

Assessment of Risk Factors of Periodontitis during Pregnancy and its Effect on Pregnancy Outcome

Thesis

Submitted for partial fulfillment for Requirements of
Master Degree in Maternity and Gynecological Nursing

By

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2018**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا

لسبب انك لا تعلم لنا
إلا ما علمتنا إنك أنت
العليم العظيم

صدق الله العظيم

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 **Amal Osman Mahran Osman**

Dedication

*First and foremost, I feel always indebted
to Allah*

*Deep thanks and great full to my whole
family especially my dear mother the center of my
life, dear father the best father in the world and
my kind brothers for everything they have done
for me.*

*Very especial and great thanks to my small
family dear husband Salah and to light of my eyes
my lovely son Eyad for their care and sweet
support.*

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List of Abbreviations

<i>Abbrev.</i>	<i>Full-term</i>
AAP	: American Association of Periodontology
ACOG	: American College of Obstetrician and Gynecologist
ADA	: American Diabetic Association
CAL	: Clinical attachment loss
CI	: Calculus index
CPI	: Community Periodontal Index
CPITN	: Community Periodontal Index of Treatment Needs
FDI	: Federal Dental International
FSH	: Follicle-stimulating hormone
GI	: Gingival index
HPL	: Human placental lactogen
IL	: Interleukin
IUGR	: Intrauterine growth restriction
LBW	: Low birth weight
LOS	: Loss of attachment
LOS	: Lower oesophageal sphincter
MDHHS	: Michigan Department of Health and Human Service
MMP	: Matrix metalloproteinase

List of Abbreviations

NICHD	: National Institute of Child Health and Human Development
NIH	: National Institute of Health
NMCOHRC	: National Maternal and Child Oral Health Resource Center
OHDF	: Oral Health Delivery Framework
OHS	: Oral Health Survey
PI	: Plaque index
PPD	: Probing pocket depth
PTB	: Preterm birth
RDA	: Recommended dietary allowance
RMR	: Resting metabolic rate
TNF-α	: Tumor necrosis factor-alpha
WHO	: World Health Organization

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Assessment of Risk Factors of Periodontitis during Pregnancy and its Effect on Pregnancy Outcome

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Abstract.

Aim of the study: The aim of the study was to assess risk factors of periodontitis associated pregnancy and its effect on pregnancy outcome. **Subjects and Methods:** This was an exploratory descriptive study which was conducted among (91) fulfilled criteria pregnant women attending the antenatal care unit in Alwaleedia Health Centre –Asyut -Egypt From of August 2017 to February 2018. Data collection tools were a 'Structured Interviewing questionnaire and an oral examination checklist conducted to a purposive sample and data were analyzed using SPSS software, descriptive statistics and chi-square test. **Result:** The present study showed that the prevalence of periodontitis among the pregnant attended the study setting and fulfilling the predetermined criteria during data collection period was 28.6%. Furthermore it was concluded that, various levels of periodontal disease among pregnant women associated with bio sociodemographic characteristics such as age, economic status and educational level, also gestational age, obesity, previous dental history and lack of dental hygienic measures. In addition to that pregnancy itself may also be associated with an increased risk of periodontal disease. Meanwhile, there was a significant relationship between periodontal disease and adverse pregnancy outcomes ($p < 0.001$). **Conclusion:** The present study findings revealed that slightly over fourth of the pregnant women attending Alwaleedia health center –Asyut -Egypt had some degree of periodontitis which was influenced with many factors (bio sociodemographic, gestational and oral hygienic factors). Also there was a statistically significant relation between periodontitis and adverse pregnancy outcome. **Recommendations:** Activating the role of the maternity and in branches of Obstetrics and antenatal clinics to enhance pregnant women's knowledge & attitude regarding oral health risks.

Keywords: Pregnancy, periodontal disease, adverse pregnancy outcome.

Introduction

Periodontitis means "inflammation around the tooth", a serious gum infection that damages the soft tissue and bone that supports the tooth. All periodontal diseases including periodontitis are infections which affect the periodontium. The tissues around a tooth that support the tooth (*Ari et al., 2016*).

During pregnancy, progesterone levels increase 10-fold and estrogen levels 30-fold compared to those observed on menstrual cycle due to their continuous production (*Vogt et al., 2012*). The findings reveal that such fluctuating female hormone levels can change conditions inside the mouth (*Rattue, 2012*).

Many investigators have reported an association between periodontal disease and adverse pregnancy outcomes, including preterm birth, low birthweight, fetal growth restriction, preeclampsia and perinatal mortality (*Eide & Papapanou, 2013*).

Furthermore, the American academy of periodontology reported that about 50% of women experience pregnancy related periodontal disease with prevalence of periodontitis 14% between the 2nd and 8th month of pregnancy as result of increased hormonal level (*Eke, 2016*).

Every year, 1,1 million babies die from prematurity and many survivors are disabled. Worldwide, 15 million babies are born preterm with two decades of increasing rates in almost all countries with reliable data. Preterm birth is now worldwide the second most common cause of death in children younger than 5 years after pneumonia with an increasing rate (*Chang et al., 2013*).

On Wednesday 3 September 2014, the Ministry of Public Health, in collaboration with the WHO country office, released the results of research on the status of oral health in Egypt. This study results show that utilization of dental services is not at optimal level; 40% of subjects reported that they experienced dental problems at the time of examination but did not see a dentist for treatment. Visiting behaviors of subjects showed that nearly 20% had not visited a dentist for more than 2 years and another 20% had never been to a dentist. 77% of the examined individuals do not brush their teeth on a regular basis, 38% have never brushed their teeth, and only 48% use toothpaste.

Nurse practitioner and certified nurse midwives who frequently examine women could serve an important role in screening for oral health problems and making appropriate dental health referrals, increased basic and continuing education could prepare nurse for collaborative care with oral health care professionals (*Katherine, 2011*).

As a part of their regular antenatal care, nurse should provide oral care to pregnant women and provide them with knowledge about oral hygiene, obvious signs of oral disease and about seeking appropriate oral care at optimum timing as periodontitis is a treatable condition (*Bamanikar and Kee, 2013*).

Justification of the study:

According to the Egyptian Dental Academy about 70% of pregnant women in Egypt experience some form of periodontal problems during pregnancy and not caring about seeking dental specialist may be due to high costs of dental procedures or fear of harming their babies.

In a previous study conducted in Bani Mazar- Elminia- Egypt that show significant relationship between periodontal disease and adverse pregnancy outcome, the incidence of preterm labor and low birth weight were significantly high 12.7% and 6.7% for PTL and LBW respectively and recommended further studies regarding the relation between periodontal disease and adverse pregnancy outcome (*Edessy et al., 2014*).

Lastly, the results of a recent study conducted in El-Fayoum and El-Mansoura city that revealed that Prevalence of periodontal diseases among study all participants was 83.5% which represents 76.0% of El-Fayoum and 91.0% of El-Mansoura study sample (*Abd El Moaty et al., 2018*).