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Health Literacy and Use of Preventative Care of Female Undergraduate Nursing vs. Non-Nursing Students

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Abstract

Background: Health literacy and use of preventative care are important aspects of health care. Health literacy, or the ability to understand basic medical knowledge, affects a person's understanding and use of preventative health care. Aim: This study was designed to investigate the perception of health literacy and use of preventative care resources by female undergraduate college students. Method: This is a quantitative, non-experimental descriptive research study with a cross-sectional design. A 30-item demographic *yes or no* and a Likert-type scale was used to survey 62 female college students living in a dormitory. The goal was to discover if additional education is needed to obtain optimal utilization of health care resources for this population. Result: Surveying the undergraduate nursing and non-nursing students helped raise awareness of health literacy of the female students. Conclusion: Understanding the use of preventative care resources by this population may influence the way nursing interventions are formulated.

Keywords: health literacy, preventive care, female college students

1. Introduction

Health literacy is an important public health issue and is receiving growing attention (Rong et al., 2017). Von Wagner, Steptoe, Wolf, and Wardle (2009) indicated that health literacy and perceptions of preventative care is a topic of interest as it is highly important to the female students and it has the potential to decrease healthcare costs. The ability a student has in understanding a doctor's orders and practicing preventative care is affected by health literacy. Healthcare professionals rely on various methods to get the message of prevention and education to the consumer and is often in written form or face-to-face dialogue. Therefore, the student with low health literacy is unlikely to participate in preventative care and may rely on personal perceptions and life experience to make healthcare decisions. This leads to increased emergency room use and a decrease in the use of a primary care physician (von Wagner et al., 2009; Schneider, 2012). The purpose of this quantitative study was to investigate the personal perceptions regarding health literacy, and the use of preventative healthcare resources by undergraduate female college students. The theoretical framework used to guide this study was the health belief model (HBM).

The background of this issue is relevant to this study. Mack (2011) identified that the American College Health Association (ACHA) is active at colleges in the United States; educating, and advocating for students' health. Various researchers found female undergraduates were unaware of their health risks, and even with awareness, did not always practice preventative care (Early, Armstrong, Burke, & Thompson, 2011). College is a transitional time for these women and often a time when they begin habits that may last a lifetime (Early et al., 2011).

2. Background

Health literacy and perceptions of preventative care were chosen partially as a result of personal interest related to an increased awareness of the cost-saving effects of preventative health care. This study is important to the female students because it has provided an increased awareness of the perceptions that female students have

regarding their personal health status, in addition to their perceptions about preventative health care. This study has also provided nursing and educators with awareness of potential gaps in the students' knowledge-base regarding preventative health care. Von Wagner et al. (2009) defined health literacy as the ability of an individual to acquire and understand health information and the ability to access care and make decisions appropriately.

In the next few paragraphs, the various contributions of the American College Health Association (ACHA) to the health of the undergraduate students on college campuses across the United States are discussed. Mack (2011) noted that the ACHA was formed in the early 1900s to address the needs of college student's health care. The mission of ACHA is to advocate, communicate, educate, and provide health services for college students. It is the goal of the ACHA to provide research and evidence-based practice to advance the health of the student body. ACHA provides health professionals on college campuses with valuable information regarding disease outbreaks that affect students (Mack, 2011). For example, the ACHA is involved in preventative care for college students. They implemented education for students to stop risky behaviors that promoted sexually transmitted diseases. In 1997, this organization launched a campaign advocating students to be vaccinated against the meningococcal disease; as college students living in dorms were six times more likely to contract this illness (Mack, 2011).

Whereas the ACHA is concerned with the health of college students, they did not adequately explore the specific health needs of the female college student. Mack (2011) noted that the ACHA conducted a survey, in which more than 800,000 students in 540 colleges and universities participated, assessing the health factors of students. Another aspect, which the ACHA addresses, is the affordability of health care for college students. One of the highest priorities of this organization was to advocate for affordable health insurance for students providing quality health care coverage (Mack, 2011). The Association's goals are relevant to this study as they advocate for education, health literacy, and decreased costs for students in America. It is apparent that college students are affected by preventable diseases and increased costs associated with the lack of health knowledge and use of preventative care.

Muñoz et al. (2010) stated there is little known about female college students' perception of their risks associated with cardiovascular health. Similarly, Early et al. (2011) found college women are oblivious to their risks for breast cancer, and their perceived risks did not influence self-breast examinations. Early et al. (2011) stated 40% of female college students were unaware of the need to start doing self-breast examinations in their 20s. Ninety-eight percent of female students believed that medical professionals alone are qualified to find an alleged lump in the breast (Early et al., 2011). One systematic review showed church-based education programs were effective in enhancing health literacy and preventive knowledge and awareness (Hou & Cao, 2017).

Ickes and Cottrell (2010) warned that a major health concern in the United States is health literacy. There is limited information available on college students' literacy levels; however, there is an indication that even with higher education levels health care consumers had trouble comprehending health care literature. This indicates the need for additional studies on this topic. A common theme is emerging; insufficient health literacy, inadequate disease prevention, and increased health care costs are negatively affecting health for female college students. Early et al. (2011) insisted, an advisable method of dealing with the problem is to start with health education, thus providing the female college students with basic knowledge and promoting their health awareness. This strategy must be combined with increased efforts by students to practice preventative health care.

3. Problem Statement

The United States recognizes the lack of health literacy as a major issue in health care (Ickes & Cottrell, 2010). The lack of knowledge and utilization of preventative health care resources contributes to an increased cost to female college students. Increased costs are associated with lack of preventative care use and an increase in the emergency room use. Health literacy affects a student's ability to comprehend medical information, which leads to a decrease in the use of health care services and an increase in hospitalizations (Ickes & Cottrell, 2010; von Wagner et al., 2009).

4. Purpose Statement

The purpose of this quantitative study was to investigate the personal perceptions regarding health literacy, and use of preventative health care resources by undergraduate female college nursing vs. non-nursing students.

5. Research Questions

There are two central research questions that provided the drive for the current study.

RQ 1: What is the health literacy of undergraduate female college nursing vs. non-nursing students?

RQ 2: What perceptions regarding the use of preventative health care resources do undergraduate female college nursing vs. non-nursing students have?

6. Review of the Literature

6.1 Databases Used

The literature was retrieved from EBSCOhost, especially from the Cumulative Index to National and Allied Health Literature (CINAHL) database and Medline with Full Text, which provided scholarly, peer-reviewed academic journals. Articles were collected from various journals, such as the American Journal of Health Education, Journal of College Health, Health Communication, Psychology, Health and Medicine, Journal of Women's Health, American Journal of Public Health, and Health Education and Behavior. Some keywords used were *health literacy, preventive care, and female college students*. This provided a wide range of research to support the need for further investigation on this topic.

6.2 Literature Review

As mentioned in the problem statement, health literacy is a major cause of concern in health care. The lack of health literacy influences the use of preventative healthcare, and preventative health care is dependent upon the perception of individual risk (Munoz et al., 2010). Von Wagner et al. (2009) reported that approximately 26% of United States citizens experience low health literacy and only approximately 20% have a marginal level of literacy. It is estimated that 75 million Americans have low health literacy. Inadequate health literacy is associated with an understanding of illness and treatments as well as observance of medical directives (von Wagner et al., 2009).

Numerous college students are living independently and find themselves responsible for their own health care. College life is a transitional time for students and may be a time when they begin to develop their own health habits that will last for the rest of their lives (Banas, 2008; Early et al., 2011). Ickes and Cottrell (2010) mentioned that there is a connection between one's level of education and personal health. Individual lack of educational opportunities contributed to a low health literacy level. However, despite their educational opportunities, only 20% of the United States college students with a four-year Baccalaureate degree and 30% of students who finished a two-year degree had fundamental quantitative health literacy. In addition to the importance of education levels, the characteristics and life experience of the individual contribute to one's health, and wellbeing (Clements & Bailey, 2010).

Schneider (2012) argued that the status of health literacy is difficult to identify. When surrounded by the health care environment, even the most educated person can become illiterate regarding health care information. There is a large amount of information presented in health care settings, which makes it difficult for the consumer to perceive and interpret this information. Schneider (2012) recommends it is highly beneficial for an individual to understand health care. An individual capable of understanding the many documents and forms, subsequently allowing interpretation of the information given, is more likely to receive quality care. They are also more likely to follow medical advice and maintain a healthy lifestyle (Schneider, 2012).

The health system relies on pamphlets, written forms, and other materials that require the client to have foundational skills, such as the ability to read and understand information in written form. This is a vital part in leading the consumer to use the primary and preventative services available (von Wagner et al., 2008). Low health literacy means the individual will have difficulty understanding the information presented; thus the individual will not benefit from campaigns for education on preventative care or recommended screenings. This leads to the consumer relying on personal assumptions and experience instead of the latest research and evidence-based practice (von Wagner et al., 2008).

The potential benefits of available services are thus limited in the client with low health literacy. The lack of comprehension, combined with their reliance on personal beliefs about health care may lead to negative beliefs about the health services available or potentially beneficial health screenings (von Wagner et al., 2008). These screenings are an essential component in early detection. The client with limited knowledge about health care often has a fatalistic view. They believe if there are no symptoms, there is no need to screen for potential risks or use preventative care. This, in turn, propagates their negative attitudes related to beneficial screening tests (von Wagner et al., 2008).

Schneider (2012) alleged that health care workers need to be involved in addressing the issue of health literacy. The patient and clinicians need to form a safe environment in which dialogue can occur. It is imperative that the patient receive the necessary information in a comprehendible format. Schneider (2012) emphasized the importance of providing holistic care and use of health literacy in all levels of care, advocating the use of words

in both written materials and in oral dialogue, which is easily interpreted by the client. The health care worker is urged to be proactive in helping patients see the importance of health, and to stay in tune with the latest information available on current health care guidelines. The clinician should counsel the patient on preventative lifestyle change (Munoz et al., 2010).

Individuals perceive preventability of disease differently based on their personality, beliefs, specific disease characteristics, or a combination of those three factors. A person's perception of the preventability of her disease is often a good indicator of how she will respond to preventative health care. If she believes she can prevent the disease, she will be more likely to take action (Lucas, Lakey, Alexander, & Arnetz, 2009).

Ormond, Spillman, Waidmann, Caswell, and Tereshchenko (2011) analyzed the savings that could be made through a reduction in disease prevalence. They looked at diabetes, hypertension, and related conditions. The results reflected savings which would amount to nearly 9 billion dollars per year if the prevalence of hypertension and diabetes were decreased by 5%. Ormand et al. (2011) stressed that a substantial amount of money could be saved in health care costs if preventative care were implemented.

Yabroff et al. (2009) explored physician adherence to the guidelines for cervical cancer screenings created by the American College of Obstetrics and Gynecology, American Cancer Society, and U.S. Preventive Services Task Force. The guidelines recommend that screenings begin at age 21 or fewer than 3 years after the patient's first sexual intercourse, whichever comes first. Patients are to be screened annually until age 30, at which point they can be screened every 2-3 years if they have had 3 consecutive normal Pap test results. Primary care physicians' recommendations for screenings were not consistent with the guidelines established by the American College of Obstetrics and Gynecology, American Cancer Society, and U.S. Preventive Services Task Force (Yabroff et al., 2009.)

Skin Cancer is the most common type of cancer in the Unites States of America and is tied to harmful UV rays emitted by the sun (Moyer, 2012). There is insufficient data to determine if sunscreen use is the best form of prevention, as it can only prevent certain types of skin cancer and the negative effects of daily sunscreen use have not been determined. It is still recommended by the American Congress of Obstetricians and Gynecologists for sunscreen to be regularly used and artificial tanning is avoided (Moyer, 2012).

6.3 Summary of Literature Review

Research studies pertaining to health literacy and use of preventative care regarding female college students have been difficult to find during the time of this study. This lack of resources indicated a gap in the literature. There are multiple factors which contribute to health literacy. The client's linguistic and reading abilities have a significant impact on their knowledge base (Clements & Bailey, 2010). It is imperative to understand a client's ability to comprehend both written and spoken information to determine the appropriate level with which to communicate.

Despite a higher education level, if a client cannot perceive a threat to her wellbeing, she is unlikely to use preventative resources such as screenings and vaccinations. As a result, the health belief model was the most appropriate one for the study. It allowed the researchers to account for a client's perception of threat and predict her use of preventative health care.

It is clear from the literature search that health literacy is an important aspect of the healthcare system. Health care workers need to educate the client and communicate in a way the client can easily understand. By speaking to the client's knowledge base, the health care provider will potentially increase the client's health literacy. This increased health literacy may lead to an increase in preventative care, and a proactive lifestyle, which naturally will cause a decrease in cost to the client. There may also be a need for physicians to be more proactive about preventative care education with their patients.

7. Theoretical Framework

Rosenstock (1974) was one of the pioneers in developing the health belief model (HBM). This model is associated with the ability to clarify behaviors associated with positive health outcomes. Carpenter (2010) clarified that the original intent of the HBM was to understand why people failed to use preventative health care, although providers were actively trying to improve health care for the public. The HBM is focused on perceptions of the client and specifies four variables, which will predict various behaviors. The first variable relates to the individuals' motivation to have a healthy lifestyle if there is a perception of risk for a certain illness or disease. On this note, the client will not act differently if there is no perceived risk of a negative outcome (Carpenter, 2010).

The HBM next predicts the more the client perceives the severity of a negative outcome, the more likely she will take a preventative action to avoid the undesirable outcome. A severe outcome is considered to be impairment physically or mentally, pain or death. So if the individual does not perceive the outcome to have a large impact on her life, she will not take the necessary action to prevent it (Carpenter, 2010). The final two variables target the individual's perception of the actions that will diminish the negative outcomes regarding her health. Thus if the action is perceived to be too difficult or the benefit does not outweigh the challenge, the client will not do the action (Carpenter, 2010).

College students participate in numerous activities, which increase risks associated with their health (Moore & Bian, 2012). In the Moore and Bian study, participants were randomly selected to participate in a computer program developed by the authors to educate about health interventions or a control group. The results indicate the computer program has the potential to intervene effectively and have a positive effect on their health perceptions and the subsequent use of preventative health care (Moore & Bian, 2012). The HBM applied well with the current research as the researchers desired to see what the perceptions of preventative care are prevalent in the female undergraduate college students.

8. Definition of Terms

The independent variable in this research is the health literacy of college undergraduate female population. The dependent variable is the college female students' use of preventative health care. Health literacy is defined as one's ability to attain and comprehend basic health information and to make appropriate decisions regarding health care (von Wagner et al., 2009; Ickes & Cottrell, 2010). Preventative care is a pattern of nursing and medical care that focuses on disease prevention and health maintenance.

9. Research Method and Design

The research approach for this study is quantitative, non-experimental, with a descriptive design. A cross-sectional sampling was used to survey 62 female student participants. This type of study indicates that the data collection happens at a single point in time (Schmidt & Brown, 2015). A quantitative design provides support that describes an occurrence and differences among variables using numbers to provide evidence. The non-experimental design was chosen as the researchers did not directly change the independent variable (Schmidt & Brown, 2015). As recommended by Schmidt and Brown (2015), data were collected in a consistent manner making sure instruments were administered in the same order for all participants, in the same context and setting, using the same set of directions.

10. Interview Instrument

The research tool used in this study is a survey containing demographic, Likert-type scale items, and yes or no questions. The survey was created by the researchers after a thorough review of the literature including studies from Carpenter (2010); Ickes and Cottrell (2010); and Ormand et al. (2011). The survey items and questions were sent to two peer reviewers to establish face validity. The peer reviewers provided feedback directly onto the questionnaire. Face validity is defined as a test for content validity when colleagues or subjects examine an instrument and are asked whether it appears to measure the concept (Schmidt & Brown, 2015). Nursing department faculty also provided critique and feedback for the final survey.

This tool was designed to identify the health literacy and perception of preventative care use in female undergraduate college students. Two different scales were used to gain more complete and concise information. This tool was designed to be comprehensive and simple for the participants to complete in about 5 minutes. This research approach is preferential to analyze the data adequately and compile it succinctly.

Permission to conduct research was obtained from the College Institutional Review Board (IRB) before sampling of participants began. Some examples of statements addressing research question one, on health literacy, are "I know when I should have my first pelvic exam," and "I obtain health information from my primary physician." Example of statements addressing research question two on the perceptions of preventative care are "I believe I can prevent diagnoses such as type-2 diabetes," and "I have gotten the full series of Human Papillomavirus vaccines."

11. Informed Consent

Informed consent was obtained from each participating in this study. The consent contains the names of the researchers and their relationship to the college. The purpose and procedures of the study, right to ask questions and right to withdraw from the study are made clear in the informed consent. There were no foreseeable risks to the participants of the study. The researchers' contact information was provided in case of questions or if the participant wished to withdraw from the study. The professor's contact information was also included in case the

participant desired to contact him. Finally, there was a place for the participant to sign and date, stating they had read and understood the consent form.

12. Confidentiality

Utmost care has been taken to ensure the confidentiality of all participants. Names of participants were not written on the survey sheets. As suggested by Schmidt and Brown (2015), each participant was assigned a research identification number that was on each page of the questionnaire, in case the pages get separated. The surveys and consents were kept in separate manila envelopes and were not shared with anyone outside the research group. The data collected was compiled and evaluated at a private residence, to ensure the privacy of the participants. After the study was completed, the surveys and consents were placed into a locked cabinet in the School of Nursing. These documents are stored for a maximum of three years and then destroyed.

13. Data Collection and Analysis Process

The research took place on the college campus dormitory after receiving permission from the IRB. The inclusion criterion is identified as a female residential undergraduate student at the college. Participants were between the ages of 18 and 25. Individuals were surveyed by the distribution of surveys in female residential dorms. Data collection was achieved by using a Likert-type scale and yes or no questions. The surveys were distributed in the female student dorms on the college campus. Informed consent was given to each of the participants to sign, one for the participant's record and one for the research project's record. The study was briefly explained, followed by the informed consent and the survey. The surveys were immediately collected and kept separate from the informed consents for privacy reasons. The total number of surveys collected was 75, but 13 of those were incomplete and thus could not be used in the data analysis. The data was based on the remaining 62 completed surveys. Descriptive statistics was used to analyze the data. Data collected was analyzed for frequency distributions, percentages, means, and standard deviations. Tables and graphs were created to organize and present the data.

14. Results

The purpose of this study was to investigate the personal perceptions regarding health literacy, and use of preventative health care resources by undergraduate female college students. This section of the study discusses the data of the study. The data collection is described followed by the demographic section. The data is divided into sections with the specific questions addressing RQ1 and RQ 2 divided into tables, with graphs highlighting the important categories of nursing and non-nursing participants for both research questions. Prior to evaluating the data, each survey underwent an assessment to ensure completeness.

Table 1 contains participant demographics. All participants were undergraduate college students. The majority of participants were non-nursing students (75.8%), and the remaining participants were nursing students (24.2%). The major is followed by the class status of the participants and somewhat equally divided. Seniors constituted 23%, juniors were 26% of the sample, sophomores were 21%, and freshman was 31% of the total sample.

15. Participants' Demographic Characteristics

Table 1. Demographics

	Frequency (f)	Percent (%)
Major		
Non-Nursing	47	75.8%
Non-Nursing	15	24.2%
Class Status		
Senior	14	23%
Junior	16	26%
Sophomore	13	21%
Freshman	19	31%
Age range		
18-24	62	100%

N=62

16. Analysis of Results

The two research questions are discussed at length in table 2 and 3. A rating above 4 is considered above average, the participant's rated these items of high importance. Nursing student's perceived healthcare to be affordable (4.3), whereas non-nursing student's rated this item a little lower (3.5). Both nursing and non-nursing student's perceived diabetes to be preventable, although nurses rated it (4.6) and non-nursing students (3.6).

17. Discussion of Findings

The first research question this study focused on was, "What is the health literacy of undergraduate female college students?" The items assessing this aspect of the research were prevention of diabetes, affordability of healthcare, health information is obtained from primary physician, the need for a pelvic exam, self breast exams, importance of human papilloma virus (HPV) vaccine, the ability to get health insurance, health information access, the necessity of a pelvic exam, knowledge of the time to begin pelvic exams, and current access to a primary care physician. The participant's used a numerical rating scale from 1 (strongly disagree) to 5 (strongly agree) and a yes and no scale.

Table 2. Comparison of the responses addressing health literacy

Variables	Mean Nurs.	SD Nurs.	Mean Non-Nurs.	SD Non-Nurs.
Prevention of diabetes	4.6	0.5	3.6	1.4
Affordability Of Healthcare	4.3	0.8	3.5	1.3
Health Information Obtained	3.9	0.7	3.6	0.9
Need for Pelvic examinations	2.8	0.9	2.8	1.5
Self-breast exams	2.5	0.9	2.8	0.6
Importance of HPV vaccine	3.3	1.0	2.9	1.2
Ability to get health insurance	3.7	0.8	2.9	1.2
Health Information from the Internet	2.9	0.8	3.1	1.0
Yes/No Responses		**% YES**		**% NO**
Necessity of a pelvic exam		69%		31%
Knowledge when to begin pelvic exams		94%		6%
Current access to a primary care doctor		92%		8%

Note. N=62. Items were rated on a 5-point Likert-type scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*), so higher means indicate higher levels of agreement

The health literacy mean of female undergraduate college students rated from 2.8 to 3.6 for non-nursing students and 2.5 to 4.6 for nursing students. On the yes questions 69% thought a pelvic exam was necessary, 94% knew when to begin getting pelvic examinations, and 92% of the participants stated they have current access to their primary care physician. There were some differences between nursing and non-nursing student's health literacy. Nursing student's generally rated higher however, there was one area regarding importance of self breast exams where the mean of the non-nursing student's was higher. Non-nursing students also rated higher in the use of the internet to acquire health information (3.1 SD of 1.0 versus nursing 2.9 SD of 0.8). Literature suggests that the Internet is a favorite source of health information for college students (Robb & Shellenbarger, 2014). Nursing students tend to get their health information from their primary physician, and it is presumable these students acquire some of their health information from their education. Non-nursing students rated their ability to get health insurance lower (2.9 with SD of 1.2) and nursing students perceived their ability to get health insurance at a mean of (3.7 with SD of 0.8) Graph 1, depicts the top 4 mean categories for RQ 1 and the differences between nursing and non-nursing.

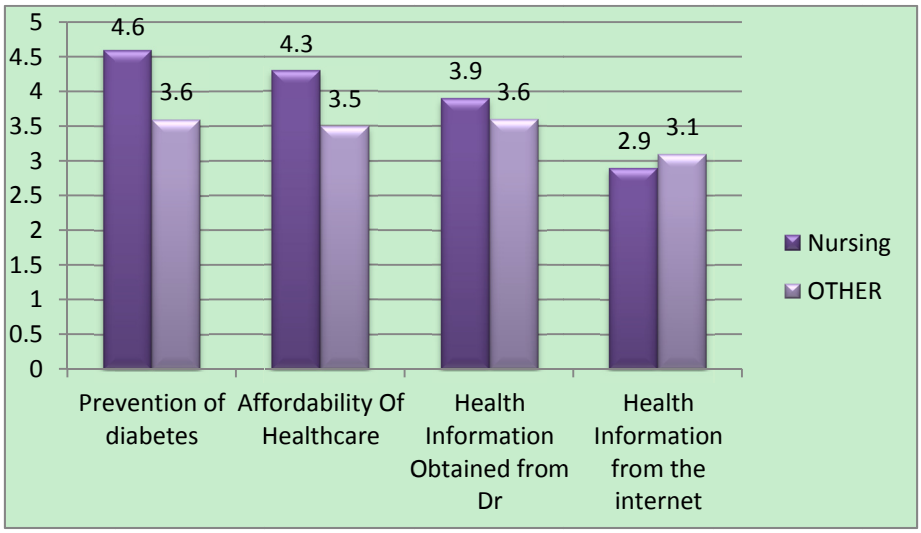

Figure 1. Top 4 categories for RQ 1: Health literacy

The second research question addressed in this study was, "what perceptions regarding the use of preventative healthcare resources do undergraduate female college students have?" The survey items addressing this research question are participation in exercise each day, yearly physical, perform self-breast exams (SBE) monthly, belief health is in personal control, use the services of the wellness center, participation in women's wellness fair, eat 3 meals a day, get 8 hours of sleep each night, wear sunscreen, access to a primary physician, drink caffeinated beverages, feel stressed, attended a series of workshops on wellness, follow the advice of their primary care physician, received the HPV vaccine, keep appointments with primary care physician, up to date on all vaccines, I have or would consider smoking, and the last item, receive the flu vaccine.

Table 3. Comparison of perceptions regarding preventative healthcare resources

Variable	Mean Nursing	SD Nursing	Mean Non-Nurs.	SD Non-Nurs.
Access to a primary Physician	4.5	0.6	4.2	0.7
Yearly physical	4.4	0.5	4.3	0.7
Follow the advice of primary care	4.3	0.5	4.2	0.5
Belief health is in personal control	4.3	0.6	4.1	0.7
Eat 3 meals a day	4.2	0.9	4.2	0.7
Feel stressed	4.1	0.7	3.7	0.7
Consume Caffeinated beverages	4.1	1.0	4.0	0.9
Participation in exercise	3.8	0.9	3.7	0.9
Use services of wellness center	3.6	1.2	3.7	0.8
Perform monthly SBE	3.4	0.9	3.0	0.8
Have attended a workshop series	2.8	0.7	2.8	0.8
Participated in wellness fair	3.4	1.4	2.9	0.8
Wear Sunscreen	2.5	0.6	2.7	0.7
Get 8 hours of sleep	2.5	0.9	2.7	0.7
YES/NO Responses	**% YES**		**% NO**	
Received HPV vaccines	32%		68%	
Keep appointments with my Primary Physician	94%		6%	
Up to Date on all vaccines	94%		6%	
Have or would consider smoking	4%		96%	
Received flu vaccine	44%		56%	

Note. ($N = 62$). Items were rated on a 5-point Likert-type scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*), so higher means indicate higher levels of agreement.

The data for RQ 2 shows a trend indicating the perceptions of undergraduate female college students do indeed participate in preventative care. Most students participate in exercise; nursing (M = 3.8 SD = 0.9) non-nursing (M = 3.7 SD = 0.9), a yearly physical was rated in high importance for all students, this was the most important category for non-nursing students with a mean of M = 4.3 SD = 0.7, and came in second in importance for nursing students at M = 4.4 SD = 0.5. In table 2, non-nursing students rated the importance of the SBE higher then nursing students, however when it comes down to actually performing the monthly SBE (table 2), nursing students rated (M = 3.4 SD = 0.9), and non-nursing students rated (M = 3.0 SD = 0.8). All students perceived their health to be in their own control; nursing (M =4.3 SD = 0.6) non- nursing (M = 4.1 SD = 0.7), this is in the top 4 categories for nursing students. Both nursing students (M = 3.6 SD 1.2) and non-nursing students (M=3.7 SD = 0.8) use the wellness center and eat 3 meals a day (M = 4.2 for both).

Both nursing and non-nursing perceive they have the ability to access their primary care physician; Nursing (M = 4.5 SD = 0.6) non- nursing (M = 4.2 SD = 0.7). This is the highest rating for the nursing students and the second highest for non- nursing students. This is equal with eating 3 meals a day and following the advice of their primary care physician (M = 4.2 SD = 0.7) for non-nursing students. Nursing students perceived following the advice of their primary physician important as well (M = 4.3 SD = 0.5). Worthy of note is nursing students were more stressed (M = 4.1 SD = 0.7) non- nursing; (M = 3.7 SD = 0.7) and both got less than 8 hours of sleep (nursing; M = 2.5 SD = 0.9) non- nursing; (M = 2.7 SD = 0.7) . It makes sense with less sleep, students will be more stressed.

With the Yes / No questions, only 32% of student's got the HPV vaccine, 94% keep their appointments with their primary care physician and 94% state they are up to date on their vaccines. Most students would not consider smoking with 96% of all students choosing "no" when asked if they would ever consider smoking. Flu vaccinations in the US are generally given from September through November. In March of the following year, only 44% of the student participants had received the flu vaccine. This is concerning and require further studies.

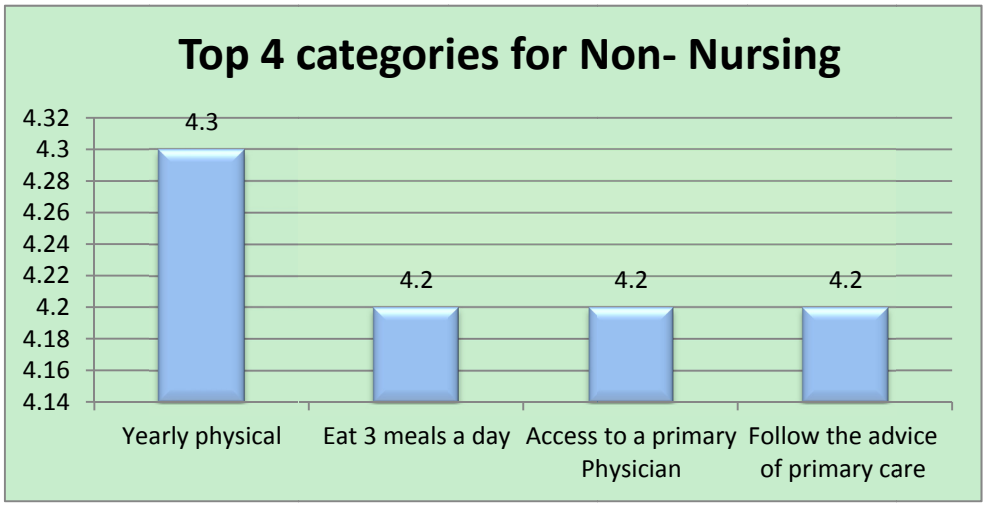

Figure 2. Top 4 categories for RQ 2 Non-Nursing: Perceptions regarding the use of preventative health care resources

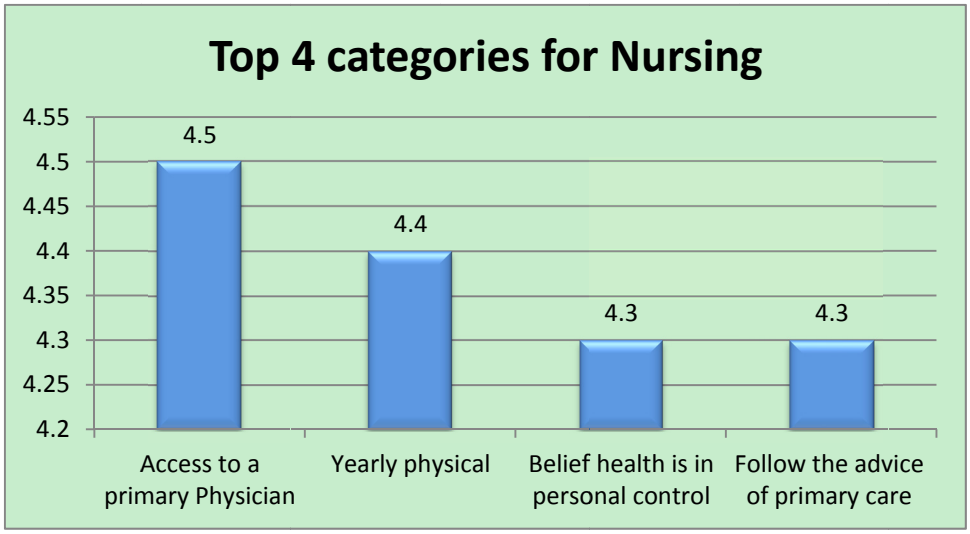

Figure 3. Top 4 categories for RQ 2 Nursing: Perceptions regarding the use of preventative health care resources.

18. Limitations

The structure of survey limited the number of questions that could be asked, the variety of responses that respondents could provide, the time each respondent had to answer questions and any interactive process with or among respondents. Thus, the data are limited in the amount and richness of participants' information. The survey did not measure ethnicity. A large percentage of female dorm residents are Caucasian; however, this was not asked in the survey. Another limitation is the sample size, especially the nursing students. The demographics did not distinguish the type of nursing degree either. The sample is limited to the female students in the college dormitory. Because of this small sampling, it cannot be determined that the results of the study can be generalized to other college campuses.

There are other limitations in doing a study on the campus. One limitation was that the majority of female students at this college have agreed to live a Christian lifestyle according to the lifestyle covenant. By signing the admission document, the students agree to abstain from sex outside marriage, alcohol, smoking, and other potentially harmful lifestyle choices. With this in mind, the study may not accurately reflect the whole population of female college students but reflect the preventative health care knowledge and use of female students at Christian colleges who have signed a similar lifestyle covenant to avoid risky behaviors.

19. Implications

An important implication of this research is to ensure adequate knowledge is given to the college female student population regarding the availability of health care resources in the area. Another important aspect is to address where health information is attained. The Internet is not always a good place to get information unless it is first screened for the validity of its content. This college has various data bases available through the library, with peer-reviewed articles based on evidence-based practice. The nursing students obtain this information through the librarian during a presentation in the research class. Non-nursing students especially need education on how to use this information. Education on the importance of sleep to aid in stress reduction may also be useful.

A benefit to nursing is that the study may help to raise awareness of the health literacy of the female residential students at the college. Understanding the use of preventive care resources by this population may influence the way nursing interventions are formulated. It may also show any variations in knowledge of students regarding preventative care in females. It may also help female students at the college to be aware of the preventative care resources available to them.

Implications for leadership are to be aware of college student's perceptions, such as; low sleep, high stress, education on flu vaccines, and the fact these women may be getting health information from the internet where the information may not be reliable. It is also important to commend these women for staying active, eating on a regular basis and accessing their primary care physician. Schneider (2012) indicated it is highly important for the leaders in the health care field to be involved in increasing health literacy.

20. Conclusion

In conclusion of the data analysis, overall the undergraduate female participants are fairly knowledgeable about health care with the ratings on a 5-point Likert type scale (1 = strongly disagree and 5 = strongly agree). Health literacy for both nursing and non-nursing students ranged from M = 2.8 (need for pelvic examination) to M = 4.6 (prevention of diabetes). All students range from (M = 2.5 to M = 4.5) in their agreements regarding the use of preventative healthcare. The low mean of (M = 2.5) regarding sleep is significant because most college students are not getting at least 8 hours of sleep. The high mean of (M = 4.5) regarding access to a primary care physician is a good indicator because access to health care is not easily available in many parts of the country. This leads to the conclusion that college undergraduate female students are aware of health care resources and use their primary care physician, which is highly important in reducing the costs of health care as it decreases emergency room visits. Ormand et al., (2011) affirmed that health care saves a substantial amount of money when preventative care is used. Another conclusion is that the participants agreed nursing students are more stressed then non-nursing students. Most participants agreed their health is within their control. This is beneficial, as a student who perceives she can prevent a condition will be more likely to take action (Lukas et al., 2009).

21. Recommendations

In future research, it is recommended to implement the surveys in a classroom setting or an alternate setting. It was found difficult to locate the participants in their dorm rooms because of the busy nature of college life. There is always homework to be done and classes to attend. Frequently the dorm rooms would only have one person available or none at all.

As mentioned previously it is important to be aware of the student's perceptions. It is advisable to educate students on the reliability of the internet and the importance of sunscreen. Moyer (2012) claimed it is unclear from prior research if sunscreen is the best way to prevent skin cancer; however, it is recommended by the American Congress of Obstetricians and Gynecologists to use sunscreen to help block harmful ultra violet rays. A free or low-cost flu shot clinic on campus may be helpful in addressing the 56% of the women who did not get a flu shot. The college wellness center may be the place to start. This college does post signs around campus regarding various precautions, and this may be a way to simply raise awareness of things like the flu shot or reliability of the internet. Lukas et al. (2009) maintained that a person's personality plays a role in how she perceives the preventability of a condition. Therefore, raising awareness in various ways to target this population may be beneficial. College students can benefit from health literacy classes in the curricula in both nursing and non-nursing departments.

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