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EFFECTS OF MALNUTRITION ON FARMWOMEN AND THEIR CHILDREN IN TEHSIL SADIQABAD, PUNJAB, PAKISTAN

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Malnutrition is generally considered as a state in which body does not receive proper nutritional elements required for its proper functioning. In Asian countries like Pakistan, India and Sri Lanka, micronutrient deficiency is one of the major causes of overall undernourishment among farmwomen. Therefore, this paper aims to identify the level of awareness about nutritional status and effects of malnutrition on women and their children in rural areas of Pakistan. Sample size comprised of 164 respondents who were selected by simple random sampling method by taking 41 respondents from each of the randomly selected villages. A pre-tested and well-structured interview schedule was developed for data collection. The results indicated that various diseases were present among rural families due to malnutrition. The diseases were lethargy, rapid heartbeat, underweight, weak muscles, kwashiorkor, rickets, depression, tiredness, iron deficiency, dizziness, headache, deficiency of protein and unusually pale skin. Pearson correlation coefficient shows significant and positive relation between nutritional awareness and proper diet $P<0.05$. Results also indicated that diseases and malnutrition were directly related with lack of awareness regarding balanced diet, which was also associated with insufficient micronutrient intake. Low-income, early age marriages, family size, family structure, education level, low access to health facilities were found to be causes of malnutrition among the respondents. There is dire need to take the situation as national nutritional emergency and should make mass level campaigns with the use of media as a tool of communication regarding awareness of coping strategies against malnutrition among rural masses.

Keywords: Rural development, women health, farmwomen, malnourishment, nutritional awareness, diseases.

INTRODUCTION

Asian rural women are playing a key role in agriculture by contributing significantly in production, storage, packaging, processing of food (IIPS, 2000; Raza *et al.,* 2018; WHO, 2008). Thus, contribute largely to food security. Only specific metrics can exactly calibrate their participation in food security (Russell, 2010). Despite this huge contribution in food security, 120 million women in developing countries are underweight (Ransom and Elder, 2013). This problem has harmful consequences for women and their next generations. It also causes serious damage to the health of pregnant women and has resulted in 20% maternal mortality (Ali *et al*., 1998). Their babies are also getting health related problems and according to an estimate, almost ninety million children below 5 years of age are having low health indices (Archer, 2007).

Health experts majorly consider malnutrition among women as deficiency of nutrients and sometimes taking excessive nutrient also graded as malnourished (Bhutta *et al.,* 2004; Bhutta *et al.,* 2007). Malnourishment leads to different abnormalities among women (Badar *et al*., 2007). Pregnant women and infants are also victim of extreme nutritional circumstances (Government of Pakistan, 2016; Grobler, 2012). Pakistan is confronting with serious malnourishment problem nationwide and two third population of largest province (Balochistan) is severely food insecure (Janjua, 2016).

The lack of proper intake of nutrients is thought to have impact on more than forty percent of its total population of Pakistan. Lack of iron and protein is common in the country and most of the women in the country are confronting illness due to low intake of nutritious and healthy food (Hoek *et al.,* 2002). The farmwomen of Pakistan are more vulnerable to damages made in result of malnutrition as compared to males (Bhutta *et al.,* 2004). Therefore, a balance food having all nutrients required for sustenance of mental and physical

health of the women and their children is suggested in this regard (Choudhury *et al.*, 2000).

Diet intake has taken as a crucial factor that interrelates with nutritional status of malnourished population (FAO, 2014). Common symptoms founds in malnourish population are pale color skin, rough hair, pigment accumulation, bleeding gums, night sightlessness, photo sensitivity, stomach problems, anemic problem, puzzlement, premature birth, imbalance reflexes, diarrhea, muscles spasms, dried lips, cracked oral cavity and goiter (Gopalan, 2000; Gul and Kiramat, 2012; Liu *et al.*, 2015; Mujib *et al.*, 2004). Farmwomen are treated unequally and they have to work extra working hour even during pregnancy (Morisky *et al.*, 2002). Farmwomen are the first victim of malnourishment who get pregnant at young age and face extreme physical weaknesses before and after giving birth to their babies. Malnutrition also causes other diseases in farmwomen and children and sometimes cause death (Hirani and Kenner, 2011). Farmwomen are also considered custodian of a house especially of their children within the walls of their household. Young mothers at farms also take responsibility to ensure balance nutrients intake for their children and themselves (Sharma *et al*., 2007). Lack of proper awareness regarding balance nutrition among women causes serious consequences on health of all household including children and adults (Farah and Khan, 2015).

Many efforts had been made to cope nutritional requirements in livestock (Rehman *et al*., 2016) and these kinds of efforts are needed to improve nutritional requirements of farmwomen (Raheela *et al.*, 2002). Furthermore, awareness campaign of balance nutrition and food safety to public organizations can be a strategy to protect malnutrition in farmwomen and children (Humphrey, 2009). Identification of symptoms and treatment of malnourishment at early stages could be other strategy to control malnourishment problems in Pakistan. It was hypothesized that nutritional awareness and nutrient intake will be related to proper diet in district Rahim Yar Khan. The main objective of the research was to investigate into causes and effects of malnutrition on health of farmwomen and their children in tehsil Sadiqabad (Punjab) with special focus upon their nutritional awareness in this regard.

MATERIALS AND METHODS

Out of total twenty-five union councils two rural union councils namely Rahimabad and Kot Sabzal were selected through simple random sampling technique. From each selected rural union councils, two villages were selected randomly. The list of farmwomen who were included into marginalized families (those women having less accessibility to diet due to lack of income) was prepared in the selected villages with the help of key informants of respective villages (key informants were Numberdar and progressive farmers of respective rural areas). After making the list, to ensure accessibility, 164 females were selected through purposive sampling procedure. Due to social barriers it was impossible for a male researcher to ask questions from rural illiterate women so female postgraduate students from Institute of Agri. Extension were trained for data collection. A well-structured interview schedule was developed for data collection. Validity of interview schedule was tested by using SPSS. Cronbatch Alpha value for questions in the different objectives was varied from 0.82 to 0.95. Further to check reliability the data collection tool was also presented to the experts of Institute of Agri. Extension and necessary amendments were made. The interview schedule was further pre-tested on 20 respondents (that were other than the purposively selected 164 rural females). At last well-structured interview schedule was developed for data collection. The data were analyzed for logical interpretations through Statistical Package for Social Sciences (SPSS).

RESULTS AND DISCUSSION

Table 1 represents the association between nutritional awareness and proper diet. Pearson correlation coefficient value which is 0.121 that shows significant and positive relation between nutritional awareness and proper diet $P<0.05$. This means that if the farmwomen had nutritional awareness then they were taking proper diet as compare to those who were unaware about nutritional awareness. The results show that nutritional awareness reduced the chances of malnutrition among farmwomen and their children. This is in line with the findings of Russell (2010) who indicated that nutritional awareness and self-perception of dietary balance, which may provide a relevant indicator of willingness and intention to take proper diet.

Table 1. Association between nutritional awareness and proper diet.

Awareness of nutrients		Awareness	Proper diet
Awareness of nutrients	Pearson Correlation	1	0.121
	Sig. (2-tailed)		0.020*
	N	164	164
Proper diet	Pearson Correlation	0.121	1.000
	Sig. (2-tailed)	0.020	
	N	164	164

P<.05 *=significant (5%)

The response of respondents regarding food consumption patterns of selected farmwomen is presented in Table 2, which indicates that common of food of farmwomen was bread (mean = 5.00±=.00), tea (mean = 4.13±=.42), vegetable (mean = 3.16±=.74) and yogurt/lasi (mean = 3.04±=.00). Whereas eating pattern of paratha (mean = 2.92±=.92), milk (mean = 2.50±=.99), rice (mean = 2.36±=.82), egg (mean =

Table 2. Food consumption patterns of selected farmwomen (n=164).

Food items	Daily		2-3 times a week		Once a week		Occasionally		Never		Mean	S.D.	Rank
	f	%	f	%	f	%	F	%	f	%			
Bread	164	100.0	0	0.0	0	0.0	0	0.0	0	0.0	5.00	0.00	1
Tea	111	67.7	13	7.9	11	6.7	9	5.5	20	12.2	4.13	0.42	2
Vegetable	36	22.0	42	25.6	31	18.9	22	13.4	33	20.1	3.16	0.74	3
Yogurt/Lasi	60	36.6	10	6.1	18	11.0	29	17.7	47	28.7	3.04	0.85	4
Paratha	54	32.9	20	12.2	13	7.9	13	7.9	64	39.0	2.92	0.92	5
Milk	31	18.9	22	13.4	14	8.5	28	17.1	69	42.1	2.50	0.99	6
Rice	3	1.8	19	11.6	54	32.9	46	28.0	42	25.6	2.36	0.82	7
Egg	5	3.0	25	15.2	21	12.8	53	32.3	60	36.6	2.16	1.12	8
Meat	0	0.0	16	9.8	22	13.4	30	18.3	96	58.5	1.74	0.67	9

Scale: 1 = Never; 2 = Occasionally; 3 = Once a week; 4 = 2-3 times a week; 5 = Daily

2.16±1.12) and meat (mean = 1.74±=.67) was low and ranked 5th to 9th, respectively. Less nutritive food intake leads to malnourishment of farmwomen (Mishel *et al.*, 2013). Findings of current study are similar with the findings of ActionAid (1999) which indicated that women were majority victim of malnourishment. Less nutritive food intake also enhanced age of puberty in girls (Memon *et al.*, 2006). Moreover, girls suffer deficiency of proteins and iron face low body growth, pelvises that consequently enhance the chances of difficult birth (Hirani and Kenner, 2011).

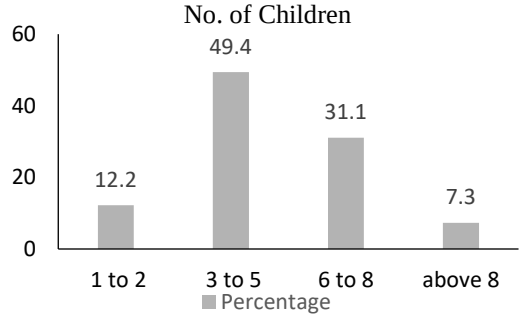

Figure 1. Number of children of the respondents

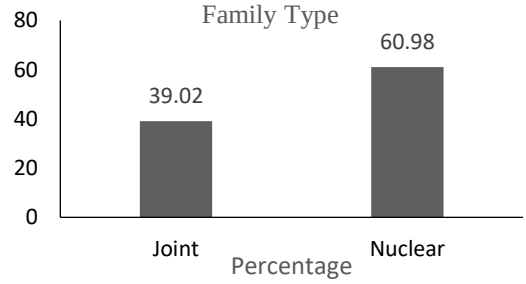

Figure 2. Family type of the respondents

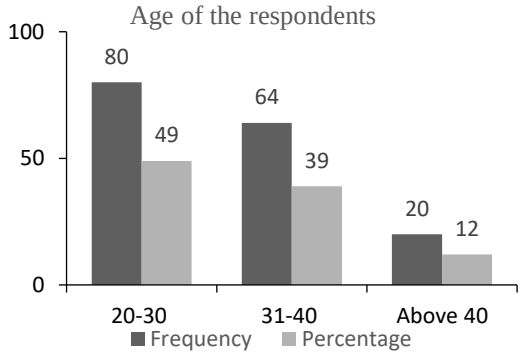

Figure 3. Age of the respondents

The association between education of the selected women and effect of malnutrition is presented in Table 3. Chi-square value shows relationship between education of farmwomen and its effect on malnutrition. Gamma value also shows a strong negative relationship between the variables. It means, illiterate farmwomen had suffered more from malnutrition as compared to their educated women counterpart.

Table 3. Relationship between education of the selected farmwomen and effect of malnutrition.

Education of the respondents	Effect of Malnutrition			Total
	Low	Medium	High	
Illiterate	5	31	31	67
	7.5%	46.3%	46.3%	100.0%
Primary	6	19	5	30
	20.0%	63.3%	16.7%	100.0%
Middle	8	26	7	41
	19.5%	63.4%	17.1%	100.0%
Matric	13	8	5	26
	50.0%	30.8%	19.2%	100.0%
Total	32	84	48	164
	19.5%	51.2%	29.3%	100.0%

Chi-square = 33.09; d.f. = 6 ; P-value = .000**; Gamma = -0.470; ** = Highly-significant

Table 3 shows that most of the illiterate respondents had medium to high-level effects of malnutrition. On the other

hand, half-matriculated women had low-level effects of malnutrition. Low literacy rates, especially among women, lack of independence and participation in decision-making, early marriages, high birth rates in the absence of birth spacing and lack of access health services are all important determinants of malnutrition among women and their children. A low level of awareness of maternal care is also an important factor of malnutrition, mainly due to inadequate diet or dietary practices. In order to improve women nutrition that ultimately reduce the children stunting, it is essential to focus on other factors like diet of teenage girls, and young mothers. Comprehensive efforts are needed to ensure that everyone in society benefits from the right to adequate, safe and wholesome natural foods while ensuring a sustainable and resilient approach to the food control system. Breastfeeding is a complete and best nutrition ever for a newly born baby and an ideal diet up to 2 year of age is essential. However, early cessation of breastfeeding affects the growth and development of children who become prone them to several infectious diseases especially diarrhea. This early cessation of breastfeeding and introduction of cattle milk is one of the most commonly observing reason of malnourishment. From the finding of the results, there is strong positive correlation between maternal illiteracy and the incidence of malnutrition in children. In Pakistan, trend towards bottle-feeding has become an everyday practice and illiterates farmwomen are more prone to improper preparation of milk (due to lack of reading of instruction) (Black *et al.*, 2013). It is also evident that use of uncooled water to prepare baby food, use an incorrect amount of preparations to prepare the formula, and not sterilize the front bottle after every meal are common practices of illiterate women (Mahgoub *et al.*, 2013). Thus, the illiteracy of the mother worsens several problems and contributes to malnutrition of children which prone them to anemia, low immunity and different types of infections like gastroenteritis. At the level of family, community and nation, socio-cultural factors also contribute to malnourishment. One of the most important socio-cultural factors include gender inequality. In Pakistan, male gender is preferred over women which results in deprivation of essential nutrients and predisposing farmwomen to psychological trauma due to ignorance.

Table 4 indicates the relationship between the family size of the selected women and effect of malnutrition. From the value of chi-square indicated that highly significant link between family size of the selected women and effect of malnutrition. Gamma value also indicated a strong positive relationship between the two variables.

Table 4. Relationship between family size of the selected women and effect of malnutrition.

Family size	Effect of malnutrition			Total
	Low	Average	High	
1-2	10	5	5	20
	6.1%	3%	3%	12%
3-5	12	57	12	81
	7.3%	34.8%	7.3%	49.4%
6-8	6	18	27	51
	3.7%	11%	16.5%	31.2%
Above 8	6	2	4	28
	3.7%	1.2%	2.4%	7.3%
Total	34	82	48	164
	20.7%	50%	29.27%	100.0%

Chi-square = 37.32; d.f. = 6; Probability value = .000**; Gamma Value = .368**; = Highly-significant

It means, if the family size will increase then more will be the chance of malnutrition among the children of malnourished women. It is indicated that from the Gamma value variables are positively associated with the effects of malnutrition.

The link between family's structure of the farmwomen and effect of malnutrition is presented in Table 5. From the value of chi-square indicated that highly significant link between family structure of the selected women and effect of malnutrition. It is indicated that joint families were having more effect of malnutrition while nuclear family were having less effect of malnutrition.

Table 5. Relationship between family structure of the selected women and effect of malnutrition.

Family structure	Effect of malnutrition			Total
	Low	Average	High	
Nuclear	17	34	13	64
	10.4%	20.7%	7.9%	39.02%
Joint	15	50	35	100
	9.1%	30.5%	21.3%	60.98%
Total	32	84	48	164
	19.5%	51.2%	29.3%	100.0%

Chi-square = 5.92; D.f. = 2; Probability value = .057*; ** = Highly-significant

Figure 6 indicates that 65.2% of the respondents had income satisfaction for their social status that was very low (Rs.1000 - 5000). Low income generally results in improper diet, food insecurity and malnutrition among women and their children. The results are in line with the study of Amir *et al.* (2013) and they associated income of households with its food security. Figure 4 indicates that 67% respondents of current study were illiterate and had no choice of better occupation. Furthermore, they had lack of awareness about malnutrition and steps taken to tackle malnutrition. Surkan *et al.* (2009) also reported that

low income leads to food insecurity, depression, child management methods and unfavorable parenting practices that may affect children's weight. These results support that low-income level, illiteracy, are risk factor of malnutrition in women and children.

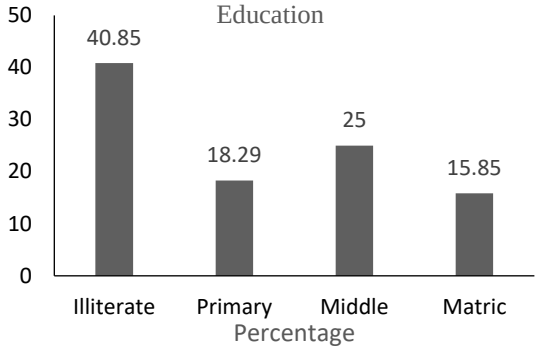

Figure 4. Education of the respondents

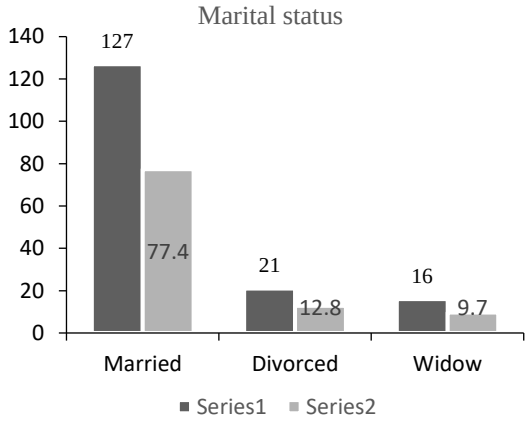

Figure 5. Material status of the respondents

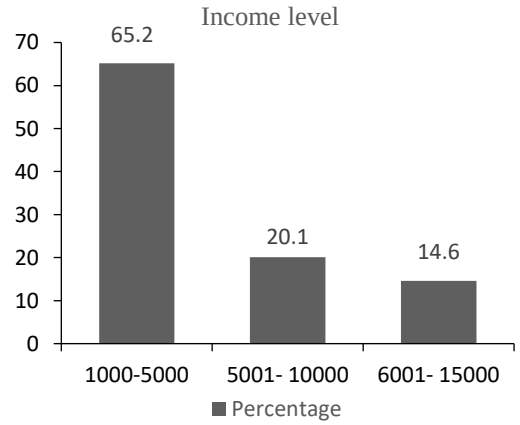

Figure 6. Income level of the respondents

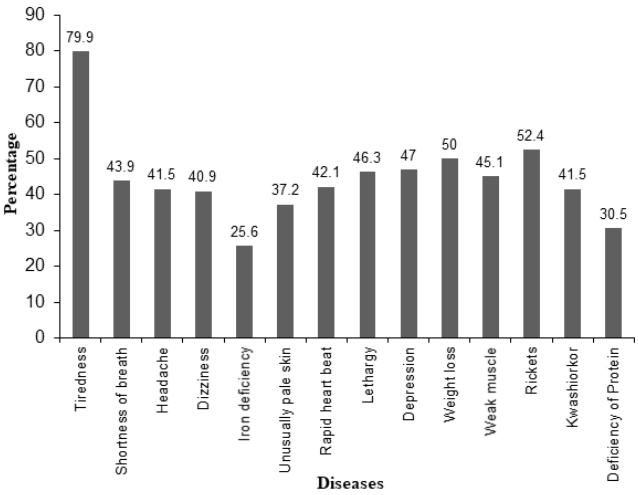

Figure 7. Graphical representation of the respondents according to symptom of malnutrition (N = 164).

The response of respondents regarding symptoms of malnutrition is presented in Figure 7. Results revealed that 79.9% of the respondents among the target population had a problem of tiredness in life. About 43.9% of respondents had a problem of shortness of breath. Half (50%) of the respondents among women were underweight while 45.1% of the respondents had weak muscles. Similarly, 52.4% of the respondents among the selected sample size were facing rickets while 30.5% of the respondents were facing deficiency of proteins in their daily life. The symptoms of malnutrition are lethargy, skin diseases, shortness of breath, weakness, loss of weight and fatigue (Harvey and David, 2000). Moreover, several congenital disorders of GIT track like cleft lip and pellet celiac disease, lactose intolerance impair the swallowing, digestion and metabolism of food, which may also leads to malnutrition (Bennett *et al*., 2004). Results of current study revealed that the respondents were malnourished (Newnham, 2017).

***Conclusions*:** Illiterate and poor farmwomen had challenge of diet quantity and quality. Farmwomen in tehsil Sadiqabad is facing economic recession and malnutrition, which is directly affecting the health of mothers and their children in rural areas. Furthermore, in farmwomen malnutrition is directly related with family size, family structure, low income, education levels, culture, lack of awareness about proper diet and symptoms of malnutrition. There is dire need to create awareness campaigns (through mass media) in coordination with public and private sectors.

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