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***Prevalence of Dental Caries and Periodontal diseases
and Associated Risk Factors Among Pregnant Women in
Sana'a-Yemen***

*Thesis Submitted to the Department of Community Health and Nutrition,
College of Medical Sciences, Al-Razi University As A partial Fulfillment
for MSc. Epidemiology.*

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انتشار تسوس الأسنان وأمراض الأنسجة الداعمة للأسنان وعوامل الاختطار المرتبطة بين النساء الحوامل في صنعاء - اليمن

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CERTIFICATE

This is to certify that the thesis entitled "*Prevalence of Dental Caries and Periodontal diseases and Associated Risk Factors Among Pregnant Women in Sana'a-Yemen*" which Submitted to the Department of Community Health and Nutrition, College of Medical Sciences, Al-Razi University for the award MSc. degree in Epidemiology. It is a recorded of the original and bona fide thesis work carried out by *Hisham Suliman Hassan Hwaiti* under our guidance. Such material as has been obtained from other sources has been duly acknowledged in the research. This thesis embodies the work of the candidate himself and no part thereof has been submitted for any other degree.

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DEDICATION

This thesis is dedicated to:

*My Mum Gamalah Haidarah, who never stop giving of
herselves in countless ways,*

My father Suliman Hwaiti God's mercy on him

*My dearest wife Yussra Obad, who leads me through the
valley of darkness with the light of hope and support,*

My beloved brothers and sister,

To all my family, the symbol of love and giving,

My friends who encourage and support me,

All the people in my life who touch my heart.

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LIST OF ABBREVIATIONS

Abbreviations	Definition
AAD	American Academy of Dentistry
AAP	American Academy of Periodontology
ANUG	Acute Necrotizing Ulcerative Gingivitis
ANUP	Acute Necrotizing Ulcerative Periodontitis
BOP	Bleeding Upon Probing
CAMBRA	Caries Management by Risk Assessment
CAL	Clinical Attachment Level
CDC	Centers for Disease Control and Prevention
CEJ	Cemento Enamel Junction
CPITN	Community Periodontal Index of Treatment Needs
DMFS	Decayed Missing Filled Surfaces
DMFT	Decayed, Missing, Filled Teeth
DT	Decayed teeth in permanent teeth
EFP	European Federation of Periodontology
EWP	European Workshop on Periodontics
FT	Filled Permanent teeth
GI	Gingival Index
MeSH	Medical Subject Heading
MT	Missing Permanent teeth
NAD	No-abnormal detected
PDL	Periodontal Ligament
PD	Probing Depth
PI	Plaque Index
PPD	Probing Pocket Depth
SM	Streptococci Mutans
UST	University of Science and Technology
WHO	World Health Organization
WWP	World Workshop in Periodontics Classifications

ABSTRACT

Background of the study

Dental caries and periodontal disease are considered of the most important oral diseases contributing to the global burden of chronic disease. Dental caries and periodontal disease may contribute to adverse pregnancy outcomes

Objective of the study

The objective of the study was to assess the prevalence and associated risk factors of dental caries and periodontal disease among pregnant women in Sana'a city-Yemen.

Methods

A descriptive, cross-sectional study was conducted among pregnant women patients attending Al-Sabeen and UST hospitals in Yemen, from 10 July to 8 August 2020. A sample size of 177 pregnant women was included in this study selected by using Convenience sampling method. All pregnant women were clinically examined and answered questions regarding, demographic variables, oral habits, oral hygiene and dietary habits factors. Their periodontal and caries statuses were examined using the Plaque index, Gingival Index, Clinical Attachment Loss and DMFT was recorded among the Pregnant women through mouth examination at four sites. The association between factors and the DMFT, gingivitis and periodontitis was measured by used correlations coefficient and chi-square test as appropriate. Two-tailed, p -value <0.05 was considered statistically significant.

Results

The study results showed that the most of the study pregnant women, 58.2% in the age group of (25-34) and the mean of age was (27.8 ± 5.6) . Most of the pregnant women (35.6%) had secondary school education. More than tow third 79.1% were housewife. The majority of the participants in the 3rd trimester pregnant (58 2%). Among those who measured the DMFT index, (85.9%) had DMFT, and the severity of DMFT was Very low (DMFT= <5.0) (49.2%), low (DMFT= $5.0-8.9$) (37.9%), moderate (DMFT= $9.0-13.9$) (11.3%) and high (DMFT= >13.9) (17%). more than tow third had plaque and gingival inflammation (94.4%, 78.0%) respectively. While the 74.0% had mild CAL. There was a small correlation between age, education and total DMFT (P -value <0.05). There was a small correlation between education, gestational time and total GI (P -value <0.05) There was a small correlation between education and CAL scores (P -value <0.05). There was no association between DMFT, gingivitis, periodontitis and oral habits (P -value >0.05). There was no association between DMFT and oral hygiene (P -value >0.05). There was association between oral hygiene (using tooth brush, and using dental floss) and gingivitis, which was statistically significant (P -value <0.05). There was association between using tooth brush and periodontitis, which was statistically significant (P -value <0.05). There was association between dietary habits (eat sweets food and eat snack) and gingivitis, which was statistically significant (P -value <0.05). There was no association between gingivitis, periodontitis and dietary habits, which was not statistically significant (P -value >0.05).

Conclusions and Recommendations

From all these findings, we concluded that pregnant women do have dental and periodontal problems and may require preventive programs directed for improvement of oral health. The presence of dental caries and periodontal disease during pregnancy has a significant association with negative pregnancy outcomes.

الخلاصة

خلفية الدراسة

يعتبر تسوس الأسنان وأمراض الأنسجة الداعمة للأسنان من أهم أمراض الفم التي تساهم في العبء العالمي للأمراض المزمنة فقد يسهم تسوس الأسنان وأمراض اللثة في نتائج الحمل السلبية.

هدف الدراسة

الهدف من الدراسة هو تقييم انتشار تسوس الأسنان وأمراض الأنسجة الداعمة للأسنان والعوامل المرتبطة بها بين النساء الحوامل في صنعاء.

منهجية الدراسة

تم إجراء دراسة وصفية مقطعية عرضية على النساء الحوامل اللاتي يترددن على مستشفى السبعين ومستشفى جامعة العلوم والتكنولوجيا صنعاء، في الفترة من 10 يوليو إلى 8 أغسطس 2020. تكونت حجم العينة من 177 امرأة حامل تم اختيارها باستخدام العينة الملائمة. تم فحص جميع النساء الحوامل سريريًا والإجابة على الأسئلة المتعلقة بالمتغيرات الديموغرافية وعادات الفم ونظافة الفم والعادات الغذائية. تم فحص امراض الأنسجة الداعمة للأسنان والتسوس باستخدام مؤشر اللويحة الجرثومية (PI)، ومؤشر اللثة (GI)، وفقدان الأنسجة المحيطة بالأسنان (CAL)، وتم تسجيل تسوس الأسنان والأنسجة الداعمة للأسنان بين النساء الحوامل من خلال فحص الفم في أربعة مواضع. من ثم تم قياس العلاقة بين العوامل ونتائج (تسوس الأسنان، والتهاب الأنسجة الداعمة للأسنان) باستخدام معامل الارتباط واختبارات مربع كاي حسب الاقتضاء. اعتبرت قيمة p ثنائية الذيل ذات دلالة إحصائية $(p \geq 0.05)$.

النتائج

أظهرت نتائج الدراسة الحالية أن معظم النساء الحوامل في الدراسة وبنسبة 58.2% في الفئة العمرية (25-34) وكان متوسط العمر (27.8 ± 5.6) . معظم النساء الحوامل بما يعادل (35.6%) حصلن على تعليم ثانوي، وأكثر من الثلثين 79.1% كانوا ربات منزل، كانت غالبية المشاركات حوامل في الثلث الثالث (58.2%). من بين أولئك الذين قاموا بقياس مؤشر DMF-T ، كان (85.9%) مصابًا بتسوس الأسنان ، وكانت شدة تسوس الأسنان منخفضة جدًا ($DMFT = 5.0 >$) بنسبة (49.2%) ، ومنخفضة (8.9-5.0) بنسبة 37.9% ، ومتوسط ($DMFT = 9.0-13.9$) بنسبة (11.3%) ، مرتفع ($DMFT \leq 13.9$) بنسبة (17%). وجدنا أكثر من الثلثين كان لديهم تراكم لطبقة اللويحة الجرثومية والتهاب اللثة (4.94%) ، (78.0%) على التوالي. في حين أن 74.0% كان عندهم التهاب في الأنسجة الداعمة للأسنان. كان هناك ارتباط ضعيف بين العمر والتعليم وتسوس الأسنان، وفرق ذو دلالة إحصائية ($P > 0.05$). هناك ارتباط ضعيف بين التعليم وفترات الحمل والتهاب اللثة والأنسجة الداعمة للأسنان ($P < 0.05$). هناك ارتباط ضعيف بين العمر والتعليم ومؤشر (PI)، ($P < 0.05$). لم يكن هناك ارتباط بين تسوس الأسنان والتهاب اللثة والتهاب الأنسجة المحيطة بالأسنان والعادات الفموية ($P < 0.05$). لم يكن هناك ارتباط بين تسوس الأسنان ونظافة الفم ($P > 0.05$). كان هناك ارتباط بين نظافة الفم (باستخدام فرشاة الأسنان، واستخدام خيط تنظيف الأسنان) والتهاب اللثة والأنسجة الداعمة للأسنان ($P < 0.05$). هناك ارتباط بين استخدام فرشاة الأسنان والتهاب الأنسجة المحيطة بالأسنان ($P < 0.05$). هناك ارتباط بين العادات الغذائية (أكل الحلويات وتناول الوجبات الخفيفة) وتسوس الأسنان ($P < 0.05$). ولم يكن هناك ارتباط بين التهاب اللثة و الأنسجة المحيطة بالأسنان والعادات الغذائية ($P > 0.05$).

الاستنتاجات والتوصيات

من كل هذه النتائج، خلصنا إلى أن النساء الحوامل يعانين من مشاكل في تسوس الأسنان واللثة وقد يحتجن إلى برامج وقائية موجهة لتحسين صحة الفم. إن وجود تسوس الأسنان وأمراض اللثة أثناء الحمل له ارتباط كبير بنتائج الحمل السلبية ويشير إلى أنه يمكن تقليل مخاطر نتائج الحمل السلبية من خلال مراقبة حالة صحة الفم لدى النساء أثناء الحمل.

