

Socio-Demographic Profile In Women With Abnormal Cervical Cytology : An Observational Study

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Abstract:

Background: Every year in India, 122,844 women are diagnosed with cervical cancer and 67,477 die from the disease. ¹ It is the second most common cancer in women aged 15–44 years and the third most common cause of mortality after breast and lung cancer ¹. Risk factors are early age at marriage, multiple sexual partners, multiparity, poor genital hygiene, malnutrition, unprotected sexual intercourse, HPV infection, smoking and lack of awareness. The overall prevalence of HPV infection is 60.33%. Prevalence of HPV infection is 93.80% in invasive cervical cancer (ICC) cases. ²

Materials and Methods: 50 women were recruited based on sensitivity and prevalence of abnormal cervical cytology then detailed history and examination was done and socioeconomic factors were studied.

Results: Mean age of the women was 39.02 ± 9.5 years with majority being in the age group 31–40 years. Majority (92.00%) of women were multiparous with parity of >=2. 56% of total women belonged to a low socioeconomic status. Majority of women were illiterate accounting for 58% of total. 66% women did not use any form of contraception. Barrier method was used only by 18% of the women. Multiparity was present as a risk factor in majority

Conclusion: Multiparity was present as a risk factor in majority i.e. 46 women (92.00%) followed by unprotected sexual intercourse being present in 33 (66.00%) women, illiteracy in 29 (58.00%), low socioeconomic status in 28 (56.00%), early age at first intercourse (<18 years) in 9 women (18.00%), poor personal hygiene in 9 women (18.00%), high risk HPV (HPV 16+) in 50.00% women who got testing done. Out of 50 only 8 women who got tested for HPV DNA outside, 4 (50%) had positive HPV DNA status, positive family history in 4.00% and diabetes mellitus in 2.00% of women. High risk factors like smoking and multiple sexual partners were present in none.

Key Word: HPV

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I. Introduction

Every year in India, 122,844 women are diagnosed with cervical cancer and 67,477 die from the disease. ¹ It is the second most common cancer in women aged 15–44 years and the third most common cause of mortality after breast and lung cancer ¹. Risk factors are early age at marriage, multiple sexual partners, multiparity, poor genital hygiene, malnutrition, unprotected sexual intercourse, HPV infection, smoking and lack of awareness. The overall prevalence of HPV infection is 60.33%. Prevalence of HPV infection is 93.80% in invasive cervical cancer (ICC) cases. ²

II. Material And Methods

STUDY DESIGN : A COMPARATIVE STUDY

PLACE OF STUDY : Department of Obstetrics and Gynaecology, LHMC & SSKH, New Delhi

STUDY PERIOD: JANUARY 2021 to JUNE 2022

STUDY POPULATION : Sample size of 50 was calculated based on sensitivity of and prevalence of abnormal cytology. 50 women with abnormal Papanicolaou test * who came to the Department of Obstetrics & Gynaecology, Lady Hardinge Medical College and SSKH fulfilling the inclusion criteria and willing to participate were included in the study.

*reporting of abnormal Papanicolaou test was done according to standard BETHSEDA CLASSIFICATION

INCLUSION CRITERIA

All sexually active women >21 years of age to 65 years of age with Abnormal papanicolaou test showing

- ASCUS (atypical squamous cells of undetermined significance)
- AS-H (Atypical Squamous Cells – cannot exclude HSIL)

- LSIL(Low-grade Squamous Intraepithelial Lesion Includes human papillomavirus infection/mild dysplasia/CIN 1)
- HSIL(High-grade Squamous Intraepithelial Lesion Includes moderate and severe dysplasia, CIN2/3, and carcinoma in situ)

who were willing to participate will be included in the study.

EXCLUSION CRITERIA

- Pregnancy
- Posthysterectomy
- Patients who have earlier received treatment for CIN
- Diagnosed cases of cervical cancer

STUDY PROCEDURE

After ethical clearance from the Institution, a written informed consent was taken from all the women included in the study after explaining the whole procedure to them in the language they understand.

DATA COLLECTION

- 50 women aged 21-65 years with abnormal Papanicolaou test attending Gynae OPD fulfilling inclusion criteria were enrolled in this study.
- A careful history including demographic data like age, socio-economic history, education, parity and age at first intercourse was taken. HPV testing was advised based on willingness.
- Detailed examination including general physical examination, systemic examination and gynaecological examination which includes per- speculum and per-vaginum examination was done.

Various socioeconomic factors were studied.

Statistical analysis

- The collected data was entered in MS Excel and was then analyzed using SPSS latest version. (v25.0)
- Quantitative data was expressed by mean and standard deviation and difference of means was observed by t test and qualitative data was expressed as percentages and difference between proportions was observed using chi square test.
- The association of the variables which were qualitative in nature were analysed using Fisher's exact test.
- Agreement was measured by cohen kappa statistics/% agreement.
- 95% confidence level was used to quantify at risk values and factors. $p < 0.05$ will be considered significant.

III. Result

The study was conducted in Department of Obstetrics and Gynaecology, LHMC & SSKH, New Delhi from January 2021 to June 2022. 50 sexually active women >21 years of age to 65 years of age with abnormal Papanicolaou test were included in the study. Detailed history was taken and examination including general physical examination, systemic examination and gynaecological examination which included per- speculum and per-vaginum examination was done.

The observations were as follows:

1.DEMOGRAPHIC PROFILE-

Table 1:-Distribution of women according to age (years).

Age(years)	Frequency	Percentage
21-30 years	8	16.00%
31-40 years	25	50.00%
41-50 years	12	24.00%
51-60 years	2	4.00%
61-65 years	3	6.00%
Mean \pm SD	39.02 \pm 9.5	
Range	22-65	

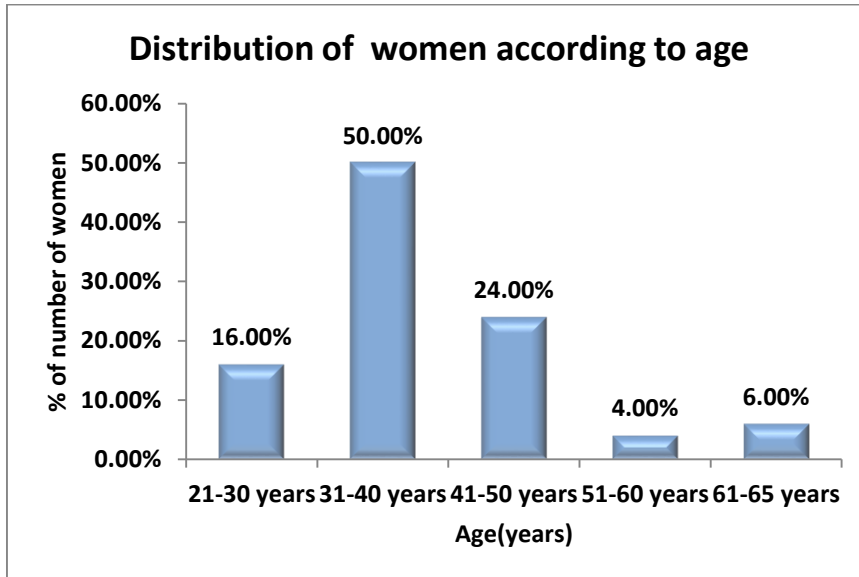


Figure 1:- Bar chart depicting distribution of women according to age.

The above table summarizes the age distribution of the women. Majority of women i.e 25(50%) were between the age group of 31-40 years followed by 12(24%) women in 41-50 year group. Mean value of age(years) of women was 39.02 ± 9.5 .

Table 2:-Distribution of women according to parity.

Parity	Frequency	Percentage
P1	4	8.00%
P2	22	44.00%
P3	13	26.00%
>=P4	11	22.00%
Total	50	100.00%

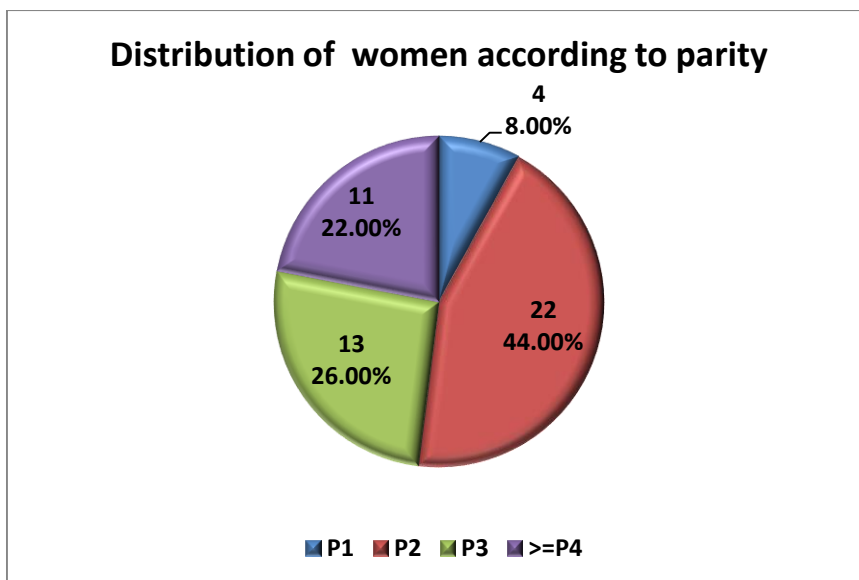


Figure 2:- Pie chart depicting distribution of women according to parity.

The above table summarizes the parity distribution of the women. Majority i.e 46 (92%) women were multiparous with 22(44%) women having parity of 2. 4(8%) ,13 (26 %) and 11(22 %)women had parity of 1, 3 and 4 respectively .

Table 3:-Distribution of women according to socioeconomic status. (Modified Kuppuswamy scale)

Socio economic status	Frequency	Percentage
Upper	0	0.00%
Upper middle	8	16.00%
Lower middle	14	28.00%
Upper lower	4	8.00%
Lower	24	48.00%
Total	50	100.00%

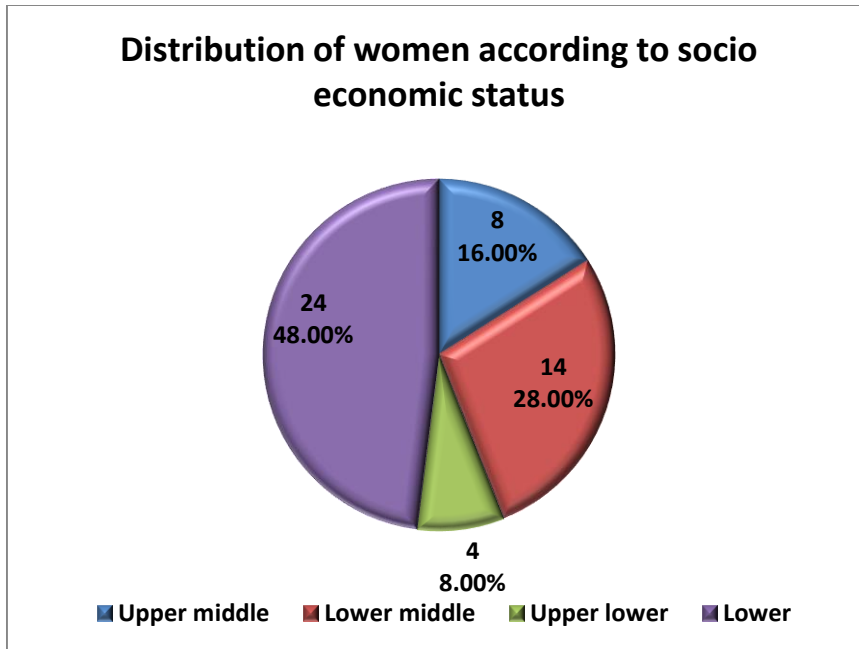


Figure 3:- Pie chart depicting distribution of women according to socio economic status .

Majority i.e 24 (48.00%) women belonged to lower socio economic status followed by 14 (28%) belonging to lower middle and 8 women (16.00%) to upper middle. Only 4 women (8.00%) belonged to upper lower. None belonged to upper class .

Table 4:-Distribution of women according to level of education.

Education	Frequency	Percentage
Illiterate	29	58.00%
Primary school	6	12.00%
High school	7	14.00%
Secondary school	4	8.00%
Graduate	4	8.00%
Total	50	100.00%

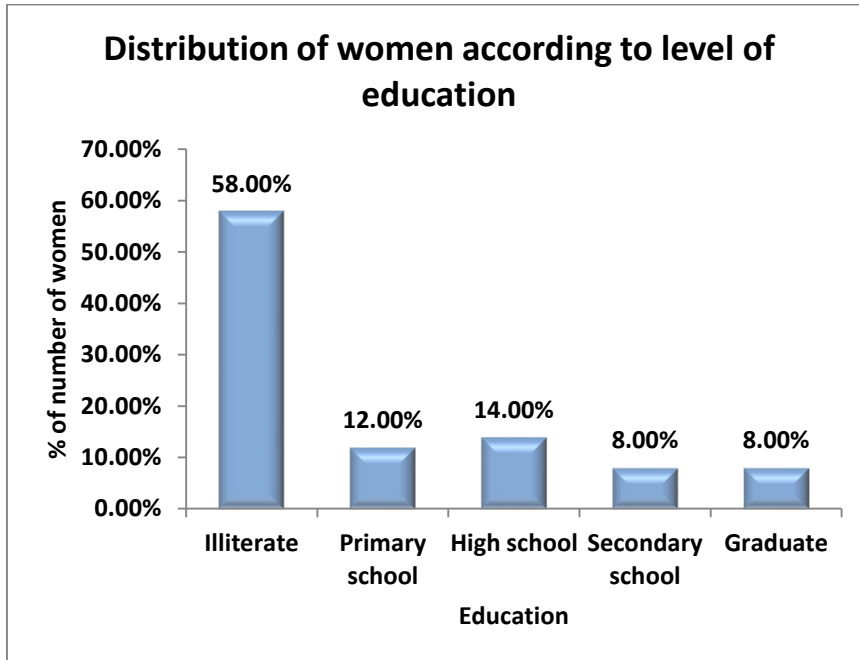


Figure 4:-Bar chart depicting distribution of women according to level of education.

The above table summarizes the level of education of the cases. Majority 26(58.00%) women were illiterate followed by 7 women (14.00%)who had studied till high school(5-8 class) and 6 women (12.00%) studied till primary school(1-5 class). 4 women (8.00%) studied till secondary school(9-12class). 4(8.00%) women were graduates.

Table 5:-Distribution of women according to contraceptive use.

Contraceptive	Frequency	Percentage
None	33	66.00%
Condom	9	18.00%
DMPA	1	2.00%
IUCD	2	4.00%
Ligated	4	8.00%
OCP	1	2.00%
Total	50	100.00%

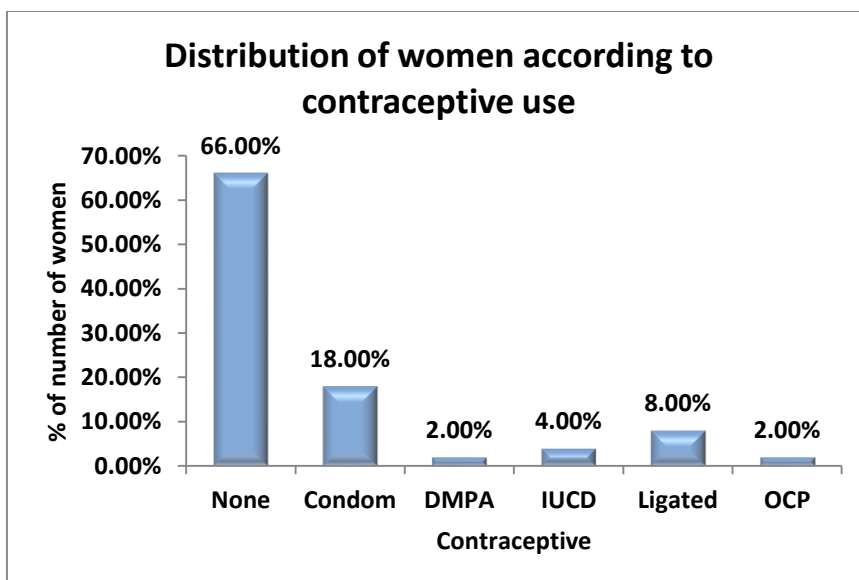


Figure 5:-Bar chart depicting distribution of women according to contraceptive use

Majority i.e 33 (66.00%) women were having unprotected sexual intercourse .Out of those who were using contraceptive Majority i.e 9 (18%) were using condom , 4 (8%) women were ligated and 2(4%) were using IUCD (Intrauterine contraceptive device)as a contraceptive method . DMPA (Depot Medroxy progesterone acetate) and OCP(oral contraceptive pills) were being used as a contraceptive of choice in 1 (2%)women each.

Table 6:-Distribution of women according to age at first intercourse(years).

Age at first intercourse(years)	Frequency	Percentage
<=20 years	31	62.00%
>20 years	19	38.00%
Mean ± SD	20.2 ± 3.02	
Range	15-28	

Age at first intercourse(years) was <=20 years in majority of women i.e 31 out of 50 accounting for 62% of total . Age at first intercourse(years) was >20 years in only 19 (38.00%) women . Mean value of age at intercourse(years) of study subjects was 20.2 ± 3.02 .

Table 7:-Distribution of women according to HPV DNA status.

HPV DNA	Frequency	Percentage
HPV DNA(done/not done)		
Not done	42	84.00%
Done	8	16.00%
HPV DNA(positive/negative)		
Negative	4	50.00%
HPV 16+	4	50.00%

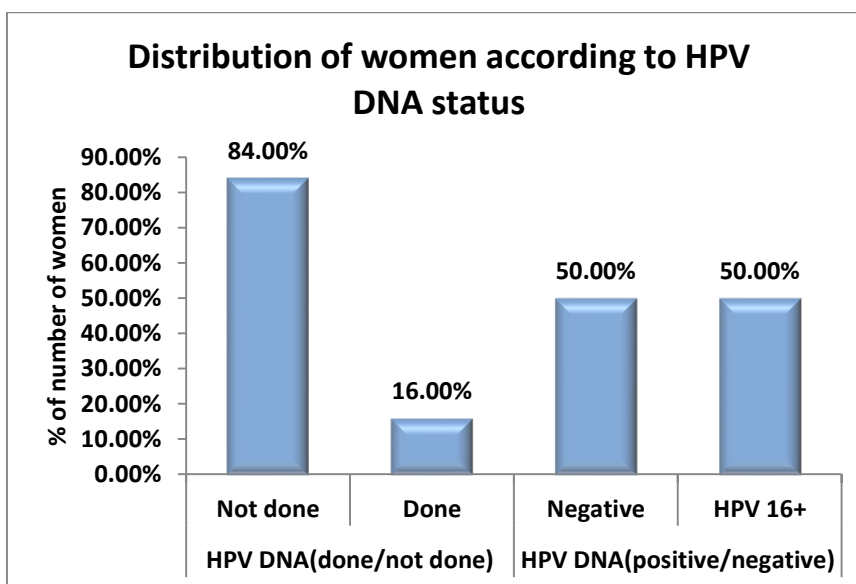
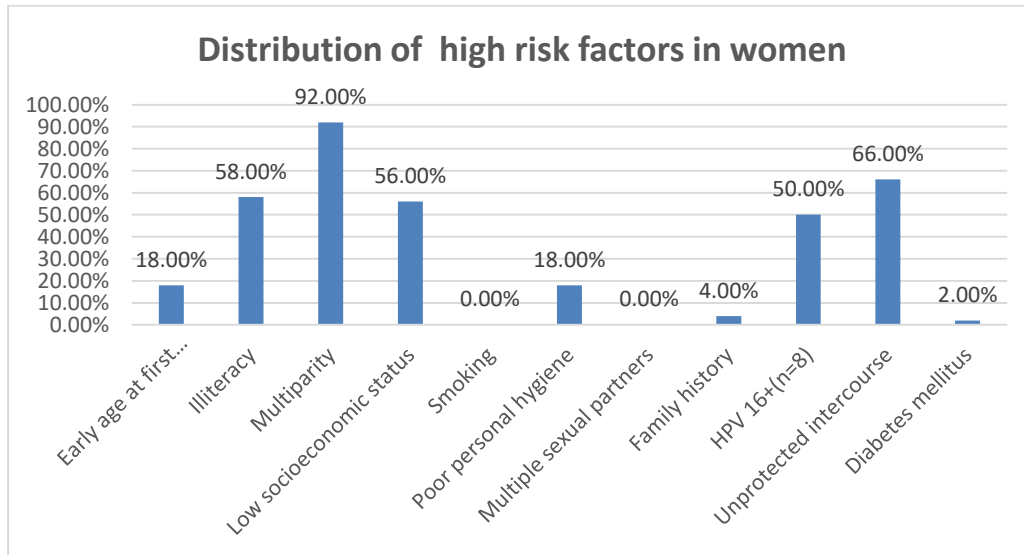


Figure 6:-Bar chart depicting distribution of women according to HPV DNA status.

In majority of women, HPV DNA was not done. Out of 50 women, 8 women got HPV DNA done High risk HPV were positive in 4 women (50%).

Table 8:-Distribution of high risk factors in women .

High risk factors	Frequency	Percentage
Early age at first intercourse(<18 years)	9	18.00%
Illiteracy	29	58.00%
Multiparity	46	92.00%
Low socioeconomic status*	28	56.00%
Smoking	0	0.00%
Poor personal hygiene	9	18.00%
Multiple sexual partners	0	0.00%
Family history	2	4.00%
HPV 16+(n=8)	4	50.00%
Unprotected intercourse	33	66.00%
Diabetes mellitus	1	2.00%



*Low socioeconomic status includes upper lower and lower class according to modified kuppuswamy scale.

Figure 7:- Bar chart depicting distribution of high risk factors in women

46 (92.00%) women were multiparous . Unprotected sexual intercourse was seen in 33 (66.00%) women, illiteracy in 29 women(58.00%), low socioeconomic status in 28 women (56.00%), early age at first intercourse(<18 years)in 9 women (18.00%), poor personal hygiene in 9 women(18.00%), high risk HPV (HPV 16+) in 50.00% women who got testing done , positive family history in 2 women(4.00%) and diabetes mellitus was present in 1 (2.00%) women. High risk factors like smoking and multiple sexual partners were present in none

V. Discussion

DEMOGRAPHIC PROFILE –

TABLE 9: Comparison of mean age with other studies –

Studies	Mean Age (years)
Fan et al ³	41.3 ± 11.6
Karya et al ⁴	41.64
Prabhakaran et al ⁵	39.6
Li et al ⁶	40.13
Rahman et al ⁷	37.63 ± 6.71
Present study	39.02 ± 9.5

The mean age in the present study was 39.02 ± 9.5 years. It was almost comparable to the study by Rahman et al⁷ , Prabhakaran et al⁵, Fan et al³ and Karya et al⁴in which it was 37.63 ± 6.71 ,39.6 , 41.3 ± 11.6 and 41.64 respectively. This can be attributed to the fact that in the present study, younger women presenting to the OPD were more commonly enrolled.

TABLE 10– Comparison of mean parity with other studies –

Studies	Parity	%
Thakur et al ⁸	>3	77.8
Sharma et al ⁹	>=2	96.3
Rahman et al ⁷	>=2	93.3
Present study	>=2	92

In the present study 92 % women had parity ≥ 2 which was comparable to the study by Rahman et al⁷ in which 93.3 % women were multiparous and in study by Sharma et al⁹ where 96.3% women were multiparous. Hence, we may conclude that risk of cervical cancer is more in multiparous women as compared to primiparous and nulliparous women.

TABLE 11– Comparison of proportion of women with illiteracy and low socioeconomic status with other studies –

Studies	Illiteracy %	Low SES *%
Karya et al ⁴	-	48.4
Sharma et al ⁹	-	64.81
Patil et al ¹⁰	-	64.81
Goel et al ¹¹	51	45
Present study	58	56

*SES: socioeconomic status

Proportion of illiterate women in the present study was 58% which was comparable to study by Goel et al¹¹ in which it was 51%. The proportion of women belonging to low socio economic status in the present study was 56% which was comparable to the study by Karya et al⁴ where it was 48.4% and less as compared to study by Sharma et al⁹ and Patil et al¹⁰ in which it was 64.81%. This shows a strong association of illiteracy and lower socio economic status with the development of pre-invasive lesions of cervix. This can be attributed to the fact that illiterate and women with low socioeconomic status seek late medical help due to ignorant behaviour.

TABLE 12 – Comparison of high risk factors with other studies –

Studies	Age at first intercourse (years)	Smoking (%)	Unprotected intercourse (%)	Multiple sexual partners (%)	HPV (%)
Rahman et al ⁷	21.23 ± 2.47	7.80	23.30		
Thakur A et al ⁸	-	9.20	94.2	9.73	
Bhalerao et al ¹²	21	2.30	88.4	-	
Karya et al ⁴		-	35.2	-	
Bhatla et al ¹³	19 ± 3.3	-	-	-	
Bosch F X et al ¹⁴					90
Schiffman M et al ¹⁵					88.4
Present study	20.2 ± 3.02	0	66	0.00	50

The mean age of women at first intercourse in our study was 20.2 ± 3.02.

It was comparable to the study by Bhatla et al¹³ (19± 3.3), Rahman et al⁷(21.23± 2.47), Bhalerao et al¹²(21 years). Hence, early age at first intercourse clearly seems to be a risk factor for cervical neoplasia.

The percentage of women who smoke was 0% in our study while it was 9.2% in the study by Thakur A et al⁸ and 2.3% in a study by Bhalero et al¹². This may be due to the limitation of sample size in our study and the fact that women may be hesitant to reveal their behaviour on questioning.

The proportion of women not using any contraceptive was 66% in our study which was extremely high in comparison to a study by Rahman et al⁷ and Karya et al⁴ in which it was 23.3% and 35.2% respectively. This may be due to the high prevalence of illiteracy and ignorance among women in our study. Women not using barrier contraceptives appear to be at higher risk of genital tract infections and subsequent neoplasia.

VI. Conclusion

Mean age of the women was 39.02 ± 9.5 years with majority being in the age group 31-40 years.

Majority (92.00%) of women were multiparous with parity of ≥ 2 .

56% of total women belonged to a low socioeconomic status.

Majority of women were illiterate accounting for 58% of total.

66% women did not use any form of contraception.

Barrier method was used only by 18% of the women.

Multiparity was present as a risk factor in majority i.e. 46 women (92.00%) followed by unprotected sexual intercourse being present in 33(66.00%) women, illiteracy in 29 (58.00%), low socioeconomic status in 28(56.00%), early age at first intercourse(<18 years)in 9 women(18.00%), poor personal hygiene in 9 women (18.00%) , high risk HPV (HPV 16+) in 50.00% women who got testing done .Out of 50 only 8 women who got tested for HPV DNA outside, 4 (50%) had positive HPV DNA status ,positive family history in 4.00% and diabetes mellitus in 2.00% of women. High risk factors like smoking and multiple sexual partners were present in none.

References

- [1]. Bruni LB, Barrionuevo-Rosas L, Albero G, Aldea M, Serrano B, Valencia S, Brotons M, Mena M, Cosano R, Muñoz J, Bosch FX. Human papillomavirus and related diseases in the world. Summary report. 2015 Dec 23;20140822.
- [2]. Senapati R, Nayak B, Kar SK, Dwibedi B. HPV Genotypes distribution in Indian women with and without cervical carcinoma: Implication for HPV vaccination program in Odisha, Eastern India. BMC infectious diseases. 2017 Dec;17(1):1-0.
- [3]. Fan A, Wang C, Zhang L, Yan Y, Han C, Xue F. Diagnostic value of the 2011 International Federation for Cervical Pathology and Colposcopy Terminology in predicting cervical lesions. Oncotarget. 2018 Feb 6;9(10):9166.
- [4]. Karya U, Zehra A, Rani A. Evaluation of Swede score and Reid score to improve the predictive value of colposcopy and its correlation with histology. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2020 May 1;9(5):2059-68.
- [5]. Rema PN, Mathew A, Thomas S. Performance of colposcopic scoring by modified International Federation of Cervical Pathology and Colposcopy terminology for diagnosing cervical intraepithelial neoplasia in a low-resource setting. South Asian Journal of Cancer. 2019 Oct;8(04):218-20.
- [6]. Li Y, Duan X, Sui L, Xu F, Xu S, Zhang H, Xu C. Closer to a uniform language in colposcopy: study on the potential application of 2011 International Federation for Cervical Pathology and Colposcopy Terminology in clinical practice. BioMed Research International. 2017 May 25;2017.
- [7]. Rahman Z, Yadav G, Tripathi U. The Diagnostic Efficacy of Swede Score for Prediction of Pre-invasive Cervical Lesions: A Prospective Hospital-Based Study. The Journal of Obstetrics and Gynecology of India. 2020 Dec;70(6):497-502.
- [8]. Thakur A, Gupta B, Gupta A, Chauhan R. Risk factors for cancer cervix among rural women of a hilly state: a case-control study. Indian journal of public health. 2015 Jan 1;59(1):45.
- [9]. Sharma CR, Kshirsagar NS. Colposcopic Evaluation of Cervical Lesions with Swede Score and its Correlation with Histopathology.
- [10]. Patil S, Patil A, Solanke P. Cytological Screening for early Diagnosis of Cervical Intraepithelial Neoplasia (CIN) and early Carcinoma of Cervix. International Journal of Scientific and Research Publications. 2015 Mar.
- [11]. Goel S, Lal P. Concurrent cytologic and colposcopic evaluation of symptomatic cervical erosion. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2022 Jan 1;11(1):125-30.
- [12]. Bhalerao A, Kulkarni S, Ghike S, Kawthalkar A, Joshi S. Correlation of pap smear, colposcopy and histopathology in women with unhealthy cervix. J South Asian Feder Obst Gynae. 2012 May;4(2):97-8.
- [13]. Bhatla N, Dar L, Patro AR, Kriplani A, Gulati A, Verma K, Broor S, Shah KV, Gravitt PE. Human papillomavirus type distribution in cervical cancer in Delhi, India. International journal of gynecological pathology. 2006 Oct 1;25(4):398-402.
- [14]. Bosch FX, Lorincz A, Muñoz N, Meijer CJ, Shah KV. The causal relation between human papillomavirus and cervical cancer. Journal of clinical pathology. 2002 Apr 1;55(4):244-65.
- [15]. Schiffman M, Herrero R, Hildesheim A, Sherman ME, Bratti M, Wacholder S, Alfaro M, Hutchinson M, Morales J, Greenberg MD, Lorincz AT. HPV DNA testing in cervical cancer screening: results from women in a high-risk province of Costa Rica. Jama. 2000 Jan 5;283(1):87-93.