



# What influences urban Indian secondary school students' food consumption? – A qualitative study

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## ABSTRACT

Indian adolescents' over reliance on foods such as nutrient-poor snacks, sugar-sweetened beverages and take-away foods puts them at significant risk of obesity and several diet-related chronic diseases. Therefore, the factors that influence their dietary behaviours need to be better understood in order to develop effective nutrition promotion strategies. The purpose of this qualitative inquiry was to investigate adolescents', parents', teachers', and school principals' perceptions of the main influences on adolescent eating behaviours. Fifteen adolescents aged 14–15 years, 15 parents, 12 teachers and 10 principals from 10 private English-speaking schools in Kolkata, India, participated in semi-structured interviews. The digitally-recorded conversations were transcribed verbatim and analysed thematically. The 52 interviews revealed a number of factors that may influence adolescents' eating habits including parent and peer influences, home and school food environments, and the mass media. Emerging evidence suggests that future health and nutrition promotion interventions need to target the different influences on Indian teenagers' food consumption.

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## 1. Introduction

Over the last decade, India has witnessed an unprecedented rise in the prevalence of overweight and obesity among adolescents (Khadilkar, Khadilkar, Cole, Chiplonkar, & Pandit, 2011; Rani & Sathiyasekaran, 2013). The health implications of these conditions can be profound (Caballero, 2007; Nishida, Uauy, Kumanyika, & Shetty, 2004). Obese adolescents are at significant risk of developing adult obesity (Black et al., 2013) (Koplan, Liverman, & Kraak, 2005) and its unhealthy consequences including coronary heart disease, non-insulin dependent diabetes mellitus, several cancers, osteoarthritis (Misra & Khurana, 2011; Stein & Colditz, 2004) and psychosocial problems such as depression and low self-esteem (Daniels, 2006). Therefore, the promotion of healthy eating habits in adolescence can significantly aid in preventing morbidity and mortality from the emerging epidemic (Meredith & Dwyer, 1991; World Health Organization, 2003).

There has been a significant change in the food consumption patterns of young adults in India over the past two decades (Popkin, 2001; Ramchandran, 2011; Shetty, 2013). Although limited, local

evidence suggests that Indian adolescents generally consume poor diets (Kotecha et al., 2013; Singla, Sachdeva, & Kochhar, 2012). These are characterised by high consumption of energy-dense, nutrient-poor foods (Goel, Kaur, & Gupta, 2013; Singh, Maheshwari, Sharma, & Anand, 2006), and low consumption of fresh fruits and vegetables (Bachani, Sogarwal, Shukla, Shelat, & Gupta, 2013). Unhealthy dietary behaviours including meal skipping and snacking on fast food items are common among Indian adolescents (Goel et al., 2013; Kotecha et al., 2013; Mahajan, Grover, & Batra, 2012). Such unhealthy meal practices have been linked to the mounting prevalence of obesity and non-communicable diseases worldwide (Birch & Anzman, 2010; Wang, Chen, Shaikh, & Mathur, 2009).

A number of factors may influence the eating behaviours of adolescents (Story, Neumark-Sztainer, & French, 2002). They may either promote or impede healthy dietary practices. Hitherto, food researchers have used a number of theoretical models to explain dietary behaviours (Abood, Black, & Feral, 2003; Brunso, Scholderer, & Grunert, 2004; Conner, Norman, & Bell, 2002; Di Noia, Schinke, Prochaska, & Contento, 2006; Hoek, Luning, Stafleu, & de Graaf, 2004). Social Cognitive Theory (SCT) (Bandura, 2004), the Health Belief Model (HBM) (Daddario, 2007), the Theory of Planned Behaviour (TPB) (Ajzen, 1991), the Trans-theoretical Model (TTM) (Prochaska & Velicer, 1997) and the Food-

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Related Lifestyle Model (FRLM) (Brunso & Grunert, 1998) are among the most commonly used theories in food behaviour research.

A range of factors including intrapersonal, social and environmental factors influence young people's food consumption (Ganasegeran et al., 2012; Larson & Story, 2009; Savige, MacFarlane, Ball, Worsley, & Crawford, 2007; Story, Neumark-Sztainer, et al., 2002). Some common intrapersonal predictors include demographic factors such as age and gender (Cooke & Wardle, 2005), snacking (Savige et al., 2007), taste preferences (Holsten, Deatrick, Kumanyika, Pinto-Martin, & Compher, 2012), identity and the development of autonomy (Stok, De Ridder, Adriaanse, & De Wit, 2010), body image (Hill, 2002), health attitude and nutrition knowledge (Franko, Cousineau, Rodgers, Roehrig, & Hoffman, 2013; Lake et al., 2004), self-efficacy (Haerens et al., 2008) and food preparation skills (Hartmann, Dohle, & Siegrist, 2013). Common social determinants include parental and family influences (Lachal et al., 2012; Pearson, Ball, & Crawford, 2012), peer group (Finnerty, Reeves, Dabinett, Jeanes, & Vögele, 2010) and culture (Turrell & Mathers, 2000). The home environment (Hendrie, Sohonpal, Lange, & Golley, 2013), the school environment (Burke, 2002), the local neighbourhood (Story, Neumark-Sztainer, et al., 2002) and mass media (Boyland & Halford, 2013) are commonly recognised environmental influences.

Although empirical evidence on the influences on dietary behaviours of adolescents is expanding, very limited evidence exists about Indian adolescents. Therefore, in order to inform future nutrition interventions to facilitate healthy eating among 238 million Indian adolescents, it is important to understand key stakeholders' perceptions of the influences over the eating habits of this population. The main stakeholders include adolescents, their caregivers, teachers and school principals. Evidence suggests that caregivers and their teenagers often share different perceptions of food-related issues such as healthy diets and family meals (Boutelle, Lytle, Murray, Birnbaum, & Story, 2001; De Bourdeaudhuij & Van Oost, 1998; Fulkerson, Neumark-Sztainer, & Story, 2006; Woodruff & Hanning, 2008). Similarly, teachers and school principals may also have diverse views regarding adolescents' dietary practices. The views of all these four stakeholder groups are important to promote adolescents' health and well-being. Therefore, the aim of this qualitative inquiry was to assess the influences on adolescent dietary behaviour from the perspectives of Indian adolescents, as well as their parents, teachers, and school principals.

## 2. Methods

The social constructivism paradigm was employed to inform this qualitative inquiry (Denzin & Lincoln, 2011). Through this phenomenological framework, the researchers aim to understand the perceptions of respondents of the situation being examined (Creswell, 2009). These perceptions are primarily governed by the culture in which the respondents live and are developed through their interactions with the members of the community (Creswell, 2013). The participants were purposefully recruited (Kaplan, Korf, & Sterk, 1987) from ten private English-speaking secondary schools (four single-sex schools and six co-educational schools) located in Kolkata, India. The participants were exclusively selected from private schools because the prevalence of overweight and obesity is more acute among students attending such schools compared to public schools (Mehan, Munshi, Surabhi, Bhatt, & Kantharia, 2012; Puri, Bhatia, Swami, Rai, & Mangat, 2008).

School principals were approached to participate in the study. They were also requested to assist in the selection of other participants i.e. year nine students (aged 14–15 years), parents and

teachers. School principals and nutrition teachers were chosen as potential informants for this study because they were expected to be well-informed of the school food environment and the food habits practised by students in this environment. Moreover, parents were considered to be suitable informants about this topic as they were primarily responsible for their adolescent's daily meals. Year nine students were included in the study because by this age most teenagers are expected to have well-developed individual food preferences. Moreover, no national level examinations were scheduled for these students (which are primarily conducted in year 10 and 12); hence, it was convenient to carry out the inquiry in this age group.

Teachers and adolescents were invited to take part in the study through announcements made in school assemblies by the school heads. To facilitate recruitment of parents, a note was sent via students' school diaries by the school staff. A recruitment pack comprising a Plain Language Statement and Consent Form was presented to students' parents, teachers, and school principals. The Plain Language Statement, which provided a broad description of the intended study, was given to all the participants, including the students. The research protocols and design were approved by Deakin University's Health Ethics Advisory Group (HEAG-H 171\_2014).

Upon receipt of completed consent forms, semi-structured interviews were conducted with the participants on the school premises. All the interviews were conducted by the lead researcher (NR). Before being interviewed, participants were verbally notified that the conversations would be audio-recorded (King, 2004a), that the recorded data would remain confidential (King, 2004a), and that they could withdraw from the investigation at any time. However, written notes were taken when one school principal did not consent to voice recording. The recruitment of participants into the study continued, until the interview data showed saturation of content (i.e. the point when no additional themes were reported in new interviews). The average duration of the face-to-face interviews was 24 min. Data collection lasted seven months, from February 2015 to August 2015.

One common question about the influences on adolescent food behaviours was posed to all the participants. This was "What is the most likely influence on an adolescent's food habits?" The face validity of this open-ended question was verified by pre-testing it with the first two interviewees from each stakeholder group.

The lead researcher (NR) undertook the transcription of the audio recordings. Two teachers and three parents reviewed their transcripts to confirm accuracy and completeness of the transcribed data. None of these participants made any changes in their transcripts, suggesting they agreed with the researcher's transcribed version. Neither the school principals nor the students wished to review their transcripts.

The transcribed data were analysed thematically using the NVivo 10 software program (QSR International Pvt Ltd. 2010) along with some manual coding (King, 2004b). This software program facilitated the identification of themes and the extraction of associated quotations from the data set. Additionally, the Leximancer text analysis program (Leximancer Pty Ltd. 2011) was also employed to verify themes established in the NVivo analysis. A four-step method involving data immersion, coding, developing categories, and the classification of themes was employed to analyse the data (Creswell, 2013). Repeated reading of the transcriptions helped to develop familiarity with the transcribed data, thereby, facilitating data immersion (Creswell, 2013). The Template Analysis technique (King, 2004b) formed the basis for the thematic analysis of the transcribed data. This technique involves the development of a template (a set of codes) which represents the main *a priori* themes in the literature and in the data identified by

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