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# A Comparative Analysis on Awareness Among Female Students of Technical and Medical Field Associated within Colleges From Tamilnadu and Pondicherry regarding gynaecological Cancers by Random Sampling Method Using Statistical Analysis

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**Abstract:**
**Aim:** Comparative analysis on awareness of cervical cancer among female students perceiving technical and medical field associated education.

**Materials and Methods:** This study employs a validated questionnaire to investigate knowledge and attitudes relating to cervical cancer. N= 300 samples were analysed with SPSS software for investigating the parameters such as the awareness of cervical cancer prevention, knowledge on screening, awareness on risk factors, and family history. The sample size was calculated by maintaining G-power 80%, α=0.05, and a confidence interval of 95%.

**Results:** The knowledge on cervical cancer from the survey was found that technical students (62.8%) had a higher understanding of self-effort compared to medical students (37.2%). The knowledge on ovarian cancer from the survey found that technical students (62.8%) had a higher understanding of self-effort compared to medical students (37.2%). The knowledge on uterine cancer from the survey was found that technical students (62.8%) had a higher understanding of self-effort compared to medical students (37.2%). The knowledge on vaginal cancer from the survey portrays that the technical students (62.8%) seem to have a higher understanding through self-effort when compared to medical students (37.2%). The statistical value by chi-square analysis was found to be statistically insignificant between the datasets. The significance value is P=0.807.

**Conclusion:** The medical students had retarded awareness when compared with the technical students. The significant gap with inadequate awareness on gynaecological cancer and lack of understanding due to social stigma was found to have retarded knowledge among medical students and technical students.

***Keywords: Awareness, Risk Factors, Screening Techniques, Innovative Knowledge, Cervical Cancer Prevention, Community Medicine, Public Health, Medical Informatics.***

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## 1. Introduction

The cervical cancer symptoms are often attributed to other conditions affecting women. The previous studies showed that the frameworks regarding the particular knowledge and its determinants among the public and this study indicates factors contributing to the high morbidity and mortality rates of cervical cancer (McTiernan, Irwin, and VonGruenigen 2010). Creating awareness, providing knowledge about cervical cancer and the need for early detection is crucial for cervical cancer screening and health care applications (Nyengidiki 2015). Improving the result of cervical cancer screening and recovery by early diagnosis is the application-focused in this study (Aref-Adib and Freeman-Wang 2014)

Evaluation of preoperative symptoms and factors that may contribute to delayed diagnosis for women with ovarian carcinoma (Deligdisch, Kase, and Cohen 2013). When women are diagnosed with cancer limited to the ovary that has not spread their chance of survival is often high (Lacey et al. 2002). Ovarian cancer at a molecular level could reveal potential biomarkers of disease diagnosis and progression as well as possible therapeutic targets in areas (Pereira et al. 2016). Awareness of ovarian cancer symptoms and risk factors among women in the general population is low. Ovarian cancer is often diagnosed at late stages, when cure is difficult; consequently, heightening women's awareness of risk factors and symptoms might help to reduce delays in diagnosis (Lockwood-Rayermann et al. 2009).

Uterine cancer is the most rapidly increasing malignancy and the second most common gynecological malignancy (Lee *et al.* 2015). Uterine carcinomas account for the majority of cases of uterine cancer, while uterine sarcomas are rare and only account for 4.2% of all corpus uteri malignancies (Boll *et al*. 2012). Because of the rarity of papillary serous carcinomas, clear cell carcinomas and carcinosarcomas, only a few population-based follow-up studies on the outcomes of these types of uterine cancer have been reported (Creasman *et al*. 2004). Most of the outcome studies on uterine sarcomas have been based on small retrospective series from a single institution, which lacks the power to make significant conclusions (Oláh *et al*. 1991). This exploratory cross-sectional survey was conducted to understand the attitude towards awareness and perseverance towards disease management of uterine cancer among technical and medical fields associated, female students in universities. It will have potential applications in the field of community medicine to have a centralised database based on the area and locality of the patient. This will guide the medical practitioners and clinicians to approach patients well depending on their understanding about the disease (Tannock and Hill 1998)

About 161 research studies were found to be relevant to cervical cancer awareness in google scholar. Similarly, around 1,005 studies were found relevant in PubMed. The objective of a study conducted in 2019 was to assess the knowledge and attitudes towards cervical cancer screening and prevention. They suggested that cervical cancer is highly preventable and can be easily treated if detected at early stages (Mohamed adil a.a et al. 2019). A similar study by Efard and team suggested that the effects of some characteristics and risk factors associated with cervical cancer will aid in diagnosis and treatment on women’s sexual life, quality, and

functional status (Efared et al. 2019; Akkuzu, Talas, and Erdogan 2012). Women with secondary and tertiary levels of education were more likely to have heard of cervical cancer (Mitiku and Tefera 2016). In the same way, students associated with patients with malignant metastatic diseases were more likely to know about the disease (Hailu and Mariam 2013).

Vaginal cancer is an uncommon gynecologic malignancy. The diagnosis of primary vaginal cancer is rare because most of these lesions will be metastatic from another primary site. Primary vaginal cancer is rare, making up 1% to 2% of all female reproductive tract cancers (Adams and Cuello 2018). The vaginal fornices are denoted as anterior, posterior, and lateral concerning the cervix (Gardner *et al*. 2015). The majority of these metastases arise from other reproductive organs such as the cervix, endometrium, or ovary, although they can also metastasize from distant sites such as the colon, breast, and pancreas (Ng *et al*. 2015). The human papillomavirus (HPV) is a known carcinogen for the tumor of the vagina, however, non-HPV based carcinogenic factors also exist. A study of this kind will hold potential application towards fabricating a medical database specific for diseases and individuals that can be of great use to medical practitioners and government public health agencies (Ng *et al.* 2015; Siegler *et al*. 2016) (Mohamed Adil *et al* 2014, 2019).

The variation in the primitive knowledge towards preliminary understanding pertaining to the disease management and medical screening methods of various gynaecological cancers have not been functionally identified. The need for awareness about the parameters leading to gynaecological cancer will pave the way to early diagnosis and ultimately save millions of lives. This exploratory, descriptive, cross-sectional survey is to understand the awareness, knowledge and perseverance towards disease management towards cervical cancer among technical and medical fields associated with female students in universities. Our study aims to examine and compare the female technical and medical field associated with students' awareness and perspectives on gynaecological cancer.

**3.Materials and methods**

The current study was initiated and data analysis was conducted in Saveetha school of Engineering with concern form from every parrticipants. Descriptive, online, self-administered survey questionnaires were circulated among female students of colleges in Chennai, pondicherry and Kanchipuram regions. The information was collected from the responses given by students regarding cervical cancer. Survey collected data based on viewpoint, attitude, or action held on a given topic by a group of individuals. The sample size was calculated using a sample size calculator for incidence values reported in the cited base paper (Kashyap et al. 2019)). The calculated sample size was found to be 34 which we felt was very low for a survey-based study. Hence keeping the base paper as a reference we increased the overall sample size to 300. Group 1 had 190 responses from technical students and group 2 had 110 responses for medical field-associated students. The sample size was calculated by maintaining G-power 80%, $\alpha$=0.05, and confidence interval 95% (clinical.com/samplesize.aspn; (Kashyap et al. 2019).

A self-administered questionnaire was developed using previously published papers. (Chaka et al. 2018). It was a questionnaire that has been deliberately designed to be answered by a respondent without the data collection involvement of the researchers and was a cost-effective way to easily gather vast quantities of information in a relatively brief period from a large number of participants. A total of 300 female students participated in this survey and the information was collected from the responses of each individual for data analysis. Participants were female students from different departments of the university. Group 1 students were from technical universities and group 2 students were from medical universities. The link for the questionnaire was shared with students online and the responses were recorded. All the data collected from the responses were entered into Microsoft excel. The data were analyzed using descriptive statistics to evaluate the participant's demographic data and responses.

**Statistical Analysis:**

The statistical software used to analyze the data was SPSS version 21. The dependent variables in our study were the risk factors and the type of educational universities under survey. A Chi-square test was performed to predict the association between the outlined variables.

**Results:**

Cervical cancer:

Table 1 represents the distribution of age among female students in universities between the ages of 13 to 38. A total of 300 participants responded. 85.8% of the respondents were in their 20s. Fig. 1 represents the distribution of age among females and students in universities. The respondent ranged from 13-20 (12.6%), 21-28 (85.8%) and 29-38 (1.6%) age groups. Table 2 suggests a comparison between the awareness responses given by both technical students and medical field-associated students in universities. This table showed technical students contributed to 62.8% and medical field associated students contributed to 37.2%. The contribution of technical students is high compared to medical field associate students. Fig. 2 represents the comparison of respondents between the technical students and the medical field associated students. A maximum number of students were from technical institutes (62.8%).

Table 3 depicts the list of questions used in the survey related to experience and knowledge on cervical cancer among female students in universities. The viral nature of cervical cancer was very evident to most of the participants (59.5%). Table 4, 4a represents the knowledge on the hereditary transmission of cervical cancer between technical and medical associated students. 63.1% of the student population was well aware of this fact. Table 5, 5a depicts the knowledge of students towards symptoms and risk factors associated with cervical cancer. Human papillomavirus being the causative agent got the maximum responses (37.6%). For risk factors smoking bagged the maximum responses (35.1%). Table. 6, 6a represents the comparison between the branch of education and the knowledge on risk factors of cervical cancer. There was a statistically significant difference between the data. Fig. 3 represents bar

chart comparison between the branch and the risk factors of cervical cancer. Smoking was found to be the highest risk factor as per technical students (70%), whereas medical associates claim all the risk factors have an almost equal share in causing cancer.

Table 7 suggests the comparison of branch and family history. There is an insignificant difference between the data. Fig 4, 4a is a bar chart that represents the comparison between the branch and family history of cervical cancer (P value was statistically insignificant). Technical students had more knowledge on family history when compared to medical associated students (140 responses). Tables 8, 8a suggest the relationship between branch and knowledge on screening. The bar chart in Fig. 5 represents the relation between branch and knowledge of screening are significantly different. Technical students had more awareness of the same when compared to their counterparts.

In Table 9, 9a the knowledge on the study branch and the prevention methods on cervical cancer is represented. Fig. 6 represents the comparison between the branch and knowledge on cervical cancer prevention. This data was statistically insignificant. Here too technical students seemed to have more awareness of the prevention measures that need to have opted for cervical cancer.

Ovarian cancer:

Table 1 represents the distribution of age among female students in universities between the ages of 13 to 38. A total of 300 participants responded. 85.8% of the respondents were in their 20s. Fig. 1 represents the distribution of age among females and students in universities. The respondent ranged from 13-20 (12.6%), 21-28 (85.8%) and 29-38 (1.6%) age groups. Table 2 suggests a comparison between the awareness responses given by both technical students and medical field-associated students in universities.

This Table 2 showed technical students contributed to 62.8% and medical field associated students contributed to 37.2%. The contribution of technical students is high compared to medical field associate students. Figure 2 represents the comparison of respondents between the technical students and the medical field associated students. A maximum number of students were from technical institutes (62.8%). Table 3 depicts the list of questions used in the survey related to experience and knowledge on ovarian cancer among female students in universities. The viral nature of ovarian cancer was very evident to most of the participants (60.6%).

Table 4 represents the knowledge on ovarian cancer between the technical and medical associated students. 41.4% of the student population was well aware of this fact. Table 5a and 5b depicts the knowledge of students towards symptoms and risk factors associated with ovarian cancer. Figure 3 represents a bar chart comparison between the branch and the risk factors of ovarian cancer. Table 6a and 6b represents the comparison of branch and knowledge on ovarian cysts. Figure 4 represents a bar chart comparison between the branch and knowledge on ovarian cysts. Technical students have more knowledge compared to medical-associated students.

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Uterine cancer

Table 1 represents the distribution of age among female students in universities between the ages of 13 to 38. A total of 300 participants responded. 85.8% of the respondents were in their 20s. Figure 1 represents the distribution of age among females and students in universities. The respondent ranged from 13-20 (12.6%), 21-28 (85.8%) and 29-38 (1.6%) age groups. Table 2 suggests a comparison between the awareness responses given by both technical students and medical field associated students in universities. This table showed technical students contributed to 62.8% and medical field associated students contributed to 37.2%. The contribution of technical students is high compared to medical field associate students. Figure 2 represents the comparison of respondents between the technical students and the medical field associated students. A maximum number of students were from technical institutes (62.8%).

Table 3 depicts the list of questions used in the survey related to experience and knowledge on uterine cancer among female students in universities. Table 4 represents the knowledge on uterine cancer between the technical and medical associated students. 37.8% of the student population was well aware of this fact. Table 5a, 5b depict the knowledge of students towards symptoms associated with uterine cancer. Figure 3 represents a bar chart comparison between the technical and medical associated with the symptoms of uterine cancer. Table 6a, 6b represents the comparison of technical and medical knowledge associated with knowledge on uterine cancer diagnosis. Figure 4 represents a bar chart comparison between the technical and medical associated with knowledge on uterine cancer diagnosis. Table 7a, 7b depict the knowledge of students towards detection by pap test associated with uterine cancer. Figure 5 represents a bar chart comparison between the technical and medical associated with the knowledge of uterine cancer detection by pap test. Technical students have more knowledge compared to medical field associated students.

Vaginal Cancer

Table 1 represents the distribution of age among female students in universities between the ages of 13 to 38. A total of 300 participants responded. 85.8% of the respondents seemed to be in their 20s. Figure 1 represents the distribution of age among females and students in universities. The respondent ranged from 13-20 (12.6%), 21-28 (85.8%) and 29-38 (1.6%) age groups. Table 2 suggests a comparison between the awareness responses given by both technical students and medical field-associated students in universities. This showed technical students seemed to contribute 62.8% of the total responses and medical field associated students seemed to contribute to 37.2%. The contribution of technical students appeared to be high compared to medical field associate students. Figure 2 represents the comparison of respondents between the technical students and the medical field associated students. A maximum number of students seemed to be from technical institutes (62.8%).

Table 3 depicts the list of questions used in the survey related to experience and risk factors of vaginal cancer among female students in universities. Table 4 represents the knowledge on

vaginal cancer between the technical and medical associated students. 65.2% of the student population seemed to be well aware of this fact. Table 5a and Table 5b depicts the knowledge of students towards risk factors associated with vaginal cancer. Figure 3 represents a bar chart comparison between the technical and medical associated with risk factors of vaginal cancer. Table 6a and Table 6b represent the comparison of technical and medical knowledge associated with knowledge on vaginal cancer. Figure 4 represents a bar chart comparison between the technical and medical associated with knowledge on vaginal cancer. Technical students seemed to have more knowledge compared to medical-associated students.

**3. Discussion**

Cervical cancer

Our study suggests the awareness and knowledge, specifically for cervical cancer among women medical associated students, was found to be extremely poor. Most of the study was found to be statistically insignificant except for the responses for awareness on risk factors. Women with secondary and tertiary levels of education were more likely to have heard of cervical cancer (Mitiku and Tefera 2016); (Getahun et al. 2013); (Woldeamanuel, Girma, and Teklu 2013); (Mitiku and Tefera 2016). Students associated with patients with malignant metastatic diseases were more likely to know about the disease (Hailu and Mariam 2013). The Chi-square test and P-value of technical and medical field associated students were accustomed to ascertain the significant relationship between the variables. The technical students showed statistical insignificance with the knowledge on various gynecological cancers like cervical cancer compared with medical field-associated students. The medical field-associated women (37.2%) were found to have retarded awareness of cervical cancer even though they had exposure to the disease through the course of their education. On the contrary technical female students had better awareness of cervical cancer and on early prevention and treatment of the same (62.8%). This has been depicted in Fig. 2 Such awareness of problems would offer new perspectives on the topic such as medical screening. This helped us to quantify the effect of our observation on the general community we were studying, as well as the shifts in the beliefs, perceptions, and activities of our respondents over time.

The previous studies showed that the frameworks regarding the particular knowledge-based awareness and its determinants among people indicated various parameters and factors that contribute to the high morbidity and mortality rates of cervical cancer among women (Chaka et al. 2018). The research conducted in 2013 on awareness, risk factors, background knowledge, and screening programs on cervical cancer suggested regular training towards the exposure of disease is required in the management of the disease (Viens et al. 2017); (Hailu and Mariam 2013). This study was planned to determine the level of concern among university students about gynecological cancers (Ng'ang'a et al. 2018). We focused primarily on views of the triggers of gynecological cancer, adverse outcomes associated with gynecological cancer, and understanding of methods of gynecological review (Kasting et al. 2017). Since most of the studies favor the efficiency and efficacy of survey-based study on

cervical cancer awareness and prognosis, hence we were unable to cite a negative article on the same.

Ovarian cancer

The technical students showed statistical insignificance with the knowledge on various gynecological cancers like ovarian cancer compared with medical field associated students. The medical field-associated women (37.2%) were found to have retarded awareness of ovarian cancer even though they had exposure to the disease through the course of their education. On the contrary technical female students had better awareness of ovarian cancer and on early prevention and treatment of the same (62.8%). Such awareness of problems would offer new perspectives on the topic such as risk factors. This helped us quantify the effect of our observation on the general community we were studying and the shifts in the beliefs, perceptions, and activities of our respondents over time. This study suggests the awareness and knowledge of ovarian cancer among women technical and medical associated students. This study was found to be statistically insignificant. The risk of developing ovarian cancer increases with age, yet poor knowledge and absence of concern about ovarian cancer may mean that symptoms experienced by older women are attributed to other causes such as the menopause or aging process, rather than recognized as the potential threat to health (Ramirez et al. 2019). Improving women's confidence may be necessary to bridge the gap between ovarian cancer symptom awareness and earlier presentation, for example by providing an explicit action plan that describes how and when to act on potential ovarian symptoms (Diaz-Padilla 2013). The chi-square test and P-value of technical and female associated students were accustomed to ascertain the significant relationship between variables.

This study shows that the frameworks regarding the particular knowledge-based awareness and its determinants among people indicated various parameters and factors. The relationship between cancer symptom awareness and actual presentation would ideally be tested in large-scale prospective studies (Andersen et al. 2009; Freij et al. 2018). Comparison with women at increased risk due to a family history of ovarian cancer would help to illuminate the role of emotions in appraising and acting on ovarian symptoms (Brain et al. 2014; Sapkota, and Abhyankar 2019). Most of the studies favor the efficiency and efficacy of survey-based analysis on ovarian cancer towards its awareness and disease prognosis.

Uterine cancer

The chi-square test and P-value of technical and female associated students were accustomed to ascertain the significant relationship between variables. The technical students showed statistical insignificance with the knowledge on various gynecological cancers like uterine cancer compared with medical field associated students. The medical field-associated women (37.2%) were found to have retarded awareness of uterine cancer even though they had exposure to the disease through the course of their education. On the contrary technical female students had better awareness of uterine cancer and on early prevention and treatment of the same (62.8%). Such awareness of problems would offer new perspectives on the topic such as risk factors. This helped us quantify the effect of the observation on the general

community. The shifts in the beliefs, perceptions, and activities of the respondents over time were analysed. This study was found to be statistically insignificant. It demonstrates the risk of uterine cancer in women with PCOS in a national population-based cohort study (Colafranceschi *et al*. 2019).

Women with PCOS have several risk factors for uterine cancer including chronic anovulation, obesity, and hyperinsulinemia, and therefore may be at increased risk of developing uterine cancer (Shafiee et al. 2020). Endometrial cancer is the most common type of uterine cancer, and studies have shown that most cases of endometrial cancer occur between the ages of 60 and 70 years (Jick, *et al* 2008). This study shows that the frameworks regarding the particular knowledge-based awareness and its determinants among people indicated various parameters and factors. Previous studies have demonstrated that obesity is associated with earlier age at diagnosis of endometrial cancers (Al-Wahab *et al.* 2011). The risk factor for uterine cancer because fat tissues tend to produce higher levels of estrogen (Nevadunsky *et al*. 2014). The young age of onset of these patients' uterine cancer highlights the need for additional study to better understand PCOS and to determine what uterine cancer screening and preventive strategies are needed (Pierpoint *et al*. 2011). The association between dysregulated thyroid hormone function and cancer risk is inconclusive, especially among different age groups and uncommon malignancies (Krashin *et al*. 2021). Since, most of the consensus supported the benefits of survey based study on diagnosis and health care, hence no negative citations were provided for the same.

Vaginal cancer

The medical field-associated women (37.2%) seemed to have retarded awareness vaginal cancer even though they had exposure to the disease through the course of their education. On the contrary, technical female students appeared to have better awareness of vaginal cancer and on early prevention and treatment of the same (62.8%). Maximum respondents seemed to be from the age group of 21-28 (85.8%). 65.2% of the student population appears to be well aware of the knowledge on vaginal cancer. The statistical value by chi-square analysis appears to be statistically insignificant between the datasets. The significance value is P=0.807.

Such awareness of problems would offer new perspectives on the topic such as risk factors. This helped us quantify the effect of our observation on the general community we were studying and the shifts in the beliefs, perceptions, and activities of our respondents over time. The chi-square test and P-value of technical and female associated students were accustomed to ascertain the significant relationship between variables. The technical students showed statistical insignificance with the knowledge on various gynecological cancers like vaginal cancer compared with medical field associated students This study suggests the awareness, attitude and innovative knowledge on vaginal cancer among women technical as well as medical field associated students. This study of the risk factors is found to be statistically significant. Vaginal cancer is not a common gynecological cancer. Some report rising trends especially in women beyond 75 (Daling *et al.* 2002). The known risk factors for vaginal

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cancer, particularly the prevalence of oncogenic HPV infection (Khan *et al.* 2005). Concerning clinical characteristics, the majority of vaginal cancer cases are Stage 1 and have squamous cell histology as has been previously described (Khan *et al.* 2005; Creasman *et al*. 2015). This study shows that the frameworks regarding the particular knowledge-based awareness and its determinants among people indicated various parameters and factors. Vaginal cancer has often been treated similarly to cervical cancer (Henson and Tarone 2018). They partially contain the same epithelium, are embryologically similar, and share many of the same exposures as risk factors (Davis *et al.* 2013). However, there is a dearth of data on the population-based level on the impact of concurrent chemo-radiation in women with vaginal cancer (Grigsby 2019). Most of the studies seem to favor the efficiency and efficacy of survey-based analysis on awareness and attitude of vaginal cancer. Hence a negative consensus on the same is not cited.

Participants of the study had different attitudes and less experience towards the early examination of vaginal cancer. The social stigma is a primary factor among women, resulting in lack of medical examination due to the feminine social stigma towards vaginal cancer and associated questions in the survey. The analysis provides useful information based on vaginal cancers perseverance.

## Tables and Figures for cervical cancer

**Table 1:** Distribution of age among females and students in universities between the ages of 13 to 38. A total of 300 participants responded. This table shows the age group of females.

| AGE | FREQUENCY | PERCENTAGE |
|---|---|---|
| 13-20 | 40 | 12.6 |
| 21-28 | 258 | 85.8 |
| 29-38 | 5 | 1.6 |

**Table 2**: Comparison between both technical students and medical field associate students in universities. This table shows technical students contribute 62.8% and medical field-associated students contribute 37.2%. The contribution of technical students is high compared to medical field associate students.

| BRANCH | FREQUENCY | PERCENTAGE |
|---|---|---|
| Technical | 190 | 62.8 |
| Medical associates | 110 | 37.2 |
| Total | 300 | 100 |

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**Table 3**: List of questions of the survey related to experience and knowledge of cervical cancer among female students in universities.

| VARIABLE | Percentage of population who are aware (%) | Percentage of population who are not aware (%) |
|---|---|---|
| Is cervical cancer caused by a virus | 175(59.5%) | 119(40.5%) |
| Is cervical cancer can occur at any age even in childhood | 158(53.6%) | 137(46.5%) |
| Have you be screened for cervical cancer | 154(52.4%) | 140(47.6%) |
| Is cervical cancer preventable | 154(51.8%) | 135(45.9%) |

**Table 4**: This table represents the knowledge on the family history between technical and medical associated students and cervical cancer.

| Variable | Percentage of population who are aware (%) | Percentage of population who are not aware (%) |
|---|---|---|
| Family history of cervical cancer | 188(63.1%) | 77(25.8%) |
| Have you ever heard of cervical cancer | 77(25.9%) | 220(74.1%) |

**Table 5**: Knowledge of cervical cancer and symptoms and risk factors of cervical cancer among participants. It is determined in frequency and percentage.

| VARIABLE | FREQUENCY | PERCENTAGE |
|---|---|---|

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| | | |
|---|---|---|
| The common cause of cervical cancer:<br>1.HPV<br>2.Radiation exposure<br>3.Pollution<br>4. Using intravenous drugs | 111<br>99<br>58<br>27 | 37.6<br>33.6<br>19.7<br>9.2 |
| Risk factors for developing cervical cancer<br>1.Smoking<br>2.weakened immune system<br>3.family history of cervical cancer<br>4.All the above | 104<br>95<br>45<br>54 | 35.1<br>32.1<br>14.5<br>18.2 |

**Table 6**: Represents the comparison between branch and risk factors of cervical cancer.

| **Variable** | | | | | | |
|---|---|---|---|---|---|---|
| | | **Risk Factors Of Cervical Cancer** | | | | |
| | | Smoking | Weakened immune system | Family history | All of the above | **Total** |
| **Branch** | Technical | 71 | 66 | 30 | 23 | 190 |
| | Medical associates | 33 | 29 | 13 | 35 | 110 |
| **Total** | | 104 | 95 | 43 | 58 | 300 |

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**Table 6a:** Represents the statistical value by chi square analysis for comparison between branch and risk factors of cervical cancer and the P-value is statistically significant. (P<0.01).

| | Value | df | Asymptotic significance (2-sided) |
|---|---|---|---|
| **Pearson chi-square** | 17.403 | 3 | <.001 |
| **Likelihood Ratio** | 16.825 | 3 | <.001 |
| **Linear-by-Linear Association** | 10.354 | 1 | 0.001 |
| **N of valid Cases** | 300 | | |

**Table 7**: Represents the comparison between branch and family history of cervical cancer. The chi-square result is statistically insignificant. (P>0.05)

| Count | | | | |
|---|---|---|---|---|
| | | Family History | | |
| | | Aware | Not aware | **Total** |
| **Branch** | Technical | 52 | 138 | 190 |
| | Medical field associated | 40 | 70 | 110 |
| **Total** | | 92 | 208 | 300 |

**Table 7a:** Represents the statistical value by chi square analysis by comparison between branch and family history of cervical cancer.

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| | Value | df | Asymptotic significance (2-sided) | Exact Sig (2- 2-sided) | Exact sig (1-Sided) |
|---|---|---|---|---|---|
| **Pearson chi-square** | 2.651 | 1 | 0.130 | | |
| **Continuity correction** | 2.245 | 1 | 0.134 | | |
| **Likelihood Ratio** | 2.621 | 1 | 0.105 | | |
| **Fisher's Exact Test** | | | | 0.119 | 0.068 |
| **Linear-by-Linear Association** | 2.642 | 1 | 0.104 | | |
| **N of valid Cases** | 300 | | | | |

**Table 8**: This table shows the relationship between branch and knowledge on screening(P>0.05)

| **Count** | | | | |
|---|---|---|---|---|
| | | **Knowledge Screening** | | |
| | | Agree | Disagree | **Total** |
| **Branch** | **Technical** | 110 | 80 | 190 |
| | **Medical associated** | 48 | 62 | 110 |
| **Total** | | 158 | 142 | 300 |

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**Table 8a**: Represents the statistical value by chi square analysis for relationship between branch and knowledge on screening

| | Value | df | Asymptotic significance (2-sided) | Exact Sig (2- 2-sided) | Exact sig (1-Sided) |
|---|---|---|---|---|---|
| **Pearson chi-square** | 5.681 | 1 | 0.017 | | |
| **Continuity correction** | 5.124 | 1 | 0.024 | | |
| **Likelihood Ratio** | 5.690 | 1 | 0.017 | | |
| **Fisher's Exact Test** | | | | 0.022 | 0.012 |
| **Linear-by-Linear Association** | 5.663 | 1 | 0.017 | | |
| **N of valid Cases** | **300** | | | | |

**Table 9**: Represents the comparison between a branch and cervical cancer prevention (P>0.05)

| Count | | | | |
|---|---|---|---|---|
| | | **cervical cancer prevention knowledge** | | |
| | | Agree | Dis agree | **Total** |
| **Branch** | Technical | 102 | 86 | 188 |
| | Medical associated | 52 | 58 | 110 |
| **Total** | | 154 | 144 | 298 |

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**Table 9a:** Represents the statistical value by chi square analysis by comparison between a branch and cervical cancer prevention

| | Value | df | Asymptotic significance (2-sided) | Exact Sig (2-2-sidedd) | Exact sig (1-Sided) |
|---|---|---|---|---|---|
| **Pearson chi-square** | 1.355 | 1 | 0.244 | | |
| **Continuity correction** | 1.090 | 1 | 0.297 | | |
| **Likelihood Ratio** | 1.355 | 1 | 0.244 | | |
| **Fisher's Exact Test** | | | | 0.280 | 0.148 |
| **Linear-by-Linear Association** | 1.350 | 1 | 0.245 | | |
| **N of valid Cases** | 299 | | | | |

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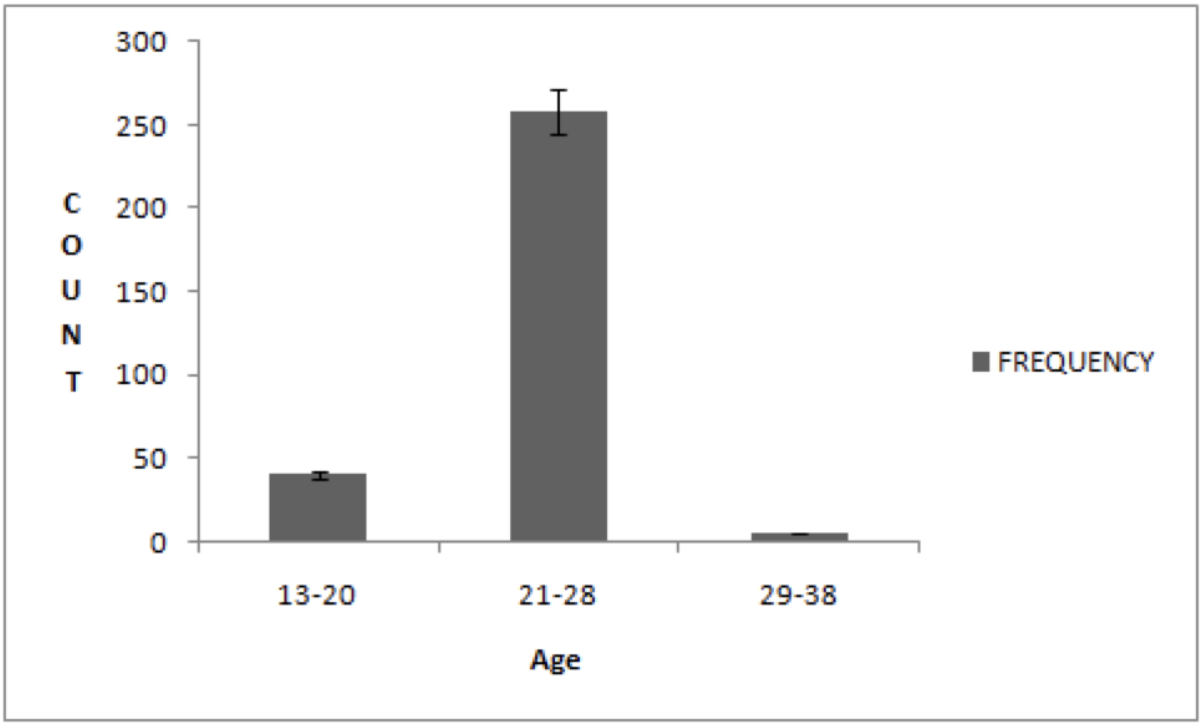


**Fig. 1:** Represents the distribution of age among females and students in universities. 13-20 age grp (12.6%), 21-28 (85.8%) and 29-38 (1.6%). The X axis represents the variable count and Y axis represents the age frequency ±1 SD

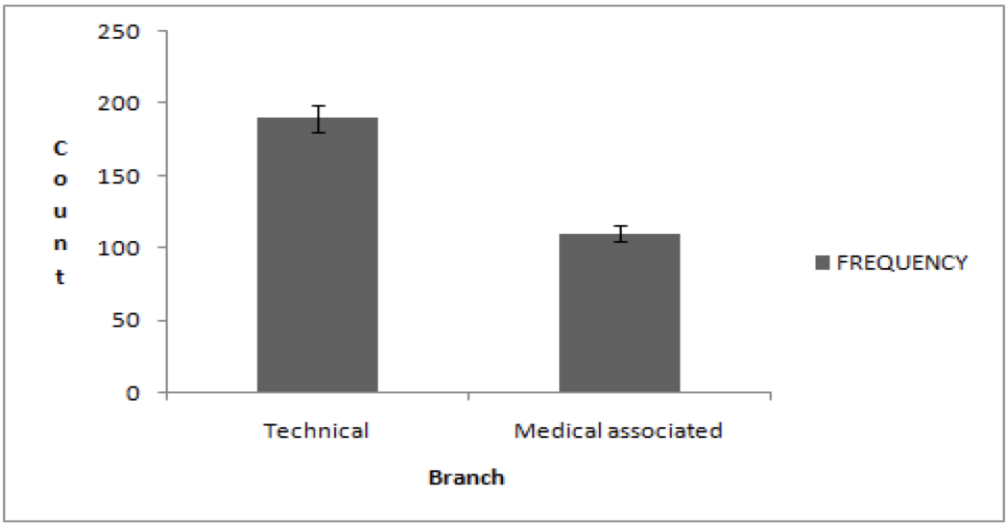


**Fig. 2:** Represents the comparison of respondents between the technical students and the medical field associated students X axis represents count and Y axis represents Branch of the study ±1 SD

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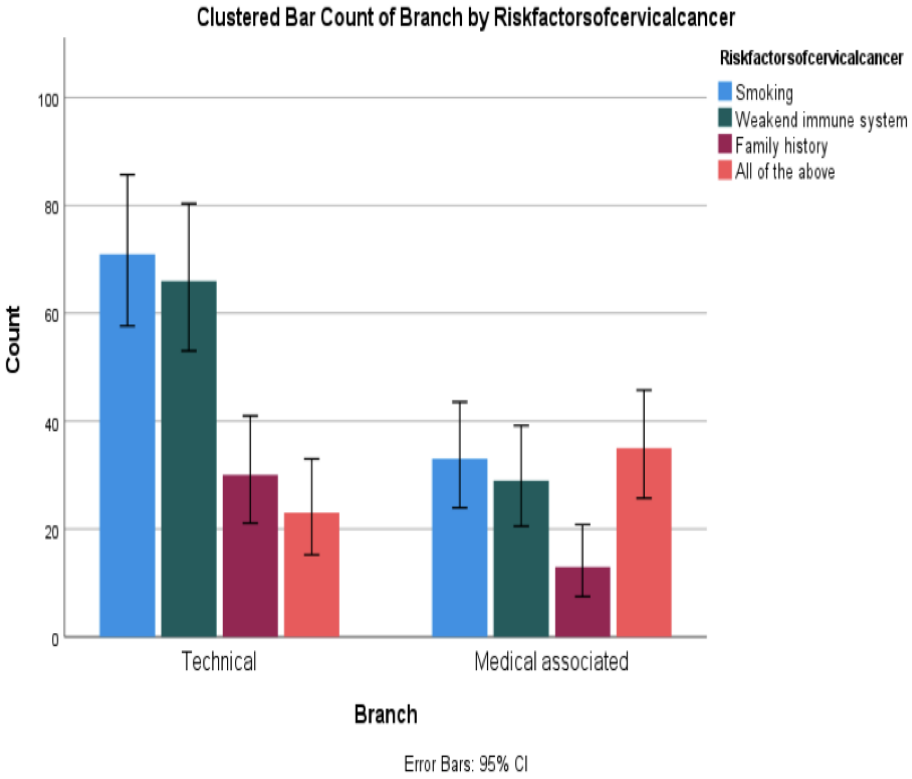


**Fig. 3:** Bar chart represents the comparison between the branch and the risk factors of cervical cancer (P<0.01 chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1 SD.

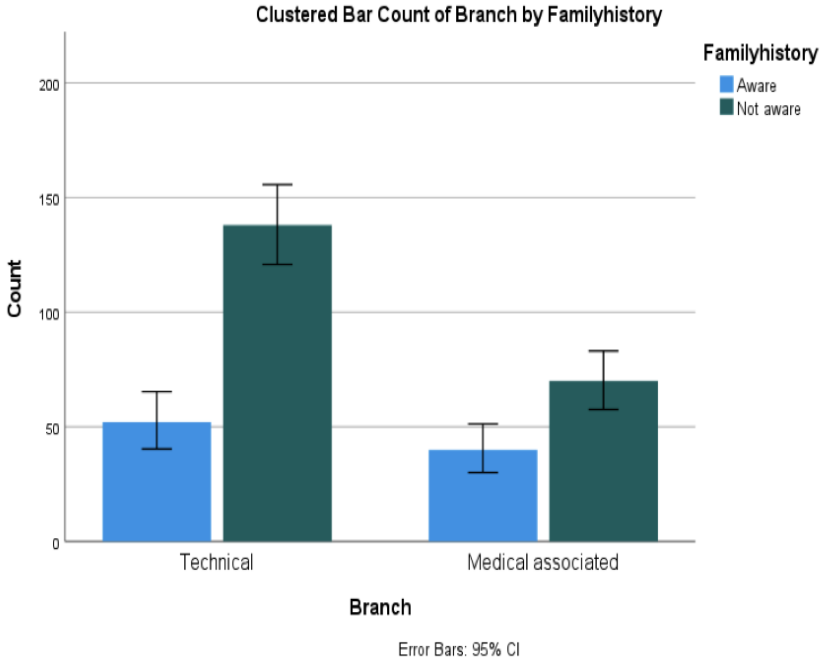


**Fig. 4:** Bar chart represents the comparison between the branch and family history of cervical cancer (P>0.05 chi-square analysis is statistically insignificant). The deviation shows

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technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1SD.

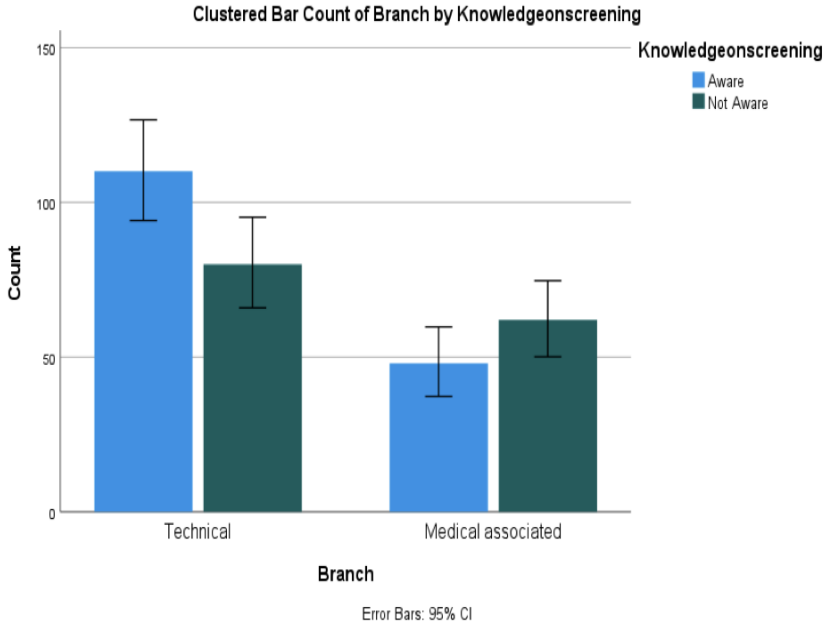


**Fig. 5**: This bar chart represents the relation between branch and knowledge of screening are significantly different. (P>0.05 chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1SD.

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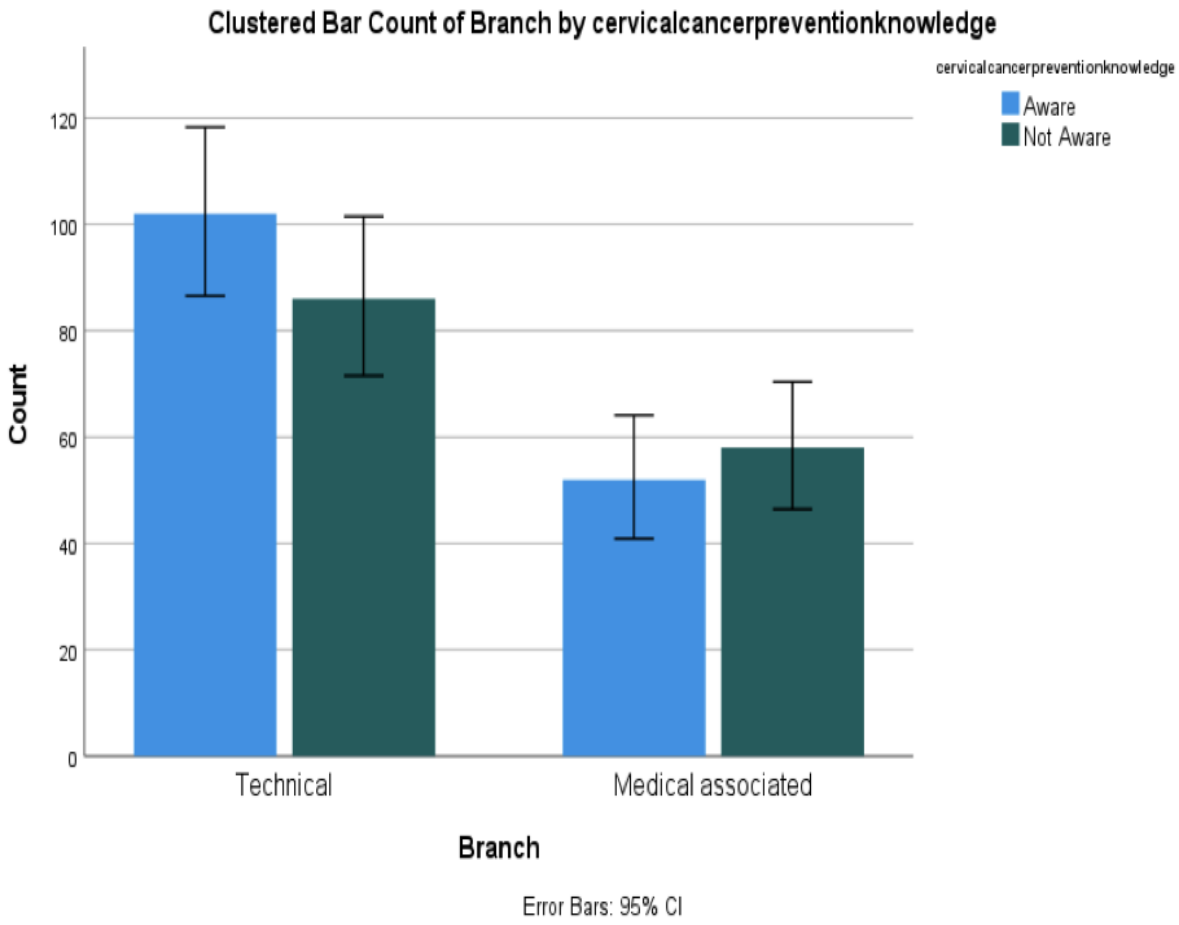


**Fig. 6:** Bar chart represents the comparison between the branch and knowledge on cervical cancer prevention. This data is statistically insignificant. (P>0.05 chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1SD.

**Table 1** Distribution of age among females and students in universities between the ages of 13 to 38. A total of 300 participants responded.

| AGE | FREQUENCY | PERCENTAGE |
|---|---|---|
| 13-20 | 40 | 12.6 |
| 21-28 | 258 | 85.8 |
| 29-38 | 5 | 1.6 |

**Table 2** Comparison between both technical students and medical field associate students in universities.

| BRANCH | FREQUENCY | PERCENTAGE |
|---|---|---|

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| | | |
|---|---|---|
| Technical | 190 | 62.8 |
| Medical field associated | 110 | 37.2 |
| Total | 300 | 100 |

**Table 3** Depicts the list of questions used in the survey related to experience and knowledge on ovarian cancer among female students in universities. The virulence of ovarian cancer was very evident to most of the participants (60.6%).

| **VARIABLE** | **Percentage of population who are aware(%)** | **Percentage of population who are not aware (%)** |
|---|---|---|
| Women who typically experience symptoms of ovarian cancer are diagnosed late | 176 (60%) | 117 (39.9%) |
| The majority of ovarian cancer diagnosed late | 173 (58.9%) | 121 (41.2%) |
| Ovarian cancer can occur at any age, even in childhood | 160 (55%) | 131 (45%) |
| Some early symptoms of ovarian cancer may be recognized | 177 (60.6%) | 115 (39.4%) |
| Most ovarian cysts are cancerous | 152 (52.3%) | 139 (47.7%) |
| Students have shown an approximate 40% reduction in mortality screening for ovarian cancer | 186 (63.7%) | 106 (36.3%) |
| Genes are responsible for some cases of ovarian cancer | 174 (59.4%) | 119 (40.6%) |

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**Table 4** Represents the knowledge on ovarian cancer between the technical and medical associated students. 41.4% of the student population was well aware of this fact.

| VARIABLE | FREQUENCY | PERCENTAGE |
|---|---|---|
| Where does ovarian cancer can occur | 55 | 18.7% |
| 1.on tissue within the ovary | | |
| 2.on the surface of the ovary | 92 | 31.3% |
| 3.in egg forming germ cell within the ovary | | |
| 4.any of the above | 93 | 31.6% |
| | 54 | 18.4% |
| Risk for developing ovarian cancer | | |
| 1.women who had multiple children | 65 | 22.3% |
| 2.women who are underweight | 99 | 33.9% |
| 3.women over the age of 30 | 70 | 24% |
| 4.any of the above | 58 | 19.9% |
| In how many stages ovarian cancer is classified depending upon the extent of spread | | |
| 1.2 | 77 | 26.5% |
| 2.3 | 120 | 41.2% |
| 3.4 | 73 | 25.1% |
| 4.5 | 21 | 7.2% |
| Usually, the first treatment for ovarian cancer is | | |
| 1.surgery | 53 | 18% |
| 2.chemotherapy | 119 | 40.5% |
| 3.radiation | 75 | 25.5% |
| 4.any of the above | 45 | 16% |
| Risk factors for ovarian cancer | | |
| 1.young age | 55 | 18.8% |
| 2.null parity | 99 | 33.9% |
| 3.multiple pregnancies | 96 | 32.9% |
| 4.use of oral pills | 42 | 14.4% |
| Symptoms uncommon in ovarian cancer | | |
| 1.abdominal pain | 96 | 32.8% |
| 2.chest pain | 123 | 42% |
| 3.weight loss | 54 | 18.4% |
| 4.abdominal digestion | 20 | 6.8% |

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| | | |
|---|---|---|
| Staging of ovarian cancer | | |
| 1.stage 3 disease | 120 | 41.4% |
| 2.stage 1 tumors | 134 | 46.2% |
| 3.stage 4 disease | 36 | 12.4% |
| In metastatic epithelial ovarian cancer | | |
| 1.ascites | | |
| 2.bowel obstruction | 62 | 21.3% |
| 3.opioid analgesics | 184 | 63.2% |
| 4.lymphedema | 28 | 9.6% |
| | 15 | 21.3% |
| The most type of ovarian cancer | | |
| 1.epithelial tumor | 50 | 17.2% |
| 2.germ cell tumor | 81 | 27.8% |
| 3.sex chord tumor | 106 | 36.4% |
| 4.Kruckenberg cancer | 54 | 18.6% |
| Out of 100 women, how many will probably develop | | |
| ovarian cancer | 38 | 13.1% |
| 1.2 | 108 | 37.2% |
| 2.5 | 116 | 40% |
| 3.10 | 28 | 9.7% |
| 4.22 | | |

**Table 5a** Represents the comparison between branch and risk factors of ovarian cancer.

| **Count** | | |
|---|---|---|
| | **Risk Factors Of Ovarian Cancer** | **Total** |

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| | | Young age | Null parity | Multiple pregnancies | prolonged use of oral contraceptive pills | |
|---|---|---|---|---|---|---|
| **Branch** | **Technical** | 40 | 64 | 62 | 23 | 189 |
| | **Medical field associated** | 22 | 35 | 34 | 19 | 110 |
| **Total** | | 62 | 99 | 96 | 42 | 299 |

**Table 5b** Represents the statistical value by chi-square analysis for comparison between branch and risk factors of ovarian cancer and the P-value is statistically insignificant. (P>0.05).

| Chi-Square Tests | | | |
|---|---|---|---|
| | Value | df | Asymptotic Significance (2-sided) |
| Chi | 1.500a | 3 | 0.682 |
| hood | 1.468 | 3 | 0.69 |
| inear | 0.666 | 1 | 0.415 |
| Valid | 299 | | |
| a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 15.45. | | | |

**Table 6a** Represents the comparison between branch and knowledge on ovarian cysts.

| **Count** | | | | |
|---|---|---|---|---|
| | | **Attitude towards Ovarian Cysts** | | |
| | | **Agree** | **Disagree** | **Total** |
| **Branch** | **Technical** | 94 | 96 | 190 |
| | **Medical field associated** | 58 | 52 | 110 |
| **Total** | | 152 | 148 | 300 |

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**Table 6b** Represents the statistical value by chi-square analysis for comparison between branch and knowledge on ovarian cysts and the P-value is statistically insignificant. (P>0.05).

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | **Value** | **df** | **Asymptotic Significance (2-sided)** | **Exact Sig. (2-sided)** | **Sig. (1-** |
| C | .295a | 1 | 0.587 | | |
| | 0.179 | 1 | 0.672 | | |
| | 0.295 | 1 | 0.587 | | |
| E | | | | 0.632 | 0.336 |
| e | 0.294 | 1 | 0.588 | | |
| l | 300 | | | | |
| a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 54.27. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

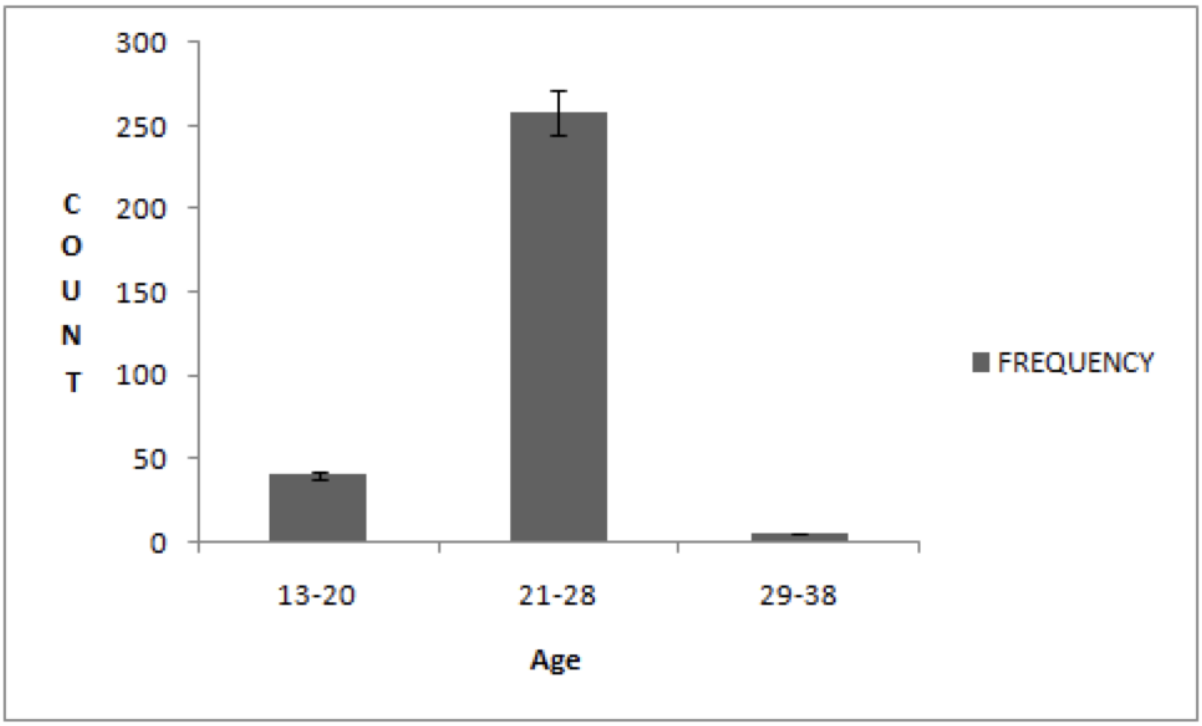

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**Fig. 1** Represents the distribution of age among females and students in universities. 13-20 age grp (12.6%), 21-28 (85.8%) and 29-38 (1.6%). The X-axis represents the variable count and the Y-axis represents the age frequency ±1 SD

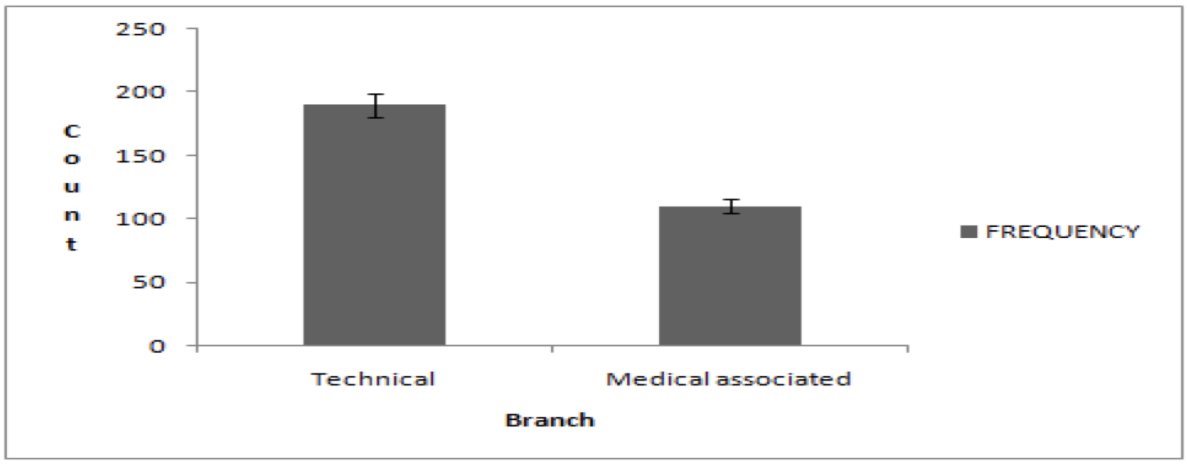


**Fig. 2** Represents the comparison of respondents between the technical students and the medical field associated students X-axis represents count and Y-axis represents Branch of the study ±1 SD

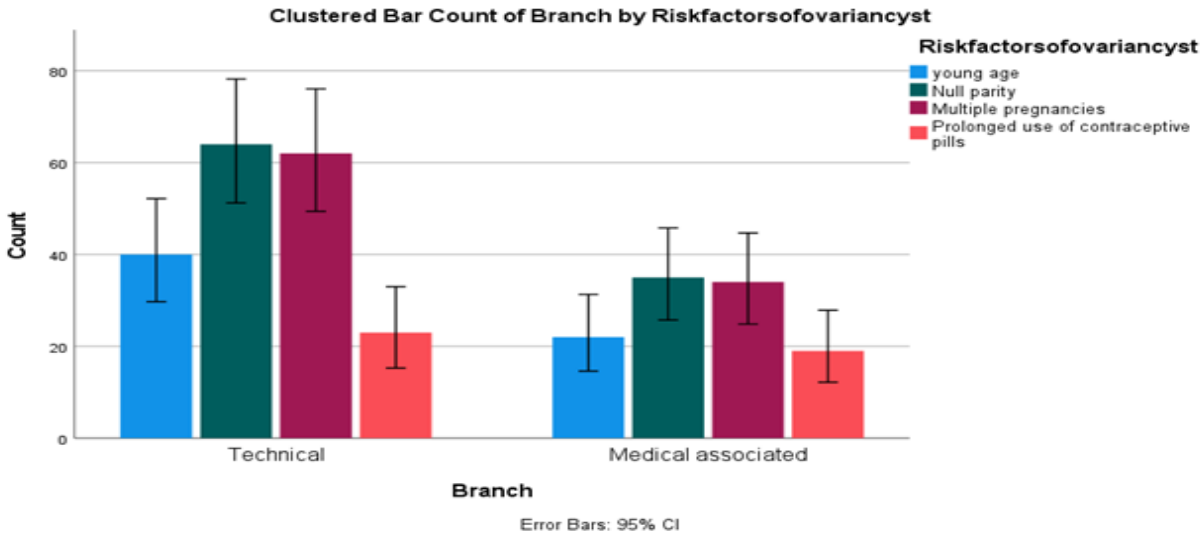


**Fig. 3** Bar chart represents the comparison between the branch and the risk factors of ovarian cancer (P>0.05 chi-square analysis). The deviation shows technical students have more

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knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1 SD.

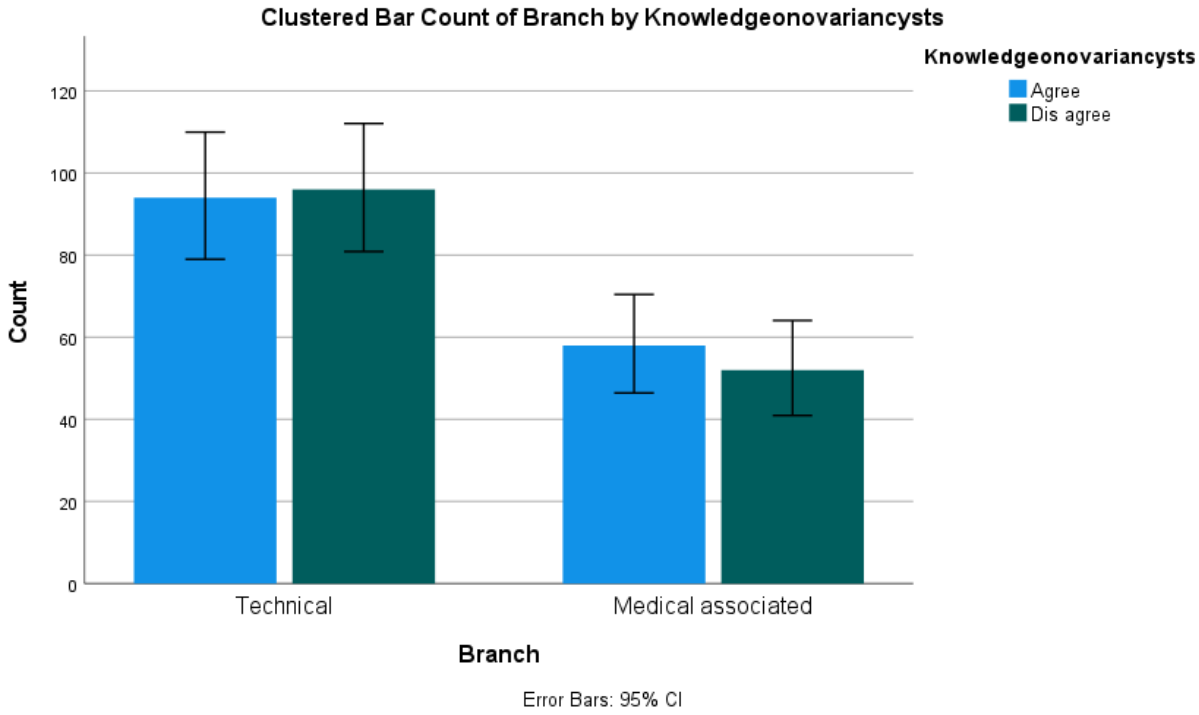


**Fig. 4** Bar chart represents the comparison between the branch and knowledge on ovarian cysts (P>0.05 chi-square analysis is statistically insignificant). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1SD.

## Tables and Figures for uterine cancer

**Table 1:** Distribution of age among females and students in universities between the ages of 13 to 38. A total of 300 participants responded. This table shows the age group of females.

| AGE | FREQUENCY | PERCENTAGE |
|---|---|---|
| 13-20 | 40 | 12.6 |
| 21-28 | 258 | 85.8 |

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| | | |
|---|---|---|
| 29-38 | 5 | 1.6 |

**Table 2:** Comparison between both technical students and medical field associate students in universities. This table shows technical students contribute 62.8% and medical field-associated students contribute 37.2%. The contribution of technical students is high compared to medical field associate students.

| BRANCH | FREQUENCY | PERCENTAGE |
|---|---|---|
| Technical | 190 | 62.8 |
| Medical associates | 110 | 37.2 |
| Total | 300 | 100 |

**Table 3:** The list of questions used in the survey related to experience and knowledge on uterine cancer among female students in universities.

| VARIABLE | The population who are aware (%) | The population who are not aware (%) |
|---|---|---|
| Uterine cancer that forms in the inner lining of a uterus is considered endometrial cancer | 164(56.4%) | 127(43.6%) |
| Is obesity increasing the risk for cancer of the uterus | 145(50.2%) | 144(49.8%) |
| Is uterus cancer detected by a pap test | 129(44.5%) | 161(55.5%) |
| Is uterine cancer treatment affect the ability to conceive | 119(41%) | 171(59%) |
| Is endometrial cancer is twice as common in overweight | 172(59.1%) | 119(40.9%) |
| Is chemotherapy treatment uses anti-cancer drugs targeted to a specific location | 194(66.7%) | 97(33.3%) |

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| | | |
|---|---|---|
| Is staging used to determine the severity or extent of the cancer | 102(35.1%) | 189(64.9%) |
| Most chemotherapy treatments are done in repeated cycles of drug administration followed by a rest period | 188(64.9%) | 102(35.2%) |
| Hormone therapy is not used on uterine cancer cells that require another hormone for growth | 180(62.5%) | 108(37.5%) |
| Is endometrial cancer is a disease in which malignant cells form in the tissues of the endometrium | 124(42.6%) | 167(57.4%) |
| Is endometrial cancer diagnosed early | 132(45.4%) | 159(54.6%) |

**Table 4:** The knowledge on uterine cancer between the technical and medical associated students. 37.8% of the student population was well aware of this fact.

| VARIABLE | FREQUENCY | PERCENTAGE |
|---|---|---|
| How can reduce the cancer of the uterus | 36 | 12.5% |
| 1.maintaining a healthy weight | | |
| 2.taking birth control pills | 87 | 30.1% |
| 3.monitoring blood sugar levels | | |
| 4.all of the above | 106 | 36.7% |
| | 60 | 20.8% |
| How is uterus cancer diagnosed | | |
| 1.pelvic examination | 33 | 11.3% |
| 2.biopsy | 69 | 23.6% |
| 3.CT scan | 104 | 29.5% |
| 4.all of the above | 33 | 35.6% |

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| | | |
|---|---|---|
| The common surgical procedures to treat uterine cancer | | |
| 1.hysterectomy | 37 | 12.7% |
| 2.radial hysterectomy | 88 | 30.1% |
| 3.lymphadenectomy | 90 | 30.8% |
| 4.all the above | 77 | 26.4% |
| The common signs and symptoms of uterine cancer are | | |
| 1.abdominal bleeding | 44 | 15.1% |
| 2.vaginal discharge | 87 | 29.9% |
| 3.pelvic pains | 85 | 29.2% |
| 4.all the above | 75 | 25.8% |
| Exposure of endometrial tissue to estrogen made by the body may be caused by | | |
| 1.never giving birth | | |
| 2.menstruating early stage | 50 | 17.2% |
| 3.menopause at a later stage | 94 | 32.4% |
| 4.all the above | 85 | 29.3% |
| | 61 | 21% |
| Risk factors for endometrial cancer | | |
| 1.obesity | 36 | 12.4% |
| 2.metabolic syndrome | 88 | 30.2% |
| 3.type 2 diabetes | 71 | 24.4% |
| 4.all the above | 96 | 33% |
| What are the following stages are used for endometrial cancer | 40 | 13.7% |
| 1.stage 1,2 | 91 | 31.3% |
| 2.stage 3,4 | 110 | 37.8% |
| 3.both of them | 50 | 17.2% |
| 4.none of the above | | |
| Endometrial cancer may be grouped for treatment as follows | 43 | 14.7% |
| 1.low risk | 118 | 40.4% |
| 2.high risk | 100 | 34.2% |
| 3.both of them | 31 | 10.6% |
| 4.none of the above | | |
| The symptoms of endometriosis may include | | |
| 1.pelvic pain | 29 | 10% |
| 2.painful intercourse | 98 | 33.7% |
| 3.infertility | 102 | 35.1% |
| 4.all the above | 62 | 21.3% |

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**Table 5a:** Comparison between technical and medical associated with risk factors of uterine cancer.

| Variable | | | | | | |
|---|---|---|---|---|---|---|
| | | **Symptoms Of Uterine Cancer** | | | | |
| | | **Vaginal discharge** | **Abdominal vaginal bleeding** | **pelvic pains** | **All the above** | **Total** |
| **Branch** | **Technical** | 59 | 29 | 60 | 41 | 189 |
| | **Medical field associated** | 28 | 15 | 25 | 41 | 109 |
| **Total** | | 87 | 44 | 85 | 82 | 298 |

**Table 5b:** The statistical value by chi-square analysis for comparison between Technical and medical field associated students towards risk factors of uterine cancer and the P-value is statistically significant. (P<0.05).

| **Chi-Square Tests** | | | |
|---|---|---|---|
| | Value | df | Significanc |
| **Pearson Chi-Square** | 9.091a | 3 | 0.028 |
| **Likelihood Ratio** | 8.933 | 3 | 0.03 |
| **Linear-by-Linear Association** | 4.066 | 1 | 0.044 |
| **N of Valid Cases** | 298 | | |
| a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 16.09. | | | |

**Table 6a:** Comparison between technical and medical-associated towards knowledge on uterine cancer diagnosis.

| Variable | | | | | | |
|---|---|---|---|---|---|---|
| | | Knowledgeonuteruscancerdiagnoised | | | | |
| | | Biopsy | Pelvic examination | CT scan | All of the above | Total |
| **Branch** | **Technical** | 49 | 19 | 54 | 68 | 190 |
| | **Medical field associated** | 28 | 14 | 32 | 36 | 110 |
| **Total** | | 77 | 33 | 86 | 104 | 300 |

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**Table 6b:** The statistical value by chi-square analysis for comparison between technical and medical associated knowledge on uterine cancer diagnosed and the P-value is statistically insignificant.

| **Chi-Square Tests** | | | |
|---|---|---|---|
| | Value | df | Significanc |
| **Pearson Chi-Square** | .673a | 3 | 0.879 |
| **Likelihood Ratio** | 0.666 | 3 | 0.881 |
| **Linear-by-Linear Association** | 0.129 | 1 | 0.719 |
| **N of Valid Cases** | 300 | | |
| a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 12.10. | | | |

**Table 7a:** Comparison between technical and medical field associated students with knowledge on uterine cancer detection by pap test.

| Variable | | | | |
|---|---|---|---|---|
| | | **knowledge on uterus cancer detection by a pap test** | | |
| | | Aware | Not Aware | **Total** |
| **Branch** | **Technical** | 90 | 100 | 190 |
| | **Medical field associated** | 49 | 61 | 110 |
| **Total** | | 139 | 161 | 300 |

**Table 7b:** The statistical value by chi-square analysis for comparison between Technical and medical associated towards knowledge on uterine cancer detection by pap test and the P-value is statistically insignificant.

| **Chi-Square Tests** | | | | | |
|---|---|---|---|---|---|
| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Sig. (1- |
| **Pearson Chi-Square** | .223a | 1 | 0.637 | | |
| **Continuity Correction** | 0.124 | 1 | 0.725 | | |
| **Likelihood Ratio** | 0.223 | 1 | 0.636 | | |
| **Fisher's Exact Test** | | | | 0.719 | 0.363 |

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| | | | | | |
|---|---|---|---|---|---|
| **Linear-by-Linear Association** | 0.223 | 1 | 0.637 | | |
| **N of Valid Cases** | 300 | | | | |
| a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 50.97. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

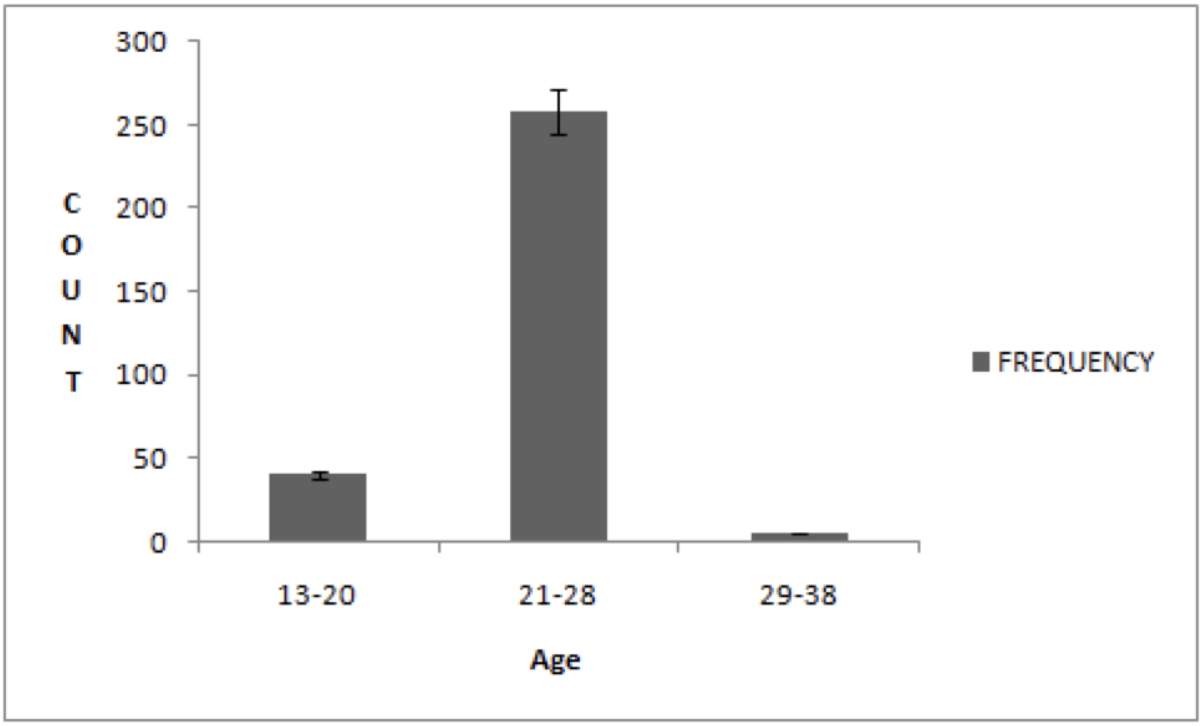


**Fig. 1.** Distribution of age among females and students in universities. 13-20 age grp (12.6%), 21-28 (85.8%) and 29-38 (1.6%). The X-axis represents the variable count and the Y-axis represents the age frequency ±1 SD

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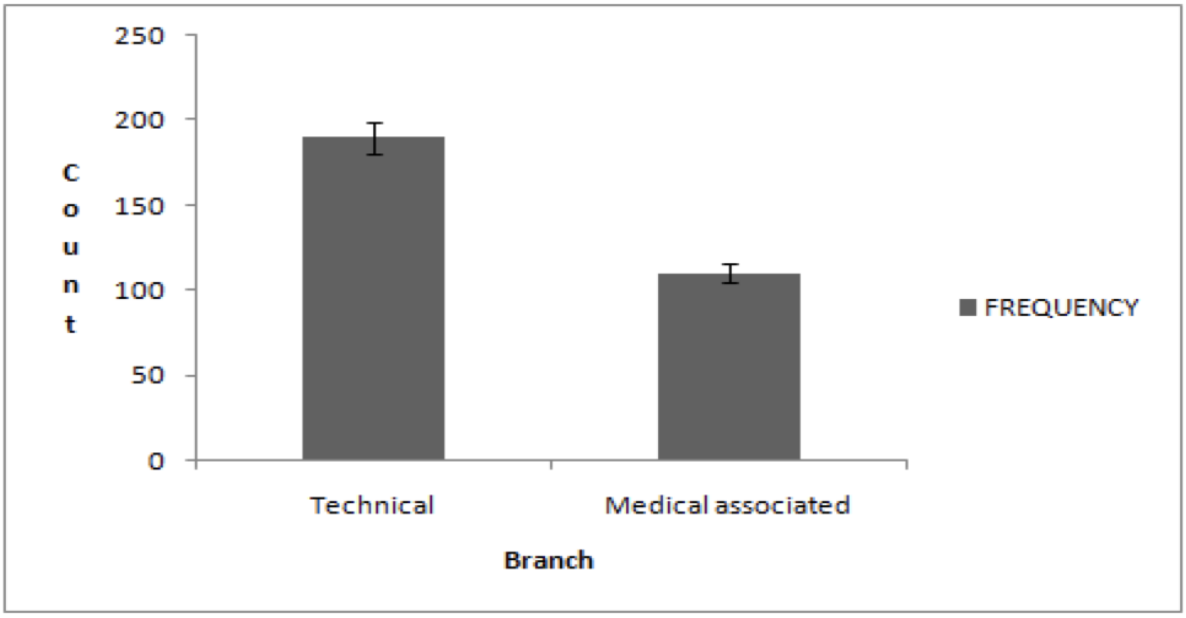


**Fig. 2.** Comparison of respondents between the technical students and the medical field associated students X-axis represents count and Y-axis represents Branch of the study ±1 SD

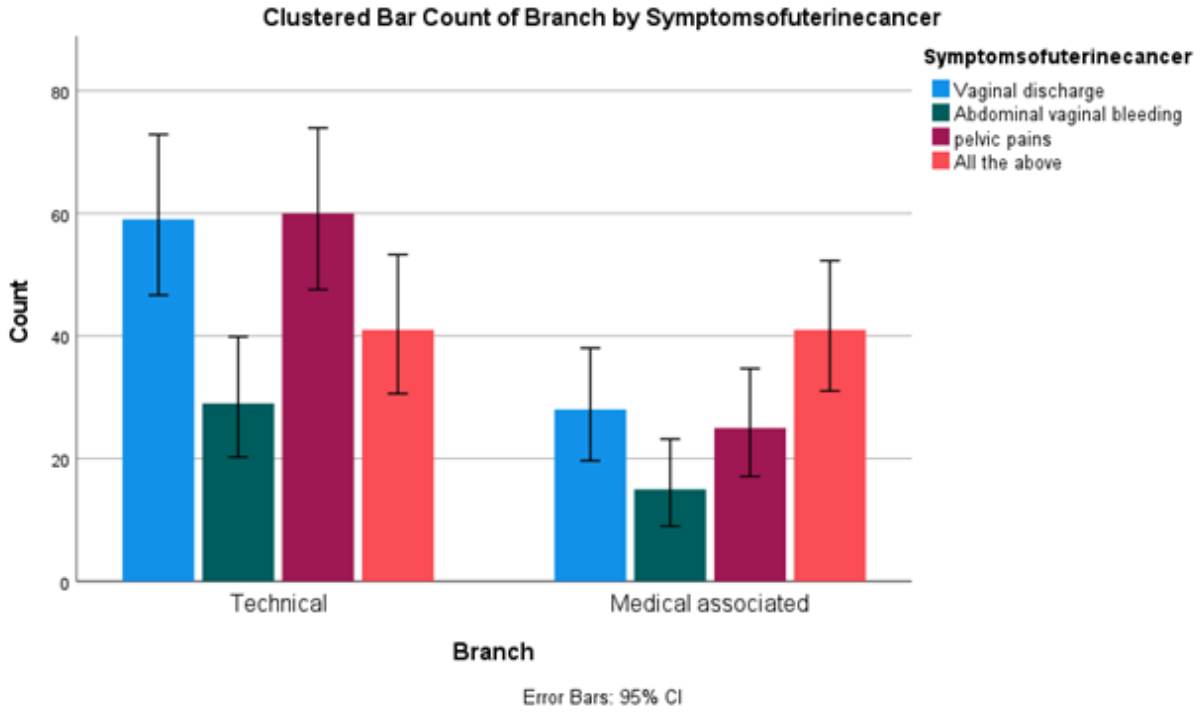

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**Fig. 3.** Comparison between the branch and the symptoms of uterine cancer (chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1 SD.

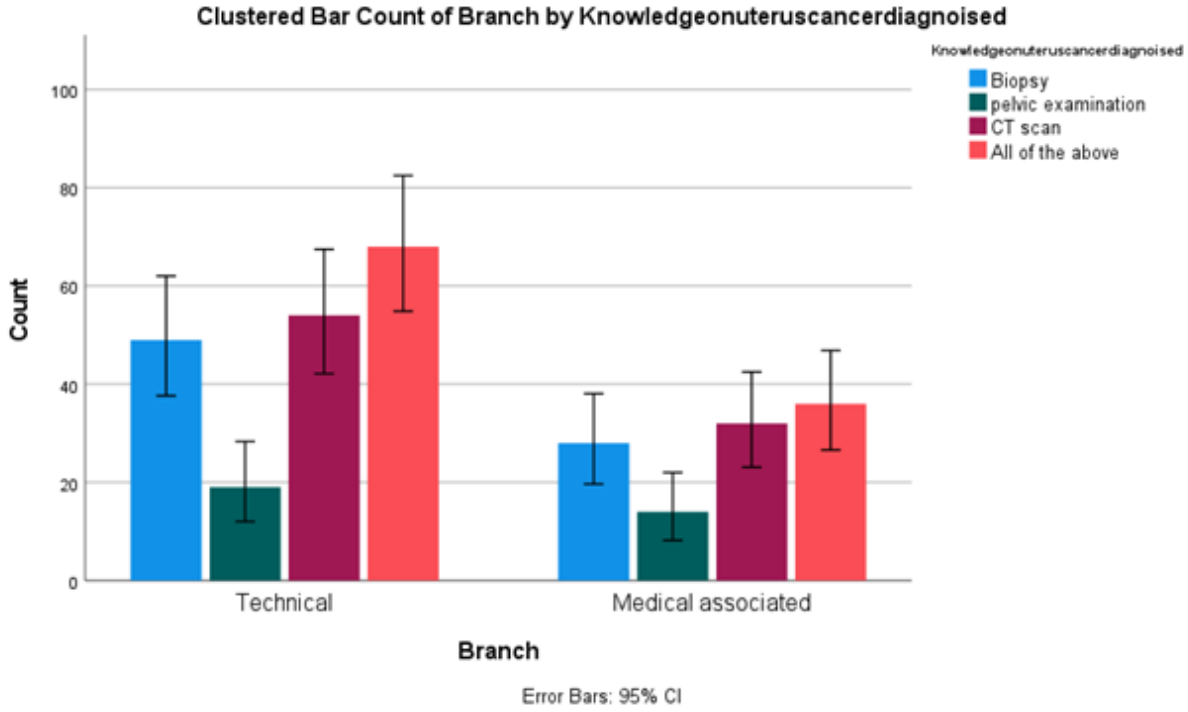


**Fig. 4.** Comparison between the branch and the knowledge of uterine cancer diagnosed (P>0.05 chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1 SD.

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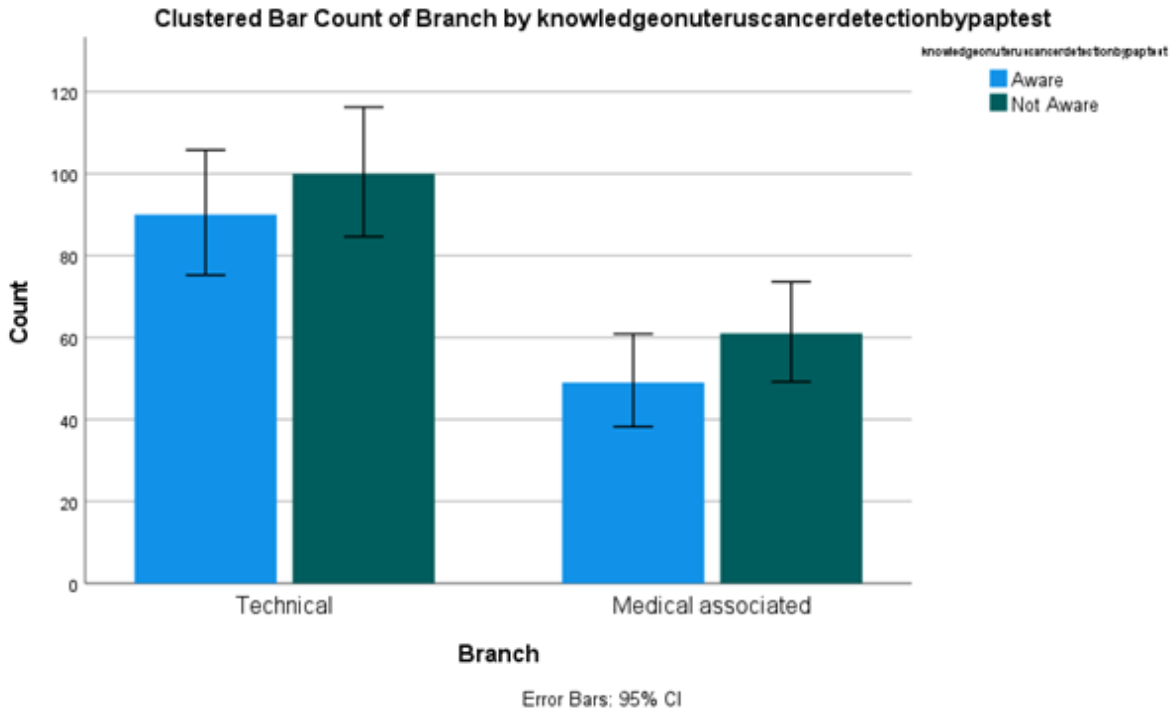


**Fig. 5.** Comparison between the branch and the knowledge of uterine cancer detection by pap test (P>0.05 chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1 SD.

**Tables and figures for vaginal cancer**

**Table 1.** Distribution of age among females and students in universities between the ages of 13 to 38. A total of 300 participants responded. This table shows the age group of females.

| AGE | FREQUENCY | PERCENTAGE |
|---|---|---|
| 13-20 | 40 | 12.6 |
| 21-28 | 258 | 85.8 |
| 29-38 | 5 | 1.6 |

**Table 2**. Comparison between both technical students and medical field associate students in universities. This table shows technical students contribute 62.8% and medical field-associated students contribute 37.2%. The contribution of technical students is high compared to medical field associate students.

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| BRANCH | FREQUENCY | PERCENTAGE |
|---|---|---|
| Technical | 190 | 62.8 |
| Medical-associates | 110 | 37.2 |
| Total | 300 | 100 |

**Table 3.** The list of questions used in the survey related to experience and knowledge on vaginal cancer among female technical and medical associated students in universities.

| VARIABLE | FREQUENCY | PERCENTAGE |
|---|---|---|
| How many ways are there, that cancer spread in the body | | |
| 1.2 | 47 | 16.2% |
| 2.3 | 100 | 34.4% |
| 3.4 | 94 | 32.3% |
| 4.5 | 50 | 17.2% |
| How many types of standard treatments are used | | |
| 1.2 | 66 | 22.7% |
| 2.3 | 139 | 47.8% |
| 3.4 | 66 | 22.7% |
| 4.5 | 20 | 6.9% |
| Risk factors for vaginal cancer | | |
| 1.tobacco use | 28 | 9.6% |
| 2.sexual initiation | 85 | 29.2% |
| 3.HPV | 78 | 34.4% |
| 4.all the above | 28 | 26.8% |
| How many types of grades are given to cancers to provide prognostic information about the tumor | | |
| 1.2 | | |
| 2.3 | 78 | 26.9% |
| 3.4 | 153 | 52.8% |
| 4.5 | 42 | 14.5% |
| | 17 | 5.9% |

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**Table 4.** The knowledge on vaginal cancer between the technical and medical associated students. 65.2% of the student population was well aware of this fact.

| **VARIABLE** | **YES (%)** | **NO (%)** |
|---|---|---|
| Is cancer travels through the blood vessels to the other parts of the body | 143(49%) | 149(51%) |
| Is a cancer tumor forms in the lymph vessels | 201(68.8%) | 91(31.2%) |
| For reducing risk, the combinations of contraceptive pills are used for the treatment or not | 189(65.2%) | 101(34.8%) |
| Is biopsy remains the gold standard to diagnose vaginal cancer | 171(58.6%) | 121(41.4%) |
| Is targeted molecular analysis confirms an overall rate of oncogenic mutations | 167(57.4%) | 124(42.6%) |

**Table 5a. The** comparison between technical and medical associated with risk factors of vaginal cancer.

| **Variables** | | | | |
|---|---|---|---|---|
| Count | | | | |
| | | Risk factors of vaginal cancer | | |
| | | Tobacco use | Human papillomavirus | Total |
| **Branch** | **Technical** | 86 | 104 | 190 |
| | **Medical field associated** | 27 | 83 | 110 |
| **Total** | | 113 | 187 | 300 |

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**Table 5b.** The statistical value by chi-square analysis for comparison between technical and medical associated with risk factors of vaginal cancer and the P-value is statistically significant. (P<0.01).

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | **Value** | **df** | **Asymptotic Significance (2-sided)** | **Exact Sig. (2-sided)** | **g.** |
| **Pearson Chi-Square** | 12.736a | 1 | 0 | | |
| **Continuity Correction** | 11.869 | 1 | 0.001 | | |
| **Likelihood Ratio** | 13.154 | 1 | 0 | | |
| **Fisher's Exact Test** | | | | 0 | 0 |
| **Linear-by-Linear Association** | 12.693 | 1 | 0 | | |
| **N of Valid Cases** | 300 | | | | |
| a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 41.43. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

**Table 6a.** The comparison between technical and medical associated with knowledge on vaginal cancer.

| Variables | | | | |
|---|---|---|---|---|
| Count | | | | |
| | | Knowledge on vaginal cancer | | |
| | | Aware | Not Aware | Total |
| **Branch** | **Technical** | 111 | 78 | 189 |
| | **Medical field associated** | 67 | 43 | 110 |
| **Total** | | 178 | 121 | 299 |

**Table 6b.** The statistical value by chi-square analysis for comparison between technical and medical associated with knowledge on vaginal cancer and the P-value is statistically insignificant.

| Chi-Square Tests | | | | | |
|---|---|---|---|---|---|
| | **Value** | **df** | **Asymptotic Significance (2-sided)** | **Exact Sig. (2-sided)** | **Sig. (1** |
| **Pearson Chi-Square** | .137a | 1 | 0.711 | | |

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| | | | | | |
|---|---|---|---|---|---|
| **Continuity Correction** | 0.062 | 1 | 0.804 | | |
| **Likelihood Ratio** | 0.137 | 1 | 0.711 | | |
| **Fisher's Exact Test** | | | | 0.807 | 0.403 |
| **Linear-by-Linear Association** | 0.137 | 1 | 0.712 | | |
| **N of Valid Cases** | 299 | | | | |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 44.52. | | | | | |
| b. Computed only for a 2x2 table | | | | | |

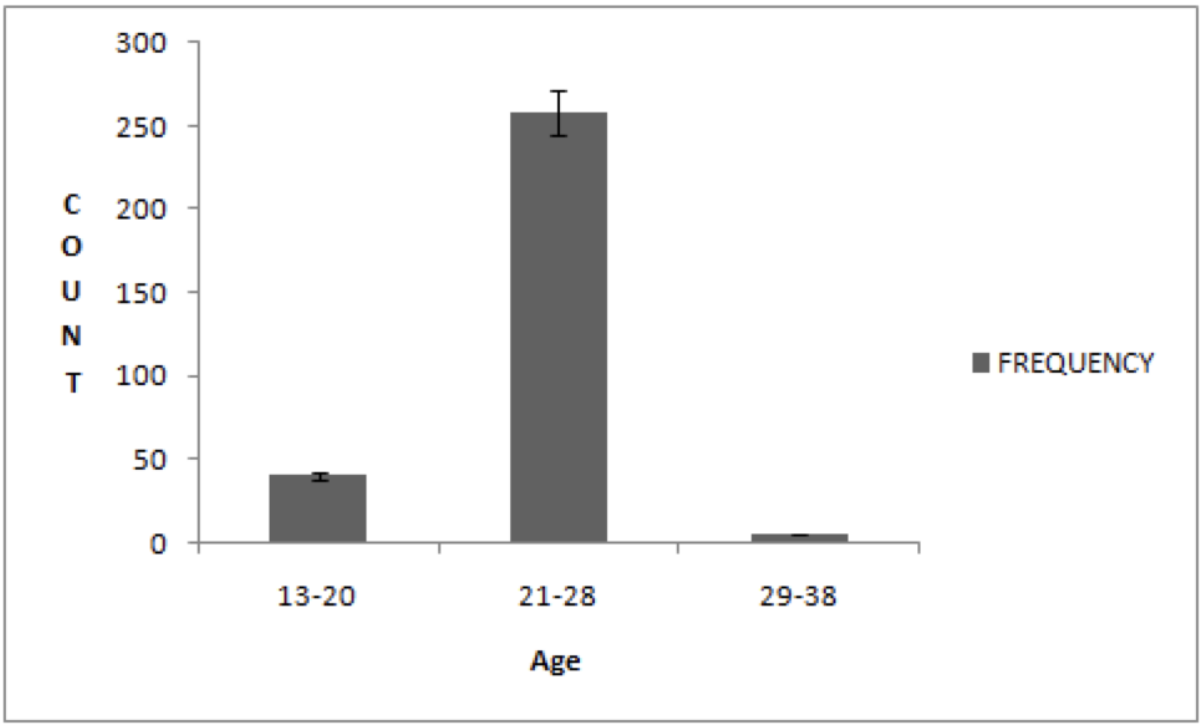


**Fig. 1.** The distribution of age among females and students in universities. 13-20 age grp (12.6%), 21-28 (85.8%) and 29-38 (1.6%). The X axis represents the variable count and Y axis represents the age frequency ±1 SD.

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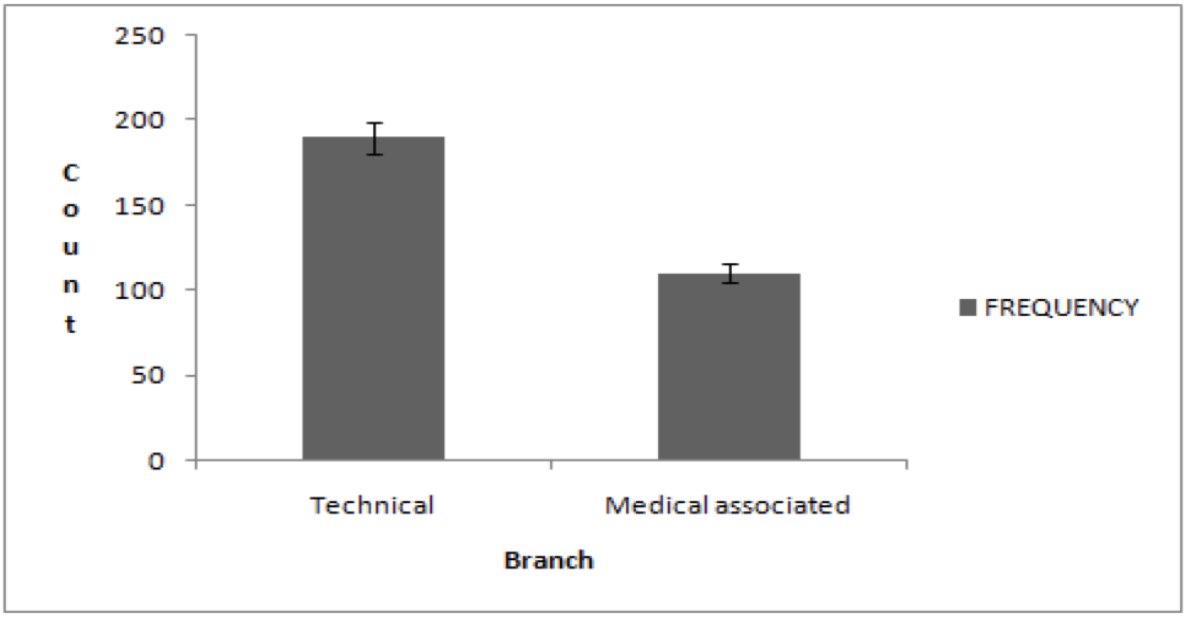


**Fig. 2.** The comparison of respondents between the technical students and the medical field associated students X axis represents count and Y axis represents Branch of the study ±1 SD.

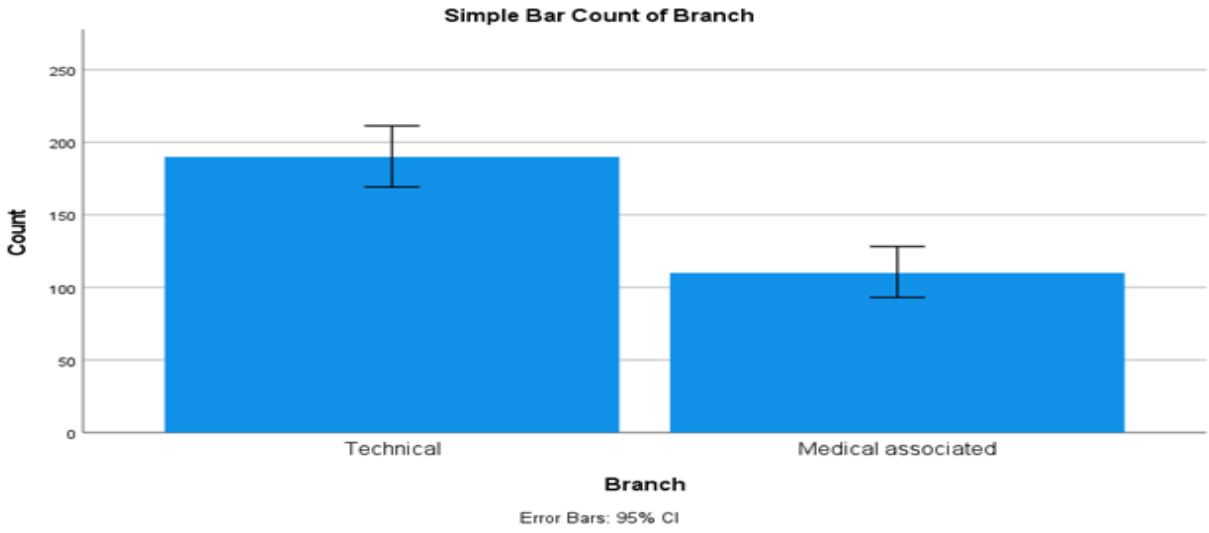

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**Fig. 3.** Comparison between the branch and the risk factors of vaginal cancer (P<0.01 chi-square analysis). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1 SD.

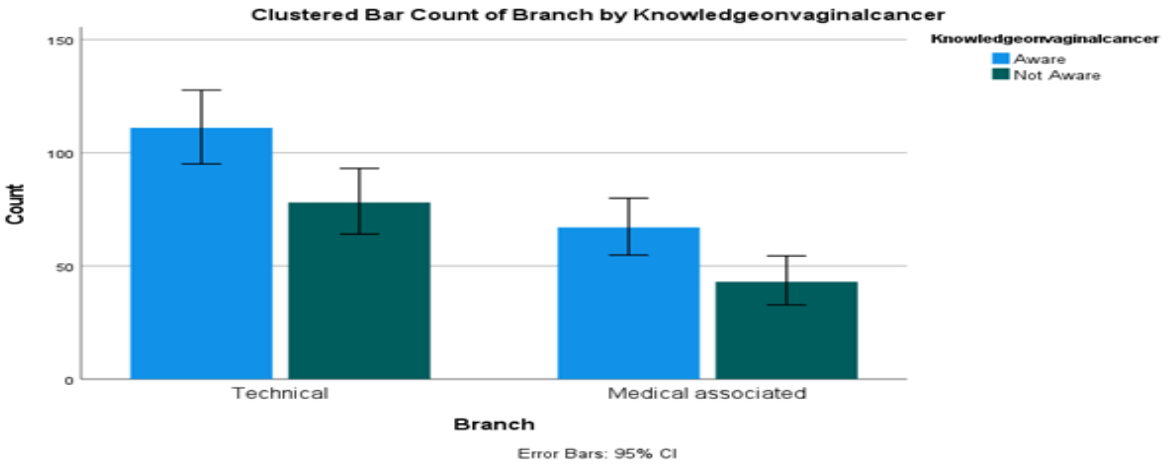


**Fig. 4.** Comparison between the branch and knowledge on ovarian cysts (P>0.05 chi-square analysis is statistically insignificant). The deviation shows technical students have more knowledge than medical associated students. X-axis technical vs medical associated students Y-axis count ± 1SD.

## 4. Conclusion

The study suggests the awareness and innovative knowledge, specifically for cervical cancer among women students, was found to be extremely low. Lack of cancer awareness with high feminine stigma towards gynecological cancers is the most potent barrier and should be addressed through multifaceted innovative strategies-based interventions. Comparative Innovative analysis of technical and medical field associated students' suggested Innovative parameters towards knowledge, awareness, perspective risk factors, and medical screening programs for gynecological cancer.

## DECLARATIONS:

### Conflict of interests

No conflict of interest in this manuscript.

### Authors Contribution

Author RH was involved in data collection and manuscript writing. Author MAAA was involved in conceptualization, data validation, and critical review of the manuscript.

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