

## Dental Anxiety is Inversely Correlated to First Time Visit and Ageing: A Prospective Research

<sup>1</sup>S. Dalampiras, <sup>2</sup>P. Kafas and <sup>2</sup>D. Bougas

<sup>1</sup>Department of Oral and Maxillofacial Surgery,

<sup>2</sup>Department of Dentoalveolar Surgery, Surgical Implantology and Radiology,  
School of Dentistry, Aristotle University, Thessalonica, Greece

**Abstract:** Dental anxiety is a specific term describing the mental status of the patient when visiting dental clinic. This may be applied before dental treatment or during operation. It was our clinical interest to evaluate this psychological status before dental treatment in the waiting room. This research protocol achieved ethics approval by the relevant committee of the hospital. Two hundred fifty six patients agreed to volunteer a few minutes by completing a specially designed questionnaire. According to the protocol, all the patients (n=256) accepted the information leaflet and signed the consent form. The statistical analysis of the data revealed that first time dental patients and the factor “age” are inversely correlated to anxiety at significant levels,  $p < 0.05$ . Concluding, a relation between social phobia and general form of anxiety may be emphasized requiring further study on the interrelations. Anxiety seemed to be found more commonly in patients experienced a previous painful dental treatment.

**Key words:** Dental anxiety, aging, prospective research, patient, Greece

### INTRODUCTION

Phobia is defined as an “irrational fear or hatred of something, which is so strong that it is like an illness” (Sinclair *et al.*, 1990). Patients dental phobia may be defined as the application of the previous all inclusive definition to dental practice. It is therefore, more a psychological implication of each personality reacting in various degrees to dentist action (Levin *et al.*, 2007). Anxiety is a popular term describing the feeling of nervousness or worries about something and can be characterized by agitation and a diffuse sense of dread (Scully and Cawson, 2004). Is there any link between these two psychological entities on dental patients?

The correlation could not be simplified. The cross relation between phobia and anxiety in most of the cases seemed complicated. The stressed condition before dental treatment may affect the ability to process information (Eli, 2008) a situation minimized when using leaflets. Very anxious patients may be uncooperative under local anaesthesia combined or not with conscious sedation requiring general anaesthesia for operative dentistry (Elledge, 2007).

It was our clinical interest to evaluate the status of social phobia and generalized anxiety on patients

visiting general dental practice. These terms are discussed with a great interest on the possible association on pre-operative dental patient. The knowledge of patient status regarding these subgroups of mental disorders may serve in the clinical approach of these psychological entities.

### MATERIALS AND METHODS

This project achieved ethics approval by the Ethics research Committee of Papageorgiou General Hospital. The whole study was carried out in accordance with the Helsinki Declaration and its amendments. An information sheet and written consent form was included for the participants.

All the patients (n = 265) were dental referrals. Inclusion criteria for patients' selection related to any patients seeking dental treatment. There were no exclusion criteria apart from communication disability.

The authors have designed a questionnaire for psychological evaluation of waiting room anxiety.

The statistical evaluation performed using SPSS<sup>®</sup>12 logistics. All the collected data is locked in a secure place for future evaluation. The data is kept anonymously using various code numbers

Table 1: First visit

|         |        | Frsquency | %     | Valid (%) | Cumulative (%) |
|---------|--------|-----------|-------|-----------|----------------|
| Valid   | Yes    | 83        | 31.3  | 32.7      | 32.7           |
|         | No     | 171       | 64.5  | 67.3      | 100.0          |
|         | Total  | 254       | 95.8  | 100.0     |                |
| Missing | System | 11        | 4.2   |           |                |
| Total   |        | 265       | 100.0 |           |                |

Table 2: Anxiety

|         |          | Frsquency | %     | Valid (%) | Cumulative (%) |
|---------|----------|-----------|-------|-----------|----------------|
| Valid   | No       | 126       | 47.5  | 49.6      | 49.6           |
|         | Minimal  | 94        | 35.5  | 37.0      | 86.6           |
|         | Moderate | 22        | 8.3   | 8.7       | 95.3           |
|         | Severe   | 12        | 4.5   | 4.7       | 100.0          |
|         | Total    | 254       | 95.8  | 100.0     |                |
| Missing | System   | 11        | 4.2   |           |                |
| Total   |          | 265       | 100.0 |           |                |

Table 3: Correlation

|             |                     | First visit | Anxiety |
|-------------|---------------------|-------------|---------|
| First visit | Pearson correlation | 1.00        | -0.145* |
|             | Sig. (2-tailed)     |             | 0.021   |
|             | N                   | 254.00      | 254.00  |
| Anxiety     | Pearson correlation | -0.145*     | 1.00    |
|             | Sig. (2-tailed)     | 0.021       |         |
|             | N                   | 254.00      | 254.00  |

Table 4: Correlation between age and anxiety

|             |                     | Age     | Anxiety |
|-------------|---------------------|---------|---------|
| First visit | Pearson correlation | 1       | -0.149* |
|             | Sig. (2-tailed)     |         | 0.017   |
|             | N                   | 254.00  | 254.00  |
| Anxiety     | Pearson correlation | -0.149* | 1       |
|             | Sig. (2-tailed)     | 0.017   |         |
|             | N                   | 254.00  | 254.00  |

Table 5: Dependent variable anxiety

| Source          | Type III sum of squares | df  | Mean square | F       | Sig.  |
|-----------------|-------------------------|-----|-------------|---------|-------|
| Corrected model | 7.083 <sup>a</sup>      | 2   | 3.542       | 5.430   | 0.005 |
| Intercept       | 115.342                 | 1   | 115.342     | 176.832 | 0.000 |
| AGE             | 3.504                   | 1   | 3.504       | 5.372   | 0.021 |
| Visit           | 3.268                   | 1   | 3.268       | 5.011   | 0.026 |
| Error           | 163.720                 | 251 | 0.652       |         |       |
| Total           | 892.000                 | 254 |             |         |       |
| Corrected total | 170.803                 | 253 |             |         |       |

<sup>a</sup>R squared = 0.041 (Adjusted R squared = 0.034)

**RESULTS**

The statistical evaluation of the data revealed that those who firstly visited the dental clinic were 83 (Table 1). The anxiety measured using a scale (no-minimal-moderate-severe) to assess the severity. According to the findings most of the patients reported no anxiety (n = 126). The second most common report was minimal anxiety (n = 94). It is therefore, obvious that a small percentage of the total group affected by moderate to severe anxiety (about 13.5%) (Table 2).

Performing Pearson correlation the findings indicated that first visit patients were inversely anxious at significant levels of p<0.05. This negative correlation indicated the possible role of experiencing a previous dental treatment to decreased anxiety (Table 3).

Another significant correlation between age and anxiety revealed that ageing is not proportionally related to increased anxiety with p<0.05. It is therefore, very likely to manage anxiety in younger groups. This finding may be related to the degree of association between first visit and younger groups (Table 4).

Using the variable anxiety as a dependent factor and the parameters of first visit and age as covariates it is proved that both parameters affected severity of anxiety at significant levels of p<0.05. The factor F was found 5.011 and 5.372 for the two parameters indicating that covariance effect was not a random value (Table 5).

**DISCUSSION**

The five major types of anxiety according to the classification are generalized anxiety disorder, obsessive compulsive disorder, panic disorder, post-traumatic stress disorder, social phobia (or social anxiety disorder) (Shearer, 2007). It is therefore observed that phobia is linked to anxiety according to the classification. This research paper described the link between the subgroups of generalized anxiety disorder and social phobia.

Many patients reported anxiety before the dental treatment in waiting room. This finding indicated that the treatment plan may be not directly associated to the initial anxiety. This anxiety may be defined as preoperative showing the tendency to have intraoperative exacerbation. We suggested that the patients with preoperative anxiety were more likely to have intense anxiety during the treatment.

The term social phobia may include the occupational factor (Van Ameringen *et al.*, 2003). Occupation in general is a social characteristic of primary importance. The communication is a necessary feature of any occupation. Therefore any occupational communication is a social activity. The term social or occupational phobia may be a holistic term for our protocol.

According to evidence, anxiety may stimulate other psychological symptoms. Tremor may be associated to anxiety as a human response to extreme cognition of a stimulus (Milanov, 2007). This may be related also to increased phobia for something. Therefore, the synergistic effect of these two entities may be found difficult to be managed. The high sound of cry is another added symptom of anxiety (Patel, 1993). The patients reacting with this usual protective mechanism released the stimulus impact. Temporary tachycardia and increased peripheral blood pressure may be seen on dental patients. Informed reassurance may be found useful for relaxing the patient. Usually the unknown and the phobia for a painful procedure stimulate adrenal glands to accommodate stress by releasing epinephrines and corticosteroids. The

adrenergic receptor stimulation may cause these symptoms (Alexander *et al.*, 2007). Another characteristic of those patients may be the exploration of everything. Any action of the dentist may be under patients' observation showing characteristics of altered emotion.

### CONCLUSION

Concluding from this study, it is more appropriate to expect from older patients and second time clinic visitors to express signs and symptoms of anxiety. The important value of social and paediatric dentistry should be emphasized. Young patients may be informed in school ages about the importance of oral health care firstly to prevent patients from oral diseases and secondly to allow patient independent personality to be familiar with the role of dentistry minimizing possibly future phobia and anxiety. It is of high importance to proceed to painless dental practice in first time visitors otherwise they would carry the possibility of nervousness.

### REFERENCES

- Alexander, J.K., A. Hillier, R.M. Smith, M.E. Tivarus and D.Q. Beversdorf, 2007. Beta-adrenergic modulation of cognitive flexibility during stress. *J. Cogn. Neurosci.*, 19: 468-478.
- Eli, I., D. Schwartz-Arad, Y. Bartal, 2008. Anxiety and ability to recognize clinical information in dentistry. *J. Dent. Res.*, 87: 65-68.
- Elledge, R., E. Alexopoulos, M.T. Hosey, 2007. Short communication: Dental anxiety levels and outcomes of care: A preliminary report on experiences of a sedation assessment clinic. *Eur. Arch. Paediatr. Dent.*, 8: 211-214.
- Levin, L., N.E. Proter and S. Levin, 2007. Dental visits and personality traits among young adults. *Quintessence. Int.*, 38: 379-83.
- Milanov, I., 2007. Clinical and electromyographic characteristics of tremor in patients with generalized anxiety disorder. *Electromyogr. Clin. Neurophysiol.*, 47: 3-9.
- Patel, V., 1993. Crying behavior and psychiatric disorder in adults: a review. *Compr. Psychiatry.*, 34:206-211.
- Shearer, S.L., 2007. Recent advances in the understanding and treatment of anxiety disorders. *Prim. Care.*, 34: 475-504.
- Scully, C. and R.A. Cawson, 2004. Psychiatric Disorders. In: *Medical Problems in Dentistry*. Scully, C. and R.A. Cawson (Eds.). Wright: Gillingham, pp: 374-395.
- Sinclair, J., P. Hanks, G. Fox, R. Moon and P. Stock *et al.*, 1990. *Collins Cobuild English Language Dictionary*. William Collins Sons and Co. Ltd. Suffolk, pp: 1075.
- Van Ameringen, M., C. Mancini, P. Farvolden, 2003. The impact of anxiety disorders on educational achievement. *J. Anxiety Disord.*, 17: 561-571.