

# Effect of watching a movie on family members' anxiety level during their relatives' surgery

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## ABSTRACT

**Background:** Surgery is a stressful condition for both patient and family members. This anxiety may interfere with the adequate family functioning and in providing positive support for the patient. Thus, specialized assessment and interventions to reduce anxiety level of family members are essential. The aim of this study was to assess the effect of watching movie on anxiety level of family members during their relatives' surgery.

**Materials and Methods:** This was a before-after trial study conducted in Alzahra Medical Center, Isfahan, Iran. Between February 2010 and November 2010, 164 eligible family members in the surgical waiting room who met the inclusion criteria entered in the study. Before and after watching movie, the anxiety level was evaluated using the State-Trait Anxiety Inventory (STAI). Chi-squares, ANOVA and paired- t test were used for analysis using the Statistical Package for Social Sciences (SPSS, Version 14) for Microsoft Windows.

**Results:** The study population were 164 people, of whom 87 (53%) were female and 77 (47%) were male. The mean age of participants was 36.6 (SD: 8.4) years ranging from 18 to 67 years. After watching movie, the mean STAI score reached from 46.06 (SD: 9.26) to 39.15 (SD: 11.81) and this difference was statistically significant ( $p = 0.003$ ).

**Conclusions:** The results of this study indicated that watching movie could reduce family members' anxiety during surgery. The findings suggested that movie might be a simple and cost-effective tool to help family members to manage anxiety during surgery of their relatives.

**Key words:** Anxiety, family members, Iran, movie, nurses, surgery, state-trait anxiety inventory

## INTRODUCTION

Surgery is a stressful condition for both patient and family members.<sup>[1,2]</sup> Fear of death, uncertain outcome, emotional disturbance, financial concerns, role changes, disruption of routines and unfamiliar hospital environment are sources of anxiety for family members.<sup>[3]</sup> Furthermore, lengthy procedures and unexpected delays typically cause increased anxiety in both patients and family members.<sup>[4]</sup> Several studies have shown that the most anxious time for family members of surgical patients is waiting during the intraoperative period.<sup>[5,6]</sup>

Anxiety may interfere with the family members' ability to receive and comprehend information and maintain adequate

family functioning. Furthermore, anxiety may interrupt using effective coping skills and providing positive support for patient.<sup>[7]</sup> Unmitigated family anxiety may produce hypervigilance and disruption in nursing care. Thus, specialized assessment and interventions to reduce families' anxiety are essential.<sup>[8]</sup>

Different nursing interventions have been practiced to meet the family members' needs in this stressful condition. Leske showed that "intraoperative progress reports" by nursing staff are useful for reducing family members anxiety in the waiting period.<sup>[9]</sup> Other studies demonstrated that preoperative education and presence of family member, especially parents during pediatric surgery, are useful techniques to control anxiety.<sup>[10-12]</sup> Furthermore, volunteer program in which trained volunteers assist people waiting in the surgical waiting room by communicating and providing non-medical information and support was helpful.<sup>[13]</sup> Jarred *et al* assessed the effectiveness of live music on family members' anxiety and found that although anxiety, stress and worry levels were not significantly decreased, the relaxation scores were significantly increased with live music.<sup>[14]</sup>

The effect of movie on reducing the anxiety level of patients has been assessed in previous studies. A randomized trial study examined the effect of watching a 14-min preparatory

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video on the anxiety of patients admitted for elective coronary angiography. Patients in the intervention group showed a significant benefit assessed with the State-Trait Anxiety Inventory (STAI).<sup>[15]</sup>

The aim of this study was to investigate the effect of watching movie in controlling family members' anxiety in the surgical waiting room during surgery.

## MATERIALS AND METHODS

This before-after trial study was conducted in Alzahra Medical Center of Isfahan University of Medical Sciences (IUMS) from February 2010 to November 2010. This study utilized pre-test and post-test design. The target population was family members waiting in the main surgical waiting room of Alzahra Medical Center. The eligibility criteria include: The first-degree relatives of patients who underwent surgery, age > 18 years and willingness to participate.

Family members, who met all eligibility criteria, entered in the study by a convenience method of sampling. The sampling was done at randomly assigned time during the study period. Data were randomly collected in all working shifts.

### Intervention

After coordinating with hospital manager and operating room head nurse, the researcher entered the surgical waiting room informed the volunteers, who consented to participate, about the purpose of the study, and asked them to fill the pre-test questionnaires.

Routinely the 42-inch LCD of waiting room shows the information about the name and condition of patient in surgery room (including time of admission to operating room, starting time of surgery, end of surgery, admission to recovery room and discharge time from operating room). This information is updated when any changes occurred in the patient status.

In this study, the LCD divided in two parts by Hospital Information System (HIS) manager, one part showed movie and another part showed text information about the surgery progress. The researcher turned on the TV and requested them to watch the movie during surgery.

The movie used in this study is known as 'Maryam al-Muqaddasah'. Saint Mary is an inspirational film from Islamic Republic of Iran directed by Shahriar Bahrani and released in 2007, depicting the life of Mary, mother of Jesus from classical Islamic readings. The movie lasted 120 minutes and participants who watched at least 100 minutes of movie were assessed for the outcome.

After completion of movie, the participants completed the questionnaires for post-test analysis. All questions were answered and participants were thanked for their participation in the study.

### Instrument

Anxiety was assessed using the State-Trait Anxiety Inventory (STAI). This internationally validated questionnaire consists of 40 items: 20 designed to assess state anxiety (S-anxiety scale) and the other 20 aimed at evaluating trait anxiety (T-anxiety scale). The STAI has been used extensively in research and clinical practice and adapted in more than forty languages. Internal consistency of its sub-scales is high. Cronbach's alpha coefficients are 0.90 and 0.93 for scores on the trait and state scales, respectively.<sup>[16]</sup>

The S-anxiety scale assesses how respondents feel "right now, at this moment". The T-anxiety scale evaluates how people "generally feel". The STAI questionnaire has only rated on a four-point intensity scale ranging from "not at all" to "very much".<sup>[15]</sup> The range of scores is 20-80; the higher score indicates more trait or state anxiety and low scores mean less anxiety.<sup>[17]</sup>

The demographic data such as age, gender, marital status, education, the relationship to the patient and type of surgery were collected by a demographic questionnaire. The data of participants who did not watch more than 100 minutes of the movie as well as unfilled questionnaires were excluded from the study.

### Statistical analysis

Demographic characteristics of individuals in each group were compared using Chi-square and Analysis of Variance (ANOVA). Paired-t test was used to compare mean of anxiety score before and after intervention. The statistical significance level was considered as 0.05. Data of participants were analyzed by the Statistical Package for Social Sciences (SPSS, Version 14) for Microsoft Windows.

### Ethics

The design of the study was approved in Ethics Committee of Vice Chancellor for Research, Isfahan University of Medical Sciences. All participants received trial information and provided written informed consent. In addition, researchers managed the confidentiality of all information carefully.

## RESULTS

The study population consisted of 164 people who agreed to participate in this study, of whom 87 (53%) were female and 77 (47%) were male. The mean age of participants was 36.6 (SD: 8.4) years with a range of 18 to 67 years.

Most participants (81.2%) were married. The demographic characteristics of participants are presented in Table 1.

The baseline STAI scores showed that women have a higher score than men ( $P = 0.02$ ). Furthermore, there was a statistically significant difference between the baseline state trait anxiety score in different levels of education ( $P = 0.02$ ). Family members with higher level of education had lower STAI score. The STAI score was not significant for marital status ( $P = 0.15$ ), occupation position ( $P = 0.19$ ) and kind of surgery ( $P = 0.55$ ).

The mean score on the STAI before the study was 46.06 (SD: 9.26) and after study was 39.15 (SD: 11.81) and this difference was statistically significant ( $P = 0.003$ ) [Table 2].

## DISCUSSION

The aim of this study was to investigate the effect of movie on anxiety level of family members during surgery. The baseline mean score of STAI showed a statistically significant difference regarding to gender and education. Men and high-educated family members experienced lower level of anxiety. Furthermore, the results of this study indicated that watching movie could reduce the anxiety of family members in surgical waiting room. The difference between anxiety score of the experimental group before watching movie and after that showed a statistically significant difference ( $p < 0.003$ ). The findings suggested that movie might be a simple, cost-effective tool to help family members manage anxiety during surgery of their relatives.

Minimizing the anxiety of family members in waiting room during surgery has been investigated in several studies. A large study on 783 American nurses showed that they believe that anxiety assessment and intervention is important in patient care.<sup>[18]</sup>

Nursing interventions such as providing intraoperative information to the relatives by nursing staff have promising effect on reducing the anxiety level of family members.<sup>[5,19-21]</sup> For example, providing families with progress reports during surgery decreases their anxiety levels. Progress reports delivered in person on a one-to-one basis are significantly more effective than written or telephone reports.<sup>[5,20]</sup>

Tansik *et al.* used “slow relaxing” recorded music in the surgical waiting room. Self-reported results showed a significant reduction in stress and anxiety levels as well as increased relaxation in surgical waiting room people.<sup>[21,22]</sup> Another study assessed the effectiveness of live music on anxiety of family members and showed that although anxiety, stress and worry levels were not significantly

**Table 1: Demographic characteristics of participants**

Variable	Participants, n (%); n=164	Baseline STAI score Mean (SD)	P-value
Gender			
Male	77 (47)	37.28 (3.44)	0.02
Female	87 (53)	45.77 (4.65)	
Age			
18-28y	47 (28.6)	41.76 (6.78)	0.87
29-38y	57 (34.7)	41.24 (9.62)	
39-48y	34 (20.7)	40.96 (8.01)	
48-58y	19 (11.5)	39.64 (7.48)	
59-68y	7 (4.5)	40.57 (6.55)	
Marital status			
Single	24 (14.6)	43.46 (6.07)	0.15
Married	133 (81.2)	40.61 (8.44)	
Divorced	3 (1.8)	37.50 (5.26)	
Widowed	4 (2.4)	47.00 (2.82)	
Education			
Illiterate	9 (5.5)	42.60 (6.95)	0.01
Diploma	120 (73.2)	41.38 (8.75)	
Master of Science	32 (19.5)	39.83 (5.63)	
PhD	3 (1.8)	35.67 (9.45)	
Occupation			
Housewife	63	44.15 (9.13)	0.19
Employed	32	39.95 (7.37)	
Retired	28	37.67 (7.31)	
Other	41	42.94 (7.90)	
Patients' Operating type			
Abdomen Surgery	55 (33.5)	43.71 (7.25)	0.55
OB/GYN Surgery	35 (21.3)	38.38 (10.05)	
Urological Surgery	21 (12.8)	40.75 (6.47)	
Brain Surgery	14 (8.5)	39.00 (6.22)	
Orthopedic Surgery	12 (7.3)	41.00 (10.88)	
Ears/Nose/Throat Surgery	11 (6.7)	40.29 (7.71)	
Spain Surgery	9 (5.5)	39.22 (5.04)	
Pediatric Surgery	5 (3)	40.00 (6.92)	
Cosmetic Surgery	1 (0.6)		
Maxilla/Facial Surgery	1 (0.6)		

**Table 2: Comparison of the mean of the State Trait Anxiety score before and after intervention**

	Mean	Standard deviation	P-value
Before intervention	46.06	9.26	0.003
After intervention	39.15	11.81	

decreased, relaxation scores were significantly increased with live music.<sup>[14]</sup>

In a randomized controlled trial study, Wang *et al.*

investigated the effectiveness of auricular acupuncture on reducing the parental anxiety. Sixty-seven mothers of children undergoing minor surgeries were divided into acupuncture and control groups. Anxiety was measured using STAI scale. Maternal and children anxiety was significantly lower than control group.<sup>[23]</sup>

Leske, based on the best evidences in this field, recommended useful interventions for decreasing the anxiety of family members in the stressful environment such as critical care unit.<sup>[7]</sup> These recommendations include identifying a family spokesperson and support groups, providing information based on family needs, explaining all procedures using understandable terms and, providing a comfortable environment for family.

This study provides an evidence for the effectiveness of watching movie in reducing the anxiety level of family members waiting in surgical waiting room.

Our study' while having much strength, involved some limitations that should be considered. The sample was limited to those patients who agreed to participate and it reflects only one hospital in Iran. The method of data collection could also be regarded as another limitation. There was no control group in this study. Therefore, the results of this study cannot be generalized to all family members in every setting and culture. Furthermore, this study did not measure other source of support to decrease the individual anxiety level during intervention. Despite these limitations, significant differences in anxiety scale score averages were detected.<sup>[24]</sup>

## CONCLUSION

To summarize, reducing the anxiety of family members during surgery is universally acknowledged and our study showed that movie presentation is a simple and cost-effective method in this way.

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