

*Prevalence of Postpartum Depression among  
Recently Delivering Mothers in Nablus District  
and Its Associated Factors*

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**Dr. Amira Shaheen, Dr.  
Khubaib Ayoub, Dr.  
Shakoor Hajat**

# Introduction

# Background

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- Postpartum depression (PPD) is one of the major underestimated public health problems in the maternal and mental health. [Wisner et al. 2006]

- It affects 13% of mothers worldwide within the first year after birth. [O'hara & Swain 1996]

- **Definition:**

- **DSM V:** Major Depressive Episode (MDE) within 4 weeks of birth.
- **ICD-10:** depression within 6 weeks of birth.
- **Danish cohort:** 630,373 mothers, PPD occurs mostly in the first 3

# Major Depressive Episode

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- Five or more out of 9 symptoms in the same 2-week period. Each of these symptoms represents a change from previous functioning, and needs to be present nearly every day:
  - *Depressed mood; most of the day;*
  - *Loss of interest or pleasure, most of the day;*
  - *Change in weight or appetite;*
  - *Insomnia or hypersomnia;*

# Statement of the problem

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- PPD affects 10-15% of childbearing women worldwide and 20% in low and lower middle income countries.
- Searching pubmed and Google scholars → no published studies about postpartum depression in Palestine.
  - Jordan PPD prevalence → 22%. [Mohammad et al. 2011]
  - Palestinian Arabs in Acre (Akka) → 16.3% [Glasser et al. 2012]

# Significance of the study

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- ***Significance to public health research:***
  - a pilot study for further exploration of PPD in Palestine.
  - will expand knowledge about the various aspects of PPD.
  
- ***Significance to public health and maternal mental health practice:***

# Objectives

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- The main objective is to determine the prevalence and associated factors of postpartum depression among mothers aged 18-45 years in Nablus district at 2 months after birth.

- *To determine the proportion of mothers who have postpartum depression (scoring  $\geq 10$  on EPDS scale).*

- *To determine the socio-demographic factors*

*associated with PPD*

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# Methodology



# Methods

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- **Design:** cross-sectional.
- **Setting:** 12 vaccination clinics (MOH and UNRWA) in Nablus district at 7-12 wks PP.
- **Population:** mothers aged 18-45 years in Nablus district vaccination clinics at 7-12 wks PP.
- **Sample:** 245 mothers conveniently chosen.

# Study tool

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- Arabic validated EPDS from Jordan. [Oweis 2001]
- MSSS validated in Jordan. [Webster et al. 2000; Mohammad et al. 2011]
- + questionnaire about PPD related factors.
- Reviewed by a 3 expert-committee.

# Study procedure

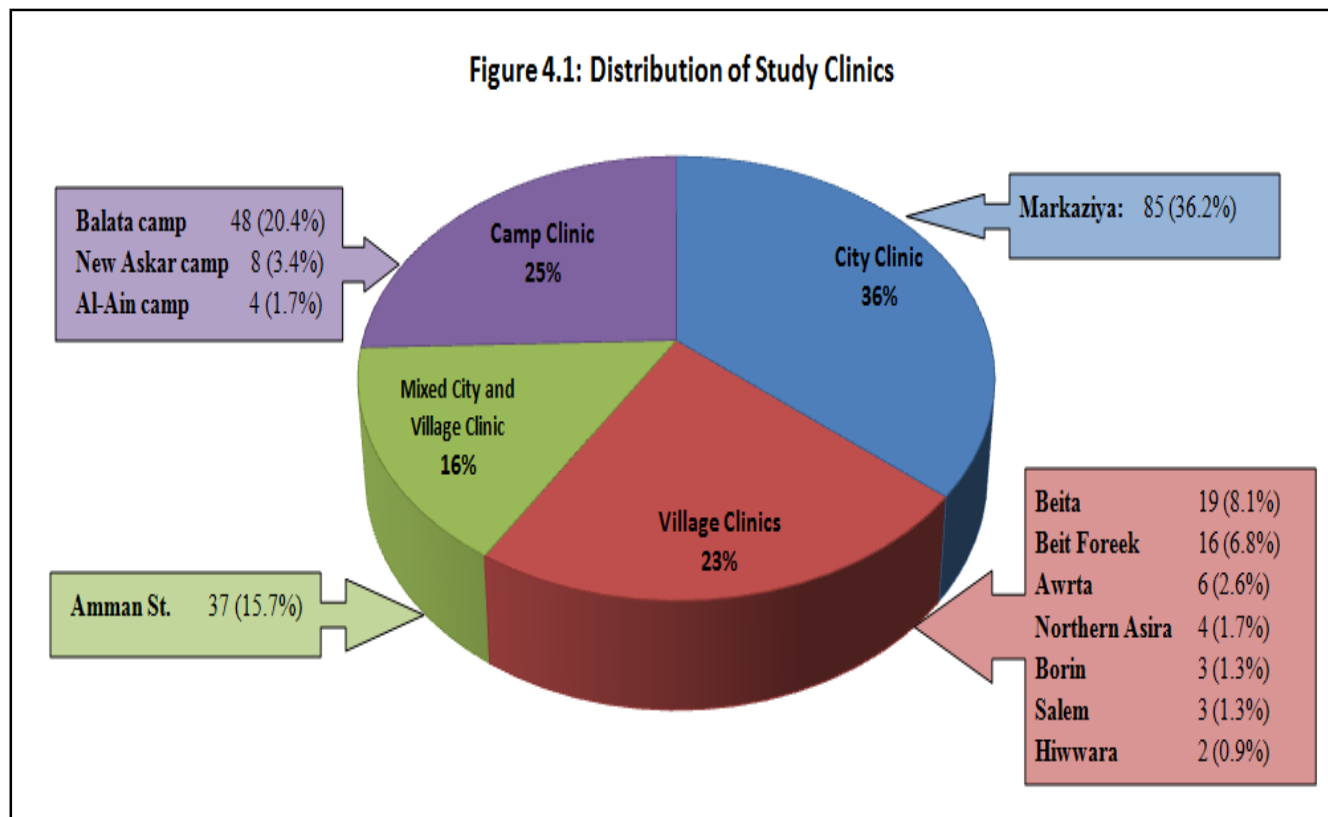
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- 2 qualified nurses interviewed mothers.
- Informed consent.
- Privacy and confidentiality were assured.
- Family relationship part self-answered.
- ***Ethical approval:***

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# Results

# Clinic distribution



### The Socio-demographic Characteristics of the Participants

Variable	Categories			Total	Mean [95% CI]	Median
<b>Age</b>	<b>17-24 years</b>	<b>25-34 years</b>	<b>35-44 years</b>			
n (%)	100 (42.6%)	116 (49.4%)	19 (8.0%)	235 (100%)	26.13 [25.45-26.81]	25
<b>Residence</b>	<b>City</b>	<b>Village</b>	<b>Camp</b>			
n (%)	117 (49.8%)	70 (29.8%)	48 (20.4%)	235 (100%)	-	-
<b>Education</b>	<b>6 years or less</b>	<b>7-12 years</b>	<b>&gt; 12 years</b>			
n (%)	8 (3.4%)	125 (53.2%)	102 (43.4%)	235 (100%)	12.59 [12.20-12.98]	12
<b>Occupation</b>	<b>Housewife</b>	<b>Employed</b>	-			
n (%)	211 (89.8%)	24 (10.2%)	-	235 (100%)	-	-
<b>Income</b>	<b>&lt; 2500 shekels</b>	<b>2500-5000 shekels</b>	<b>&gt; 5000 shekels</b>			
n (%)	104 (44.3%)	81 (34.5%)	25 (10.6%)	210 (89.4%)	3014.5 [2734.5-3294.5]	2500
<b>Income: family member ratio</b>	<b>0-500 shekels/ member</b>	<b>501-1000 shekels/ member</b>	<b>&gt; 1000 shekels/ member</b>			
n (%)	120 (51.1%)	64 (27.2%)	24 (10.2%)	208 (88.5%)	-	-
<b>Insurance</b>	<b>Governmental</b>	<b>Military</b>	<b>UNRWA</b>	<b>Private</b>	<b>No insurance</b>	
n (%)	144 (61.3%)	9 (3.8%)	58 (24.68%)	17 (7.23%)	48 (20.4%)	-

## Birth and Newborn Characteristics of the Participants

Variable	Categories		
<b>Place of birth</b>	<b>Governmental Hospital</b>	<b>Private Hospital</b>	<b>UNRWA Hospital</b>
n (%)	123 (52.3%)	97 (41.3%)	15 (6.4%)
<b>Type of birth</b>	<b>Vaginal</b>	<b>Caesarean Section</b>	-
n (%)	160 (68.1%)	75 (31.9%)	-
<b>Desired pregnancy</b>	<b>Yes</b>	<b>No</b>	-
n (%)	171 (72.8%)	64 (27.2%)	-
<b>Primiparity</b>	<b>Yes</b>	<b>No</b>	-
n (%)	73 (31.1%)	162 (68.9%)	-

Variable	Categories		
<b>Newborn Sex</b>	<b>Male</b>	<b>Female</b>	-
n (%)	115 (48.9%)	119 (50.6%)	-
<b>Desired baby Sex</b>	<b>Male</b>	<b>Female</b>	<b>No difference</b>
n (%)	67 (28.5%)	57 (24.3%)	111 (47.2%)
<b>Baby's sex agreement With mother's desire</b>	<b>Agree or no difference</b>	<b>Do not agree</b>	-
n (%)	183 (77.9%)	51 (21.7%)	-
<b>NICU Admission</b>	<b>Yes</b>	<b>No</b>	-
n (%)	30 (12.8%)	205 (87.2%)	-
<b>Premature baby</b>	<b>Yes</b>	<b>No</b>	-
n (%)	38 (16.2%)	197 (83.8%)	-
<b>Feeding Type</b>	<b>Breast Feeding</b>	<b>Formula Feeding</b>	<b>Mixed Feeding</b>
n (%)	153 (65.1%)	16 (6.8%)	66 (28.1%)

## Psycho-social Characteristics of the Participants

Variable	Categories		
<b>Personal mental history</b>	Yes	No	Don't know
n (%)	4 (1.7%)	228 (97%)	3 (1.3%)
<b>Family mental history</b>	Yes	No	Don't know
n (%)	4 (1.7%)	231 (98.3%)	-
<b>Depression during pregnancy</b>	Yes	No	Don't know
n (%)	59 (25.1%)	176 (74.9%)	-
<b>Number of stressful events</b>	No stressful events	One stressful event	2 or more stressful events
n (%)	48 (20.4%)	111 (47.2%)	76 (32.3%)

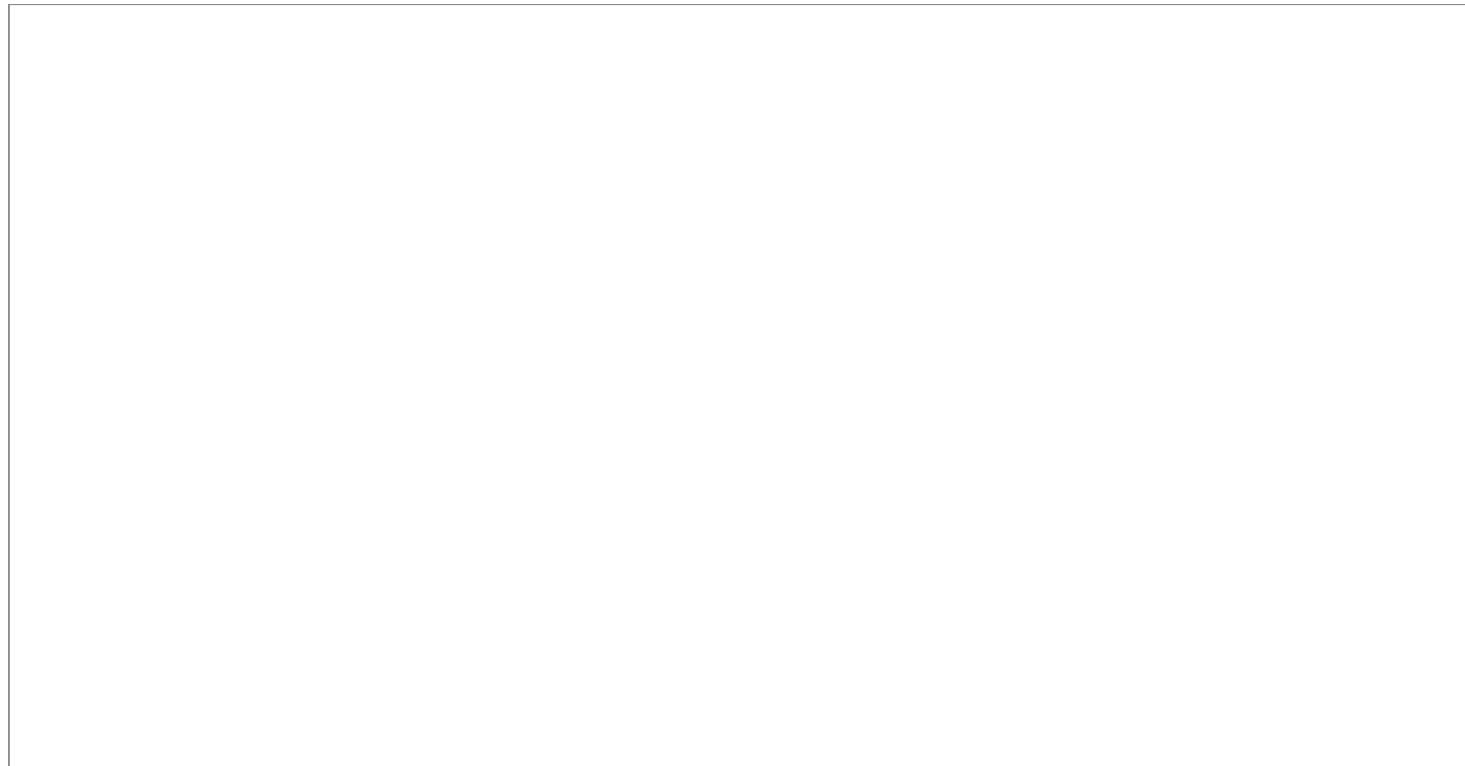
Variable	Median	Poor N (%)	Good N (%)	Total	
<b>Husband relationship</b>	4	12 (5.2)	223 (94.8)	235	
<b>Husband Help &amp; Support</b>	4	50 (21.3)	185 (78.7)	235	
<b>Mother-In-Law relation</b>	4	27 (12.6)	187 (87.4)	214	
MSSS	Median	Low N (%)	Medium N (%)	High N (%)	Total
<b>MSSS score</b>	24	15 (6.4)	102 (43.4)	108 (46.0)	225



# Prevalence of PPD

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- Mothers scored  $\geq 10$  on EPDS  $\rightarrow$  **17%**



## Factors associated with PPD (univariate)

Variable	Categories	Non-depressed	Depressed	Total	OR [95% CI]	p value
Premature newborn	yes	36 (18.5%)	2 (5%)	38 (16.2%)	0.23	<b>0.035*</b>
	no	159 (81.5%)	38 (95%)	197 (83.8%)	[0.05-1.0]	
Personal mental history	Yes	1 (0.5%)	3 (7.5%)	4 (1.7%)	15.72	<b>0.016*</b>
	No or don't know	194 (99.5%)	37 (92.5%)	231 (98.3%)	[1.59-155]	
Depression during pregnancy	Yes	28 (14.4%)	31 (77.5%)	59 (25.1%)	20.54	<b>&lt; 0.001*</b>
	No	167 (85.6%)	9 (22.5%)	176 (74.9%)	[8.84-47.74]	
Husband & Marital relationship satisfaction	Poor	4 (2.1%)	8 (20%)	12 (5.1%)	11.94	<b>&lt; 0.001*</b>
	Good	191 (97.9%)	32 (80%)	223 (94.9%)	[3.39-41.97]	
Husband help & support	Poor	29 (14.9%)	21 (52.5%)	50 (21.3%)	6.33	<b>&lt; 0.001</b>
	Good	166 (85.1%)	19 (47.5%)	185 (78.7%)	[3.03-13.20]	
Mother-in-law relationship satisfaction	Poor	19 (10.6%)	8 (23.5%)	27 (12.6%)	2.61	<b>0.037</b>
	Good	161 (89.4%)	26 (76.5%)	187 (87.4%)	[1.03-6.57]	
Maternal Social Support Scale (MSSS)	Low	9 (4.8%)	6 (16.7%)	15 (6.7%)	1	<b>&lt; 0.001*</b>
	Medium	77 (40.7%)	25 (69.4%)	102 (45.3%)	0.49	
	High	103 (54.5%)	5 (13.9%)	108 (48%)	0.07	
					[0.16-1.50]	<b>&lt; 0.001**</b>
					[0.02-0.29]	

\* Fisher's exact test; \*\* Chi square for trends (linear association)

## Factors associated with PPD -2 (univariate)

Variable	Categories	Non-depressed	Depressed	Total	OR [95% CI]	p value
Away from a dear person	Yes	12 (6.2%)	12 (30%)	24 (10.2%)	6.54 [2.67-15.97]	< 0.001*
	No	183 (93.8%)	28 (70%)	211 (89.8%)		
Verbal harassment	Yes	2 (1 %)	6 (15%)	8 (3.4%)	17.03 [3.29-87.91]	< 0.001*
	No	193 (99%)	34 (85%)	227 (96.6%)		
Marital separation or divorce	Yes	7 (3.6%)	5 (12.5%)	12 (5.1%)	3.84 [1.15-12.77]	0.035*
	No	188 (96.4%)	35 (87.5%)	223 (94.9%)		
Severe illness of mother or a dear person	Yes	16 (8.2%)	10 (25%)	26 (11.1%)	3.73 [1.55-8.99]	0.002*
	No	179 (91.8%)	30 (75%)	209 (88.9%)		
Hitting and physical abuse	Yes	1 (0.5%)	3 (7.5%)	4 (1.7%)	15.73 [1.59-155.3]	0.016*
	No	194 (99.5%)	37 (92.5%)	231 (98.3%)		
Difficulties dealing with children	Yes	38 (19.5%)	21 (52.5%)	59 (25.1%)	4.57 [2.23-9.33]	< 0.001*
	No	157 (80.5%)	19 (47.5%)	176 (74.9%)		
Number of stressful events	no stressful events	45 (23.1%)	3 (7.5%)	48 (20.4%)	1	< 0.001*
	one stressful event	100 (51.3%)	11 (27.5%)	111 (47.2%)	1.65 [0.44-6.20]	< 0.001**
	> 1 stressful events	50 (25.6%)	26 (65%)	76 (32.3%)	7.8 [2.21-27.53]	

## Factors associated with PPD (logistic regression)

Variable	B	S.E.	OR [95% CI for OR]	p- value
Having a female baby	-1.755	0.696	0.17 [0.04- 0.68]	0.012
Depression during pregnancy	2.818	0.701	16.75 [4.24- 66.16]	< 0.001
Being away from a dear person	2.053	1.016	7.79 [1.06- 57.09]	0.043
Poor satisfaction with marital relationship	2.622	1.186	13.77 [1.35- 140.71]	0.027
Constant	-4.363	0.904	0.013	< 0.001

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# Limitations

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- Convenient sample – selection bias?
  - Possible recall bias – pregnancy events.
  - EPDS is screening rather than diagnostic tool.
  - Multiple testing effect on significance.

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**Thank you for your attention**