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The Misuse of the Annual Pap Smears Alone for Cervical Cancer Screening

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Abstract

Currently, the annual pap smear is being misused because it is performed annually in offices by providers. A pre- and post-test quasi-experimental design was done to educate the patients about clinical guidelines. The research was conducted in Northeast Florida in a private urban gynecology office, where 20 participants were chosen for the study. The concern is pelvic examinations with cervical cancer screening being performed despite the guidelines suggesting limited evidence on the need to perform pap smears before age 21; regardless of sexual risk factors unless there is a history of HIV infection.1

Keywords: *Pap Smear, cervical cancer, screenings, HPV, pelvic examination, annual screenings*

Introduction

As a nurse, the guidelines of practice are related to prevention and health promotion when caring for patients. The incidence of cervical cancer continues to decrease with awareness, and use of screening.2 Currently, guidelines related to screening for cervical cancer are by the use of human papillomavirus, which is the leading cause for cervical dysplasia.2 Since 2014, the FDA has approved the use of HPV testing for screening for cervical cancer.2 Cervical cancer screening and prevention show evidence-based practice in the use of HPV testing as a primary screening than using annual Pap smear testing for screening methods for cervical cancer.3 Currently, pelvic examinations with cervical cancer screening are being performed despite the guidelines suggesting limited evidence on the need for performing Pap smear before age 21 regardless of sexual risk factors unless history of HIV infection.4 In this project, a clinical problem will be explored, giving support to current established guidelines.

Purpose for the Scholarly Project

This scholarly project is a prevalent topic in women's health as it relates to cervical cancer. The pelvic examination has historically evolved and is trending toward less use of cervical cancer screening by Pap smears. Underdeveloped countries are disproportionately affected due to the lack of evidence-based practices and access to healthcare services for screening.

Currently, there are no guidelines consistent with current practices of what is being done in the United States to prevent cervical cancer.5 Screening is important to main health optimal reproductive health. This project will continue to support ACOG recommendations by adding to research advocating for current guideline use universally. Currently, the annual Pap smear is being misused because it is done annually. There is no benefit for annual Pap smear alone without the use of HPV testing.2 Cervical cancer is the first cancer to be linked to a high probability of a viral source as an origin.2 There are various explanations against the use of annual Pap smear for cervical cancer screening.6 The concern is pelvic examinations with cervical cancer screening being performed despite the guidelines suggesting limited evidence on the need from performing Pap smear before age 21 regardless of sexual risk factors unless history of HIV infection.7

Background to the Problem

Research supports the use of Human Papillomavirus (HPV) co-testing, which has been approved by the Federal Drug Administration (FDA).8 Though many who have had HPV infections have a spontaneous clearing of the virus through immunity.8 The pediatric population and family practice offices with male and female patients less than twenty-seven should be encouraged to consent to vaccination. Vaccination against HPV can continue to lower the rates of cervical cancer and help with the screening process for cervical cancer.8 The screening will be improved because of the health promotion by primary prevention through vaccination can be the focal point instead of the misuse of annual Pap smears.2

Human Papilloma Virus (HPV) and Vaccination

Human papillomavirus (HPV), known as HPV, is the most common cause of cervical cancer. Cervical cancer is most likely caused by high-risk HPV such as 16 and 18.9 Gardisil is the vaccination can prevent the infection of this sexually transmitted virus in the prevention of 6, 11, 16 and 18.[10]

Problem Significance

Support for the current guidelines will provide better health promotion by screening and prevention through vaccination and community awareness. Unnecessary testing can be costly and also cause tension for patients wanting to have screening.10 Abnormal test results can cause apprehension for the patient and mistrust for the screening process when diagnostic testing is confirmed to show no concern for cervical cancer.11 The consequence of early testing is false positive abnormalities due to transient infections in adolescence and early adulthood on Pap smears being performed.12 Pelvic examination should be done for those with abnormal discharge or sexually transmitted diseases or infections once sexually active. The cervical cancer screening should be spared for age twenty-one and over with the absence of its annual use.

Scope of Practice

Overall, the objective of the project was to give support to current guidelines of triennial Pap smear examinations for those twenty-one and older while supporting human papillomavirus (HPV) contesting and vaccination.2 The use of HPV vaccination and contesting with the Pap smear can be a useful more preventative method of screening.13 The goal would be to alter patients' perception of annual Pap smear and also show the need for a reduction of annual Pap smear. Subsequent goals would be to perform a literature review supporting the reduction of medical expenses on additional testing for abnormal cervical changes from the Pap smear.

Benefit of the Project to Nursing Practice

Current guidelines are for Pap smear to be done every three years.2 The only exception to Pap smears not being performed annually are those with Human Immunodeficiency Syndrome (HIV).14Those with immunodeficiency are more likely than those without HIV to have a more aggressive form of cervical cancer.14 The colposcopy is a further study that can detect cancerous lesions on the cervix by staining and microscopic visualization.15

Outcomes through this project would involve supporting the current guidelines outlined by ACOG regarding cervical cancer screening and recommendations. Initiatives should be done to ensure the guidelines are followed, preventing testing for abnormal findings before the age of twenty-one.

Population Influence

This project promoted correct evidence-based practices. The literature review supported the current guidelines. Pap smears are typically performed in community health departments, family practice offices, and gynecology offices.

The misuse of pelvic examinations is the culture at this time in both family practice and gynecology clinics. Reimbursement for these services is at higher rates as the well-woman examination in comparison to annual examination. This problem will be constructed to prove and give evidence supporting current guidelines rejection the efficacy of annual Pap smear testing.

Literature Review

The literature review was conducted to support the misuse of an annual cervical cancer screening by Pap smear. Guidelines currently are in favor of more histological testing of high-risk HPV types, which can lead to cervical cancer. Cervical cancer is a slow-growing cancer, which does not require annual testing despite whether HPV cotesting is available. The prevalence of ovarian cancer is low (30-50 per 100,000 women), which confounds safe and cost-effective screening strategies.16

Changes in cervical cancer screening favor in less frequent screenings by Pap testing.2 Use of contesting for the screening of human papillomavirus (HPV) is the current evidenced-based practice.

Literature Review Search Methods

The PICOT question was used to organize the search for evidence. The evidence included a mixture of sample sizes and settings regarding cervical cancer screening. The following keywords were used to guide obtaining the research: cervical cancer screening, HPV testing, annual screening for cervical cancer, perception of Pap smear, Pap smear, pelvic exam. The literature consisted of approximately thirty articles supporting the PICOT question.

Strengths

The use of triennial screening is proven to be most appropriate for screening.17 The research suggests that vaccination will reduce the risk of high-risk HPV types from causing cervical dysplasia. Low-grade cervical cell changes can resolve spontaneously without the use of more invasive testing of cervical cells.18

Pap smear alone should not be the only screening for cervical cancer due to false-positive screenings of cervical changes from the Pap smear.19 Patients should be more aware of HPV, and its prevalence.20 Promotion of health and prevention of cervical cancer should be a high priority through appropriate screening methods.

The ACOG2 (2016) guidelines suggest cervical cancer screening to be done before 21 years old only with immunosuppression and known HIV. The HIV and immunosuppressed population should be screened more aggressively because of the higher incidence of cervical dysplasia.21 There is a need for Pap smear screenings to be promoted annually with those with HIV.22

Weaknesses

The weakness in the research is that the rescues saved when not performing annual cervical cancer screening.2 The evidence does not provide insight on the vast amount of colposcopies and additional cone biopsy procedures done for abnormal cells from the Pap smear.2 There should also be more information on the perception of HPV vaccination with follow up at appropriate intervals.23 Meta-analysis to include both qualitative and quantitative viewpoints of the misuse of annual Pap smear examination has gaps in the literature.

The vaccination education should be better reviewed and communicated with adolescents, parents of adolescents, and young women and men.23 The perception of HPV itself should also be further researched as a possible phenomenon may be limited education of this condition due to the vast amount of other sexually transmitted infections.24

Methods Section

Overview of the Approach/Design

The use of co-testing with HPV is more significant for risks of cervical cancer, providing a need for diagnosis in comparison to additional testing for abnormal Pap smear testing alone. Participants in the study will be given education on cervical

cancer screening using a low literacy reading level pamphlet and will hypothetically show an increase in competence after the information is provided.

Site, Agency, or Participant Information

The research was conducted in Jacksonville, Florida, which is considered the Southeast section of the United States at a private urban gynecology office. Participants will be chosen based on their type of office appointment, which will be coded under annual physical or gynecology appointments by using convenience sampling. The use of convenience sampling is to ensure that vulnerable populations will not be included in the sample by mistake when recruiting participants.

There will be a total of 20 participants, which is the sample goal (n=20). Group I intervention group (n=10) will receive both the pre and posttest with educational pamphlets given before posttest completion. Group II (n=10) will be the control group where there will only be a posttest completion on baseline knowledge regarding cervical cancer. Inclusion criteria: includes ages of the participants will range from 18 to 64 years old. No vulnerable populations will be included in this study. Exclusions criteria include male gender, pregnancy, age less than 18, or age over 64 years old. There will be a pre- and post-assessment regarding cervical cancer screening information for the dependent Group I.

Human Protection

In the capstone project, each participant will have informed consent from the primary researcher. The research project has been sent for formal approval through the South University IRB submission process. Each step of the capstone project is submitted for review. Certificates of training for the researcher is included in the application and required for IRB submission.25

Protection of human rights is ensured by having formal training in the area of research.

Instruments

The pamphlet that was created by the primary researcher will be the instrument used for the initial knowledge and the post knowledge. The tool was created based on the American Association of Gynecologists and Obstetrics (ACOG) recommendation for triennial Pap smear examination after age 21 years old.

Data Collection

The 20 participants were divided into a group of 10. Each participant gave a completed consent before being given any surveys prior to the data collection process. AA spreadsheet was created in order to start the data collection using SPSS. The data collection did include any patient identifiers such as the name and age of the patient; the medical record information will not be included.

The excel spreadsheet has password protection. The data was later placed in SPSS for the final analysis. The first ten patients did not receive the intervention. The second group received the intervention brochure. The total number for each group was ten participants, with a total of n=20 participants in the study. The original data will be placed in a locked cabinet until inputted into the excel spreadsheet and SPSS outputs for data analysis. The information was locked with the consent forms from each patient before giving the surveys out.

Data Analysis Plan

Data will be reviewed based on each section of the responses by participants. The central tendency will be used as well as percentages based on responses. Measurements used in the analysis will be collected and placed in an excel spreadsheet. The central tendency will be used to summarize findings.26 The use of simple percentages and comparisons between groups with and without intervention will be used. The standard deviation is the average of how the scores will deviate from the mean based on the responses. The use of these basic statistics will help to identify the difference between groups. The evaluation via output will be described based on the responses of those with and without the intervention, which will correlate to a knowledge deficit present among participants who do not receive the information pamphlet. Use of these statistical methods will be adequate in supporting the ACOG guidelines which refute the need for annual Pap smear examinations.2

Data Collection Before Analysis

The collected data was placed in password-protected excel spreadsheets with responses. Was “cervical.” The continued protection of participants was done by placing the original surveys in a locked cabinet in the preceptor’s office.

Several participants commented on not being able to complete the qualitative section due to not receiving the pamphlet. This was determined to be a discrepancy in the study because participants were unsure about whether to place comments in the section more specific to the intervention group.

Summary of Initial Data Collection

The data collection process began by submission to the IRB with the project details and objectives of the capstone topic. Flyers were made to place at the front desk, given possible participants information before about the research. IRB approval was obtained, and the research started. Prior to obtaining data from the participants, consent was completed, and information about confidentiality was assured to patients before their participation in the study.

The second (intervention) group will receive both the pre and the post-test. The intervention group will repeat the initial survey after receiving the pamphlet intervention. After the completion of the initial survey, the intervention brochure will be given, and the patient will come into the examination room to complete the post-intervention survey.

Data Analysis

Intervention Group

There was a total of 20 participants in the study. Ten (50.0%) were assigned to the intervention group, and 10 (50.0%) were assigned to the non-intervention group. The intervention group had a mean age of 30.90 (SD = 9.757) years, with the youngest being 20 years of age and the eldest being 53 years of age for a range of 33 years. Composite average scores were calculated by summing the items correct for preintervention and postintervention and dividing that by the total number of items to get the correct percentage. The pre-intervention score for multiple choice (M = 75.00, 21.679, n = 6) was found to not have a significant mean difference (18.33) from the post-intervention score for multiple choice (M = 93.33, 16.329, n = 6) at $t(5) = -2.015$, $p = 0.100$ (Figure 1).

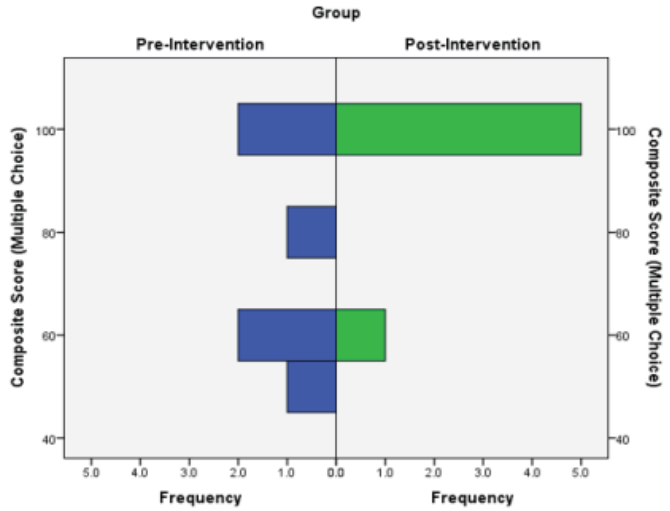

Figure 1: Pre-post on multiple choice.

The pre-intervention score for true/false (M = 66.66, 30.767, n = 6) was found to not have a significant mean difference (30.00) from the post-intervention score for true/false (M = 96.67, 8.164, n = 6) at t(5) = -2.196, p = 0.080 (Figure 2).

Based on the p-value, the null hypothesis is accepted for the intervention group. When compared to the multiple-choice (post-tests) for the nonintervention group and the intervention group, the null hypothesis is rejected because there was significance found between groups. The p-value is the level of marginal significance within a statistical hypothesis test representing the probability of the occurrence of a given event, in this case, the intervention group, the statistical analysis of this group alone.

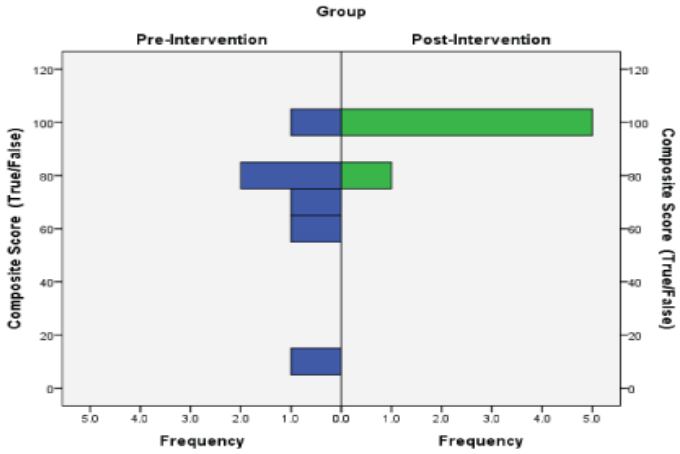

Figure 2: Pre-post true and false.

Non-intervention Group

The intervention group had a mean age of 34.90 (SD = 9.218) years with the youngest being 22 years of age and the oldest being 51 years of age for a range of 29 years. Composite average scores were calculated by summing the items correct for post-intervention and post-non-intervention by dividing that by the total number of items to get the percent correct. The post-intervention score for multiple choice (M = 93.33, 16.330, n = 6) was found to be significantly higher from the post-non-intervention score for multiple choice (M = 68.33, 17.224, n = 6) at t(10) = 2.580, p = 0.027 (Figure 3). The post-intervention score for true/false (M = 96.67, 8.165, n = 6) was found to be significantly higher from the post-non-intervention score for multiple choice (M = 78.33, 21.370, n = 6) at t(10) = 1.963, p = 0.078 (Figure 4).

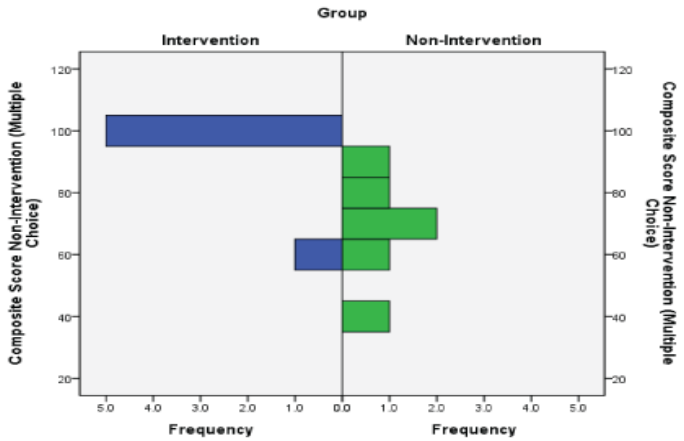

Figure 3: Post-test comparisons multiple choice.

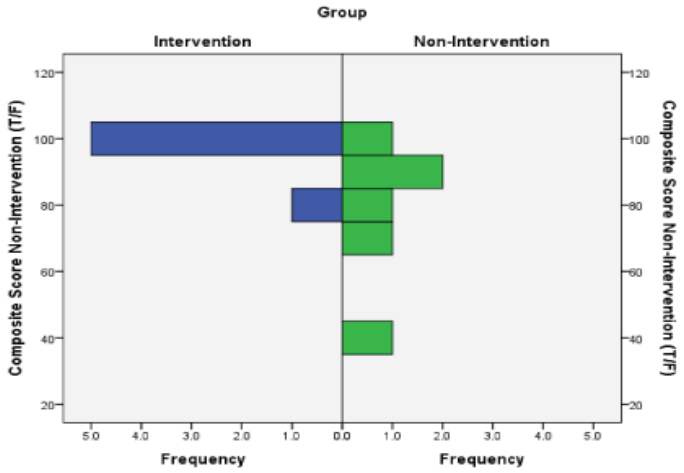

Figure 4: Post-test comparisons true/false.

Summary of Reliability and Validity

Validity can be later accomplished through replication of the study in the future. The reliability was present, showing in the intervention group a difference in scores based on the pre and post-test scores. The study suggested a majority had yearly Pap smears, and many believed this to be the current frequency of testing.

Future studies could include those who are pregnant. A more extensive study over a longer period may offer better qualitative insight into the patient's perception of the topic. Information obtained from the participants included "informational" and "guessed on many of the responses." The nonintervention group only had a 20% response to the comments section. The comments section of the nonintervention group could have been vaguer and not suggesting that the pamphlet intervention group was seen.

Significance

Cervical cancer is best prevented through best practice

screening techniques. Human papillomavirus is the main cause of cervical dysplasia leading to metaplasia. The use of HPV co-testing has become important in conjunction with the use of Pap smear testing and is considered a better screening tool when used separately. The use of Pap smear testing annually is not an appropriate cervical cancer screening.27 Age has shown to be a reliable factor in the changes made for cervical cancer screening. The high prevalence of HPV has deemed Pap smear testing to be unnecessary before age 21.2

Conclusion

The focus on prevention is more of the practice with nurse practitioners.28 Prevention of disease would be a closer evaluation of rates of HPV vaccination available. The perception of vaccination, cost, and rationale should be considered when performing cervical cancer screening as a provider.29 HPV vaccination offers protection against the development of cervical cancer and associated morbidities and mortalities.29 The wider use of vaccination can be a valuable resource in limited settings where secondary prevention methods such as cytology screening are not widely available and may not be cost-effective.29 The change in frequency to every three to five years, depending on the availability of contesting, can help spread resources.

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