

Association Between Contraceptive Use and Pap Smear Findings in PKK Women in Bendul Merisi Surabaya

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ABSTRACT

Background: Cervical cancer remains a major health burden for women worldwide. Pap smear is a widely used screening tool, while contraceptive use, particularly hormonal methods, has been debated as a potential risk factor for cervical lesions. **Objective:** This study aimed to investigate the association between contraceptive use and Pap smear findings among members of the Family Welfare Movement (PKK) in Bendul Merisi, Surabaya. **Methods:** A cross-sectional study was conducted involving 64 respondents selected through purposive sampling. Data were collected using questionnaires and Pap smear results. Statistical analysis was performed using contingency coefficient tests. **Results:** The study revealed a significant association between contraceptive use and Pap smear results ($p = 0.001$). Different types and duration of contraceptive use were significantly related to cytological outcomes, with hormonal methods showing a stronger association with abnormal findings such as LSIL (Low-grade Squamous Intraepithelial Lesion). **Conclusions:** Contraceptive use, especially hormonal methods with longer duration, influences Pap smear findings, highlighting the need for regular cervical cancer screening among women using hormonal contraception.

Keywords: Cervical Cancer, Contraceptives, Pap Smear, Uterine Cervix, Cytology

INTRODUCTION

Cervical cancer is the second most common malignancy among women after breast cancer. In 2018, there were an estimated 570,000 new cases worldwide, with 311,000 deaths. In Indonesia, the incidence reached 23.4 per 100,000 population with a mortality rate of 13.9 per 100,000 (Kemenkes RI, 2019)¹. Early detection through Pap smear is essential to reduce morbidity and mortality. Several studies have suggested a possible association between contraceptive use, particularly long-term hormonal contraception, and cervical cytological abnormalities. However, evidence remains inconsistent. Therefore, this study aimed to determine the association between contraceptive use and Pap smear findings among PKK women in Bendul Merisi, Surabaya.

METHODS

Study Design: This research used a cross-sectional design. **Population:** Women who were members of PKK in Bendul Merisi, Surabaya. **Sample:** A total of 64 respondents were recruited using purposive sampling. **Inclusion criteria** included women who were PKK members, used contraceptives, and consented to undergo Pap smear testing (Table 1). **Data Collection:** Data were obtained from questionnaires covering demographic and contraceptive history, and Pap smear results examined by a pathologist². **Statistical Analysis:** Data were analyzed using contingency coefficient tests with SPSS software.

RESULTS

The results showed that contraceptive use was significantly associated with Pap smear outcomes ($p = 0.001$). Women who used hormonal

contraception for more than 5 years were more likely to present with LSIL compared to those who used non-hormonal methods. Overall, 78.26% of respondents had NILM results, while 21.74% had LSIL (Table 2). Type of contraceptive was also significantly related to Pap smear findings ($p = 0.000$), with injectable hormonal contraception showing the highest association with abnormal cytological findings (Table 3).

Table 1. Age at Marriage of Respondents

Age Group (years)	Frequency (n)	Percentage (%)
20–24	19	41.3
25–29	15	32.6
30–34	10	15.2
≥35	6	10.9

Most respondents married between the ages of 20–24 years (41.3%).

Table 2. Pap Smear Results

Pap Smear Result	Frequency (n)	Percentage (%)
NILM	36	78.26
LSIL	10	21.74

Table 3. Type of Contraception Used

Type of Contraception	Frequency (n)	Percentage (%)
1-month Injectable	8	17.39
3-month Injectable	10	21.74
Condom	7	15.22
IUD	11	23.91
MOW	10	21.74

Injectable contraceptives were the most common method used (39.1%).

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Table 4. Association between Contraceptive Use and Pap Smear Results

Variable	Test Used	Value	p-value
Contraceptive Use vs Pap Smear Result	Contingency Coefficient	0.352	0.001
Type of Contraceptive vs Pap Smear Result	Chi-square	$\chi^2 = 18.72$	0.000
Duration of Contraceptive Use vs Pap Smear Result	ANOVA	F = 4.21	0.018
Pap Smear NILM vs LSIL	Independent T-test	t = 3.45	0.000

Statistical analysis confirmed a significant relationship between contraceptive use and Pap smear results. Chi-square and ANOVA tests showed significant differences across contraceptive types and duration, while the independent T-test highlighted a significant difference between NILM and LSIL outcomes.

DISCUSSION

This study demonstrated a significant relationship between contraceptive use and Pap smear findings. Our results are consistent with Williams et al. (2018)³, who found that long-term hormonal contraception increased the risk of cervical intraepithelial lesions. Hormonal imbalance induced by estrogen-progestogen combinations may alter the cervical epithelial environment, increasing susceptibility to HPV infection and abnormal cytological changes. However, some studies reported no significant association (Wulandari, 2018)⁴, highlighting the complexity of the relationship. The relatively high proportion of LSIL among hormonal contraceptive users underscores the importance of regular screening, particularly for women with prolonged contraceptive use (Table 4).

CONCLUSIONS

1. There is a significant association between contraceptive use and Pap smear results among PKK women in Bendul Merisi, Surabaya.
2. Hormonal contraceptive use, especially with long duration, is linked to abnormal cytological findings such as LSIL.
3. Regular cervical screening is strongly recommended for women using hormonal contraceptives.

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