

The Impact of Pericoronitis on Health Related Quality of Life

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ABSTRACT

Matthew David McNutt: The Impact of Pericoronitis on Health Related Quality of Life
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Subjects and Methods: Healthy subjects with pericoronitis were enrolled in an IRB approved study. Subject's were given a Health Related Quality of Life (HRQOL) instrument to assess the impact of pericoronitis in the previous week on: pain, lifestyle, and oral function. The impact of pericoronitis in the previous three months was recorded on Oral Health Impact Profile(OHIP-14). Because of sample size, analyses are limited to descriptive statistics.

Results: Forty percent reported worst pain as severe. Oral function was compromised "quite a bit / lots" for eating 30%, chewing 23%, mouth opening 10%. Mean OHIP severity score was 27 of 56.

Conclusion: When clinicians carefully consider options for pain management in patients undergoing palliative treatment for acute pericoronitis, the reported data may alter their recommendations. In summary, acute episodes of pericoronitis can be associated with adverse life outcomes similar to the impact of third molar removal on pain and oral function.

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CHAPTER I

Literature Review

Introductory Remarks

In contemporary clinical dental practice, patients continue to routinely seek treatment associated with symptomatic mandibular third molars. There is collegial agreement amongst professionals that third molars should be maintained provided that there is adequate surrounding attached gingiva, minimal or no periodontal pockets, absence of bleeding or purulence on probing, minimal plaque accumulation, absence of symptoms, and occlusion with opposing teeth.(1)

Clinicians who counsel patients with pericoronitis about treatment options are hampered by the lack of information on incidence, recurrence rate, and the probable impact of their symptomatic condition on quality of life. Currently there are no reported data that provide a comparison between the impact of acute pericoronitis symptoms and recovery following third molar removal. Patients diagnosed with acute pericoronitis have a substantial probability of symptomatic recurrence, despite conservative therapy.(2) If conservative treatment does not preclude further episodes of acute pericoronitis then the option of third molar removal could be a reasonable alternative. Currently the literature lacks the necessary data to compare such an alternative. An investigation thereof should include, but is not limited to, evaluating pain, dysfunction, lifestyle impact, cost, complications and future health. The availability of such data may provide new insight into the clinical management of patients and is worthy of investigation. The aim of the

manuscript to follow is to assess the impact of acute pericoronitis on health-related quality of life outcomes (pain, oral function and lifestyle) and to describe them within the context of patient care management.

Definition of Pericoronitis

Pericoronitis is defined as inflammation of the oral soft tissues surrounding the crown of an erupted or partially erupted tooth. Pericoronitis is a mixture of Latin and Greek and its etymologic derivation is as follows: “Peri” is a Latin prefix meaning “around or about”. “Coron” is a Greek word meaning “crown”. “Itis” is Greek suffix meaning “inflammation”. Pericoronitis of mandibular permanent third molars is typical and is rarely diagnosed elsewhere (hereafter referred to as pericoronitis for brevity).(3-5) Pericoronitis manifests itself in both a chronic and acute state, the former often being characterized with periods of quiescence, which may or may not include episodic acute attacks.(6) Pericoronitis may occur bilaterally, although such a presentation is uncommon.(6)

Epidemiology

Data on the prevalence of pericoronitis is limited. Population studies of military recruits in the US and Scandinavia indicated a prevalence of acute pericoronitis in 20 year olds of 2% and 7%, respectively.(7, 8) A subsequent report found during a 5-year study period of 14,500 military conscripts that 1.2 cases of acute pericoronitis per 1000 men were diagnosed monthly.(9) Based on a survey of third molar problems presenting to general dentists in Norway, it was reported that 9% of the young adult population sought treatment for pericoronitis over a one year time frame.(10)

In a study carried out at the Finnish Student Health Services, Helsinki Finland, it was reported that 51 of 100 consecutive patients who complained of third molar problems were diagnosed with pericoronitis.(11) Fifty-one percent of patients diagnosed with pericoronitis reported having a previous episode in the same tooth. Overall, 15% reported experiencing at least one previous episode, 10% reported two episodes and 26% reported experiencing more than two episodes.(11)

According to one report, the age range of peak occurrence is 21 to 25 years and according to a similar report diagnosis of pericoronitis is generally confined to patients age 17 to 26.(6, 4) However, the diagnosis is not confined to younger age groups and pericoronitis was the most frequently cited reason (41%) for third molar removal in a cohort of patients older than 35 years of age.(12) It is worth noting that the upper end of the age range often associated with eruption of third molar may be older than conventional thinking. Third molars found to be impacted at age 20 may undergo complete eruption in subsequent early adulthood.(13, 11)

Clinical Diagnosis

Pericoronitis is clinically classified into three distinct diagnostic categories: 1) acute pericoronitis, 2) sub-acute pericoronitis, and 3) chronic pericoronitis. These classifications are empirically derived based on how individual cases arbitrarily fall into the three distinct clinical categories and his description of differential diagnosis follows.(6)

Symptoms of acute pericoronitis are predominantly differentiated first and foremost by a report of limited range of motion (limited jaw opening) as the chief complaint and secondarily by pain associated with the local inflammatory process

(generally described as throbbing and either intermittent or continuous), radiation of painful symptoms into adjacent muscles (via their localized muscular attachments), discomfort during swallowing and extra-oral swelling. Pain associated with an acute attack is often sporadically sharp in nature and exacerbated during mastication, which may interfere with sleep.(6)

The general *signs* of *acute pericoronitis* include lymphadenitis (submandibular and portions of the deep cervical lymph nodes), facial/cervical edema, and erythema, edema and tenderness (upon palpation) of the operculum surrounding the third molar, malaise, bad taste/breath, purulent exudates (expressed upon palpation) and occasionally loss of appetite. When left untreated, fever is a common finding.(6, 1, 7)

Symptoms of *Sub-acute pericoronitis* are predominantly differentiated first and foremost by a report of pain associated with the local inflammatory process without limited jaw opening. The presence or absence of limited range of motion distinguishes acute from sub-acute attacks, respectively. Stiffness of the jaw and muscles of mastication are common findings. The pain is most often described as continuous, dull, and is occasionally sharp and/or throbbing. Unlike acute attacks, radiation of painful symptoms into adjacent muscles is rare.(6)

The general *signs* of *sub-acute pericoronitis* include those found in acute attacks with the following exceptions: sub-acute attacks generally lack systemic involvement (e.g. fever) and lymphadenitis is typically limited to the submandibular nodes.(6)

Rarely, severe acute attacks will result in fever above 101° F, cellulitis and severe uncontrolled discomfort. In such cases immediate treatment is recommended.(7) The

duration of an attack, both acute and sub-acute, is generally limited to a period of several days to two weeks.(2)

Symptoms of chronic pericoronitis include temporary dull aching low grad pain that becomes gradually apparent to the patient and typically lasts only one to two days. Chronic episodes may occur periodically and may be accompanied by an acute attack. Bad breath is likely to also be reported. There are few *signs of chronic pericoronitis*, but they include palpable non-tender submandibular lymph nodes and macerated buccal tissue consistent with cheek biting.(6) Chronic recurrence following an acute episode is likely to occur in 3 to 15 months (patients with impinging maxillary third molars tend to have less time between recurrent episodes than patients without).(6) The scope of the manuscript to follow is limited to acute and sub-acute diagnoses, without distinction thereof.

Risk Based on Tooth Position

Pericoronitis risk based on tooth position has been thoroughly investigated. Findings in the literature conclude that fully erupted vertical third molars are at highest risk. Pericoronitis in young patients is often associated (about 80% of acute diagnoses) with vertically positioned third molars that have erupted to the occlusal plane, in the absence of clinically detrimental alveolar bone loss or decrease in CAL.(1) These findings are corroborated by several other studies (7, 14-16)

Additional Differential Diagnostics: Microbiology & Clinical Findings

Pericoronitis pathology has been associated with the establishment of resident “Orange” complex bacteria in the periodontal pocket surrounding a mandibular third molar.(1, 17) The associated periodontal pocket is typically no greater than 5 mm in

depth.(1) Pocket depths equal to or greater than 5 mm and the presence of “Red” complex bacterial clusters (in addition to Orange), are typical findings of *periodontitis*.(1, 17) The microbiology and clinical findings associated with acute pericoronitis are apparently more similar to severe gingivitis than periodontitis.(1) In addition to the local flora and inflammatory response, pericoronitis may be associated with or elicit a *systemic* inflammatory response. This topic is being investigated in a current prospective longitudinal third molar clinical trial being conducted at the University of North Carolina at Chapel Hill (Department of Oral and Maxillofacial Surgery, School of Dentistry). More data is needed to better characterize the inflammatory condition including the composition of the associated biofilm, and the quality of the oral and systemic inflammatory response.

Treatment

Most symptomatic mandibular third molars diagnosed with pericoronitis can be treated successfully with local saline irrigation alone without antibiotics.(1) Third molar extraction may be offered concurrently with palliative treatment or following resolution of symptoms. Data from the aforementioned clinical trial suggest that with our present knowledge and understanding of pericoronitis as a chronic inflammatory condition, the only viable treatment to alter or eliminate the associated biofilm with its resident pathogens may be removal of third molars.

Health-Related Quality of Life

Assessments of Oral Health-Related Quality of Life (OHRQL) continue to gain momentum as more findings are published, addressing both global oral health and

condition specific oral health; the manuscript to follow contributes to the knowledge base of both.

In twenty-first century clinical practice oral health related quality of life assessments, once considered secondary outcomes, have proven to be useful primary outcome measures.(18) Current acceptance of OHRQL outcomes are historically rooted in a 1946 World Health Organization (WHO) initiative aimed at redefining ‘health’.(19, 20) The WHO now defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity. This new definition represented the beginning of a paradigm shift in clinical practice, now in its sixth decade, from a disease centered biomedical approach to a multidisciplinary approach.(19, 20) Also noteworthy is the Surgeon General’s Report on Oral Health released in 2000, which was the first of its kind. The report focuses on good oral health, quality of life, as well as access to care.(21)

Health-Related Quality of Life (HRQL) instruments have been designed to measure outcomes for various medical/dental conditions, ranging from overall health (global) outcomes to condition specific outcomes. One aim of the study in the manuscript to follow is to describe HRQL outcome measures among patients who were seeking consultation for acute pericoronitis symptoms associated with mandibular third molars. The outcomes are grouped by the impact of pericoronitis on pain, lifestyle and oral function.

Oral health related quality of life measures such as the Oral Health Impact Profile (OHIP-14) and the United Kingdom Oral Health related Quality of Life measure (OHQoL-UK) are designed to measure how different oral conditions affect quality of life

in an overall sense.(22-27). In contrast are condition specific instruments such as the Third Molar HRQOL designed to capture the subtleties associated with a specific condition (28-36). In a study of the effect of third molar removal on quality of life investigators combined the use of an overall oral health instrument (OHIP-14) and a condition specific instrument (Third Molar HRQOL) to capitalize on the strengths of each.(37) The use of complementary instruments to measure quality of life outcomes provides a broader understanding of the impact of a specific condition.(37) Few data exist to substantiate the impact of pericoronitis on Oral Health-Related Quality of Life (OHRQL). A similar approach adapted from that of Shugars et al was used in the manuscript to follow to assess the impact of pericoronitis on health-related quality of life outcomes (pain, oral function and lifestyle) and to describe them within the context of patient care management.(37)

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CHAPTER II

Manuscript

Impact of Pericoronitis on Health Related Quality of Life

Introduction

Pericoronitis is defined as inflammation of the oral soft tissues surrounding the crown of an erupted or partially erupted tooth. Pericoronitis most frequently occurs in mandibular third molars and is generally diagnosed in patients age 17-26.(1-3) The diagnosis is not restricted to young adults: pericoronitis was the most frequently cited reason for third molar removal, 41% in a cohort of patients over 35 years of age versus 25% for removal for periodontal problems. (4) The duration of an acute episode generally ranges from several days to two weeks.(5)

Data on the prevalence of pericoronitis is limited. Population studies of military recruits in the US and Scandinavia found a prevalence of acute pericoronitis in 20 year olds of 2% and 7%, respectively.(6, 7) A subsequent report found during a 5-year study period of 14,500 military conscripts that 1.2 cases of acute pericoronitis per 1000 men were diagnosed monthly.(8) Patients diagnosed with acute pericoronitis have a substantial probability of symptomatic recurrence, despite conservative therapy.(5) If conservative treatment does not prevent further episodes of acute pericoronitis then the option of third molar removal could be a reasonable alternative.

Clinicians who counsel patients with pericoronitis about treatment options are hampered by the lack of information on incidence, recurrence rate, and the probable impact of their symptomatic condition on quality of life. Currently there are no reported data that provide a comparison between the impact of acute pericoronitis symptoms and recovery following third molar removal. Oral health related quality of life measures such as the OHIP developed by Slade and Spencer (9) are designed to measure how different oral conditions affect quality of life in an overall sense (10-12) while condition specific instruments such as the Shugars et al. third molar HRQOL (13) are designed to capture the subtleties associated with a specific condition (14-21). The use of complementary instruments to measure quality of life outcomes provides a broader understanding of the impact of a specific condition, as demonstrated by Shugars et al (22) in a study of the effect of third molar removal on quality of life. A similar approach adapted from that of Shugars et al (22) was used to assess the impact of pericoronitis on health-related quality of life outcomes (pain, oral function and lifestyle) and to describe them within the context of patient care management.

Subjects and Methods

The data for these analyses on health-related quality of life (HRQOL) are from subjects diagnosed with mild symptoms of pericoronitis, recruited for an institutional review board-approved, prospective, exploratory clinical trial. Patients presenting consecutively during 2006 to an academic clinical center were asked to participate.

Subjects met the following inclusion criteria: American Society of Anesthesiologists risk assessment level I or II, between ages 18-35 years, with mild signs or symptoms of pericoronitis, including spontaneous pain, localized swelling and

purulence or drainage, affecting at least one lower third molar. Subjects with major signs or symptoms of pericoronitis, such as a temperature of $>101^{\circ}$ F, dysphagia, limited mouth opening, facial swelling/cellulitis or severe uncontrolled discomfort, generalized periodontal disease American Academy of Periodontology (AAP) IV, a medical condition contraindicating periodontal probing, an acute illness, a body mass index >29 , and those on systemic antibiotics, or currently using tobacco were excluded.

After consenting to participate in the study, clinical and demographic data, and data assessing oral health were collected from each subject at enrollment.

The impact of pericoronitis on overall oral health during the three months previous to enrollment was recorded on the Oral Health Impact Profile (OHIP-14).(9)(Figure 1.) Severity was computed as the sum of the responses to the 14 items. Responses were coded as follows: “never” (0), “hardly ever” (1), “occasionally” (2), “fairly often” (3) and “very often” (4). Responses were dichotomized such that at least one report of “fairly often” or “very often” was considered an indicator of a clinically important negative impact on quality of life.

To assess the impact of pericoronitis in the previous week on pain, lifestyle, and oral function, subjects completed the Health Related Quality of Life (HRQOL) instrument designed for third molar problems, adapted from the one developed by Shugars et al.(13)(Figure 2.) The oral function category related specifically to the patient’s ability to chew and speak. Lifestyle addressed the patient’s ability to conduct daily activities, including going to school/work, maintaining a regular social life, engaging in leisure activities, and sleeping.(13) Oral function and lifestyle items were recorded using a Likert-type five point scale: “no trouble” (1), “a little trouble” (2),

“some trouble” (3), “quite a bit of trouble” (4) and “lots of trouble” (5). The pain dimension related to the severity, duration, and character of the pain.(13) Pain items were recorded using a Likert-type seven point scale anchored at opposite ends with “no pain” (1) and “worst pain imaginable” (7). Each HRQOL item was dichotomized such that responses on Likert –type scales “quite a bit” or ”lots” (4-5/5) for lifestyle and oral function, and 5-7/7 for pain were considered indicators of a clinically important negative impact on quality of life. The sensory perception of pain and the affective impact or unpleasantness of pain being experienced over the previous week were recorded on Gracely Scales.(23)(Figure 3) The affective and the sensory scales each contained thirteen subjective words. Affective words “very distressing”, “intolerable”, “very intolerable” and Sensory words “intense”, “very intense”, “extremely intense” were indicators of a clinically important negative impact on quality of life.

The data entry and data management protocols described by White were used.(24) Because of the small sample size, analyses are considered exploratory and are limited to descriptive statistics.

Results

The median age of the thirty subjects was 23.5 years (IQ 21.8–26.8 years). Slightly more females, 57%, than males participated. Fifty-three percent of respondents were Caucasian, 20% were Asian and 20% African American. All subjects were at least high school graduates. Ninety-three percent had at least some college.

In the three months prior to enrollment, the average OHIP-14 severity score was 26 (sd = 9.73). The total score primarily reflects endorsement on the pain dimension, the most frequently reported items. “Fairly often” or “very often” was chosen by 48% of the subjects for “painful aching in my mouth” and by 40% for “uncomfortable to eat any foods.” Percent distribution of all OHIP-14 items are detailed in Figure 1.

On the third molar HRQOL more subjects (40%) reported substantial pain than difficulty with oral function (30% eating, 23% chewing, 10% opening, 0% talking, respectively) and lifestyle (4% sleeping, 3% social life, 3% sports/hobbies, 0% routine, respectively).(Figure 2)

Subjects’ reported worst pain and average pain the week prior to enrollment are detailed in Figure 4. Forty percent of subjects described their worst pain as severe (5-7/7), 37% as moderate (3-4/7), and 23% as none/little. Average pain in the previous week was described as severe (5-7/7) for 7% of subjects, as moderate (3-4/7) for 56%, and as none/little for 37%.

On the Gracely scales 13% of subjects reported the sensory intensity of pain in the past week as “intense”, “very intense”, or “extremely intense”.(Figure 3) Twenty-seven percent reported pain as “nothing” or “weak”. Only one subject reported the

unpleasantness of pain as “intolerable”. Percent distribution of all reported Gracely items are detailed in Figure 3.

Discussion

The most clinically relevant findings from these analyses are that pain and difficulty with oral function associated with an acute episode of pericoronitis can negatively effect quality of life similar to the impact of third molar removal. Acute pericoronitis also impacted lifestyle, albeit to a lesser extent. Pain associated with pericoronitis, as reported in this study, should remind clinicians that pain management is as important a component of treatment for acute episodes of pericoronitis as it is following third molar removal.

How do results compare to data from other investigations? Few data exist on the impact of pericoronitis on HRQOL. Blakey et al enrolled 20 subjects diagnosed with acute pericoronitis and studied subjects' clinical signs and symptoms.(25) Median highest pain in the week prior to enrollment was 85 on a scale of 100, higher than the median of our subjects, 4 on a scale of 7. Average pain levels in the previous week were similar, 3 of 7 for our subjects and 48 of 100 for Blakey et als' subjects.

In a related study Slade et al found that if patients, N=480, reported pre-surgery that the reason for seeking surgery was “pain or swelling because of wisdom teeth and want to have them removed before it happened again”, the odds were three-fold that another OHIP-14 item would be reported “fairly often” or “very often” (OR 2.9; 95%CI 1.7-4.8).(24) These positive responses generally were associated with “difficulty relaxing”, “interrupting meals”, “being irritable”, “feeling tense”. No clinical data confirming pericoronitis was reported, but the stated reason for surgery was compatible with symptoms of pericoronitis. It is worth noting that in our study 40% or more of

pericoronitis subjects reported difficulty relaxing, having to interrupt meals and feeling tense at least “occasionally.”

Ninety three subjects awaiting third molar removal, without confirmed pericoronitis, were studied by McGrath et al. They reported an OHIP-14 presurgery score of 9.68 (SD 6.27) with a median age of 24 years.(11) Most subjects reported “problems” with third molars in past year. Severity scores were significantly higher if subjects reported “took time off work or study” because of third molar problems, mean 12.2 (SD6.2) vs. 8.3 (SD 4.9) if no “time off” was indicated. These OHIP-14 severity scores are lower than severity scores of our subjects at enrollment, mean 26 (IQ 19-32). In a subsequent report of subjects age 24 years, 69 of 88 subjects had confirmed symptoms of pericoronitis.(12) OHIP-14 presurgery mean severity score was 9.69 (SD 6.2). If subjects had symptoms of pericoronitis, differences in severity scores presurgery to 6 months post surgery were greater than for those with no pericoronitis symptoms, median -5 (IQ 1-10) vs. -2 (IQ 0-4).(12) The differences in the OHIP-14 scores are logical given that in our study a concurrent acute attack of pericoronitis was requisite, whereas, in the previous two studies subjects without pericoronitis were enrolled and chronic vs. acute cases were not differentiated in subjects enrolled with confirmed pericoronitis.

How do outcomes for our subjects with pericoronitis compare to the impact of third molar removal on quality of life? On post surgery day (PSD) one, Shugars et al reported worst pain as severe 5-7/7 in 48% subjects compared to 40% of our pericoronitis subjects.(22) On Gracely scales sensory intensity of pain described as “intense”, “very intense”, or “extremely intense” was 13% for both the subjects recovering from surgery and pericoronitis subjects. “Painful aching” was reported “often” or “very often” for 57% of the post surgery subjects on PSD one as compared to 48% of pericoronitis subjects. The average OHIP-14 score for pericoronitis subjects in our study was 26 (IQ 19-32) and Shugars et al reported an average OHIP-14 score of 27 (IQ 16-34), which suggests that the impact on overall oral health related quality of life for patients with pericoronitis is similar to post surgery subjects on PSD one. These findings for pericoronitis subjects may be surprising to clinicians.

Our data on pericoronitis may not be widely applicable to all individuals with similar signs and symptoms. All our subjects were young adults, median age 24 years, and relatively well educated, over 90% with at least some college experience. Pericoronitis can occur in older patients.(5) Subjects who used tobacco, had systemic antibiotics recently, or a BMI >29 were excluded to reduce the impact of these confounding variables. Quality of life outcomes could be different if such subjects were included.

With our present knowledge and understanding of pericoronitis as a chronic inflammatory condition, the only viable treatment to alter or eliminate the biofilm with its resident pathogens may be removal of third molars. More data is needed to better characterize the inflammatory condition including the composition of the associated

biofilm, and the quality of the oral and systemic inflammatory response. These topics are being studied further in a longitudinal trial.

Clinicians who counsel patients with pericoronitis about treatment options are hampered by the lack of information on incidence, recurrence rate, and the probable impact of their symptomatic condition on quality of life. Prior to this publication, there are no reported data that provide a comparison between the impact of acute pericoronitis symptoms and recovery following third molar removal. Patients diagnosed with acute pericoronitis have a substantial probability of symptomatic recurrence, despite conservative therapy. If conservative treatment does not prevent further episodes of acute pericoronitis then the option of third molar removal could be a reasonable alternative. The analyses reported in this paper were conducted to assess the impact of pericoronitis on health-related quality of life outcomes (pain, oral function and lifestyle) and to describe them within the context of patient care management. The limited data set presented suggests pericoronitis can be associated with adverse life outcomes and has a negative impact on HRQOL. Given the results, it is noteworthy that discomfort PSD one following third molar removal is comparable to the reported discomfort of an acute episode of pericoronitis. When clinicians carefully consider options for pain management in patients undergoing palliative treatment of an acute episode of pericoronitis, the reported data may alter their recommendations. In summary, acute episodes of pericoronitis can be associated with adverse life outcomes similar to the impact of third molar removal on pain and oral function.

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Figure 1. Oral Health Impact Profile-14: Percent Distribution of Reported Problems with Daily Life During the Three Months Prior to Enrollment.

	Percentage				
	Very Often	Fairly Often	Occasionally	Hardly ever	Never
1. Have you had trouble pronouncing any words because of problems with your teeth or mouth?*	0	3	14	17	66
2. Have you felt that your <u>sense of taste has worsened</u> because of problems with your teeth or mouth?*	3	0	7	7	83
3. Have you had <u>painful aching</u> in your mouth?*	7	41	28	10	14
4. Have you found it <u>uncomfortable to eat any foods</u> because of problems with your teeth or mouth?	17	23	27	20	13
5. Have you been <u>self conscious</u> because of your teeth or mouth?	6	10	7	30	47
6. Have you <u>felt tense</u> because of problems with your teeth or mouth?	3	13	27	10	47
7. Has your <u>diet been unsatisfactory</u> because of problems with your teeth or mouth?*	0	7	14	14	65
8. Have you had to <u>interrupt meals</u> because of problems with your teeth or mouth?	0	17	23	17	43
9. Have you found it <u>difficult to relax</u> because of problems with your teeth or mouth?	0	13	27	30	30
10. Have you been a bit <u>embarrassed</u> because of problems with your teeth or mouth?	3	3	13	7	74
11. Have you been a bit <u>irritable with other people</u> because of problems with your teeth or mouth?	0	0	20	27	53
12. Have you had <u>difficulty doing your usual jobs</u> because of problems with your teeth or mouth?	0	0	13	40	47
13. Have you felt that life in general was <u>less satisfying</u> because of problems with your teeth or mouth?*	3	0	21	17	59
14. Have you been <u>totally unable to function</u> because of problems with your teeth or mouth?	0	3	7	17	73

*N = 29

Response choice "Don't know" not shown (zero responses).

Figure 2. Oral Health-Related Quality of Life Instrument: Percent Distribution of Reported Problems During the Week Prior to Enrollment.

1. In the past week how much have your wisdom teeth (3rd molars) or jaw given you trouble with:

	Percentage				
	No trouble	A little trouble	Some trouble	Quite a bit of trouble	Lots of trouble
a. Eating the foods you want	37	10	23	23	7
b. Chewing foods easily	27	27	23	17	7
c. Opening your mouth wide	60	20	10	7	3
d. Sleeping*	55	24	17	4	0
e. Talking so that people can understand you	73	20	7	0	0
f. Going about your everyday routine	50	33	17	0	0
g. Taking part in your regular social life	67	17	13	3	0
h. Taking part in your favorite sports / hobbies	80	10	7	3	0

	Percentage						
	No pain						Worst pain imaginable
2. Rate the <u>WORST</u> pain you have felt in your wisdom teeth (3rd molars) or jaw during the <u>past week</u> .	13	10	17	20	17	23	0
3. Rate the <u>AVERAGE</u> pain you have felt in your wisdom teeth (3rd molars) or jaw during the <u>past week</u> .	17	20	33	23	7	0	0

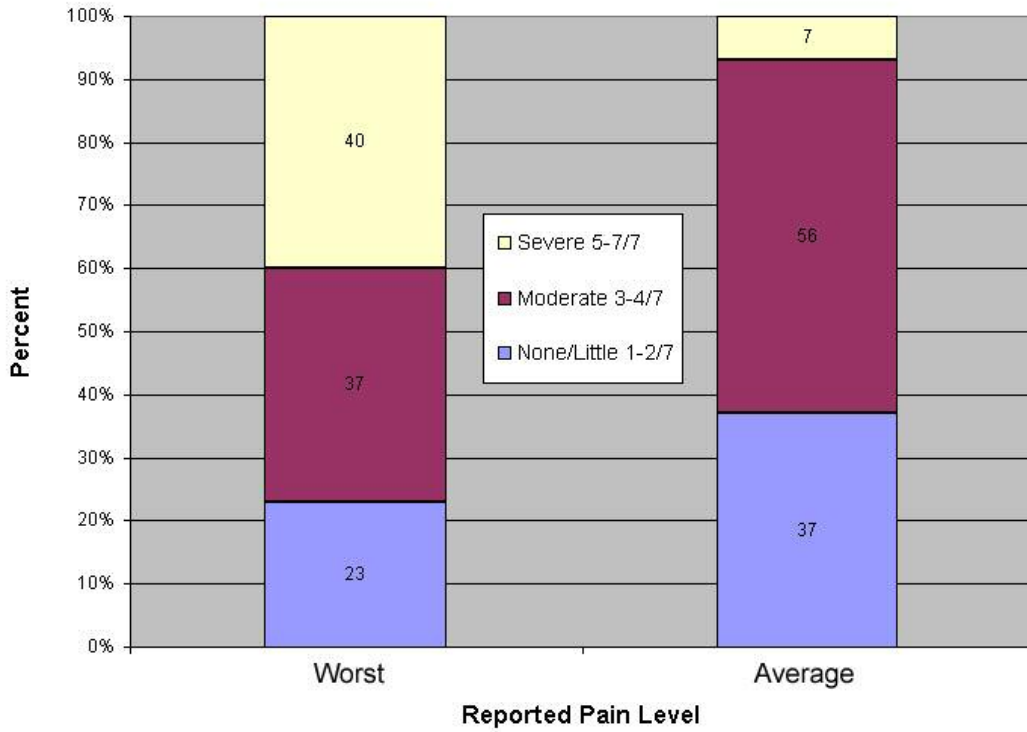
*N = 29

Figure 3. Oral Health-Related Quality of Life: Gracely Scales
 Percent Distribution of Reported Affective and Sensory Words
 Used to Describe Pain in the Week Prior to Enrollment.

4. Select ONE circle word from the A-Words list and the ONE from the S-Words list which best describes the pain in your wisdom teeth (3rd molars) or jaw IN THE PAST WEEK.

<u>%</u>	<u>Affective-Words</u>	<u>%</u>	<u>Sensory-Words</u>
20	Neutral	23	Mild
17	Annoying	20	Moderate
13	Slightly Annoying	20	Nothing
13	Very Unpleasant	7	Intense
13	Unpleasant	7	Weak
10	Distressing	7	Very Mild
3	Intolerable	3	Strong
3	Slightly Intolerable	3	Barely Strong
3	Slightly Distressing	3	Extremely Intense
3	Slightly Unpleasant	3	Very Intense
0	Very Distressing	3	Slightly Intense
0	Very Intolerable	0	Faint
0	Very Annoying	0	Very Weak

Figure 4. Percent Distribution of Reported Worst and Average Pain in the Week Prior to Enrollment.



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