Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city
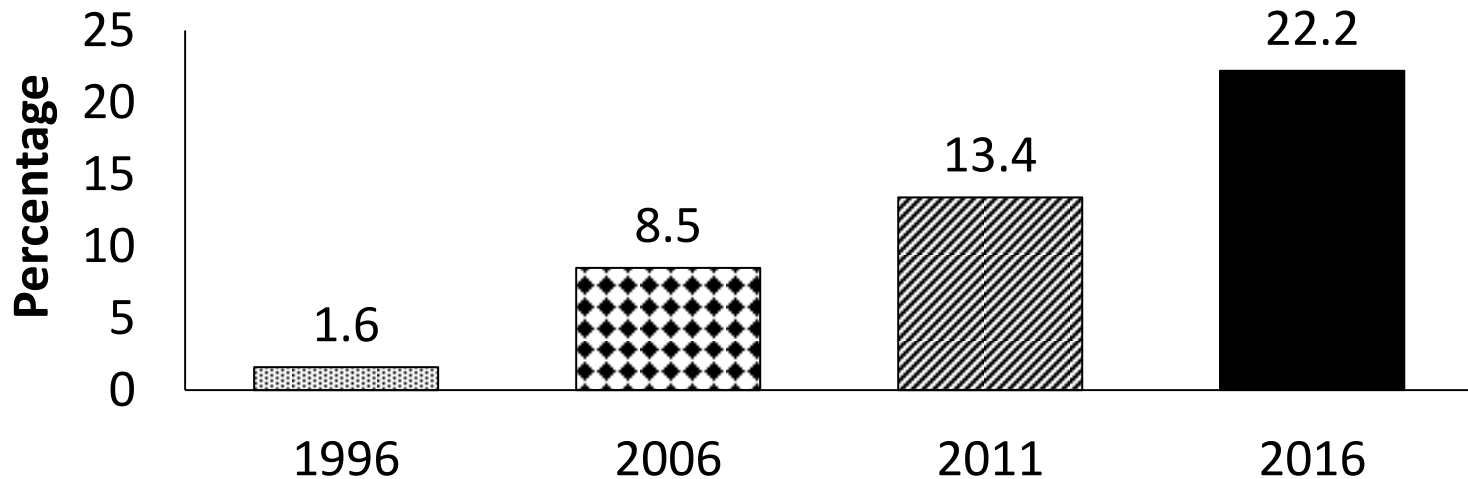
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Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Background

➢ **Non-communicable diseases are a major public health problem in Nepal**

➢ **Among the identified risk factors of NCDs, overweight or obesity is the one.**

Overweight and obesity in reproductive aged Nepalese women

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Background

➢ **Urbanisation is rapid in the country, leading to nutrition transition**

➢ **Increased consumption of high calorie foods, less consumption of fruits and vegetables and behavioural practices favouring obesity.**

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Objective

➢ **To identify the dietary factors associated with overweight and obesity among reproductive aged women residing in Bharatpur metropolitan city.**

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Significance of the study

➢ **helpful in highlighting the problem of overweight and obesity in a urbanized place, Bharatpur and the main contributing dietary factors.**

➢ **helpful in informing the health sector and the public health planners in mobilization and allocation of resources for the prevention and control of NCDs.**

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Methodology

Research design

➢ **Cross-sectional design**

Dependent variables

➢**Body Mass Index (BMI)**
  ➢$\geq$ 25 kg/m² =Overweight
  ➢$\geq$30 kg/m² =Obese
➢**Waist to Hip ratio (WHR)**
  ➢> 0.85 = Abdominally obese

Independent variables

➢**Calories and nutrient (**carbohydrate, protein, fat, calcium**) intake**
➢**Consumption frequency of foods rich in fiber, energy and calcium**
➢**Behavioral practice (**skipping/delaying breakfast, watching TV while eating, outside eating**)**

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Methodology

Study area

➤ **Bharatpur metropolitan city, Chitwan district, Province 3, Nepal.**
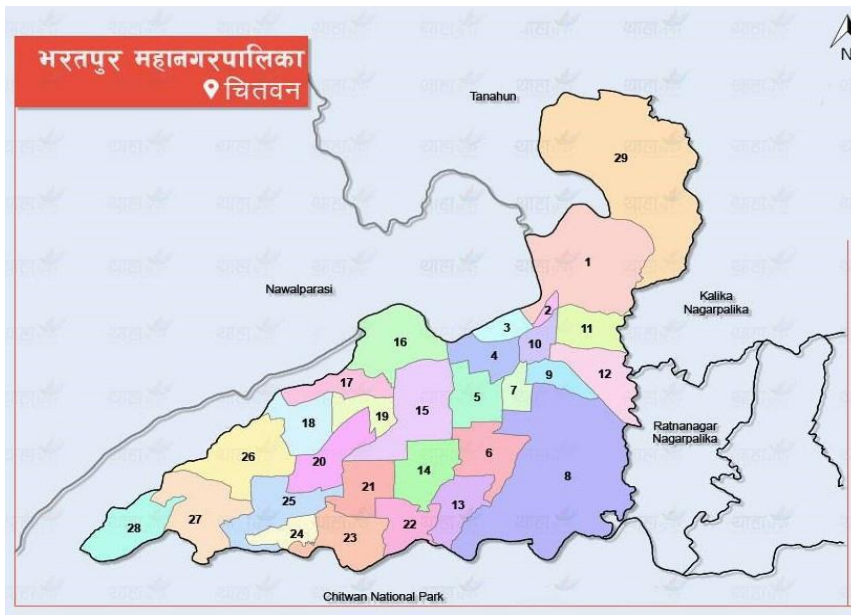
Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Methodology
Sample

➤**Sample size:** 300

➤**Sampling technique:** Probability proportional to size followed by simple random sampling was done to select household.

➤**Inclusion criteria:** Females residing in study area, of age between 15-49 years.

➤**Exclusion criteria**

    ➤Pregnant and lactating females.

    ➤Females with acute or chronic illness.

    ➤Females who were residing temporarily in Bharatpur.

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Methodology

Data collection technique

- **Anthropometric measurements**
- **Food frequency questionnaire**
  - fiber (whole/unpolished cereals & legumes, vegetables, leafy vegetables, fruits)
  - energy (fast foods)
  - calcium (dairy products)
  - Consumption frequency was categorised as regular (once a day), frequent (2-4 times/week) and rare (once a week or less).
- **24 hour dietary recall method**
- **Structured questionnaire** (behavioral practice)

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Results and discussion

Prevalence of overweight and obesity

▤ overweight   ▣ obesity   ■ normal
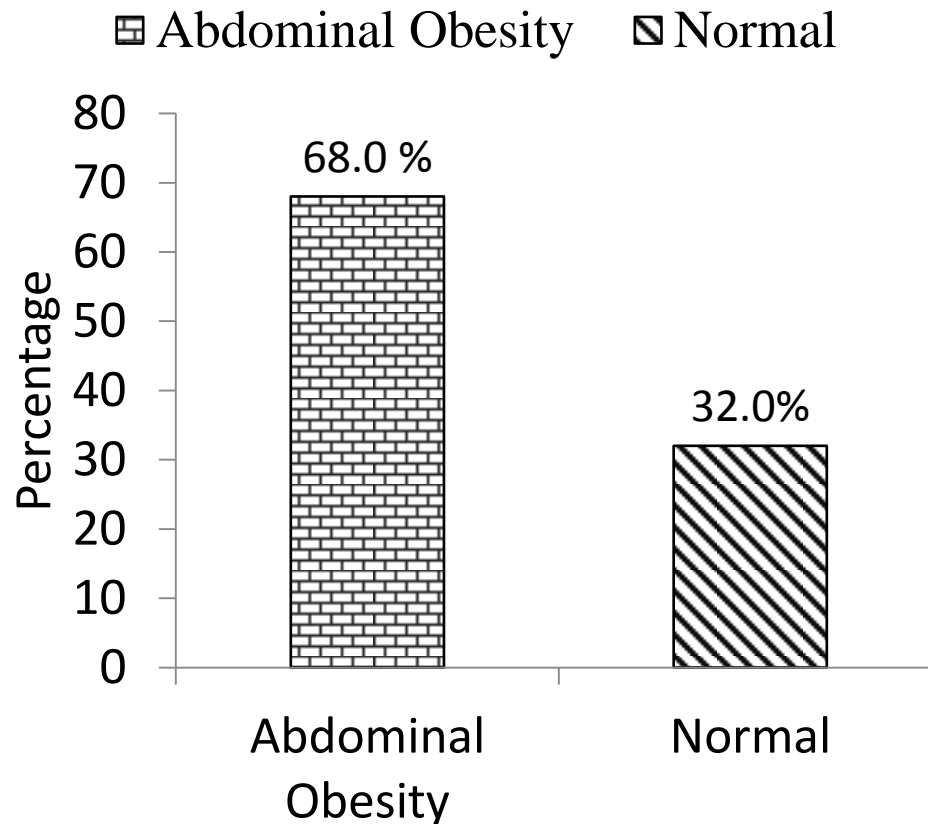

32.3%

58%

9.7%
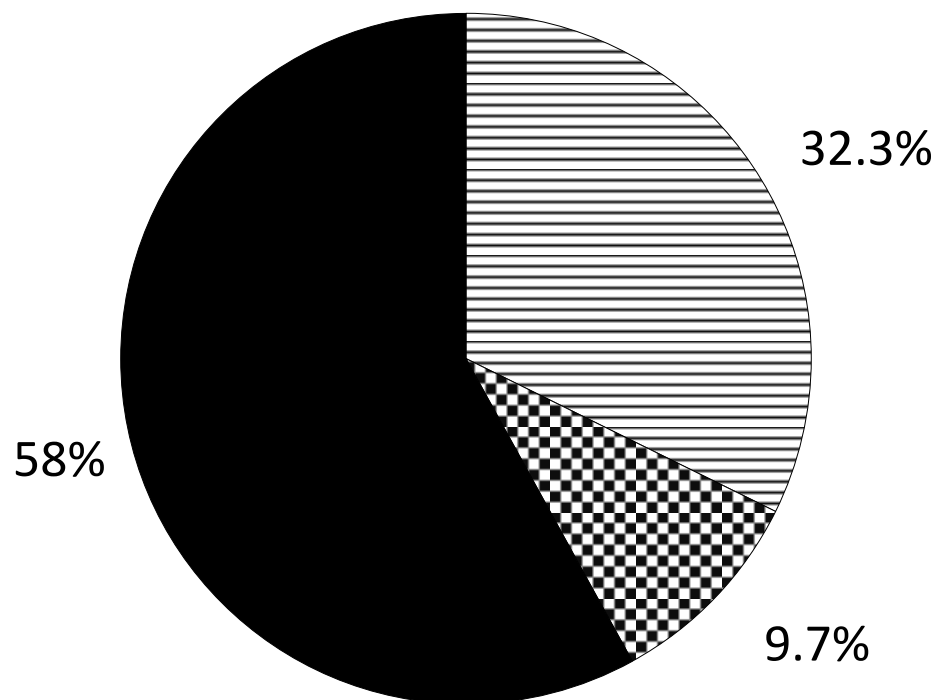
Mean BMI = 24.1±10.01 kg/m²

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Results and discussion

Prevalence of abdominal obesity

Mean WHR = 0.89±0.11

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Results and discussion

Nutrient intake

Nutrient	Intake	Frequency	Percent
Calories	Adequate	61	20.3
	Inadequate	239	79.7
Fat	Low	33	11.0
	Normal	152	50.7
	High	115	38.3
Carbohydrate	Low	238	79.3
	Normal	50	16.7
	High	12	4.0

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Results and discussion

Nutrient intake

Nutrient	Intake	Frequency	Percent
Protein	Adequate	189	63.0
	Inadequate	111	37.0
Calcium	Inadequate	196	65.3
	Adequate	104	34.7

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Results and discussion

Food frequency

	Regular	Frequent	Rare
Fiber			
Whole/unpolished cereals & legumes	21.8	8.3	69.9
Green leafy vegetables	27.3	42.7	30.0
Other vegetables	32.3	64.3	3.3
Fruits	34.0	9.7	56.3
Calcium (Dairy products)	35.0	21.7	43.3
Energy rich (Fast food)	27.7	45.7	26.7

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Results and discussion

Behavioral practice

Practice	Daily	2-3 times	Once a week	Rare
Skip/delay breakfast	58.0	22.3	2.7	17.0
Eating while watching TV	25.7	27.4	-	47
Eating out	-	5.7	42.7	51.7

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Results and discussion

Dietary factors associated with overweight and obesity

Factors	Category	Overweight and Obesity	Non-overweight and obese	Chi-square	P-value
		Freq. (%)	Freq. (%)		
Calorie	Adequate	50 (82.0)	11(18.0)	36.11	0.000*
	Inadequate	76 (31.8)	163(68.2)		
Protein	Adequate	91 (48.1)	98(51.9)	7.926	0.300
	Inadequate	35 (31.5)	76(68.5)		

*Statistically significant (P<0.05)

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Results and discussion

Dietary factors associated with overweight and obesity

Factors	Category	Overweight and Obesity	Non-overweight and obese	Chi-square	P-value
		Freq. (%)	Freq. (%)		
Carbohydrate	Low	77 (32.8)	161 (67.6)	13.449	0.000*
	Adequate	38 (76.0)	12 (24)		
	High	11 (91.7)	1 (8.3)		
Fat	Low	6 (18.2)	27 (81.8)	17.193	0.102
	Normal	46 (30.3)	106 (69.7)		
	High	74 (64.3)	41 (35.7)		

*Statistically significant (P<0.05)

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Results and discussion

Dietary factors associated with overweight and obesity

Factors	Category	Overweight and Obesity	Non-overweight and obese	Chi-square	P-value
		Freq. (%)	Freq. (%)		
Unpolished *dal*	Regular	18 (36.7)	31 (63.3)	1.278	0.525
	Frequent	17 (37.8)	28 (62.2)		
	Rare	91 (44.2)	115 (55.8)		
Fruits	Regular	35 (34.3)	67 (65.7)	6.855	
	Frequent	9 (31)	20 (69)		
	Rare	82 (48.5)	87 (51.5)		0.032*

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Results and discussion

Dietary factors associated with abdominal obesity

Factors	Category	Abdominally obese	Non-obese	Chi-square	P-value
		Freq. (%)	Freq. (%)		
Calorie	Adequate	55 (90.2)	6 (9.8)	17.286	0.000*
	Inadequate	149 (62.3)	90 (37.7)		
Protein intake	Adequate	125 (66.1)	64 (33.9)	0.184	0.367
	Inadequate	79 (71.2)	32 (28.8)		

*Statistically significant (P<0.05)

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Results and discussion

Dietary factors associated with abdominal obesity

Factors	Category	Abdominally obese	Non-obese	Chi-square	P-value
		Freq. (%)	Freq. (%)		
Fat intake	Low	22 (66.7)	11 (33.3)		
	Adequate	96 (63.2)	56 (36.8)		
	High	86 (74.8)	29 (25.2)	4.096	0.129
Carbohydrate	Low	152 (63.9)	86 (36.1)		
	Adequate	41 (82)	9 (18)		
	High	11 (91.7)	1 (8.3)	9.462	0.009*

*Statistically significant (P<0.05)

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Results and discussion

Dietary factors associated with abdominal obesity

Factors	Category	Abdominally obese	Non-obese	Chi-square	P-value
		Freq. (%)	Freq. (%)		
Unpolished *dal*	Regular	30 (61.2)	19 (38.8)		
	Frequent	30 (66.7)	15 (33.3)		
	Rare	145 (70.4)	60 (29.6)	1.604	0.448
Fruits	Regular	69(67.6)	33(32.4)		
	Frequent	13(44.8)	16(55.2)		
	Rare	122(72.1)	47(27.8)	8.525	0.114

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Conclusion

➢ **Prevalence of overweight and obesity in females residing in Bharatpur is high.**

➢ **Calcium intake was inadequate, consumption frequency of fiber and calcium rich food was less and behavioural practices promoting positive energy balance was found to be followed by the females of study area.**

➢ **Calorie, carbohydrate intake and fruits consumption were significantly associated with overweight and obesity in these females.**

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

Conclusion

➢ **The high prevalence of overweight and obesity in the study area, highlights a need for behavior change programs and strategy related to improve dietary practices targeting reproductive aged females of urbanized area.**

Dietary factors associated with overweight and obesity among reproductive aged females residing in Bharatpur metropolitan city

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