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Do depression, anxiety, or stress have any effect on pain scores in patients undergoing colposcopy?

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ABSTRACT

Objective: In this study, we evaluated the effect of depression, anxiety, and stress on pain perception during colposcopy.

Material and methods: This study was performed at the gynecologic oncology department of Lutfi Kirdar Kartal Education and Research Hospital in Istanbul, Turkey between September 2017 and January 2018. After taking the informed consent form, Depression, Anxiety and Stress Scale (DASS-42) was filled out by women who attended outpatient colposcopy unit. Patients were classified into three groups according to DASS-42 (Group 1: patients without depression, anxiety, or stress; Group 2: patients with one or two of depression, anxiety, and stress; Group 3: patients with all of depression, anxiety, and stress). Patient characteristics were also recorded. The degree of pain perception was evaluated with visual analog scale (VAS) at the end of the procedure. The p values less than 0.05 were considered statistically significant.

Results: A total of 116 women were enrolled in this study. There was no statistically significant difference between the groups in terms of age, gravidity, parity, number of gynecologic examination, waiting time, BMI, VAS, having a partner, came alone to clinic, level of education, employment, the indication of procedure, number of biopsies, ECC presence ($p>0.05$). There was no difference between the subgroups in terms of VAS. There was a negative correlation between groups and VAS ($r=-0.195$, $p=0.036$).

Conclusion: According to our findings, depression, anxiety, and stress have no impact on pain perception during colposcopy, but there is a weak correlation between the absence of depression, anxiety, stress, and the pain score.

Keywords: colposcopy, depression, anxiety, stress, visual analogue scale

INTRODUCTION

Colposcopy, a procedure that allows for direct visualization of the cervix, is the gold standard procedure for detecting cervical dysplastic lesions. Although colposcopy is essentially a minimally invasive procedure, women may experience discomfort. Biopsy procedure can cause discomfort and application of acetic acid may also give rise to stinging sensation (1). Topical and oral analgesics are ineffective (2). In a Cochrane review, different forms of pain relief before, during and after colposcopy were evaluated. Although most guidelines recommend taking oral pain-relieving medicines before treatment on the cervix in the colposcopy unit, evidence from two small trials does not show that this practice reduces pain during the procedure (3).

The significance of depression, anxiety, or stress on pain perception during colposcopy is not clear. The Depression Anxiety Stress Scale (DASS) is a 42-item self-report measure of depression, anxiety, and stress that requires no special skills to administer (4). We aimed to evaluate the effect of depression, anxiety, or stress on pain perception during colposcopy procedure using DASS-42

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MATERIAL and METHODS

This study was conducted at the Department of Gynecologic Oncology, Lutfi Kirdar Kartal Education and Research Hospital, Istanbul, Turkey from September 2017 to January 2018. The study was designed according to the Helsinki declaration and approved by the Ethics Research Committee of the hospital (Protocol code: 2017.514.111.3).

A written informed consent form was also obtained from all participants. The 116 women aged between 23-55 years with HPV-16/18 positive or an abnormal pap-smear result requiring colposcopy were prospectively included in the study. Women with pregnancy, known psychiatric diseases and taking medication who had colposcopic examinations previously were excluded from the study.

Information about age, height, weight, gravidity, parity, number of gynecologic examination previously, waiting time, having a partner, coming alone to clinic, level of education, employment was collected. Psychological data were collected using the Turkish version of DASS-42 before the procedure. It is a self-report questionnaire consisting of 42 symptoms divided into three subscales of 14 items: Depression scale, anxiety scale, and stress scale.

In all patients, colposcopic examinations were performed by the same doctor (MSC). After examination with the naked eye and colposcope, 3% acetic acid solution was applied to the cervix. Suspicious areas were biopsied, and endocervical curettage was performed. All of the patients were asked to state the severity of their pain and discomfort during the procedure with VAS immediately after the procedure. Before the procedure, a detailed information about VAS was given personally to each woman. VAS was a 10-cm line scaled from 0 to 10. (0= no pain, 10= severe pain). VAS score of five and above was accepted as severe pain.

Statistical Analysis: Statistical analyses were performed using SPSS Version 20.0 for Windows software.

Numeric variables were stated as mean ± standard deviation (SD) or median (interquartile range), and categorical variables were expressed as number and percentage. Normal distribution of data was assessed using Kolmogorov-Smirnov and Shapiro Wilk tests. If numeric variables were normally distributed, the comparisons between the groups were performed with Student's t-test, comparisons between more than two groups were done with one-way ANOVA test and Tukey's HSD test. If numeric variables were not normally distributed, two group comparisons were analyzed with Mann-Whitney U test and comparisons of more than two groups were done with Kruskal Wallis test and Dunn-Bonferroni test. Differences between categorical data were evaluated using the Chi-square test. Pearson correlation analysis was used to assess the association between DASS-42 and VAS scores. The p values less than 0.05 were considered statistically significant.

RESULTS

A total of 120 patients underwent colposcopic examination within the study period. Of these, 4 women who declined to participate in the study, one woman who was pregnant, one woman who took medication for major depression and two women who had prior colposcopic evaluation were excluded from the study. One-hundred and sixteen women were included in the final analysis. The comparison of clinical and demographic characteristics of the groups are presented in Table 1. Group 1 (Patients without depression, anxiety, or stress) consisted of 40 patients, Group 2 (Patients with one or two of depression, anxiety, and stress) consisted of 36 patients, Group 3 (Patients with all of the depression, anxiety, and stress) consisted of 40 patients. There were no statistically significant differences between the groups in terms of age, gravidity, parity, number of gynecologic examination, waiting time, BMI, VAS score, having a partner, coming alone to clinic, level of education, employment, indication of procedure, number of biopsies, ECC presence (p > 0.05).

Table 1. Comparison of clinical and demographic features of patients undergoing colposcopy (n=116)

		Group 1	Group 2	Group 3	p
Age		39,4±5,9	39,2±7,9	39,2±7,3	0,988[a]
Gravidity		2±2	2±2	3±1	0,375[b]
Parity		2±2	2±2	2±2	0,189[b]
No of gyn-examination		7±16	15±15	10±15	0,127[b]
Waiting time		30±30	30±44	27,5±20	0,276[b]
BMI		25,0±5,8	25,3±7,5	24,7±4,4	0,768[b]
VAS		4,8±5,3	4,2±4,2	3±4	0,183[b]
Having a partner	**No**	9 (22,5%)	11 (30,6%)	11 (27,5%)	0,724[c]
	Yes	31 (77,5%)	25 (69,4%)	29 (72,5%)	
Came alone to clinic	**No**	11 (27,5%)	15 (41,7%)	15 (37,5%)	0,409[c]
	Yes	29 (72,5%)	21 (58,3%)	25 (62,5%)	
Level of education	**Elementary/middle school**	23 (57,5%)	19 (52,8%)	24 (60,0%)	0,179[c]
	High school	8 (20,0%)	10 (27,8%)	14 (55,0%)	
	University	9 (22,5%)	7 (19,4%)	2 (5,0%)	
Employment	**No**	25 (62,5%)	25 (69,4%)	25 (62,5%)	0,770[c]
	Employed	15 (37,5%)	11 (30,6%)	15 (37,5%)	
Indication	**HPV-16/18 +NILM**	19 (47,5%)	11 (30,6%)	14 (35,0%)	0,290[c]
	ASCUS/LSIL	18 (45,0%)	19 (52,8%)	17 (42,5%)	
	ASC-H, HGSIL, AGC	3 (7,5%)	6 (16,7%)	9 (22,5%)	
Number of biopsies	**0**	6 (15,0%)	8 (22,2%)	8 (20,0%)	0,878[c]
	1	23 (57,5%)	16 (44,4%)	18 (45,0%)	
	2	11 (27,5%)	12 (33,4%)	14 (35,0%)	
ECC presence	**No**	0 (0,0%)	0 (0,0%)	1 (2,5%)	0,384[c]
	Yes	40 (100,0%)	36 (100,0%)	39 (97,5%)	

aOneway ANOVA test (Mean±SD); bKruskal-Wallis Test (Median±Interquartil Range); cChi-Square Tests (%). BMI: body mass index, VAS: visual analog scale, NILM: negative for intraepithelial lesion or malignancy, ECC: Endocervical curettage.

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VAS score is divided into two subgroups (subgroup 1: 0-4,9; subgroup 2: 5-10) and score of five and above was accepted as severe pain. There was no statistically significant difference between groups (p=0.282, Table 2).

Table 2: Comparison of VAS subgroups between groups

			Group 1	Group 2	Group 3	Total
VAS subgroup	1	Count	21	25	26	72
		within group%	52,5%	69,4%	65,0%	62,1%
	2	Count	19	11	14	44
		within group%	47,5%	30,6%	35,0%	37,9%
Total		Count	40	36	40	116
		within group%	100,0%	100,0%	100,0%	100,0%

The comparison of VAS scores and depression, anxiety, and stress status according to the DASS-42 scale are described in Table 3. There were no statistically significant differences in terms of VAS scores between patients with and without depression, anxiety, and stress (p > 0.05).

Table 3: Comparison of the presence of depression, anxiety, stress and VAS scores.

	Group	N (%)	VAS score±IR	p
Anxiety	**No**	52 (44,8%)	4,8±5,4	0,057
	Yes	64 (55,2%)	3,5±4	
Stress	**No**	64 (55,2%)	4,6±5	0,106
	Yes	52 (44,8%)	3,3±4	
Depression	**No**	61 (52,6%)	4,4±4,5	0,369
	Yes	55 (47,4%)	3,5±4,1	

There was negative correlation between DASS-42 scores and postprocedure VAS score but it was not statistically significant (Depression r=-0.130; anxiety r=-0.103; stress r=-0.151; p > 0.05, Table 4)

Table 4: Correlations between VAS and Depression, anxiety, Stress score

		Depression score	Anxiety score	Stress score
VAS	Pearson Correlation	-.130	-.103	-.151
	Sig. (2-tailed)	.164	.269	.105
	N	116	116	116

There was statistically significant negative correlation between group 1 and VAS score (r; -0.195, p; 0.036, Figure 1).

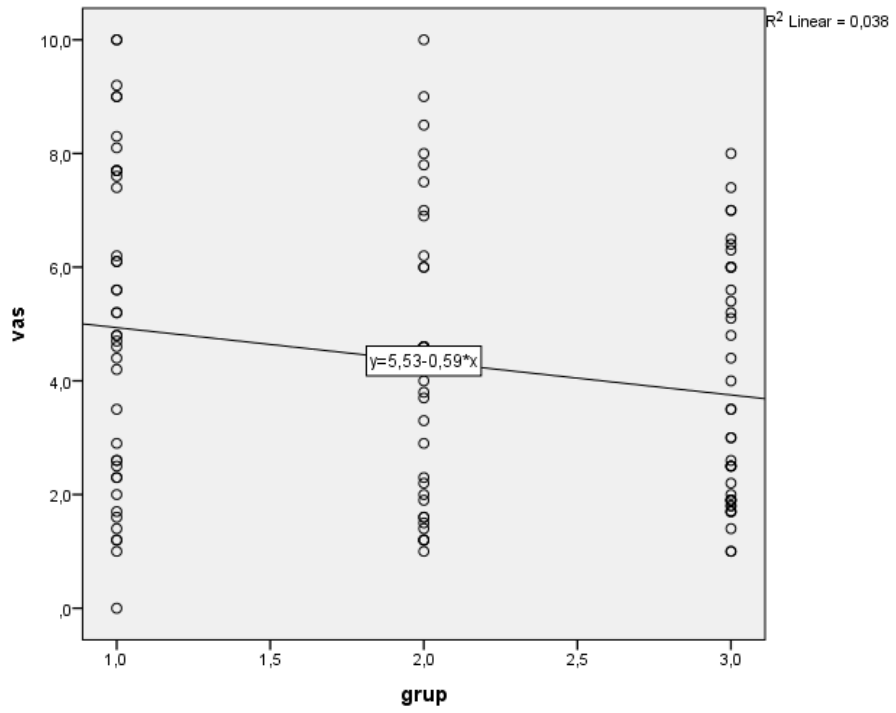

Figure 1: Correlation between groups and VAS

As a result, there is no relationship between subgroups and VAS score one by one. However, group 1 with no subgroups correlated more with pain than the others (p=0.036).

DISCUSSION

Cytological screening in the cervix prevents the progression of cervical intraepithelial neoplasia to invasive cervical cancer. Abnormal results of the smear test and a positive human papillomavirus (HPV) DNA test are usually followed by a colposcopy test that allows a detailed examination of the cervix. Colposcopy is the gold standard procedure used to detect and treat any cervical dysplastic lesions (5).

The significant level of anxiety and stress can be expected among women due to uncertainty in the status of cancer diagnosis and also in the process of colposcopy due to the pain and burning effect of the acetic acid preparation during biopsy (6). A study described in detail the entire sensory experience of undergoing colposcopy and related procedures from the perspective of the women involved and found that women can experience a range of different sensations that are quite specific to different aspects of follow-up investigations and procedures for abnormal cervical cytology. Sensory experiences of undergoing colposcopy± related procedures were pain/discomfort, stinging, shaking of the body, heart beat faster, cramping, burning smell, scraping, and cold (7).

Local anesthesia is not routinely used for biopsies of the cervix, since injection of the anesthetic is probably as painful as the biopsy. Topical and oral analgesics are ineffective (2). A systematic review suggests that music therapy has no great positive effect in reducing anxiety and pain levels and no effect in increasing satisfaction levels when compared with control groups during the colposcopy procedure (8).

Colposcopy has a potential for causing extreme anxiety, especially in single, parous, highly trait anxious patients, women who consider the information provided by the gynecologist is inadequate, women who have to wait a long time (9,10). The high levels of anxiety before and during colposcopy may have several consequences including pain, discomfort and failure to return for follow-up, impaired health related quality of life (11,12).

In similar studies, the State-Trait Anxiety Inventory (STAI) or Hospital Anxiety and Depression Scores (HADS) form were used to detect anxiety or depression. The STAI assesses anxiety on 40 items, 20 of which measure the A-state (state anxiety) intensity response scale and 20 of which measure the A-trait (trait anxiety) frequency response scale. The state scale measures anxiety at the time just prior to the colposcopy and the trait scale measures the day-to-day levels of the anxiety. The total scores of each response scale range from 20 to 80. The STAI is a self-report form, does not have a cut-off point for detecting the presence of anxiety, and only measures the level of the anxiety (13). It has been shown that colposcopy related pain and discomfort were significantly affected by pre-procedural state anxiety levels (14). The HADS consists of 14 items: 7 items that assess symptoms of anxiety and 7 items that assess symptoms of depression. The total scores for anxiety and depression range from 0 to 21. HADS is also a self-report form and has a cut-off point, but it evaluates the level of anxiety and depression; however, subgroup evaluations are not possible (15,16).

Unlike these studies, we used DASS-42 form. It is also a self-report form, has cut-off points for detecting the presence of depression, anxiety, and stress, and can evaluate their severity within subgroups (4).

One of the limitations of this study is that the DASS-42 scale is a self-report form and this type of evaluation can not take the place of a psychiatric examination performed by a psychiatrist. The other limitation is related to pain perception. Pain itself is a subjective sensation and can be related to many factors so pain evaluation is complicated.

CONCLUSION

To our knowledge, this is the first study that has evaluated depression, anxiety, and stress on pain perception during colposcopy. According to our findings, we can conclude that existing depression, anxiety, and stress before colposcopy may not be related to pain perception among the subgroups but there is a weak correlation between the absence of depression, anxiety, stress, and the pain score during the colposcopy session.

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