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

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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 income groups.

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 consent.
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       |

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.

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 |
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 [100]. 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 [111]. 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 [122]. 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 [113]. 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.

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