Overweight and obesity in reproductive aged females of Kathmandu Metropolitan city; its association with dietary and other life style factors (Sep 2016- Mar 2017).

Promod Chandra Paudel,[1] Kshitiz Upadhyay Dhungel,[2] Raj Kumar Sangroula[3]

[1] Food Inspector, Department Of Food Technology and Quality Control, Babarmahal, Kathmandu, Nepal (2005-2018).
[2] Professor, Director Research and planning, College of Applied Food And Dairy Technology, Baneshwor, Kathmandu, Nepal (Mar 2016).
[3] Lecturer, Nutritional Epidemiology, College of Applied Food and Dairy Technology, Baneshwor, Kathmandu, Nepal (2016).

Introduction

• Overweight and Obesity is a highly prevalent global epidemic.[1]

• South Asians are more vulnerable to obesity-related diseases with rising co-morbidities when compared to developed countries.[2]

• It is linked with several health complications in both men and women.

• Globally more women are found overweight or obese compared with men.

• NDHS, 2011 showed prevalence of total overweight and obesity in females age 15-49 was 13.5% which showed considerable rise in NDHS, 2016 i.e. 22%

• STEPS survey Nepal, 2013 showed prevalence of overweight including obesity in females age (15-69) was 22.1% which was more than males (i.e. 21.2%) in the same age group.

Trends in Women's Nutritional status (NDHS 2016)

Percentage of women age 15-49
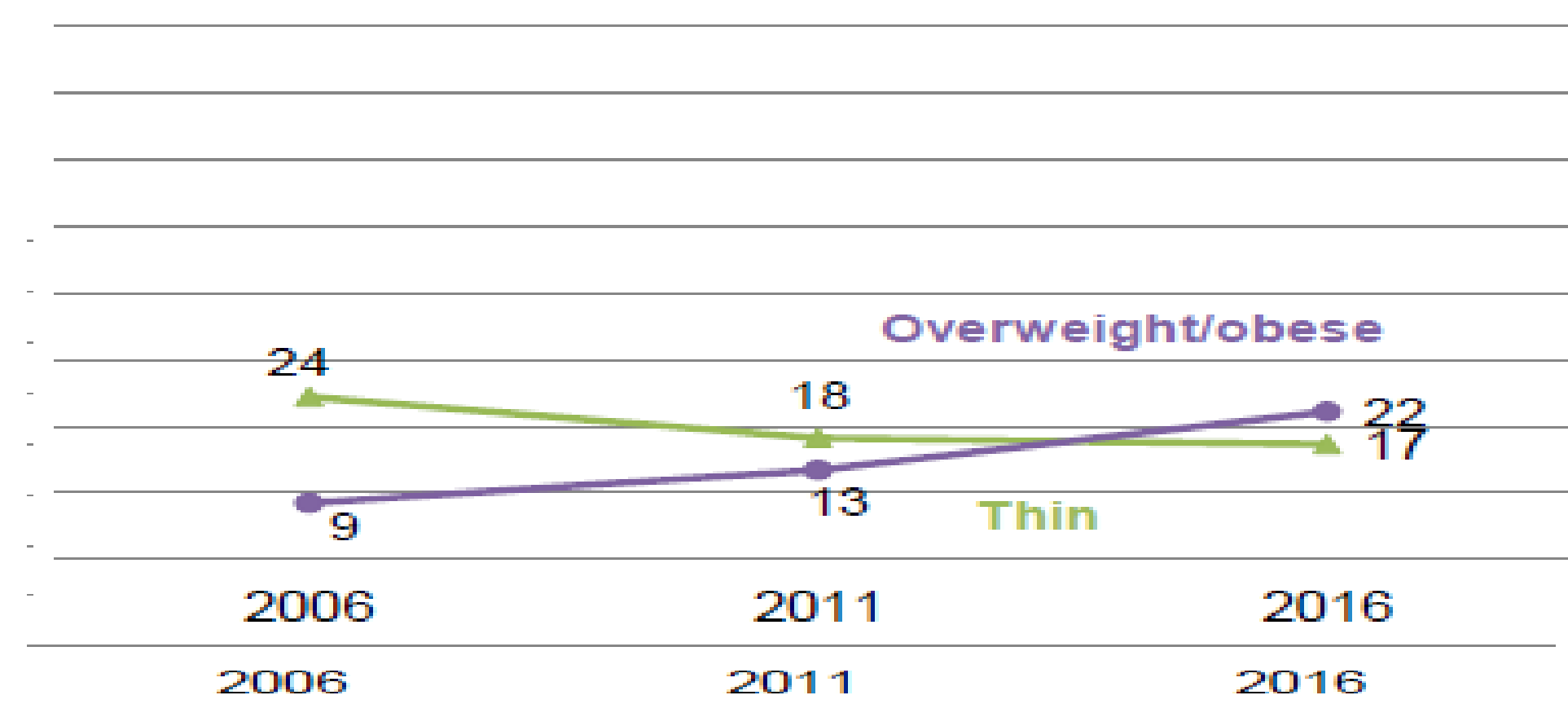
• Overweight and obesity in females of reproductive age is associated with adverse reproductive outcomes which effect for both mother and child.[3]

• Urban lifestyle and dietary habits is often blamed for increased burden of overweight and obesity in the countries like Nepal.[4]

Objectives

• To examine the dietary and life-style related determinants of overweight and obesity in reproductive aged females (15-49).

Contact

Email :   *pramodpaudel79@gmail.com*
Cell :   *+9779841891786*
Office:-   *Department of Food Technology & Quality Control, Babarmahal, Kathmandu.*

Methods

• Analytical cross-sectional study.

• Sample size was determined by using formula $n = Z^2PQ / d^2$.

• Required sample size was 189 using prevalence 13.5% (NDHS, 2011) and non response rate 5%.

• Stratified random as well as population proportionate sampling technique was used to determine number of respondents from each selected ward.

Kathmandu Metropolitan City Map

• A structured questionnaire reviewed by the panel of experts was administered for data collection.

• Heights and weights were measured using Crown weighing machine and Bio Plus stature meter following standard procedures.

• Body mass index was measured by weight in kilogram divided by height in squared meter.

• Overweight or obesity was considered as per BMI international cut-off points for adults.

• For 24- hr recall, food models and household measures were used. The respondents who were fasting or feasting the day before the interview were excluded.

• Low, moderate and high intake of various food groups was determined by making tertiles of the percent contribution of daily calorie intake.

• Only consent form signed respondents and those that agree with the inclusion criteria were entertained for the study.

• Overweight or obesity (BMI≥25) was considered as a dependent (outcome) variable whereas various socio-demographic, lifestyle and dietary variables as the independent variables.

• Bivariate and multivariate analysis was done using IBM SPSS statistic 21 .

• Variables which were significant at the level of 0.2(P<0.2) in bi-variate analysis were considered for multivariate analysis. P< 0.05 was considered statistically significant.

Results

Anthropometric characteristics of females of reproductive age

Variables	Mean	Std. Dev.
Height(cm)	156.23	5.4
Weight(kg)	55.91	8.19
Body mass Index	**Frequency**	**Percent**
Underweight (< 18.5)	16	8.5
Normal (18.5-24.99)	124	65.6
Overweight (25-29.99)	43	22.8
Obese (≥ 30)	6	3.2

Dietary characteristics of female of reproductive age

Variables	Mean intake	(Std. Error)
Total daily calorie intake	1764.16	± 22.41
Protein intake%	11.53	±0.13
Fat intake %	27.55	±0.45
Carbohydrate intake%	61.403	±0.52
Bread and cereal%	46.32	±0.98
Milk and dairies%	4.88	±0.35
Meat and Equivalent %	3.30	±0.29
Legumes and nuts%	8.11	±0.29
Fruits and vegetables %	8.79	±0.35
Added fats and oils%	15.31	±0.28
Fast foods%	8.42	±0.74
Sugar and sugary products%	4.6 7	±0.29

Multivariate analysis showing selected variables with overweight/Obesity (p<0.05) :

Variables	Freq	AOR (95%CI)	p-value
Occupation			
Not working	78	1 (Ref)	
Working	111	0.026 (0.001-.520)	0.017*
Marital status:			
Unmarried	81	1(Ref)	
Married	108	601.97(9.76-37134.2)	0.002*
Physical Activity			
low	79	1(Ref)	
moderate	99	0.078(0.006-0.943)	0.045*
High	11	0.225(0.005-10.31)	0.444
F.H.Overwt/ obesity			
Yes	63	15.575(1.225-198.1)	0.034*
no	126	1(Ref)	
Daily Breakfast			
Yes	107	0.038(0.002-0.604)	0.021*
no	82	1(Ref)	
Legumes and nuts			
low	63	1(Ref)	
Moderate	63	0.005(0.00-0.146)	0.002*
High	63	0.131(0.006-3.03)	0.205
Fast foods			
low	99	1(Ref)	
Moderate	27	84.52(2.25-3178.4)	0.017*
High	63	8.4(0.224-299.4)	0.252
SSB			
low	63	1(Ref)	
Moderate	63	0.019 (0.001-0.639)	0.027*
High	63	5.39 (.231-122.2)	0.297

Ref- Reference Category * denotes to significant Variables

Key Findings

• Overweight or obesity (BMI≥25) in reproductive aged females was found to be 26%.

• Women who were working, married, had family history of overweight and obesity and those who took fast foods moderately were found significantly more likely of becoming overweight or obese.

• Moderate physical activity, daily breakfast intake, moderate intake of legumes and nuts and moderate intake of sugar sweetened beverages were found to be significantly less likely of becoming overweight or obese in reproductive aged women.

Conclusions and recommendations

• Moderate physical activities as well as daily breakfast consumption is more likely to reduce overweight and obesity.

• Moderate intake of legumes and nuts can reduce the likelihood of overweight or obesity.

• The findings can be used as a guideline for overweight and obesity prevention in reproductive aged women.

• Some larger prospective studies are needed .

References

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Acknowledgements