

A CASE CONTROLLED COMPARISON OF MATERNAL MENTAL HEALTH OF MALNOURISHED VERSES WELL-NOURISHED CHILDREN

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ABSTRACT

OBJECTIVE

To compare the maternal mental health status of malnourished verses well-nourished children.

STUDY DESIGN

Cross sectional

PLACE AND DURATION OF STUDY

The study conducted from April 2003 to October 2003 at pediatrics department PGMI, Lady Reading Hospital, Peshawar, KPK, Pakistan.

SUBJECTS AND METHOD

200 mothers including 100 of malnourished and 100 well-nourished children's mothers admitted in Pediatrics unit lady Reading Hospital Peshawar were included in the study. Psychiatric problems were diagnosed through a semi structured interview, according to the Diagnostic and Statistical Manual of Mental Disorders Version 4 Text Revision (DSM-IV TR).

RESULTS

45 % mothers of the malnourished and 33% of the well-nourished children were found to have a psychological problem, the most common being Depressive disorder in 29 % of mothers of malnourished children vs. 18% of mothers of well-nourished children. Adjusting for all other known factors like age, literacy and socioeconomic status, maternal mental illness in general (Odds ratio=2.38, 95% CI:1.34-4.22, P=0.003) and depressive illness in particular (Odds ratio=1.94, 95 % CI: 1.05-3.57, P < 0.034) were found significantly correlated with malnourishment in children.

CONCLUSION

Maternal mental health problems, especially depression is associated with malnutrition in children and could be a potential target for intervention in dealing with malnourishment in children.

KEY WORDS

Maternal mental health, Mal/ well nourished children, Depression.

INTRODUCTION

Malnutrition is a clinical state resulting from deficiency of one or more vital nutrients. Primary malnutrition results from deficiency of food availability while secondary malnutrition results when food is available, but the body cannot assimilate it. Approximately 150 million children in the developing countries are malnourished and that malnutrition is linked in more than half of all child deaths worldwide¹. Deficiencies of essential nutrients at any stage of development have lasting adverse effects on the intellectual and psychological development of children^{2,3}. In the recent years attention has turned to other factors such as household behaviour, mother's mental health and intellectual capacity, sociocultural and child care practices that may also adversely affect child health and development.

Maladaptive child-care practices often the result of maternal mental health problems are recognized as an important cause of malnourishment⁴. Studies have shown an association between postpartum depression and defective child growth⁵. Another study concluded that the risk of malnutrition in children of mothers with mental disorders is doubled than the normal population⁵. Maternal care-giving can therefore seems a factor influenced by maternal mental health that has its relation with child malnutrition. Depression and anxiety disorders during pregnancy have been found to be associated with low birth weight in studies done in low and middle-income (LAMI) countries⁶.

The aim of the study was to detect and systematically compare the common psychological disorders in mothers of malnourished and well-nourished children.

SUBJECTS AND METHODS

200 hundred mothers participated in the study. Cases were 100 Mothers of Malnourished Children (MoM-C) [weight for age below the National Centre for Health Statistics (NCHS) World Health Organization (WHO) third centile] while control group consisted of 100 Mothers of Well-nourished Children (MoW-C) [weight for age above 10th centile]. To minimize selection bias, controls (MoW-C) were selected according to the age and socioeconomic status of the cases (MoM-C). Inclusion criteria was defined as all mothers of consecutively admitted children in Pediatric department of Lady Reading Hospital Peshawar between April 2003 and October 2003 while exclusion criteria was defined as mothers who did

not consent for the study.

Demographic details, educational and socioeconomic status were recorded on a pre-design questionnaire and each of the study participants was assessed for presence of any diagnosable psychiatric condition through a semi structured clinical interview using DSM IV-TR guidelines by a psychiatrist who was blind to the cases and control groups.

For these analyses we classified our maternal illness data into different categories among our control sample. A crude OR and 95% CI were determined for the maternal illness and malnutrition in both groups. For all of the adjusted analysis, we controlled for age, educational and socioeconomic status, because these confounders have been noted among other factors contributing to malnutrition.

RESULTS

The mean age of the mothers in both groups was 22.7 ± 4.5 . Majority of the mothers were young, as shown in Table 1 and had no formal education (table 2). Socioeconomic condition of the subjects was not satisfactory and almost uniformly distributed between the two groups (Table 3).

Forty five percent of mothers of the malnourished and 33% of the well-nourished children were found to have a psychological problem, the most common being Depressive disorder in 29 % of mothers of malnourished children vs 18% of mothers of well-nourished children. Maternal mental health problems were associated with malnutrition in their children regardless of age, educational status and socioeconomic status of the mother (Odds ratio=2.38, 95% CI: 1.34-4.22, $p=0.003$). Maternal depression alone doubles (Odds ratio=1.94, 95% CI: 1.05-3.57, $p \leq 0.034$) the risk of malnutrition in children (see table 4).

Table 1
Age Distribution of Patients

Age Distribution	MoM-C	MoW-C	Percentage
16-25 years	48	47	47.50%
26-35 years	36	39	37.50%
36-44 years	16	14	15.00%
Total	100	100	100%

Table 2
Educational Qualification of The Subjects (n=200)

Qualification	MoM-C	MoW-C	Total	Percentage
Illiterate	89	80	169	84.50%
Primary School	3	6	9	4.50%
High School	7	13	20	10.00%
Graduation	1	0	1	0.50%
Master Degree	0	1	1	0.50%
Total	100	100	200	100%

Table 3
Socioeconomic Status of the Subjects (n=200)

Monthly Income	MoM-C	Mo W-C	Total	Percentage	Odd Ratio
<5,000	49	33	82	41%	Odds ratio=1.95, 95% CI:1.10-3.45, P=0.02
5,000-10,000	26	22	48	24%	Odds ratio=1.24, 95% CI:0.65-1.39, P=0.50
10,000-2,0000	12	22	34	17%	Odds ratio=0.48, 95% CI:0.22-1.04, P=0.06
>20,000	13	23	36	18%	Odds ratio=0.50, 95% CI:0.24-1.05, P=0.06
Total	100	100		100%	

Table 4
Comparison of the Maternal Mental Health Problems Between the Two Groups. (n=200)

Psychological Order	MoM-C	Mo W-C	Total	Percentage	Odd Ratio
Depressive Disorder	29	18	47	23.5	Odds ratio=1.99, 95% CI:1.02-3.88, P=0.04
Anxiety Disorder Conversion	12	7	19	9.5	Odds ratio=1.81, 95% CI:0.68-4.81, P=0.23
Disorder Bipolar Affective	6	4	10	5.00%	Odds ratio=1.50, 95% CI:0.41-5.60, P=0.51
Disorder Adjustment	3	2	5	2.50%	Odds ratio=1.50, 95% CI:0.24-9.27, P=0.65
Disorder	1	0	1	0.50%	Odds ratio=3.03, 95% CI:0.12-75.28, P=0.49
Epilepsy	1	1	2	1.00%	Odds ratio=1.00, 95% CI:0.06-16.21, P=1.00
OCD	0	1	1	0.50%	Odds ratio=0.33, 95% CI:0.13-8.19, P=0.49
Schizophrenia	1	0	1	0.50%	Odds ratio=3.03, 95% CI:0.12-75.28, P=0.49
Total	54	33	87	43.50%	Odds ratio=2.38, 95% CI:1.34-4.22, P=0.003

DISCUSSION

In our study we found that 87 (43%) out of 200 samples had mental health problems. The most common condition was Depressive disorder in both groups which correlated with the general prevalence of the condition in the community as shown in a systemic review by Mirza and Jenkins⁷.

Finding in the current study that although mental health problems were more prevalent in mothers of malnourished children (54%) compared with the well-nourished children (33%), this difference was found statistically significant only in cases of maternal depressive illness where the risk of having malnourished children was double. Similar results have been reported in other studies that

concluded that common mental maternal disorders like depression doubled the risk of moderate or severe malnutrition in children⁵. Nasreen et al found that postnatal depression, current depression and low maternal intelligence were associated with malnutrition in the children⁶. The non-significant difference between the rest of mental conditions could be explained by the similarity in the sample of the two groups in terms of acute stress one might expect to cope with while having to look after a child in an indoor hospital setting. Major mental health problems like bipolar affective disorder and schizophrenia could be expected to have worse effects on the childcare, but due to our small sample size we could not draw any conclusion. Similar findings have been reported in other LAMI countries where no significant difference was noted in the mother of children based on their nutritional status⁸.

It's imperative to integrate the strategies of combating children malnutrition and intervention programs of improving maternal mental health, especially in regions with high malnutrition prevalence. Unfortunately, non of the child nutrition programmes have adequately addressed mental health condition of mothers in these regions⁹. It's really unfortunate that the World Health Organization's robust Integrated Management of childhood illness strategy does not address mental health status of mothers.

CONCLUSION



Maternal care giving is adversely affected by maternal mental health and success of any programmes geared to improve infant health or growth largely depends on the mother's mental well-being. Such findings have emphasised the need for new policies in the field of maternal and child care programmes. However, more research is needed so as to confirm the association between all these factors with greater scientific accuracy.

LIMITATIONS

Although the study recruited a sample of mothers of non-malnourished children, it could not be a true representative of the general population as both the groups had children admitted in a paediatric unit hence undergoing through stress, therefore our results could not be generalized to the rest of communities in Pakistan. Some factors related to the design of like recall bias and up to some extent selection bias could have impact on the final analysis, although efforts were made to minimise these biases at the time of designing the study.

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