

# Evaluation of The Quality of Life After Surgical Extraction of Impacted Third Molars

Gömülü 3. Molar Diřlerin Cerrahi Çekimi Sonrası Yařam Kalitesinin Deęerlendirilmesi

**Nesrin Saruhan, Görkem TEKİN**

Eskiřehir Osmangazi Üniversitesi Diř Hekimlięi Fakültesi,  
Ağız Diř ve Çene Cerrahisi AD, Eskiřehir

Yazıřma Adresi / Correspondence:

**Nesrin Saruhan**

Ağız Diř ve Çene Cerrahisi AD., Diř Hekimlięi Fakültesi, Eskiřehir Osmangazi Üniversitesi, Eskiřehir, Türkiye

T: +90 537 246 59 49 E-mail: dt\_nesrin@yahoo.com

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## Abstract

- Aim** The purpose of this study was to assess the oral health-related quality of life of patients after the impacted third molar extraction with the Oral Health Impact Profile OHIP-14 scale ( **Sakarya Med J 2018, 8(3):475-480** )
- Material and Methods** A total of 100 patients with impacted third molars were included in this study. Patients' age, gender, position of third molar teeth and scores given to OHIP-14 scale were evaluated
- Results** A total of 100 patients were included in this study, 64 of whom were female (64%) and 36 of whom were male (36%). The Simple Count values of the patients' responses to the OHIP-14 scale were found as minimum 0 maximum 44 (mean 11.64±9.8). When the answers to the OHIP-14 scale were evaluated in terms of gender and Simple Count; count as minimum 0 maximum 44 (mean 11.83±9.8) in the female patients and minimum 0 maximum 36 (mean of 11.31±9.8) in the male patients and there was no statistically significant difference between male and female patients ( $p > 0.05$ ). When the responses given to the questions on the OHIP-14 scale were evaluated as a total; it was seen that the patients describes most complaints with question 6, followed by 9, 4, 5, 8, 7, 3, 12, 1, 11, 2, 13, 14 and 10 questions respectively.
- Conclusion** It was seen that the patients were most uncomfortable with the 6th question and least comfortable with 10th question.
- Keywords** Impacted tooth; tooth extraction; quality of life

## Öz

- Amaç** Bu çalışmanın amacı gömülü 3. molar diř çekimi sonrası hastaların ağız saęlığı ile iliřkili yařam kalitelerini Ağız Saęlığı Etki Profili (Oral Health Impact Profile) OHIP-14 ölçeęiyle deęerlendirmektir. ( **Sakarya Tıp Dergisi 2018, 8(3):475-480** ).
- Gereç ve Yöntem** Çalışmaya gömülü 3. molar diřleri bulunan toplam 100 hasta dahil edildi. Hastaların yaşı, cinsiyeti, 3. molar diřlerin pozisyonları ve OHIP-14 ölçeęindeki cevaplara verilen skorlar deęerlendirildi.
- Bulgular** Çalışmamıza 64'ü kadın (%64), 36'sı erkek (%36) toplam 100 hasta dahil edildi. Hastaların OHIP-14 ölçeęine verdięi cevapların Simple Count deęerleri minimum 0 maksimum 44 (ortalama 11,64±9,8) olarak bulundu. OHIP-14 ölçeęine verilen cevaplar cinsiyet ve Simple Count açısından deęerlendirildiğinde; kadınlarda minimum 0 maksimum 44 (ortalama 11,83±9,8), erkeklerde ise minimum 0 maksimum 36 (ortalama 11,31±9,8) olduęu ve aralarında istatistiksel olarak anlamlı bir fark olmadıęı görüldü ( $p > 0,05$ ). OHIP-14 ölçeęindeki sorulara verilen cevaplar toplam olarak deęerlendirildiğinde; hastaların en çok 6. sorudan sonrasında sırasıyla 9, 4, 5, 8, 7, 3, 12, 1, 11, 2, 13, 14 ve 10. sorulardan rahatsızlık duyduęu görüldü.
- Sonuç** Hastaların en çok 6. sorudan en az ise 10. sorudan rahatsızlık duyduęu görüldü.
- Anahtar Kelimeler** Gömülü diř; diř çekimi; yařam kalitesi

## Introduction

Surgical extraction of the impacted third molar (M3) is one of the most common dentoalveolar surgical procedures.<sup>1</sup> Due to the prophylactic recommendation of the dentists, symptoms of M3 are required extraction in the second and third decades of life. Some complications such as trismus, pain and swelling can be seen after surgery of M3.<sup>2,3</sup> Although several studies have been published after M3 surgery addressing different factors related to quality of life [Oral Health Related Quality of Life (OHRQoL)], the data are still insufficient. The forms that were given to the patient to accurately estimate and predict OHRQoL after M3 surgery are useful not only for obtaining informed consent but also for correcting healing perceptions of patients.<sup>4</sup> Oral diseases and surgical procedures have some impact on quality of life. Problems caused by wound healing after M3 extraction and physical squeal can significantly affect the patient's OHRQoL. For this reason, patients are informed about the risks and benefits of M3 extraction before surgical treatment. With this information being important, patients want to be informed about the healing process.<sup>5</sup>

A number of scales are used to assess the effectiveness of the M3 surgery. From these scales, the Oral Health Impact Profile (OHIP) is a special measure that is used worldwide to measure the social impact of oral diseases on the general health that individuals perceive personally.<sup>6</sup> OHIP measures the social impact of oral diseases on the well-being of patients. The main advantage of this scale is that the questions originate from the patients, not the researchers. OHIP distinguishes seven main groups as functional limitations, physical pain, psychological discomfort, psychological disability, physical disability, social disability and handicap in terms of the subjects to be measured.<sup>7</sup> The increase in the total score obtained indicates that the problem is exacerbated and the quality of life of the patient is reduced.<sup>3</sup> The OHIP was long with 49 items causing time-wasting and difficulties for the respondents. In order to remove these problems, OHIP-14 was created which is shorter and more specific and is used contemporarily.<sup>8,9</sup>

The aim of this study was to evaluate the oral health-related quality of life of patients after surgical removal of impacted third molars with OHIP-14 scale.

## Material And Method

Before the study ethical approval was obtained (Ethical Committee Decision No: 28/2018). This study included retrospective data from patients admitted to Department of Oral and Maxillofacial Surgery Eskisehir Osmangazi University Faculty of Dentistry with complaints of M3 between October 2017 and December 2017. Individuals of all ages were included in this randomized clinical trial study without gender discrimination. Retrospectively, 100 patients were evaluated for their age, sex, location of M3 (upper and lower jaw), position (mesioangular, vertical, distoangular, horizontal, bucco-lingual) and OHIP-14 scale. Likert response system in evaluating OHIP-14 scale 0 = "Never", 1 = "Hardly ever", 2 = "Occasionally", 3 = "Fairly often", 4 = "Very often" used. OHIP-14 Simple Count (SC) was used for the evaluation. SC is the total score of responses given by patients to each item. In other words, the frequency of the effects is calculated by summing up the answers of each problem. The total score was at least 0, the highest was 56.

Statistical analysis was performed by using IBM SPSS Statistics 20 package software (IBM Corp., Chicago, IL, USA). The Kolmogorov-Smirnov test was used to evaluate the normality of the data. The independent t-test was used to compare variables between the genders. The test result

was considered statistically significant if the p-value was < 0.05.

## Results

A total of 100 patients were included in the study, 64 of whom were female (64%) and 36 of whom were male (36%). The age ranges of the patients ranged from 15 to 47 and the mean age was  $26.15 \pm 7.5$ . The ages of the female were minimum 17 and maximum 47 (mean  $26.16 \pm 7$ ), while the ages of the male were minimum 15 and maximum 46 (mean  $26.14 \pm 8,2$ ).

When evaluated according to the jaw localizations of M3; in total of 100 cases of M3 was seen in the jaw, 12 (12%) of them were in the upper jaw and 88 (88%) of them in the lower jaw. When M3's were evaluated according to their positions; 25 (25%) mesioangular, 12 (12%) distoangular, 42 (42%) vertical, 3 (3%) buccolingual and 18 (18%) horizontal were seen. (Figure 1)

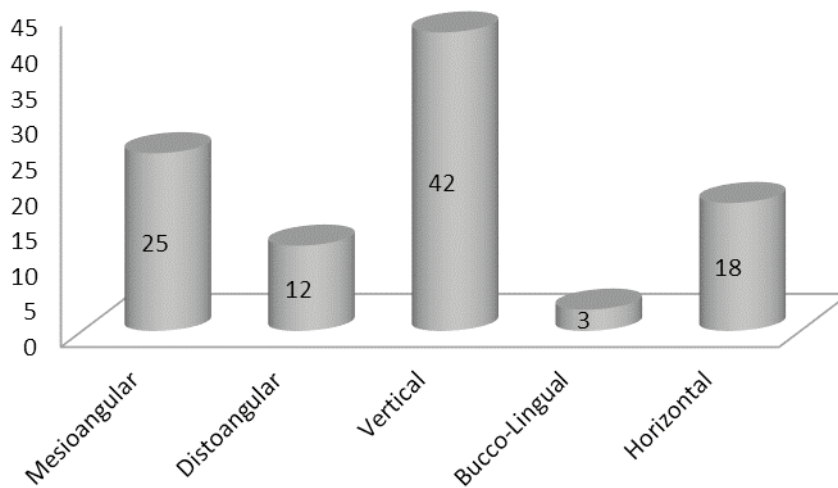


Figure 1: Distribution according to localizations M3

M3: third molar

The SC values of the responses of the patients to the OHIP-14 questionnaire were shown in Table 1.

When the answers to the OHIP-14 questionnaire were evaluated in terms of gender and SC, there was no statistically significant difference between male and female. ( $p > 0.05$ ) (Table 1)

Table 1: OHIP-14 Simple Count Values and Binary Comparison according to gender						
Gender	N	Minimum	Maximum	Mean	SD.	p
Female	64	0	44	11.83	9.8	0.8
Male	36	0	36	11.31	9.8	
<b>Total</b>	<b>100</b>	<b>0</b>	<b>44</b>	<b>11.64</b>	<b>9.8</b>	

N: Number of participants  
SD: Standard deviation  
OHIP: Oral Health Impact Profile

When the answers given to the questions in the OHIP-14 questionnaire were evaluated as a total; most of the patients were found to be uncomfortable with the 6th question which was about tension. It was seen that participants were uncomfortable with 9, 4, 5, 8, 7, 3, 12, 1, 11, 2, 13, 14 and

10 questions respectively. It was seen that participants were the least uncomfortable question was 10th which was about embarrassed. (Figure 2)

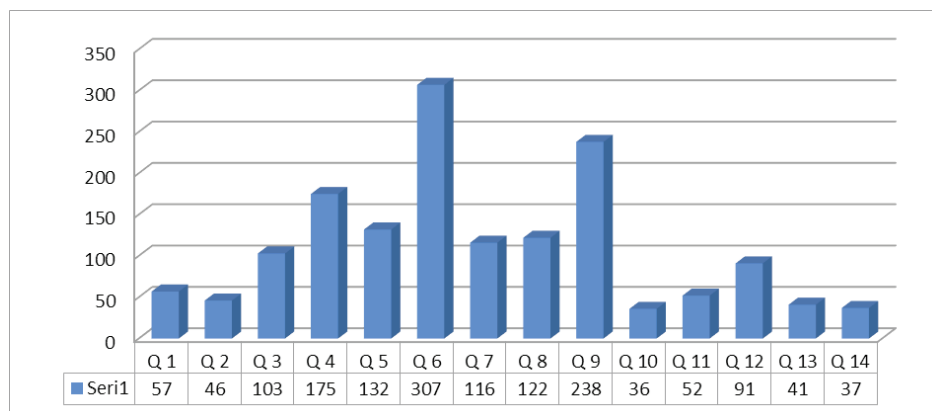


Figure 2: The total of the answers given in OHIP-14

OHIP: Oral Health Impact Profile

### Discussion

Patients encounter some problems after surgical extraction of M3. Studies have reported that chewing, swallowing ability and mouth opening are adversely affected in patients after M3 surgery. These results are explained by the fact that the buccal mucoperiosteal flap elevation during surgical extraction of M3 is accompanied with inflammatory mediators filling the posterior region resulting in edema in the pterygomasseteretic area and decreased mouth opening.<sup>10,11</sup>

There are many factors that affect problems after M3 surgery. Age can be a risk factor for postoperative complications after surgical interventions. A significant relationship was found between age and postoperative complications observed. Many studies suggested that increased age appears to be associated with a higher complication rate for M3 extractions.<sup>12</sup> M3's are most common in the 2nd and 3rd decades. Generally, the indications for grafting are set at these ages.<sup>13,14</sup> When the patients in our study were evaluated for their age, the mean age of the patients ranged from 15 to 47 (mean 26.15±7.4). It was seen that the age average of our studies was in accordance with the literature.

In this study, changes in the OHRQoL of patients after M3 surgery were assessed using the OHIP-14 scale. The results of the recent study revealed that there were significant changes in the oral health-related quality of life of patients after M3 surgery. Similarly, Mc Grath et al. and Van Wijk A. et al. showed that there was a significant decrease in OHRQoL of the patient for 3 days following the M3 extraction in their studies and that the decrease in OHRQoL was supported by the higher OHIP-14 scale scores.<sup>7,15</sup> There have been many studies using the OHIP-14 scale system was seen in Table 2.

Two types of methods are used when OHIP scores are calculated. The first one is OHIP-14 Additive (A) and the second is OHIP-14 Simple Count (SC). In OHIP-14 A, the number of responses given by a participant as 2 "Occasionally" or 3 "Fairly often" within 14 items. OHIP-14 SC is the total score of the each item.<sup>27</sup> In our study, the decrease in the OHRQoL of the patient was assessed postoperatively using the OHIP-14 SC method. Patients were most likely to have difficulty

for tension after M3 surgery (question 6). The least discomfort of the patients was found to be loss of embarrassed (question 10).

**Table 2: Studies using OHIP-14 scale system**

Authors	Evaluation method	Systemic Disease / Prosthesis / Disease
Mc Grath et al. <sup>16</sup> (2003)	OHIP 14 OHRQoL	M3 extraction
Ozcelik et al. <sup>17</sup> (2007)	OHIP 14 General Oral Health Assessment Index	Surgical Non-surgical Non-surgical + Enamel Matrix Protein
Mulligan et al. <sup>18</sup> (2008)	OHIP 14	Plaque Index (PI) Decayed Missing Failed Tooth (DMFT) HIV- infected
Lopez et al. <sup>19</sup> (2007)	OHIP 14	Necrotizing Ulcerative Gingivitis Clinical Attachment Level (CAL)
Baskirt et al. <sup>20</sup> (2009)	OHIP 14 OHRQoL	Blood levels DMFT
Jowett et al. <sup>21</sup> (2009)	OHIP 14	Fecal microbiota transplant before and after
Archarya et al. <sup>22</sup> (2009)	OHIP 14	Gingival Index (GI) Bleeding on Probing (BOP)
Araujo et al. <sup>23</sup> (2010)	OHIP 14	Periodontal Pocket Depth, BOP
Bernabe et al. <sup>24</sup> (2010)	OHIP 14	CAL, DMFT
Daly et al. <sup>25</sup> (2010)	OHIP 14	DMFT, homeless
Smith et al. <sup>26</sup> (2010)	OHIP 14 General Health Questionnaire	Age, implant application

M3: Impacted Third Molar, OHRQoL: Oral Health Related Quality of Life, OHIP: Oral Health Impact Profile, DMFT: Decayed Missing Failed Tooth, PI: Plaque Index, CAL: Clinical Attachment Level, GI: Gingival Index,

In a study evaluating the relationship between patient anxiety and postoperative pain, when pain was defined according to gender, male were found to describe pain more severely than female.<sup>28</sup> When evaluate the SC scores according to gender in this study; there was no statistically significant difference between females and males. ( $p>0.05$ )

### Conclusion

After surgical removal of impacted mandibular third molar tooth, the mean OHIP-14 Simple Count values of the patients were found  $11.64 \pm 9.8$ . Further studies involving larger patient population assessing the quality of life of patients after M3 surgery are needed.

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