

### Abstracts of Undergraduate Research Projects of Academic Year 2023-2024



The research project is a mandatory part of study in College of Dentistry Hawler Medical University. Students who passed the fourth year final examination, are grouped under different titles of research that suggested by teaching staff of college departments. Each group may have one or two supervisors. The titles may include clinical trials, surveys, experiments and all other types of research in Dentistry and biomedical field. They should pass through all levels of researching applied in Hawler medical university, like proposal discussion, ethical approval, data gathering, writing and discussion.

In current issue there are seventeen research projects abstracts which passed the discussion committee and peer reviewed.

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## **Article Processing Charge**

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# Prevalence Of Premature Loss Of Primary Molars Among Patients Aged 6-10 Years Old Attending Pedodontic Department Of College Of Dentistry / Hmu

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## ABSTRACT

Primary teeth are deciduous and present in early childhood until they exfoliate, allowing permanent teeth to develop. This research aims to determine the frequency of premature primary molar loss in paediatric patients visiting the pedodontic department at HMU College of Dentistry. We investigated gender and age predominance and their impact on premature primary molar loss. A questionnaire and clinical exam were used in a cross-sectional research. Patients aged 6-10 years old were examined at the pedodontic department of HMU College of Dentistry from November to December 2023. The study investigated 78 instances. Patients who had premature loss were questioned about the time of loss. The data was analysed using SPSS 26 for windows. Premature initial tooth loss was 23%. Out of 23%, 46.2% were female and 53.8% were male. No significant differences were seen in the frequency of early primary tooth loss across genders. (p-value = 2.064, p-value > 0.05). The largest rate of early primary molar loss occurred at 7 years old (36.8%). The greatest frequency of early loss of lower left primary second molar was 11.5%. The most common interval for premature primary molar loss was within three months, with 12.8% frequency. The research found that 23% of paediatric patients aged 6-10 years had early loss of primary molars, with lower left second molars being the most prevalent. Premature primary molar loss may have various repercussions, depending on the tooth and time of loss.

**Keywords:** Primary teeth, primary molar, patients, childhood, early loss .

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# Dental Caries Experience, Oral Hygiene Status Among Beta Thalassemic Patients In Erbil City

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## ABSTRACT

**Background and objective:** Good level of oral hygiene practice keeps the oral cavity clean and decrease the risk for dental caries especially for children with beta thalassemia. This research aimed to evaluate the oral health status, in beta thalassemia major patients in Erbil city.

**Subjects and Methods:** A cross-sectional study was conducted of 105 patients, 54 males and 51 females with thalassemia major who were attending the Thalassemia Center in Erbil City with an age range (6-18) years. Decayed, missing and filled teeth / surfaces index was used for detection of caries experience. Oral health status was recorded by application of debris index and calculus index.

**Results:** The P value of dmft and dmfs of thalassemic patients between females and males in the age group 6-8 years showed that the males have higher mean value compared to females (7,6.4545)(14.7273, 8.6364) respectively, which was statistically highly significant ( $P > 0.001$ ). While in the age groups of (9-11, 12-14, and 15 above) were  $P = 0.280, 0.25, 1; 0.43, 0.25, 1$  respectively which was statistically non-significant. Result founded that the total mean value of DMFS in age group 15 and above was 11.45 which was highest among other age groups. For the same parameter, the females total mean was 13.8 and showed to be the highest among the other groups and the difference statistically was not significant. For the oral hygiene index, the data showed that in age group 12 –14 was 2.4225 and it was highest among other age groups. The gender factor in this group showed that females are more than males. The age group 6-8 the oral hygiene index was found to be the least.

**Conclusion:** The DMFT and DMFS statistically not significant between age groups and gender, while dmft was statistically highly significant in age group (6-8) only. The oral hygiene index directly related to the number of snack consumption per day.

**Keywords:** Beta thalassemia; Dental caries; Oral hygiene

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# Comparative Clinical Evaluation Of Hyaluronic Acid And Alveogyl As A Prophylactic Measure for Alveolar Osteitis After Wisdom Tooth Extraction.

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## ABSTRACT

**Background and objective:** Alveolar osteitis (dry socket) is a complication of dental extractions more often involving mandibular molar teeth. It is associated with severe pain developing 2 to 3 days postoperatively, and its prevention is more important than its treatment. Aim of this study to evaluate the effectiveness of utilizing two materials (Hyaluronic Acid gel and Alveogyl paste) as a prophylactic agent to prevent the occurrence of Alveolar Osteitis after non-surgical extraction of mandibular third molar.

**Material and Method:** A randomized clinical trial study on a sample of 100 patients who needs extraction of non-surgical extraction of mandibular third molar, after obtaining the informed consent. Patients were subdivided into two equal sub groups. Group I: received Hyaluronic Acid gel 0.8% after extraction of mandibular third molar, while group II received Alveogyl after mandibular third molar extraction. On the second, third, and fourth postoperative days following surgery, the incidence of dry socket was evaluated for both groups.

**Results:** Among 100 cases of non-surgical extracted mandibular wisdom teeth, the incidence of dry socket was 10 percentages. 8% of dry socket occurred in group II (Alveogyl group), while only 2% experienced dry socket in group I (Hyaluronic Acid group). Statistical analysis revealed a significant difference between the two groups (P-Value= 0.047); better results achieved when Hyaluronic Acid 0.8% was used in the extraction sockets.

**Conclusion:** Hyaluronic acid appears to offer a beneficial effect in the prevention of dry socket occurrence following non-surgical extraction of mandibular third molar.

**Keywords:** Lower wisdom tooth, Alveolar Osteitis, Dry Socket, Alveogyl, Hyaluronic Acid.

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# Treatment Modality For Dental Extraction Socket In Patients on Anti resorptive And Anti Angiogenic Drugs

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## ABSTRACT

Medication-related osteonecrosis of the jaw (MRONJ) is a severe adverse drug reaction, consisting of progressive bone destruction in the maxillofacial region of patients. It is characterized by non healing exposed bone that can be probed through an intraoral or extra oral fistula in the maxillofacial region that has persisted for longer than 8 weeks in a patient with a history of antiresorptive drugs.

**Aim of study:** to see the effect of PRF on healing process of post extracted socket in patients on antiresorptive drugs, and to prevent bone expose following dental extraction in patients on antiresorptive drugs.

**Patient and Methods:** 30 patients with history antiresorptive drugs were undergo dental extraction, distributed on two groups, each group presented with the 15 patients, as follows: (Group A: 15 patients, control group undergone dental extraction, Group B: 15 patients, study group undergone dental extraction, then followed by immediately advanced platelet rich fibrin in the extraction socket). They were follow up in 1st and 3rd week postoperatively

**Results:** A total of (30) patients 11 males and 19 females, study group had better soft tissue healing when compared to the control group with the p-value of 0.05 at 1st week, and 0.0001 at 3rd week. And, patients on intravenous root better soft tissue healing when compared to the control group with the p-value of 0.081 at 1st week, and 0.029 at 3rd week.

**Conclusion:** When it comes to accelerating bone growth in the extraction socket and facilitating soft tissue healing, PRF performs noticeably better. As a useful substance for promoting bone regeneration and soft tissue repair, PRF might be suggested.

**Keyword:** platelet rich fibrin, medication related osteonecrosis of jaw.

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# Evaluation Depth of Cure of Different Direct Anterior Tooth-Colored Restorations

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## ABSTRACT

**Background:** Development in anterior teeth colored restoration improvement is recommended.

**Objective:** The aim of this study was evaluating the depth cure of some different direct anterior tooth-colored restorations.

**Material and Method:** Four resin composites that were selected: (Beautifil II) fluoride releasing restorative material. (G-aenial) light-cured radiopaque composite restorative, (PALFIQUE LX5) submicron filled composite resin, (Vittra APS) Sub-micrometric universalchroma composite. All resin composite shade A2 except for Vittra APS is DA2. Depth of cure was determined by using scraping test according to International Organization for Standardization (ISO) standard 4049 (2000) for composite materials and using analysis of variance (ANOVA) test.

**Result:** Result found that in depth of cure was highly significant at  $P < 0.001$ . significant difference was found between Beautiful II and Vittra APS with each other and other 2 composite.

**Conclusion:** Based on the result of this study group shofu beautifil showed highest level of depth of cure while Vittra APS showed minimum depth of cure, so it recommends using Beautifil II group when maximum depth cure is required.

**Key words:** Depth of cure, Tooth colored restoration, Dental curing lights.

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# Effect of Ozonated Water on Post Operative Sequelae After Surgical Removal of Lower Third Molar

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## ABSTRACT

**Background & Aim:** The removal of impacted lower third molars often result in postoperative complications like pain, swelling, and trismus. Ozonated water, known for its antimicrobial and anti-inflammatory properties, represents a potential alternative to conventional treatments. This study aims to evaluate the efficacy of ozonated water in reducing post operative sequelae like pain, swelling, and trismus after surgical removal of impacted lower third molars.

**Methods:** 12 patients (5 male, 7 females) enrolled in this study using the split mouth method, where each patient underwent 2 surgeries, for the removal of impacted lower third molar, one for the left side and one for the right side, with one side using ozonated water for irrigation, and normal saline(NS) being used on the other side. Clinical assessment of the patient includes taking an OPG for evaluating the location and configuration of the impacted lower third molar and the adjacent structures. Maximum mouth opening distance was measured before the surgery. Visual analogue scale (VAS) was used for recording pain and swelling for a duration of one week starting from the first day after surgery.

**Results:** The means and mean ranks of pain scores of the normal saline group were significantly higher than those of the Ozone group in day 1-5 ( $p < 0.001$ ) and in day 6 ( $p = 0.005$ ). The means and mean ranks of the swelling scores of the NS group were significantly higher than those of the Ozone group in day 1 ( $p = 0.001$ ), and in day 2 – day 7 ( $p < 0.001$ ). the mean of mouth opening distance was 61.33 mm in the Ozone group compared with 61.58 mm in the NS ( $p = 0.932$ ). But in day 2 the mean was 51.25 mm in the Ozone group compared with 39.33 mm in the NS group ( $p = 0.004$ ). In the next days, the means of the Ozone group were significantly higher than those of the NS group, in day 3 and 4 ( $p = 0.001$ ), in day 5 ( $p = 0.002$ ), and in day 6 ( $p = 0.033$ ), but in day 7, the difference was not significant. Data were analyzed using Mann Whitney test.

**Conclusion:** The use of ozonated water has been shown to be effective in reducing postoperative pain, swelling and trismus following surgical removal of impacted lower third molars. This therapeutic approach offers a promising adjunct to conventional treatment method enhancing patients' comfort and accelerating recovery.

**Keywords:** Impaction, ozonated water, pain, swelling, third molar surgery, trismus.

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# Awareness of Malocclusion Among Dental Students of College of Dentistry-Hawler Medical University

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## ABSTRACT

**Background and Objectives:** It has been stated that malocclusion is the third most common oral health problem, which is caused due to various environmental and genetic factors. The lifestyle of a person is adversely impacted by malocclusion due to its psychological as well as other disturbances in eating, talking, and aesthetics. So, the present study aims to assess the awareness and knowledge about the effect of malocclusion among dental Students of Hawler Medical University.

**Materials and Method:** A cross-sectional study was conducted among (294) dental students of College of Dentistry at Hawler Medical University between the ages of 17 and 24 (116 male and 178 female). A questionnaire consisting of 19 questions were sent to the participants via online.

**Results:** The majority of the participants (74.1%) were confident of their smile and (60.2%) were happy to smile for photograph. In the past three years, 76.9% of the participants did not go to the dentist's office. In terms of level of knowledge, (78.6%) knew that malocclusion leads to gum problems, (82%) and (76.2%) were aware that it leads to cavities and pain respectively. (86.7%) were aware that thumb sucking, mouth breathing and other bad oral habits were causing malocclusion. Among those surveyed (57.1%) have contemplated that there is an age limit for orthodontic treatment. Lastly, (93.9%) were aware that an orthodontist specialized for correction of malocclusion.

**Conclusion:** The study revealed overall good knowledge about the effect and the etiology of malocclusion among dental students. High levels of knowledge and attitude toward orthodontics treatment were present, particularly among older students.

**Keywords:** Malocclusion, Dental Students, Awareness, Knowledge, orthodontic treatment, Hawler Medical University.

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# Prevalence and Severity of Gingivitis among 4th Stage Dental Clinic: A Retrospective Study

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## ABSTRACT

**Background:** Inflammation that is limited to the gingiva and does not spread to other tooth-supporting tissues is a hallmark of gingivitis, and the study's goal is to assess the level of plaque-induced gingivitis and its prevalence in 4th stage dental clinic patients.

**Patients and Methods:** This study used a quantitative descriptive retrospective design to assess gingival health among patients at Hawler Medical University's periodontal department. Data were collected from patient case sheets completed by stage four students, and included demographic and clinical information such as age, gender, smoking status, and tooth brushing habits. Gingival health was evaluated using a UNC periodontal probe, based on gingival index (GI). Paired t test and one-way analysis of variance were used for statistical analysis.

**Results:** Out of the total (912) participants, the proportion of female involvement was greater than the percentage of male participation, at 52.1%. There were more participants aged 18-24 than 44.8% older. The education status is one in which the percentage of persons without formal education is higher than that of those with formal education, at around 55.1%. A higher number of people (approximately 53.1%) clean their teeth only once. The percentage of non-smoking patients is much higher than that of smoking patients, at roughly 93.1%. Moreover, have an extremely high number of visiting patients, which is around 77.8% more than the number of non-visitors. And the p-value of gender is (0.000) highly significance and smoking p-value is (0.0010) highly significance.

**Conclusion:** The findings of this study demonstrate a substantial correlation between the high incidence of moderate to severe gingivitis among 4th stage dental clinic patients and plaque buildup.

**Key words:** Prevalence, severity Gingivitis, Periodontal disease

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# Retrospective Audit for Quality Assessment of Root Canal Obturation Performed by Undergraduate Students of College of Dentistry- Hawler Medical University

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## ABSTRACT

**Background and Objectives:** Dental students are future dentists. Continuous assessment and improving of the educational curricula will ensure excellent academic performance of dental students and thus providing the community with the best treatment modalities. The aim of this study is to evaluate the technical quality of root canal obturations performed by undergraduate students of Hawler Medical University in 2023-2024.

**Methodology:** The records of 151 patients who underwent endodontic treatment by undergraduate students of Hawler Medical University in 2023-2024 were evaluated radiographically based on three criteria of quality (length, density, and taper). Cohen's Kappa test was used to assess the agreement between the examiners and Chi-squared test was used for the association between the study variables. The level of significant was set at  $\alpha < 0.05$ .

**Result:** A comprehensive evaluation was conducted on 176 canals from 151 teeth. The results of the study revealed that the overall quality of roots canals fillings is encouraging as 64.8% of the assessed canals met the acceptable criteria across all three assessments 84.7% of canals recorded adequate length, 83.0% had adequate density and 96.0% had adequate taper. The buccal canal had significantly better length quality than the palatal canal ( $P = 0.31$ ), while they had no significant difference in density and taper.

**Conclusion:** The study at Hawler Medical University found that most root canal fillings performed by undergraduate students (64.8%) were deemed acceptable. Students encountered a variety of cases with different tooth types. However, the main issue detected in assessing the quality of fillings was related to density. Suggestions were made to enhance the accuracy and quality of filling density.

**Keywords:** Root canal treatment, pulp, density, taper, length, endodontics.

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# Prevalence And Characteristics of Bifid Mandibular Canal Based on Cone-Beam Computed Tomography: A Retrospective Cross-Sectional Study

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## ABSTRACT

**Background and Objective:** The mandibular canal is a critical anatomical structure with variations that can impact dental and surgical interventions. The primary objective of this retrospective cross-sectional study is to assess the prevalence and characteristics of bifid mandibular canals in a sample of population through cone-beam computed tomography analysis.

**Material and method:** This retrospective study was conducted on 200 cone-beam computed tomography of mandible, utilizing (Natioh et al. 2009)'s classification of bifid mandibular canal types, and categorizing them based on gender, location, and type. Statistical analysis, including Chi-square tests, was employed to assess gender-based differences and associations between location, type, and gender.

**Results:** The study analyzed 200 cone-beam computed tomography images retrospectively, comprising 88 males and 112 females. 17 (8.5%) exhibited bifid mandibular canals, with 10 (5%) in males and 7 (3.5%) in females. Gender-based analysis revealed no statistically significant difference ( $P$ -value = 0.198). Location mapping showed significant association between bifid mandibular canal (BMC) with higher prevalence in the left side of the mandible ( $P$ -value < 0.001). Further classification identified the most frequent type as Type I (retromolar canal) with rate of (41.2%).

**Conclusion:** our findings indicate a lower prevalence compared to previous studies. Cone-beam computed tomography proved to be a valuable tool for bifid mandibular canal detection, offering potential implications for dental and surgical planning in dentistry.

**Keywords:** Anatomical variations of mandibular canal, Bifid mandibular canal, Cone-beam computed tomography.

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# Survey of Impression Materials and Techniques for Fixed Prosthodontics Among Dentists In Erbil City-Iraq

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## ABSTRACT

**Background and Objectives:** Fixed prosthodontics involves restoring and replacing teeth with non-removable artificial substitutes, such as crowns, bridges, and veneers. This study investigates the preferences of dentists in Erbil regarding impression materials and techniques used in fixed prosthodontics, aiming to enhance understanding and improve clinical outcomes.

**Materials and Methods:** A structured questionnaire was distributed to 98 dentists and postgraduate students in Erbil from October 2023 to February 2024. The survey included questions on demographic information, material preferences, and impression techniques. Data were analyzed using descriptive and inferential statistics to identify trends and associations.

**Results :** The study surveyed dental professionals and found diverse educational backgrounds and varying levels of experience among participants. Most (53%) do not take diagnostic impressions routinely before tooth preparation. Addition silicone was the preferred impression material for its accuracy and stability (77.6%), with alginate commonly used for diagnostic purposes. Regarding gingival retraction, 77.6% of participants use retraction materials, particularly cords. The dual-phase technique was the most popular impression method (54.1%), followed by digital impressions (28.6%). The study underscores the prevalent use of addition silicone and the dual-phase technique in fixed prosthodontics, highlighting the need for further education on digital techniques to enhance accuracy and patient comfort.

**Conclusion :** The preference for addition silicone and the dual-phase technique reflects the priorities of dentists in Erbil, focusing on accuracy and patient satisfaction. The study provides insights that can guide future clinical practices and educational programs in fixed prosthodontics.

**Keywords :** fixed prosthodontics, impression materials, impression techniques, addition silicone, dual-phase technique, gingival retraction, digital impression, patient comfort.

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# Correlation Between Long Occupational Period And Periodontal Disease

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## ABSTRACT

**Background:** Maintaining good oral health is crucial for overall health, and it can be greatly affected by factors like extended time in a job, work-related stress, and financial strain. This study aimed to examine how a prolonged occupational period impacts the development of periodontal diseases.

**Method:** A cross-sectional study was conducted at Hawler Medical University College of (Medicine, Dentistry, Pharmacy, and Nursing), Salahaddin University, Ministry of Housing and Reconstruction, Sardam Private Hospital, Boulevard and Ganjan projects. The study included 450 individuals of varying ages and genders (21-66 years) who were required to complete a self-administered questionnaire and have a full mouth examination. The plaque index, gingival index, bleeding on probing, probing pocket depth, and clinical attachment level are the parameters utilized in periodontal evaluation.

**Result:** 276 individuals were diagnosed with periodontitis and 174 were diagnosed with gingivitis. Individuals with extended work hours, work-related stress, and financial stress displayed a notably higher occurrence of periodontitis ( $P < 0.001$ ). Within the gingivitis cohort, job stress exhibited a significant association with the gingival index, while financial stress displayed a significant positive correlation with the gingival index, plaque index, and bleeding on probing. In the group with periodontitis, there was a strong correlation between increased working hours and higher levels of GI and BOP. Stress at work is strongly associated with the depth of probing pockets.

**Conclusion:** The findings showed a correlation between periodontal diseases and extended work hours, job-related stress, and financial stress.

**Keywords:** Chronic periodontitis, long working hours, job stress, financial stress, clinical periodontal parameters.

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# Prevalence of Halitosis and Associated Factors in Adolescents in Erbil City-Iraq

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## ABSTRACT

**Background and objectives:** Halitosis is a multifactorial condition characterized by unpleasant odors deriving from the oral cavity. The aim of this study was to evaluate the prevalence of halitosis and associated factors among adolescents aging (14-16).

**Methodology:** A questionnaire and a clinical examination were used in a cross sectional study. The study included 150 high school students aged 14 to 16 years old, with 75 students (50%) being boys and 75 students (50%) being girls. 100 of the students were from public schools (50 girls and 50 boys), and the remaining 50 were from private schools (25 girls and 25 boys). During clinical examination the Tongue coating, periodontal health, Presence or absence of suppuration, dental caries, brushing frequency, plaque index.

**Result:** The prevalence of halitosis among students who were examined was 77.33% according to organoleptic examination. The prevalence was higher significantly in boys than girls, which were (85.26%) and (69.33%) respectively. (t- test/ p value =0.010397, p value < .05). There was a statistically significant differences in the prevalence halitosis between public and private schools which were 83% and 66% respectively (t- test/ p value =0.012117, p value < .05).

**Conclusion:** The present study concluded that the prevalence of halitosis was 77.33% which higher than most of other studies. The prevalence was higher in males and public schools The prevalence of halitosis had a significance association with plaque Index and the gingival health with no significant relation with, tongue coating.

**Keywords:** oral malodor, teenager, Erbil City.

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# The Effects of Different Light Curing Methods on Color Stability of Composite Resin Filling Materials: An In Vitro Study.

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## ABSTRACT

**Background and Objective:** This study explores the impact of different light curing methods on the enduring color stability of composite resin fillings in an in vitro study. Recognizing the crucial role of these materials in dental aesthetics. The study aims to scrutinize the effects of various light curing methods on the color stability of composite resin fillings.

**Method:** This study investigated the color stability of Gradia Direct (X-bleach white shade) microhybrid composite resin cured under different conditions. Specimens, varying in dimensions and curing parameters. In this experimental investigation, the specimens underwent curing processes utilizing distinct parameters as detailed above. Subsequently, they were immersed in a solution composed of coffee extract for a predetermined duration, prior to undergoing analysis via spectrophotometry. This analytical technique was employed to discern and quantify any discernible variations in measured values, thereby elucidating potential effects resulting from the diverse curing conditions employed.

**Result:** This study showed the significant change different settings of curing intensity, distance and duration can bring to the color stability of composite resin. The results showed a greater color stability in those sample that were cured at a high curing intensity for a long duration, while the specimens that were cured at a further distance showed less color stability.

**Conclusion :** Curing intensity and curing time had an obvious effect on the color stability.

**Keywords:** Color stability, light cure, curing intensity and composite resin.

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# Knowledge and Attitude Towards Orthodontic Treatment Among Dental Students in College Of Dentistry-Hawler Medical University

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## ABSTRACT

**Background and Objectives:** Orthodontic treatment constitutes a pivotal aspect of dental care, addressing functional and aesthetic issues related to dental irregularities. The effectiveness of orthodontic interventions relies highly on patients' knowledge and attitudes towards treatment modalities. The aim of the study was to assess the knowledge and attitude of dental students in Hawler medical university and compare between male and female student and stages regarding orthodontic treatment

**Materials and Methods:** A descriptive cross-sectional questionnaire based –study was conducted among dental students in college of dentistry , A validated questionnaire comprised of three parts with a total of twenty two questions were given to dental students to assess their knowledge and attitude . The responses were entered into Microsoft excel and analyzed statistically by SPSS , version 20.

**Result:** The total number of the respondents were 245 out of 601 dental students among which 136 (55.5%) were females and 109 (44.5%) were males, (95.5%) had awareness of dental irregularities, (95.9%) believed that irregular teeth can affect appearance , (92.2%) believed that braces at an earlier age can improve facial appearance and (92.7%) acknowledged that orthodontic treatment caused teeth movement. Higher proportion of females acknowledged a significant differences compared to males regarding awareness of habits on dental irregularities, dietary considerations and post treatment requirements and p value were (0.014) , (0.031) and (0.011) respectively . Statistically significant difference was found among stages regarding cost of treatment and (P=0.008) with stages 5 &4 showed higher awareness compared to other stages.

**Conclusion:** Generally, dental students had high level of knowledge and positive attitude towards orthodontic treatment, generally females with stage 5 showed higher levels of knowledge and attitude regarding orthodontic treatment.

**Keywords:** Dental Students, Awareness, Knowledge, orthodontic treatment.

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# Association Between Bedtime and Sleep Duration with Presence and Severity of Temporomandibular Joint Disorders

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## ABSTRACT

**Background and objective:** The temporomandibular disorders are increasing day by the day with huge impact on quality of life. Bad sleep habits have deteriorating effect on majority of human systems including musculoskeletal and especially on pain. There has been some discussion for possible association between bedtime and sleep duration with presence and severity of temporomandibular joint disorders, which has been set as the aim for this study.

**Materials and methods:** A cross-sectional study was conducted to include participants of both genders aged older than 18 years old, from different areas and cities of Kurdistan region of Iraq. Every second examined person was included as participant (with their permission to participate). The data collection included history and physical examination. A specific questionnaire was designed to include both TMD and sleep related information.

**Results:** Total of 300 cases were involved that include 62.33% female and 37.66% males with mean age 34.43 and SD 15.6. Out of all. 20.66% cases were without any clinical TMD signs and symptoms. Regarding bedtime, 57.33% and 42.66% were before and after midnight respectively, with statistically significant association only for mandibular movement. The sleep duration, 11.33%, 58.66%, 30% of less than 6, 6-8 and more than 8 hours respectively, with statistically significant TMD parameters like neck, shoulder spasm, pain on swallowing and deviation, in both groups of duration less than 6 hrs, and more than 8 hours. Sleep interruption was present in 55.33% of cases, out of which 39.66% and 15.66% were those with duration of interruption less and more than 30 minutes respectively. The presentation of TMD signs and symptoms was marked in both groups. But only mouth opening problems were significant in both groups.

**Conclusion:** There is an association between sleep disorders and TMD presence and severity.

**Keywords:** Temporomandibular disorders, TMJ, orofacial pain, sleep duration, sleep interruption, bedtime.

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# Tooth Extraction Reasons and Related Multiple Risk Factors in Erbil City-Iraq

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## ABSTRACT

**Background and Objective:** To evaluate the reasons for tooth extractions and investigate the related risk factors in adult patients attending the College of Dentistry in Erbil City.

**Methods:** Two hundred six patients with an age ranging from 35-70 years (mean age of  $48.1 \pm 10.4$ ) were included. The patient's variable included age, gender, education level, working status, and other risk factors such as diabetes and smoking habits were included.

**Results:** From 206 patients, 232 teeth underwent extraction for at least one tooth per person due to different causes and the mean number of extracted teeth per patient was  $1.12 \pm 0.32$ . Retained roots (36%), dental caries (28.60%), and periodontal disease (22.2%) were the most common reasons for tooth extraction. Males were more prone to extractions (54.6%) than females (45.4%) ( $P=0.33$ ), and the middle adult age group of 35-44 had the highest percentages of tooth extraction (44%) than other age groups ( $P=0.04$ ). Nonsmokers (70.2%), and nondiabetic patients (83.6%) accounted for more extraction than smokers (29%) ( $P=0.001$ ) and diabetic (16.44%) ( $P=0.08$ ). Moreover unemployed (68.6%) with low education level (41.1%) had the high percentages of extraction than those employed ( $P=0.01$ ) and other education levels ( $P=0.02$ ).

**Conclusion:** dental caries, retained roots, and Periodontal disease, are the most common causes of extraction especially in the third and fourth decay of life with no significant differences were detected between these causes and the patient variables with the exception between caries and age groups, and between periodontal disease and nondiabetic patients

**Keywords:** Periodontal disease, tooth extraction, risk factors, smoking, diabetes.

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