

## Junk Food Addiction - A Major Nutritional Concern for Preschool Children in Western Uttar Pradesh

Kanishka Singh<sup>1</sup> and Dr. Pankaj Chhabra<sup>2</sup>

<sup>1</sup>Food & Nutrition Researcher, M.L. & J.N.K Girls College, Saharanpur (UP), CCS University, Meerut, India

<sup>2</sup>Principal and Research Supervisor, M.L. & J.N.K Girls College, Saharanpur (UP), CCS University, Meerut, India

<sup>1</sup>Corresponding Author: kanishkasingh2@gmail.com

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### ABSTRACT

**Background:** Preschool years are critical in term of growth, development and food behaviors & habits of children. India has a hefty population size of 99 million children of 3 – 6 years of age. Childhood obesity is now becoming an epidemic and the trends seems to be steeply increasing in India.

Studies have reported that approx. 17 million Indian children will be obese by 2025, in both urban & rural. Children's food consumption is dramatically influenced by food promotions for unhealthy foods. Junk foods are HFSS (high fat, salt & sugar), which are responsible for creating nutritional and dietary imbalances in children and making the more prone to NDDs.

**Objective:** To investigate the food consumption of junk & processed foods among preschool children (3 - 6 years) of Meerut city in western UP.

**Materials & Methods:** A sample of 400 parents of preschool children (3 - 6 years) was purposely & randomly selected and investigated with prior signed consent from their parents for participating in the study. Pre-tested interview schedule and FFQ were used to collect the data from the respondents.

**Results:** Out of 400 parents (respondents) 14% were fathers and 86% were mothers. 59% were Hindu, 20.75% were Muslim and 20.25% were from other religions. Majority of 87.75% were urban residents and 12.25% were residing in rural. Regarding the SES, 59.75% were from middle SES, 25% from lower SES and 15.25% from upper SES. Regarding children, 43.5% were male and 56.5% were female children, which were 44% from 3 – 4 years of age, 23% from 4.1 – 5 years of age and 33% from 5.1 – 6 years of age, among which 49% were vegetarian, 26.5% were non-vegetarian and 24.5% were eggitarian.

It was recorded that 49.8% children consume junk & processed food on daily basis, 25.5% on alternately basis, 21.3% on weekly basis and 3.5% on monthly basis. Females (27.25%) consumes more junk & processed foods than males (22.5%) on daily basis, followed by 14.25% of females and 10.75% males on alternately basis, 12.25% females and 9.5% males on weekly basis and 2.75% females and 0.75% males on monthly basis consumes junk & processed foods.

**Conclusions:** The status of frequency of junk food consumption among preschool aged children in western U.P. is in a serious and worrisome condition, which in turn is greatly contributing to the whopping crisis of malnutrition in all forms in children of early developmental years, which is also making childhood malnutrition a nutritional epidemic, despite of financial strength as compared to rural. Consumption of junk & processed foods by children is an exigency for making healthier future.

**Keywords:** junk food, addiction, nutritional concern, preschool children, parents

**Abbreviations:** HFSS – High Fat, Salt & Sugar, NDDs – Nutritional Deficiency Diseases, IBS – Irritable Bowel Syndrome, FFQ – Food Frequency Questionnaire, MNDs – Micro Nutrient Deficiencies, NCDs – Non Communicable Diseases

## I. INTRODUCTION

Preschool years are critical in term of growth, development and food behaviors & habits of children. India has a hefty population size of 99 million children of 3 – 6 years of age (7). Childhood obesity is now becoming an epidemic in developing nations, and the trends of overweight and obesity seems to be steeply increasing in India (1).

Health status of children in India is a paradox of nutrition and food consumption. Studies have reported that approx. 17 million Indian children will be obese by 2025, in both urban & rural (2). Recent reports clearly indicate that children's food consumption is dramatically influenced by food promotions for unhealthy foods (3). Researches also revealed that junk foods

are HFSS (high fat, salt & sugar), which are responsible for creating nutritional and dietary imbalances in children and making the more prone to NDDs (nutritional deficiency diseases) like malnutrition in all forms, food sensitivities, allergies, gut-issues like IBS (irritable bowel syndrome), mood swings, poor academic performance, etc. (4).

Hence, the present study was conducted to gather the information and evidences on junk & processed food intakes by children. The study focused on the junk & processed food consumption by children of 3 – 6 years of age in Meerut city of western U.P. (India).

## **II. OBJECTIVE OF STUDY**

To investigate the food consumption frequency of junk & processed foods among preschool children (3 - 6 years) of Meerut city in western UP.

## **III. STUDY DESIGN**

School-based pre-experimental one group pre and post test design was adopted.

## **IV. STUDY AREA AND POPULATION**

The investigations for the study were done in Meerut city area of western UP (India). Preschool children of 3 – 6 years of age were investigated and assessed for their food consumption frequency of junk & processed foods who were studying in the selected schools during the time of study.

## **V. SAMPLE SIZE & TECHNIQUE**

Purposive random sampling was used to select the sample of 400 parents of preschool children for the study purpose.

## **VI. INCLUSION CRITERIA**

1. Parents of preschool children (3 - 6 yrs.) of upper, middle & lower income groups of every religion.
2. Parents of preschool children (3 - 6 years) who were studying in the selected schools during the study period and whose parents signed the informed consent form for the participation & successful completion of the study.

## **VII. EXCLUSION CRITERIA**

1. Parents of preschool children with severe disease condition or long term medication.
2. Single parents of preschool children.
3. Parents who did not signed the consent form.

## **VIII. DATA COLLECTION PROCEDURE & METHODS**

The investigations of the study were done in the Meerut city area of western UP (India). 10 schools were randomly selected from the study locale. All the children of 3 – 6 years in those schools were purposefully and randomly selected based on inclusion & exclusion criteria of the study. All the concerned school authorities & parents whose children were investigated were briefed out for about the study objectives and its purpose.

The duely signed consent forms from all the concerned and participating parents were obtained by the investigator mentioning all necessary details regarding the study before the conduction of nutritional assessment session for children. Selected school authorities were asked to pre-inform the parents for the session day allotted for nutritional assessment of children so that no parent remains un-informed and no selected child remains absent during the data collection session. Pre-tested interview schedule & FFQ was used to conduct the investigations through parents regarding the junk & processed food consumption frequency of their preschooling children. The date of birth of child was used to calculate the age of child to the nearest birth month. After collecting the general information and socio-demographic profile like religion, gender, age, food habit, residential area, type of family, etc. and the food consumption frequency of junk & processed foods was investigated through FFQ. The food consumption frequency questionnaire was administered on parents of preschool children, along with structured interview schedule on the same day.

The data collection of the present paper was over a period of 10 days. Each school was visited by the investigator separately. The investigator carried own laptop & stationary to record the data and camera to record the session proceedings.

### IX. DATA ANALYSIS

The tabulation of data was done in MS-Excel 2007 version. The statistical analysis of the data was done using the IBM SPSS Advanced Statistics 29.0 (5725-A54) Version.

### X. RESULTS

Among all the respondent parents 14% were fathers and 86% were mothers. Among them all 59% were Hindu, 20.75% were Muslim and 20.25% were others, and majority of them 87.75% were urban area residents and 12.25% were rural area residents.

Regarding the family type, majority of 59.8% were living as nuclear families and 40.3% were living as joint families. The majority of 49% were vegetarians, followed by 26.5% non-vegetarians and 24.5% eggitarian.

Regarding socio-economic status, a majority of 59.75% were from middle income status, followed by 25% from lower income status and 15.25% were from upper income status.

**Table 1:** Description of gender wise distribution of preschool children (3 – 6 years)

Gender	Total	
	F	%
Male	174	43.5
Female	226	56.5

Table 1, presents the description of gender wise distribution of preschool children. It reveals that, a majority of 56.5% was females and 43.5% was males.

**Table 2:** Description of age group wise distribution of preschool children (3 – 6 years)

Age Group	Total	
	F	%
3 – 4 years	176	44
4.1 – 5 years	92	23
5.1 – 6 years	132	33
Total	400	100

Table 2, presents the description of age group wise distribution of preschool children. It reveals that, a majority of 44% were of 3 – 4 years of age, followed by 33% of 5.1 – 6 years of age and 23% of 4.1 – 5 years of age.

**Table 3:** Description of junk and processed foods consumption frequency by preschool children (3 – 6 years)

Food consumption frequencies	Junk & Processed Foods (N = 400)	
	Frequency	%
Daily	199	49.8
Alternately	102	25.5
Weekly	85	21.3
Monthly	14	3.5
Occasionally	0	0
Never	0	0
Total	400	100

Table 3, presents the description of junk and processed foods consumption frequency by preschool children (3 – 6 years). It reveals a majority of 199 (49.8%) children consumes some or the other type of junk & processed foods on daily basis,

followed by 102 (25.5%) alternately, 85 (21.3%), and 14 (3.5%) on monthly basis. There was no child consuming junk & processed foods on occasional and never basis.

**Table 4:** Description of gender wise distribution of junk and processed foods consumption frequency by preschool children (3 – 6 years)

		(N = 400)	
Food Consumption Frequencies	Males (%)	Females (%)	
Daily	22.5	27.25	
Alternately	10.75	14.25	
Weekly	9.5	12.25	
Monthly	0.75	2.75	
Occasionally	0	0	
Never	0	0	

Table 4, presents the description of gender wise distribution of junk and processed foods consumption frequency by preschool children. It reveals that female children consumes junk & processed foods with the majority of daily basis (27.25%), followed by alternately basis (14.25%), weekly basis (12.25%) and monthly basis (2.75%). And male children also consume junk & processed foods with the majority of daily basis (22.5%), followed by alternately (10.75%), weekly (9.5%) and monthly (0.75%). There was no child in either categories with consumption on occasional and never basis.

## XI. DISCUSSION

In the present study, the food consumption frequency of junk & processed foods among preschool children (3 - 6 years) was investigated through their parents. The present study was conducted in the Meerut city of western Uttar Pradesh. Early years are the years of rapid growth & development and thus are very crucial of child health.

Nutritional issues like wasting, under & over weight, obesity, etc. are the major health issues affecting large proportion of childhood population (5). Consumption of nutritionally deficient foods during these years can also lead to various MNDs which also results in fragile immunity, increased vulnerability of excess consumption of high calorie foods to meet energy demands and other lifestyle diseases in later life stages (8).

In present study out of total 400 parents investigated for their preschool children's junk food consumption 87.75% were urban area residents and only 12.25% were from rural, which clearly shows that the junk & processed food consumption is more in reference to children living in urban area.

In present study, a majority of 59.75% were from middle income status, followed by 25% from lower income status and 15.25% were from upper income status. And, among all children investigated for their consumption frequencies, 43.5% were males and 56.5% were females. Similar study was reported by *Tay, C. (2018)* in an article published in *Food Navigator – Asia*, which reported the growing concerns of nutrition researchers for increasing junk food consumption in rural areas in India too. It also reported a study which was done on 425 school children in H.P. and was investigated by AIIMS research team. This study also recorded the similar SES i.e. 51% were from middle SES, 41% from high SES and 8% from lower SES. This clearly shows the high junk food consumption rates of in middle SES families in India. The study reported that among all 425 children 48.94% were males and 51.06% were females. (10).

The present study shockingly revealed that among all investigated parents for their preschool children's junk & processed foods consumption frequencies, a breathtaking 49.8% children use to consume junk & processed foods on daily basis followed by 25.5% alternately, 21.3% weekly and only 3.5% monthly. And, on daily basis the female children (27.25%) consumes more junk & processed foods than male children (22.5%), followed by 14.25% for females and 10.75% for males on alternately basis, 12.25% for females and 9.5% for males on weekly basis and 2.75% for females and 0.75% for males on monthly basis. Similar findings were reported by *Athavale, P. et al. (2020)* in Mumbai, where 959 mothers were investigated for their children. It revealed that 52% (majority) of children consume high sugar foods like sweets, candies or chocolates, and 58% chips & biscuits. This consumption frequency was higher till 3 years of age. The study also surprisingly reported that 61% mothers spend money on junk food consumption on daily basis (6). *NDTV (2018)* in one of its article penned the reports of American Journal of Children and Media, and stated that children choose to eat junk food over home cooked healthy meals, and had also highlighted the role of powerful advertisements and marketing strategies to induce the mental craving for these foods (9). Similar study was reported by *Tay, C. (2018)* in an article published in *Food Navigator – Asia*, which also reported that among all investigated (425) 36% of them use to eat junk food, in which 56% were females and 44% were males, which also shows marginal or insignificant difference in junk food consumption among two genders (10).

In an article by Thomas, Dr. L. (2018) in *News Medical* it was penned that junk food consumption >3 times per week is linked with increased risk of atopic disorders like asthma. The study shockingly revealed that regular junk food intake declines mathematical and reading skills in children, increased and/or induces constipation, makes the tongue more addictive to them thus impairing taste sensation in children, declines academic performance, induces mental issues like depression in young children, and disturbs the sleep cycle dramatically. The study clearly stated that the high junk consumption makes children nutritionally deprived in-turn increasing anti-social behaviors and hyperactivity in them (11).

The present study indicates high junk food consumption among children of early growth years, particularly in urban area of Meerut city. This shows a worrisome status towards the nutritional levels of children of newer generation and the increased health risks of other associated lifestyle and NCDs in them as young adults. This study reflects the high vulnerability of highly nutritionally deprived child populus and highly degraded health of upcoming generation(s).

## XII. CONCLUSION

As recorded in the present study, the status of frequency of junk food consumption among preschool aged children in western U.P. is in a serious and worrisome condition, which in turn is greatly contributing to the whopping crisis of malnutrition in all forms in children of early developmental years, which is also making childhood malnutrition a nutritional epidemic, despite of financial strength as compared to rural. Consumption of junk & processed foods by children is an exigency for making healthier future.

## RECOMMENDATION

1. Improving nutritional knowledge, particularly regarding junk & processed foods, among parents, caregivers and schools is the urgently needed.
2. Sale and/or availability of junk & processed foods near schools need to be strictly prohibited by responsible agencies at all levels.
3. Time-to-time practical sessions, workshops and other nutrition related activities should be conducted at community and school levels for developing on-ground and better understanding towards good and bad food behaviors and nutrition practices.
4. Strict actions under laws must be taken against misleading and faulty advertisements and information in any form.

## CONFLICT OF INTEREST

There is no conflict of interest.

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