



## Factors affecting malnutrition of landless rural households in District Faisalabad, Pakistan

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### Abstract

People are facing malnourishment in developed and as well as in developing countries, and that leads to different diseases. At this time in the world above 800 million people are undernourished. The major portion of these people is in developing countries. The situation of malnourished people in Asian is 35% currently. Pakistan show the status of undernourishment that is 33% families are facing a shortage of good quality of food. Therefore, this study was designed, keeping in view, the national and international issues regarding malnutrition. District Faisalabad has been selected for this research study; selection of tehsil, union councils and villages has been through simple random sampling technique. Total 200 respondents (25 respondents from each village) were selected randomly. Statistical analyses such as T-test and Chi-square were used to analyze the data. The results show that main factors which were directly affecting malnutrition of landless rural households are lacking education, employment, fewer wages work, and lack of awareness about the quality of food utilization and large family members. A large number of families were facing malnutrition condition, and only 48 families out of 200 were nutritionally secured. Malnutrition status considering protein only 36 families were secured. Meanwhile, 164 families were insecure. The government of Pakistan should take reasonable steps to ensure good quality of food and drinking water. Water And Sanitation Agency should improve the hygiene system in rural areas. Local government should install filtration plants in rural areas. Media should also provide awareness through electronic/print media.

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## Introduction

Malnutrition is not only national instead it is a global issue. According to United Nations International Children's Emergency Fund (UNICEF) report, it is revealed that three million younger people lose their lives in a year. Due to malnutrition kids are at higher risk of dying due to common contagion. First 1000 days of the children are most important for their growth. So due to malnutrition in first 1000 days of the children's life can lead to stunted growth. 22.9% children under the age of 5 globally had stunted growth in 2016 (Chen, *et al.*, 2016). It is clearly mentioned that 2000 to 2016, stunting occurrence worldwide decayed from 32.7 % to 22.9%. Current situation of the number of children which are affecting fell from 198 million to 155 million. The number of children in 2016, 1/3 in sub-Saharan Africa and two out of every four stunted lived in South Asia (UNICEF/WHO, 2017).

The Assembled Countries nourishment and Horticulture Association evaluates that around 795 million people of the 7.3 billion people on the planet, or one in nine, were encountering unending undernourishment in 2016 (Optiz *et al.*, 2016). All the anxious people, 780 million, live in making countries, addressing 12.9 percent. There are 11 million individuals undernourished in developed nations. As the most crowded orientation on the globe, Asia is birthplace to two on the wrong track of three of the world's undernourished individuals (FAO, 2015). Lack of healthy nourishment keeps on being a noteworthy general medical issue all through the creating scene, especially in southern Asia and sub-Saharan Africa. Due to the consumption of less calories by populaces, there is habitually insufficiency of macronutrients (protein, starches and fat, prompting protein-energy unhealthiness), micronutrients (electrolytes, minerals, and vitamins, prompting particular micronutrient inadequacies) or both (NHS, 2013).

The most vulnerable groups are: Children under five, pregnant and lactating ladies, and the elderly and handicapped; Poor individuals; People who live in developing nations in Asia and the Pacific; People in Africa.

The World Health Organization (WHO) appraises those 98 million kids less than five years old are underweight, or around one in every six kids. Most underweight kids live in Southern Asia (WHO 2013). It is estimated that around 3 million people in the United Kingdom are affected by malnutrition (sub nutrition) (National Health Service, 2016). The number of people globally who were malnourished stood at 923 million in 2007, an increase of over 80 million since the 1990-92 base period (FAO, 08-2011). The nutritious position of children is of wholesome rank by looking at tallness & bulk estimations alongside a global mention stock. 45 percent of kids under five are hindered and also small for their era. This shows incessant lack of healthy nourishment. Obstructing is most basic among offspring of less instructed moms (55%) and those from the most impoverished families (62%). Hindering is more typical in provincial regions (48%) than urban areas (37%) (Pak demo & Health Survey, 2012-13).

Wasting (too dear for height), which is add such name to of nifty malnutrition, is fully less for a such a malicious place (11%). In real, 30% of Pakistani children are underweight, or aside from thin for their age (Pak demo & Health Survey, 2012-13). In Punjab province of Pakistan, a real situation of depressed is serving in stunting condition, the wasting rate is coming up continually in priority mode than two-thirds of the districts at shameless rate (Bashir and Schilizzi, 2013). This is on up and up threat, and stunting could begin to get back on one feet in future. UNICEF is helping Pakistan to gain back on one feet this persistent stoppage by identifying malnourished children and women, by way of explanation in hard-to-reach, marginalized communities, and raising their nutrition levels around systematic interventions (UNICEF, 2016). Therefore, this study was designed for keeping in view national and international issues of malnutrition. So the current study was about to identify the factors affecting the malnutrition of landless rural households in District Faisalabad with the objectives given below. The information which is generated through this study is hoped that will be very helpful for the policy makers.

Therefore, the main objective of this research was to assess the malnutrition situation of landless rural households and to identify the factors affecting the malnutrition. Moreover, to investigate the relationship between malnutrition and health of the same target group(s).

**Materials and methods**

*Study Area*

No doubt if we keep the right track of the study then it is must that we should collect data from all districts of Pakistan for showing the accurate result regarding malnutrition condition. It was quite difficult to visit all districts with limited time and resources. Therefore, district Faisalabad has been selected for the study. Out of six tehsils<sup>1</sup> of Faisalabad, Tehsil Sumandri was selected conveniently. Four Union Councils (UC No. 117, UC No. 118, UC No. 120 and UC No. 122) were selected through simple random sampling technique ((Bashir and Schilizzi, 2013). Eight villages (225GB, 277GB, 339GB, 117 GB, 221 GB, 199GB, 111 GB & 249GB) were selected from four union councils through simple random sampling technique. Two villages from each union councils were selected through simple random sampling technique. Total 200 respondents (25 respondents from each village) were selected randomly from eight villages.

*Data Collection*

A mixed approach was followed in terms of data collection. Both primary and secondary data were collected. Total 200 respondents were selected cumulatively from eight villages. 200 respondents means 200 families were selected.

Likewise, 200 households sample size was collected, which were representing the whole community condition of that factors which was the purpose of this study. A comprehensive questionnaire was developed. Data were gathered through a well-designed interview schedule. Both types of questions were existed in this questionnaire like open ended and close ended questions.

*Data Analysis*

To investigate the results, Friedman Test, and other statistical methods such as t test,  $\chi^2$  test and econometric functions were used. Detail of these models/tests is given below. The data consist of “k” related samples (corresponding to “k” treatments) each of size “b” (Number of blocks). Rank 1 is assigned to the smallest observation, 2 to the second and then until the largest of the “k” observations within each block. In case of a tie, we use the average of the ranges corresponding.

$$R_i = \sum_{j=1}^b R(X_{ij})$$

Where R (Xij) is the rank assigned to the observation Xij inside of the block “j” and where Ri is the sum of the ranks assigned to the sample i:

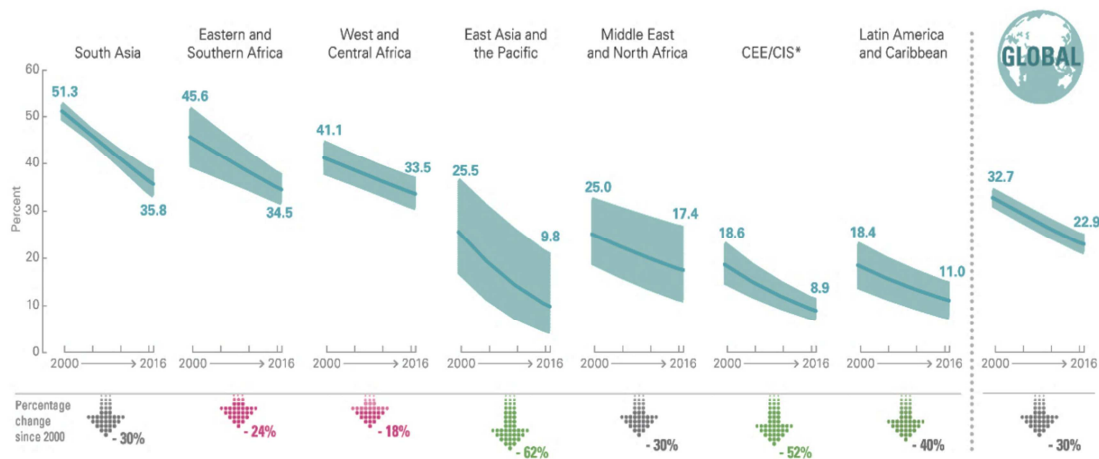
$$\text{proof or T or Fr} = \frac{(k-1) \left[ \frac{bB - b^2 k (k+1)^2}{6} \right]}{A - \frac{bk(k+1)^2}{6}}$$

The standard decision rule is followed as for previous similar studies (Ali and Abbas, 2013; De Rivero, 2001; Friedman, 2008). Moreover, SPSS was used to analyze the data and plot the results in the form of Table 1. and Fig. 1.

**Table 1.** Nutrition Situation in Urban and Rural of Pakistan.

Nutrition	Pakistan	Urban	Rural
Children under 5 years who are stunted (moderate or severe) (%)	45	37	48
Children under 5 years who are wasted (moderate or severe) (%)	11	10	11
Children under 5 years who are underweight (%)	30	24	33
Women 15-49 who are overweight or obese (%)	40	54	33

Source: Pakistan Demographic and Health Survey 2012-13.



**Fig. 1.** Global View of Malnutrition among Children.

Source: WHO/World Bank/ UNICEF Combined Children Malnutrition Approximations, May 2017 version

**Results and discussion**

The main objective of this study was to assess the malnutrition situation of landless rural households and to identify the factors affecting the malnutrition. Through analysis and findings we explain all that data turned into descriptive and quantitative descriptions containing the background of the respondents, univariate analysis and socio-economic status. Table 2 shows that each respondent has different choices of boundary stages. It is also shown in the table that 48 families were that who were secured from malnutrition condition and 152 of the respondents that families were in malnourished condition. As the standard of the calories is 2350 per person per day is required. From the aggregate example contemplate territory have 200 specimens out of which 152 were under malnourished, and 48 are not under-malnourished. This information is concluded by calories research which was conducted in the field through research tool. Table 3 explains respondents of provincial zones in calories consumed. The base nourishment allows tehsil Sumandri area Faisalabad to be about 861.73 calories/capita balanced, while the highest per day allowed 9756.70/ per/capita Kcal., in 200 family units, with a mean of 3180.5023 Kcal. 3110.1378 Kcal. 3007.4489 Kcal. 3150.1750 Kcal.

In 50 family units, with a mean of Kilocalories. UC1, UC2, UC3 & UC4 demonstrates the base nourishment allow in is 870.52, 889.06, 834.36 & 840.36 Kcal per capita balanced by AEU, while the most extreme

every day allow per capita is 8576.84 Kcal in 50 family units, with a mean of 3180.5023 Kcal. It is shown in Table 4 that basic daily food intake of the landless rural households that in UC no.1 only 20 respondents intake basic daily food, 24 respondents in UC no.2 were about basic intake food, in UC no.3 21 respondents were intake basic daily food and in UC no.4 27 respondents were intake basic daily food. There were many factors which were affecting nourishment of the landless rural households. Table 5 showing that 75% respondent`s malnutrition of condition affected by education. 87% respondent`s admitted that their nourishment affected by unemployment. According to the result of the research report 80.5% respondent, the large family size was the main reason behind the malnutrition. 90% respondent said that their fewer wages were the reason for malnutrition. Meanwhile, 72.5% landless rural households were admitted that they have no awareness about food utilization.

Table 6 displays the strong relationship between age of the respondents and they are confronting ailing health. Chi-square esteem demonstrates a huge relationship between age of the respondents and their perception of the influence of malnutrition condition. They are confronting with different diseases due to lack of healthy nourishment. Gamma value shows a positive relationship between the variables. So the speculation "Age of the respondents will impact on their wellbeing status" is accepted.

**Table 2.** Malnutrition status in rural areas of Tehsil Sumandri in District Faisalabad.

Situation	Frequency	Percentage
Food secure	48	24.0
Food insecure	152	76.0
Total	200	100.0

**Table 3.** Food intake of different Union Councils in Kilo Calories.

Strata	UC1	UC2	UC3	UC4
Households	50	50	50	50
Mini	870.52	889.06	834.36	840.36
Mean	3180.5023	3110.1378	3007.4489	3150.1750
Max	8576.84	6852.74	5871.71	6150.65
Total	1688.60516	1258.26484	1115.57473	1315.57415

**Table 4.** Frequency distribution of BDFI (Basic daily food intake).

	Coding	UC1	UC2	UC3	UC4	Total	Valid Percent
BDFI	Frequency	20/50	24/50	21/50	27/50	92/200	46/100

**Table 5.** Factors affecting malnutrition of landless rural households.

Source	Yes		No		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Education	150	75	50	25	200	100
Employment	175	87.5	25	12.5	200	100
Large family size	161	80.5	39	19.5	200	100
Less wages work	180	90	20	10	200	100
Awareness	145	72.5	55	27.5	200	100

Table 7 is depicting that the relationship between education of the respondents and malnutrition status. Chi-square value shows a significant relationship between education of the respondents and their malnutrition status. Gamma value shows a strong positive relationship between variables.

It suggests high education of the respondents were much influenced by their malnutrition status. The higher education of the respondents will be the higher influence on the malnutrition status is accepted.

Table 8 is showing the relationship between monthly income of the respondents and their malnutrition status. Chi-square proves an exceptionally huge relationship between wages of the respondents and their malnutrition status. Gamma esteem demonstrates a solid, definite connection between the variables. It implies high pay respondents had fewer issues regarding nutritional food when contrasted with low pay respondents. So the speculation “salary of the respondents will be much influenced by their malnutrition status” is accepted.

**Table 6.** Influence of respondent`s age on their malnutrition status.

Age of the respondents (in years)	Facing malnutrition		Total
	No	Yes	
Up to 35	20 10.0%	38 19.0%	58 29.0%
36-45	34 17.0%	23 11.5%	57 28.5%
Above 45	45 22.5%	40 20.0%	85 42.5%
Total	99 49.5%	101 50.5%	200 100.0%

Chi-square = 29.211 d.f. = 2 P-value = .000\*\* Gamma = .421 \*\* = Highly significant.

**Table 7.** Influence of respondent`s education on their malnutrition status.

Education of the respondents	Facing any WB malnutrition		Total
	No	Yes	
Illiterate	14 7.0%	34 17%	48 24.0%
Primary-middle	10 5.0%	17 8.5%	27 13.5%
Matric	25	50	75

Education of the respondents	Facing any WB malnutrition		Total
	No	Yes	
Above matric	12.5% 20	25.0% 30	37.5% 50
Total	10.0% 69 34.5%	15.0% 131 65.5%	25.0% 200 100.0%

Chi-square = 4.678 d.f. = 4 P-value = .000\*\* Gamma = -.107 = Significant.

**Table 8.** Influence of the respondent`s monthly income on their malnutrition status.

Income of the respondents	Facing any malnutrition		Total
	No	Yes	
Up to 10000	20 10.0%	50 25.0%	70 35.0%
10001-20000	20 10.0%	55 27.5%	75 37.5%
Above 20000	25 12.5%	30 15.0%	55 27.5%
Total	65 32.5%	135 67.5%	200 100.0%

Chi-square = 13.24 d.f. = 6 P-value = .040\*\* Gamma = .107 \* = Significant.

**Conclusions**

The need of the study arisen from the current situation of food security around the world and especially in Pakistan. Pakistan is showing the status of undernourishment that is 33% families are facing a shortage of good quality of food. Such situation is getting worse day by day. Food security has a linear relationship with the poverty, which is another dragging indicator for the developing countries, particularly low-income countries such as Pakistan.

Therefore, the prime objective of this study was to assess the malnutrition situation of landless rural households and to identify the factors affecting the malnutrition in Tehsil Sumandri, Punjab province of Pakistan. It is concluded that the main factors which are directly affecting the malnutrition of landless rural households are lack of education, high rate of unemployment, less wages work, lack of awareness about the quality of food utilization, and large family members. These factors are somehow impacting on the malnutrition of the residents of the studied area. A large number of families were facing malnutrition condition, and only 48 families out of 200 were food secured. Malnutrition status regarding protein only 36 families were secured. Meanwhile, 164 families were insecure. Only 92 families were that who intake the basic daily food out of 200 families. By the results, authorities should take some reasonable steps for the good quality of food and drinking water.

WASA have to improve the hygiene system in rural areas. The agriculture department should arrange seminars to give awareness and knowledge about the productivity of clean and pure vegetables and fruits. Health centers should provide awareness about the utilization of nutritious food. Local Government should provide the filtration plants in rural areas. Media should also provide awareness through electronic and print media.

**References**

**Ali G, Abbas S.** 2013. Exploring CO<sub>2</sub> sources and sinks nexus through integrated approach; insight from Pakistan. *Journal of Environmental Informatics* **2(22)**, 112-122.

**Bashir MK, Schilizzi S.** 2013. Determinants of rural household food security a comparative analysis of African and Asian Studies. *J Sci F Agr* **93(6)**, 1251-1258.

**Bempah CK, Buah-Kwofie A, Tutu AO, Denutsui D, Enimil E, Adjei-Martey G, Blewu B, Asomaning J.** 2011. Pesticide residues and heavy metals levels in some selected fruits and vegetables from Ghanaian markets. *Food Science* **39**, 4964-4972.

**Chen M, Liu W, Lu D.** 2016. Challenges and the way forward in China's new-type urbanization. *Land Use Pol* **55**, 334-339.

- De Rivero O.** 2001. *The Myth of Development: The Non-viable Economies of the 21st Century*. London: Zed Books.
- FAO.** 2011. *The state of food insecurity in the world: meeting the international hunger targets - taking stock of uneven progress*. Food and Agriculture Organization of the United Nations, Rome.
- FAO.** 2015. *The state of food insecurity in the world: meeting the international hunger targets - taking stock of uneven progress*. Food and Agriculture Organization of the United Nations, Rome.
- Friedman M.** 2008. *The Use of Ranks to Avoid the Assumption of Normality Implicit in the Analysis of Variance*. Published by: American Statistical Association 2008.
- GOP.** 2016. *Economic survey of Pakistan 2015-16*. Ministry of Finance, Government of Pakistan, Islamabad, Pakistan.
- NHS.** 2013. National Health Service, UK, (November 20th 2013). "Causes of malnutrition" [HYPERLINK www.nhs.uk/Conditions/Malnutrition/Pages/Causes.aspx](http://www.nhs.uk/Conditions/Malnutrition/Pages/Causes.aspx)
- Omari R, Frempong G.** 2015. Food safety concerns of fast food consumers in urban Ghana. *Appetite* **98**, 49-54.
- Opitz I, Berges R, Piorr A, Krikser T.** 2016. Contributing to food security in urban areas: differences between urban agriculture and peri-urban agriculture in the Global North. *Agriculture and Human Values* **33**, 341-358
- WHO.** 2013. *Diet, nutrition and the prevention of chronic diseases*. Report of a Joint WHO. Expert Consultation. WHO Technical Report Series No. 916. Geneva.
- Yuan Y, Chenb C, Zhengb C, Wanga X, Yanga G, Wanga Q, Zhanga Z.** 2014. Residue of chlorpyrifos and cypermethrin in vegetables and probabilistic exposure assessment for consumers in Zhejiang Province, China. *Food Control* **36(1)**, 63-68.
- Yusuf AA, Arowolo TA, Bamgbose O.** 2003. Cadmium, copper and nickel levels in vegetables from industrial and residential areas of Lagos City, Nigeria. *Food Chem Toxicol* **41**, 375-378.
- Zaidi MI, Asrar A, Mansoor A, Farooqi MA.** 2005. The heavy metal concentrations along roadside trees of Quetta and its effects on public health. *Journal of Applied Sciences* **5(4)**, 708-711.
- Zia A.** 2013. 80% of diseases are waterborne. *The Express Tribune*, Lahore, Pakistan. Online available at <http://tribune.com.pk/story/524428/80-of-diseases-are-waterborne/> accessed on 20/02/2017.