Oral Health-Related Quality of Life Changes Following Third Molar Surgery in a Jordanian Population: Effect of Demographic and Clinical Factors on the Immediate Postoperative Period

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Abstract

Objective: This study aimed to evaluate oral health-related quality of life (OHRQOL) changes following third molar surgery, and investigate demographic and clinical variables’ effect on (OHRQOL) in the first postoperative week.

Methods: 45 subjects had surgical removal of lower third molar/s by one surgeon at Jordan University hospital from March 2011 to November 2011, following a standardized protocol. Patients’ demographics and clinical data were recorded. (OHRQOL) was evaluated before surgery using the Oral Health Impact Profile (OHIP)-14. On postoperative days (PD) 1, 3, 5 and 7, patients completed the (OHIP)-14 & the condition-specific (HRQOL) instrument.

Results: A significant deterioration in OHRQOL was seen on (PD)1 (P=0.000), and (PD)3 (P=0.000), except for psychological discomfort and disability domains. On (PD)5, no difference was found, however, females had significantly lower OHRQOL levels than males on (OHIP)-14 (P=0.008) and the domains: physical (P=0.048), psychological (P=0.016) and social disability (P=0.018).

Conclusions: Third molar surgery was associated with deterioration in patients’ OHRQOL on the first three postoperative days. Females had a slower recovery, with no effect of other factors on patients’ recovery pattern.

Keywords: Oral health, Quality of life changes, Demographic and clinical factors.

Introduction

Health-related quality of life (OHRQOL) assessment is regarded as an essential component for assessing outcomes following removal of impacted third molar teeth.1 It allows the assessment of patients’ perception

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Regarding the risks of morbidity and complications of surgical removal, as well as influences on day-to-day living and quality of life.²

Several studies investigated the impact of third molar removal on patients’ OHRQOL, employing a number of measures, which have been constructed and aimed to evaluate the physical, psychological, and social effects of oral health on patients’ quality of life. The 49-item Oral Health Impact Profile (OHIP-49), and its short-form derivative, the OHIP-14 developed by Slade and Spencer³,⁴ have been used to measure the impact of oral health conditions on quality of life. Other condition-specific instruments were also employed to measure OHRQOL after third molar surgery, such as the 16-item UK Oral Health Related Quality of Life instrument⁵ and the Health-related quality of life (HRQOL) instrument developed by Shugars et al.⁶ Other investigators also constructed custom questionnaires to measure the subjective OHRQOL levels following third molar surgery, addressing a number of health care outcome measures including levels of oral function, physical discomfort, social interaction and others.⁷,⁸

Several methods of controlling the immediate inflammatory response associated with the third molar surgery were proposed in the literature, including different surgical closure techniques,⁹ use of medications such as analgesics,¹⁰ corticosteroids¹¹ and antibiotics¹², and other physical therapeutic methods such as laser application¹³ and piezosurgery¹⁴, all attempting to reduce the adverse impact of third molar surgery on patients’ OHRQOL, that was found significant in the immediate postoperative period¹⁵,¹⁶,¹⁷ in relation to oral functions, perception of pain,¹⁸ and the potential effect of postoperative complications on OHRQOL.¹⁷

Thus, this study was designed to evaluate Jordanian patients’ perception of their recovery following third molar surgical removal, in terms of OHRQOL changes using an Arabic version of the OHIP-14 and the condition-specific HRQOL instruments, and to investigate the effect of age, gender, and various clinical variables including number of molars removed, pre and postoperative complications, and difficulty of surgery on OHRQOL scores in the first week following surgery.

Methods

Patients included in this study were all Jordanian patients who were prospectively treated in the Oral and Maxillofacial Surgery department of the Jordan University Hospital, Amman, Jordan between March 2011 to November 2011. All subjects had previous indication of third molar removal, were free of pericoronitis and infection at time of surgery, and were all requiring surgical removal of one or more third molars. The inclusion criteria included partial bony impacted mandibular third molars with Class II or III and position B or C, according to the Pell and Gregory classification on a panoramic radiograph. Subjects categorized as P1 (normal healthy patient) or P2 (patient with mild systemic disease) according to the American Society of Anesthesiologists.¹⁹

Subjects were asked to participate in the study and provided a written consent before the investigation. A member of the research team explained details of the study. This study was approved by the faculty of academic research at the University of Jordan(no. 61/2009).
Questionnaires and data collection

At the first appointment all patients received standardized orientation on the surgical intervention and its anticipated post-operative course. Patient’s baseline data, including demographics (age, sex, smoking status and education level) were recorded. Patients completed a questionnaire containing the Arabic version of OHIP-14 instrument, a short-form derivative of the (OHIP-49) developed by Slade and Spencer, aimed to evaluate the physical, psychological and social effects of oral health on patients quality of life. It consists of 14 items representing the seven dimensions of functional limitations, physical pain, psychological discomfort, physical disability, psychological disability, social disability and handicap, with the responses “hardly ever”, “occasionally”, “fairly often” or “very often”.

One week after, in their second appointment, a standardized surgical procedure was performed in all patients. Local anesthesia was administered using a solution of Lidocaine hydrochloride 2% and epinephrine 1:100,000. Surgical access was achieved through a buccal triangular flap. Bone removal around the tooth was then performed, sterile low-speed hand-pieces and sterile distilled water were used for ostectomy and crown sectioning as necessary. After extraction, the socket was inspected, copious irrigation of the socket followed extraction, and the flap was sutured back by 2 interrupted stitches using a 4-0 silk suture. An antibiotic and a non-steroidal anti-inflammatory drug were prescribed (Co-amoxiclav 625 mg and Ibuprofen 400 mg—both 3 times daily (p.o.) for 4 or 7 days), with 0.12% Chlorhexidine digluconate rinses 3 times a day for 7 days. The duration of the surgical procedure in minutes (from the incision to the last suture) was recorded, one senior surgeon (Author) performed surgery for all subjects.

After each surgical procedure, the surgeon completed a questionnaire ranking the difficulty of surgery on a 7-point Likert-type scale for each third molar, ranging from “least difficult” to “most difficult”. All patients received a diary consisting of the OHIP-14 and the condition-specific HRQOL instrument, which was developed by Shugars et al and modified by Conrad et al to assess patients perception of recovery from third molar surgery in five domains: pain, life style, oral function and other related symptoms, with a 5-point Likert-type scale and the anchors of “no trouble” (1) and “lots of trouble” (5), except for pain levels which were assessed with a 7-point Likert-type scale anchored by the verbal descriptors “no pain” and “worst pain imaginable” (7). Gracely scales were also used to report the sensory perception of the affective impact of pain post-operatively.

In addition, patients were asked to mark their level of activity on a 7-point Likert-type scale anchored by the verbal descriptors “Normal activity” and “Totally inactive” and report whether they were still taking pain medications.

The diary consisted of questionnaires labeled with postoperative days 1, 3, 5 and 7. Patients were instructed to complete each questionnaire according to the respective postoperative day, and those who failed to return the questionnaire were excluded from the study. Sutures were removed one week after surgery, and patients were asked to report post-operative complications.

Data analysis

All data are expressed as mean ± standard deviation and/ or frequency (%). OHRQOL scores measured with OHIP-14 total and its
domains were compared using the paired t-test (after surgery at (PD)1, 3, 5 and 7 vis-a`-vis the pre-surgery). ANCOVA was used to compare mean changes in OHIP-14 scores considering changes in scores as the dependent variables, demographic (age, gender, smoking status) and clinical variables (number of lower third molars removed, preoperative complications, surgeon’s estimate of difficulty, surgery duration and postoperative complications) as the factors, and baseline (pre-surgery) scores as a covariate. The significance level was set at 0.05.

HRQOL instrument items and Gracely scores after surgery were analyzed at (PD)1, 3, 5 and 7 as recommended by Shugars et al, by considering patients’ responses on Likert-Type Scales: “quite a bit” or “lots” (4-5/5) for lifestyle, oral function, or other symptoms and (5-7/7) for pain, and on Gracely scales affective words “very distressing,” “intolerable,” “very intolerable,” and sensory words “intense,” “very intense,” “extremely intense” to be detrimental in assessing OHRQOL.

The statistical analysis was performed using the statistical software SPSS version 15 (SPSS, Chicago, IL)

Results:
A total of 52 subjects were included in the study. Seven subjects failed to return the questionnaires. Thus, the final data available were for 45 patients with a mean age of 23.4 years (SD=5.7). The sample comprised 32 (71.1%) females and 13 (28.9%) males, who completed or undergoing their tertiary education. All subjects had previous indication for removal of lower third molars, and all had bone removal from one or both lower molars. 24 subjects (53.3%) had surgical removal of one lower third molar and 21 (46.7%) had surgical removal of two lower third molars. Of 45 subjects, 11 expressed postoperative complications (7 with prolonged bleeding, 2 with disturbed wound healing and 2 with medications-related complications), while 13 subjects had preoperative complaints related to their third molars. (Pain, infection or caries). Table (1).

In the immediate post-operative period following third molar surgery, there was a significant decrease in the OHRQOL among the subjects as compared to the preoperative scores (Table 2). A significant increase in the mean OHIP-14 scores and its domains was seen on postoperative day (PD)1 compared to the preoperative scores (P=0.000), and in (PD)3 scores (p=0.000) except for the psychological discomfort and psychological disability domains that had comparable levels to the preoperative scores, while, no significant difference in the mean OHIP-14 was found in (PD)5 compared to preoperative scores except for the functional limitation (p=0.007) and physical disability (p=0.000) domains that showed a delayed return to preoperative levels only at (PD)7. In (PD)7, a significant decrease was found in OHIP-14 scores (P=0.001) compared to preoperative scores.

In order to examine the impact of demographic & surgical risk factors on the immediate recovery after third molar surgery, subjects were divided into groups according to: their age (19-21, and > 21 years old), number of lower third molars removed (one versus two lower molars surgical removal), preoperative complaints (presence or absence of preoperative complaints), degree of surgical
difficulty as assessed by the surgeon (less difficult: 1-4, and more difficult: 5-7), the length of the surgical procedure (15 minutes or less, and > 15 minutes) and postoperative complications (presence or absence of postoperative complications).

Table 1. Characteristics of the study sample

<table>
<thead>
<tr>
<th></th>
<th>n=45 (%)</th>
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</thead>
<tbody>
<tr>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>13 (28.9%)</td>
</tr>
<tr>
<td>Female</td>
<td>32 (71.1%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Age 19-21 years (mean)(SD)</td>
<td>20.29 (0.92)</td>
</tr>
<tr>
<td>Age &gt;21 years (mean)(SD)</td>
<td>25.21 (6.56)</td>
</tr>
<tr>
<td>Use tobacco</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (13.0%)</td>
</tr>
<tr>
<td>No</td>
<td>39 (87%)</td>
</tr>
<tr>
<td>Removal of lower third molars</td>
<td></td>
</tr>
<tr>
<td>One molar</td>
<td>24 (53.3%)</td>
</tr>
<tr>
<td>Two molars</td>
<td>21 (46.7%)</td>
</tr>
<tr>
<td>Duration of the surgical procedure</td>
<td></td>
</tr>
<tr>
<td>15 mins or less</td>
<td>25 (55.6%)</td>
</tr>
<tr>
<td>&gt; 15 mins</td>
<td>20 (44.4%)</td>
</tr>
<tr>
<td>Surgeons’ estimate of difficulty (1-7)</td>
<td></td>
</tr>
<tr>
<td>Less difficult (1-4)</td>
<td>29 (64.4%)</td>
</tr>
<tr>
<td>More difficult (5-7)</td>
<td>16 (35.6%)</td>
</tr>
<tr>
<td>Pre-operative complaints</td>
<td></td>
</tr>
<tr>
<td>Pain, Infection, caries</td>
<td>13 (28.9%)</td>
</tr>
<tr>
<td>No complaints</td>
<td>32 (71.1%)</td>
</tr>
<tr>
<td>Post-operative complications</td>
<td></td>
</tr>
<tr>
<td>Bleeding, disturbed wound healing, complications related to medications</td>
<td>11 (24.4%)</td>
</tr>
<tr>
<td>No complications</td>
<td>34 (75.6%)</td>
</tr>
</tbody>
</table>

Table 2. OHIP-14 scores (mean +/- S.D) from pre-surgery to 7 days post-surgery and paired t-test between pre-surgery scores and scores at day 1,3,5 and 7 post-surgery

<table>
<thead>
<tr>
<th></th>
<th>Presurgery</th>
<th>Day1</th>
<th>Day3</th>
<th>Day5</th>
<th>Day7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (S.D)</td>
<td>Mean (S.D)</td>
<td>Mean (S.D)</td>
<td>Mean (S.D)</td>
<td>Mean (S.D)</td>
</tr>
<tr>
<td>OHIP-14 total</td>
<td>25.56 (10.48)</td>
<td>45.95 (11.08)</td>
<td>.000</td>
<td>37.58 (12.05)</td>
<td>.000</td>
</tr>
<tr>
<td>Functional Limitation</td>
<td>3.00 (1.40)</td>
<td>6.05 (2.57)</td>
<td>.000</td>
<td>4.80 (1.90)</td>
<td>.000</td>
</tr>
<tr>
<td>Physical Pain</td>
<td>6.02 (2.05)</td>
<td>8.36 (1.66)</td>
<td>.000</td>
<td>7.27 (2.04)</td>
<td>.003</td>
</tr>
<tr>
<td>Psychological discomfort</td>
<td>4.61 (2.40)</td>
<td>5.67 (2.50)</td>
<td>.015</td>
<td>4.48 (2.47)</td>
<td>.809</td>
</tr>
<tr>
<td>Physical disability</td>
<td>3.66 (2.22)</td>
<td>7.86 (2.44)</td>
<td>.000</td>
<td>6.72 (2.56)</td>
<td>.000</td>
</tr>
<tr>
<td>Psychological disability</td>
<td>4.52 (1.75)</td>
<td>6.07 (2.07)</td>
<td>.000</td>
<td>5.02 (2.12)</td>
<td>.145</td>
</tr>
<tr>
<td>Social disability</td>
<td>3.91 (2.32)</td>
<td>5.84 (2.29)</td>
<td>.000</td>
<td>4.91 (2.53)</td>
<td>.012</td>
</tr>
<tr>
<td>handicap</td>
<td>3.57 (2.16)</td>
<td>5.69 (2.69)</td>
<td>.000</td>
<td>4.82 (2.55)</td>
<td>.012</td>
</tr>
</tbody>
</table>

Level of significance was set at P<0.05
Table 3. OHIP-14 scores (mean ± S.D) according to gender at pre-surgery and post-surgery scores on days 1, 3, 5 and 7. Data are adjusted for baseline scores (ANCOVA test - Level of significance was set at P<0.05)

<table>
<thead>
<tr>
<th></th>
<th>Pre-surgery</th>
<th>Day 1</th>
<th>Day 3</th>
<th>Day 5</th>
<th>Day 7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>M (S.D.)</td>
<td></td>
<td>M (S.D.)</td>
<td></td>
<td>M (S.D.)</td>
</tr>
<tr>
<td>OHIP-14 total</td>
<td>42.84 (13.70)</td>
<td>20.64 (9.41)</td>
<td>50.64 (14.48)</td>
<td>24.59 (9.18)</td>
<td>0.55 (0.46)</td>
</tr>
<tr>
<td>Functional Distraction</td>
<td>3.08 (1.33)</td>
<td>3.00 (1.46)</td>
<td>5.17 (2.09)</td>
<td>6.21 (4.43)</td>
<td>1.58 (2.08)</td>
</tr>
<tr>
<td>Physical Pain</td>
<td>6.58 (2.07)</td>
<td>5.83 (1.97)</td>
<td>8.08 (1.96)</td>
<td>8.47 (1.53)</td>
<td>1.31 (2.08)</td>
</tr>
<tr>
<td>Psychological discomfort</td>
<td>4.56 (1.98)</td>
<td>4.71 (2.23)</td>
<td>6.00 (1.98)</td>
<td>7.26 (2.25)</td>
<td>0.18 (0.57)</td>
</tr>
<tr>
<td>Personal disability</td>
<td>4.00 (2.58)</td>
<td>3.58 (2.11)</td>
<td>7.77 (2.98)</td>
<td>7.65 (2.23)</td>
<td>0.42 (0.93)</td>
</tr>
</tbody>
</table>

Table 4. Health related quality of life and Gracely scale scores post-surgery through day 7: percentage of Patients with Responses on Likert-Type Scales: “Quite A Bit” or “Lots” (4-5/5) for Lifestyle, Oral Function, or Other Symptoms and (5-7/7) for Pain, and On Gracely Scales Affective Words “Very Distressing,” “Intolerable,” “Very Intolerable,” and Sensory Words “Intense,” “Very Intense,” “Extremely Intense” (n = 45)

<table>
<thead>
<tr>
<th></th>
<th>Postsurgery day1</th>
<th>Postsurgery day3</th>
<th>Postsurgery day5</th>
<th>Postsurgery day7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifestyle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleeping</td>
<td>37%</td>
<td>13%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Daily activity</td>
<td>29%</td>
<td>20%</td>
<td>5%</td>
<td>0%</td>
</tr>
<tr>
<td>Social life</td>
<td>47%</td>
<td>24%</td>
<td>9%</td>
<td>0%</td>
</tr>
<tr>
<td>Recreation</td>
<td>47%</td>
<td>29%</td>
<td>16%</td>
<td>2%</td>
</tr>
<tr>
<td>Oral function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Talking</td>
<td>20%</td>
<td>4%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Mouth opening</td>
<td>84%</td>
<td>71%</td>
<td>21%</td>
<td>17%</td>
</tr>
<tr>
<td>Regular diet</td>
<td>78%</td>
<td>56%</td>
<td>32%</td>
<td>12%</td>
</tr>
<tr>
<td>Chewing</td>
<td>87%</td>
<td>69%</td>
<td>41%</td>
<td>17%</td>
</tr>
<tr>
<td>Other symptoms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>11%</td>
<td>4%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Swelling</td>
<td>60%</td>
<td>47%</td>
<td>11%</td>
<td>0%</td>
</tr>
<tr>
<td>Pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worst pain past 24 hours</td>
<td>62%</td>
<td>40%</td>
<td>16%</td>
<td>10%</td>
</tr>
<tr>
<td>Average pain past 24 hours</td>
<td>47%</td>
<td>18%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Taking pain meds</td>
<td>98%</td>
<td>91%</td>
<td>73%</td>
<td>49%</td>
</tr>
<tr>
<td>Gracely Scales Affective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“very distressing,” “intolerable,” or “very intolerable”</td>
<td>27%</td>
<td>12%</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>Gracely Scales Sensory “intense,” “very intense,” or “extremely intense”</td>
<td>21%</td>
<td>9%</td>
<td>7%</td>
<td>0%</td>
</tr>
</tbody>
</table>

After adjusting for baseline values, the changes in OHRQOL mean scores still
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differed to a statistically significant degree between the preoperative and postoperative levels in the immediate postoperative period, with no significant effect of the surgical risk factors (surgical difficulty, procedure length, one-side versus 2-sided extraction), preoperative complications, smoking, age and postoperative complications on postoperative mean OHRQOL scores, whereas female subjects were found to have significantly higher mean scores than male subjects in (PD)5 in the total OHIP-14 (P=0.008) and the domains: physical disability (P=0.048), psychological disability (P=0.016) and social disability (P=0.018), indicating a general tendency of slower recovery of female subjects in terms of their OHRQOL following third molar surgery. (Table 3).

Condition-specific HRQOL measures scores and Gracely scale scores for the postoperative period are reported in table (4). More than three quarters of patients indicated that were impaired “quite a bit” or “lots” in (PD)1, reaching levels below (17%) by (PD)7, while scores for the domains of life style were highest on (PD)1 (>29%) reaching levels below than 16% on (PD)5. Almost three quarters of patients reported a return to their normal activity levels by (PD)5 (Figure 1).

Pain items (worst or average pain in the past 24 hours) were highest on PD 1 (>47%), decreasing to less than 16% on (PD)5(Figure 2). Gracely scale scores were highest on (PD)1 for affective (27%) and sensory intensity (21%) decreasing to (12%) and (7%) respectively on (PD)5. Almost half the patients reported that they were still taking their analgesics on (PD)7 (Figure 3).

Discussion:

Third molar removal is a commonly performed procedure in oral surgery that can lead to difficulties experienced by patients in the postoperative period. In this study, we examined the effect of surgery on patients’ perceived OHRQOL in the first postoperative week, and investigated the possible impact of demographic and clinical factors on patients’ course of recovery following surgery.

Results from our study indicated that patients had a significant decrease in their OHRQOL levels in the three postoperative days after surgery, which was present on the OHIP-14 total, with the functional limitation and physical disability remaining at lower levels than their preoperative values till (PD)7. A number of studies have shown similar effect on the OHRQOL of patients following third molar surgery. Sato et al18 found that the mouth opening and chewing were the main limitations for patients during the first three days with the highest perception of pain during the first postoperative day, and McGrath et al23 reported a significant deterioration in OHRQOL following third molar surgery during the first five days, using the OHIP-14 and OHQoLUK, with a mean difference in OHIP-14 total score of 20.01 on POD 1 to 3.67 on (PD)5, compared to a mean difference of 16.39 on (PD)1 and 0.82 on (PD)5 in our study. The lower mean differences found in our study could be due to the higher preoperative mean scores of OHIP-14 in our sample, which might be related to our patients’ report of preoperative mean scores of OHIP-14 in our sample, which might be related to our patients’ report of preoperative pain and other complaints (28.9% of the sample), giving a mean preoperative OHIP-14 total score of 29.56, compared to 9.7 in the above-mentioned study, and 23.62 reported preoperatively in another study using the Dutch version of OHIP-14.15 Patients report of preoperative pain might also explain the early return of the physical pain sub-score to levels comparable to its preoperative value on (PD)5, although
48.8% of subjects were still reporting some degree of pain and were on pain medications on (PD)7, which is consistent with Shugars et al\textsuperscript{16} finding who reported that 46% of their patients were still using analgesics on the seventh postoperative day.

For the OHIP-14 sub-scores, our results indicate that functional limitation and physical disability were the last to return to the preoperative levels, and 17% of patients in our sample reported significant impairment of oral functions in (PD)7 as assessed by the HRQOL instrument. These findings are in accordance with results reported by several investigators regarding the significant limitation in oral functions such as chewing and mouth opening/trismus in the immediate postoperative period.\textsuperscript{6,7,18}

In this study, our second objective was to investigate for the possible effect of variables such as age, gender, difficulty and duration of surgery, number of third molars removed and the presence of preoperative and postoperative complications on the pattern of patients’ recovery in terms of OHRQOL levels following surgery. Female patients were found to experience slower recovery following surgery, as they were found to have OHRQOL levels measured by the OHIP-14 total to be close to male patients in (PD)1 and (PD)3, while significantly lower levels in (PD)5. The effect of gender is supported by the findings of Phillips et al\textsuperscript{24} who reported that male subjects of their 958 patient sample had a quicker...

![Figure 1. Activity levels reported by patients in the first, third, fifth and seventh postoperative days](image-url)
recovery than female subjects for all outcomes, and in a previous study, Philips et al\textsuperscript{22} also reported prolonged female recovery for oral function and pain after controlling for other variables. Female patients were also found to take more pain medications through day 14 after surgery.\textsuperscript{25} This finding is consistent with the observation of several researchers that women experience pain differently to men,\textsuperscript{26, 27, 28} with some studies indicating that the menstrual cycle phases could have a potential effect on women perception of pain.\textsuperscript{29, 30}

On the other hand, age did not have a significant effect on OHRQOL levels after surgery in our study. In the literature, available data about the effect of age on recovery following third molar surgery is contradictory. Haug et al\textsuperscript{31} reported a minimal impact of third molar surgery on the quality of life in patients 25 years of age or older, with a low incidence of postoperative complications, while others reported that increased age was associated with longer recovery periods for patients,\textsuperscript{22, 24, 32} and is correlated with higher rates of complications after surgical removal of third molars\textsuperscript{33}.

Other factors such as the difficulty of surgery, number of lower third molars removed and clinical complications did not affect our patients’ OHRQOL in the short term. In the literature, the effect of various clinical variables is controversial. Wijk et al\textsuperscript{17}
reported an association between complications and lower OHRQOL of patients in the first postoperative week although the number of complications in their study was low, therefore authors pointed to this effect with caution. Yuasa and Sugiura\cite{34} correlated between surgical difficulty and postoperative pain, while Sato et al\cite{18} found that surgery duration and difficulties during surgery were not related to postoperative pain. On the other hand, Bienstock et al\cite{32} correlated age, female gender and several clinical factors including full-bony impaction, number of lower third molars removed and complications with prolonged recovery, however, the use of different study designs, and various quality of life instruments make comparisons across studies more difficult.

Despite the small sample size, our study design controlling for potential surgical risk factors, with surgery performed by one senior surgeon, following a standardized clinical protocol, aids to have a better understanding of patients short-term recovery following third molar removal that can lead to their active participation in the decision-making process preoperatively. Such patients’ involvement can enhance chances of their satisfaction in spite of the surgical morbidity associated with this commonly performed surgical procedure. Future longitudinal studies with a larger sample size are needed to further analyze patients’ experience and factors that can affect the surgical morbidity after removal of lower third molars.

Figure 3. Patients use of pain medications in the first, third, fifth and seventh postoperative days
Conclusion:
There was a significant deterioration in patients’ OHRQOL levels in the three postoperative days following third molar surgery, with a slower recovery experienced by female patients, while no significant effect of other demographic and surgical factors was found on the pattern of patients’ recovery after surgery. Such information provide a better understanding of patients short-term recovery following third molar removal, that can lead to their active participation in the decision-making process preoperatively.

References
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التأثيرات في نوعية الحياة المتعلقة بالصحة الفموية بعد القولع الجراحي لأضرار العقل

الملخص

الهدف: تهدف الدراسة إلى تقييم التغيرات في نوعية الحياة المتعلقة بالصحة الفموية بعد القولع الجراحي لأضرار العقل وكذلك فحص تأثير العوامل السيربية والديموغرافية عليها خلال الأسبوع الأول بعد الجراحة.

الطريقة: تضمنت الدراسة 5 مريضاً حضروا القولع الجراحي لأضرار العقل السفلي (حولية جراح واحدة) في مستشفى الجامعة الأردنية - عمان (آذار 2011 لغاية تشرين الثاني 2011)، بإتباع بروتوكول موحد. تم جمع المعلومات المتعلقة بجنس المرضى وأعمارهم، عدد الأضراس السفلية التي تم قلعها، تقدير صعوبات القولع الجراحي، المدة الزمنية للجراحة وكذلك مستويات الجراحة. قام المرضى بتعبئة الاستبانة المتعلقة بنوعية الحياة المتعلقة بالصحة الفموية (OHIP-14) قبل الجراحة، كذلك قام المرضى بتعبئة (OHIP-14) في اليوم الأول والثالث والخامس والسابع بعد الجراحة، وكذلك الاستبانة المتعلقة بنوعية الحياة بعد قلع أضراس العقل وعندما تكون أضراس أخرى متصلة بالتغيرات في الأغلب والصحة في الأغلب، ومستوى النشاط وتعاطي الأدوية الممكنة.

الاستنتاجات: تراجعت مستويات نوعية الحياة المتعلقة بالصحة الفموية في اليوم الأول بعد الجراحة (P=0.000) مقترنة بمستويات قل الجراحة، وكذلك في اليوم الثالث بعد الجراحة (P=0.000) باستثناء جوانب الإزعاج النفسي والمحفز النفسي، بينما لم يكن هناك فرق في اليوم الخامس مقارنة بالمستويات قبل الجراحة، باستثناء العجز الجسدي والتحديات الوظيفية والتي عادت بمستوياتها قبل الجراحة في اليوم السابع. كذلك كانت مستويات نوعية الحياة لدى المرضى الإناث في اليوم الخامس أسوأ من المرضى الذكور في المعدل (P=0.008) وكذلك في جوانب العجز الجسدي (P=0.048) والعجز النفسي (P=0.016) والعجز الاجتماعي (P=0.018).

الكلمات الدالة: الصحة الفموية، نوعية الحياة، العوامل السيربية، والديموغرافية.