# ORIGINAL ARTICLE

## Assessment of Pap smear in women

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***ABSTRACT:***
**Background:**Cervical cancer is a growing global health concern, accounting for around 12% of all malignancies diagnosed in women. The present study was conducted to assess Pap smears in women. **Materials & Methods:**70 prepared slides were received by the pathology department in a coplin jar and dipped in ethyl alcohol. After air drying, slides were stained with Pap stain. Two cytopathologists who worked independently completed the reporting in accordance with the Bethesda classification system. **Results:** The age group 21-30 years had 35, 31-40 years had 20, 41-50 years had 11, and >50 years had 4 cases. The difference was significant (P< 0.05). The diagnosis was unsatisfactory in 7, normal in 4, bacterial vaginosis in 18, actinomycosis in 5, mixed infection in 4, ASCUS in 1, inflammatory (non-specific) in 20, candidiasis in 6, and trichomoniasis in 4 cases. The difference was significant (P< 0.05). **Conclusion:** A helpful screening technique for the early identification of premalignant and cancerous cervix lesions is pap smears. Early identification of cervical premalignant lesions by appropriate Pap screening program implementation can reduce the incidence of invasive cervical cancer.
**Keywords:**Bethesda, Pap smear, Cervical cancer

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## INTRODUCTION

Cervical cancer is a growing global health concern, accounting for around 12% of all malignancies diagnosed in women.[1] The world cancer statistics show that because of a lack of awareness and the challenges associated with implementing cytology-based screening programs, developing and low-resource nations account for over 80% of all cases of cervical cancer.[2] In South Asia, India has the highest age-standardized incidence of cervical cancer. Cervical cancer and its precursor lesions can be identified and treated early with a simple pap test. A common screening procedure, Pap smears have a 70–80% sensitivity in identifying HSIL.[3]
The pap smear's abnormalities in cervical epithelial cells indicate a range of intraepithelial lesions, from invasive malignancy to mild-to-severe dysplasia.[4] Despite being a standard screening procedure, the Pap smear has a 70–80% overall sensitivity in detecting high-gradesquamous intraepithelial lesions (HSIL). The Bethesda System (TBS), which is used to record cervical cytology results, was created as a standardized terminology system to offer precise direction for clinical care. It is advised to have a Pap smear screening from the age of 21 to 65.[5]The present study was conducted to assess Pap smears in women.

## MATERIALS & METHODS

The study included 70 prepared slides that were received by the pathology department in a coplin jar and dipped in ethyl alcohol. After air drying, slides were stained with Pap stain. Two cytopathologists who worked independently completed the reporting in accordance with the Bethesda classification system. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

## RESULTS
**Table I Distribution of patients**

| Age group (years) | Number | P value |
|---|---|---|
| 21-30 | 35 | 0.05 |
| 31-40 | 20 | |
| 41-50 | 11 | |
| >50 | 4 | |

Table I shows that the age group 21-30 years had 35, 31-40 years had 20, 41-50 years had 11, and >50 years had 4 cases. The difference was significant (P< 0.05).

**Table II Assessment of diseases on pap smear**

| Diseases | Number | P value |
|---|---|---|
| Unsatisfactory | 7 | 0.05 |
| Normal | 5 | |
| Bacterial vaginosis | 18 | |
| Actinomycosis | 5 | |
| Mixed infection | 4 | |
| ASCUS | 1 | |
| Inflammatory(Non-specific) | 20 | |
| Candidiasis | 6 | |
| Trichomoniasis | 4 | |

Table II, graph I shows that diagnosis was unsatisfactory in 7, normal in 4, bacterial vaginosis in 18, actinomycosis in 5, mixed infection in 4, ASCUS in 1, inflammatory (non-specific) in 20, candidiasis in 6, and trichomoniasis in 4 cases. The difference was significant (P< 0.05).

**Graph I Assessment of diseases on pap smear**
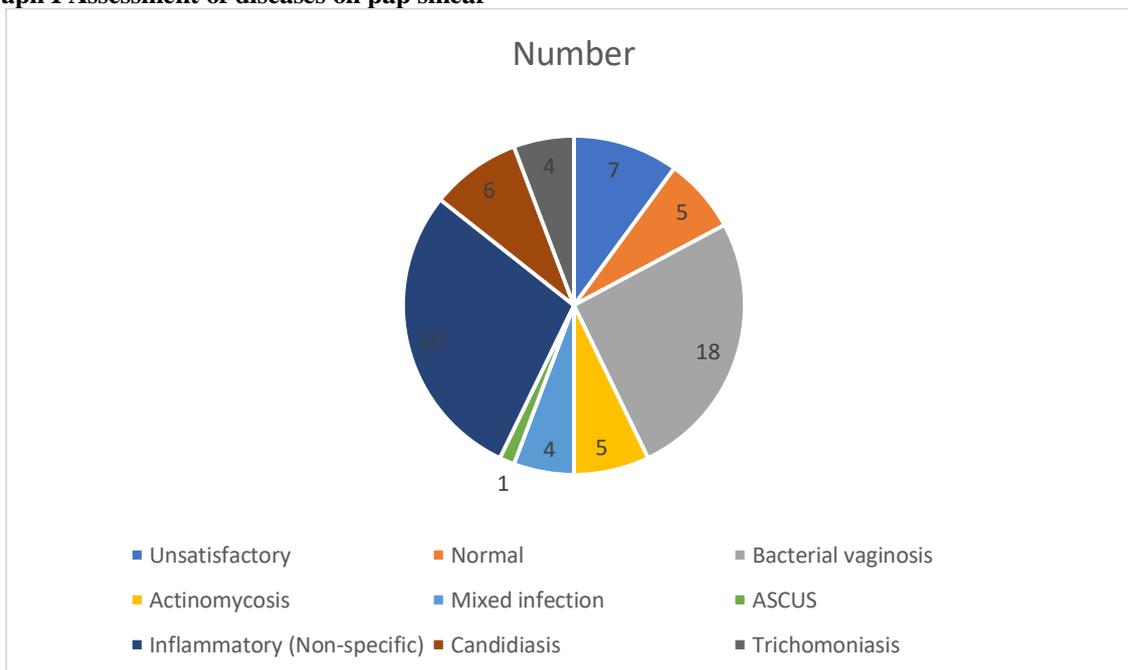


## DISCUSSION

Cervical cancer is a growing global health concern and a major cause of death for women. Cervical cancer is an international disease. Cervical cancer incidences have decreased dramatically in wealthy countries, yet there is still a considerable gap in incidence between them. There is still a significant cervical cancer burden in poor nations like India.[6,7] It is clear that developing and low-resource nations account for more than 80% of all cervical cancer cases, mostly because of a lack of awareness and the challenges associated with implementing cytology-based screening programs.[8,9] The present study was conducted to assess Pap smears in women.

We found that the age group 21-30 years had 35, 31-40 years had 20, 41-50 years had 11, and >50 years had 4 cases. Banik U et al[10] revealed the following scenario: 0.18% ASCUS, 0.12% Atypical glandular cells (AGC), 6.36% LSIL, 1.18% HSIL and 0.35% malignancy. This study showed ASCUS 0.77%, ASC-H 0.35%, HSIL 0.35%, SCC 0.14% and AGUS 0.28%.

We found that the diagnosis was unsatisfactory in 7, normal in 4, bacterial vaginosis in 18, actinomycosis in 5, mixed infection in 4, ASCUS in 1, inflammatory (non-specific) in 20, candidiasis in 6, and trichomoniasis in 4 cases. Edelman et al[11] studied Pap smears from 29295 females and the Pap smear abnormalities were as follows: 9.9% ASC-US, 2.5% LSIL, 0.6% HSIL, and 0.2% invasive cancer.

Ansari et al[12] in their study Pap smears were taken from 320 postmenopausal Indian females and meticulously screened. Lesions were classified according to type of postmenopausal pattern. 120 smears showed varying degrees of premalignant and malignant changes, which were classified using the Bethesda system. The findings were correlated with duration of menopause, parity, and duration of sexual activity and significance was derived. Histopathological correlation was conducted in those cases where biopsies were available. It was found that

as the age of the patients increased, the incidence of low-grade and high-grade squamous intraepithelial lesions and carcinoma also increased with the relationship being statistically significant. The occurrence of these lesions also showed an association with increasing parity and period of sexual activity.

Pradhan et al[13] found that patients with suspicious cervix attending Gynaecology OPD of TUTH and Western regional hospital (Pokhara) who have undergone for pap smear cytology test along with biopsy were selected. A detailed history with clinical examination was performed and the findings were correlated. An unhealthy cervix with discharge was found to be common even in chronic cervicitis however bleeding and tenderness were associated with more advanced lesions. Pap smear test was found to be equally sensitive to histopathological examination for the early detection of different cervical lesions. However, it is advised to perform biopsy if any abnormalities are detected in the pap smear for correlation and confirmation.

There is a need to spread cervical cancer screening awareness programs, educate women regarding the symptoms of cancer, and motivate them to visit the hospital for a cancer screening. Women and all family members should be counseled about the need for cancer screening. Pap smear-positive women need adequate treatment and regular follow-up. Thus, we have to strengthen our health services and health-care system to include screening at primary health centers.[14]

The limitation of the study is the small sample size.

## CONCLUSION
Authors found that a helpful screening technique for the early identification of premalignant and cancerous cervix lesions is pap smears. Early identification of cervical premalignant lesions by appropriate Pap screening program implementation can reduce the incidence of invasive cervical cancer.

## REFERENCES
1. Hande Celik Mehmetoglu, GanimeSadikoglu et al. Pap smear screening in the primary health care setting: A study from Turkey. N Am J Med Sci. 2010;2:1-28.
2. Magdy HB, Mohammed SM, Naema G, Souad O. Cytological pattern of cervical Papanicolaou smear in eastern region of Saudi Arabia. J Cytol. 2011;28:173–7.
3. FerlayJ,Shin H.R, Bray F, Forman D,Mathers C, and Parkin D.M. et al.- Estimates of Worldwide burden of cancer in 2008 GLOBOCAN. Int J Cancer. 2010;127:2893-917.
4. Ghaith JE, Rizwana BS. Rate of Opportunistic Pap smear Screening and Patterns of Epithelial Cell Abnormalities in Pap Smears in Ajman, United Arab Emirates. Sultan Qaboos Univ Med J. 2012;12(4):473-8.
5. Saslow D, Solomon D, Lawson HW, Killackey M, Kulasingam S, Cain et al. American Cancer Society, American Society for Colposcopy and Cervical Pathology, and American Society for Clinical Pathology Screening Guidelines for the Prevention and Early Detection of Cervical Cancer. Journal of Lower Genital Tract Disease. 2012;16(3):175-204.
6. Ranabhat SK, Shrestha R, Tiwari M. Analysis of abnormal epithelial lesions in cervical pap smears in mid-Western Nepal. J Pathol Nepal. 2011;1:30–3.
7. Atilgan R, Celik A, Boztosun A, Ilter E, Yalta T, Ozercan R, et al. Evaluation of cervical cytological abnormalities in Turkish population. Indian J PatholMicrobiol. 2012;55:52–5.
8. Bal MS, Goyal R, Suri AK, Mohi MK. Detection of abnormal cervical cytology in Papanicolaou smears. J Cytol. 2012;29:45–7.
9. Al Eyd GJ, Shaik RB. Rate of opportunistic pap smear screening and patterns of epithelial cell abnormalities in pap smears in Ajman, United Arab Emirates. Sultan Qaboos Univ Med J. 2012;12:473–8.
10. Banik U, Bhattacharjee P, Ahamad SU, Rahman Z. Pattern of epithelial cell abnormality in Pap smear: A clinicopathological and demographic correlation. Cyto Journal. 2011;8:8.
11. Edelman M, Fox A. Cervical Papanicolau smear abnormalities in inner Bronx adolescents: Prevalence, progression, and immune modifiers. Cancer (cancer cytopathology). 1999;87:184-9.
12. Ansari M, Mehdi G, Arif SH, Ansari H, Khan T. Smear patterns and spectrum of premalignant and malignant cervical epithelial lesions in postmenopausal Indian women: A hospital-based study. DiagnCytopathol. 2012;40:976–83.
13. Pradhan B, Pradhan SB, Mital VP. Correlation of PAP smear findings with clinical findings and cervical biopsy. Kathmandu Univ Med J (KUMJ) 2007;5:461–7.
14. Patel M.M, Pandya A.N, Modi J. Cervical pap smear study and its utility in cancer screening, to specify the strategy for cervical cancer control. N J Comm Med. 2011;2(1):29-31.