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## Exploring Food Cravings and Dietary Behaviours in Bengali Adolescents through Online Data Collection: Evidence from Students of Brainware University, Barasat, India and Daffodil International University, Bangladesh

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### ABSTRACT

This study investigates the relationship between food cravings and eating habits among Bengali adolescents in West Bengal, India, and Bangladesh. The research aims to identify patterns of craving frequency, duration, and food preferences, as well as their impact on perceptions of healthy eating and engagement in unhealthy dietary practices. Particular attention is given to the influence of gender, cultural context, and socio-economic background on craving behaviours. Media exposure is considered as both an opportunity for discovering new food cultures and promoting healthy lifestyles, and as a risk factor for reinforcing unrealistic body ideals and unhealthy eating patterns.

A structured survey was conducted with a diverse adolescent sample, and the data were analysed using statistical methods. The study employed the Food Cravings Questionnaire (FCQ–T, FCQ–S, and modified versions), recognised for their construct validity and sensitivity to situational changes such as food deprivation and intake. Findings highlight the significant role of cravings in shaping adolescent dietary practices, while also revealing cultural and socio-economic influences. The study concludes by recommending awareness campaigns and educational interventions to promote healthier eating behaviours and to mitigate the negative impacts of cravings within this demographic.

**Keywords:** Food Cravings, Dietary Behaviour, Adolescent Nutrition, Psychophysiological Factors, Cross-Cultural Study (India–Bangladesh).

### INTRODUCTION

People often think that food cravings are just a sign of not having enough willpower, but new research shows that they are actually important physiological and psychological signals. These cravings could be a sign of underlying nutritional deficiencies, mental needs, or changes in hormones that are affecting how people eat. For example, a strong desire for chocolate is often a sign of low magnesium levels, while a strong desire for red meat may be a sign of low iron levels. Similarly, a desire for salty foods could mean that your body needs to replenish salts after working out.

Besides the physical aspect, the brain's reaction to certain foods, especially those high in sugar or fat, can change the production of serotonin and the control of mood, which can further change eating habits.

In order to understand these urges, people need to pay close attention to their bodies. Instead of eating processed or sugary foods without thinking, knowing what the body really wants can help you make better food choices. For instance, eating fruits instead of sweets can give you natural energy, and salty tastes can be satisfied by nuts or seeds, which contain healthy fats and minerals. Being aware of this changes the way you eat from a loop of guilt and impulsivity to one of knowing yourself and getting enough nutrients.

It is especially important for teens to understand this link between food urges and how they eat. As a person grows up, they go through a lot of changes, including fast physical growth, hormonal changes, emotional swings, and social stresses that can affect how they eat. "Exploring Food Cravings and Dietary Behaviours in Bengali Adolescents: Evidence from Students of Brainware University, Barasat, India, and Daffodil International University, Bangladesh" is a study that aims to look into the cultural, psychological, and physiological aspects of food cravings in this group of people. The study collects data online to find out how cravings can be a sign of deeper mental or nutritional needs and how raising awareness can help Bengali youth eat better in a world where food is becoming more global.

Food craving refers to an intense desire to consume a specific food (Weingarten & Elston, 1990). This specificity differentiates it from general feelings of hunger, which can be alleviated by the consumption of any type of food. Craved foods usually have a high energy density due to their carbohydrate and/or fat content (Hormes, 2014). In India, about 30% of adolescents do not consume vegetables, 45% do not consume any servings of fruits, and 70% eat three or more servings of energy-dense snacks (Rathi, Riddell, & Worsley, 2017). In general, girls had more nutritious dietary intakes than boys.

Food craving is a multidimensional experience as it includes cognitive (e.g., thinking about food), emotional (e.g., desire to eat or changes in mood), behavioural (e.g., seeking and consuming food), and physiological (e.g., salivation) aspects (Rodríguez-Martín & Meule, 2015). Moreover, while the experience of a food craving is a transient state, there are also more stable individual differences in the frequency and intensity of experiencing food cravings (sometimes labelled trait food craving) (Hallam, Boswell, DeVito, & Kober, 2016).

## **MATERIALS AND METHODS**

A cross-sectional study was conducted on adolescents from Brainware University, Barasat, West Bengal, India and International Daffodil University, Bangladesh, from May 2024 to September 2024. A total of 220 adolescents aged 15-25 years were selected for this study. Data were analysed with the help of MS Excel. Food Cravings Questionnaire–State (FCQ–S) was used to measure the intensity of momentary food craving. The questionnaire has 15 items, with responses ranging from 1 = strongly disagree to 5 = strongly agree. Higher scores represent more intense current food craving. Several subscale scores were also calculated. Methodology: The study followed a structured cross-sectional survey design. Participants were recruited using stratified random sampling to ensure representation across gender, socio-economic classes, and geographical locations (urban, rural, tribal). A total of 220 participants aged 15–25 years consented to participate. Data was collected through self-administered questionnaires (FCQ–S, FCQ–T) administered in local languages. Quantitative data were analysed using descriptive statistics (mean, median,

mode) and factor analysis to validate the FCQ-S structure. Ethical clearance was obtained, and the confidentiality of participants was strictly maintained.

## RESULTS

The study revealed significant findings from the Food Cravings Questionnaire-State (FCQ-S):

- Out of 220 adolescents, 36.3% were in the age group 15–19 years, while 63.7% were in 20–25 years. Males represented 45.9% and females 54.1% of the participants.
- Socioeconomic distribution showed that 70.9% were from middle-class families, 24.1% from upper-middle-class, 3.6% from lower-class, and 1.4% from high-class families.
- Craving patterns reflected strong desires towards sweet, salty, and carbohydrate-rich foods, with a mean craving score of 52.1 (on a 15–75 scale). The craving was often linked with mood regulation, where eating was perceived to improve mood or reduce irritability.
- The five-factor structure of cravings emerged: (1) intense desire to eat, (2) anticipation of positive reinforcement, (3) anticipation of relief from negative states, (4) lack of control over eating, and (5) craving as a physiological state.
- Food preference data highlighted frequent cravings for carbohydrate-based and fatty foods, with lower preference towards fruits and vegetables.
- Almost half of the participants admitted to overeating when experiencing cravings, while a considerable number were dissatisfied with their weight or engaged in dieting/exercise efforts.

## TABLES

Table 1: Biographic Profile of Participants

Biographic Data	Category	Percentage (%)
Age Group	15–19 years / 20–25 years	36.3% / 63.7%
Gender	Male / Female	45.9% / 54.1%

Table 2: Socio-demographic Profile of Participants

Socio-demographic Data	Category	Percentage (%)
Geographic Location	India (West Bengal) / Bangladesh	63.7% / 36.3%
Cultural Background	Urban / Rural / Tribal	67.7% / 30.5% / 1.8%
Socioeconomic Status	Lower / Middle / Upper Middle / High	3.6% / 70.9% / 24.1% / 1.4%

Table 3: Food Cravings Questionnaire-State (FCQ-S)

Item	Mean	Median	Mode
Intense desire to eat	3.6	4	4
Craving specific foods	3.6	4	4
Urge for specific foods	3.5	4	4
Eating improves mood	3.9	4	4
Lack of control over eating	2.9	3	2

Table 4: Food Preferences and Habits

Question	Category	Mean Score
Food Cravings	Sweet/Salty, Spicy, Carbs, Fatty foods, Fruits & Veg	3.6
Daily Portions	Once / Twice / Thrice / More	2.7
Overeating tendency	Never / Occasionally / Often	2.5
General Health of Diet	Excellent / Good / Poor	3.2
Weight Control Efforts	Dieting, Exercise, Both	3.4

## INTERPRETATION OF RESULTS

The findings suggest that food cravings among Bengali adolescents are not merely momentary urges but are closely linked to emotional regulation, stress levels, and cultural dietary patterns. Adolescents in urban and middle-class contexts showed a higher tendency towards energy-dense foods, likely influenced by media exposure and peer behaviour. The association between cravings and mood regulation highlights the psychosocial component of dietary behaviour. Additionally, the study revealed that a lack of control over eating and frequent exposure to fast foods may contribute to weight dissatisfaction and potential health risks. Gender differences indicated that females were more conscious of weight management compared to males, but both groups experienced similar craving intensities.

## LIMITATIONS

The study has certain limitations:

1. The sample size was limited to 220 adolescents, which may not fully represent the entire Bengali adolescent population in India and Bangladesh.
2. Self-reported questionnaires may have led to bias due to underreporting or overreporting of dietary behaviour.
3. The cross-sectional nature of the study prevents establishing causality between food cravings and dietary outcomes.
4. Factors such as parental influence, peer dynamics, and long-term psychological conditions were not deeply explored.
5. The study was geographically limited to specific regions in West Bengal and Bangladesh; hence, findings may not be generalised to rural or tribal populations elsewhere.

## CONCLUSION

This study concludes that food cravings significantly shape eating habits among Bengali adolescents, with strong associations to emotional well-being, cultural influences, and socio-economic background. Cravings for energy-dense foods dominate over healthy alternatives like fruits and vegetables, reflecting both psychological and environmental factors. Interventions such as school-based nutrition education, awareness campaigns, and family-centred programs are recommended to help adolescents build healthier food choices and reduce the risks of obesity and diet-related illnesses.

Importantly, in response to these findings, a **mobile application for adolescents** is currently in development. This app aims to promote healthy and mindful eating by offering personalised food suggestions, mindfulness tools, and engaging features like gamification. By integrating psychology, nutrition, and technology, this initiative aspires to transform adolescent food cravings into opportunities for better health, emotional balance, and long-term well-being.

## FUTURE RESEARCH DIRECTIONS

Future research could explore several key areas

**Longitudinal Studies**– Tracking adolescents over time to identify causal relationships between cravings, dietary patterns, and long-term health outcomes.

**Intervention Programs**– Designing and testing school-based or community-based interventions that target food cravings and promote healthier alternatives.

**Psychological Dimensions**– Investigating how stress, peer influence, and digital media exposure shape craving patterns among adolescents.

**Neurobiological Studies**– Using neuroimaging and physiological monitoring to understand the biological basis of cravings and their link to mood regulation.

**Cross-Cultural Comparisons**– Expanding the research to include adolescents from different regions of India and South Asia to identify unique cultural and dietary influences.

**Family and Parental Role**– Examining how parental dietary habits, family mealtime practices, and household food environment affect adolescent cravings and eating patterns.

**Digital Health Solutions– App Development**– A promising direction lies in developing adolescent-centred mobile applications that provide healthy, affordable, and culturally relevant food options. Such apps could include features like:

Personalised Meal Suggestions that redirect cravings toward healthier choices.

Mindful Eating Tools such as craving journals, stress trackers, and reminders.

Gamification (rewards, challenges, progress tracking) to make healthy eating fun.

Parental/Peer Integration so families and peers can support each other.

AI-driven Insights to help adolescents understand craving triggers and habits.

Encouragingly, based on insights from this study, such a mindful eating app for adolescents is already in development. This tool seeks to bridge research with practice, offering a digital platform where adolescents can transform cravings into mindful, conscious, and healthy eating behaviours.

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