FOOD HABITS AMONG ADOLESCENT GIRLS: A QUALITATIVE STUDY IN URBAN AND PERI-URBAN COMMUNITIES, DELHI, INDIA

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ABSTRACT

There are approximately 253 million adolescents in India, and their nutritional needs are high. Consumption of fast food, high in saturated fat, salt, and sugar, is high among adolescents. Considering the lack of information on the knowledge and practices related to eating patterns among adolescents in India, this paper reports the practice, perception, and knowledge about healthy and unhealthy eating habits of this segment of its population in urban and peri-urban communities. Qualitative data were collected during the formative stage of an intervention study. Fifty in-depth interviews and eight focus group discussions were conducted in two communities in Delhi, the national capital of India (28º 36' 36" N; 77º 13'48" E). For data analysis, a deductive approach was adopted, and a thematic content analysis was performed. Practices, perception and knowledge, and seeking information were the themes that emerged, and it was verified that low income is a limiting factor for acquisition at the family level. Cleanliness, hygiene, and taste are the factors when choosing the preparation of food. Strong perceptions about certain foods were observed: parents showed helplessness concerning the consumption of outside food by their children. Food bought in a restaurant is better and not as harmful, and adolescents prefer the taste to health. Preferences for healthy foods and the acceptance of food from large restaurants, and the preference for their tastes, have emerged as factors influencing adolescents' eating practices. In addition, the research revealed awareness and knowledge about healthy and unhealthy food among female adolescents and community members residing in low-socioeconomic status urban and peri-urban communities of Delhi. Several factors were found to influence the eating habits of Delhi female adolescents, such as taste, nutrition-related awareness, and self-efficacy (at the individual level), as well as parental and peer pressure (at the societal level). Nevertheless some methodological limitations, this study suggests behaviour change interventions among adolescents using the findings of the current study.

Key words: Food habits, dietary behavior, perception, adolescence, nutrition, qualitative research, Delhi, India

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RESUMEN

En la India hay aproximadamente 253 millones de adolescentes, cuyas necesidades nutricionales son altas. El consumo de comida rápida, rica en grasas saturadas, sal y azúcares es alto entre los adolescentes. Dada la escasa información sobre conocimientos y prácticas en cuanto a patrones alimentarios entre los adolescentes en el país, este artículo reporta la práctica, percepción y conocimientos sobre hábitos alimentarios saludables y no saludables de este segmento poblacional en comunidades urbanas y periurbanas. Los datos cualitativos se recopilaron durante la etapa formativa de un estudio de intervención, mediante cincuenta entrevistas en profundidad y ocho discusiones de grupos focales en dos comunidades de Delhi (28º 36' 36" N & 77º 13' 48" E).Se adoptó un enfoque deductivo y se efectuó un análisis de contenido temático para analizar los datos. Las prácticas, la percepción y el conocimiento y la búsqueda de información fueron los temas abordados, constatándose que los bajos ingresos constituyen un factor limitante para la adquisición de alimentos por las familias. La limpieza, la higiene y el sabor fueron los factores clave a la hora de elegir la preparación de los alimentos. Se observaron percepciones fuertes sobre determinados alimentos: los padres mostraban impotencia frente al consumo de alimentos fuera del hogar por parte de sus hijos. La comida comprada en restaurantes fue considerada mejor y menos dañina, en tanto los adolescentes prefieren más el sabor que la salud. Las preferencias por alimentos saludables, aceptación de alimentos de grandes restaurantes e inclinación por sus gustos fueron los factores determinantes de las prácticas alimentarias de los adolescentes. Además, la investigación reveló que tanto en los adolescentes como los miembros de comunidades urbanas y periurbanas de estratos socioeconómicos bajos de Delhi tienen conciencia y conocimientos sobre alimentos saludables y no saludables. Se encontró que varios factores influyen en los hábitos alimentarios de los adolescentes de Delhi (como el gusto, la conciencia relacionada con la nutrición y la autoeficacia, a nivel individual; y la presión de padres y compañeros, a nivel socioambiental). A pesar de algunas limitaciones metodológicas, el presente estudio sugiere intervenciones orientadas a cambiar el comportamiento entre adolescentes, con base en los hallazgos.

Palabras clave: hábitos alimentarios, conducta alimentaria, percepción, adolescencia, nutrición, investigación cualitativa, Delhi, India

RÉSUMÉ

Il y a environ 253 millions d'adolescents en Inde et leurs besoins nutritionnels sont élevés. La consommation de restauration rapide, riche en graisses saturées, en sel et en sucre, est élevée chez les adolescents. Cet article rend compte de la pratique, de la perception et des connaissances sur les habitudes alimentaires saines et malsaines chez les adolescents. Les données qualitatives ont été recueillies au cours de la phase formative d'une étude d'intervention. Cinquante entretiens approfondis et huit groupes de discussion ont été menés dans deux communautés de Delhi (28º 36' 36" N & 77º 13' 48" E). Pour l'analyse des données, une approche déductive a été adoptée et une analyse de contenu thématique a été effectuée. Les pratiques, la perception et les connaissances, et la recherche d'informations ont été les thèmes qui ont émergé, et il a été constaté que le faible revenu est un facteur de contrainte pour l'approvisionnement au niveau familial. La propreté, l'hygiène et le goût sont les facteurs déterminants dans le choix de la préparation des aliments. Des perceptions fortes sur certains aliments sont observées : les parents se montrent impuissants face à la consommation d'aliments hors du foyer par leurs enfants. Les aliments achetés au restaurant sont meilleurs et moins nocifs, et les adolescents préfèrent le goût à la santé. Les préférences pour les aliments sains et l'acceptation des aliments des grands restaurants, ainsi que la préférence pour leurs goûts, sont apparues comme des facteurs influençant les pratiques alimentaires des adolescents. Cette étude suggère des interventions de changement de comportement chez les adolescents en utilisant les résultats de l'étude actuelle. En outre, l'enquête a révélé que les adolescents et les membres des communautés urbaines et périurbaines des couches socio-économiques de bas revenus à Delhi sont sensibilisés et connaissent les aliments sains et ceux que ne le sont pas. Plusieurs facteurs ont été trouvés pour influencer les habitudes alimentaires des adolescents de Delhi, tels que le goût, la sensibilisation liée à la nutrition et l'efficacité d'un point de vue individuel, ainsi que la pression du milieu social des parents et des pairs. Malgré certaines limites méthodologiques, la présente étude suggère des interventions visant à modifier le comportement chez les adolescents sur la base des résultats obtenus.

Mots-clés : habitudes alimentaires, comportement alimentaire, perception, adolescence, nutrition, recherche qualitative, Delhi, Inde

RESUMO

Existem aproximadamente 253 milhões de adolescentes na Índia e suas necessidades nutricionais são altas. O consumo de fast food, rico em gordura saturada, sal e açúcar, é elevado entre os adolescentes. Este artigo relata a prática, percepção e conhecimento sobre hábitos alimentares saudáveis e não saudáveis entre adolescentes. Os dados qualitativos foram coletados durante a etapa formativa de um estudo de intervenção. Cinquenta entrevistas em profundidade e oito discussões de grupos focais foram realizadas em duas comunidades de Delhi (28º 36' 36'' N & 77º 13' 48'' E). Para a análise dos dados, adotou-se a abordagem dedutiva e a análise de conteúdo temática. Práticas, percepção e conhecimento e busca de informações foram os temas que emergiram, e constatou-se que a baixa renda é um fator limitante para as compras em nível familiar. Limpeza, higiene e sabor são os fatores na escolha do preparo dos alimentos. Observam-se fortes percepções sobre determinados itens alimentares: os pais demonstraram desamparo em relação ao consumo de alimentos de fora pelos filhos. A comida comprada em um restaurante é melhor e não tão prejudicial, e os adolescentes preferem o sabor à saúde. A preferência por alimentos saudáveis e a aceitação de alimentos de grandes restaurantes e a preferência por seus gostos surgiram como fatores que influenciam as práticas alimentares dos adolescentes. Este estudo sugere intervenções de mudança comportamental entre adolescentes usando os resultados do estudo atual. Ademais, a investigação revelou que tanto os adolescentes como os membros de comunidades urbanas e periurbanas de estratos socioeconômicos mais baixos de Delhi possuem consciência e conhecimentos sobre alimentos saudáveis e não saudáveis. Se encontrou que vários fatores influem nos hábitos alimentares dos adolescentes de Delhi, a exemplo do gosto, da consciência relacionada com a nutrição e eficácia do ponto de vista individual, bem como a pressão de pais e colegas, bem como do ponto de vista ambiental. Apesar de algumas limitações metodológicas, o presente estudo sugere intervenções orientadas a modificar o comportamento entre adolescentes com base nos achados logrados.

Palavras-chave: hábitos alimentares, comportamento alimentar, percepção, adolescência, nutrição, pesquisa qualitativa, Delhi, Índia

1. INTRODUCTION

World Health Organization (WHO) defines adolescents are people aged 10 to 19 years old (World Health Organization, 2015). There are about 253 million adolescents in India. It accounts for over one-fifth of the total population of the country(UNICEF, 2020).Adolescence is marked by significant physical, psychological, and behavioral changes that may affect one's health and well-being over lifelong.

Nutritional needs are high during adolescence. These dietary requirements are a combination of physical growth and fitness requirements as well. In an evolving world, diet changes for several reasons, including increased food consumption away from home, social pressure, changes in exercise patterns, and availability. Adolescents are known for snacking and avoiding breakfast (Blaine, Kachurak, Davison, Klabunde & Fisher,2017; Almoraie *et al.,* 2021). Adolescence is also a time when people are more prone to obesity. Obesity in adolescents is caused by various factors and lack of physical exercise and outdoor sports activities, and the intake of fat-rich junk foods adds to it (Mistry & Puthussery, 2015; Askari, Heshmati, Shahinfar, Tripathi & Daneshzad, 2020).

Fast-food consumption has now almost become a global trend (Ashakiran & Deepthi, 2012). With lifestyle changes, there has been an increase in the consumption of junk foods among Indian school-aged children (Sahoo *et al.,* 2015). Perceived good taste, peer pressure, enticing packaging and advertisement have played a role in attracting teenagers to the selling outlets (Kaushik, Narang & Parakh, 2011; St George &Wilson, 2012; Deliens, Clarys, De Bourdeaudhuij & Deforche, 2014; Paes *et al.,* 2015; Ramdass, Gupta & Nongkynrih, 2017). Fast foods have an energy density that is more

than that of the daily allowance (Patel *et al.,* 2018; Ronto, Wu & Singh, 2018). The present world's adaptation to a fast food-eating environment has negative health consequences.

High fast food consumption has been documented to contribute to India's obesity rate among school-aged children (Ranjani *et al.,* 2016). In another study, fast food consumption was reported by 98% of children in Lucknow, India (Manjunatha & Mishra 2014). High junk foods consumption has also been linked to an increased risk of developing diet-related non-communicable diseases such as obesity, diabetes and hypertension in early life (Shetty, 2013; Bahadoran, Mirmiran & Azizi, 2015; Mistry & Puthussery, 2015; Sahoo *et al.,* 2015; Dooley, Moultrie, Sites & Crawford, 2017; Borzekowski & Pires, 2018; Ronto *et al.,* 2018). Skipping meals was also significantly higher in children belonging to low socioeconomic strata (SES), and they reported a higher prevalence of underweight. Adolescents from low SES consumed more fast food and bakery products on a regular basis (Omidvar & Begum, 2014). In India, overweight and obesity are not only an issue among adults but also among children and teenagers. Obesity in children and adolescents has been on the rise in recent decades (Ranjani *et al.,* 2016; Di Cerare *et al.,* 2019; Khadilkar & Shah, 2021).

In this context, it is important to examine the current food habits of adolescents. Also, it necessitates nurturing healthy eating habits and the development of an effective nutrition promotion program. As part of an intervention study, this formative research was undertaken to understand the existing food habits and the factors inhibiting healthy food habits of adolescent girls residing in some urban and peri-urban communities of Delhi, the national capital of India. It also aimed to explore the knowledge among adolescent girls and their parents regarding healthy food habits and eating practices in these communities.

2. METHODS

2.1. STUDY SETTING AND DESIGN

The grounded theory approach was used to conduct this study (Glaser & Strauss, 1967; Walker & Myrick, 2006). All the principles of qualitative research were followed (Patton, 2014). Data were collected through in-depth interviews and focus group discussions carried out during September 2019 - February 2020. The purpose of the in-depth interview is to learn about the issue of interest and understand the participants' perceptions, whereas focus group discussions allow making inferences about the groups of interest (Hudelson,1994). Table Nº 1 provides an overview of the methodology.

The interview/discussion guides were developed based on informal meetings/ discussions with community members before initiating this study. Separate interview guides were prepared for adolescent girls, their parents and grandparents. The topic guide was initially prepared in English and then translated into Hindi. These in-depth interviews were conducted using standard methods (Pelto & Pelto, 1978; Spradley, 2016). Interviews were conducted at the time of participants' convenience with prior appointment. The interviews lasted for 30 to 40 minutes and were conducted in Hindi. Focus group discussions were conducted according to the standard guidelines (Kitzinger, 1995; Hudelson, 1994). Guides were used to ensure that the moderator covered all of the issues that the group wanted to discuss. For the girls and their parents, separate guides were developed. The focus group discussions lasted for 60 to 90 minutes. All interviews and focus group discussions were audio-recorded with the participants' consent.

2.2. STUDY PARTICIPANTS

Purposive sampling was used to select participants for in-depth interviews and focus group discussions from two different communities in Delhi. Purposive sampling refers to selecting sample sites or informants to reflect the spectrum of heterogeneity in their characteristics that seem to be relevant to the research topic. Participants for in-depth interviews were adolescent girls (n=20), parents (mothers=10, fathers=10) and grandparents (n=10) (Table Nº 1). A total of eight focus group discussions were also held with adolescent girls and their parents separately. Data collection was stopped with fifty in-depth interviews and eight focus group discussions

Table 1
Methodology at a Glance

Research method	Study participants	Number of participants	Broader issues covered
In-depth interviews	· Adolescent Girls (10-14 years) · Adolescent Girls (15-19 years) · Mothers of adolescent girls · Fathers of adolescent girls · Grandparents of adolescent girls	· Ten interviews in each category	· What type of food is consumed · Who decides the menu · What is healthy food · What is unhealthy food · What food items should be consumed daily; should not be consumed routinely · Constraints in the procurement of healthy food · Do school going/working girls carry homemade food · Any gender discrimination while preparing and serving food · Suggestions to increase healthy eating
Focus group discussions	· Adolescent Girls (10-14 years) · Adolescent Girls (15-19 years) · Mothers of adolescent girls · Fathers of adolescent girls	· Two groups with 8 to 10 participants in each group	· Type of food consumed by the community in general, adolescent girls, adolescent boys and males · Understanding of eating right and eating wrong · Components of routine diet · Adults reaction to children eating unhealthy food

Source: Own elaboration

because of the redundancy of information. To conduct focus group discussions with different groups, *i.e.* adolescent girls, their mothers and fathers, a group of eight to ten people from that community were consulted and requested to meet at a specific location at a specific time. These participants were similar in their personal characteristics. It was assured that all focus group participants knew each other during the selection process, and care was taken to preserve homogeneity within each group. These focus group participants were not selected for in-depth interviews. The study's purpose was communicated to all participants, and their consent to participate was obtained. None of the participants denied taking part in the study. The Institutional Ethics Committee of the Indian Council of Medical Research-National Institute of Medical Statistics, New Delhi, approved the study protocol.

2.3. DATA MANAGEMENT AND ANALYSIS

The entire discussion/interviews were recorded in audio recorders. Later, with the help of adjunct notes taken during the interview/discussion, the audio recorders were played back and transcribed into the language of the interview/discussion. The transcripts were translated into English. Standard transcription and translation guidelines were followed (Mergenthaler & Stinson, 1992; Mclellan, Macqueen & Neidig, 2003). The deductive approach of data coding was adopted, and thematic content analysis was done. The data were read several times thoroughly and grouped under several heads of pre-decided themes. Under each theme, several codes (issues) were identified. For each category of participants, quotations of each code were extracted, and inferences were drawn through thorough reading and discussion among the researchers.

3. RESULTS AND DISCUSSION

The results are presented under three themes: practice, perception and knowledge, and information seeking. Further, the results are presented under various sub-themes under each main theme (Table Nº 2).

3.1. PRACTICE-PROCUREMENT AND PREPARATION

The study explored the process of procurement, preparation and consumption of food followed by the families. Almost all participants reported the shortage of money

Table 2
Theme-specific findings

Theme	Sub-themes	Findings
· Practice	· Procurement & Preparation	· Money is a constraint · Cleanliness, hygiene and taste
	· Family and Community practices	· Same food served to everyone, no discrimination; girls are given equal importance
	· Healthy food items	· Most of the school-going girls carried homemade food; also buy food from outside · Homemade food, *dal chawal* (rice with dish made with stewed legumes), *roti sabzi* (flat Indian bread with curry), etc. as healthy
	· Unhealthy food items	· Food from outside and food made of maida (white flour made of wheat), snacks, etc. are unhealthy
· Perception and Knowledge	· What should be consumed	· Strong perceptions about certain food items
	· Consumption of food items	· Parents helplessness about the consumption of food from outside by children · Food purchased from a restaurant is better and not as harmful as street food · Adolescents prefer taste over health
	· Recommendations	· Have little knowledge
· Suggestions	· Best way to impart knowledge about nutrition and healthy	· Readiness to learn more and to receive nutrition education

Source: Own elaboration

as a major constraint in the procurement of food. However, a few found distance to be a constraint, and few others felt that time is also a constraint. The candid expressions by some mothers are as follows, «Money is an issue; at times, we are able to fulfil children's demands at times not.»

A significant number of the participants informed that the women of the family purchase raw food items and decide the menu. Women often take care of everyone's preferences. The majority of adolescent girls agreed that mothers purchase food items, and they often accompany their mothers. Some fathers shared that they would also buy food items. A father said, «Sometimes, I get chips and fruits from the market.»

Another father said, «This is ladies' department; they know better.»

Several factors were taken care of while preparing food. Cleanliness and hygiene were given importance. Variation was reported while informing about the use of oil and spices. A mother shared,» Taste should be good; I don't worry about the oil. At times I put extra oil to make it tasty.»

While a girl said, «We don't use excess oil, it's not good.»

Some grandparents reported having ghee on roti, «Spices in proper amount; we use ghee. I don't eat roti [a traditional flat Indian bread cooked on a griddle] without ghee.»

When asked about any meal in a day, most participants reported the consumption of traditional foods containing local cereals and pulses regularly. However, some variations exist, and a few people reported consuming food they bought outside.

Some participants said, «*Dal-chawal* [rice with dish made with stewed legumes], *roti-sabzi* [flat Indian bread with curry], fruits» (mother of an adolescent girl).

«My work is such that I don't get much to eat, I eat whatever is available outside like samosa (small turnover filled with vegetables or meat and fried and served hot), bread *pakora* [pieces of bread deep fried in a batter flavoured with spices]» (father of an adolescent girl).

A grandparent told about outside food, «Children eat those foods. *Chowmein* [spiced fried noodles] and burger is good if we eat them occasionally. Two or three times in a week, such food comes at home.»

Most mothers reported that children are fond of eating snacks and food items from outside. Most of them consumed chips, biscuits, etc., almost every day. They also ate *momos* [steamed dumplings], *chowmein* [spiced fried noodles], finger fries, etc.

A mother said, «They buy tiger biscuits, my son eats chips, he likes *kurkure* [spiced crunchy puffed snacks] and chips, he is fond of all *aaltu-faaltu* [junk]things. We are forced to buy for him.»

Almost all adolescents consume packaged snacks nearly every day. These snacks were readily available in their neighborhood. Many of them bought and consumed snacks from the money provided by their parents. Interestingly, parents were aware that the little money they give to their children would be used to purchase unhealthy food items, but they displayed their helplessness to stop them. Parents, though unknowingly, were encouraging their children to eat unhealthy food items. Financial constraints and lack of time were two important factors that forced parents to give children money to buy from small roadside vendors. Similar findings were reported, and they revealed that teenagers always opt for fast foods, soda pop, cookies and chips and in India, overconsumption of energy-dense, low-nutrient, and sugar-sweetened drinks continues to be a feature of adolescent diet (Camelo, Rodrigues, Giatti & Barreto, 2012; Shaikh, Patil, Halli, Ramakrishnan & Cunningham, 2016; Harrell *et al*., 2015). Most adolescent girls reported that they consumed cooked food from outside and named a few of them as burgers, *momos* (steamed dumplings), chilly potatoes, *chowmein* [spiced fried noodles], chips, biscuits, etc.

3.1.1. FAMILY AND COMMUNITY PRACTICES

Participants' responses were sought whether the same kind of food prepared in the home will be served to all household members like children, parents and grandparents. Nine out of ten mothers said that the entire family consumed the same food. However, one mother had a different view. She said,

«Should be different as per age» (Mother who is looking after her in-laws also).

Most of the participants in other groups also opined that the same food is served/consumed, but the grandparents shared that the food may be different for the elderly.

One grandparent shared,

«We give separate food to grandson» (Grandfather), while another said, «Different as per ones' choice» (Grandmother).

An attempt was made to study the role of family and community practices in preparing and serving food. A question was asked to check if some family members got preference over others while preparing and serving food. Most of the mothers felt that they take care of everyone's choice. However, the male head of the family is given importance. A mother shared, «I take care of the children's choice. First, I serve to my in-laws, then my husband and then children and I eat at end.»

Another informed, «I am aware of everyone's choice; when I buy *sabzi* [vegetables], I buy as per everyone's choice» (a mother who is a homemaker).

However, an adolescent girl shared, «My mother gives maximum preference to my father's choice, but otherwise, she takes care of the three of us.»

One father of an adolescent girl also informed, «Food is prepared as per the likes of the head of the family; maximum preference is given to my choice» (father of adolescent children).

Participants were asked to share if any discrimination existed while serving food to male and female members of the family. Though most participants said there is no difference, about 30% of participants felt that

some gender difference existed while serving food within the family. However, most participants (about 90%) felt that boys and girls should be served a similar and equal amount of food. A participant shared, «There should be no difference; one can eat less or more as per his/her choice.»

Some girl participants shared,

«Girls should eat more because they develop fast. They work more.»

«Girls should eat more to gain strength.»

Almost all participants shared that girls carry a tiffin to school, and at the same time, they occasionally buy food from outside. To quote some participants,

«Carry tiffin, sometimes buy from outside, sometimes take mid-day meal in school»; «We eat *momos* (steamed dumplings), we get 12 *momos* for Rs 20; we take our tiffin, and if we don't carry tiffin then mother gives us some money. We also eat with our friends and buy *kurkure* [spiced crunchy puffed snacks], chips, etc.»

Parents provide the primary contextual environment for home food. Our study revealed the role of a mother in steering the family's food choices; she is the deciding authority for home-cooked food. It was highlighted that the lady of the house was aware of the food choices of all family members and generally bought healthy and affordable food items while giving equal importance to everyone's preference. Hence, the parents' perspectives are to be considered during the proposed interventions. It will help to strengthen healthy food habits among adolescents. A core factor in developing healthy eating habits among adolescents was discovered to be the family environment and their parents (Eisenberg, Olson, Neumark-Sztainer, Story & Bearinger, 2004; Woodriff & Hanning, 2008; Chopra *et al.,* 2021). The research was done in various developed countries like the United States (Neumark-Sztainer, Story, Ackard, Moe & Perry,2000) and New Zealand (Utter, Scragg, Schaaf & Mhurchu, 2008) indicated that 30 to 42 per cent of adolescents take at least one family meal a day at home. The same is also reported in this study. Regarding the current community's routine diet, most participants reported consuming home-cooked food like *dal-chawal* (rice with a dish made with stewed legumes) and *roti-sabzi* (flat Indian bread with curry) at home.

Many parents and grandparents discussed the importance of fruits and milk for adolescents. Nevertheless, they spoke about their inability to provide fruits and milk to their growing children because of financial constraints. On the other hand, they also raised the issue that the quantity of fast food items is more than any fruit item, which can also be one reason to prefer unhealthy food over healthy food items. It was also concluded in a study that for people whose food choices are steered by their financial status, belonging to the less prosperous segments of society, there is an ample supply of foods with low nutritional quality that are often cheaper, more affordable and easier to access have become hugely popular in society and linking consumption to social status (Camelo *et al.,* 2012). Amid this complex food choice process, it becomes clear that adolescents are strongly encouraged to pick foods with poor nutritional quality over nutritive food by ignoring the consequences of eating such foods.

3.2. PERCEPTION AND KNOWLEDGE ABOUT HEALTHY AND UNHEALTHY FOOD

Participants were asked to share their views about healthy and unhealthy food items. The participants indicated the food items that should be consumed every day and those that should be avoided. Almost all participants shared that green vegetables, foods made of local cereals and pulses, fruits, milk and curd are healthy. In contrast, fried food, chips, *momos* (steamed dumplings), *chowmein* (spiced fried noodles), noodles, *samosa* (small turnover filled with vegetables or meat, fried, and served hot), food items made from refined white flour, among others, are unhealthy. Some participants reported perceptions like perceiving unhealthy foods as healthy and vice-versa. Another perception about food purchased from outside is worth mentioning. Some participants shared that it is all right to consume a burger, *chowmein* (spiced fried noodles), and similar foods if purchased from a restaurant, but the same is unhealthy if purchased from a local vendor. They attributed hygiene to this perception.

As an adolescent girl shared,

«Burger if purchased from a street vendor is not good, I eat burgers form a restaurant, they are good. Burgers are healthy.»

When participants were asked to name healthy food items, one mother shared, «Green vegetables, *dal* [rice with a dish made with stewed legumes], eggs, curd, milk, fruits, meat.»

A father said,

«*Dal-chawal* [rice with a dish made with stewed legumes], *roti-sabzi* [flat Indian bread with curry], sprouts, seasonal fruits, green vegetables.»

An adolescent girl said,

«Home-cooked food, *roti-sabzi* [flat Indian bread with curry], *dal* [Indian dish made with stewed legumes], *paneer* [cheese].»

Near uniform response was recorded when the participants were asked to name unhealthy food. A father shared,

Food from outside, fried food, food made from *maida* [white flour made from wheat], *chhole bhature* [a deep-fried flat bread made from fine wheat flour served with spicy chickpeas curry], *samosa* [small turnover filled with vegetables or meat and fried and served hot], *chowmein* [spiced fried noodles], *momos* [steamed dumplings].

An adolescent girl told when asked to name unhealthy foods, «Junk food, pizza, burger, momos [steamed dumplings], rolls [small, usually round or oblong individual loaf of bread filled with fried pieces of vegetables or meat], biscuit, chips.»

Some interesting perceptions about food items were noted. One participant informed, «Food purchased from outside *i.e.,* chowmein [spiced fried noodles], burger is unhealthy; burgers are still better, it's like toasted bread with very little oil.»

A grandparent said, «Stale food, food items from outside *i.e. chowmein* [spiced fried noodles], *momos* [steamed dumplings], pizza are unhealthy.»

Certain unusual perceptions were also noticed. In this regard, a mother shared, «Vegetables, *dal* [a dish made with stewed legumes], fruit; the curd is healthy; *chawal* [rice] is not good but children like it».

A father shared similar views, when declared «*Roti* [flat Indian bread] every day; rice should not be consumed every day; consuming rice more often can lead to cough.»

A grandparent said, «There is no such item that is not good for human health. If it is not cooked well, then it is not good.»

Our study revealed an interesting finding of giving weight age to hygiene over the food ingredients. Adolescents believe that consuming food items like burgers, *chowmein* (spiced fried noodles), among others, when purchased from a restaurant is not harmful because it is prepared hygienically. However, one should avoid eating the same if procured from a small-time kiosk or a cart. The acceptance of such food behavior may be influenced by factors such as group conformity and media advertisement hype. The way the media cast fast food as nutritious and hygienic as homemade food, the acceptance of such food increases among adolescents because they spend more time on the television screen. Studies have proven that the immense influence of the media, brandish by prominent celebrities and major fast-food corporations through television and radio advertisements, billboards, movies, and other communications media, is influential for adolescents. In such situations, these people tend toward high-calorie items, as shown in advertisements (Camelo *et al.,* 2012).

The family's beliefs, misconceptions and practices about certain food items were also reported in this study. Many studies reported eating as an important family practice (Morgan, 1996, 2013). Food preferences, behaviors related to eating, and identities are mainly learned and encountered within families (Lupton, 1996; Valentine, 1999). Children follow what they learn from their parents, and when they see certain practices being followed by adult family members they do not question them. Some participants considered cauliflower to be unhealthy, while a few others thought that *brinjal* was not healthy. In the Indian context, questioning the elders is not encouraged; hence, the myths are transmitted from one generation to another and are blindly followed. Some mothers believed that eating rice was not a healthy practice, and they made sure that their family members also did not consume rice.

3.3. INFORMATION SEEKING

The participants were asked to inform their choice of information seeking. A majority of the participants felt that they would like to know more about the right food choices. They had some knowledge about healthy and unhealthy food items, but were interested in learning more about healthy food. People, including adolescents, are ready to receive nutrition education. An adolescent girl said, «I want to learn about healthy and unhealthy food. I don't know much about the burger, is it healthy or unhealthy.» Another girl asked, «I would like to learn more about the difference between healthy food and junk food. Why *samosa* (small turnover filled with vegetables or meat and fried and served hot) made at home is unhealthy.»

A grandparent said, «I can't say this that I have complete knowledge. If you have more knowledge then you can tell us».

To quote, a father said, «What is a healthy food, food that will enhance mental ability.»

A mother asked, «What is good for our body.»

Another mother queried, «I would like to learn about timings. When should we eat, the time, quantity, etc.?»

Adult study participants believed that though they have the requisite knowledge about nutrition, they would like to learn and understand it further. They were conscious that it was their responsibility to provide the most nutritious meal that they could afford to their family. Adolescents shared that they have limited sources to comprehend why they are restrained from consuming food that appeals to the palate. Participants in both communities revealed their keenness to enhance their nutrition-related knowledge.

The present study revealed consciousness and cognizance about healthy and unhealthy food among adolescent girls and community members residing in low-socioeconomic status (SES) urban and peri-urban communities of Delhi. Numerous factors were found to influence an adolescent's food habits. At the individual level, taste, nutrition-related awareness and self-efficacy were found. Similarly, at the social-environmental level, parents' and peers' pressure were noted to influence one's food habits. Physical environmental (*e.g.* school canteen, fast food establishments), and macro system (*e.g.* food advertisements) effects have also been identified in various research (Pearson, Griffiths, Biddle, Johnston & Haycraft, 2017; Story, Neumark-Sztainer & French, 2002; Banna, Buchthal, Delormier, Creed-Kanashiro & Penny, 2016; Pearson, Ball & Crawford, 2011; Neumark-Sztainer, Larson, Fulkerson, Eisenberg & Story, 2010).

The current situation of unhealthy eating habits of adolescent girls has implications for their health. Overweight, obesity, and nutrition-related non-communicable diseases (NCDs) are the major health problems in India (Ranjani *et al.*, 2016). Diet quality, particularly the low nutrition quality junk foods, influences increased nutrition-related NCDs (Lane *et al.*, 2020; Nardocci, Polsky & Moubarac, 2020; Yang, Zhang, Steele, Moore & Jackson, 2020). This kind of dietary intake is associated with weight gain and obesity, the onset of diabetes and hypertension and related mortality (Kim, Hu & Rebholz, 2019; Lawrence & Baker, 2019; Askari *et al.*, 2020; Rauber *et al.*, 2021; Bonaccio *et al.*, 2021; Pagliai *et al.*, 2021). Hence, most NCDs prevention interventions include dietary modification as one of the key interventions (Daivadanam *et al.*, 2013). These dietary interventions are based on calorie requirements for different population groups. Though it is known that community's awareness alone is not sufficient to achieve desired behavior, community awareness generation on best dietary behavior and, thereby, behavioral interventions are to be implemented. The community, specifically adolescent girls, are keen to enhance its knowledge of diet. Further, the interventions should promote regular family meals instead of junk foods.

The current study has some limitations. The data collection was restricted to two communities in Delhi. Only adolescent girls were selected from these two communities of a city, and boys were not taken, limiting the results' generalization. However, due to the type of data, it provided a viewpoint of the community and warranted an educational intervention to improve the people's perceptions and behavior.

4. CONCLUSION

There is little information about knowledge and practices related to dietary patterns among adolescents in India; however, the available literature suggests that adolescents are prone to unhealthy eating habits that can lead them to the development of non-communicable diseases and primarily obesity and hypertension. It is thus necessary to bring some behavioral modifications related to dietary patterns. Regular family meals could serve as a role model for healthy eating behaviors. The community has shown willingness to receive nutrition education. An educational intervention to modify eating practices and the healthfulness of the diet can be implemented by targeting adolescents, their parents and other community members.

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