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# Perceptions of healthy eating amongst Indian adolescents in India and Canada



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#### ABSTRACT

*Introduction:* Dietary patterns have contributed to the rising prevalence of overweight and obesity among Indian adolescents. Yet there are limited studies on their perspectives on healthy eating. The purpose of this study was to understand perceptions and attitudes of Indian-origin adolescents in India and Canada that may contribute to healthy eating behaviour.

Methods: Qualitative data collection and analysis of 13 focus group discussions (FGD) was conducted among 34 boys and 39 girls (total number of participants: 73) of different weight and socioeconomic status (SES) in rural and urban India, and urban Canada aged 11–18 years.

Results: All adolescents perceived homemade foods, and foods high in vitamins, minerals and fiber as healthy. Rural Indian adolescents also identified contaminant-free food as important. Opinions differed regarding the health value of consuming meat, and amongst Canadian adolescents, the health impact of Western versus Indian diets. Identified benefits of healthy eating included improved energy for Indians, and disease prevention for Canadians and urban Indians. Identified barriers across all settings included peers; and availability, access and affordability of unhealthy foods. Urban Indians and Canadian girls also reported academic stress and lack of time as barriers. Canadian girls reported limited parental supervision during mealtimes as an additional barrier. Facilitators to healthy eating included parents, friends and personal preferences for healthy foods.

Conclusion: This study suggests potential targets for family-based and school-based education programs and policies to improve dietary habits of Indian and Indo-Canadian adolescents which include, culturally focused nutrition education and guidelines, academic stress management strategies, parental education, food hygiene regulations and restriction on the sale and advertising of unhealthy foods.

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## 1. Introduction

Worldwide, the prevalence of overweight and obesity amongst children and adolescents has increased 47% in the last 25 years in high and low-middle income countries (LMICs), and changing dietary patterns over the years have in part contributed to this trend (Ng, Fleming, & Robinson et al., 2014). In many LMICs, urbanization has resulted in changing food landscapes with increased availability of energy dense, low nutrient convenience foods, along with decreased opportunities for physical activity consistent with obesogenic environments (World Health Organization, 2015). In India, 5% of children and adolescents are reported to be overweight or obese (Ng et al., 2014), whereas in Canada the prevalence of overweight or obesity for children and adolescents is 26% (Shields, 2006)

Eating habits (Craigie, Lake, Kelly, Adamson, & Mathers, 2011) and obesity (Singh, Mulder, Twisk, van Mechelen, & Chinapaw, 2008) in childhood and adolescence track into adulthood. This is of particular importance for people of Indian origin, who constitute

Abbreviations: LMIC, Low-middle income country; SES, Socioeconomic status; FGD, Focus group discussion; BMI, Body mass index.

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the second largest ethnic group in the world and one of the fastest growing immigrant groups in Western countries (Malenfant, Lebel, & Martel, 2010). Indians are at increased risk for developing chronic lifestyle diseases such as type 2 diabetes, the metabolic syndrome and cardiovascular disease, and may manifest these diseases 5–10 years earlier compared to individuals of other ethnicities (Bhopal, 2002; Joshi, Islam, &Pais et al., 2007; Nightingale, Rudnicka, Owen, Cook, & Whincup, 2011; Rajpathak et al., 2010). Therefore, early interventions to improve dietary habits are important amongst Indian children and adolescents.

Promotion of healthy eating is a global goal (World Health Organization, 2004). Yet, there are limited studies on Indian adolescents' perspectives on healthy eating. Models of health behaviour clearly indicate the important role of attitudes, along with perceptions of barriers and facilitators in determining healthy behaviour, which in turn are important for designing interventions to promote healthy eating (Janz, Champion, & Strecher, 2002; Stroebe, 2000). This qualitative study aimed to identify perceptions and attitudes towards healthy eating amongst adolescents of Indian origin in two countries (India and Canada) across sex, weight status, socio-economic status (SES), and urban/rural residence, to inform current intervention planning and policy review, as well as generate hypotheses for future research.

#### 2. Methods

Focus group discussions (FGD) were conducted to explore adolescents' dietary experiences and attitudes towards healthy eating. The study also evaluated perceptions about physical activity using the same methods, which have been described in an earlier paper (Rajaraman et al., 2015). The Health Belief Model was used to provide a framework for the development of the interview guides. According to this model, individual health behaviours are influenced by perceived susceptibility to and severity of disease; perceived threat of disease; perceived benefits of and barriers to preventive action; and cues to action (Janz et al., 2002; Stroebe, 2000). This framework was used to develop interview guides to explore adolescents' understanding of a healthy diet, and perceived benefits, disadvantages, barriers and facilitators of healthy eating. Within the framework of the Health Belief Model, healthy eating was the health behaviour outcome of interest. As such, our analysis focused on understanding the factors that promote or hinder healthy eating, specifically, perceptions of healthy eating, and perceived barriers and facilitators to healthy eating. Data were also gathered about general eating habits, as well as perceptions of unhealthy eating and motivators for and deterrents to unhealthy eating, as these are considered to be important to the adoption of healthy eating behaviours. The probing questions used to facilitate discussions in the focus groups are shown in Table 1. All groups were asked the same set of questions. The barriers, facilitators, benefits and disadvantages address both healthy and unhealthy eating. For instance, factors that are perceived as barriers to healthy eating serve as facilitators for unhealthy eating. However, in reporting the results we emphasize healthy eating, as research supports a focus on positive messaging towards healthy eating rather than negative messaging towards unhealthy eating (Bos, Lans, Van Rijnsoever, & van Trijp, 2015).

#### 2.1. Recruitment and data collection

The sample drawn for the FGDs is shown in Table 2. Eight FGDs were conducted in South India and five FGDs were held in Canada in 2012. All FGDs were stratified by sex (male/female). All FGDs in India were stratified by urban/rural residence; and in urban India, by SES (high/low). All FGDs in urban high SES India and in Canada were stratified by body weight (overweight/normal weight). There weren't enough overweight participants in rural and low SES urban groups in India to conduct weight stratified FGDs. Ethics approvals were obtained from the local institutional ethics committees. Informed consent was obtained from parents and participants.

In South India, adolescents between the ages of 14 and 15 years were recruited from schools in Bangalore, Karnataka (urban); and Palamaner area in the state of Andhra Pradesh (rural). School fee structures were used as an indicator of SES and a questionnaire regarding house ownership, parental occupation and education, and household assets was used to validate the SES classification. Body Mass Index (BMI) was measured to categorize participants' nutritional status, using the WHO Growth Reference standards (De Onis et al., 2007). Two members of the research team served as facilitator and note-taker respectively, and conducted FGDs at the participants' schools in their preferred language (Kannada, Telugu or English). FGD recordings were translated to English and transcribed.

In Canada, Indo-Canadian adolescents between the ages of 11 and 18 years were recruited from a Hindu temple, a church and a South Indian ethno-cultural association in the Greater Toronto Area. Canadian participants received a compensation of five Canadian dollars. All FGDs were conducted at the respective institutes, in English by a single member of the research team who served as facilitator and note-taker.

## 2.2. Data analysis

Data were analyzed using a framework approach for qualitative analysis (Gale, Heath, Cameron, Rashid, & Redwood, 2013). After reviewing the transcripts and field notes, researchers wrote a detailed summary for each FGD, which was used to develop an analytical framework with codes under each thematic category. NVivo 9.2 software was used to code the interviews (QSR International, 2010). The coding framework was applied to two Indian and two Canadian transcripts prior to being refined and applied to all transcripts. Coding was conducted by four members of the research team. The senior researcher reviewed a sample of coded transcripts to ensure inter-rater reliability. Microsoft Excel was used to chart the data according to categories and FGD composition, and analyze and interpret thematically.

#### 3. Results

Table 3 provides a summary of the results by focus group.

 Table 1

 Focus group discussion probes on factors affecting healthy eating behaviours.

General eating habits Perceptions of healthy and unhealthy eating Perceived benefits of healthy eating Perceived disadvantages of unhealthy eating Perceived barriers to healthy eating Perceived facilitators for healthy eating What do you eat for meals and snacks?
What is healthy eating? What is unhealthy eating?
What are the benefits of healthy eating?
What are the consequences of unhealthy eating?
What makes it difficult for you to eat healthily?
What helps you in eating healthily?

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