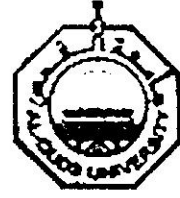




كلية الصحة العامة-فلسطين
School of Public Health
فلسطين-القدس



وزارة الصحة

جامعة القدس

The association between early marriage and pre-maturity among newborns in Gaza Governorates

By

Nahed R. Eid
B.Sc. Bethlehem University - Palestine

A Thesis submitted in partial fulfillment of the requirement for the degree of
Master of Public Health – Health Care Management

Supervisor
Dr. Yehia Abed, Dr. P.H
Associate Professor – Al-Quds University

Advisor
Mr. Mahmoud Eddema, MSC

February 2004

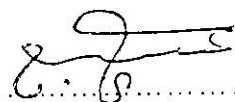
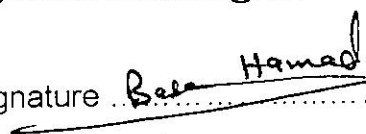
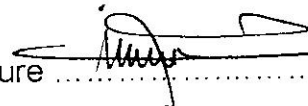
The association between early marriage and pre-maturity among
newborns in Gaza Governorates

By

Student Name: Nahed R. Eid
Registration No.: 9911190
Supervisor: Dr. Yehia Abed
Advisor: Mr. Mahmoud Eddama

Master thesis submitted and accepted, Date: February 16, 2004

The names and signatures of the examining committee members are as follows:

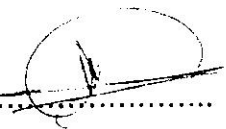
1- Dr. Yehia Abed	Head of committee	Signature	
2- Dr. Bassam Abu Hamad	Internal Examiner	Signature	
3- Dr. Mahmoud Joudeh	External Examiner	Signature	

Al-Quds University

2004

Declaration

I certify that this thesis submitted for the degree of Master is the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has been submitted for a higher degree to any other university or institution.

Signed: 

Nahed Ragheb Eid

Date:16-2-2004.....

DEDICATION

*To my parents, wife and children for their love,
support and unlimited patience.*

ACKNOWLEDGEMENTS

The author would like to express high appreciation and gratitude to Dr. Yehia Abed & Mr. Mahmoud Edda'ma for their insightful comments and their support. I would like to acknowledge the support given by the Population Council who provided the financial support for this study. My sincere thanks, respect, appreciation and love go to all members working in the Ministry of Health's information center who assisted me in gathering the data.

Abstract

The title of this study is "The association between early marriage and prematurity among newborns in Gaza Governorates". The aim of this study is to find out the association between early marriage and hospitalized prematurity.

Objectives of the study: to assess the pre-maturity status in the Gaza governorates, to identify socio-demographic risk factors associated with pre-maturity, to assess the association between pre-maturity and residency of mothers, to explore the association between mother's age at marriage and pre-maturity, to explore the association between mother's age at delivery and pre-maturity, to identify the association between pre-maturity and infant weight, to assess the association between pre-maturity and mother's years of education and to explore the association between pre-maturity and delivery outcome (single, twins, triplet and quadruplet).

Population and Sampling: all live births (108686) during the period between 1st of Jan., 1999 & 31st of Dec., 2002 in Northern, Gaza and Mid-zone Governorates. The sample consisted of all newborns (8457) who weighted less than 2500 grams at birth.

Material of the Study: Birth Registration Record from the Ministry of Health's information center.

Results, conclusions and recommendations: The distribution of all live and premature births by weight and governorate indicated that the majority of the total premature newborns are from Gaza governorate (55.1%) while the least from Mid-zone governorate (19%). The distribution of the total number of live and premature births by weight and gender suggested that the majority of live births are males (51.8%) while the majority of premature are females (53.6%). The distribution of all live and premature newborns by weight and mothers age at marriage suggested that the majority of births are for mothers whose age at marriage was over 18 years 47.4% and 48.3% for newborns weighting more than 2500 grams and less or equal to 2500 grams, respectively. The distribution of all live and premature newborns by weight and mothers age at delivery suggested that the majority of newborns are for mothers whose age at delivery was over 18 years 94.5% and 92% for newborns weighting more than 2500 grams and less or equal to 2500 grams, respectively. The distribution of all live and premature births by weight and mothers age at marriage and mothers years of education suggested that mothers who had 7-12 years of education had premature newborns more than mothers who had educational years less than 7 years and over 12 years of education regardless of mothers age at marriage. The distribution of all live and premature births by weight and mothers age at delivery and mothers years of education suggested that mothers who had 7-12 years of education had premature newborns more than mothers who had educational years less than 7 years and over 12 years of education regardless of mothers age at delivery. The distribution of all live births by weight, mothers age at marriage and delivery outcome suggested that mothers who give birth to single delivery outcome had the highest percentage of premature newborns, regardless of mothers age at marriage. In addition, the number of premature twins was directly related to mothers age at marriage. The majority of triplet and quadruplet delivery outcomes were premature newborns, regardless of mothers age at marriage. The majority of triplet and quadruplet delivery outcomes were premature newborns, regardless of mothers age at delivery.

In the light of the study results, the researcher's recommendations are: Improving and reforming the referral and information system concerning newborns, particularly premature newborns' records. Further studies are needed to explore the reasons behind percentage of pre-maturity among females.

ملخص الدراسة

العلاقة بين الزواج المبكر وولادة الأطفال الخدج في قطاع غزة

مقدمة:

هدفت هذه الدراسة الى التعرف على العلاقة بين الزواج المبكر وولادة الأطفال الخدج في محافظات غزة.

منهجية الدراسة:

تمت هذه الدراسة في محافظات غزة الثلاث ، محافظة شمال غزة ، محافظة غزة ، محافظة الوسطى ، و هي دراسة مقطعية.

وتكون مجتمع الدراسة من جميع الولادات الحية المولودة في المحافظات أنفة الذكر ابتداء من الأول من يناير لعام 1999 ولغاية الحادي والثلاثون من ديسمبر لعام 2002. وقد بلغ عدد المواليد 108686 ولادة حية وقد تمثلت عينة الدراسة في 8457 مولوداً يمثلون جميع المواليد الذين بلغت أوزانهم أقل من 2500 جرام و صنفوا كأطفال خدج.

وقد درست نماذج تسجيل المواليد الموجودة في مركز المعلومات التابع لوزارة الصحة الفلسطينية بغزة ومن ثم عولجت هذه البيانات إحصائياً باستخدام برنامج Epi-info و برنامج SPSS.

النتائج والتوصيات:

توصلت الدراسة للنتائج التالية: أظهر توزيع جميع المواليد بما فيهم الخدج حسب المحافظات أن غالبية المواليد الخدج كانوا في محافظة غزة (55.1%) و أقل نسبة كانت في محافظة الوسطى (19%). كما أظهرت نتائج توزيع المواليد حسب الجنس بأن غالبية المواليد في المجتمع الأصلي من الذكور (51.8%)، بينما غالبية مواليد العينة (الخدج) كانوا من الإناث (53.6%). و أوضحت الدراسة أن الفئة العمرية أكثر من 18 سنة عند الزواج كانت لديهن ولادات أطفال تزيد أوزانهم عن 2500 جرام بنسبة (47.4%) في حين كانت نسبة ولادة أطفال تقل أوزانهم عن 2500 جرام (خدج) (48.3%) لنفس الفئة، مع العلم أن هذه الفئة العمرية كانت أكثر ولادة من الفئتين العمريتين الأخرين في الدراسة، و نفس النتيجة ظهرت في الفئة العمرية لأمهات أعمارهن عند الولادة أكثر من 18 عام، حيث بلغت النسب (94.5%) و (92%) للمواليد الذين بلغت أوزانهم أكثر و أقل من 2500 جرام على التوالي. أما بالنسبة للعلاقة بين سن الأم عند الزواج و عدد سنوات تعليمها و إمكانية إنتاج مواليد خدج فقد أشارت النتائج إلى أن أكبر نسبة لولادة أطفال خدج كانت لأمهات ذوات سنوات تعليم 7-12 سنة تعليمية بغض النظر عن الفئة العمرية عند الزواج. و هذه النتيجة تنطبق تماماً على العلاقة مع عمر الأم عند الولادة. كذلك فقد بينت الدراسة أن أغلبية مواليد التوائم الثلاثية و الرباعية كانوا مواليد خدج.

في ضوء نتائج هذه الدراسة فقد أوصى الباحث بما يلي:

1. تطوير و تحسين جهاز المعلومات المرتبط بالمواليد، تحديداً المواليد الخدج.
2. إجراء أبحاث ودراسات لإيجاد الأسباب التي أدت إلى ارتفاع نسبة الخدج عند الإناث.

Table of Contents

Declaration	I
Dedication	II
Acknowledgment	III
Abstract English	IV
Abstract Arabic	V
Chapter One: Introduction	1
1.0 Background	1
1.1 Geography	2
1.2 Demography	2
1.2.1 Population	2
1.2.1.1 Population density	3
1.2.2 Age and Sex Structure	3
1.2.2.1 Life Expectancy	3
1.2.3 Marital Status	4
1.2.4 Fertility	5
1.2.4 Prematurely newborn	5
1.3 Education	6
1.4 Problem Identification	7
1.5 Justification	8
1.6 Purpose of the study	9
1.7 Study Objectives	10
1.7.1 General Objective	10
1.7.2 Specific Objectives	10
1.8 Feasibility of the study and cost	10
1.9 Operational Definitions	11
Chapter 2: Literature Review	12
2.0 Marriage	12
2.1 Early marriage	12
2.1.1 Marriage age as a development indicator	14
2.1.2 Tradition, religion and legal age of marriage	16
2.1.3 International commitments	19
2.1.4 Early marriage and CRC	20
2.2 How common is early marriage	21
2.2.1 Sub-Saharan Africa	22
2.2.2 Asia	23
2.2.3 North American, Europe and Oceania	24
2.2.4 Caribbean and Latin American	24
2.2.5 Middle East and North Africa	24
2.3 Early Marriage: Causes and Context	25

2.3.1	Early marriage as a strategy for economic survival	26
2.3.2	Protecting girls	26
2.3.3	Sanction against early marriage: the legal context	27
2.4	The impact of early marriage on children and society	27
2.4.1	Psychological disadvantage	28
2.4.2	Adolescent health and reproduction	29
2.4.2.1	Pregnancy and childbirth	29
2.4.2.2	Prematurity and low birth weight	30
2.4.2.3	Infant and early childhood care	44
2.4.2.4	Future maternal health and child bearing	44
2.4.2.5	The impact of maternal age on pregnancy and its outcomes	45
2.4.3	The denial of education	45
2.4.4	Violence and abandonment	46
Chapter Three: Methodology		48
3.0	Study design	48
3.1	Study population	48
3.1.1	Sampling Method/Size	49
3.2	Place of the study	49
3.3	Operational definitions	49
3.4	Tools of the study	50
3.5	Data collection procedure	50
3.5.1	Inclusion Criteria	50
3.5.2	Exclusion Criteria	51
3.6	Constrains of the study	51
3.7	Ethical issues	51
3.8	Piloting	52
3.9	Data entry and statistical analysis	52
Chapter Four: Results		53
4.0	Introduction	53
4.1	Geographical distribution of the study population	54
4.1.1	Distribution of all live births and premature by weight and governorate	54
4.2	Distribution of premature live births by gender	56
4.3	Marital age and weight of newborns	58
4.4	Mothers age at delivery and weight of newborns	59
4.5	Marital age and mothers years of education	59
4.6	Mothers age at delivery and mother years of education	61
4.7	Marital age and outcome of delivery	62
4.8	Mother age at delivery and outcome of delivery	64
4.9	Marital age and weight of newborn	67
4.10	Mothers age at delivery and weight of newborns	68
4.11	Marital age and mothers years of education	69
4.12	Mother age at delivery and mothers years of education	71
4.13	Marital age and outcome of delivery	72
4.14	Mother age at delivery and outcome of delivery	74

Chapter Five: Discussion	76
Chapter Six: Conclusion and recommendations for future research	86
6.0 Conclusion	86
6.1 Recommendations for future research	88
References	89
Annexes	98

List of Tables

Chapter One:

Table 1: Percentage Distribution of persons (12 & over) by age, marital status and sex in the Palestinian Territory – 2000 (PCBS, 2001) 5

Table 2: School Enrollment for the Palestinian Population aged (10 – 24) years by age and sex and region Source: Palestinian Central Bureau of Statistics, 2001 6

Chapter Two:

Table 3: (Reproduced and translated from personal Status laws for Muslims and Christians and Foreigners and Awqaf Law, Gaza, 1996) 18

Chapter Four:

Table (4): Distribution of all live births and premature by weight and governorate 43

Table (5,6) Distribution of all live births and Premature births by governorates and gender over the years of the study 44

Table (7) Distribution of Premature live births (≤ 2500 gm) by governorates 45

Table (8) Distribution of Premature live births (≤ 2500 gm) by gender 46

Table (9): Distribution of all live births and premature by weight and gender 46

Table (10): Distribution of all live births by weight and mothers age at marriage 47

Table (11): Distribution of all live births by weight and mothers age at delivery 48

Table (12): Distribution of all live births by weight, mothers age at marriage and years of education 49

Table (13): Distribution of all live births by weight, mother's age at delivery and years of education 51

Table (14): Distribution of all live births by weight, mothers age at marriage and delivery out come 52

Table (15): Distribution of all live births by weight, mothers age at delivery and delivery out come 54

Table (16): Distribution of all live and premature births by weight and governorate	55
Table (17): Distribution of all live and premature births by weight and gender	56
Table (18): Distribution of all live births by weight and mothers age at marriage	57
Table (19): Distribution of all live births by weight and mothers age at delivery	58
Table (20): Distribution of all live and premature births by weight, mothers age at marriage and years of education	60
Table (21): Distribution of all live births by weight, mothers age at delivery and years of education	61
Table (22): Distribution of all live births by weight, mothers age at marriage and delivery out come	62
Table (23): Distribution of all live births by weight, mothers age at delivery and delivery out come	64

List of Abbreviation

CDC	Center for Disease Control and Prevention – Atlanta
CRC	Convention of the Rights of the Child
GS	Gaza Strip
IUGR	Intrautrine Growth Reterdation
LBW	Low Birth Weight
MOH	Ministry of Health
NGOs	Non-Governmental Organizations
PCBS	Palestinian Center Bureau of Statistics
PHC	Primary Health Care
PNA	Palestinian National Authority
SGA	Small for Gestational Age
SPSS	Statistical Package for Social Sciences
UNICEF	
UNRWA	United Nations Relief and Works Agency
WHO	World Health Orgnization

Chapter One

Introduction

1.0 Background

A mounting number of studies in the literature as well as programmatic evidence increasingly confirm that those infants who have not matured to 37 weeks is a significant contributor to child health problems and developmental problems and to infant mortality in developing countries. In addition, existing literature support the view that early marriage has obvious impact on infant maturity. A number of studies have found that the incidence of premature infants is directly related to different factors one of which is early marriage. According to Drew et al (1996) women who reported early marriage during pregnancy in 1996 were 1.1 times more likely to deliver prematurely.

According to the Women Affair Center's questionnaire survey (2000) 42 percent of marriages in Palestine involve girls that are 17 years old or less, and between 9 to 17 percent of unions involved boys aged 18 years old or less. They indicated that the majority of these girls and boys are 15 -17 years old and 17-18 years, respectively. Records of Sharia court (1999) showed that 11.5 percent of early married women were 12 – 14 years, whereas the Women Affair Center's questionnaire survey (2000) indicated that 18.4 percent of early married women were 12 – 14 years old. This difference suggested that some parents of very young girls may falsify documents in order to circumvent the law. Alternatively, judges can apply their discretionary powers afforded by the exceptions to the minimum marital age under the law

and conduct marriages between very young boys and girls. They may forge such unions, or assess each union on individual basis. For example, a judge may view a parent's dire economic conditions as sound reason for the marriage. (Women's Affairs Center, 1999).

Early marriage has implications for the following: personal freedom, chance to develop a full sense of selfhood, psychological and emotional well being, reproductive health, educational opportunity, well-being of families and for society as a whole.

1.1 Geography

Palestine is comprised of two geographically separated areas, Gaza Strip (GS) and the West Bank (WB) including East Jerusalem. The WB is an area of approximately 5.634 square kilometers. It is located between the coastal plain in the west and the Jordan valley in the east. Gaza is an elongated zone located on the south of Palestine, stretching along the Mediterranean Sea between Israel and Egypt. Gaza Strip is an area of 362 square kilometers. Gaza strip is divided into five Governorates: Northern, Gaza City, Mid-zone, (Southern) Khanyounis and Rafah. Within these provinces there are four towns, eight refugee camps and fourteen villages.

1.2 Demography

1.2.1 Population

The Palestinian Central Bureau of Statistics (2000) estimated the population of the Gaza Strip and the West Bank to 3.150.056 inhabitants, of whom 1.428.891 are registered as refugees. They estimated the population of the Gaza Strip to be 1.138.126 of whom 73.6% were refugees. They also