Evaluation of the relationships among demographic factors, pain levels, dental anxiety and coping methods in adult dental patients

Erişkin hastalarda ağrı ile başa çıkma yöntemi tercihinin demografik faktörler, ağrı düzeyi ve dental anksiyete ile ilişkilerin değerlendirilmesi

Kaan Hamurcu, DDS, PhD.
Gazi University, Department of Oral and Maxillofacial Surgery, Ankara – Turkey
Orcid ID: 0000-0002-1070-0460

Sercan Küçükkurt, DDS, PhD.
Istanbul Aydın University, Department of Oral and Maxillofacial Surgery, Istanbul – Turkey
Orcid ID: 0000-0002-4095-957X

Mehmet Barış Şimşek, DDS, PhD.
Gazi University, Department of Oral and Maxillofacial Surgery, Ankara – Turkey
Orcid ID: 0000-0002-8479-6709

SUMMARY
Purpose: To evaluate the relationships among demographic factors, pain levels, dental anxiety, coping methods, and pain perception in adult patients.
Material and Methods: A total of 150 randomly selected adult patients completed a survey, which was divided into five parts. The first part covered demographic features and patient history; the second part covered details regarding orofacial pain; the third part included the visual analogue scale (VAS) for pain determination; the fourth part included the Modified Dental Anxiety Scale (MDAS); and the fifth part included the COPE inventory to evaluate patient coping methods. The survey data were analyzed using t-tests or Mann-Whitney U-tests and one-way analysis of variance (ANOVA), as appropriate. Chi-square tests were used for table analyses.
Results: The results revealed that coping methods differed according to gender, marital status, anxiety, and pain levels. According to results of our study, “Use of Instrumental Social Support” (3.0739), “Positive reinterpretation and growth” (3.0706) and “Active Coping” (3.0556) methods are most commonly used coping methods, respectively. While “mental disengagement” (t: 2.3039, p<0.05) and “use of emotional social support” (t: 2.3657, p<0.05) were higher for women, “drug use” (t: 2.2170, p<0.05) was higher for men. Anxiety levels were higher in women (W:14.48 – M:11.43, t: 4.041, p<0.05) and patients with severe pain; there were no correlations between anxiety levels and any of the other assessed factors.
Conclusions: Pain perception and dental anxiety are multi-factorial problems. Several internal and external factors can affect an individual’s strategies to cope with dental anxiety and pain. According to the results of this study, the methods of coping with pain are influenced by several factors such as gender, age, marital status, anxiety level, as well as pain location, severity, and duration.
Keywords: Pain Perception, Dental Anxiety, Demography, Adaptation, Psychological Factors

ÖZET
Amaç: Bu çalışmada erişkin hastaların ağrı ile başa çıkma yöntemi tercihin üzerine demografik faktörlerin, ağrı düzeyinin, dental anksiyetenin etkilerini değerlendirme amacıyla amaçlanmıştır.
Gereç ve Yöntem: Rastgele seçilen 150 erişkin hastadan, beş parçadan oluşan bir anketi doldurması istenmiştir. Birincisi bölüm demografik özellikleri ve hasta öyküsünü kapsamaktadır; ikincisi bölüm orofasilal ağrı ile ilgili detayları kapsar; üçüncü bölüm de VAS ile ağrı tespiti için ağiz analog skala’da oluşmaktadır; dördüncü bölüm ise Modifiye Dental Anksiyete Ölçeği (MDAS); beşinci bölüm ise hastanın ağrı ile baş etme yöntemlerini değerlendirme için COPE envanteri içermektedir. Anket verileri, t-testi veya Mann-Whitney U-testi ve tek yönlü varyans analizi (ANOVA) kullanılarak analiz edilmiştir. Tablo analizleri...
Coping methods can differ

Coping can be described as

Anxiety is defined

The aim of the present study was to evaluate the relat-

Sonic: Anğı algılamaş ve dişhekimleri kaygısı çok faktöre

Sonuç: Anğı algılaması ve dişhekimleri kaygısı çok faktöre

Anahtar Sözcüklar: Anğı Algılama, Dental Anksiyete, De-

INTRODUCTION

The International Association for the Study of Pain de-

Factors affecting coping methods with pain
by Tunc and Ilguy. Agargun et al. demonstrate that the psychometric properties of COPE are a reliable measure of evaluation of coping attitudes in the Turkish sample, according to the results of the study they performed.

Statistical analysis
Numerical values are expressed as an average/standard deviation, median/min–max, and percentage. All statistical analyses were performed using SPSS 21.0 (IBM, Somers, NY, USA). The Shapiro–Wilk and Kolmogorov–Smirnov tests were used for normality testing. An independent samples t-test was used for groups showing normal dispersion and the Mann–Whitney U (MWU) test was used for groups that did not show normal dispersion. The chi-square test was used for table analyses; the error level was $\alpha=0.05$.

RESULTS
The demographic characteristics of the participants are shown in Table 1, and the characteristics of pain in the participants are shown in Table 2. The severity of pain, as assessed via the VAS, is shown in Figure 1.

![Figure 1. Pain scores on the VAS in terms of number of participants](image)

Figure 1. Pain scores on the VAS in terms of number of participants

Table 1. Demographic and social characteristics of the participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>GENDER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female / Male</td>
<td>81</td>
<td>54 / 46</td>
</tr>
<tr>
<td>AGE</td>
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<tr>
<td>18-29 / 30+</td>
<td>106</td>
<td>70.7 / 29.3</td>
</tr>
<tr>
<td>EDUCATION LEVELS</td>
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<td>Primary School</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>Secondary School</td>
<td>8</td>
<td>5.3</td>
</tr>
<tr>
<td>High School</td>
<td>37</td>
<td>24.7</td>
</tr>
<tr>
<td>Academy</td>
<td>11</td>
<td>7.3</td>
</tr>
<tr>
<td>University</td>
<td>66</td>
<td>44</td>
</tr>
<tr>
<td>Master Degree</td>
<td>14</td>
<td>9.3</td>
</tr>
<tr>
<td>Doctorate</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>MARITAL STATUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married / Single</td>
<td>38</td>
<td>25.3 / 74.7</td>
</tr>
</tbody>
</table>

According to the results of T-tests, the average score for the “mental disengagement” coping method was significantly higher for women than for men (t: 2.3039, p<0.05) and significantly lower for married patients than for single patients (t: −2.073, p<0.05). The average score for the “use of emotional social support” strategy was significantly higher for women (t: 2.3657, p<0.05). Regarding the “drug use” strategy, the average score was significantly lower for women (t: −2.2170, p<0.05) and for married patients (t: −2.359, p<0.05). Regarding the “turning to religion” strategy, the average score was significantly higher for married patients (t: 2.074, p<0.05) and for patients with spreading pain than for patients with localized pain (t: 3.13, p<0.05). Regarding the “suppression of competing activities” strategy, the average score was significantly higher for married patients than for single patients (t: 2.253, p<0.05).

The average MDAS score was 14.48 for women and 11.43 for men, with a significant difference between the two genders (t: 4.041, p<0.05). There was no significant difference in the average MDAS score between married (12.89) and single patients (13.46; t: −0.600, p>0.05). Additionally, the average MDAS score for patients with spreading pain (13.42) and localized pain (12.61) showed no significant difference (t: 0.9888, p>0.05).

According to the ANOVA results, the average scores for the
“positive reinterpretation and growth” strategy were 3.04, 3.35, and 2.66 for patients with dental pain, temporomandibular joint (TMJ) pain, and pain in the head and neck region, respectively; the average score was significantly higher for patients with TMJ (F: 4.780, p<0.05). The corresponding average MDAS scores were 13.11, 12.80, and 13.75, respectively, with no significant difference among the three groups (F: 0.115, p>0.05). The average scores for the “focus on and venting of emotions” coping strategy were 2.85, 2.56, 2.35, and 2.46 for patients with pain after 15 days, 1 month, 3 months, and >3 months respectively; the score was significantly higher for patients with pain after 15 days (F: 3.5102, p<0.05). The corresponding average MDAS scores were 13.48, 13.03, 12.50, and 11.96, with no significant difference (F: 0.6392, p>0.05). The average scores for the “mental disengagement” strategy were 2.35, 2.06, 2.41, and 2.80 for patients with throbbing pain, electric shock-like pain, tingling pain, and unendurable pain, respectively; the score was significantly higher for patients with unendurable pain (F: 3.2544, p<0.05). For the “restraint coping” strategy, the corresponding average scores were 2.51, 1.69, 2.37, and 2.65, respectively; this score was significantly lower for patients with electric shock-like pain (F: 3.3862, p<0.05). The average MDAS scores of 13.13, 10.50, 13.17, and 12.95, respectively, showed no significant differences. (F: 0.3735, p>0.05).

Scores for each of the 15 coping strategies were compared between groups of patients with high and low anxiety levels, according to the MDAS score. The score for the “focus on and venting of emotions” strategy (MVU p=0.0135) was significantly higher for patients with low anxiety levels, whereas that for the “behavioral disengagement” strategy (MVU p=0.0152) was higher for patients with high anxiety levels.

Scores for each of the 15 coping strategies were also compared between patients with high and low VAS scores. The scores for the “turning to religion” (MVU p=0.02) and “using emotional social support” (MVU p=0.01) strategies were significantly higher for patients with a high VAS score. There was no relationship between MDAS scores and VAS variants (chi-square test, 0.054; p=0.816).

The average score for active coping was 3.00 for patients aged 18–29 years (t: 1811.00;50, p<0.05). The score was significantly lower for patients aged ≥30 years. This score was significantly lower for patients aged 18–29 years and 3.24 for patients aged ≥30 years. The average score for passive coping was 1.69 for patients aged 18–29 years and 1.74 for patients aged ≥30 years. This score was significantly lower for patients aged 18–29 years and 1.69 for patients aged ≥30 years. The average score for reappraisal was 2.85 for patients aged 18–29 years and 2.25 for patients aged ≥30 years. This score was significantly higher for patients aged ≥30 years.

DISCUSSION

In this study, we evaluated the relationships among demographic factors, pain levels, dental anxiety, coping methods, and pain perception using a five-part survey in adult patients complaining of pain. According to the results of this study, the first null hypothesis was confirmed, while the second hypothesis failed. The results revealed that tendency to the coping methods affected both demographic features and characteristics of pain.

Bedi and McGrath reported that dental anxiety is affected by factors such as age, gender, education level, sociodemographic factors, oral health status, frequency of dental visits, past treatment experience, and type and duration of dental treatment. Studies reporting the relationship between age and anxiety levels have documented varied results. According to Milgrom et al.,12 dental anxiety decreases with age. Hakeberg found that patients aged 20–39 years exhibited higher anxiety levels compared with younger and older age groups. Kunzelmann and Dunninger reported that the level of fear reaches a plateau after a certain age, probably because the fear associated with dental issues loses importance with an increase in other health problems. Hofer et al. reported that individuals with high anxiety levels were significantly younger. Two Finnish studies also showed that the proportion of individuals who were very scared or slightly scared to visit a dentist was higher in younger age groups. In addition, an older study by Corah found higher dental anxiety scores in younger subjects. Ragnarsson reported that...
In the present study, we found no significant correlation between age and dental anxiety. However, while the “drug use” strategy was more common in 18–29-year-old individuals, individuals aged ≥30 years preferred more problem-focused methods. Moreover, individuals with low anxiety levels preferred more effective coping methods such as “focus on and venting of emotions,” whereas those with high anxiety levels showed an inclination towards “behavioral disengagement.”

In our study, the strongest indicator of dental care behavior was gender. It is known that women report higher levels of fear more frequently and comfortably. Several studies have indicated that dental fear is more prevalent among women, whereas some studies report that there are no gender-related differences in dental fear. Ter Horst and De Wit reported that, universally, women are more anxious. According to Stouthard and Hoogstraten, high anxiety levels in women originate from their externalization of fear more easily compared to men. In the present study, although anxiety levels were significantly higher in women, there was no significant correlation between gender and severity of pain. Regarding coping strategies, women preferred strategies such as “mental disengagement” and “use of emotional social support,” whereas men preferred passive strategies such as “drug use.”

Hallström and Halling reported that dental anxiety is higher in individuals with low education levels. Stabholz and Peretz assessed the correlation between education level and anxiety and reported that educated individuals exhibited better coping skills in stressful situations. Ilguy et al. could not find any association between dental anxiety and education level. Similarly, in the present study, there was no significant difference between anxiety and education level.

We found that the average score for “mental disengagement” was significantly lower for married patients, and they more often preferred strategies such as “turning to religion” and “suppression of competing activities,” while single patients preferred “mental disengagement” and “drug use.”

Praying to a God or a higher power is a worldwide practice, regardless of the culture, religion, or method of offering prayers. Pain studies suggest that coping strategies involving praying are more frequently preferred by individuals who feel less powerful, are more depressed, and have higher levels of fear. In the present study, individuals with more severe pain more frequently chose the “turning to religion” and “use of emotional social support” strategies. In addition, anxiety levels were higher in patients with severe pain. Accordingly, we can conclude that patients who preferred these coping methods are highly anxious patients. This result is significant, because severe pain can psychologically pressurize patients. Some pain studies showed that praying as a passive method of coping represented somewhat unrealistic hopes and desires, and was associated with lower self-efficacy, while Loggia et al. reported that positive spiritual thoughts decrease dento-alveolar pain, while negative thoughts increase pain perception.

According to Haythornwaite and Benrud-Larson, emotional situations are associated with pain from chronic illnesses. Similarly, Krittayaphong et al. reported that angina pain was experienced more often by cardiac patients with depression. Villemure and Bushnell reported that similar situations are valid for acute dental pain, and that preoperative anxiety is associated with postoperative pain. They showed that situations positively affecting the soul, such as good music, decrease the perception of pain, whereas anxiety and some personal characteristics increase the perception of pain. The results of the present study indicated that anxiety increases pain levels.

In the present study, patients who visited our clinic with pain in the last 15 days more frequently used the “focus on and venting of emotions” coping strategy, while there was no significant difference between anxiety levels and the duration of pain. Furthermore, there was no relationship between the pain location and type and anxiety levels. Individuals with spreading pain preferred the “turning to religion” strategy, while patients with TMJ pain preferred “positive reinterpretation and growth.”

The most commonly used coping strategies in our study included “use of instrumental social support” (3.074±0.675), “positive reinterpretation and growth” (3.071±0.617), and “active coping” (3.056±0.611), while the less frequently used strategies include “humor,” “denial,” “behavioral disengagement,” and “drug usage,” which are emotion-focused and avoidant.

This study is limited by the small sample size, which may limit generalization of the results. Future studies with a larger number of participants are needed to confirm the results of this study. In addition, similar studies in different cultures and nationalities will allow for global assessment of the results. The strength of this study is the evaluation of several variables and detailed comparisons of several factors using a survey including different assessment tools.

CONCLUSIONS

According to the results obtained within the limits of this study, the ways of coping with pain are influenced by many factors such as patient gender, age, marital status, anxiety level, pain zone, severity, and duration. The identified differences are as follows:

- While “mental disengagement” and “use of emotional social support” were higher for women, “drug use” was
higher for men.

- While “mental disengagement” and “drug use” were higher for single patients, “turning to religion” and “suppression of competing activities” were higher for married patients.

- Patients with low anxiety preferred “focus on and venting of emotions” and patients with high anxiety preferred “behavioral disengagement.”

- Active coping methods and “turning to religion” were lower for patients aged 18–29 years

- “Turning to religion” was higher for spreading pain, “positive reinterpretation and growth” was higher for patients with TMJ pain, “mental disengagement” was higher for patients with unendurable pain and “restraint coping” lower for patients with electric shock-like pain

- “Focus on and venting of emotions” was higher for patients with pain in the past 15 days.

- “Turning to religion” and “using emotional social support” were significantly higher for patients with high VAS score.

- Anxiety levels were higher in women and patients with severe pain; there was no correlation between anxiety levels and any of the other assessed factors.

- “Use of instrumental social support,” “positive reinterpretation and growth,” and “active coping” methods were the most preferred methods of coping.

Conflicts of interest statement: “None declared.”

Acknowledgement: We thank Eda Gizem Koçyiğit for assistance with the statistical analysis of our study. We would also like to show our gratitude to Prof. Berrin İşik for sharing her pearls of wisdom with us during the course of this research.

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