

## Analytic Record of Pap Smear Results Files of Women Attending Gynecological Outpatient Clinics at Imamain Al-Kathimain Medical City \ Al Elweiya Maternity Teaching Hospitals in Baghdad In 2022

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### ABSTRACT

**Background:** medical record" refers to the systematic documentation of an individual patient's medical history and care across time, within the jurisdiction of a single healthcare provider.

**Objective:** To assess the analytic record of pap smear results files of group of Iraqi women in Baghdad and to determine the prevalence of abnormal pap smear results, find the possible risk factors of abnormal pap smear results and to revise a one year test records at women health unit of Alalwyia maternity hospital \ Imamain Al-Kathimain Medical City in Baghdad

**Patients and method:** data-based record study with analytic component conducted in women health unit of two hospitals in Baghdad-Iraq (Al-Imamain Al-Kathimain Medical City and Al Elwiya Maternity Teaching Hospital) Gynecological Outpatient Clinic for the period of nine months from (1st of March to 31st of November 2023). This study included a total of 711 women.

**Results:** Vaginal discharge was the most common symptom found in 205 (30.5%), abnormal findings were detected in 37 women (5.2%), while the cervicitis were found in 674 women (94.8%). The rates of abnormal Pap smear were significantly higher in patients in the age group (50 – 59) years and in patients  $\geq 60$  years (13.3% and 16.7%, respectively with P- value of 0.002). Further, the rate of abnormal Pap smear was significantly higher in smoker women (33.3%,  $P=0.001$ ).

**Conclusion:** High percent of missing data of the patient attending to the Al-Emamein Al-Kadhemein Medical City that make the evaluation of pap smear report at this hospital very hard and not inclusive.

**Keywords:** Cervical cancer, Screening, Pre-cancerous lesions, Pap smear, Medical Record.

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## 1. INTRODUCTION

The term "medical record" refers to the systematic documentation of an individual patient's medical history and care across time, within the jurisdiction of a single healthcare provider. The medical record comprises several sorts of "notes" entered by healthcare professionals throughout time, documenting observations, drug and therapy administration, orders for drug and therapy administration, test findings, X-rays, and reports. Health care providers are obligated to maintain comprehensive and sufficient medical records, which is mandated as a criterion for licencing or certification (1). The medical record serves as a centralised storage for organising care plans and recording communication between healthcare providers, patients, and others involved in the patient's treatment. The primary objective of the medical record is to guarantee the documentation of adherence to institutional, professional, or regulatory regulations. Electronic medical records (EMR) can be analysed to measure illness loads and aid in identifying the causes, sources, and contributors of diseases (2). The quality of medical records varied among different types of institutions and different ailments. Prioritising actions to enhance the quality is crucial. Efforts should be made to restructure charts, establish guidelines, and provide training for carers (3). The cervical smear, often known as a Pap smear, is a straightforward procedure that involves collecting a sample of epithelial cells from the cervical transition zone using a spatula. The main objective of the cervical smear test is to identify pre-cancerous lesions at a stage where appropriate treatment can be provided prior to the progression to invasive malignancy (4). The use of systematic cervical screening has resulted in a significant reduction in both the occurrence and death rate of cervical cancer in developed nations. The lack of a comprehensive screening programme has hindered the ability to achieve this reduction in most low- and middle-income nations (5). The recommended frequency for Pap smear testing varies between the United States Preventive Services Task Force (USPSTF) and the American College of Obstetricians and Gynaecologists (ACOG). However, it is generally advised for women aged 21 to 65. Screening is not advised for anyone under the age of 21. The incidence of abnormal pap smears is approximately 3.8%. Annually, a minimum of 50 million pap smears are conducted. According to data from 2019, over 13,000 women were diagnosed with cervical cancer, and 4,000 women lost their lives due to this disease (6). The conventional Pap smear procedure

has been the primary approach used in most screening programmes for some decades (7). Typically, the longer the time gap between an abnormal Pap smear test and the subsequent follow-up, the higher the likelihood of requiring more intrusive treatment and experiencing a poorer prognosis. If a patient lacks comprehension or memory of advice or medical records, she may postpone making a decision to seek follow-up care or perhaps disregard the recommendations entirely, so heightening her susceptibility to developing cervical cancer (8). The primary focus is on the correlation between the severity of the Pap test results and the level of awareness regarding the given guideline, which affected by education level, that was correlate more directly with patients attendance for medical record and follow up (9).

## **2. METHODOLOGY**

### **Study design, setting and data collection time**

This was a data-based study with analytic component conducted in women health unit of two hospitals in Baghdad-Iraq (Al-Imamain Al-Kathimain Medical City and Al Elwiya Maternity Teaching Hospital) Gynecological Outpatient Clinic for the period of nine months from (1st of March to 31st of November 2023).

### **Study population and sample size**

The study sample included all archived records of pap smear results of the selected hospitals (cancer screening unit) during one year (2022) for women having pap test at cancer screening unit . The total number of patients included in this study was 711.

### **Selection criteria.**

All files were included, however files of patients with missed data were excluded from analysis

### **Data collection**

The data had been collected through distribution of previously well-designed questionnaire. It included patients characteristics; age, marital status, age at marriage, number of marriages, level of education, residency, occupation, gravida, para, abortion, contraception use and smoking history. Sign and symptoms; Abnormal vaginal bleeding, Post coital bleeding,, dyspareunia, vaginal discharge,, chronic pelvic pain, vulval and vaginal (perineal

area) and skin lesions. Medical and surgical history, family history, clinical findings and progress, and results of Pap test.

#### **Administrative approvals were granted from the following**

Official approval was granted from the Scientific Committee in the Department of Community and Family Medicine which was later approved by the Council of Al-Kindy College of Medicine / Baghdad University. Letter of facilitation was obtained from Al-Kindy College of Medicine to the selected hospitals.

**Statistical analysis:** Data were managed using the statistical package for social sciences (SPSS) version 28. Statistical tests were applied according to the type of variable and comparison. All tests applied at a level of significance of  $\leq 0.05$ .

### **3. RESULTS**

This study included a total of 711 women who visited the gynecological outpatient clinics of two hospitals in Baghdad (AL-Elwyia Maternal Teaching Hospital and Imamain Al-Kathimain Medical City). The women's age ranged between 16 and 80 years with a mean of  $39.46 \pm 10.65$  years. A Pap smear was done for all of 711 recruited women to screen for cervical abnormalities. Among the studied group, abnormal Pap smear test findings were detected in 37 women giving a prevalence of (5.2%), while cervicitis reported in 674 women (94.8%), (**Figure 1**). Cross-tabulation for the association between Pap smear findings and Patients' characteristics revealed that age group of 40-49 years was the more frequent; contributed for 242 (34.2%), followed by the age group of (30 – 39) years which contributed for 219 women (31%). According to the registered data, 289 women (87.6%) were married, 269 (88.5%) were housewives. Out of 134 women whose BMI was registered, 78 women (58.2%) were overweight and 23.1% were obese. Past medical and surgical history were recorded in 97 (27.2%) and 111 (44.9%) of studied women, respectively. Smokers were 39 (16.1%) women. Regarding ABO blood group, the O group was the most common type in 244 women (80.5%). Cross-tabulation and analysis of association between pap smear findings and other variables revealed a statistically significant association between abnormal Pap smear findings and each of women's age and smoking status, in both comparisons, (P.value  $<0.05$ , significant). Other variables did not show any significant association with abnormal Pap smear finding (P  $\geq 0.05$ ), (**Table 1**). Regarding the number of children, data were available for

640 women of them 346 (54.1%) had 4 or more children. 266 women (50.9%) had no history of abortion. Regarding menstrual history, 304 women (54.7%) reported regular menses, 196 (35.2%) reported irregular menses, and 56 women (10.1%) were menopausal. Using contraceptives was reported in 33 women (19.5%). Repeated pap smear test was done for 74 (21.6%) of participant women. None of these variables showed significant association with abnormal Pap smear test results, ( $P > 0.05$ ), (**Table 2**). Vaginal discharge was the most common symptom found in 202 (30.6%) and it was significantly associated with abnormal Pap smear test results, ( $P$  value  $< 0.05$ ). vaginal bleeding reported in 97 women (27.3%), post coital pain in 63 (9.5%), infection in 89 (13.5%), postmenopausal bleeding in 9 women (1.4%) , abnormal Pap smear results were significantly more frequent in women with postmenopausal bleeding compared to those without, 22.2% vs. 5.1%, respectively, ( $P < 0.05$ ). Dyspareunia found in 45 (6.8%) and it was significantly associated with abnormal Pap smear findings, ( $P < 0.05$ ), while 115 women (17.4%) had no complaints, all these findings are shown in (**Table 3**).

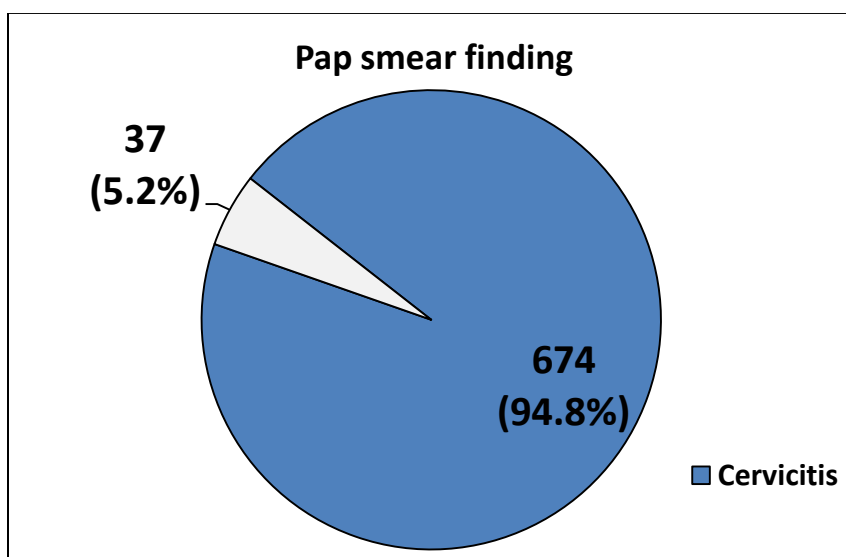


Figure 2. Distribution of the studied women according to Pap smear finding

Table 1. Cross-tabulation for the association between Pap smear findings and Patients' characteristics

Patients' characteristics		Pap Smear Finding				Total		P. value
		Abnormal		Normal				
		No.	%	No.	%	No.	%	
Age (Years)	< 30	5	3.9	124	96.1	129	18.7	<b>0.002sig</b>
	30 – 39	7	3.3	205	96.7	212	30.7	
	40 – 49	8	3.4	228	96.6	236	34.2	
	50 – 59	11	13.3	72	86.7	83	12.0	
	≥ 60	5	16.7	25	83.3	30	4.3	
	Total	36	5.2	654	94.8	690	100.0	
Marital Status	Married	14	4.8	275	95.2	289	87.6	0.059
	Others*	5	12.2	36	87.8	41	12.42	ns
	Total	19	5.8	311	94.2	330	100.0	
Occupation	Housewife	13	4.8	256	95.2	269	88.50	0.820
	Employee	2	5.7	33	94.3	35	11.51	ns
	Total	15	4.9	289	95.1	304	100.00	
BMI (kg/m <sup>2</sup> )	Normal	4	16.0	21	84.0	25	18.7	0.187 ns
	Overweight	6	7.7	72	92.3	78	58.2	
	Obese	6	19.4	25	80.6	31	23.1	
	Total	16	11.9	118	88.1	134	100.0	
Past Medical History	Yes	5	5.2	92	94.8	97	27.3	0.394
	No	20	7.8	238	92.2	258	72.7	ns
	Total	25	7.1	330	92.9	355	100.0	
Past Surgical History	Yes	7	6.3	104	93.7	111	44.5	0.727
	No	7	5.3	126	94.7	133	54.5	ns
	Total	14	5.7	230	94.3	244	100.0	
Smoking	Yes	13	33.3	26	66.7	39	16.1	<b>0.001 sig</b>
	No	11	5.4	192	94.6	203	83.9	
	Total	27	5.7	230	94.3	242	100.0	
ABO Blood Group	A	2	6.9	27	93.1	29	21.6	0.736 ns
	B	2	6.1	31	93.9	33	24.6	
	AB	0	0.0	10	100.0	10	7.5	
	O	9	3.7	235	96.3	244	80.5	
	Total	13	4.3	290	95.7	303	100.0	

Total numbers are varied because missed data were excluded from analysis.

\*others: Divorced or widowed. sig: significant, ns: not significant

Table 2. Cross-tabulation for the association between Pap smear findings and obstetrical and gynecological history

Patients' characteristics		Pap Smear Finding				Total		P. value
		Abnormal		Normal				
		No.	%	No.	%	No.	%	
Number of Children	0 - 1	7	10.0	63	90.0	70	10.9	0.156 ns
	2 - 3	13	5.8	211	94.2	224	35.0	
	≥ 4	13	3.8	333	96.2	346	54.1	
	Total	33	5.2	607	94.8	640	100.0	
Number of Abortion	0	17	6.4	249	93.6	266	50.9	0.926 ns
	1	8	5.3	144	94.7	152	29.1	
	2 - 3	3	4.6	62	95.4	65	12.4	
	≥ 4	2	5.0	38	95.0	40	7.6	
	Total	30	5.7	493	94.3	523	100.0	
Menstrual History	Regular Cycle	13	4.3	291	95.7	304	54.7	0.137 ns
	Irregular Cycle	10	5.1	186	94.9	196	35.2	
	Menopause	6	10.7	50	89.3	56	10.1	
	Total	29	5.2	527	94.8	556	100.0	
Use Contraceptives	Yes	5	15.2	28	84.8	33	19.5	0.073 ns
	No	8	5.9	128	94.1	136	80.5	
	Total	13	2.3	156	97.7	169	100.0	
Repeated Pap Smear performed	Yes	5	6.8	69	93.2	74	21.6	0.797 ns
	No	16	5.9	253	94.1	269	78.4	
	Total	21	3.8	322	96.2	343	100.0	

Total numbers are varied because missed data were excluded from analysis. S: significant, ns: not significant

Table 3. Cross-tabulation for the association between Pap smear findings and clinical presentations

Presentations		Pap Smear Finding				Total		P. value
		Abnormal		Normal				
		No.	%	No.	%	No.	%	
Vaginal Discharge	Yes	17	8.4	185	91.6	202	30.6	<b>0.017</b> sig
	No	18	3.9	441	96.1	459	69.4	
	Total	35	5.3	626	94.7	661	100.0	
Vaginal Bleeding	Yes	5	5.2	92	94.8	97	27.3	0.271 ns
	No	20	7.8	238	92.2	258	72.7	
	Total	25	7.0	330	93.0	355	100.0	
Post Coital Pain	Yes	3	4.8	60	95.2	63	9.5	0.842 ns
	No	32	5.4	566	94.6	598	90.5	
	Total	35	5.3	626	94.7	661	100.0	
Infection	Yes	7	7.9	82	92.1	89	13.5	0.242 ns
	No	28	4.9	544	95.1	572	86.5	
	Total	35	5.3	626	94.7	661	100.0	
Postmenopausal Bleeding	Yes	2	22.2	7	77.8	9	1.4	<b>0.022</b> sig
	No	33	5.1	619	94.9	652	98.6	
	Total	35	5.3	626	94.7	661	100.0	
Dyspareunia	Yes	6	13.3	39	86.7	45	6.8	<b>0.012</b> sig
	No	29	4.7	587	95.3	616	93.2	
	Total	35	5.3	626	94.7	661	100.0	
Asymptomatic	Yes	9	7.8	106	92.2	115	17.4	0.182 ns
	No	26	4.8	520	95.2	546	82.6	
	Total	35	5.3	626	94.7	661	100.0	



#### 4. DISCUSSION

The American Cancer Society advises women to adhere to these measures in order to facilitate early detection of cervical cancer. These instructions can also assist in the detection of precancerous conditions, which can be effectively treated to avoid the development of cervical cancer. It is recommended that all women commence cervical cancer screening at the age of 21. For women aged 21 to 29, it is advised to undergo a Pap smear every 3 years. The HPV test is not recommended for screening purposes in this particular age group (however it can be utilized as a component of the follow-up process for an abnormal Pap smear result) (1,2). Starting at the age of 30, the recommended approach for detection involves conducting a Pap smear together with an HPV test every 5 years. This is referred to as a collective examination and should persist until the age of 65. An alternative, rational choice for women between the ages of 30 and 65 is to undergo a Pap smear examination every three years. Based on the aforementioned concepts, it is possible that women who have a heightened susceptibility to cervical cancer due to a compromised immune system (such as HIV infection, organ transplantation, or prolonged steroid usage) or exposure to Diethylstilbestrol (DES) in the womb, should undergo more frequent screening. Women who are 65 years or older and have undergone regular screening tests within the past 10 years can discontinue these tests if no significant pre-cancerous conditions, such as CIN2 or CIN3, have been identified in the last two decades. Nevertheless, it is recommended that women who have previously been diagnosed with CIN2 or CIN3 have regular testing for a minimum of 20 years following the detection of the abnormality (1,3). Women who have undergone a complete hysterectomy, which involves the removal of the uterus and cervix, may discontinue undergoing tests such as Pap screenings and HPV testing, unless the hysterectomy was performed as a therapy for pre-cancerous or cancerous conditions of the cervix. According to the aforementioned guidelines, it is recommended that women who have undergone a hysterectomy without removal of the cervix (known as a hysterectomy supracervical) should nevertheless undergo screening for this type of cancer (4). It is not necessary for women of any age to undergo annual testing using any detection method. Women who have received the Human papilloma virus vaccine should still adhere to these guidelines (5). The current study was the first study done to evaluate the analytic record of

pap smear results files of women attending gynecological outpatient clinics at two medical teaching centers in Baghdad city/Iraq. In the present study and according to the registered data, (90.1%) women were married, (88.7%) were housewives, (54%) had  $\geq 4$  children, and using of contraceptives was recorded in 33 women (19.5%), while in a study carried by Alwan NA et al., in 2018, that 60% of the 175 women participated in the study were housewives, 40% got married before the age of 20 years, 35.4% had used contraceptive pills and 10.3% were nulliparous (6). Repeated pap smear test was done for 74 (21.6%) of participant women in this study, which is more than that registered by another Iraqi study carried by Alwan NA et al., in 2017 that found about 17% of the married respondents in the study were subjected to Pap smear test before; two thirds of those were examined during the past two years (7). The current study showed that age range of studied women was 16 to 80 years with a mean of  $39.46 \pm 10.65$  years. Most women 242 (34.2%) were found in the age group of (40 – 49) years, and Vaginal discharge was chief complaint registered and found in less than 1/3rd of women (30.5%), and abnormal findings were detected in (5.2%) and most of the abnormalities were found within the age between 30-49 years old, which is in agreement with that found by Mishra R et al., which mentioned that most of the epithelial cells abnormality found in the age range between 31–50 years, and 47.92% of the women had a chief complaint of vaginal discharge (8). Also, it is similar to the Sachan PL et al., study revealed that Vaginal discharge was the most common complaint, happening in more than 1/3rd of the women (9). Furthermore in a study done by Garg Pet al., mentioned that about 1/3rd (32.72%) of women were in the age group 31-40 years of the total cases. The most often reported primary concern observed in 32.12% of cases was vaginal discharge, followed by menorrhagia. The highest number of cases recorded were classified as non-specific inflammatory smears (64.54%) (10). The current study found that cervicitis was found in in majorities of women included as it represented in 674 women (94.8%) which is more than (42.66%) that found by Sachan PL et al., this difference may be attributed to differences in sample collection (9). The current study shows that only (5.2%) of cases were presented with abnormal finding, which is less than that revealed by previous Iraqi study done by Abdulla K et al., Demonstrated that a greater proportion of the investigated group exhibited Pap smear abnormalities (86%). Furthermore, our study contradicts the findings of a previous study,

which indicated that there is no disparity in Pap smear abnormalities between individuals above and below the age of 39 years (11). This difference may be attributed to that the selection of patients sample in the previous study as because most of them were having signs and symptoms. There is interesting finding in the present study as it revealed that there is no significant association between abnormal pap smear finding and multiparous, which not similar to that found by Chikhaoui M et al., resulted that there is association between abnormal finding and multiparous (12). Furthermore, not in agreement with Khatoon H et al., study concluded that about half (46.3%) of abnormal finding was found in grand multiparous women (13). This difference was due to small sample size as there is missing in registration in our study in comparison to other study. Smoking is one of the common risk factors for cervical cancer as it may decrease the immune system, and in the current study found that the rate of abnormal Pap smear was significantly higher in smoker women (33.3%,  $P= 0.001$ ). which is in agreement with Nagelhout G et al., in their meta-analysis study that revealed according to base on the existing evidence, it can be carefully inferred that smoking escalates the likelihood of cervical anomalies (14). Moreover, in a Korean study by Kim JY et al., mentioned that even secondhand smoke exposure women (passive smokers) will increase risk for cervical cancer (15). Sugawara Y et al., in a meta-analysis study revealed that according to the result finding they can confidently state that cigarette smoking significantly raises the likelihood of developing cervical cancer in Japanese women (16). Post-menopausal bleeding significantly associated with pap smear finding in the present study, this is in agreement with in a Danish Nationwide Cohort Study concluded by Bengtson MB et al., that mentioned women who experience postmenopausal bleeding that is identified in the hospital have a higher risk of developing gynaecological, urological, gastro-intestinal, and haematological malignancies within the first three months (17). Also, it is in agreement with that found in a two year study carried by Lavanya S et al., in a tertiary institute concluded that Carcinoma cervix and endometrium classically present with post-menopausal bleed (18).

## **5. CONCLUSIONS AND RECOMMENDATIONS**

Abnormal Pap smear findings were detected in (5.2%) of women. Abnormalities were significantly more frequent in women at age of  $\geq 50$  years , smokers and in those presented

with vaginal discharge, postmenopausal bleeding or dyspareunia. Obstetrical and gynecological history did not showed a significant association with abnormal Pap smear findings. We observed that the number of pap test consider to be low in comparison with the number of married women that visit outpatient clinics complaining of alarming symptoms ; the number of daily visitors ranged between 100-200 patients, of them only 5-10 patients had been screened. High proportion of missing data of the patient attending to the Al-Emamein Al-Kadhemein Medical City, therefore, the evaluation of pap smear reports at this hospital was difficult and not inclusive. In light of our study we recommend performing the screening program pap smear at a wide range including more women and even at the level of primary healthcare centers, particularly, in the rural areas, HPV testing could be included too in the screening program because its important role in cervical epithelial changes , and because the silent manner while in the body. We also suggest that patients data should be reported fully without missing and assurance of enough follow up of patients with abnormal result and take an action about their condition and outcomes.

#### **Ethical Approval:**

All ethical issues were approved by the author. Data collection and patients enrollment were in accordance with Declaration of Helsinki of World Medical Association , 2013 for the ethical principles of researches involving human. Signed informed consent was obtained from each participant and data were kept confidentially.

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