Is Emotional Adjustment Status Predictor of the IUD Survival?

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Received April 2008; Revised and accepted July2008

Abstract

Objective: To evaluate the effect of emotional adjustment on IUD continuation to understand why persons with similar clinical problems have different interpretation and select different strategies to cope with their complaints.

Materials and Methods: This historical cohort study was carried out on 12 randomly chosen health centers of Isfahan province in 2007. Two hundred forty eight literate and married women aged 15-49 years who had chosen IUD as a contraceptive method since 2002 entered the study. After explaining the aim of study and taking informed consent, women completed the demographic, individual characteristics and 32 questions in emotional domain of Bell's Adjustment Inventory (adult form). May 2007 was considered the end time of IUD consumption as a defined outcome. Data analysis was performed with the SPSS version 15. T-test, chi-square, Mann-Whitney, General Linear Model, Regression were used for data analysis.

Results: During this period 60% (146) of women preserved their IUD and 40% (98) of them removed their IUD. The mean score of emotional adjustment was 16.16±6.28 in IUD preserved women in comparison to 18.23±5.63 in IUD removed women. Poor ,moderate and good grades of emotional adjustment were 54%, 40% and 6% in IUD preserved woman vs 72.4% , 24.5% and 3.1% in IUD removed women.

Conclusion: Psychological factors such as emotional adjustment can influence IUD survival; so improved counseling and good candidate selection before IUD insertion is recommended.

Key words: IUD, Survival, Emotional adjustment

Introduction

It is estimated that 100 million persons in the world use intrauterine device (IUD) as their contraceptive method. Known factors that affect IUD acceptance by women are: individual characteristics, caregiver characteristics, health worker's skill and attitude, advantages and disadvantages of method and socio economic culture, religious factors such as educational level, income and marital relationship (1).

Contraceptive effectiveness of T_{cu} 380A IUD is 10 years (2). According to several studies from different countries and Iran the mean duration of IUD continuation was 5.8±3.9 years, 36, 35.8, 31.5, 22.7 and 14.2 months respectively (3-8). Also menstrual irregularity (9, 4, 5, 7), pelvic pain (9,3,4), intended pregnancy (10, 3, 5, 7), unintended pregnancy (5, 7)

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Table 1: Comparison of some participants characteristics: IUD preserved vs IUD removed

Variable		IUD status		P-Value
		Preserved (n=146)	Removed (n=98)	
Mean age		32.67±5.86	30.56±4.88	0.004
Median no. of children		2	2	0.10
Mean length of menstrual bleeding (days)	Before IUD insertion	5.21±1.22	5.05±1.13	0.29
	After IUD insertion	7.19±1.79	7.96±1.90	0.001
Employment	Occupied	12 (8.2%)	8 (8.2%)	0.988
	Housekeeper	134 (91.8%)	90 (91.8%)	
Educational level	Under diploma	87 (59.6%)	44 (44.9%)	0.024
	Diploma and higher	59 (40.4%)	54 (55.1%)	
Bleeding amount before IUD insertion	Low	45 (30.8%)	44 (44.9%)	0.038
	Moderate	98 (67.1%)	50 (51%)	
	High	3 (2.1%)	4 (4.1%)	
Bleeding amount after IUD insertion	Low	9 (6.2%)	6 (6.1%)	0.015
	Moderate	96 (65.8%)	47 (48%)	
	High	41 (28.1%)	45 (45.9%)	
History of psychiatric visit before IUD insertion	Yes	3 (2.1%)	1 (1%)	0.651
	No	143 (97.9%)	97 (99%)	
History of psychiatric visit after IUD insertion	Yes	11 (7.5%)	5 (5.1%)	0.452
	No	135 (92.5%)	93 (94.9%)	
Median of pain intensity	Before IUD (0-5)*	123.11	121.60	0.86
	After IUD (0-5)*	119.95	126.30	0.48

T – student, Man – withney and Chi – square tests were used.

* Scores of pain intensity:

0 – No pain
1 – Pain without need to use NSAIDs
2 – Pain in less than half an hour a day, need to use NSAIDs when pain increases
3 – Pain in more than half an hour a day, need to use NSAIDs when pain increases
4 – Pain, need to use NSAIDs regularly in first 2-3 days
5 – Pain without response to NSAIDs

infection (4), changing method (5, 7), Muslim women (11), husband and family disagreement (10), without cause (5, 7), physical or psychological side effects were causes of IUD discontinuation (5).

Despite some side effects like pelvic pain, dysmenorrhea and menstrual irregularity many women accept and continue to use IUD because this contraceptive method has a low failure rate (0.8%) (2) and after insertion it is independent to regular patient usage. On the other hand according to some studies women remove IUD without any known causes (5, 7). Therefore it seems that non medical factors such as emotional adjustment may influence IUD continuation.

Adjustment is ability to come to an agreement with environmental and internal variable situation (12). It is important to understand why persons with similar clinical problems have different interpretation and select different strategy in coping with symptoms of their disease and other health related conditions (13, 14).

The results of a systematic review about women's emotional adjustment to IVF indicated that unsuccessful treatment raised the women's level of negative emotion, which continued after consecutive unsuccessful cycles and when IVF resulted in pregnancy, the negative emotions disappeared (15). The results of another study about relationship between coping responses and psychological adjustment to a breast cancer diagnosis showed that women who were depressed at time of treatment planning and who responded to their cancer diagnosis with cognitive avoidance, i.e. acceptance/ resignation, had signifycantly worse psychological adjustment three years later (16).

In the study of predictors of parental emotional adjustment to childhood cancer lack of positive expectations about the course of the illness was most strongly related to negative emotions for mothers and fathers. (17)

In the investigation of the effect of preoperative psychological adjustment on postoperative depression

Table 2: Comparison of some characteristics of participants: IUD removal due to medical vs. non medical indications

Variable		Cause of IUD removal		P-Value
		Medical (n=27)	Non medical (n=71)	
Mean age		31.5±6. 20	30.19±4 .27	0.23
Median no. of children		2	2	0.75
Mean length of menstrual bleeding (days)	Before IUD insertion	5.03±1.05	5.05±6.16	0.94
	After IUD insertion	8.14±1.89	7.90±1.91	0.56
Employment	Occupied	3 (11 %)	5 (7%)	0.38
	Housekeeper	24 (88.9%)	66 (93%)	
Educational level	Under diploma	13 (48.1%)	31 (43.7%)	0.73
	Diploma and higher	14 (51 %)	40 (56.3%)	
Bleeding amount before IUD insertion	Low	13 (48.1%)	31 (43.7%)	0.69
	Moderate	13 (48 1%)	37 (52%)	
	High	1 (3.8%)	3 (4.3%)	
Bleeding amount after IUD insertion	Low	1 (3.7%)	5 (5%)	0.67
	Moderate	15 (55.6%)	32 (47.1%)	
	High	11 (40.7%)	34 (47.9%)	
History of psychiatric visit before IUD insertion	Yes	0 (0%)	1 (1.4%)	0.72
	No	27 (100%)	70 (98.6%)	
History of psychiatric visit after IUD insertion	Yes	1 (3.7%)	4 (5.6%)	0.57
	No	26 (96.3%)	67 (94 %)	
Median of pain intensity	Before IUD (0-5)*	52.37	48.41	0.52
	After IUD (0-5)*	50.20	49.23	0.87

T-student, man – withney and Chi – square tests were used.
* See above.

in epileptic patients followed up prospectively for 2 years of temporal lobotomy, preoperative scores on the emotional adjustment scale of the Washington Psychosocial Seizure Inventory (WPSI) were most highly correlated with depression 2 years after surgery. Good preoperative emotional adjustment was generally associated with less depression after surgery (18). One study showed that severity of traumatic brain injury appeared less important that emotional adjustment in awareness of deficit (19). In the study of predictors of emotional adjustment following traumatic injury, only greater social constraints were uniquely predictive of greater Post Traumatic Stress Disorder (PTSD). Higher levels of experiential avoidance, social constraints and loss of material resources all were associated with greater levels of depression (20).

Iranian women can benefit from this method without any charges at health centers. So we decided to evaluate the effect of emotional adjustment on IUD survival for improving IUD continuation.

Materials and methods

This cohort study was conducted in Isfahan health centers in 2007. The city was divided into 2 areas and 6 health centers. Samples were randomly chosen from each area. All necessary information was gathered from the medical files of these 12 centers. Files without the required information were excluded from the study. Two hundred forty eight literate and married women aged 15–49 years who had chosen IUD as a contraceptive method since 2002 entered

Table 3: Frequency of emotional adjustment grades among participants

Emotional adjustment	IUD status		P-Value
	Preserved n (%)	Removed n (%)	
Poor	79 (54 1%)	71 (72.4%)	0.015
Moderate	58 (39.7%)	24 (24 5%)	
Good	9 (6.2%)	3 (3.1%)	

Chi – square test was used.

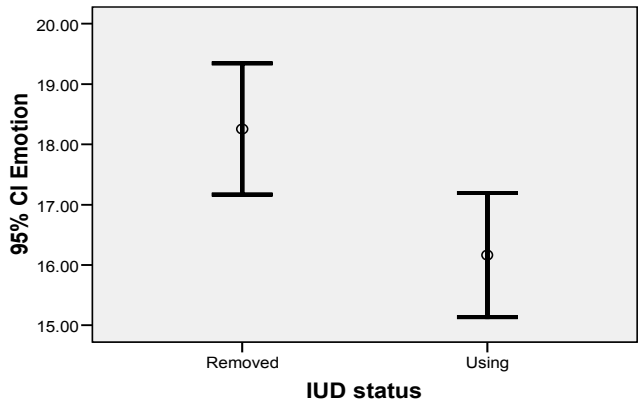

Figure 1: Comparison of mean and 95% CI emotional scores in IUD removed and using group

the study. Power of the study was calculated 90% and Zα = 1.96. Participants were invited to come to health centers for a certain day by health workers. After explaining the aim of the study and taking informed consent, women were asked to complete the questions regarding demographic, individual characteristics such as mean length of menstrual period, median of pain intensity, bleeding amount according to individual opinion (low, moderate, high), history of referring to psychiatric and the diagnosis before and after IUD insertion, IUD consuming status (using or removal), date and cause of removal.

Causes of discontinuing were divided into two groups: 1) having contraindication for continuing IUD (genitalia infection, not visible IUD string, physician recommendation, unintended pregnancy, IUD displacement), 2) no contraindication for IUD continuing (menstrual irregularity, dysmenorrhea, pelvic pain, fear of complication, intended pregnancy, changing contraceptive method, husband disagreement). Thirty three questions in emotional domain of Bell's adjustment questionnaire (adult form) were completed. Validity and reliability of questionnaire have been confirmed (21). Patients with high scores were defined to have emotional instability and patients with low scores were defined to have emotional stability. The end point of study was May 2007. Good emotional status was defined as a score of 3–6, moderate as score of 7–15 and poor as score of 16-20. Data analysis was performed with the SPSS (15) statistical package. Descriptive statistics and T– test, chi–square, Mann–Whitney and Univariate General Linear Model, Regression were used for data analysis.

Results

Due to spontaneous IUD removal in a short time period after IUD insertion 4 enrolled women were excluded. On 2007, all women that had inserted their IUDs in 2002 were evaluated. During this period 60% (146) of them preserved their IUD and 40% (98) of them removed their IUD. 27.6% (27) removed their IUD due to medical causes and 72.4% (71) of women removed their IUD due to causes that hadn't have contraindication for IUD continuation. The most common medical cause for IUD removal was infection (29.6%) and physician recommendation (22.2%), while the most common cause of removal in the group that didn't have contraindication for continuation was intended pregnancy (38%) and menstrual irregularity (36.6%).

Table 1 shows characteristics of IUD preserved and removed participants. None of these characteristics were significantly different between two groups; some removed their IUDs due to medical complications and the other group removed their IUDs due to some problems without contraindication for continuing IUD (Table 2). The mean and median months of IUD continuation in women that didn't discontinue their IUD during the study and those that removed it were (67.8±3) and 68 months vs (43± 15.3) and 45 months. Emotional adjustment statuses of subjects are shown in table 3.

The mean and SD of emotional scores of participants in two groups (removed, using) were: 18.2±5.5 and 16±6.2, respectively (t = 2.7, df = 246, p = 0.007). Figure 1 shows mean and CI 95% of emotional score in IUD removed and using groups. Using general linear model, after adjustment for covariates like; age, education, mean duration of menstrual and bleeding amounts before and after IUD insertion, emotional scores were statistically different between two groups (f = 6.1, df = 1, p = 0.014).

We observed an inverse relationship between emotional score and IUD total preservation time (Figure 2). This equation (1) was extracted from regression model:

$$Y = 57.8 - 0.12\ (X_1) - 0.114\ (X2) - 0.14\ (X_3)$$

(Y = preservation time of IUD, X1= emotional adjustment score, X2 = age, X3 = education)

Discussion

In this study, women with IUD removal had lower emotional adjustment in comparison to those that

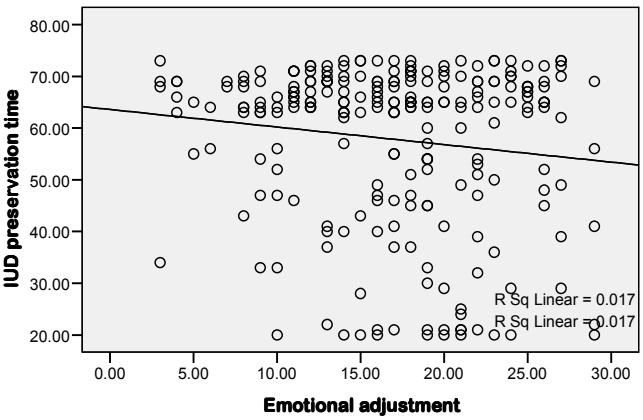

Figure 2: Inverse relationship between emotional score and IUD preservation time

preserved their IUD (Figure 1). In IUD removal group percentage of women with low emotional adjustment was more than IUD preserved group (72.4% vs 54%). In measurement of emotional adjustment getting high scores means emotional instability that this finding is seen in IUD removal group.

Verhaak (2007) showed that emotional adjustment is associated with success in medical intervention; women that had gone under IVF resulted in pregnancy had better emotional adjustment in comparison with unsuccessful IVF (15). Derry (2000) showed that having better emotional adjustment in epileptic patient before temporal lobotomy resulted in lower incidence of post operation depression (18).

Another study by Sawchyn showed that severity of traumatic brain injury appeared less important than emotional adjustment in the awareness of deficit (19).

According to equation (1), one unit increase in emotional adjustment score (decrease of adjustment capacity) decreases IUD preservation time for 1.5 months .Women with good adjustment capacity can bear negative signs and symptoms of unsuitable condition. Our study showed that women with higher emotional adjustment capacity well manage their bothering symptoms like pain, bleeding and so on.

Psychological feature of people determine their coping with disease and undesirable condition. So, because psychological factors such as emotional adjustment can influence IUD survival, improved counseling and good selection of candidates before IUD insertion is recommended.

Acknowledgment

We would like to declare our respect to all ladies that participated in this study.

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