International Journal of Advanced Community Medicine

Dr. Pooja Sadana
Associate Professor,
Department of Community
Medicine, Sri Guru Ram Das
Institute of Medical Sciences
and Research, Amritsar,
Punjab, India

Dr. Kanwal Preet Kaur Gill
Professor, Department of
Community Medicine, Sri Guru
Ram Das Institute of Medical
Sciences and Research,
Amritsar, Punjab, India

Dr. Priyanka Devgun
Professor & Head, Department
of Community Medicine, Sri
Guru Ram Das Institute of
Medical Sciences and Research,
Amritsar, Punjab, India

A study to assess the nutritional status of women in slums of Amritsar city (Punjab), India

Dr. Pooja Sadana, Dr. Kanwal Preet Kaur Gill and Dr. Priyanka Devgun

DOI: https://doi.org/10.33545/comed.2019.v2.i3a.78

Abstract
Introduction: Health of the urban poor is considerably worse off than the urban middle and high income groups. Women in the slums are worst affected. Hence the current study was conducted to assess the nutritional status of women in slums of Amritsar.

Materials and Method: A cross-sectional study was conducted in a slum of Amritsar city. A sample of 200 married women in the reproductive age were studied by using pre-designed, pre-tested proforma. Body Mass Index was used to assess the nutritional status of women. Nutritional status in relation to various socio-demographic characteristics was also studied. The data was compiled and analyzed by using SPSS 17.0 version for windows.

Results: It was observed that 67.6% women were having normal nutritional status while 11.1% of them were overweight and 21.3% were suffering from chronic energy deficiency. Literacy and socioeconomic status were found to be significant factors affecting nutritional status of women in slums.

Conclusion: Literacy status and socioeconomic status of women needs to be addressed to improve the nutritional status of women in slums.

Keywords: Nutritional status, socio-demographic, slums, women

Introduction
Slums, an unwanted offshoot of modern industrialization and urbanization, are acquiring alarming dimensions with each passing day. The explosive increase in urban population without the requisite economic and social growth is leading to the formation of big and small slums**.** Poor housing, choked drains, high density of insects and rodents, poor personal hygienic conditions are the hall marks of urban slums in India [1]. Apart from poverty that hinders the urban poor's capacity to fulfill basic survival needs, slum dwellers live in congested conditions which promote the spread of infectious diseases. Moreover, they are frequently excluded from basic government nutritional and health services as they often live in unauthorized settlements. Health of the urban poor is considerably worse off than the urban middle and high income groups. There are thousands of easily preventable maternal deaths each year. Poverty drives a large number of women to work outside resulting in their poor nutritional status. Slum dwellers inhabit the land belonging to other agencies and are therefore illegal and vulnerable to eviction, rapid migration and mobility which further affect the health delivery in slums. Low literacy rate of 73.1% in slums as compared to 81% in the overall non- slum population is also one of the important characteristics of slums in India [2].

As women spend more time in this environment they are the most affected. Poor nutritional status further deteriorates their health. Due to lack of availability of organized health care system in slums, there are large number of maternal deaths. All these factors, hence, make women in urban slums a special need group the nutritional status of which need to be identified [3]. Because of changing life style, the slum women are also found to be overweight which makes them vulnerable to non-communicable diseases [4]. Hence the current study was conducted to assess the nutritional status of women in slums of Amritsar.

Materials and Method
A cross-sectional study was conducted in a slum of Amritsar city. By adopting convenience sampling, 200 married women in the reproductive age were studied after taking informed

Correspondence
Dr. Pooja Sadana
Associate Professor,
Department of Community
Medicine, Sri Guru Ram Das
Institute of Medical Sciences
and Research, Amritsar,
Punjab, India

consent. Pre-designed, pre-tested proforma was used to interview the women. Modified Udai Pareek Scale [5] was used to assess the socio-economic status of women. Body Mass Index was used to assess the nutritional status of women. Height and weight of women was recorded with standard procedure. The height was recorded with the women standing erect and bare feet on the floor against the wall, with feet parallel and buttocks, shoulders and back of head touching the wall. Then a scale was put on the top of their heads across the wall and height was measured in centimetres (cms) up to nearest of 0.1cm. For measuring weight, a standard stand on digital scale was used. It was regularly standardized by putting a known weight over it. The women were made to stand on machine without shoes and minimum clothes at the centre of the platform without touching anything and weight was recorded. Body Mass Index (BMI) was calculated by dividing weight in kilograms by square of height in meters and subjects were classified as per WHO criteria [6]:

Classification BMI
Overweight ≥25.00
Normal weight 18.50 – 24.9
Chronic Energy Deficiency (CED) < 18.50
Various sociodemographic factors were studied in relation to chronic energy deficiency. Odds Ratios (ORs) with 95% confidence interval were generated.

Exclusion criteria
1. Women not willing to participate.
2. Pregnant women
3. Women suffering from any chronic illness

Pilot testing was done and as no changes were required the subjects were added to sample size. The data was compiled and analyzed by using SPSS 17.0 version for windows.

Results and Discussion

Table 1: Distribution of women according to their socio-demographic characteristics

Parameter		Frequency (n= 200)	Percentage
Age in years	<25	140	70.0
	≥ 25	60	30.0
Caste	Upper caste	63	31.5
	Lower caste	137	68.5
Type of family	Nuclear	110	55.0
	Joint	90	45.0
Socio-economic Status	Upper	11	05.5
	Upper middle	42	21.0
	Lower middle	76	38.0
	Lower	71	35.5
Parity	≤2	131	65.5
	>2	69	34.5
Literacy	Literate	78	39.0
	Illiterate	122	61.0

Socio-demographic features of the study subjects were studied (Table 1) and it was observed that among 200 women, large majority of them (70%) were less than 25 years of age while 30% of them were above 25 years of age. Less than one third of them (31.5%) were belonging to upper caste where as large majority of study subjects were belonging to lower caste. In today's life of industrialization and modernization, there is a trend of nuclear families. Similar findings were observed in the current study. Nuclear families (55%) had a little edge over joint families and 45% of women were residing in joint families. Normally the socioeconomic status of slum dwellers is considered to be poor. In the current study, socioeconomic status of women was observed by using Modified Udai Pareek Scale and it was revealed that out of 200 women, only 5.5% of them could qualify to be put in higher socio-economic status. Parity of large majority of them (65.5%) was equal to or less than 2 and only 39% of them were literate.

Table 2: Distribution of women according to their nutritional status

BMI	Frequency (n=200)	Percentage
≥ 25 (High)- overweight	23	11.1
18.5 – 24.9 (Normal)	142	67.6
< 18.5 (Low) –CED	45	21.3

Poor women are more likely to be malnourished than non-poor women. At least one out of four poor women is undernourished in India [7]. Nutritional status of women was assessed by using body mass index (Table-2). It was observed that 67.6% women were having normal nutritional status while 11.1% of them were overweight and 21.3% were suffering from chronic energy deficiency. In a cross-sectional study in slums of Dinajpur, Bangladesh, nearly half of the women were found to be acutely malnourished [8]. Similar findings were observed in another study of nutritional status of women in slums of eight metro cities where 23% women in slums were undernourished [9]. Food inadequacy is not a problem in Punjab. There are also a number of national nutritional schemes running in our country. Current findings of poor nutritional status of women depicts the inadequacies in the availability of food. It may also be because of the reason that there are a number of communicable diseases in the slums which may deteriorate the nutritional status of women. Further studies on the large scale observing the factors responsible for poor nutritional status of women need to be conducted.

Table 3: Under-nutrition among women in relation to various socio-demo-graphic factors

Parameter		Undernourished		†OR (CI)	p value
		Yes	No		
Caste	Lower Caste (137)	30	107	1.1 (0.56-2.5)	0.75
	Upper Caste (63)	12	51		
Type of family	Joint (90)	21	69	0.09 (0.5-2.1)	0.79

	Nuclear (110)	24	86		
Socioeconomic Status*	Upper (53)	03	50	0.1(0.04-0.50)	0.0006
	Lower (147)	42	105		
Literacy	Literate (78)	05	73	0.14 (0.05-0.38)	0.000
	Illiterate (122)	39	83		
Age	<25 (140)	31	109	1.2 (0.58-2.7)	0.54
	≥ 25 (60)	11	49		
Parity	≤2 (131)	28	103	0.99 (0.5-1.9)	0.98
	>2 (79)	17	62		

*Socio-economic status (SES) groups were clubbed together for statistical analysis. Upper Middle Class was clubbed with Upper Class and Lower Middle Class was clubbed with Lower Class.
†OR (CI) – Odds Ratio (Confidence Interval)

Under-nutrition among women was studied in relation to various socio-demographic factors (Table 3) It was observed that there was no significant difference of nutritional status among women in relation to caste and type of family. Odds of undernourished women were 90% less among women of higher socioeconomic status in comparison to women in lower socioeconomic status and the difference was found to be highly significant (OR=0.1, CI=0.04 to 0.53, p= 0.0006). Similar findings were reported by Kamra D in her study of slums in Ludhiana [10]**.** This might be due to the fact that economic status of a households improves their access to food supply and use of health services which are prime determinants of maternal nutritional status [11]. Literacy showed a negative relation with malnutrition. Nutritional status of illiterate women was also found to be poor (OR - 0.14, CI -0.05-0.38). Literate women was 86% less likely to suffer from malnutrition in comparison to illiterate women. It indicates that there is a need to improve the literacy of women in order to improve their nutritional status. A study in Rajasthan also showed that literate women were less likely to suffer from chronic energy deficiency [12].

Age and parity showed no significant difference in the current study however in a study in Ethiopia it was observed that the odds of malnutrition were higher among young women [13]. Literacy might contribute to socioeconomic status of a family. May be a literate women can better utilize the resources hence improving the socioeconomic status as well as improving the nutritional status of the family as a whole.

As in the current study, the literacy status of the women and socioeconomic status of the family are found to be the significant factors contributing to nutritional status of a women, there is a need to frame policies focusing on these factors so that we might have healthy women and hence healthy nation.

Conclusion
In the current study, it was observed that the nutritional status of women in urban slums is very poor which needs to be addressed. The literacy and socioeconomic status of women was found to be significant factors affecting nutritional status of women. Hence, a more focused approach is required to address these issues so that nutritional status of women can be improved.

Conflict of Interest: Nil

Source of Funding: Nil

Ethical Clearance: Ethical clearance was taken from the Ethical Committee of the institution.

References
1. Pothen KP. Slum - its concept and causes. In: Pothen KP, Singh SD, editors. Slum children of India. New Delhi: Deep & Deep publications; 1982, 13-7.
2. Census of India. Metadata and brief highlights on Slum population. Government of India, 2001.
3. Pande S. Background note on health in urban slum in Delhi. Ensuring public accountability through community action. Institute of social studies trust, New Delhi, 2005 [cited 2018 Oct 19. Available from: www.isst-india.org/pdf/Health%20in%20urban%20slum.pdf
4. Subramanian SV, Kawachi I, Smith GD. Income inequality and the double burden of under- and overnutrition in India. J Epidemiol Community Health. 2007; 61(9):802-809 [PMC free article] [PubMed] [Google Scholar]
5. Pareek U, Trivedi G. Manual of socio-economic scale (rural). Manasayan Publishers, New Delhi, 1979.
6. World Health Organization Physical Status: the Use and Interpretation of Anthropometry. Technical Report Series no. 854. Geneva: World Health Organization, 1995.
7. National Family Health Survey III. Health and living conditions in eight Indian cities. Ministry of Health and Family Welfare. Govt. of India, 2006.
8. Rehman S, Hilderbrand K, Kolsteren P, Diniz A. A nutritional profile of non-pregnant women from the slums of Dinajpur, Bangladesh. Tropical Doctors. 1999; 29(4):221-4.
9. Kumar K, Sinha RK. Understanding women's nutritional status in urban India: A comparative study of slum versus non- slum dwellers. International Institute of Population Sciences Mumbai, 2009 [cited 2018 Oct 18]. Available from: http://iussp2009.princeton.edu/download. aspex? Submission ID =91275
10. Kamra D. A study of epidemiological correlates of health status and quality of life of elderly population in a rural area of Punjab. [Thesis]. Ludhiana: Baba Farid University of Health Sciences, Faridkot, 2009.
11. United Nations Children's Fund (UNICEF). Strategies of improving nutrition of children and women in developing countries. New York: UNICEF, 1990.
12. Nair C. Study of chronic energy deficiency among women labourers in Rajasthan (India). The internet journal of epidemiology. 2009 [internet]; 8(1). [Cited 2019 Feb 28] Available from: http://www.ispub.com/IJE/8/1/13374
13. Haidar J, Muroki NM, Omwega AM, Avana G. Malnutrition and iron deficiency in lactating women in urban slum communities from Addis Ababa, Ethioia. East Afr Med J. 2003; 80(4):191- 4.