

# Effect of awareness and reassurance on anxiety of dental implant candidates

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**Objectives** Dental anxiety can be potentially problematic. Anxiety must be controlled in highly anxious patients in order to ensure a smooth procedure and prevent potential complications. Awareness and reassurance are believed to be efficient for anxiety control in patients undergoing dental procedures especially dental implant treatment. This study sought to assess the effect of awareness and reassurance of patients undergoing dental implant treatment on their level of anxiety.

**Methods** In this experimental study, 40 dental implant candidates with a mean age of 37.5 years were selected and randomly assigned into two groups ( $n = 20$ ). Case group patients received awareness and reassurance through a standard interview while controls only received routine information. Level of anxiety of the patients was determined pre- and postoperatively using the Spielberger State-Trait Anxiety Inventory (STAI). The anxiety scores of the patients in the two groups were statistically analyzed by Mann-Whitney U test.

**Results** The preoperative anxiety scores of cases and controls were not significantly different (54.73 vs. 57.55;  $P > 0.05$ ). However, the anxiety score of the case group was significantly lower than that of the control group postoperatively (52.30 vs. 60.64;  $P = 0.004$ ). Also, male patients had a significantly lower anxiety score than females ( $P < 0.05$ ).

**Conclusion** Awareness and reassurance through a standard interview can efficiently decrease the level of anxiety of dental implant candidates. Furthermore, female patients often experience higher level of anxiety than males.

**Keywords** awareness, dental anxiety, dental implants

## Introduction

Reassurance of patients is an effective strategy for clinicians to establish a good communication with dental patients. Reassuring the patients improves their trust in their clinician, the selected treatment plan and the service to be received and consequently enhances the quality of care.<sup>1</sup> Patient reassurance of the quality of care is an important parameter for both patients and service providers.<sup>2</sup>

At present, patients' expectations often dictate the quality of care provided by the healthcare providers.<sup>3</sup> Many clinicians do not have the required communication knowledge and skills in order to well communicate with patients. As the result, during clinical examination, patients may not be able to clearly discuss their major complaints with clinicians.<sup>4</sup> Efficient patient-physician communication is a key factor and a prerequisite for provision of high-quality care, and in order to achieve this, the medical team must acquire adequate communication skills.<sup>5</sup>

Patients' level of anxiety is also highly influenced by the communication skills of the dental personnel. Psychologically, anxiety is defined as a feeling of restlessness, worry, unease and fear of something with an uncertain outcome. Management of dental fear and anxiety is an important topic. Approximately 40% of individuals in Western countries are anxious about dental visits and 20% have dental phobia.<sup>6</sup> Efficient management of dental anxiety and fear of patients is a major challenge and a concern for many dentists since dental anxiety can lead to fewer dental visits or not seeking dental treatment at all by many patients.<sup>7,8</sup>

Improving the communication skills of clinicians can greatly decrease the anxiety of patients and clinicians themselves.<sup>9</sup> Anxiety control of patients undergoing dental procedures is an important factor affecting the success of treatment. Patients seeking dental treatment may have mild, moderate or high level of anxiety; determining the level of anxiety of patients allows more efficient dental treatment planning. Dreger and Tremback<sup>10</sup> in 2006 showed that 60% of patients undergoing surgical procedures experienced some degrees of anxiety. If remained unrecognized, anxiety can cause stress in long-term, which has adverse consequences for patients and may delay recovery.<sup>11,12</sup> According to the opinions of psychologists, anxiety mainly stems from the lack of adequate knowledge,<sup>13</sup> and awareness of patients and eliminating the factors causing dental anxiety can lead to its efficient management.

On the other hand, dental implant treatment is currently the most suitable modality for replacement of the lost teeth. Inadequate knowledge and misbeliefs of patients about dental implant treatment have led to patients' fear and anxiety of this procedure.<sup>14</sup> This study sought to assess the effect of awareness and reassurance of dental implant candidates on their level of anxiety.

## Methods

This experimental study was conducted on 40 candidates for dental implant treatment presenting to a private office in Ardebil City in 2015. (Ethical approval code IR. ARUMS. REC.1394.80)

The sample size was calculated using the formula:  $n = (Z_{1-\alpha/2} + Z_{1-\beta})^2 \times (\sigma_1^2 + \sigma_2^2) / (\mu_1 - \mu_2)^2$  based on 5% alpha error. Therefore, with a sample size of 20 patients,  $\sigma_1 = 10$ ,  $\sigma_2 = 14$ ,  $\mu_1 = 65$ ,  $\mu_2 = 65$  the power of the study was calculated to be 80%. Sampling was sequential to achieve equal number of males and females in patients and control groups.

All patients willingly participated in the study and signed written informed consent forms. Before the initiation of the study, the patients undertook the Spielberger anxiety test (pre-test) to determine their level of anxiety preoperatively. Next, the participants were randomly divided into two groups of cases and controls ( $n = 20$ ). Both groups were first briefed about dental implants, the reasons for dental implant surgery, site of surgery and the importance of this treatment modality via a brochure.

The case group patients also received a reassurance counseling service for 15 minutes prior to surgery via an interview, which had been designed based on standard reassurance protocol. The contents of the interview had been previously approved by a psychologist. The control patients only received routine general information about the procedure and their questions were answered. All surgical procedures in both groups were performed by the same surgeon. After the surgery, both groups undertook the Spielberger anxiety test (post-test). The anxiety scores of the case and control groups pre- and post-operatively were statistically analyzed using SPSS version 20 (SPSS Inc., IL, USA) and Mann Whitney U test. The mean and standard deviation of level of anxiety and age of patients were reported. The gender of patients was reported as frequency and percentage.

## Results

The level of anxiety of 40 patients in the two groups of cases and controls was reported before and after implant surgery. There were 12 (30%) females and eight (20%) males in the case and 12 (30%) females and eight (20%) males in the control

group (a total of 24 females and 16 males). The mean age of patients was  $39.2 \pm 9.33$  years in the control and  $35.5 \pm 11.11$  years in the case group. The difference in the mean age was not significant between the two groups ( $P = 0.13$ ).

In the case group, 15 patients (37.5%) received one implant and five patients (12.5%) received two implants. In the control group, 12 patients (30%) received one implant and eight patients (20%) received two implants. In general, patients in the case and control groups were almost matched in terms of age, sex and number of implants received.

The mean anxiety score of patients preoperatively was  $54.73 \pm 9.25$  in the control and  $57.55 \pm 10.58$  in the case group. According to the Mann Whitney U test, the difference in the anxiety scores of patients before the operation was not significant ( $P > 0.05$ ; Table 1).

The mean anxiety score postoperatively was  $60.64 \pm 10.83$  in the control and  $52.30 \pm 8.27$  in the case group. According to the Mann Whitney U test, the difference in this regard between the two groups was statistically significant ( $P = 0.004$ ). In other words, the mean anxiety score after the operation was significantly lower in the case group compared to the control group (Table 1).

In male patients, the mean anxiety score preoperatively was  $52.62 \pm 10.14$  in the control and  $59.12 \pm 11.03$  in the case group; the difference in this respect was not statistically significant ( $P > 0.05$ ). The mean anxiety score postoperatively was  $60.87 \pm 11.24$  in the control and  $47.75 \pm 9.43$  in the case group. According to the Mann Whitney U test, the difference in postoperative anxiety score between the two groups was statistically significant ( $P = 0.01$ ; Table 2).

In female patients, the mean anxiety score preoperatively was  $56.14 \pm 10.57$  in the control and  $58.66 \pm 10.61$  in the case group. The difference in the anxiety score of females in the two groups of cases and controls was not significant before the operation ( $P > 0.05$ ). The mean anxiety score of females after the operation was  $57.32 \pm 11.23$  in the control

Table 1. The mean, standard deviation, minimum and maximum values of anxiety score in the two groups ( $n = 20$ ) of cases and controls preoperatively and postoperatively (Mann Whitney U test; data distribution was not normal)

Group	Preoperatively			Postoperatively		
	Median	Mean	Standard deviation	Median	Mean	Standard deviation
Control	57.32	57.55	11.12	59.93	60.64	10.83
Case	57.83	58.69	10.17	48.5	49.12	6.21
<i>P</i> value		0.183			0.001	

Table 2. The mean, standard deviation, minimum and maximum values of anxiety score in males and females in the two groups of cases and controls preoperatively and postoperatively (Mann Whitney U test; data distribution was not normal)

Group	Number	Preoperatively			Postoperatively			
		Median	Mean	Standard deviation	Median	Mean	Standard deviation	
Control	8	57.3	59.62	10.27	61.6	60.87	11.24	
Male	Case	8	58.4	59.12	11.73	48.3	47.75	9.43
	<i>P</i> value		0.83			0.01		
Control	12	55.1	56.14	10.57	58.7	57.32	11.23	
Female	Case	12	56.9	58.66	10.61	52.1	50.50	7.34
	<i>P</i> value		0.147			0.01		

and  $50.50 \pm 7.34$  in the case group; according to the Mann Whitney U test, the difference in this regard was statistically significant ( $P = 0.01$ ; Table 2). In other words, awareness of female patients in the case group significantly decreased their anxiety compared to controls.

In general, the mean anxiety scores of male and female patients in the case group were significantly lower than those in the control group postoperatively. The postoperative anxiety of both female and male patients in both groups was higher than that preoperatively. Moreover, females generally had higher anxiety than males ( $P = 0.041$ ).

## Discussion

Management of dental anxiety and fear of patients is important in dental treatments. Approximately 40% of individuals in Western countries are anxious about dental visits and 20% have dental phobia.<sup>7</sup> Efficient management of dental anxiety and fear of patients is a major challenge and a concern for many dental clinicians since dental anxiety can lead to fewer dental visits or not seeking dental treatment at all by many patients.<sup>8,9</sup> On the other hand, anxiety of patients may affect the performance of dentists and decrease their self-confidence and consequently the success rate of procedure. Since provision of dental care services plays a fundamental role in public health, patients' anxiety and not seeking dental treatment may adversely affect the community health. Davoudi et al.,<sup>15</sup> in 2015 evaluated anxiety and its causes in patients presenting to general dental offices in Hamadan City and showed that reassuring the patients of sterilization of dental instruments and proper hygiene practices at the office, efficient communication of dentist and the office staff with patients, achieving adequate depth of anesthesia during the procedure and dentists wearing a clean gown were among the factors that efficiently decreased the level of anxiety of patients. Ghasempour and Haddadi<sup>16</sup> in 2015 evaluated dental fear and anxiety of medical and dental students and reported that the mean score of fear and anxiety of medical students was higher than that of dental students. Also, dental anxiety in higher-grade students was significantly lower than that in lower-grade students; moreover, significant differences were noted among the students of different grades in terms of dental fear. Thus, it seems that the higher the knowledge of individuals about dental treatments, the lower their fear and anxiety.

The current study assessed the effect of reassurance and awareness of patients on their level of anxiety. The Spielberger STAI was used to assess the level of anxiety of patients. This questionnaire has been translated to 30 languages and has also been standardized in terms of adaptation to the Iranian culture. Byakodi et al.<sup>17</sup> evaluated the reliability of this questionnaire

and reported the Cronbach's alpha to be 0.94. In use of this questionnaire for study of anxiety, scores 65–80 indicate severe anxiety.

Based on the results of the current study, the mean score of anxiety was 54.72 in the control and 57.55 in the case group, preoperatively. The difference in this regard between the two groups was not significant. After the operation, the mean anxiety score was 60.64 in the control and 52.30 in the case group and this difference was statistically significant. In other words, the mean score of anxiety in the case group was significantly lower than that in the control group after the operation. The same results were obtained in the two groups of males and females. These findings indicate that awareness and reassurance decrease the anxiety of patients. These results are in agreement with the findings of Doering et al.,<sup>18</sup> in 2000; they also showed that awareness decreased the anxiety of patients. Ng et al.,<sup>19</sup> in 2004 discussed that adequate knowledge and good understanding of the disease preoperatively significantly decreased the level of anxiety of patients. Their findings were in accordance with the current results. Pani et al.,<sup>20</sup> in 2014 reported the same results.

Based on the current findings, level of anxiety of males and females was significantly different, and male patients had significantly lower anxiety score than females. It has been documented that females experience higher level of fear and anxiety during dental procedures. In females, the level of anxiety swings during the procedure while in males, level of anxiety decreases as the procedure progresses. In a study conducted in 1999, the majority of patients with dental fear were females (about 70%) and had a considerable anxiety during dental surgery and other dental procedures.<sup>12</sup> Erten et al.,<sup>13</sup> in 2006 evaluated the level of stress and anxiety of dental patients and revealed that the mean dental anxiety scale score was 9.52 for females and 8.76 for males.

## Conclusion

In general, reassurance and awareness of dental implant candidates efficiently decreased their anxiety. Thus, this method can be implemented as a simple efficient technique to decrease the anxiety of dental patients.

## Acknowledgment

"None Declared."

## Conflict of Interest

"None Declared." ■

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