

# Minor Psychiatric Morbidity in Young Saudi Mothers Using Mini International Neuropsychiatric Interview (MINI)

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## ABSTRACT

**Objective:** To determine the prevalence of postpartum psychiatric disorders in young mothers using a brief structured psychiatric interview, the Mini International Neuropsychiatric Interview (MINI).

**Study Design:** A cross-sectional study.

**Place and Duration of Study:** The Primary Health Care Centres (PHCCs) in Al-Ahsa region, Saudi Arabia, during the period 2008 to 2009.

**Methodology:** Young primigravid mothers (in their teen age) were interviewed using MINI. Psychiatric morbidity was analyzed in relation to the different sociodemographic, psychiatric and obstetric characteristics. The distribution and frequency of the MINI subscales were presented in number and percentage. To quantify the risk, Univariate analysis was employed with reporting of crude Odds Ratio (OR) and 95% Confidence Intervals (CI); p-value of < 0.05 was considered significant.

**Results:** The prevalence of psychiatric disorders was 22.6% with preponderance of anxiety disorders due to increased prevalence of generalized anxiety disorder and social phobia. Postpartum anxiety disorders were significantly associated with urban residency, poor husband support, past history of psychiatric illness, anemia, caesarean mode of delivery and female baby gender.

**Conclusion:** These results highlighted importance of addressing screening for psychiatric morbidity particularly anxiety disorders in the implementation of perinatal care for the pregnant Saudi adolescents.

**Key words:** Teenage pregnancy. Postnatal psychiatric disorders. MINI. Saudi Arabia. Anxiety.

## INTRODUCTION

A number of public health problems are associated with adolescent pregnancy in terms of elevated rates of adverse physical and psychiatric pregnancy outcome.<sup>1</sup> In developing countries, the focus of pre-natal and delivery care is focused on women's medical and obstetrical problems and on the baby's wellbeing. The social and psychological needs of pregnant women as they experience biological, physical, and physiological changes are rarely addressed.<sup>2</sup>

Since the mid-20th century, Saudi Arabia with its oil riches has been in a sociodemographic, cultural, and economic transformation. In the last four decades the population has increased from 4 million (5% urban, 70% illiterate) to 28 million (80% urban, 81% literate) with over 50% of the population in Saudi Arabia is now less than 25 years of age. This fast transformation raised many new concepts. Young women became more reluctant to marry at an earlier age, choosing to pursue higher education and careers, less accepting of having

their roles restricted to motherhood. The consequences of these changes would have a substantial effect on the mother, her child and the family.<sup>3</sup>

The birth of a child especially the first can be a joyous and exciting time, but following childbirth, some women may experience postpartum disorders such as the baby blues, postpartum depression (PPD), birth-related post-traumatic stress disorder, postpartum anxiety and/or panic disorder, postpartum obsessive-compulsive disorder (OCD) or rarely postpartum psychosis (PPP). There is growing awareness of the importance of mental health issues in the perinatal period in Western societies, but very little information is available from Muslim and Arab countries.<sup>4</sup> Green *et al.* reported that 22% and 12.5% of mothers were falling into depression at 3 months after delivery in United Arab Emirates.<sup>5</sup> In Tunisia, Masmoudi *et al.* reported an overall prevalence of 13.2%.<sup>6</sup>

Most, if not all, previous studies in Arab region have adopted questionnaires in the assessment of their patients' psychiatric status.<sup>4-6</sup> Questionnaires, however, can only reveal the prevalence of psychiatric symptoms. To obtain a more accurate understanding of psychiatric morbidity among young women in postpartum period, studies using proper and structured psychiatric diagnostic procedures are needed.

It is hoped that clinicians working at maternal and infantile health clinics in a primary health care setting can understand their patients better through an aware-

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ness of their psychiatric condition. As a consequence, clinicians may be able to provide more comprehensive care for their patients.

The objective of this study was to determine the prevalence of psychiatric disorders in young mothers in postpartum period in Al Ahsa region, Eastern Province, Saudi Arabia using a structured diagnostic interview (MINI).

### METHODOLOGY

This study was conducted during the period 2007-09, in Al-Ahsa, Saudi Arabia; which is the largest province in the Eastern region with a population of nearly 1.5 million with diverse socioeconomic backgrounds. Maternal services are provided by Al-Ahsa Maternity Hospital and a network of 53 primary health care centres (PHCCs).

The sample consisted of all primigravid teenage females attending the primary health care centres for postnatal visits within 2 months after delivery. Subjects with any chronic medical disease (hypertension, Diabetes, renal, cardiac and sickle cell disease) or multiple births were excluded. Two hundred and five cases were legible to be enrolled in the study. Of those, 190 subjects agreed to participate with a response rate of 92.7%. An informed consent was obtained from each participant before enrollment in the study.

Data were collected regarding sociodemographic (educational level and occupation, current residence and level of income), medical, especially obstetrical (antenatal; gestational Diabetes, anemia, and other antenatal complications e.g. premature rupture of membranes and hypertension, perinatal; mode of delivery, newborn's gender and health status and postpartum complication e.g. postpartum hemorrhage) and psychiatric data in a semi-structured manner (quality of marital life, support by husband, stressful life events in the last 6 months, past history of psychiatric illness). A standardized structured diagnostic interview according to the Arabic version of Mini International Neuropsychiatric Interview (MINI) 5.0.0 edition.<sup>7</sup> The MINI is a standardized diagnostic instrument for the diagnosis of psychiatric disorders. It consists of standardized, structured, closed-end questions throughout its diagnostic procedure. Studies have shown that the MINI is a valid and reliable diagnostic tool. Inter-rater and test-retest reliabilities were high among the majority of disorders. Validities with other lengthy structured diagnostic interviews, including the Composite International Diagnostic interview (CIDI) and Structured Clinical Interview (SCID), were also high.<sup>8</sup> Trained research staff has helped in data collection. They underwent training on the MINI interview provided in 3 separate sessions.

The data were analyzed using Epi Info™ for Windows version 3.5.1 (Centres for Disease Control and Prevention). The predictor variables were grouped into sociodemographic, psychiatric and obstetric charac-

teristics. The distribution and frequency of the MINI subscales were presented in number and percentage. The anxiety disorders were assessed in detail because it represented the most prevalent finding. In order to evaluate the factors associated with postpartum anxiety, the sample was divided in two groups, cases and non-cases. To quantify the risk, Univariate analysis was employed with reporting of crude Odds ratio (OR) and 95% Confidence Intervals (CI); p-value of < 0.05 was considered significant.

### RESULTS

A total of 190 women were enrolled in this study. The mean age was 17.7 years, ranging from 15.7 to 19.8 years. The demographic data and clinical characteristics of these participants showed that the majority of mothers (79.5%) had achieved either elementary or secondary levels of education and 78.4% were housewives. Nightly-two women (48.4%) were living in urban areas and 23.7% had unsatisfactory income. The majority of cases had good quality of married life; however, 32 (16.8%) of them described this relation as poor and 32.7% of the sample lack the assistance from husband, 18.4% had stressful life events during the previous 6 months, 8.4% had previous psychiatric disorders and 27.4% had a family history of psychiatric disorders.

Table I summarizes the obstetric and psychiatric characteristics of the study sample. Regarding the course of

**Table I:** Obstetric and psychiatric findings of the participants.

	Total (N=190) N (%)
Gestational diabetes	46 (24.2)
Anemia	104 (54.8)
Other pregnancy complications	34 (17.9)
Abnormal delivery mode	
Caesarean	48 (25.3)
Instrumental	31 (16.3)
Baby sex (gender)	
Male	115 (60.5)
Female	75 (39.5)
Abnormal baby health	26 (13.7)
Postpartum complications	65 (34.2)
Poor quality of marital life	32 (16.8)
Past history of psychiatric illness	16 (8.4)
Family history of psychiatric illness	52 (27.4)
Stressful life events in last 6 months	35 (18.4)
Absent husband support	45 (23.7)
Frequency of psychiatric diagnosis by MINI	
- At least one psychiatric disorder:	43 (22.6)
- More than one psychiatric disorders:	12 (6.3)
- Anxiety disorders:	29 (15.3)
Generalized anxiety disorder.	5 (2.6)
Social phobia	6 (3.2)
Panic disorder	5 (2.6)
Obsessive compulsive disorder	2 (1.1)
Post-traumatic stress disorder	2 (1.1)
Agoraphobia	2 (1.1)
- Depressive disorders	12 (6.3)
Major depression	5 (2.6)
Dysthymia	7 (3.7)
- Eating disorders	2 (1.1)
- No psychiatric disorders.	135 (71.1)

MINI = Mini international neuropsychiatric interview.

pregnancy, nearly half of the sample reported anemia (54.8%) whereas 24.2% had gestational Diabetes, others include: hypertension, premature rupture of membranes and antepartum hemorrhage in 17.9% of cases. Caesarean delivery was reported in 25%, a gender distribution of babies (60.5 % males and 39.5% females), a baby's health problem (13.7%) and post-partum complications in 34.2% of cases.

The prevalence of psychiatric disorders in this sample was shown in Table I. Forty three participants had at least one psychiatric diagnosis. The prevalence of any psychiatric disorder was (22.6%).The frequency of having anxiety and mood disorders was 15.3% and 6.3% respectively. Among all the psychiatric diagnoses, generalized anxiety disorder (GAD) and social phobia were the most frequent (prevalence = 5.8 and 5.3% respectively), followed by dysthymic disorder (3.7%), panic disorder (3.2%) and major depressive disorder (2.6%). There were 12 of our participants (6.3%) had both mood and anxiety disorders. Only 2 cases (1%) of post-traumatic stress disorder, panic disorder and obsessive compulsive disorder were found.

In Table II the sociodemographic, psychiatric and obstetric characteristics were compared between participants

with anxiety disorder and those without. There was an excess risk of anxiety among housewives ( $p < 0.05$ ) and in urban areas ( $p < 0.01$ ). Anxious mothers reported significantly more complications of pregnancy as caesarean mode of delivery, female baby gender and anemia ( $p < 0.01$ ). Nearly one half of anxious mothers reported a lack of husband support during pregnancy and a past history of psychiatric illness ( $p < 0.01$ ).

### DISCUSSION

This cross-sectional investigation assessed the adolescent mothers followed at primary health care centres in Al-Ahsa region, Saudi Arabia. Patients were interviewed with a standardized psychiatric interview (MINI) to characterize the rate of major Axis-I DSM-IV disorders.

Rates of current Axis-I DSM-IV disorders using the MINI were found to be common, affecting nearly one-quarter of the sample (22.6%). This rate of current Axis-I disorders is in agreement with the results of the study of conducted by Matthey and his associates, who found that in a group of 216 Australian postpartum women 6 weeks after delivery, 25.9% met the DSM-IV criteria for depressive or anxiety disorders (including phobia, panic,

**Table II:** Factors associated with postpartum anxiety disorders.

		Anxiety versus no anxiety			
		Case (N=29) N (%)	Non-case (N=161) N (%)	p-value	OR 95% CI
Demographic	Maternal education:				
	< secondary	8 (27.6)	31 (19.3)	0.3 Ns	0.62
	≥ secondary	21 (71.4)	130 (80.7)		0.3-1.5
	Maternal occupation				
	House wife	18 (62)	131 (81.4)	0.02*	2.7
Working	11 (38)	30 (18.6)		1.14-6.2	
Residence status	Urban	24 (82.8)	74 (46)	0.00 **	0.18
	Rural	5 (17.2)	87 (54)		0.06-0.4
	Unsatisfactory income	8 (27.6)	37 (23)	0.59 Ns	0.7
					0.3-1.8
Psychiatric	Poor quality of marital life	8 (27.6)	24 (14.9)	0.1 Ns	0.4
	Past history of psychiatric illness	16 (55.2)	36 (22.3)	0.00 **	0.23
	Family history of psychiatric illness	6 (20.7)	10 (6.2)	0.02 Ns	0.25
	Stressful life events	8 (27.6)	27 (16.8)	0.17 Ns	0.53
	Poor husband support	14 (48.3)	31 (19.3)	0.00 **	0.26
Obstetric	Gestational diabetes	9 (31)	37 (23)	0.35 Ns	0.66
	Anemia	14 (48.3)	20 (12.4)	0.00 **	0.15
	Other obstetric complications	17 (58.6)	87 (54)	0.65 Ns	0.37-1.85
	Abnormal delivery mode	14 (48.2)	36 (22.3)	0.00 **	0.4
	Female baby sex (gender)	23 (79.3)	52 (32.3)	0.00 **	0.12
	Baby health problems	6 (20.7)	20 (12.4)	0.24 Ns	0.54
	Postpartum complications	9 (31)	22 (13.7)	0.028*	0.35
				0.14-0.8	

\* Significant; \*\* Highly significant; Ns = Non significant.

and acute adjustment disorder with anxiety).<sup>9</sup> Similarly, other studies confirmed those findings.<sup>10</sup>

The present results from a verified standardized structured diagnostic interview have provided further evidence to support some of the previous questionnaire-based research which found high frequencies of anxiety and depression in maternity clinics.<sup>11,12</sup> However, these studies using questionnaires could not distinguish between major depression and dysthymic disorder, nor could they differentiate between specific anxiety disorders.

Most but not all investigations about women's antenatal and postpartum mental health have focused on depressive disorders because they are known as the most common mental disorder. Comparatively less research has been devoted to characterizing the whole distribution of Axis-I disorders including anxiety disorders in the general population of adolescent patients attending maternity clinics.

Of the postpartum adolescents with identified current disorders, anxiety disorders were the common current disorders (15.3%), with generalized anxiety disorder (GAD) and social phobia were the most frequent being the most common (prevalence=5.8% and 5.3% respectively). A similar prevalence was reported by Piyasil at Rajvithi Hospital in Thailand.<sup>13</sup> In non-pregnant teenagers prevalence of anxiety found in another study that took place in Egypt, was 7.9%. Thus, the prevalence of anxiety disorders in teenage women can be considered high and warrant concern for psychiatric morbidity in maternity clinic settings.<sup>14</sup>

Muneer *et al.* reported that one third of mothers, assessed on week 6 after delivery, were depressed according to the Edinburgh Postnatal Depression Scale. Their study included 154 women in Pakistan.<sup>15</sup> Recent researches on adolescent mothers have revealed rates of depressive symptoms within the first 3 months postpartum of 56%.<sup>16</sup> On the other hand, in our sample only 6.3% met criteria for depressive disorders, including current major depression (2.6%). Some authors suggest that PDD is a problem of industrialized countries; due to the sociocultural pattern including postnatal family support, non-industrialized population do not often experience PDD.<sup>17</sup>

Eating disorders were rare in this sample. Al-Sabaie, cited that Saudi culture discourages public display of the female body.<sup>3</sup> Until a few decades ago, thinness was equated with poverty or ill health and people continue to consider mild obesity as a sign of wealth and health.

The significant psychosocial correlates of postpartum anxiety disorders in this study are consistent with the findings of one of the previous studies.<sup>18,19</sup> Britton *et al.* reported that a history of psychiatric problems including depressed mood, medical and negative social life events,

lack of pregnancy planning and prenatal class attendance, perceived peripartum stress, and duration of postpartum hospital stay are probably risk factors which have been previously identified in a hospital-based survey of postpartum anxiety in women in USA. Anxious mothers in this sample reported more frequently poor husband support and past history of psychiatric illness.<sup>19</sup>

In the present study, several obstetric factors were recognized to be associated with postpartum anxiety such as anemia during pregnancy, caesarean section and early postpartum period complications e.g. postpartum hemorrhage. In Saudi Arabia, the birth rate per 1000 females is 114. The average age at marriage is 14 years, and average age at first pregnancy is 16 years.<sup>20</sup> An increased prevalence of anemia, low-birth-weight (LBW) infants, pregnancy-induced hypertension (PIH) and caesarean section was found in young Saudi pregnant women.<sup>20-21</sup>

Beard *et al.* researched the association between iron deficiency anemia (IDA) and perinatal emotions and cognitions in South Africa. They showed a strong association between iron status variables (haemoglobin, mean corpuscular volume, and transferrin saturation) and cognitive as well as behavioural variables such as anxiety in anemic mothers.<sup>22</sup> This study does not allow us to determine whether the relationship between anemia and postpartum anxiety is causal.

The literature on women's attitudes towards, and perceptions of, caesarean section as well as its potential role in postpartum maladjustment varies. In settings as diverse as North America and Sub-Saharan Africa, natural birth is highly desired, and some women find caesarean section traumatic.<sup>23</sup> On the other hand, in other places—for example, Latin America—caesarean section is seen as a preferable and less traumatic way to deliver.<sup>24</sup>

An interesting pattern appeared in the analysis of the gender of the children; the risk of anxiety disorders was higher among young mothers with female children. In many Arab communities, boys in the family are regarded as an asset (who acts as a future means of security for the parents) whereas girls are regarded as a liability, a mother sometimes exerts her influence on her husband and other members of the family through the agency of her eldest son.<sup>25</sup>

Several limitations of this investigation, as well as opportunities for future research, should be recognized. First, caution should be taken in interpreting some data from such a small number of participants, inferences of causality cannot be accomplished because of the design of this study (cross-sectional). There was no data of the MINI diagnosis in community or primary care settings in Saudi Arabia for comparison. Finally, the high rate of anxiety disorders, either alone or in combination



with mood disorders, suggests that directed study of these disorders remains an important task for the future.

## CONCLUSION

This study confirmed that the prevalence of postpartum psychiatric disorders is broadly similar to that in other countries, and that anxiety disorders were the most common. In addition, postpartum anxiety disorders were significantly associated with urban residency, poor husband support, past history of psychiatric illness, anemia, caesarean mode of delivery and female baby gender. In future, studies concerning the acceptability and the implantation of routine screening for postpartum anxiety and depression at the Saudi maternal and infantile health unit in primary healthcare settings in Saudi Arabia must be conducted.

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