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# Assessment of Pre-Procedural Anxiety and Its Impact on Pain and Difficulty of Office Hysteroscopy

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## **Abstract**

**Background:** Prior medical interventions, anxiety is virtually constant presence and may affect how patients perceive pain. The aim of this work was to evaluate the correlation between pre-procedural anxiety level measured by Eysenck Personality Questionnaire (EPQ) and Taylor Manifest Anxiety Scale (TMAS) and pain score during office hysteroscopy and Assessment of difficulty of office hysteroscopy.

**Methods:** This Observational cross-sectional work was performed on 75 female patients with clinical criteria of Women undergo office hysteroscopy for various gynecological indications (infertility assessment, abnormal uterine bleeding, recurrent pregnancy loss, suspect uterine anomaly, suspect of endometrial pathology). Patients were subdivided into four groups according to TMAS (normal, mild, moderate and sever), three groups according to EPQ (significant, Normal and Anxiety) and also into three groups according to VAS levels (mild, moderate and sever).

**Result:** a statistically substantial positive correlation was existed among VAS score with difficulty of hysteroscopic procedure, with p-value ( $p=0.034$  &  $p<0.001$ ), correspondingly. There was a statistically substantial association between TAMS with main complain among all studied patients, with p-value ( $p<0.05$ ). There is no statistically substantial association between EPQ with main complain, with p-value ( $p>0.05$ ). There was a statistically substantial variation among main complain according to VAS level with p-value ( $p<0.05$ ). There was a highly statistically substantial positive correlation among TAMS with EPQ and VAS score. EPQ and VAS score have insignificant correlation.

**Conclusions:** Pain during office hysteroscopy affected by main complaints and the difficulty of hysteroscopic procedure in terms of duration and scope introduction also pain increased by increasing anxiety score. However, no correlation was found between pain and age, or parity.

**Keywords:** Taylor Manifest Anxiety Scale, Eysenck Personality Questionnaire, visual analogue scale, Anxiety, Office Hysteroscopy.

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## **Introduction**

For the diagnosis and treatment of gynecological disorders that develop in the uterus, hysteroscopy is a frequent and effective intervention. The majority of women report having a favorable hysteroscopy experience, with levels of pain they can tolerate, quick recovery, and no need for a general anesthetic. It is crucial that women believe they are capable of making authentic and informed decisions. If patients want to continue with a hysteroscopic operation, they should also state their choices for the treatment location, pain management, and anesthesia type [1].

The procedure ought to be "one-stop," meaning she is effectively cared for in just one clinic visit, wherever this is feasible and to the woman's satisfaction. Where necessary, a "see and treat" strategy should be used to help with this. Concomitant treatments include endometrial biopsy, intrauterine device placement or removal, endometrial or cervical polypectomy, removing submucosal fibroids, and division of small adhesions should be made available to the patient. Any indicated drug may also be prescribed [2].

The effectiveness of hysteroscopy, either diagnostic or therapeutic, is correlated with pain, making it more than just an issue on its own. The treatment of anxiety and its function in office hysteroscopy are still not well understood, despite their significance [3].

Using central and peripheral neurobiological processes, anxiety modulates pain in an unusual way and is a significant, underappreciated, patient-related factor that might impair procedure tolerance [4]. Pain perception may be impacted by anxiety. The correlation between anxiety as evaluated by the Taylor Manifest Anxiety Scale (TMAS) and Eysenck Personality Questionnaire (EPQ) and pain as assessed by a visual analogue scale (VAS) is positive, and stress might result in disaster (exaggerated negative

orientation towards pain stimulus). There is widespread usage of these validated anxiety measures. The effect of anxiety on OH pain perception is unclear [5].

The purpose of this study was to assess the correlation between pre-procedural anxiety level measured by EPQ and TMAS and pain score during office hysteroscopy and Assessment of difficulty of office hysteroscopy.

## **Patients and Methods**

This Observational cross-sectional work was performed on 75 female patients, with clinical criteria of infertility assessment, abnormal uterine bleeding, recurrent pregnancy loss, suspect uterine anomaly and suspect of endometrial pathology. After receiving permission from the Ethics Committee of the Maternity Hospital, Ain Shams University, the research was carried out. All patients provided written approval after being fully briefed.

Exclusion criteria were other causes of anxiety or any psychiatric diseases because it effects on the score anxiety, pelvic inflammatory disease because it leads to the spread of infection, heavy bleeding interferes with the procedure and avoids endometriosis, severe cardiovascular disease reduces the risk of heart failure and suspected pregnancy to avoid abortion.

All patients were further subdivided in to four groups according to TMAS (normal, mild, moderate and sever), three groups according to EPQ (significant, normal and anxiety) and into three groups according to VAS levels (mild, moderate and sever).

All patients were subjected to sociodemographic characteristics and routine laboratory investigations [blood tests and pregnancy tests detecting human chorionic gonadotropin (HCG)]. Anxiety was measured using TMAS and EPQ.

### **Eysenck Personality Questionnaire**

The EPQ uses four scales to evaluate the temperamental qualities that make up personality: The component we employed in this research was N, which stands for emotionality or neuroticism (evaluated by 24 questions). P, psychoticism, or toughness of mind, was examined using 25 questions; E, extraversion, was evaluated using 20 questions; and L, lying, was evaluated using 23 questions.

Calculation of EPQ: 'Lie score' is a rating out of nine. Your responses are graded on how socially acceptable you attempt to be. Those that get a 5 or higher on this scale are likely attempting to seem good and are not being completely honest with their answers. Your extrovert level was assessed using the "E score" out of 24. The "N score," which ranged from 0 to 24, indicated how neurotic you are. The E score and the N score are displayed on a graph, allowing you to determine your personality traits from the results.

### **Taylor's Manifest Anxiety Scale**

We are utilizing the extended version of this early instrument, which contains 49 questions, to measure anxiety state. It is developed from the Minnesota Multiphasic personality inventory (MMPI), and it is available in two formats. The Arabic translation was also used [6]. Scores between 0 and 16 are regarded as normal, between 17 and 25 as mild anxiety, between 25 and 36 as moderate anxiety, and beyond 36 as severe anxiety. The total score represents the intensity of the anxiety condition. Vaginoscopy technique which is performed by avoiding the need to introduce a speculum and a tenaculum. The Hysteroscope was conducted A rigid, 2.9 mm outer diameter with a 30 fore-oblique view. With a 0° grade optic.

### **Grading for assessment of difficulty of hysteroscopy<sup>[7]</sup>**

Very easy: getting into the cavity with no resistance or having to withdraw the scope tip.

Easy: having to withdraw and reintroduce the scope tip once.

Equivocal: having to withdraw and reintroduce the scope tip more than once or resistance at the int. Os.

Difficult: getting into the cavity with significant patient discomfort but not to the extent to interrupt the procedure.

Failed: failure of entering the cavity or patient discomfort necessitating procedure interruption.

### **Sample Size Calculation**

Sample Size was calculated utilizing NCSS 11.0 and according to work performed by [8] A sample size of 30 women planned to undergo office hysteroscopy achieve 95% power to determine a variance of -0.68700 among the null hypothesis correlation of 0.00000 and the alternative hypothesis correlation of 0.68700 utilizing a two-sided hypothesis test with a significance level of 0.01000.

### **Statistical analysis**

SPSS v26 (IBM Inc., Chicago, IL, USA) was used for the statistical analysis. Histograms and the Shapiro-Wilks test were utilized to assess the normality of the data distribution. The mean and standard deviation (SD) of quantitative parameters were provided, and they were contrasted using a paired T-test. Chi-square test was used to compare qualitative parameters that were reported as frequencies and percentages (%). Spearman rank correlation equation: non-normal parameters/non-linear monotonic relationships. A two-tailed P value < 0.05 was considered statistically significant.

### **Results**

Regarding personal data, mean age value was 37.47, mean parity numbers were 2, the mean abortion times was 1 and 100% of the patients have vaginoscopy method of

introduction. Regarding office hysteroscopy procedure details, the main patients complaints were infertility, bleeding, recurrent pregnancy loss, uterine anomaly, endometrial pathology. Introduction of scope was easy in 92%, difficult in 607%, and failed in 1.3%. The mean duration of the procedure was 4.59. (Table 1).

**Table 1: Different parameters distribution among all study group**

Parameters		Total (n=75)
Age (years)		37.47±10.83
Parity		2.00±1.00
Abortion		1.00±1.00
Method of Introduction	Vaginoscopy	75 (100.0%)
Office hysteroscopy Procedure details		
Main Complain	Infertility	15 (20.0%)
	Bleeding	15 (20.0%)
	Recurrent pregnancy loss	15 (20.0%)
	Uterine Anomaly	15 (20.0%)
	Endometrial Pathology	15 (20.0%)
Uterus	AVF	72 (96.0%)
	RVF	3 (4.0%)
Vision	No	1 (1.3%)
	Foggy	1 (1.3%)
	Dim	3 (4.0%)
	Clear	70 (93.3%)
Difficulty of Hysteroscopic Procedure		
Introduction of scope	Easy	69 (92.0%)
	Difficult	5 (6.7%)
	Failed	1 (1.3%)
Duration of the procedure (min)		4.59±2.97
Main Lesion	Polyp	24 (32.0%)
	Un-remarkable study	15 (20.0%)
	uterine anomaly	15 (20.0%)
	Endometrial Pathology	12 (16.0%)
	Tubal pathology	4 (5.3%)
	Faild	1 (1.3%)
	Mass	1 (1.3%)
	Scare niche	1 (1.3%)
	Adenomyosis	1 (1.3%)
	Adhesion	1 (1.3%)
TAMS	0-16 Normal	9 (12.0%)
	17-25 Mild	23 (30.7%)
	26-36 Moderate	28 (37.3%)
	Above 36 Severe	15 (20.0%)

<b>EPQ</b>	<b>0-11 Not significant</b>	17 (22.7%)
	<b>12-17 Normal</b>	26 (34.7%)
	<b>17-24 Anxiety</b>	32 (42.7%)
	15.71±5.84	
<b>VAS Score</b>		5.73±2.95

Data are presented as mean ± SD and numbers of (%). AVF: Arteriovenous fistulas. RVF: rectovaginal fistula. TAMS: Taylor's Manifest Anxiety Scale. VAS: visual analog scale. EPQ: Eysenck Personality Questionnaire.

There was a statistically significant association between TAMS and VAS level with main complain among all studied patients, with p-value (p<0.05). There is no statistically significant association between EPQ with main complain, with p-value (p>0.05) (Table 2).

**Table 2: Association between TAMS, EPQ and VAS level with main complain among all studied patients**

Main Complain		Infertility (n=15)	Bleeding (n=15)	Recurrent pregnancy loss (n=15)	Uterine Anomaly (n=15)	Endometrial Pathology (n=15)	p-value
<b>TAMS</b>	<b>0-16 Normal (n=9)</b>	4 (2.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (33.3%)	FE0.034*
	<b>17-25 Mild (n=23)</b>	4 (26.7%)	4 (26.7%)	7 (46.7%)	4 (26.7%)	4 (26.7%)	
	<b>26-36 Moderate (n=28)</b>	3 (20.0%)	7 (46.7%)	6 (40.0%)	6 (40.0%)	6 (40.0%)	
	<b>Above 36 Severe (n=15)</b>	4 (26.7%)	4 (26.7%)	2 (13.3%)	5 (33.3%)	0 (0.0%)	
<b>EPQ</b>	<b>0-11 Not significant (n=17)</b>	4 (23.5%)	2 (11.8%)	1 (5.9%)	2 (11.8%)	8 (47.1%)	FE0.118
	<b>12-17 Normal (n=26)</b>	5 (19.2%)	6 (23.1%)	6 (23.1%)	7 (26.9%)	2 (7.7%)	
	<b>17-24 Anxiety (n=32)</b>	6 (18.8%)	7 (21.9%)	8 (25.0%)	6 (18.8%)	5 (15.6%)	
<b>VAS levels</b>	<b>Mild</b>	5 (22.7%)	3 (13.6%)	9 (40.9%)	2 (9.1%)	3 (13.6%)	0.049*
	<b>Moderate</b>	6 (20.7%)	6 (20.7%)	5 (17.2%)	5 (17.2%)	7 (24.1%)	
	<b>Severe</b>	4 (16.7%)	6 (25.0%)	1 (4.2%)	8 (33.3%)	5 (20.8%)	

Data are presented as numbers of (%). TAMS: Taylor's Manifest Anxiety Scale. VAS: visual analog scale. EPQ: Eysenck Personality Questionnaire. \*Significant.

There was a highly statistically significant positive correlation between TAMS with EPQ and VAS. While EPQ and VAS score insignificant correlation. (Table 3).

**Table 3: Correlation matrix between TAMS, EPQ & VAS score, using Spearman's rank correlation coefficient (rs) among all patients**

		TAMS	EPQ	VAS score
TAMS	rs		0.711	0.304
	p-value		<0.001**	0.008*
EPQ	rs	0.711		0.078
	p-value	<0.001**		0.507
VAS score	rs	0.304	0.078	
	p-value	0.008*	0.507	

TAMS: Taylor's Manifest Anxiety Scale. VAS: visual analog scale. EPQ: Eysenck Personality Questionnaire \*Significant

### **Discussion**

Anxiety may affect pain perception. Anxiety measured by EPQ and TAMS and pain measured by VAS are positively correlated, and nervousness may lead to catastrophizing (exaggerated negative orientation toward pain stimuli). Validated anxiety scales are extensively utilized. Anxiety's influence on OH pain perception is unclear [5, 9].

Our study's findings are consistent with those of other recent investigations. According to Zayed et al. [10], out of 254 patients, 33.86% reported minimal or minor pain, 46.46% described moderate pain, 17.32% suffered severe pain, and six individuals (2.36%) had intolerable pain that required stopping the procedures. Rolim et al.'s study [5] of 252 patients revealed that mild pain (41.7%), moderate pain (29.8%), and severe pain (28.6%) were all experienced throughout hysteroscopy. According to Sorrentino et al., [3] of 104 patients who underwent office hysteroscopy, (27%) reported mild pain, (33%) reported moderate pain, and 42 (40%) reported severe pain. The STAI-Y1 and VAS showed a statistically substantial positive relationship, showing that individuals with higher state anxiety throughout hysteroscopy report pain as being more intense. Involving 75 patients, Malu et al., [11] 66% of the participants reported mild pain, 22% suffered moderate pain, and 12% suffered severe pain. The length of the process was statistically significantly correlated with pain.

In current study pain is not affected by age and parity. In contrast to the current study Campo et al. and other study [5, 9, 10, 12] found that pain affected by parity may be because using conventional Technique or number of patients.

In current study the only study that assessment of difficulty of hysteroscopic procedure by measuring the time of the procedure and failure of entering. In contrast to the current study [10-13] pain affected by procedural duration only.

In our study pain increased in subjects with a high score of anxiety. In contrast to the current study [9, 14] pain not affected by anxiety score this may because using conventional Technique or number of patients.

### **Conclusions**

An important component of ambulatory hysteroscopy's success is overcoming anxiety. Pain during office hysteroscopy increased by increasing anxiety score also pain affected by main complaints and the difficulty of hysteroscopic procedure in terms of duration and scope introduction. However, no correlation was found between pain and age, or parity.

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