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Nutritional Status among Reproductive-aged Women in Dang District: A Cross-sectional Descriptive Study

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ABSTRACT

Introduction: Women's nutrition during their reproductive years is a major concern around the world, particularly in developing countries. Women's nutritional status is crucial to their health and that of their children, as any abnormalities can lead to adverse pregnancy outcomes. Moreover, it has far-reaching implications for human capital, economic productivity, and overall national development. Therefore, the objective of this study was to determine the nutritional status among reproductive-aged women in Dang, Nepal.

Methods: We conducted a descriptive cross-sectional study in Ghorahi, the Sub-Metropolitan City of Dang after obtaining ethical approval from the Nepal Health Research Council. Total 339 women of reproductive age (15-49 years) were chosen for the study through a systematic random sampling technique. Nutritional status was determined based on Body Mass Index. Face-to-face interview technique was used for data collection after informed consent. SPSS 16 was used to analyze the data which were collected using semi-structured questionnaires.

Results: Out of total respondents, 105 (31%) (26.1-26.2 at 95% CI) , 85 (25.1%) (20.5-30 at 95% CI), and 26 (7.6%) (5.1-11 at 95% CI) were undernourished, overweight, and obese respectively.

Conclusions: Nutritional deficiency is still a problem among reproductive-aged women in Nepal. Suitable measures from both governmental and non-governmental sides to improve the nutritional status of reproductive-aged women are imperative.

Keywords: *BMI; Dang; Nepal; Nutritional status; Reproductive-aged women.*

INTRODUCTION

Nutritional status is characterized by a balance between adequate food intake and increased requirements and its utilization by the body, as measured by anthropometric measurements.[1] Women's nutrition during their reproductive years is a major concern around the world, particularly in developing countries. Underweight women account for at least 120 million women in developing nations.[2]

In the context of Nepal, most resources are compromised in case of women, and nutritional concerns rise as a result of the restricted resources available to women.[2] According to the Nepal Demographic and Health Survey (NDHS) 2016, 17% of women aged 15-49 years were underweight and 22% were overweight.[3] The objective of this study was to determine the nutritional status among reproductive-aged women in Dang, Nepal.

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METHODS

A descriptive cross-sectional study was conducted among 339 reproductive-aged women (15 to 49 years) from ward no.15, Ghorahi, Sub Metropolitan of Dang district, Nepal. The study was conducted after ethical clearance from Nepal Health Research Council (Ref no. 778/2018) and informed consent from every individual.

The study population included all reproductive-aged women (15-49 years) from Ward 15 of Ghorahi Sub Metropolitan who were willing to participate in the study.

Women who were not of reproductive age were not included in the study.

Sample size calculation

Sample size was calculated by using formula:

$n = z^2pq/e^2$

$= (1.96)^2*0.20*0.80/(0.05)^2$

$= 245.86$

$=246$

Where,

p= prevalence=20.2%= 0.20 (Prevalence of a study from Africa[4])

q= complement of prevalence= 1-0.20=0.80,

Z= 1.96 at 95% Confidence Interval,

d= maximum allowable error (5%) = 0.05

Including a non-response rate of 10%, the total sample size was 250. We used systematic random sampling techniques for recruiting the participants. 339 reproductive-aged women were chosen from each of the 789 households. The k value was calculated using the sample frame of the Ghorahi Sub Metropolitan utilizing systematic random sampling.

K^{th} item= 789/333 = 2.3=2

We gathered information on nutritional status as well as socio-demographic variables along with illness status, physical activity, dietary intake for nutritional considerations. Body mass index (BMI) was used to measure nutritional status, with less than 18.5 indicating underweight, 18.5-25 indicating normal, 25-30 indicating overweight, and more than 30 indicating obesity, according to the cut-off values of the World Health Organization (WHO).[5]

Table 1. WHO classification for BMI

Nutritional status	Body Mass Index (BMI- kg/m^2)
Underweight	Below 18.5
Normal	18.5- 25
Overweight	25- 30
Obese	Above 30

Weighing scales and measuring tape was used to measure weight and waist-circumference of reproductive-aged women respectively for anthropometric measurements.

To ensure the study's reliability, pretesting was carried out in Mahalaxmi Municipality ward number 5, Ghorahi, where 34 women from each household were interviewed, accounting for 10% of the sample size. Data was collected and processed into SPSS version 16 for analysis. The frequency and percentage of univariate analysis were provided.

RESULTS

Out of 339 women of reproductive age, underweight, overweight and obesity was found to be prevalent in 105 (31%) (26.1-26.2 at 95% CI), 85 (25.1%) (20.5-30 at 95% CI), and 26 (7.6%) (5.1-11 at 95% CI) respondents respectively. Likewise,123 (36.3%) women had normal BMI.

Table 2 shows the socio-demographic characteristics of the respondents. Of the total respondents, most of the women, 112 (33%) were aged 15-24 years old. More than half of the respondents were homemakers 192 (56.6%). Approximately half the respondents, i.e., 169 (49.9%), had completed their graduation. The majority of women 326 (96.2%) followed Hinduism as their primary religion, with 289 (85.3%) belonging to the Brahmin/Chhetri ethnicity. 226 (66.7%) were married, and 231 (68.1%) respondents were living in nuclear families. Exactly half of the respondents showed a medium level of wealth index of 170 (50.4%).

Table 2. Socio-demographic distribution of respondents (n= 339)

Socio-demographic variables	n (%)
Age(in years)	
15-24	112(33.0)
25-34	73(21.5)
35-44	110(32.5)
45 and above	44(13.0)
Occupation	
Agriculture	5(1.5)
Business	13(3.8)
Private job	10(3.0)
Government job	4(1.2)
Student	115(33.9)
Homemaker	192(56.6)
Literacy level	
Illiterate	28(8.2)
Primary level	47(13.9)
Secondary level	95(28.0)
Graduate and so above	169(49.9)
Religion	

Socio-demographic variables	n (%)
Hinduism	326(96.2)
Buddhism	8(2.3)
Christianity	5(1.5)
Ethnicity	
Dalit	2(0.6)
Brahmin/Chetri	289(85.3)
Newar	13(3.8)
Janjati	35(10.3)
Marital status	
Married	226(66.7)
Unmarried	109(32.1)
Widow	3(0.9)
Divorced	1(0.2)
Family type	
Nuclear	231(68.1)
Joint family	108(31.9)
Wealth index	
Very poor	26(5.9)
Poor	110(35.6)
Medium	170(50.4)
Rich	22(5.3)
Very rich	11(2.8)

Table 3 depicts that almost all the respondents had health issues in the last three months, i.e., 336 (99.1%). The majority of respondents suffered from acute illnesses such as headaches, 188 (55.5%) and skin problems, 188 (55.5%) followed by gastritis, 187 (55.2%). Similarly, the majority of respondents suffered from chronic illnesses such as hypertension, 38(11.2%), low blood pressure, 20 (5.9%), and diabetes, 1 (0.3%).

Table 3. Disease condition of the respondent (n=339)

Disease condition	n(%)
Any health issues	
Yes	336(99.1)
No	3(0.9)
Acute illness*	
Gastritis	187(55.2)
Fever	61(18.0)
Diarrhea	107(31.6)
Skin problem	188(55.5)
Stomach ache	143(42.2)
Headache	188(55.5)
Chronic illness*	
Hypertension	38(11.2)
Diabetes	1(0.3)
Low blood pressure	20(5.9)

**multiple response*

Table 4 shows that all of the respondents were involved in some kind of physical activity. The majority of the respondents, 314 (92.6%) were in household activity. Similarly, 204 (60.2%) of respondents were engaged in some physical activity for more than 30 minutes a day. Almost all of the participants, 323 (95.3%) were non-vegetarian, with the frequency of food intake being three times a day, i.e., 248 (73.2%).

Table 4. Physical activity and dietary intake of respondents (n=339)

Characteristics	n (%)
Physical activity by respondent	
Yes	339(100.0)
Types of physical activity*	
Household activity	314(92.6)
Infield (agriculture)	36(10.6)
Walking	132(38.9)
Duration of physical activity	
Less than 30 minutes	96(28.3)
30 minutes	39(11.5)
More than 30 minutes	204(60.2)
Dietary intake	
Types of food	
Vegetarian	169(4.7)
Non-vegetarian	323(95.3)
Intake of meal	
2 times a day	46(13.5)
3 times a day	248(73.2)
4 times a day	45(13.3)

**multiple response*

DISCUSSION

Anthropometric assessment is a simple method that serves as the most useful screening test for nutritional assessment, especially in developing countries.[2] Our study used anthropometric measurements to determine the nutritional status of women of reproductive age. This study was conducted in one of the wards in Dang district, Nepal, where underweight, overweight, and obesity was found to be prevalent in 31%, 25.1%, and 7.6% women of reproductive age, respectively. Likewise, only 36.3% of women were found to have normal BMI. In contrast to this, a study conducted in Baitadi, Nepal, found contradicting results where the proportion of respondents having normal weight was 62.9% and overweight/obese were 4.8%. However, in the instance of being underweight, the results were very comparable to ours,being 32.3 percent.[2] Furthermore, contrary to our findings regarding women's underweight status, the

Nepal Health Demographic Survey (NDHS) 2016 report and a study done in Nepal's three ecological regions both showed a lower number of underweight participants, with 17 % and 16.4%, respectively.[3,6]

According to a study conducted in Bangladesh, there was a significant difference in the context of women's underweight condition and age group. Findings relating to normal weight, on the other hand, were found to be similar.[7] The disparity in the results of both researches could be due to the differences in geography, economy, and social structure between Nepal and Bangladesh.

We found acute health problems such as headaches (55.5%), skin problems (55.5%), gastritis (55.2%), stomach discomfort (42.2%), diarrhea (31.6%), and fever (18%) among participants which was similar to the study conducted in Baitadi where participants reported frequent health conditions such as headaches, fevers, and coughs/colds.[2] Common socio-demographic characteristics and geographic location may be contributing factors to the occurrence of common health problems. In addition, both the referred and current studies revealed consistency in terms of the age range of the majority of respondents and their marital status.

In this study, majority of the women were non-vegetarians which is similar to the study conducted in India.[8] Similarly, in terms of meal consumption throughout the day, a study conducted in Nepal found that majority of the participants consumed their meals three times per day, which was consistent with the findings of our study.[2]

CONCLUSIONS

One of the most crucial components in maintaining excellent health and well-being is proper nutrition. Nutritional deficiency is still a problem among reproductive-aged women in Nepal. To improve the nutritional status of reproductive-aged women, suitable measures from both governmental and non-governmental sides are imperative.

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Not applicable

CONFLICT OF INTEREST

None

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