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# The Minds of Mothers: Maternal Mental Health in an Urban Squatter Settlement of Karachi

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## Abstract

**Background:** Community-based information on maternal mental health in developing countries is meager and nearly non-existent in Pakistan.

**Objective:** To determine the proportion of probable cases of women with mental disorders and examine the associated conditions and risk factors which contribute to maternal mental ill-health.

**Methods:** With convenient sampling 260 mothers in an urban squatter settlement of Karachi were interviewed. The tools consisted of a household questionnaire collecting information on basic demographic and other characteristics and the Aga Khan University Anxiety and Depression Scale (AKUADS), an instrument to assess psychiatric morbidity.

**Results:** The proportion of probable cases of mental disorder was 28.8% (n = 75). Reviewing the gradient of responses the most frequently expressed psychiatric symptoms were “being worried” and “crying”. Amongst somatic complaints the most frequently reported was headache. Study also suggests that women in the older age group (OR 2.30, CI 1.27-4.19, p = 0.0031) and those with longer duration of marriage (OR 1.80, CI 1.01-3.22, p = 0.032) are more likely to be mentally distressed. Arguments with husband (OR 5.0, CI 2.19-11.52, p = 0.00001) or in-laws (OR 2.43, CI 1.22-4.85, p = 0.0059), husband’s unemployment (OR 4.1, CI 1.27-13.6, p = 0.0058), not having permanent source of income and lack of autonomy in making decisions significantly contributed towards mental illness,

**Conclusion:** Approximately 1 out of 4 women suffer from mental illness. This is alarmingly high. Besides counseling in cases of matrimonial disharmony, community-based interventions should aim to improve the socioeconomic status of households (JPMA 50:306, 2000).

## Introduction

Mental problems are thought to be a consequence of adverse interaction of the social, cultural and physical aspects of the environment on one hand and the different levels of the human nervous system on the other<sup>1</sup>.

Lack of intimate, confiding relationship, loss of mother before 11 years of age, presence of 3 or more children under 14 years of age, lack of paid employment have been identified<sup>1,2</sup> as four vulnerability factors for depression in women. Other factors include low income, poor housing, over-crowding, high parity, lack of security of tenure, etc.

Since women (particularly mothers) are the principal child care providers ensuring their adequate physical and mental health is of the utmost importance. Women who are already exhausted by repeated childbearing and subsisting on marginal nutrition, are not able to find sufficient energy to meet the demands of a young child. Studies<sup>2</sup>, have therefore questioned the ability of unfit mothers to provide adequate childcare. Unfortunately while much attention has been given to women’s physical health, little has been done about the mental health of women in developing countries<sup>3</sup>.

According to the WHO Global Burden of Disease 1996 Statistics<sup>4</sup>, the leading cause of disease burden for women in 1990 was unipolar depression, amounting for 13% of all causes of disease burden in women of developing countries. Figures for psychiatric morbidity vary considerably. Figures relevant to our setting range from 8.2% quoted by Thacore et al<sup>4</sup> to a maximum of 39% by A Alam<sup>5</sup> in Bangladesh. In a study carried out at the Aga Khan University, the prevalence of psychiatric morbidity was found to be 38.4% and significantly associated with women and housewives<sup>6</sup>. Another study

conducted in Pakistan by Akhund et al reported a prevalence of 12%<sup>7</sup> The latter two studies also varied considerably in design, setting and methods of identification of cases.

Mental ill health may present in a variety of ways. Goldberg and Bridges<sup>8</sup> have stated that anxiety and depression are the commonest psychiatric problems seen by general practitioners. Psychosis is not as common<sup>9</sup> and is more easily identified<sup>10</sup> Hence anxiety and depression appear to be the most reliable indicators of psychiatric morbidity.

Approximately over 40% of the total population of Karachi lives in squatter settlements<sup>11</sup>. These settlements are prime examples of the stresses of urbanization and poverty. Although the literature on community-based measures of prevalence of mental disease is limited<sup>12</sup>, a high prevalence of mental disorders in this population is expected.

This study attempts to focus on women's mental disorders in an urban squatter settlement of Karachi. Our objectives were to (a) determine the proportion of probable cases of women with mental disorders using AKUADS (Aga Khan University Anxiety and Depression Scale), a validated screening questionnaire for use in the community and (b) examine the associated conditions and risk factors which contribute to maternal mental ill health in the community.

## **Subjects and Method**

### **Setting of the study**

This study was conducted at Sultanabad, an urban squatter settlement of Karachi, located in District West where the Aga Khan University is working with a defined population of approximately 15,000 to improve the health status of women and children. The vast majority of people living in this settlement are Punjabi and Pushto speaking migrants from Northern Pakistan. Women in the age group 15-49 years comprise 21% and children under five, 14% of the population. In terms of literacy 74% women and 51% men are illiterate and only 50% men are gainfully employed. Contraceptive prevalence among eligible married couples remains dismally at 22%<sup>13</sup>.

### **The Study Instrument**

A literature review of the prevalence of mental disorders revealed a number of pitfalls. To mention a few, there is no uniformity of definitions, sampling procedures and ways of identifying cases. In some studies cases are identified through doctor's diagnoses, others use unstandardised methods of diagnosis and some studies have used screening questionnaires coupled with in depth psychiatric questionnaires<sup>12</sup>.

Locally two questionnaires have been employed and validated in various studies. These are: (a) SRQ-Self-Reported questionnaire and (b) AKUADS - Aga Khan University Anxiety and Depression Scale<sup>14</sup>. Since the SRQ is a self reporting instrument, it is not recommended for countries like Pakistan where the level of literacy is low. AKUADS however is more suitable. It has been developed from the actual symptoms of the patients and does not merely rely on expert's views. AKUADS is in the local language and is representative of local symptom complexes and local expressions for such symptoms. AKUADS has been validated in urban squatter settlements of Pakistan, keeping the psychiatrists' diagnosis as the gold standard. It is a 25-item questionnaire which includes 12 psychiatric and 13 somatic symptoms. It is a differential scale that is rank ordered for severity, compared to the SRQ which has only "yes" or "no" as answers. It inquires about the presence and severity of psychiatric and somatic symptoms of anxiety and depression over the last two weeks. Out of the 25 items in the AKUADS. 8 items assess the DSM-IV criteria for depression, 6 items assess anxiety and 9 items assess the criteria for panic attacks. Other advantages of using AKUADS are that it has a good content validity as compared to the DSM-IV criteria for diagnosis of the common neurotic disorders found in the community. It also meets the desirable attributes of a good screening questionnaire. Giving an equal score of 1 to each item, at a cut-off of 19, it has a reasonable sensitivity of 74%, a high specificity of 81% a positive predictive value

of 63%, a high negative predictive value of 88% and a low misclassification rate of 21%. Besides AKUADS, our study also used a household questionnaire to collect information on demographic and socioeconomic characteristics, interpersonal relationships and Women's autonomy etc.

### **Sample size**

We calculated sample size using Epi Info (version 6.0). Considering the population size, the prevalence of psychiatric morbidity and the worst possible outcome expected a total sample size of 245 was deemed sufficient. The prevalence of psychiatric morbidity was taken as 20%, which is an average of the different studies published. The worst possible outcome and confidence interval were set at 95% respectively. It is worth mentioning here that our study aimed at pointing out the proportion of probable cases rather than the true prevalence in the community. For calculation of the actual prevalence, a much larger sample and validation by clinical and psychiatric examination is required.

### **Study Design, Sampling Strategy and Interview Characteristics**

This study was a cross-sectional descriptive survey. Through convenience sampling a door-to-door survey of households was conducted in 1999. The medical students of the Aga Khan University administered the questionnaires after obtaining informed consent. Enrolled subjects comprised of ever-married women having at least one child under the age of 5 years at the time of the interview. Houses without children less than 5 years or where the mothers were not present were excluded from interview. The refusal rate was minimal (<1%). Areas in which language posed a barrier, help was sought from community volunteers.

The questionnaire was thus administered to 270 women. Of these, 3 women declined to offer information, while in 7 households, language barrier was faced by the interviewers, giving us a total sample size of 260.

### **Statistical Analysis**

Simple univariate analysis computed prevalence of various psychiatric and somatic symptoms. Then bivariate analysis was conducted identifying the likely risk factors for mental illness. The bivariate association between sociodemographic and other variables and cases and controls of mental illness were investigated and odds ratios and p-values were calculated using the software Epi Info version 6.0.

## **Results**

### **Univariate Analysis**

**Table 1. Response to each item in AKUADS (n = 260).**

S. No.	Item	Never (%)	Sometimes (%)	Mostly (%)	Always (%)
1.	Have you been sleeping less?	74.6 (194)*	16.5 (43)	6.9 (18)	1.9 (5)
2.	Have you had lack of interest in your daily activities?	76.5 (199)	16.2 (42)	5.8 (15)	1.5 (4)
3.	Have you lost interest in your hobbies?	78.5 (204)	13.1 (34)	6.5 (17)	1.9 (5)
4.	Have you been anxious?	56.5 (147)	25.4 (66)	13.1 (34)	5.0 (13)
5.	Have you had sensation of impending doom?	67.7 (176)	21.5 (56)	8.5 (22)	2.3 (6)
6.	Have you had difficulty in thinking clearly?	68.5 (178)	16.9 (44)	10.8 (28)	3.8 (10)
7.	Have you preferred to be alone?	73.8 (192)	17.7 (46)	6.9 (18)	1.5 (4)
8.	Have you felt unhappy?	55.8 (145)	27.7 (72)	11.5 (30)	5.0 (13)
9.	Have you felt hopeless?	63.5 (165)	20.8 (54)	11.2 (29)	4.6 (12)
10.	Have you felt helpless?	67.3 (175)	20.4 (53)	9.2 (24)	4.6 (12)
11.	Have you been worried?	52.3 (136)	25.0 (65)	12.7 (33)	10.0 (26)
12.	Have you cried?	53.1 (138)	23.8 (62)	14.2 (37)	8.8 (23)
13.	Have you thought of taking your life?	87.7 (228)	6.2 (16)	5.4 (14)	0.8 (2)
14.	Have you had loss of appetite?	62.3 (162)	24.2 (63)	9.6 (25)	3.8 (10)
15.	Have you had retrosternal burning?	64.2 (167)	20.0 (52)	12.3 (32)	3.5 (9)
16.	Have you had indigestion?	72.7 (189)	16.5 (43)	8.8 (23)	1.9 (5)
17.	Have you had nausea?	71.9 (187)	16.5 (43)	9.2 (24)	2.3 (6)
18.	Have you had constipation?	71.5 (186)	13.5 (35)	11.2 (29)	3.8 (10)
19.	Have you felt difficulty in breathing?	75.4 (196)	15.0 (35)	8.8 (23)	0.8 (2)
20.	Have you felt tremulous?	66.5 (173)	20.0 (52)	12.3 (32)	1.2 (3)
21.	Have you felt numbness of hands and feet?	58.8 (153)	24.6 (64)	14.2 (37)	2.3 (6)
22.	Have you felt a sensation of tension in your neck and shoulders?	56.5 (147)	21.2 (55)	16.2 (42)	6.2 (16)
23.	Have you had headaches?	34.6 (90)	26.9 (70)	26.5 (69)	11.9 (31)
24.	Have you had pain all over your body?	44.6 (116)	26.2 (68)	23.5 (61)	5.8 (15)
25.	Have you passed urine more frequently?	75.0 (195)	11.2 (29)	8.5 (22)	5.4 (14)

Table 1 shows the gradient of responses (simple frequency and percentage) to the AKUADS questionnaire for the 260 respondents. Interviewees responded to every item. The items for which high scores were recorded (based on “sometimes”, “mostly”, “always” responses) were headaches, worry, episodes of crying and tenseness. The least reported symptoms were suicidal ideation, lack of interest in hobbies or daily activities and having difficulty in breathing.

The most frequently expressed psychiatric symptom was of being worried and crying. Suicidal ideation was present ‘always’ in only 2 respondents in the last 2 weeks. Of the 13 items dealing with somatic symptoms, the most frequently reported symptom was headache followed by pain all over the body. The least expressed symptom was difficulty in breathing.

At a cut-off value of 19 for AKUADS, 75 (28.8%) women were classified as probable cases of mental illness. Those with scores less than 19 were classified as “mentally healthy” or controls.

### **Bivariate Analysis**

Factors associated with mental illness were computed through a bivariate analysis. A total of 47 variables were included in the study. Statistically significant results are shown in Table 2.

**Table 2. Association of mental illness with respondent characteristics (n = 60).**

S. No.	Items	Mental health		Odds ratio	95% CI	p-value
		Yes n = 75	No n = 185			
<b>1. Demographic characteristics</b>						
<b>* Respondent's age</b>						
	>29 years	34	49	2.3	1.27-4.19	0.0031
	<29 years	41	136			
<b>* Duration since marriage</b>						
	>10 years	43	79	1.8	1.01-3.22	0.032
	<10 years	32	106			
<b>* Children under 14</b>						
	>2	48	95	1.68	0.94-3.04	0.063
	≤2	27	90			
<b>* Respondent's first marriage*</b>						
	Yes	13	3	10	2.11-53.87	0.0004
	No	13	30			
<b>2. Economic characteristics</b>						
<b>* Husband employed*</b>						
	No	9	6	4.1	1.27-13.6	0.0058
	Yes	64	175			
<b>* Wages*</b>						
	Irregular	35	54	1.85	1.02-3.35	0.0299
	Regular	40	114			
<b>3. Interpersonal relationships</b>						
<b>* Fights/arguments with in-laws</b>						
	Yes	22	27	2.43	1.22-4.85	0.0059
	No	53	158			
<b>* Fights/arguments with husband*</b>						
	Yes	20	13	5	2.19-11.52	0.00001
	No	52	169			
<b>* Physical abuse by husband*</b>						
	Yes	10	6	3.44	0.93-13.17	0.034
	No	16	33			
<b>* Economic reasons in fights with husband*</b>						
	Yes	13	3	10	2.11-53.87	0.0004
	No	13	30			
<b>4. Women's autonomy</b>						
<b>* Decision making in child's marriage</b>						
	No	21	33	1.79	0.91-3.52	0.067
	Yes	54	152			
<b>* Can buy own clothes</b>						
	No	24	30	2.43	1.25-4.75	0.0045
	Yes	51	155			
<b>5. Others</b>						
<b>* Disturbing event in family</b>						
	Yes	28	49	1.65	0.9-3.04	0.08
	No	47	136			

Besides demographic, socio-economic characteristics and interpersonal relationships, information on women's autonomy was also obtained.

#### **Demographic variables**

Age of the respondents (OR 2.30, CI 1.27-4.19, p = 0.0031) and duration of marriage (OR 1.8, CI 1.0

1-3.22,  $p = 0.032$ ) were found to have significant association with mental illness. Women with more than two children under 14 years were approximately two times more likely to suffer from mental illness. Language, literacy level, educational status, age at marriage, frequency of marriage (first or second of either spouse), total number of children and duration of residence were not found to be significantly associated with mental illness.

### **Economic variables**

The husband being unemployed (OR 4.10, CI 1.27,  $p = 0.005$ ) and not having permanent source of income (OR 1.85, CI 1.02-3.35,  $p = 0.029$ ) contributes significantly to the woman's mental health. The woman was more likely to suffer from mental illness if the monthly household income was less than Rs. 2500. However, ownership of house or assets and type of household construction were not significantly associated with mother's mental status.

### **Interpersonal Relationships**

Arguments with both husband (OR 5.00, CI 2.19-11.57,  $p = 0.00001$ ) and in-laws (OR 2.43, CI 1.22-4.85,  $P = 0.0059$ ) were significantly associated with higher rates of mental ill health. Amongst the reasons for arguments with husbands, economic deprivation (OR 10, CI 2.11-53.87,  $p = 0.0004$ ) was cited as the main cause. Physical abuse by the husband during such quarrels (OR 3.44, CI 0.93-13.17,  $p = 0.034$ ) was also significantly associated with maternal mental ill health.

### **Women's Autonomy**

We used few proxy indicators for decision making as indicators of women's autonomy. Women who were not allowed to buy clothes (OR 2.43, CI 1.25-4.75,  $p = 0.0045$ ) or have a say in children's marriage were more likely to be mentally disturbed (OR 1.79, CI 0.91-3.52,  $p = 0.067$ ).

### **Others**

Death of respondent's mother in her adolescence and family history of psychiatric illness was not significantly associated with higher rates of mental ill health. Having a recent disturbing event in the family, however resulted in a greater likelihood of a woman being mentally disturbed (OR 1.65, CI 0.9-3.04,  $p = 0.08$ ).

## **Discussion**

To measure the overall psychiatric health of a population, psychological and psychosomatic symptoms have a better validity as compared to institution based data. We have therefore used AKUADS as our instrument to screen cases of mental illness in this community. Other studies<sup>10,12</sup> also support similar approaches.

When comparing figures for prevalence quoted by earlier studies in Pakistan<sup>6,7</sup> the diversity of study designs must be considered. These studies are either hospital-based or use the psychiatrist's diagnosis as the yardstick. Our study is unique, It is community-based and relies on a screening instrument already validated in urban squatter settlements.

Since patients coming to hospitals are not true representatives of the population, hospital based data tend to over-estimate the prevalence. Using AKUADS as a screening tool, this study found the proportion of probable cases of mental disorder to be 28.8%. a figure quite high considering the fact that this is a community-based study. In order to target interventions appropriately, prevalence studies in larger populations and across various socioeconomic strata are advocated.

"Crying" and expression of "being worried" are quite acceptable culturally and hence it is not surprising that they were frequently reported in this study. On the contrary people usually hesitate to admit suicidal thoughts. Since "headache" was the most commonly reported somatic symptom a psychiatric evaluation should be made of women who report it. Studies have reported considerable psychiatric morbidity in women attending gynecology clinics<sup>15</sup>.

A study on domestic violence in Karachi, shows that women married over 20 years are 3 times less likely to take any action in response to abuse. Qualitative analysis of interviews conducted with these

victims of violence reveals that as household and child rearing responsibilities increase, women become silent sufferers giving in to family needs and demands in order to maintain family integrity and protect their children. (Domestic violence: Determinants and consequences. A study from Karachi, Pakistan unpublished data). Ultimately this suffering manifests as anxiety and depression. Hence it is not surprising that in this study, older women with longer duration of marriage were more likely to suffer from mental distress. By this time the children are usually in their adolescence and economic pressures for education and social obligations for girl's marriage start. Presence of more than two children under 14 years of age, therefore emerged as a significant stressor in this study. A recent disturbing event in the family also contributes to mental illness. The latter two have also been reported elsewhere to cause significant mental distress in mothers<sup>1</sup>.

Interestingly however, the total number of children did not significantly contribute towards mental health. Another study<sup>16</sup> also supports this and states that our child rearing practices are different from the West where the majority of children have fairly tight and demanding schedules. In the community studied, scant attention is paid to disciplining the young children and with a combined family system lot of family support is available. Moreover, children are looked upon as assets rather than a burden. Studies have considered anxiety and other mental disorders as multi-factorial events, which need a confluence of several adverse circumstances at the individual and social level<sup>12</sup>. In this study, employment of the spouse and not having permanent source of income emerged as a major stressor. Verbal and physical abuse by husbands showed strong associations with depression. Other studies have also confirmed the association between disturbed marriages and depression in women<sup>17,18</sup>. Physical housing conditions, possession of material assets and literacy level did not contribute significantly to maternal mental ill health. This is consistent with an earlier study conducted on perceptions of mental health in the same locality<sup>19</sup>.

The choice to purchase one's own clothes and have a say in children's marriage were used as a proxy for women's autonomy. Denial of these led to anxiety and depression. Similarly in another study<sup>15</sup> women who were not allowed to travel and keep wages were twice as likely to be verbally and physically abused.

There is definite need for skill training for men and increasing income-generating opportunities for women. This will enhance their decision making power within the family. Culturally appropriate, community-based social support systems enhancing positive self-identity and promoting stress-coping mechanisms are recommended for mothers in difficult circumstances. Training of local women in group and individual counseling techniques, especially for women having incordial matrimonial relationships is advocated. In collaboration with community groups in this area, the primary health care system set up by the Aga Khan University is exploring ways and means to meet these needs.

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