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The Survey of Fast-Food Addiction and Weight Status in Adolescents (Age 13 - 19 yrs.)

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Abstract:
The present study aims to characterize food addiction in a sample of adolescent's and enlighten the relationship between food addiction, weight status, eating habits, and food choices in this population. A sample of 50 early adulthood students (48% females) aged between 13 - 19 years old and (52% males) completed a set of self-reported online questionnaire. The present study is done to assess the study of Fast-food addiction and weight status in adolescents (13 to 19 Yrs old). According to age group shows 26% of 17 to 19 years 8% are 13 to 15 yrs. age and 66% are age group between 15 to 17 yrs. shows that BMI underweight were 28% below 18.5 normal weight 18.5 to 24.9 were 54% pre-obesity 25 to 29.9 were 16% and obese who are 30 and above are 2%. shows that people who accept they enjoy eating fast food 12%. For no people who don't like fast food and 88% those who like fast food. that breakup of individuals in various height range. Most individuals fall in the range of 161-170cm and 171-180cm. the table shows that breakup of individuals in various weight range. Most individuals fall in the range of 61-70kg and 81-90kg. Regarding health risks associated with fast food consumption most of participants were believed healthy food and the remaining were believed unhealthy food. Data presented in table 4 shows that frequently consumed burgers 25% consumed noodles, 34% consumed Pizza, 15% consumed fried chicken, 6% consumed soft drink followed by shows. The Result shows the Likert frequency scale and percentage levels for the questions which say Strongly Disagree and Strongly Agree. shows that maximum number of people like packed juices may be once or twice a month 54%. shows that maximum number of people like cold drinks may be once or twice a month 52%. shows that maximum number of people like packed foods may be once or twice a month 50%. shows that maximum number of people like Indian packed snacks 2 to 3 times a week's 36%. shows that maximum number of people like Indian fried foods May be once or twice a month 42%.

Keywords: Fast Food Addiction , Weight Status, BMI, Adolescents , Early Adulthood

A human being's body undergoes several changes and developments throughout their life span and food acts as the fuel needed for all these changes. Proper nutrition, exercise and a friendly environment ensures healthy human being in all stages of their life. Some basic nutrients required for human growth are carbohydrates, essential amino acids, fatty acids, vitamins and minerals in order to sustain a healthy lifestyle. **(Byju's)**
Discussing further about the lifespan and making a list of what one would consider the basic periods of development we can narrow down to perhaps three: childhood, adulthood, and old age. Some studies try and break the lifespan of humans into eight stages.

1. Adolescence – 11 to early teens
2. Early Adulthood – late teens to twenties

The list of the periods of development of humans reflects unique aspects of the various stages of childhood which will be explored in this dissertation. So, while both an 8-month-old and an 8-year-old are considered children, they have very different motor abilities, cognitive skills, and social relationships. Their nutritional needs are different, and their primary psychological concerns are also distinctive. The same is true of an 18-year-old and an 80-year-old, both considered adults. **(Laura O et al, 2021)**

Healthy children learn better. People with adequate nutrition are more productive and can create opportunities to gradually break the cycles of poverty and hunger. On the other hand, malnutrition, in every form, presents significant threats to human health. Today the world faces a double burden of malnutrition that includes both undernutrition and overweight, especially in low- and middle-income countries. There are multiple forms of malnutrition, including undernutrition (wasting or stunting), inadequate vitamins or minerals, overweight, obesity, and resulting diet-related noncommunicable diseases.

According to the 2016–2025 nutrition strategy, WHO uses its convening power to help set, align and advocate for priorities and policies that move nutrition forward globally; develops evidence-informed guidance based on robust scientific and ethical frameworks; supports the adoption of guidance and implementation of effective nutrition actions; and monitors and evaluates policy and programme implementation and nutrition outcomes. **(WHO)**

We can therefore mention that Nutrition plays a fundamental role in determining the growth of individuals. An appropriate growth progression is considered a harbinger of adequate nutrient intake and good health.

1.1 Early Adulthood

Historically, early adulthood spanned from approximately 18 years (the end of adolescence) until 40 to 45 years (beginning of middle adulthood). More recently, developmentalists have divided this age period into two separate stages: Emerging adulthood followed by early adulthood. Although these age periods differ in their physical, cognitive, and social development, overall, the age period from 18 years to 45 years is a time of peak physical capabilities and the emergence of more mature cognitive development, financial independence, and intimate relationships

Emerging Adulthood

Figure 1. A young adult enjoying a saxophonist performance.

Arnett has identified five characteristics of emerging adulthood that distinguishes it from adolescence and young adulthood.

Arnett also described this time period as the age of instability. Exploration generates uncertainty and instability. Emerging adults change jobs, relationships, and residences more frequently than other age groups.

This is also the age of self-focus. Being self-focused is not the same as being "self- centered." Adolescents are more self-centered than emerging adults. Arnett reports that in his research, he found emerging adults to be very considerate of the feelings of others, especially their parents. They now begin to see their parents as people not just parents, something most adolescents fail to do. Nonetheless, emerging adults focus more on themselves, as they realize that they have few obligations to others and that this is the time where they can do what they want with their life.

This is also the age of feeling in-between. When asked if they feel like adults, more 18- to 25-year-olds answer "yes and no" than do teens or adults over the age of 25. Most emerging adults have gone through the changes of puberty, are typically no longer in high school, and many have also moved out of their parents' home. Thus, they no longer feel as dependent as they did as teenagers. Yet, they may still be financially dependent on their parents to some degree, and they have not completely attained some of the indicators of adulthood, such as finishing their education, obtaining a good full-time job, being in a committed relationship, or being responsible for others. It is not surprising that Arnett found that 60% of 18- to 25-year-olds felt that in some ways they were adults, but in some ways they were not. **(Julie L et al 2020)**

1.2 Nutritional Status

Nutritional status has been defined as an individual's health condition as it is influenced by the intake and utilization of nutrients. Good nutrition means eating a balanced diet rich in vitamins and minerals to fuel your body with what it needs.

Early adulthood (age 18–30 years) is the life course stage when prevalence of overweight and obesity increases the fastest. The poor-quality diet often consumed at this age is likely to contribute to this increase. Behaviours established during early adulthood, including obesity-related behaviours such as dietary intake, eating behaviours and physical activity behaviours, may persist into later adulthood, influencing the risk of non-communicable disease in later life. Early adulthood has been identified as an important age for health behaviour interventions, which may be more successful at a time when habits are disrupted by lifestyle changes. There is a need to build a better understanding of factors affecting changes in diet during early adulthood, and how this contributes to the establishment of long-term dietary behaviours to inform the development and targeting of diet interventions.

1.2.1 Classification of Nutritional Status

- Undernutrition
- wasting, stunting, underweight
- inadequate vitamins or minerals
- overweight
- obesity
- resulting diet-related noncommunicable diseases.

1.2.2 The four Components of Nutritional Status

- Anthropometrical Measurements

- Biochemical Measurements
- Clinical Measurements
- Dietary Measurements

When obtaining the health history of an individual, it is important to assess and document the nutritional status. Nutrition is critical in maintaining a healthy weight and to preventing conditions such as cardiovascular disease and diabetes. In addition, adequate nutrition is vital to healing and recovery from illness and injury **(Hinkle et al, 2021**).z

The different components of a complete nutritional assessment include the **ABCD**: **Anthropometric, Biochemical, Clinical, and Dietary.**

1.2.3 Anthropomorphic Measurements

Anthropomorphic measurements are attributes of the human body including size and shape.

- Height, weight, and BMI
- Circumference (arm, abdomen, and thigh) measurements are indicators of protein stores
- Skinfold thickness (biceps, triceps, subscapular, and Suprailiac skinfold) is an indicator of energy (fat) stores.

1.2.4 Dietary

Complete the comprehensive nutritional assessment by asking questions that allow the patient to provide subjective responses related to their daily dietary habits (Bickley, 2021).

- Have you experienced a loss of appetite?
- Can you describe your eating habits?
  - Do you eat fruits and vegetables daily?
  - What do you eat on a typical day?
- Have you maintained the same weight, or has it fluctuated?
  - How many meals do you eat each day and what are your portion sizes?
  - How often do you eat out?
  - Do you follow any restrictive diets (i.e., vegan, vegetarian)?
- Do you exercise and if so, how often? **(Myrna BS, MSN, RN et al 2022)**

Benefits of regular physical activity

Regular physical activity – such as walking, cycling, or dancing – has significant benefits for health. For instance, it can reduce the risk of cardiovascular disease, diabetes and osteoporosis, help control weight, and promote mental well-being.

Taking part in physical activity increases opportunities for socialization, networking and cultural identity. Physical activity has a positive influence on the community and society by promoting social interaction and cohesion.

Especially among children and young people, sports and other physical activities contribute to empowerment and self-confidence. Physical activity furthermore helps to prevent and control risk behaviour, such as the use of tobacco, alcohol and other substances, unhealthy diet and violence.

Active living benefits health at all ages. It is especially important to the healthy development of children and young people, and active ageing can make a dramatic difference to the well-being of older people.

Having the opportunity to enjoy quality recreation is vital to the health and personal development of all individuals, regardless of gender, functional ability, cultural background, age or socioeconomic status.

1.3 Fast Food Consumption

Fast food is often nutritionally poor and high in calories. Evidence demonstrates that overeating commercial fast-food products can negatively impact health in both the short- and long-term.

1.3.1 Short-term impacts

Fast food is typically high in sugar, salt, and saturated or trans fats. The body's reaction to these nutrients results in a range of short-term impacts when a person eats fast food.

1.3.2 Spike in blood sugar

Fast food breaks down quickly, causing a rapid spike in blood sugar because of the refined carbohydrates and added sugar. In turn, this causes an abnormally large trusted source insulin surge, resulting in a drop in blood sugar. This can cause people to feel tired. Insulin promotes further hunger within a short time after the meal.

1.3.3 Blood pressure

A Small 2019 found that consuming high levels of salt could immediately impact the proper functioning of a person's blood vessels. Excess sodium intake also has links to fluid retention.

1.3.4 Increased inflammation

A single serving of fast food could increase inflammation throughout the body. A study found that one fast food meal high in saturated fat increased airway inflammation in individuals with asthma. This inflammation acts as a trigger for asthma attacks.

1.3.5 Affects nutrient intake

Fast food does not typically contain fresh fruit and vegetables. If an individual eats fast food frequently, they may find it challenging to reach their recommended daily intake of at least 5 servings of fruit and vegetables. They may also have difficulties reaching their ideal fiber intake, which according to the Food.

1.3.6 Binge eating

Fast food is highly palatable, meaning the body breaks it down quickly in the mouth, and it does not need much chewing. Therefore, it activates the reward centers in the brain rapidly.

Research from 2019 from trusted source and other previous studies have suggested a link between fast food consumption and the incidence of Food addiction for these low-nutrient items.

1.3.7 Long-term impacts

There is plenty of well-researched evidence showing that regularly eating fast food can harm a person's health.

This is because most fast food is high in sugar, salt, saturated fat, trans fats, processed ingredients, and calories. It is also generally low in antioxidants, fiber, and many other nutrients.

1.3.8 Digestive system

Many fast-food meals are extremely low in fiber. Doctors associate low-fiber diets with a higher risk of digestive conditions such as constipation and diverticular disease, as well as reductions in healthy gut bacteria.

1.3.9 Immunity and inflammation

A 2019 study examined the effects of a Western diet on a person's immune system. This diet consists of high amounts of sugar, salt, and saturated fat from only a few sources. The authors noted that a Western diet could lead to higher inflammation, lower control of infection, higher cancer rates, and a higher risk of allergic and autoinflammatory disease.

1.3.10 Memory and learning

A 2020 paper suggests a link between unbalanced diets high in saturated fat and simple carbohydrates, ty-

pical of fast food, and a lower capacity for memory and learning. This sort of diet may also raise the risk of Alzheimer's and Parkinsons disease.

1.3.11 Allergies

The FDA also notes that a diet high in trans fats raise the amount of low-density lipoprotein or "bad" cholesterol and lowers the amount of high-density lipoprotein or "good" cholesterol. This means that a person is more likely to develop heart disease.

1.3.12 Obesity

The study points out that typical fast food contains a very high number of calories. If a person eats more calories than they burn each day, they gain weight, which may lead to obesity.

According to the CDC, obesity increases a person's risk of developing a range of serious health conditions.

1.3.13 Education

Another consequence of younger people regularly eating fast food is their unintentional lack of understanding of basic meal preparation, cooking, and healthy eating.

Over time, this perpetuates dependence on fast food, and people may not learn how to prepare healthy, balanced food in the home. Consuming healthy meals can support a person's long-term health throughout their lifespan. **(Timothy H et al 2023)**

1.4 BMI

Note. BMI is derived from a person's weight in kilograms, divided by height (squared) in centimetres. The recommended levels are adapted from the global WHO recommendation of 18.5–24.9 as a normal BMI.

Body mass index - BMI

BMI, formerly called the Quetelet index, is a measure for indicating nutritional status in adults. It is defined as a person's weight in kilograms divided by the square of the person's height in metres (kg/m2). For example, an adult who weighs 70 kg and whose height is 1.75 m will have a BMI of 22.9.

70 (kg)/1.752 (m2) = 22.9 BMI

For adults over 20 years old, BMI falls into one of the following categories.

Table 1. Nutritional status

BMI	Nutritional status
Below 18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Pre-obesity
30.0–34.9	Obesity class I
35.0–39.9	Obesity class II
Above 40	Obesity class III

History

BMI is very easy to measure and calculate and is therefore the most commonly used tool to correlate risk of health problems with the weight at population level. It was developed by Adolphe Quetelet during the 19th century. During the 1970s and based especially on the data and report from the Seven Countries study, researchers noticed that BMI appeared to be a good proxy for adiposity and overweight related problems.

Other measures, such as waist circumference (WC), can complement BMI estimates. Association between WC and health risks is not an easy task and should be done scientifically using proper techniques.

1.5 Weight Status

This study aimed to identify associations among self-perceived weight status, accuracy of weight perceptions, and weight control behaviours, including both healthy and unhealthy behaviours. **Nishida A, Foo JC, Shimodera S, Nishida A, Okazaki Y, Togo F, et al. (2020)**

During children, health behaviours and weight status are increasingly influenced by friendship and peer networks. This paper examines weight-related characteristics and how they are with sociodemographic factors.

Body mass index (BMI), commonly used to identify or classify obesity, is calculated as the body mass in kilograms divided by height in meter squared.

METHODOLOGY

Research is a systemic and refined techniques of thinking, employing, specialized tools instruments and procedure in order to obtain more adequate solution of a problem that would be possible under ordinary means. It starts with a problem, collects data or facts, analysis then critically and reaches decision based on the actual evidence. The Purpose of the research work is to discover the answer to the questions through the application of a scientific procedure. According to Young P.V. “Research as a Systemic method of exploring, analyzing and conceptualizing social life in order to extend, correct or verify knowledge aids in the construction of theory or in the practice of art”.

The imminent research intends to gauge the survey of Fast-Food Addiction and Weight Status in Adolescents (Age 13 - 19 yrs.)

An online survey was conducted among Early Adulthood. questionnaire was set up via Google Forms. The survey consisted of 3 open ended questions and rest were 13 closed ended questions. demographic characteristics, dietary habits, physical activity and weight status.

Problem Statement: The recent study aimed to determine Access the Study Between the Fast-Food Addiction and Weight Status in Early Adulthood (Age 13 - 19 yrs.)

Review of Literature: Reviews of different authors and papers were selected and they were filtered. Literature was collected from different books, journals, and websites, Also the reviewed literature was through the primary and secondary data.

Objective and Hypothesis: After the Research were identified, objectives were established and hypothesis was done. In terms of what is significant and insignificant. To study differences in dietary intake between adults with different socioeconomic status (SES) and trends over time. This research examines the complexity of health behaviour decision-making moments that reflect relational social dynamics in context-specific dialogues, frequently under situations of choice restriction, using the relationship between food intake, food security, and obesity.

1. To evaluate the strategies used by fast-food organizations like McDonald’s, KFC etc. to target consumers.
2. To review the factors that had changed the trend of fast-food Addition

Data collection and selection of subjects:

Locale of the study: The study was conducted from the fulfil the adequate number of sample size for study.

Sample size: The sample size taken for this study was comprised of 50 subjects' formula used.

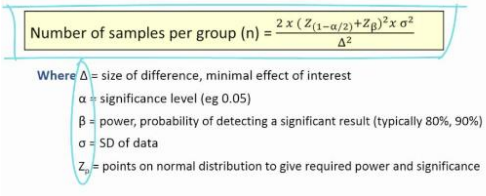

Figure: 12 Sample Size Collection Google Image

Sample Collection: The data was collected between the age group (13 - 19) years Early Adulthood
Study Population: The target group of study were Early Adulthood (13 – 19)
Tools and Techniques: The Research tool is the instrument used to collect data.

- Demographic Profile
- Anthropometric Measurements
- Dietary Assessment

Demographic Profile: A Questionnaire was constructed for data collection. The questionnaire consists of 55 questions related to anthropometric measurements, dietary habits, physical activity, behavior and other questions which include these questions
Anthropometric measurement: In this section weight and height of the subjects were asked.
Height: is the measurement from the bottom to the top of a person. It was stadiometer. It Was Measured with Anthropometric rod. The barefooted respondents were made to stand erect in the Frankfurt Position with heels, buttocks, shoulders and back of the head touching the upright of anthropometric rod at the back.
Weight: it is the measurement of the heaviness of somebody. It was measured by machine. It is the key anthropometry measurements. Weight was measured by using weighing balance calibrated in kilograms and grams.
BMI (Body Mass Index): Body Mass Index is a great tool to access the nutritional status of adults. BMI is basically a measure of the body fat based on height of the subjects. BMI was calculated by using the standard Formula-Weight in Kg divided by height in Meters.

WHO CLASSIFICATION OF WEIGHT STATUS	
WEIGHT STATUS	**BODY MASS INDEX (BMI), kg/m^2**
Underweight	<18.5
Normal range	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	≥ 30
Obese class I	30.0 – 34.9
Obese class II	35.0 – 39.9
Obese class III	≥ 40

Figure: 13 BMI Classification

Clinical Symptoms: In this section symptoms like underweight, anxiety, loss of appetite, weakness, lethargic, obesity, and Headache, dietary habits, physical activity, were assed
Dietary Habits: The consumption of outside, junk food, and packed items were asked
Physical Activity: The frequency, duration and type of physical activity was asked.

Observation Method: During, the research work, the nutritional status, physical activity, and outside food of all the subjects were observed.

RESULT AND DISCUSSION

Results: Fast Food Addiction and Weight Status was reported by all students in this study. The soic-demographic characteristics of the study participants are 50. Adolescent who participated in the study, ages of teenagers ranged from 13 to 19 years. Approximately over half (48.0%) of participates consumed fast food were female and about (52.0%) were male. According to age group shows 26% of 17 to 19 years 8% are 13 to 15 yrs. age and 66% are age group between 15 to 17 yrs. shows that people who accept they enjoy eating fast food 12%. For some no people who don't like fast food and 88% those who like fast food. that breakup of height range. Most individuals fall in the range of 161-170cm and 171-180cm. the table shows that breakup of individuals in various weight range. Most individuals fall in the range of 61-70kg and 81-90kg. Regarding health risks associated with fast food consumption most of participants were believed healthy food and the remaining were believed unhealthy food.

Data presented in table 4 shows that frequently consumed burgers 25% consumed noodles, 34% consumed Pizza, 15% consumed fried chicken, 6% consumed soft drink followed by shows that the money spend per meal on fast food is 34% on Rs 100 to Rs 250 28% on Rs 250 to Rs 400 16% on Rs 400 to Rs 600 4% on Rs 600 and above and Money is not a concern is 18%

The Result shows the Likert frequency scale and percentage levels for the questions which say Strongly Disagree and Strongly Agree. shows that maximum number of people like packed juices may be once or twice a month 54%. shows that maximum number of people like cold drinks may be once or twice a month 52%. shows that maximum number of people like packed foods may be once or twice a month 50%. shows that maximum number of people like Indian packed snacks 2 to 3 times a week's 36%. shows that maximum number of people like Indian fried foods May be once or twice a month 42%.

The following is the summary about the demographics covered during the survey and data collection

- **Sample size:** 50
- **Locality: Indore**

Table 4.3 BMI (Body Mass Index)

Sr. No	Family Type	BMI	Percentage
1	Under Weight	Below 18.5	28
2	Normal Weight	18.5 - 24.9	54
3	Pre-Obesity	25 - 29.9	16
4	Obese	30 and Above	2

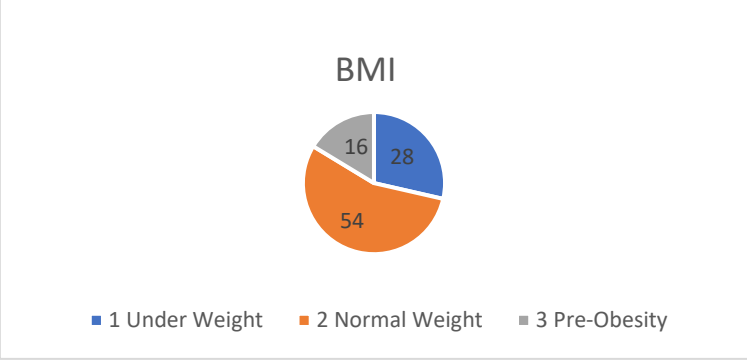

Figure: 16 Table 4.3 and Figure above shows that BMI underweight were 28% below 18.5 normal weight 18.5 to 24.9 were 54% pre-obesity 25 to 29.9 were 16% and obese who are 30 and above are 2%.

Table 4.12 Response of questions on Likert Scale in Percentage

Sr. No.	Percentage of Responses on the Likert Scale Questions	SD				SA
		1	2	3	4	5
1	Does branding / packaging affect your choice of fast food?	10	16	36	24	14
2	Does the pricing of Fast Food influence your choice about a specific fast food?	14	12	20	26	28
3	You are easily influence by a brand if it is international / national and would prefer it over a local brand / road side shop?	18	28	30	18	6
4	Consuming fast food depends on your emotional state at a particular time - factors such as happy, sad, angry, and stress affects your eating habits of fast food?	24	6	18	24	28
5	According to you, fast food adversely effects the health of people	6	0	26	26	42
6	According to you, does fast food consumption results in obesity (gaining of weight)	6	8	24	26	36
7	According to you, does consumption of fast-food lead to high cholesterol levels and eventually may lead to heart attacks?	6	0	30	22	42
8	A person of your age group always prefers to eat fast food over healthy food	14	8	24	28	26
9	As per you, fast foods are Unhealthy	4	6	30	32	28

Figure: & Table 4.12 shows the Likert frequency scale and percentage levels for the questions which say Strongly Disagree and Strongly Agree

CONCLUSION

This dissertation aimed to explore the survey of fast-food addiction and weight status people over this work aimed to explore the survey of Fast-Food Addiction and Weight Status in Adolescents (Age 13 - 19 yrs.) The work in Chapter 3 reported a moderate amount of Obesity.

A sample of 50 early adulthood students (48% females) aged between 13 - 19 years old and (52% males) completed a set of self-reported online questionnaires on Google Forms. Namely, a Sociodemographic and Anthropometric Questionnaire, a questionnaire on Food Choices Characterization, the Eating Habits Scale, and the Frequency Questionnaire participants presented food addiction problems. Fast foods have become very popular among all age groups.

The present study is done to assess the survey of Fast-food addiction and weight status in adolescents (13 to 19 Yrs old). According to age group shows 26% of 17 to 19 years 8% are 13 to 15 yrs. age and 66% are age group between 15 to 17 yrs. shows that BMI underweight were 28% below 18.5 normal weight 18.5 to 24.9 were 54% pre-obesity 25 to 29.9 were 16% and obese who are 30 and above are 2%. shows that people who accept they enjoy eating fast food 12%. For no people who don't like fast food and 88% those who like fast food. Most individuals fall in the range of 61-70kg and 81-90kg. Regarding health risks associated with fast food consumption most of participants were believed healthy food and the remaining were believed unhealthy food.

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