

Assessment Of Malnutrition Among Mothers And Child Under Five: Awareness And Nutritional Status In District Okara, Punjab, Pakistan

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Abstract

The women of reproductive age and children under-5 are most vulnerable and easily affected by malnutrition. Particularly, those belonging to lower socioeconomic classes commonly suffer from malnutrition because of an unbalanced diet and a lack of food diversity. It has been further noticed that malnutrition problems are generally severe among pregnant mothers. In this cross sectional study data was collected about the socioeconomic conditions, maternal and child health feeding habits, current nutritional status of married women and children under five and awareness level of respondents in the target area of selected village. The information collected in this household survey was used to determine a linkage between the effect of the availability and diversity of foods, dietary habits, Breast feeding, complementary feeding practices and living conditions and hygiene on the prevalence of malnutrition among mothers and children. The results illustrated that most of the respondents belonged to lower socioeconomic status. The data showed that (38.1%) women have no formal education; only (31%) women possess primary education followed by (24.4%) have secondary education. A substantial proportion of household (39.1%) had monthly income less than Rs 20000 whereas 60.9% of households had monthly income ranging from Rs. 20000 to 50000. The data further showed that 14.7% of the sample households owned cultivable land and a

smaller percentage were growing their own vegetables. This baseline survey noted that 19.8% households are rearing animal and poultry at their homes. The joint family structure prevails in majority of the respondents as 65 % of sample households lives jointly whereas 34.5% are living as nuclear families.

Keywords: Nutrition, Malnutrition, Food Diversity,

Introduction:

Malnutrition is a serious health condition that occurs due to poor diet which does not provide sufficient nutrients or the appropriate balance of nutrients to sustain optimal health. Malnutrition is a public health issue which has serious consequences. Severe malnutrition if not addressed properly and timely in children it may increase the risk of death. Previous studies have revealed that malnutrition is responsible for higher mortality rates among women of reproductive age and children under-5 in developing countries (World Health Organization, 2002). Malnutrition is estimated to be responsible for 45 percent mortality in children which translates to slightly more than 3 million child deaths globally on annual basis (Bhutta, et al., 2013).

Malnutrition has been shown to contribute to adverse pregnancy outcomes in women of reproductive age. When the women has poor nutritional status, she is more likely to deliver a low birth weight child. Addressing malnutrition is a key factor for reducing maternal and child mortality. Provision of proper nutrition will help to achieve the Sustainable Development Goals for preventing child and maternal deaths (WHO, 2016). These facts indicate that investing in nutritional programs should be the priority of government policies to achieve maternal and child survival goals (Black, et al., 2008; Bhutta, et al., 2013).

Currently, in Pakistan, malnutrition remains an issue of public health importance (Asim, 2018). The National Nutrition Survey, 2018 indicates that less than fifty percent of women who are of reproductive age in Pakistan had normal body mass index (BMI). The survey also states that women of reproductive age in Pakistan are facing dual burden of malnutrition. On one side 14.4% are undernourished, while overweight and obesity has increased from 28% to 37.8% as reported in NNS, 2018.

Malnutrition in children is a common problem and a major public health issue of this country. This country is reported to have higher levels of prevalence of child malnutrition when compared with other developing and neighbor counties (Di Cesare et al., 2015). The latest NNS of Pakistan shows that 40.2% of children are stunted. The wasting rate was 17.7%. About 29% of the children were underweight. 54% were anemic, and 29% had iron deficiency. The indicators show that malnutrition was much higher in rural areas as compared to urban areas across the country.

The malnutrition indicators in children under 5 has shown no improvement in the last two decades (NNS 2001, 2011 & 2018). The stunting which was recorded in 41.6% of children in NNS

2001, remains 40.2% in NNS 2018. However the wasting has shown increasing trend as 14.3% of children had signs of wasting in the NNS 2001 that increased to 15.1% in the NNS 2011 and 17.7% in NNS 2018. The other developing countries have successfully reduced malnutrition in the last two decades. However, Pakistan has not been able to reduce the prevalence of child malnutrition like other countries (Pakistan Institute of Development Economics, 2011).

The survey of global literature shows that causes of malnutrition are multi-sectoral and interrelated involving many different aspects of life (IFPRI, 2005; Cheah, et al., 2010). The factors behind childhood malnutrition are generally low birth weight, inadequate breast feeding, inappropriate complementary feeding, and lack of proper knowledge of nutrition. Moreover poor sanitation, unhygienic home conditions and poor access to clean water can also promote malnutrition by creating environments favorable for infectious diseases (Linnemayr, et al., 2008; Arif et al., 2012; UNICEF, 2015).

According to National Nutritional Survey of Pakistan, child malnutrition in the country mainly prevails due to poor dietary intake by women during pregnancy, inadequate breastfeeding, inappropriate care and in general poor infant and young child feeding practices (NNS, 2011).

Prevalence of food insecurity at the household level is also an important constraint in taking nutritious and healthy foods. However, it has been reported that the knowledge, attitudes and practices of family caretaker and household members have a major role in determining the nutritional status of the household. Hence the maternal knowledge of food preparation, feeding practices, family eating behaviors, hygienic and sanitation practices and living conditions are important determinants of house hold nutritional status (Anik et al., 2019).

Malnutrition has negative consequences for people, families, communities and countries. The nutrition-related factors are reported to be the major causes of higher incidence of diseases and mortality. These conditions call for the urgent implementation of interventions to minimize their occurrence and ameliorate their unwanted consequences.

It requires urgent and appropriate responses from policy makers, scientists and health providers to improve diets to end malnutrition in all its form. Considering the fresh evidence received through the NNS 2018, the urgent priorities for the government, its partners, various organizations and researchers should address the issue of malnutrition. We are committed to combat malnutrition to improve the lives of the poorest in Pakistan. If these issues are not dealt with appropriate policies, children and women of child bearing age will continue facing various health risks and country will not be able to achieve sustainable development goals.

Objective of the Nutrition Household Survey:

Although in general common causes of malnutrition are already reported by several studies, a cross sectional study was conducted for collecting contextual information directly from people residing in target area. Such contextual nutrition survey helps in the planning and implementation by providing target related data which assists to improve the nutritional situation in a better way. It

goes without saying that proper planning and implementation requires comprehensive quantitative and qualitative information. Moreover, it serves as a benchmark to measure the progress of nutrition-improvement program and end line impact of the project after completion.

Therefore, each nutrition related program must start with such type of survey. As this study was aimed to explore the nutritional status and living conditions of target community, it is necessary to determine the causes, magnitude, and nature of malnutrition.

Methods:

This study was conducted in village ¼ L situated in Tehsil and District Okara. The village comprises of approximately 2000 households. A cross sectional household survey was conducted to collect the information about the socioeconomic conditions, maternal and child health feeding habits, nutritional status and awareness level of respondents.

The data was collected by a team comprising of local trained female workers of health department. The data collection team received a one week basic training on data collection procedures, height, weight, anthropometric measurements, ethical issues and data collection tools. The first training was provided during the last week of December 2020, prior to the data collection. As part of the training, measurements for weight, height and MUAC were taken on five children.

The data was collected during January 2021 to March 2021 with a questionnaire designed to gather important information. The questionnaire was pre-tested by the data collection team on trial basis in the field and the required changes were made according to situation before actual data collection. Due to prevailing corona hazards, the standard operating procedures were followed. An appropriate distance between the team members and household members was ensured during data collection. The survey was completed through conducting interview of the mothers and taking required height, weight and anthropometric measurements by a trained team member.

The selection of respondents was done by simple random sampling. The detail of selection criteria for interview of household were as follow:

- Currently married women (15-49)
- having at least one child under five years age at the time of survey
- Priority was given to mother with children in the bracket of 6-23 months of age in the household.
- In case such a respondent was not found/available, a mother with children in the age bracket of 24-59 months was selected.
- In case of presence of more than one eligible mother in household, the mother of the youngest child was given priority.
- If both options were not available, any pregnant woman was preferred.
- In case there was no pregnant woman in household, preference was given to the youngest married women falling in the age bracket of 15-49 years.
- The target population for this survey included pregnant and lactating women and children 0-59 months of age.

Results & Discussion:

This household survey was aimed to explore and study nutrition conditions of target households (particularly with respect to mothers and children under 5 years of age) from a multi-dimensional perspective covering areas such as socio-economic demographics of the households, nutrition-sensitive components of water, sanitation, and hygiene (WASH), agriculture, livestock, and food security of the households.

Socio-demographic profile:

This section is comprised of socio-demographic characteristics of the respondents.

Table 1 Showing socio-demographic data of the Respondents n= (197)

Demographic Data	N	%
Age of Respondent		
20-24	49	24.9
25-29	62	31.5
30-34	81	41.1
Marital Status		
Married	172	87.3
Widow	10	5.1
Divorced	15	7.6
Household head		
Male	178	90.4
Female	19	9.6
Education of Respondent		
Illiterate	75	38.1
Primary	61	31
Secondary	48	24.4
Higher	13	6.6
Husband's Education		
Illiterate	78	39.6
Primary	68	34.5
Secondary	41	20.8
Higher	10	5.1

The results in Table-1 reveal that (41%) mothers were in the 30-34 years old followed by (31.5%). The results also showed that the majority of households interviewed were headed by men (90.4%, n=178) and only 9.6% (n=19) household heads are female. The data on marital status shows that majority of the women interviewed in our survey were currently married (87.3% n=178). Data regarding educational status shows that (38.1%) women have no formal education;

only (31%) women possess primary education followed by (24.4%) have secondary education. Similar trend was recorded in the education of women's partners. Among them 39.6 % were illiterate while 34.5%, 20.8% and 5.1% had primary secondary and higher education levels respectively.

Socio-economic profile:

This section details the socio-economic findings of the surveyed household in this baseline survey. It outlines with providing insights on household income. It is pertinent to mention that detailed income and expenditure modules were not used in the survey, instead a simple one liner question was probed 'What is your household total income

Table 2 Socio-economic profile of the Respondents n= (197)

Socio-economic Data	N	%
Income of Household		
monthly income less than Rs. 20000	77	39.1
monthly income Rs. 20000 -50000	120	60.9
Owner of Agricultural land	29	14.7
Home Garden	10	5.1
Grow own Vegetable	4	2
Own livestock, farm animals poultry	39	19.8
Structure of Family		
Nuclear	68	34.5
Joint	129	65.5

Table 2 illustrates that a substantial proportion of household had monthly income less than Rs. 20000/- and majority (60.9%) of households had monthly income ranging from Rs.20000/- to 50000/-. The data further showed that 14.7% of the sample households owned cultivable land and a smaller percentage were growing their own vegetables. This survey noted that 19.8% households are rearing animal and poultry at their homes. However, a significant proportion (80.2%) of households do not have any livestock animal. The joint family structure prevails in majority of the respondents as 65 % of sample households lives jointly whereas 34.5% are living as nuclear families.

Food intake during Pregnancy:

Data on dietary habits and diversity of foods consumed by members of household is an indicator that reflects minimum micronutrient adequacy needed to improve micronutrient nutrition among women. It defines "whether or not women 15-49 years of age have consumed nutritious foods during pregnancy.

Table 3 Status of food intake during pregnancy n= (197)

Food Item	Daily		Once a Week		Twice a Week		Occasionally	
	N	%	N	%	N	%	N	%
Milk	62	31.5	95	48.2	19	9.6	21	10.6
Egg	20	10.2	137	69.5	20	10.2	20	10.2
Rice	-		163	82.7	10	5.1	24	12.2
Wheat	192	97.5	-		5	2.5	-	
Vegetables	93	47.2	-		104	52.8	-	
Chicken	-		99	50.3	10	5.1	88	44.2
Meat	-		30	15.2			167	84.7
Lentils	-		105	53.3	79	40.1	13	6.6
Fruits	20	10.2	89	45.2	-		88	44.7

Table 3 exhibits that protein intake of majority of women during pregnancy in terms of milk and egg was 48.2% and 69.5 % on weekly basis. The vegetable intake was reported (52.8 %) twice a week. The intake of chicken on weekly basis was recorded as 50.3% while the considerable percentage 84.7 had meat occasionally. The percentage close to (45%) reported that they had intake of fruits occasionally during pregnancy. Overall the major source of daily food intake was wheat and vegetables.

Food intake of Child:

In order to estimate the micro-nutrient density of foods consumed by children between 6-23 months, dietary diversity has been used as a measure. This section provides the data collected on food intake of child 0-59 to highlight the current situation of their nutritional status. The data gives the pattern of food being consumed by the target population to estimate the nutritional health of children 0-59 months. At the end of the section conclusions are drawn from the analysis of food diversity.

Table 4 Food intake of child (0-59)

Food Item	Daily		Once a Week		Occasionally		Do not Take	
	N	%	N	%	N	%	N	%
Milk	59	29.9	39	19.8	20	10.2	79	40.1
Egg	20	10.2	93	47.2	65	33	19	9.6
Rice	-		163	82.7	-		20	10.2
Wheat	163	82.7	14	7.1	-		20	10.2
Fortified Cereal	34	17.3	-		10	5.1	153	77.7
Yogurt	24	12.2	75	38.1	-		98	49.7
Chicken	-		99	50.2	64	32.5	34	17.3
Meat	-		-		76	38.6	62	31.5

Fruits	15	7.6	-	159	80.7	34	17.3
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Table 4 illustrates that 40 % of child do not take milk and a greater percentage (47.2) take egg weekly. A higher percentage 77.7%, 49.7% of child does not eat fortified cereal and yogurt respectively. The intake of chicken on weekly basis was recorded as 50.3% while 38.6% had meat occasionally. Significant number 159 (80.7%) among child had intake of fruits occasionally. The major source of daily food intake was wheat for child ≥ 2 years and milk for child less than 2 years. Overall the food pattern recorded for child ≤ 5 does not contain required nutrition.

Growth Monitoring Knowledge, Breast Feeding Practices:

This section is comprised of knowledge of mothers about growth monitoring of the child and breast feeding practices for child ≤ 2 years.

Table 5 Growth Monitoring, Knowledge, Breast Feeding and supplements for ≤ 5

Growth Monitoring	N	%
Awareness about nutritious food during pregnancy	85	43.1
Visited any health facility to check the growth of child	49	24.9
Importance of growth monitoring	105	53.3
Ever measured the Weight, Height	68	34.5
Ever measured MUAC of child	57	28.9
Ever checked BMI	20	10.2
Ever breastfed the child	139	70.1
Exclusive Breastfeeding	79	40.1
Complementary Breastfeeding	56	28.4
If not, reason		
Lack of Awareness about importance of BF	25	12.7
Health Issue	33	16.8
Ever gave supplement to the child	68	34.5

The data presented in the table 5 shows that less than (50%) of the mothers are aware about intake of nutritious food during pregnancy. The percentage of mothers who have knowledge about growth monitoring of the child was recorded as (53.3 %) and (24.9%) visited any health facility for the growth monitoring of their child. The minute percentage (10.2 %) of child was reported whose BMI was ever.

The data further reveals that (70%) newborn are reported to be ever breastfed and 40% reported breastfeeding for exclusive breastfeeding while the children who received complementary

breastfeeding for 2 years was higher (28%). The mothers 12.7 %, 16.8% reported that due to lack of awareness about breastfeeding and health issues did not breastfed their child respectively.

Figure 5 Percentage of Child with abnormal Growth



Knowledge about prevention of Malnutrition:

This section has recorded the data about knowledge of malnutrition among women and assessed their knowledge about prevention of malnutrition.

Table 11 knowledge and prevention of Malnutrition n= (197)

Knowledge about Malnutrition	N	%
knowledge about malnutrition	73	37.1
Reasons of malnutrition		
Adequate food not available	41	20.8
Food is not nutritious	15	7.6
Cannot eat enough food due to illness	9	4.6
Measures to prevent malnutrition		
Availability of more food	30	15.2
Provision of different types of foods	5	2.5
Increasing frequency of meals	10	5.1
Provision of attention during meals	8	4.1
Counseling structure for nutrition in the village	32	16.2
Don't know	131	66.5
Received nutrition counseling	28	14.2

The majority (66%) of the women do not know about the causes and prevention of malnutrition. The respondents were asked to name if any counselling was being provided for nutrition in their villages. However the availability of nutrition counselling could not be identified at their village level. The majority of the respondents (83.8%) reported they have never observed any nutrition counselling from a professional health worker in their village. In the study area, higher percentage (85.8%) had never received any nutrition counselling session. However, 14.2%

told that they had received nutrition counseling from educated friends, relatives or during casual visits of health facilities.

Conclusion/Recommendations:

The information collected in this survey is useful to identify the underlying causes of malnutrition in our target population. Moreover, this information is further needed to design tailor and implement interventions that could effectively address the current situation of the potential beneficiaries of this program. Problem of malnutrition can be solved by implementing proven set of interventions (USAID, 2014). These interventions include, addressing food security issues, provision of primary health care services, providing awareness counselling on health, sanitation, hygiene and nutrition. Moreover, counseling mothers about breastfeeding practices; and treatment of acute malnutrition, provision of iron and vitamin supplementation, providing nutrition education, bringing about desirable changes in attitudes and behavior (WHO, 2007). The problem of malnutrition in study area must be dealt with by using a multi-sectoral approach and coordination

i. Ensure food security programs: These interventions include, addressing food security issues at community level by the promotion of kitchen gardens, poultry farming, and increasing crop yield. It will be accomplished by the collaboration and coordinating of concerned agricultural and livestock department. The experts of these departments will provide advisory services to the household of project area.

ii. Educating people on how to eat cheaply and properly promoting nutrition education and counseling about health care, establishing community based education centers for social change communication, Promoting behavior change and the adoption of best practices and habits in food, Improving Sanitation and hygiene education, including menstrual hygiene.

World Health Organization has recommended breastfeeding as the most critical nutrition intervention for meeting the adequate dietary requirements for children. Breast milk fortifies the immune system in addition to other psychological benefits for infants. If the new born and infants are breast fed as recommended by WHO, their nutritional needs are adequately met. It is therefore very important that proper breastfeeding techniques are taught to mothers. It is further added that they are advised about sanitation and hygiene measures so that their babies could be prevented from falling ill.

iii. Primary health care services. Addressing the problem requires primary maternal and child health care interventions suggested by World Health Organization (WHO, 2016), which include quality of antenatal checkups including monitoring for risk factors. There is need to encourage pregnant women to attend antenatal counseling meetings to learn why they need supplements of iron, vitamins and folic acid. It also included the treatment of acute malnutrition, administering oral rehydration salts for diarrhea, treatment of chronic infections, diarrhea and deworming and

malaria prevention. These health care services are envisaged to be made available with the help of lady health worker, lady health visitor, trained birth attendant and local health care officials.

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