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SNACKING PATTERNS IN MIDDLE CLASS MALE AND FEMALE POPULATION AGED 45 - 65 YEARS

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Abstract:

Introduction:

Snacks are usually foods and beverages which are consumed between meals. Snacks are mostly high in calories, fat, sugar, refined carbohydrates and they are generally tasty and appetizing.

Objective:

The present research was conducted to study snacking patterns in middle class male and female population aged 45 – 65 years.

Materials and Methods:

Purposive sampling technique was used to enroll samples. The comparative study was done in Mumbai on total 140 subjects (70 males and 70 females) aged 45 – 65 years belonging to middle class socioeconomic status. The data collection was done using google form questionnaire in which general characteristics, eating patterns, snacking patterns and lifestyle parameters were assessed also the dietary data was collected using telephonic 24- hour dietary recall to assess the nutritional status of the study participants and Data collected was coded in Microsoft excel and statistical analysis was done using SPSS to interpret the results.

Results:

It was observed that, readymade snacks consumption was more (64.3% females 60.0% males) in study participants, majority of female participants consumed 2 or more snacks in a day compared to male participants who consumed 1 snack in a day and this difference in proportion was highly significant **($p \leq 0.01$)**, most participants consumed snacks between lunch and dinner (88.6% females and 88.6% males).

Conclusion:

The study participants were not consuming balanced diet and their nutritional status was poor. Studies have shown that unhealthy diet increases risk for diseases. Thus, incorporating balance diet is important. Snacks high in protein and low in carbohydrates and fat should be encouraged in this group. Awareness is needed to improve snacking patterns in middle class male and female population also snacks available in corporate canteen could be made more nutritious by recruiting people from nutritional field.

Keywords – Snack, Snacking patterns, Lifestyle, Middle income group, Middle age, Diet.

I. INTRODUCTION

Snacking is defined as any eating occasion apart from main meals, regardless of it's amount and type of food consumed (Si et al, 2018) but According to Njike et al, Snacking is a food or drink consumed between regular meals , this definition varies with some studies as they may specify the time and amount of food consumed (Njike et al, 2016). In Maharashtra, the Estimated per capita annual purchase of food groups from 2013–2017 was 20% for sweet snacks, 20% for Salty snacks,-18% for Soft drinks, -2% for Milk, 15% for Dairy product, 2% for edible oil , -3% for Processed wheat and -13% for other processed foods and the processed foods and beverages were purchased more by Delhi population (Law et al, 2019). Rolls, stated that Men consume more calories than women, also Women experience more food-related conflict than men (Rolls,1991). Grogan et al reported that women eats more sweet snacks compared to men, and men's sweet-snacking is less influenced by social pressure compared to women's (Grogan et al,1997). According to Law et al, In India, the dietary patterns high in sweets and snacks were associated with higher risk of diabetes (Law et al, 2019). Kulkarni et al ,conducted a study in middle class population and found that , In Mumbai, The prevalence of diabetes was 9.3 % while the incidence of hypertension was 29 % for women and 35.6 % for men . According to a meta analysis, In urban India the prevalence of hypertension is 38 %. Also According to World health organization the prevalence of obesity, high blood glucose and blood pressure have increased between year 2010 and 2014 (Kulkarni et al, 2020). Njike et al , states that Despite of knowledge of healthy food and snacks, people tend to consume more of readymade and processed snacks as they are easily available and affordable (Njike et al, 2016) Thus Choices made with regard to snacking are affected by many factors at individual, social, and environmental levels (Si et al, 2018).

II. Materials and methods

To assess snacking patterns in middle class male and female population aged 45 - 65 years. A comparative study was done to compare snacking patterns in total 140 subjects (70 Males and 70 Females) aged 45 - 65 years belonging to Middle class families. Purposive Sampling Technique was used to enroll subjects. The research proposal was approved and passed by the Institutional Ethical Committee (IEC) to continue further research. The demographic profile, physical activity, sleeping patterns, eating patterns, snacking patterns, nutritional status (24 hour dietary recall), socio-economic status (Kuppuswamy scale was used for socio-economic status) and lifestyle patterns were assessed. Data collection was done using Google form Questionnaire which include questions related to: personal details, socioeconomic status (Sheikh, 2020), menstrual health, medical health, physical activity, sleeping patterns, addictions, food preferences, food allergy, type of oil used for cooking, meals in a day, snack preference, average snack consumption and when in the day they most want to snack were included in the questionnaire and dietary intake data was collected through 24-hour dietary recall. The recall was carried out by telephonic interview method and statistical package of social sciences (SPSS, version 23) was used for data analysis.

III. Result and Discussion

3.1. General Characteristics

Fifty percent participates were females and fifty percent were males. Age of female participants ranged between 45 - 65 years and the age of male participants ranged between 46 – 65 years. All participants were married. Majority of female participants belong to premenopause category (54.3%). Majority of study participants (74.3% males and 68.6% females) were free from diseases, had not undergone any surgery (91.4% females and 90% males) and not on any medications (85.7% males and 68.6% females). Majority of participants not performed regular physical activity (64.3% males and 62.9% females), whereas remaining performed light intensity physical activity (69.2% females and 56.0% males). Walking was most preferred (76.9% females and 76.0% males) physical activity in study participants. Majority of participants do physical activity for at least 30 minutes (50.0% females and 44.0% males), once a day (100% females and 96.0% males). Majority of study participants reported to have sound sleep (90.0% males and 87.1% females) for at least 6 - 7 hours (70.0% males and 68.6% females). Majority of study participants were graduates (81.4% females and 75.7% males) with occupation of technicians and associate professionals (38.6% females and 34.3% males) had income of rupees 74,755 – 99,930 (47.1% females and 47.1% males). All the study participants belonged to lower middle class to upper middle class with majority of them belonged to upper middle class. However, all of this differences in proportion were non-significant.

3.2. Eating pattern

Binge eating was not present in all the participants. Majority of study participants were non- smokers (100% females and 98.6% males), alcohol consumption was more in males (2.9% males and 1.4% females), most participants were non- vegetarian (52.9% females and 50.0% males), had no food allergy (100% males and 98.6% females), participants preferred sunflower oil for cooking (72.9% males and 68.6% females) and consumed 3 – 4 meals a day (95.7% males and 92.9% females). However, all of this differences in proportion were non-significant.

3.3 Snack Pattern

Table 3.3 Snacking patterns in study participants

	Female	**Male**	**X^2**	**t value**	**p value**
Snack Type (n = 140)			0.273	-	0.601
Readymade	60.0 %	64.3 %			
Homemade	40.0 %	35.7 %			
Average Snack (n = 140)			22.566	-	**0.000****
2 or more snacks	74.3 %	34.3 %			
1 snack	25.7 %	65.7 %			
Snack Time (n = 140)			2.091	-	0.554
Lunch and dinner	88.6 %	88.6 %			
First thing in the morning	8.6 %	7.1 %			
Between breakfast and lunch	1.4 %	4.3 %			
Middle of the night	1.4 %	-			
Snack Energy (n = 140)			-	2.889	**0.004****
Mean ± SD	269.12 ± 88.21	223.51 ± 98.33			
Percent kcal RDA	16.21 ± 5.31 %	10.59 ± 4.66 %			
Snack CHO (n = 140)			-	4.139	**0.000****
Mean ± SD	31.22 ± 8.97	24.39 ± 10.50			
Percent CHO	24.01 ± 6.90 %	18.76 ± 8.07 %			
Snack Protein (n = 140)			-	2.522	**0.013***
Mean ± SD	7.99 ± 2.82	6.83 ± 2.58			
Percent Protein	14.53 ± 5.13 %	10.52 ± 3.98 %			
Snack Fat (n = 140)			-	1.428	0.155
Mean ± SD	12.65 ± 6.48	11.09 ± 6.40			

**p ≤ 0.05 – findings considered to be significant and **p ≤ 0.01 – findings considered to be highly significant*

Table 3.3 illustrates that, majority of participants consumed readymade snacks and there was no significant difference in the proportion of male verses female with respect to snack type (X^2 =0.273, p > 0.05). Majority of female participants consumed 2 or more snacks a day compared to male participants who consumed 1 snack a day and this difference in proportion was highly significant **(X^2 =22.566, p ≤ 0.01)**. Majority of study participants consumed Snack in between lunch and dinner and there was no significant difference in the proportion of male verses female with respect to snack timing (X^2 = 2.091, p > 0.05). In females, snack contributed to 45.61 kcal greater energy intake when compared to males and this difference was highly significant **(t = 2.889, p ≤ 0.01).** Snack contributed to 16.21 ± 5.31% of the energy requirement in females and 10.59 ± 4.66% of the energy requirement in males. In females, snack contributed to 6.83 gms greater carbohydrate intake than males and this difference was highly significant **(t = 4.139, p ≤ 0.01)**. Snack contributed to 24.01 ± 6.90% of the carbohydrate requirement in females and 18.76 ± 8.07% of the carbohydrate requirement in males. In females, snack contributed to 1.16 gms greater protein intake than males and this difference was significant **(t = 2.522, p ≤ 0.05).** Snack contributed to 14.53 ± 5.13% of the protein requirement in females and 10.52 ± 3.98% of the protein requirement in males. In females, snack contributed to 1.56 gms greater fat intake than males and this difference was non- significant (t = 1.428, p > 0.05). Snack contributed to 27.38 ± 12.70 % daily fat guidelines in females and 22.64 ± 12.18 % daily fat guidelines in males. Thus, in female participants snacks contributed to highly significantly greater energy intake by 45.61 kcal and carbohydrate intake by 6.83 gms, significantly greater protein intake by 1.16 gms and for fats by 1.56 gms however was non – significant when compared to male snacks intake.

3.4 24 Hour Recall

Table 3.4 24 Hour recall assessment in study participants

	Female	**Male**
Energy Mean ± SD	1673.11 ± 296.02	1775.78 ± 286.85
RDA	1600	2100
t value	0.371	- 9.748
p value	0.712	**0.000****
CHO Mean ± SD	210.58 ± 39.16	226.72 ± 41.56
RDA	130	130
t value	17.213	19.470
p value	**0.000****	**0.000****
Protein Mean ± SD	50.46 ± 11.07	53.50 ± 10.34
RDA	55	65
t value	-3.427	-9.298
p value	**0.001****	**0.000****
Fat Mean ± SD	68.43 ± 14.61 gms Or 36.80 ± 4.17 %	70.95 ± 14.44 gms Or 35.95 ± 4.38 %

****p ≤ 0.05 – findings considered to be significant and **p ≤ 0.01 – findings considered to be highly significant***

Table 3.4 depicts that, females met their energy requirement whereas males were significantly deficient for their energy intake when compared to reference standards. All the participants met their carbohydrate requirement but females were consuming 80.58 gms above RDA and males were consuming 96.72 gms greater than RDA for carbohydrate. Both males and females were significantly deficient for their protein intake but as compared to female, males were consuming less protein in their daily diet. All the participants met their fat requirement but females were consuming 11.80 % above % RDA and males were consuming 10.95 % greater than % RDA guidelines for fats. Thus, the diets of female participants were adequate for energy, significantly greater for carbohydrate and fat requirement and were significantly lower for protein requirement when compared with reference standards whereas the diets of male participants were significantly lower for energy requirement, significantly in excess amount for carbohydrate and fat requirement and were significantly lower for protein requirement when compared with reference standard. The study participants were not consuming balanced diet and their nutritional status was poor. If not corrected can lead to problems. According to Misra., et al, Indian diets are high in calories, carbohydrates, fats, sugar, salt and low in fiber which can lead to an increase risk of obesity, type 2 diabetes and cardiovascular diseases (Misra., et al, 2011). Thus, awareness about healthy diet is needed.

3.5 Lifestyle Pattern

3.5 Snacking and eating pattern , sleep pattern and physical activity relationship

Table.3.5 Snack and Eating pattern, sleep pattern and physical activity relationship

Variable Association	p value	r value	Relationship
Snack Type and Average Snack	**0.006****	**- 0.230**	Negative
Snack Type and Snack Time	**0.002****	**- 0.265**	Negative
Snack Protein Intake and Alcohol Consumption	**0.022***	**- 0.194**	Negative
Snack Fat Intake and Alcohol Consumption	**0.038***	**- 0.175**	Negative
Snack Type and Bed Time	**0.000****	**-0.308**	Negative
Snack Type and Sound Sleep	**0.007****	**-0.229**	Negative
Snack Type and Regular Physical Activity	**0.001****	**0.266**	Positive

p ≤ 0.05 - findings considered to be significant, **p ≤ 0.01 - findings considered to be highly significant

The table 3.5 reveals that, Snacking patterns showed significant, weak, negative relationship with eating and sleeping patterns and there was highly significant, week, positive relationship between snacking pattern and regular physical activity.

IV. Conclusion:

The study participants were not consuming balanced diet and their nutritional status was poor. Studies have shown that unhealthy diet increases risk for diseases. Thus, incorporating balance diet is important. Snack high in protein and low in carbohydrates and fat should be encouraged in this group. Awareness is needed to improve snacking patterns in middle class male and female population also snack available in corporate canteen could be made more nutritious by recruiting people from nutritional field.

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