Food Cravings And Weight Dynamics: Unravelling The Complex Relationship

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ABSTRACT

Background: Food cravings are a prevalent phenomenon that can significantly influence eating behaviours and, consequently, weight management. This study aims to explore the impact of food cravings on weight management within a selected community setting.

Methods: A cross-sectional survey was conducted among 45 participants from a Primary health centre. Data on frequency and intensity of food cravings, eating habits, and weight management practices were collected through structured questionnaires and analysed using statistical methods.

Results: The study showed that among 45 samples 9 (20%) were having low food cravings, 26 (58%) were having moderate food cravings and 10 (22%) were having high food cravings. the association between levels of food cravings with selected demographic variables. In this study high association was found between levels of food craving with presence of psychosocial problems and Body Mass Index. The strong correlation found between food cravings and weight management.

Conclusion: Food cravings play a critical role in shaping eating behaviours and affecting weight management. The study revealed a strong correlation between frequent and intense food cravings and poor weight management outcomes. Addressing these cravings through targeted interventions and support could enhance weight management strategies within community settings.

Keywords: Body Mass Index, Eating behaviours, Food cravings, Weight management.

1. INTRODUCTION

Food cravings, described as an intense desire for a specific food that is difficult to resist, have long been recognized as a significant factor in weight management and overall health. Food cravings are a universal experience that can significantly influence dietary behaviours and, consequently, weight management among community populations. As individuals navigate their daily lives, the interplay between physiological, psychological, and environmental factors often dictates the nature and frequency of these cravings, ultimately impacting weight outcomes.1 The relationship between food cravings and weight is a complex one, with various physiological and psychological factors at play. Food energy density, which refers to the amount of energy per unit of food, is considered a strong predictor of cravings in adults with overweight or obesity. Individuals with higher energy-dense cravings, such as for chocolate, salty snacks, ice cream, or sweetened baked goods, are more likely to consume large quantities of these foods, leading to an imbalance in energy intake and expenditure.2

Craving is a multifaceted phenomenon that can be influenced by a range of factors, including hormonal fluctuations, stress, and emotional states.3 Chronic exposure to energy-dense foods can alter the reinforcing value of these foods, triggering learned associations between environmental cues and food rewards, which can promote cravings and food-seeking behaviour.4 Recent research underscores the multifaceted origins of food cravings, revealing that they are not merely expressions of hunger but are also influenced by emotional states, environmental cues, and social context. For instance, a study by Amanda C. Del Giacco et al. (2023) highlights how heightened emotional distress can exacerbate cravings for high-calorie comfort foods, leading to increased consumption and potential weight gain.5 Furthermore, the availability of highly palatable food options in many communities contributes to frequent and intense cravings, thus creating an environment where healthier choices become increasingly difficult to maintain.6

The implications of these cravings extend beyond individual choices; they reflect broader societal patterns in diet and health. Community members who experience frequent food cravings may be more susceptible to developing poor eating habits, which often manifest in higher body mass index (BMI) and obesity rates. For example, individuals residing in food deserts may experience particularly intense cravings for unhealthy food options due to limited availability of fresh produce and whole foods, thereby exacerbating weight-related issues.7

2. PROBLEM STATEMENT

Impact of food cravings on weight management in selected community setting in Andaman and Nicobar islands

Objectives

1. To assess the level of food cravings

2. To find association between level of food cravings with selected demographic variables

3. To find correlation between level of food cravings with Body Mass Index

3. RESEARCH METHODOLOGY

RESEARCH APPROACH: Quantitative Research Approach.

RESEARCH DESIGN: Descriptive Design.

SETTING OF THE STUDY

NCD Clinic at primary health centre Campbell bay.

SAMPLES: A Selected Community Adults attending NCD Clinic.

SAMPLING TECHNIQUE

Non-Probability Purposive Sampling Technique.

SAMPLE SIZE: 45

4. CRITERIA FOR SAMPLE SELECTION

The samples were selected based on the following inclusion and exclusion criteria

INCLUSION CRITERIA

1. Adult who are above 20 years of age

2. People who were present at the time of data collection

EXCLUSION CRITERIA

1. People who are mentally disabled

2. People who are not willing to participate

5. DATA COLLECTION TOOL

Section A: Demographic Variables consists of gender, age, educational status, marital status, occupational status, type of family, maladaptive behaviour, presence of associated health problems, presence of psychosocial problems, obesity in family, number of meals / snacks per day, BMI.

Section B: Cepeda-Benito, Gleaves, Williams, and Erath, Food craving questionnaire to assess Food craving which consists of fifteen items measured on a six-point Likert scale rated as 1-Never, 2-Rarely, 3-Sometimes, 4-Quite frequently, 5- often, 6 -always was used. The tool was categorized into low food cravings (≤30), moderate food cravings (31-60), and high level of food cravings (61-90). The reliability of the tool was r=0.80.

Data Collection Procedure:

Permission was obtained from Medical officer in charge from primary health centre Campbell bay. Informed consent was taken from all the participants. The investigator herself administered the questionnaire for assess the level of food craving to the study participants. The duration of data collection for each sample was 15- 20 minutes and approximately 10 samples were approached per day. Data was obtained from the community people with the written consent. Data were collected by self-administered questionnaire.

Data analysis:

The data has been analysed in terms of descriptive and inferential statistics. Chi-square test was used to find out the association between levels of food cravings with selected demographic variables

6. RESULTS

Table 1: Baseline characteristics of the participants (N=45).

S.No	Demographic variables	Frequency	Percentage
1.	Gender:		
	Male	23	51.1
	Female	22	48.9
2.	Age (in years):		
	20-30 Years	9	20
	31-40 Year	13	28.9
	41-50Years	12	26.7
	>50 Years	11	24.4
3.	Educational status:		
	Illiterate	3	6.7
	Primary education	6	13.3
	Secondary education	12	26.7
	Colligate education	24	53.3
4.	Marital status:		
	Married	33	73.3
	Unmarried	8	17.7
	Widower	3	6.7
	Divorced	1	3.3
5.	Occupational status:		
	students	1	2.2
	Self employed	15	33.3
	Unemployed	12	26.7
	Working in private sector	4	8.9
	Working in government sector	13	28.9
6.	Type of family:		
	Nuclear family	25	55.6
	Joint family	20	44.4
7.	Any other mal addictive behaviour:		
	Yes	12	26.7
	No	33	73.3
8.	Presence of any associated health problems		
	Yes	19	42.2
	No	26	57.8

9.	Presence of any psycho social problems		
	Yes	22	48.9
	No	23	51.1
10.	Obesity in family		
	Nil	21	46.7
	1	20	44.4
	2	3	6.7
	More than 2	1	2.2
11.	Number of meals per day		
	1-3	32	71.1
	More than 3	13	28.9
12.	Number of snacks per day		
	1	24	53.3
	1-3	13	28.9
	More than 3	8	17.8
13.	BMI:		
	Underweight	8	17.8
	Normal weight	15	33.3
	Over weight	12	26.7
	Obesity	10	22.2

Table 1 showed that the most of the samples age between 31-40 years (29%) and 41-50 years (28%) and the majority of the samples are male 51.9%. Most of the samples have collegiate level of education 53.3% and 73.3% samples were married. 55.6% samples were belongs to nuclear family. 57.7% and 59.9% having associated health issue and psycho social problems respectively. No of meals and snacks per day were 3 times (29%) and 1time (29%). 44.4% samples having obesity family history. out of 45 samples 8 were under weight, 15 were in healthy weight, 12 were over-weight and 10 were obesity.
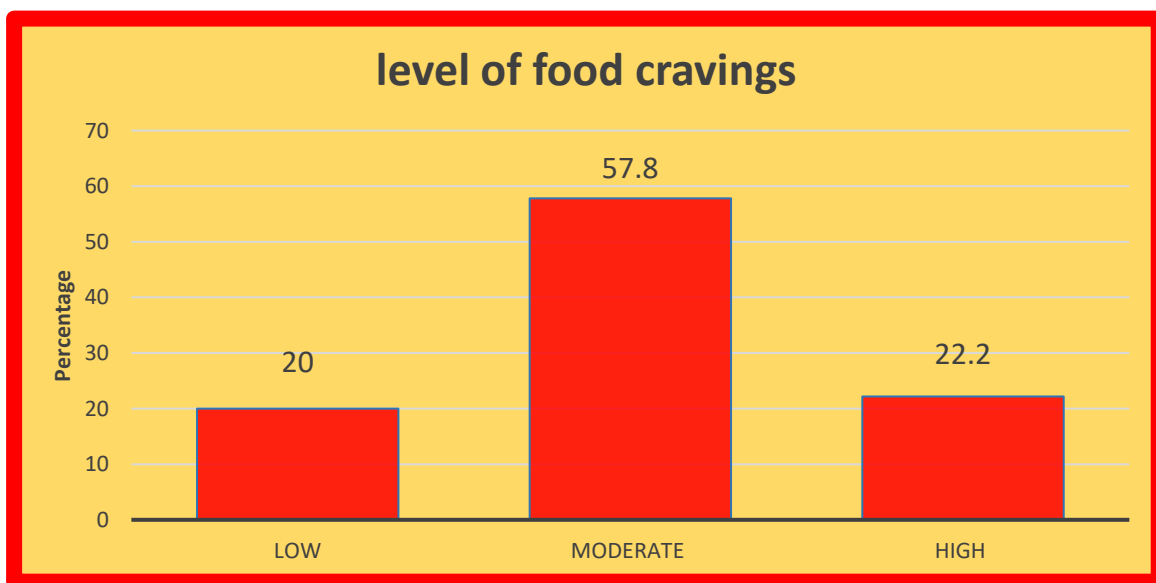

Figure 1: Frequency and percentage wise distribution for level of food cravings with body mass index in selected community.

Figure 1 represented the level of food cravings. Among 45 samples 9 (20%) were having low food cravings, 26 (58%) were having moderate food cravings and 10 (22%) were having high food cravings. This objective was supported by a study by Meule A et al (2020), "The psychology of food cravings: the role of food deprivation". It concluded that low level of food cravings and high level of food cravings. 8

Table 2: Association between level of level of food cravings and selected demographic variables.

Demographic variables	Low		Moderate		High		χ2-value	p-value
	f	%	f	%	f	%		
Gender:								
Male	3	6.7	14	31.1	6	13.3	1.53	0.465
Female	6	13.3	12	26.7	4	8.9	(df=2)	NS
Age (in years):								
20-30 Years	3	6.7	6	13.3	0	0		
31-40 Years	1	2.2	8	17.7	4	8.9	5.98	0.425
41-50Years	3	6.7	7	15.6	2	4.4	(df=6)	NS
>50 Years	2	4.4	5	11.1	4	8.9		
Educational status:								
Illiterate	1	2.2	2	4.4	0	0	4.82	0.567
Primary education	1	2.2	2	4.4	3	6.7	(df=6)	NS
Secondary education	3	6.7	6	13.3	3	6.7		
Collegiate education	4	8.9	16	35.5	4	8.9		
Marital status:								
Married	5	11.1	19	42.2	9	20		
Unmarried	2	4.4	6	13.3	0	0	10.79	0.095
Widower	2	4.4	1	2.2	0	0	(df=6)	NS
Divorced	0	0	0	0	1	2.2		
Occupational status:								
students	1	2.2	0	0	0	0		
Self employed	0	0	9	20	6	13.3	14.51	0.069
Unemployed	5	11.1	6	13.3	1	2.2	(df=8)	NS
Working in private sector	0	0	3	6.7	1	2.2		
Working in government sector	3	6.7	8	17.8	2	4.4		
Type of family:								
Nuclear family	4	8.9	15	33.3	6	13.3	0.578	0.749
Joint family	5	11.1	11	24.4	4	8.9	(df=2)	NS
Any other mal addictive behaviour:								
Yes								
No	2	4.4	6	13.3	4	8.9	1.17	0.557
	7	15.6	20	44.4	6	13.3	(df=2)	NS
Presence of any associated health								

problems								
Yes	4	8.9	8	17.8	7	15.6	4.57	0.101
No	5	11.1	18	40	3	6.7	(df=2)	NS
Presence of any psycho social problems								
Yes	2	4.4	11	24.4	9	20	9.78	0.008**
No	7	15.6	15	33.3	1	2.2	(df=2)	HS
Obesity in family								
Nil	7	15.6	11	24.4	3	6.7		
1	2	4.4	12	26.7	6	13.3	5.66	0.461
2	0	0	2	4.4	1	2.2	(df=6)	NS
More than 2	0	0	1	2.2	0	0		
No of meals per day								
1-3	9	20	18	40	5	11.1	5.87	0.053
More than 3	0	0	8	17.8	5	11.1	(df=2)	NS
No of snacks per day								
1	7	15.6	14	31.1	3	6.7	6.66	0.155
1-3	2	4.4	8	17.8	3	6.7	(df=4)	NS
More than 3	0	0	4	8.9	4	8.9		
BMI:								
Underweight	6	13.3	2	4.4	0	0	33.82	P<0.001***
Normal weight	2	4.4	12	26.7	1	2.2	(df=6)	HS
Over weight	1	2.2	9	20	2	4.4		
Obesity	0	0	3	6.7	7	15.6		

*p<0.05 significant, ** p<0.01 & ***p<0.001 highly significant.

Table 2 showed that the association between levels of food cravings with selected demographic variables. In this study high association was found between levels of food craving with presence of psychosocial problems and Body Mass Index. This finding was supported by a study by Dick Oren et al (2022) who conducted a study on the dynamic network association of food craving, restrained eating, hunger and negative emotions. This study reported that Food craving was also predicted by hunger and stress, and hunger predicted loneliness. 9 high associations were found between levels of food craving with Body Mass Index. This finding was supported by Lichtenstein et al conducted a study on "Food cravings: Association with Dietary intake and metabolic Health". This study showed that the Food cravings were also positively associated with BMI ($P = 0.03$). 10

Table3: Correlation between level of food cravings and body weight of the people.

	Food Cravings		Body Weight		r value	p value
	Mean	SD	Mean	SD		
Sample 45	60	16	63	26	0.729	< 0.05

Table 3 shows that strong correlation found between level of food cravings and body weight of the people. This objective was supported by the study by Chao A et al conducted a study on "Food cravings mediate the relationship between chronic stress and body mass index" Food cravings were positively correlated with BMI.($p < .001$). 11

7. CONCLUSION

Understanding the relationship between food cravings and BMI is crucial for developing effective interventions to promote healthy eating behaviours and weight management. Strategies to address emotional eating, manage stress, and regulate hormonal balance can help reduce food cravings and support a healthy BMI. Additionally, modifying the food environment and regulating food marketing practices can contribute to healthier food choices and better weight management outcomes.

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