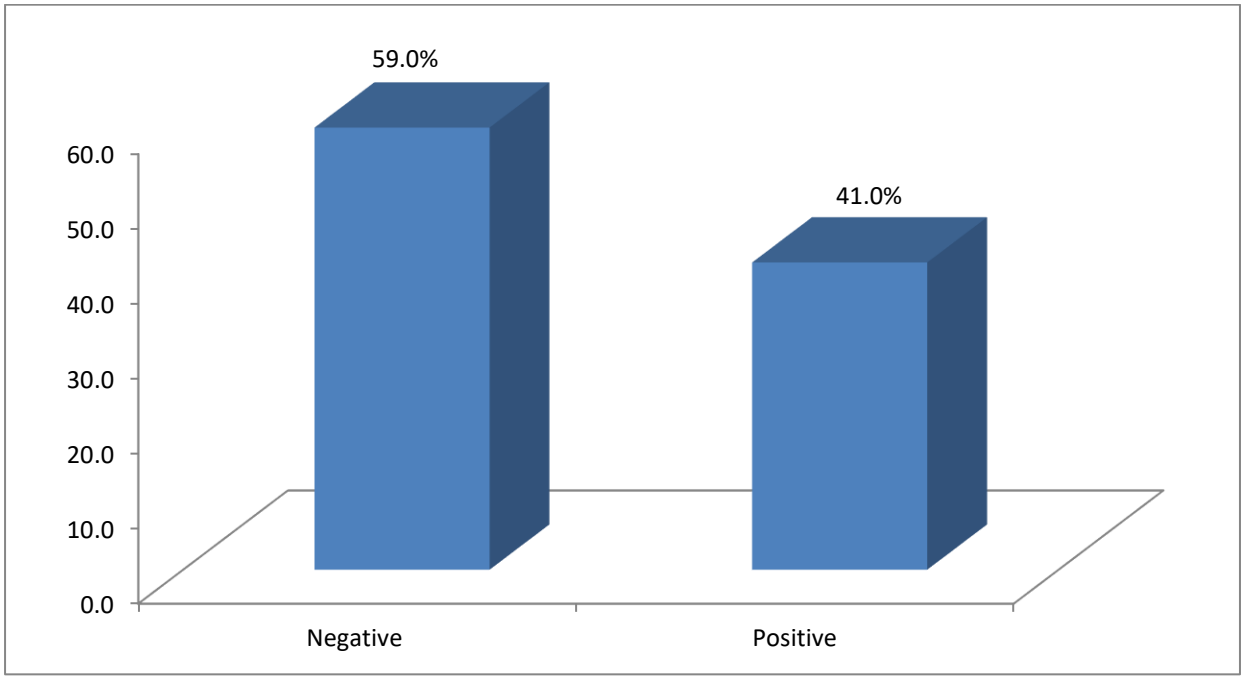

Figure 4.2: Respondents' Attitude towards Testicular Self-Examination

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Figure 4.2 reveals that 59.0% of the respondents had a negative attitude towards testicular self-examination.

Practice of Male Undergraduate Students towards Testicular Self-Examination

Table 4.4: Practice of Testicular Self-Examination (n = 290)

Items	Frequency (n)	Percentage (%)
Have you ever performed Testicular Self-Examination:		
Yes	43	14.8
No	247	85.2
Having ever had your Testicles examined by a medical practitioner:		
Yes	33	11.4
No	257	88.6
How often do you perform TSE		
Once every year	18	6.2
Once every 6 months	24	8.3
Once every 3 months	11	3.8
Once every month	6	2.1
Never perform TSE	231	79.7
The two steps involved in TSE are inspection and feeling only:	156	53.8
Yes	134	46.2
No		
What tool(s) do you use to perform TSE		
None	68	23.4
Mirror	48	16.6
I don't know	174	60.0
Reasons for not performing TSE		
I have never been informed about TSE	168	77.1
I'm not competent to perform TSE	25	11.5
I'm too young to have cancer	25	11.5
Preferred place to learn about TSE		
As regular check-up for males in clinics	112	51.4
In the school as part of a health educational program	106	48.6

Table 4.4 reveals that 14.8% of the respondents have done testicular self-examination (TSE) before; 11.4% were examined by a medical practitioner; 2.1% perform TSE once in every month; 53.8% agreed that the two steps involved in TSE are inspection and feeling only; 16.6% used mirror as a tool to perform TSE; 77.1% claimed that they have never been informed about TSE as a reason for not performing TSE; and 51.4% preferred regular check-up for males in clinics to learn about TSE.

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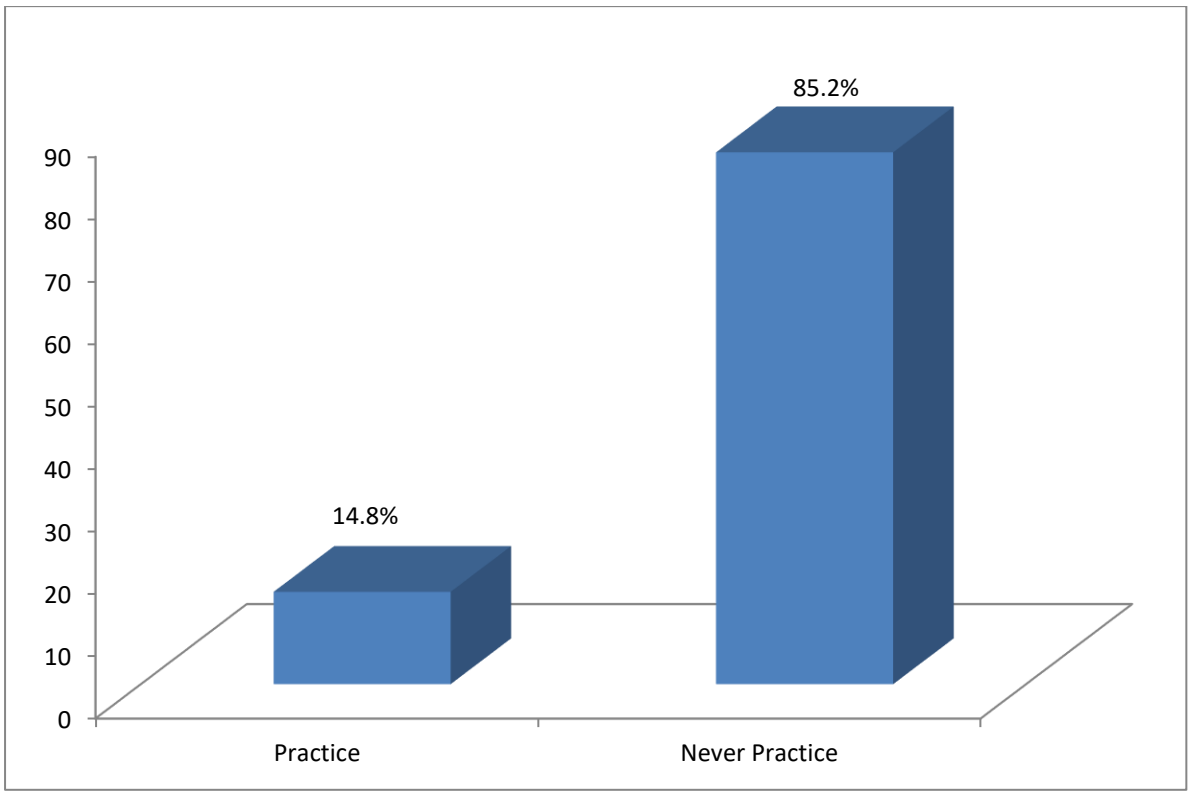

Figure 4.3: Respondents' Practice of Testicular Self-Examination

The figure above reveals that 14.8% of the respondents have practiced testicular self-examination.

Hypothesis Testing

Hypothesis I: There is no significant association between knowledge and practice of TSE.

Table 4.5: Chi Square Analysis of Knowledge and Practice of TSE

		Practice of TSE		Total	X^2-value	df	p-value	Remark
		Practice	Never Practice					
Knowledge	**Poor**	21 (48.8)	112 (45.3)	133				
	Good	22 (51.2)	135 (54.7)	157	0.18	1	0.67	Insignificant

Table 4.5 reveals that there is no significant (p = 0.67) association between level of knowledge of TSE and the practice.

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Hypothesis II: There is no significant association between attitude and practice of TSE.

Table 4.6: Chi Square Analysis of Attitude and Practice of TSE

		Practice of TSE		Total	X^2-value	df	p-value	Remark
		Practice	Never Practice					
Attitude	**Negative**	6 (14.0)	165 (66.8)	171				
	Positive	37 (86.0)	82 (33.2)	119	42.3	1	<0.001	Significant

Table 4.6 reveals that there is significant ($p < 0.001$) association between attitude of TSE and the practice.

Answering of Research Question

Research Question 1: Do the respondents have adequate knowledge on testicular self-examination?

According to Table 4.2 and Figure 4.1, the mean score for the knowledge was 1.6±0.9, showing that 54.1% of the respondents had good knowledge of testicular self-examination with 45.9% having poor knowledge of TSE.

Research Question 2: What are the attitudes of the respondents towards testicular self-examination?

The answer to this question is provided in Table 4.3 and Figure 4.2, which reveal that 44.1% of the respondents had a positive attitude while the majority 59.0% of the respondents had a negative attitude towards testicular self-examination.

Research Question 3: Do the respondents perform testicular self-examination?

According to analysis of Table 4.4 and Figure 4.3, it shows that 85.2% of the respondents have never practiced testicular self-examination while only 14.8% of the respondents have practised TSE, which shows that there were poor practices of TSE.

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Research Question 4: Is there any relationship between the knowledge and practice of testicular self-examination?

The analysis of Table 4.5 reveals that there is no significant ($p = 0.67$) association between level of knowledge of TSE and the practice.

Research Question 5: Is there any relationship between the attitude and practice of testicular self-examination?

As found in Table 4.6, it reveals that there is a significant ($p < 0.001$) association between attitude of TSE and the practice.

DISCUSSION OF FINDINGS

Discussion of Findings

Demographically, the study findings revealed that over four-fifths of the respondents are within the ages of 15-20 years old and are Christians. About two-fifths were of Yoruba ethnic group while more than a third of the respondents' educational level was 100L.

Knowledge of Male Undergraduate Students about Testicular Self-Examination

Majority of the respondents (54.1%) in this study had a good level of knowledge about TSE though not proportional with the level of attitude and practice of TSE. The finding is however encouraging considering the fact that knowledge is always the first step towards motivation of desirable behavior. This finding agrees with Ingwu et al.'s (2016) study of 172 male medical students of the University of Nigeria, Enugu campus, which revealed that 110 (64.0%) had a good knowledge of TSE, but that knowledge was not proportional to the level of practice as 94 (54.1%) had not performed TSE. Both findings might be attributed to the university's environment that the respondents were associated with; it could be inferred that respondents directly obtained information from academic and social environment and from peers. This finding was however at variance with the study of Onyiriuka and Imoebe (2013) where majority (98.7%) of the respondents demonstrated very low knowledge of TSE. The difference in knowledge level may be due to variation in their institutional levels, that is, secondary school versus university.

Attitude of Male Undergraduate students towards Testicular Self-Examination

The study revealed that 59.0% had a negative attitude towards TSE while 41.0% had a positive attitude. This was surprising because a good level of knowledge failed to influence the attitude of the respondents positively; this therefore shows that the desirable measures that could lead to the early detection of testicular cancer were generally unaccepted. This finding is supported by the study of Ramim et al. (2014), Muliira et al. (2011) and Pelzer and Pengpid (2014) where respondents portrayed a poor attitude for TSE. The authors attributed their findings to the fact that respondents did not perceive TSE to be important and even if it was perceived as important, it was irrelevant for men of their young age. Specifically, the findings of Ramim et al. revealed

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that only about 10% of 330 young males in a medical sciences university in Iran had a good attitude about performing TSE and over 81% showed poor efficacy.

Practice of Male Undergraduate Students towards Testicular Self-Examination

This study revealed low practices (85.2%) of TSE among male undergraduate students of the Computing and Engineering Sciences in Babcock University. Only an insignificant minority (2.1%) practiced TSE regularly and as recommended while the other few who practiced TSE did so irregularly and not as recommended. This finding could be associated with the fact that most respondents had never been informed about TSE (77.1%) and the tools needed to perform the procedure, had never practiced TSE, and also the majority (88.6%) had never been examined by a medical practitioner. Poor attitude towards TSE also influenced its practice among the respondents as they agreed that TSE sounds funny and believe that they are too young to have testicular cancer. This finding is further supported by Ingwu et al. (2016) and Mizie-Okoye et al. (2016) who reported low practice of TSE despite the high level of knowledge.

Hypothesis

A chi-square value of 0.18 was obtained revealing that there is no significant ($p = 0.67$) association between level of knowledge of TSE and the practice while a value of 42.3 was obtained showing that there is a significant ($p < 0.001$) association between attitude of TSE and the practice.

Summary of Findings

In summary, the study was carried out to investigate the knowledge, attitude and practice of testicular self-examination among male undergraduate students. Several relevant literatures were reviewed on the topic, sub-topics were explicitly explained, and Health Promotion Model was the adopted framework for the study. A descriptive cross-sectional design was adopted for the study where two hundred and ninety male undergraduate students were randomly selected from the Computer Science Department of the School of Computing and Engineering Sciences, Babcock University, Ilishan, Remo, Ogun State. An online-administered questionnaire was used to obtain information on relevant issues and the gathered information was presented on frequency-percentage tables and charts while the hypotheses were tested using chi-square at 5% level of statistical error.

Implication of Findings to Nursing

Nurses have a critical role to play in the health education of men; on the health promotion of testicular self-examination, identifying the signs of testicular cancer at an early stage and encouraging a positive attitude and practice towards TSE. Nurses should carry out TSE on male patients regularly as part of a physical assessment.

Most importantly, testicular self-examination should be incorporated into nurses' training as very few have in fact been taught TSE. Nurses' lack of knowledge about TSE and lack of its practice on male patients would hinder the ability to teach and promote TSE among men.

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CONCLUSION

In conclusion, the study of the male undergraduate students discovered that more than half of the respondents had a good knowledge of TSE. However, their level of knowledge did not translate into their attitude and practice of TSE as about three-fifth of the respondents had a negative attitude towards TSE and only less than a fifth ever practiced TSE.

RECOMMENDATIONS

Awareness programs, campaigns and seminars can be organized about TSE to the general public. TSE should be integrated into clinical physical assessments. Young men attending healthcare institutions for any reason should be given health education on TSE accompanied by a patient leaflet containing all essential information about its procedure, tools and the frequency of its practice as recommended. Nurses should be taught TSE and its importance in the early detection of testicular cancer.

Suggestion for Further Study

This gap in actual practice calls for concern among all stakeholders, considering the high risks of testicular cancer among young men. It may be necessary to undertake another study to ascertain the reasons for poor and low attitude and practice despite the high level of knowledge about TSE.

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APPENDIX

BABCOCK UNIVERSITY
HEALTH RESEARCH ETHICS COMMITTEE

NHREC/24/01/2020 BUHREC308/21 April 19, 2021

Our Ref._____ Your Ref._____ Date:_____

NAME OF PRINCIPAL INVESTIGATOR: OAMEN GRACE E.

TITLE OF STUDY: KNOWLEDGE, ATTITUDE AND PRACTICE OF TESTICULAR SELF-EXAMINATION AMONG MALE UNDERGRADUATES OF COMPUTING AND ENGINEERING SCIENCES IN BABCOCK UNIVERSITY, ILISHAN-REMO, OGUN STATE.

RESEARCH LOCATION: OGUN STATE, NIGERIA.

NOTIFICATION FOR ETHICAL APPROVAL

Babcock University Health Research Ethics Committee has approved your research proposal and other related materials after the necessary reviews and corrections.

The National code for Health Research Ethics requires that you comply with all institutional guidelines, rules and regulations. All forms and questionnaire must carry the assigned BUHREC number. No changes are permitted in the research without prior approval by the Committee.

Please, note that the Committee will monitor the research study. All data collection must be completed within twelve calendar months (One year), from the date stated on this approval.

You are expected to give a progress report of the investigation and submit a final copy of the research to the Committee.

This approval is with effect from March 31, 2021.

Thank you.

Professor S. O. Fapohunda
Chairman, Babcock University Health Research Ethics Committee
09133507122

Babcock University Health Research Ethics Committee (BUHREC)

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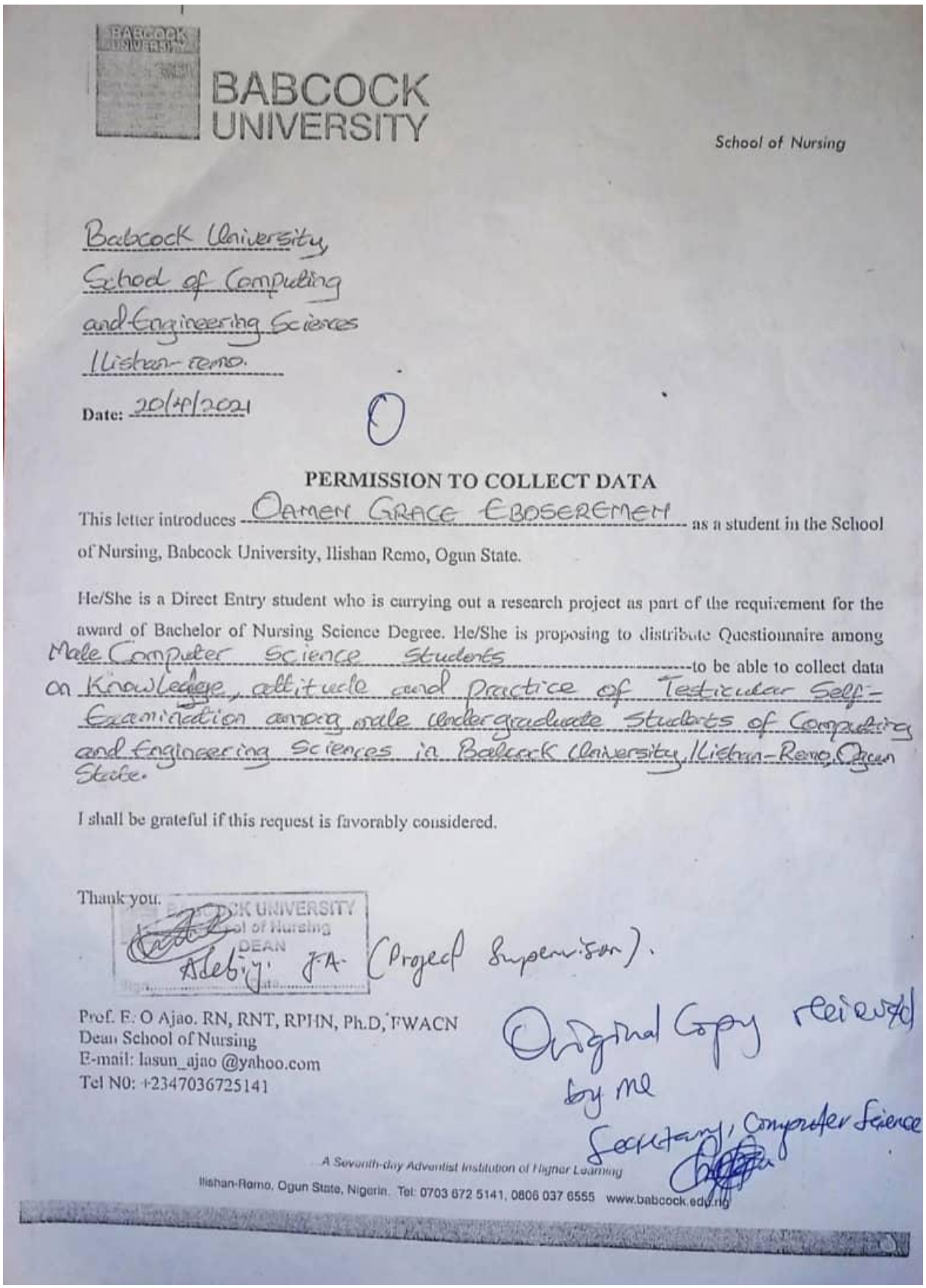

BABCOCK UNIVERSITY

School of Nursing

Babcock University,
School of Computing
and Engineering Sciences
Ilishan-remo.

Date: 20/4/2021

PERMISSION TO COLLECT DATA

This letter introduces OAMEN GRACE EBOSEREMEN as a student in the School of Nursing, Babcock University, Ilishan Remo, Ogun State.

He/She is a Direct Entry student who is carrying out a research project as part of the requirement for the award of Bachelor of Nursing Science Degree. He/She is proposing to distribute Questionnaire among Male Computer Science Students to be able to collect data on Knowledge, attitude and Practice of Testicular Self-Examination among male undergraduate Students of Computing and Engineering Sciences in Babcock University, Ilishan-Remo, Ogun State.

I shall be grateful if this request is favorably considered.

Thank you.

BABCOCK UNIVERSITY
School of Nursing
DEAN
Adebiyi J.A. (Project Supervisor).

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by Oamen Grace Eboseremen

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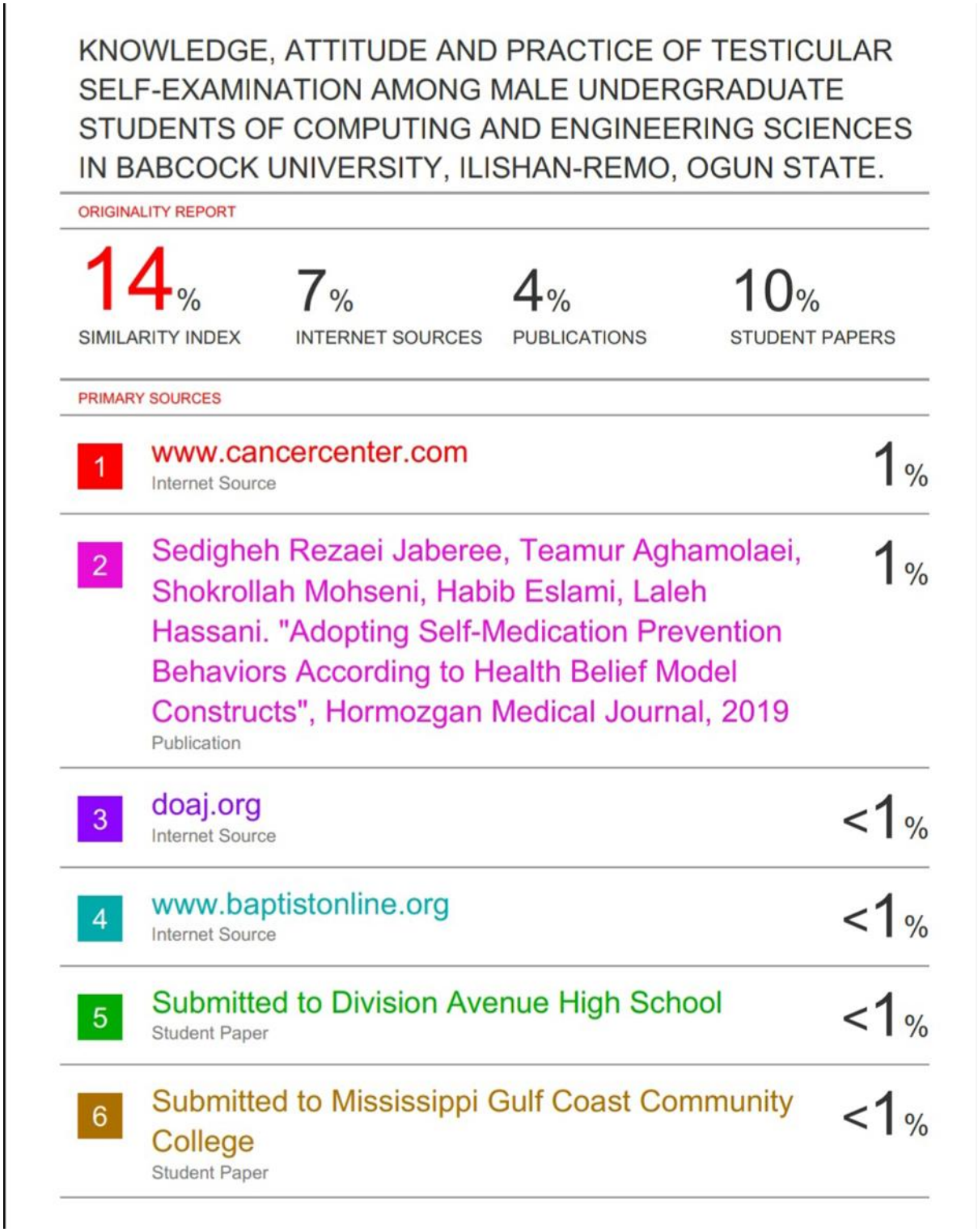

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