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# The Nutritional factors affecting Iron Deficiency Anemia among Pregnant Women in the West Bank

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# The Nutritional factors affecting Iron Deficiency Anemia among Pregnant Women in the West Bank

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## Thesis Approval

# The Nutritional factors affecting Iron Deficiency Anemia among Pregnant Women in the West Bank

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Jerusalem - Palestine

1440/2018

# Dedication:

**That is dedicated to my wonderful mother and father, my lovely husband, my brothers and sisters, all my colleagues and to my supervisor Dr.Amira Amr . It's also dedicated to all pregnant ladies in Palestine.**

**Researcher: Neveen Wajeeh Shalalfa**

**Declaration**

**I make clear that this thesis submitted to the master in public health – epidemiology, and that this thesis has not been submitted for any other higher degree in any university or to any other college or group.**

**Signed:**

**Neveen Wajeeh abdelfatah Shalalfa**

**Date: 15 / 12 /2018**

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**Researcher:**

**Neveen Wajeeh Shalalfa**

# Abstract

**Background:**

Ministry of health provide iron supplementation for the pregnant women to prevent iron deficiency anaemia (IDA) and only haemoglobin level test is done for assessing anaemia in the pregnant women.

This study aims to determine the nutritional, sociodemographic, gynecological and obstetrical factors that may affect iron deficiency anemia in pregnant women who attend the primary health care clinics of Ministry of health (MOH) – West Bank.

**Methods:**

Matched maternal age and gestational age case-control study was conducted from June, 2017 to May, 2018 among pregnant women who initiated antenatal care follow up in the antenatal health care clinics during their first and third trimester, a sample of 342 was selected from three major clinics and three minor clinics in cluster systemic sampling method from the north, centre and south area of West-Bank / Palestine.

A self-administered questionnaires was filled after getting an informed consent from the women, the antenatal care file of each pregnant woman was reviewed to obtain information about blood haemoglobin of the mother and to review the health state. Also, 3 days food record instrument was used to collect dietary data, women were requested to record estimated foods in cups or spoons and beverages as they were consumed throughout the reported three days .Food records were analysed using super tracker, 2011, USAID to obtain micro and macro –nutrients.

After data collection, statistical analysis was performed using SPSS software (version 23, SPSS), logistic regression analysis was implemented. Distribution, frequencies, and cross-tabulation were, 95% confidence interval and p-value <0.05 for statistical significance was considered. T-test, one way ANOVA test, Chi-square test were used.

**Results**:

The results indicated that, lower educational level, Smoking, economic status had significant positive association with IDA (OR=1.5, 8.833, 1.9 respectively).

Parity of deliveries, repeated abortion, period between current pregnancy and previous (child spacing), density of menstrual cycle were all significantly positively associated with IDA (OR= 2.242, 12.326, 5.723, 4.134, 9 respectively).

There were significant association between protein, iron, and vitamin C intakes and IDA (OR= 2.242, 12.326, 5.723, 4.134, 9 respectively).

Participants' fat and carbohydrates intake were not enough to protect against anemia. (OR: 1.055, 1.017 respectively) (p = 0.062).

Number of meals per day is negatively associated with IDA (OR=0.327, 95% CI=0.162-0.663)( p< 0.002) . Increase in appetite to food during pregnancy is negatively associated with IDA (OR=0.348, 95%CI=0.190-0.638), (p, 0.001).

**Conclusion**:

The gynecological factors that cause increase in blood loss are positively associated with IDA .i.e. OCP and loop use, multiparty, recurrent abortion.

The lower educational level, Smoking, economic status have significant positive association with IDA.

The nutritional factors has a major role in IDA and further studies must be done in this field

**العوامل التغذوية المؤدية الى فقر دم ناتج عن الحديد في الحوامل في الضفة الغربية**

**اعداد: نيفين وجيه عبد الفتاح شلالفة**

**اشراف: د. اميرة عمر**

**الملخص**

تقوم وزاره الصحة الفلسطينية بتزويد النساء الحوامل بأقراص الحديد كوقاية من فقر دم الحديد أثناء الحمل ويتم تقييم حالات فقر الدم من خلال قياس مستوى الهيموغلوبين فى الدم للنساء الحوامل .

تهدف هذه الدراسة الى تحديد العوامل التغذوية المؤدية الى فقر دم الحديد لدى النساء الحوامل اضافه الى تأثير العوامل الاجتماعية وعوامل الصحة الإنجابية .

هذه الدراسة عباره عن دراسة الحالة والشاهد والتي استهدفت النساء الحوامل اللاتي يتابعن رعاية الحمل في عيادات الرعاية الصحية الأولية في ثلاث عيادات رئيسيه وثلاث نقاط صحيه في الضفة الغربية منذ شهر مايو لعام 2017 الى شهر يونيو 2018 , ولقد شملت العينة 342 امرأه وقد تم اختيار العينات مناصفه ما بين الحالات والشواهد مع مطابقه العمر للام وعمر الحمل .

تمت تعبئه المشتركات في الدراسه للاستبيانات بعد توقيع كل المشاركات على نموذج الموافقة بالمشاركة، ثم تم تحليل البيانات باستخدام برنامج (SPSS النسخة 23) وضبطت القيمة الهامه على مستوى 0.05 . وتم تطبيق البرامج الحسابية التالية :

(. T-test, One way ANOVA test , Chi-square test) .

اضافه الى ذلك تم تعبئه سجل للغذاء المتناول بكل مواصفاته وكمياته لمدة ثلاثة أيام من بينهن يوم عطله , ثم تم تحليل محتويات الغذاء باستخدام برنامج SUPER TRACKER,2011

أظهرت نتائج الدراسة أن هنالك ارتباط قوي ايجابي بين فقر الدم ومستوى التعليم والتدخين والحالة الاقتصادية (1.9 ,8.8 ,1.5 )=OR بالترتيب

عدد المواليد والاجهاضات المتكررة وتباعد المسافات ما بين الحملات واضطرابات الدورة الشهرية كان لها الارتباط الايجابي عند النساء اللواتي يعانين من فقر الدم مقارنه بالنساء اللاتي لا يعانين من فقر الدم (OR= 2.242 , 12.326 , 5.723 , 4.134, 9.5) بالترتيب.

كما وأن العوامل التغذوية كان لها تأثير كبير وفرق واضح ما بين الحوامل اللاتي يعانين من فقر الدم واللاتي لا يعانين اذ أظهرت الدراسة أن مستويات الاستهلاك اليومي من الحديد وفيتامين سي والبروتين كانت عالية لدى الحوامل الاتي لا يعانين من فقر الدم .

(OR= 2.242 , 12.326 , 5.723,4.134,9), بالترتيب

عدد وجبات الطعام وزياده الشهية خلال الحمل أظهرتا ارتباطا سلبيا مع فقر دم الحديد للنساء الحوامل

(OR=0.327, 95% CI=0.162−0.663),(P< 0.002),

(OR=0.348, 95%CI=0.190−0.638), (p, 0.001).

لقد أثبتت الدراسه أن العوامل النسائيه والانجابيه كاستخدام أقراص منع الحمل او اللولب لتنظيم الحمل و زياده عدد المواليد وتكرار الاجهاضات مرتبطه ارتباطا ايجابيا بفقر دم الحديد للنساء الحوامل , كما وأن العوامل الاقتصاديه والاجتماعيه تحمل نفس الارتباط مع فقر الدم للحوامل , ومن هذه العوامل التدخين والحاله الاقتصاديه ومستوى التعليم .

كما وأثبتت الدراسه أن الغذاء هو أحد أهم العوامل المؤدية الى فقر الدم ونحن بحاجه ماسه الى اجراء بحوث أكثر في هذا المجال .

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