

Food Choice Drivers in the Context of the Nutrition Transition in Delhi, India

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ABSTRACT

Objective: To understand factors that influence the process of food decision-making among urban Indian women in the context of the nutrition transition.

Design: Mixed methods.

Methods: Semistructured interviews and sorting of 12 *a priori* hypothesized drivers into categories of always, sometimes, and never influencing food choice.

Setting: Delhi, India.

Participants: Thirty-eight women aged 20–35 years selected from the roster of a prospective cohort study.

Phenomenon of Interest: Drivers of food choice.

Analysis: Interviews were transcribed verbatim and translated, then analyzed using an iterative, constant comparative process. Differences in pile sort rankings across tertiles of body mass index and wealth index were tested using Fisher exact tests.

Result: Four primary themes emerged: (1) family influence; (2) cultural perceptions, with 3 subthemes of beliefs relating to (a) outside food and less healthful food, (b) seasonality, and (c) hometown food; (3) convenience, with 3 subthemes of (a) decisions regarding procurement of food, (b) not having time to cook, resulting in eating out or purchasing premade foods, and (c) eating whatever is available at home or is left over from previous meals; and (4) habit, with 2 subthemes of (a) subconscious decisions and (b) food roots. Responses from the pile sort activity revealed perceptions that food safety and health most influence food choice whereas marketing and advertisements least influence it.

Conclusions and Implications: Young adult women in Delhi seem to rely on preferences of their families, habits and perceptions established in childhood, convenience, and food safety and health when making choices about food. These aspects of decision-making should be targeted in future interventions aimed at improving dietary intake in this population.

Key Words: India, Diet, food preferences, mixed methods, urban health (*J Nutr Educ Behav.* 2018;■■:■■–■■.)

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INTRODUCTION

As household spending power has increased in India, dietary intake has shifted in a process called the nutrition transition¹: consumption of energy-dense, processed foods such as fried and salted snacks and prepared sweets is increasing. Moreover, although carbohydrates still account for a large proportion of total energy intake (73% in rural areas and 68% in urban areas²), coarse grains (whole-wheat flour, brown rice, millet, barley, and sorghum) are being replaced with refined grains (white flour and polished white rice).³ However, distinct from the nutrition transitions characterized in China,⁴ Mexico,⁵ and Brazil,⁵ the intake of meat and

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sugar-sweetened beverages has not risen dramatically in India.⁶

Traditional diets in India vary considerably across regions, with whole wheat-based breads (eg, chapatis or roti) contributing a majority of calories in the north and rice and lentils (including *dosa* [rice-lentil crepe] and *idli* [steamed rice-lentil cake]) being the major contributors in the south. Traditionally, dairy products, with the exception of yogurt, are more common in the north (eg, milk, *ghee* [clarified butter], and *paneer* [cheese]) and coconut is more common in the south. A meal typically consists of a staple grain with seasonal vegetables (depending on the recipe, the cooking method could be shallow or deep frying) and sometimes a pulse/lentil-based dish (pressure-cooked).

The nutrition transition in India has been accompanied by an epidemiological transition, particularly in urban areas. A recent analysis by the India State-level Disease Burden Initiative found that in 2016, noncommunicable diseases (NCDs) such as cardiovascular disease, diabetes, and cancer accounted for 61.8% of deaths compared with undernutrition and communicable, maternal, and neonatal diseases, which together accounted for just 27.5% of deaths.⁷ They also found that in 1990, Delhi, which is located in the northern part of India, was among the first areas in India to experience the epidemiological transition; it had more deaths attributable to NCDs than undernutrition and communicable, maternal, and neonatal diseases at that time.⁷ Delhi, which is the nation's capital and second largest city (the population according to the 2011 Census was approximately 11 million), is also uniquely diverse

in its food culture, although heavily influenced by traditional northern Indian cuisines. Given this evidence of a substantial and increasing burden of NCDs in India, and Delhi specifically, interventions targeting key risk factors for NCDs, such as dietary intake, are urgently needed.⁸

To develop such interventions, a greater understanding of underlying drivers of dietary behaviors in India is needed. As outlined by the Food Choice Process Model, decisions relating to food choice are frequent, complex, and multifaceted, and vary over both personal and historical time.^{9,10} Research conducted in high-income countries found that cultural ideals are among the most important drivers of food choice, as are personal factors such as taste preference and identities.¹⁰ Only 1 previous study explored drivers of food choice in the context of India. That study, which was conducted in rural Kerala, the southernmost state of India, found that food choices within the household were strongly influenced by the preferences of husbands and children, as well as cost.¹¹ Given that Indian women are the primary cooks in the household¹¹ and that they are more likely to be overweight or obese compared with men,¹² the 2 objectives of this study were (1) to determine the drivers of food choice among young adult women living in Delhi and (2) to interpret these drivers in the context of the nutrition and epidemiological transitions.

METHODS

Participants and Recruitment

The researchers used a combination of semistructured and structured quali-

tative methods to identify drivers of food choice among women aged 20–35 years living in Delhi. A total of 38 women were purposively selected from the roster of a prospective cohort study called the Centre for Cardiometabolic Risk Reduction in South Asia (CARRS) Surveillance Study.¹³ The CARRS study used multistage probability sampling to select a representative sample of Delhi at baseline, in 2014, and has continued to follow up with participants annually to collect data on incident disease. To be eligible for inclusion in the CARRS study, individuals had to be living in Delhi for ≥5 years with no plans to move from Delhi in the next 5 years.

For the purposes of this mixed-methods study, 2 categories of body mass index (BMI) and tertiles of household wealth index were calculated using the CARRS dataset for women age 20–35 years. Body mass index was derived as weight (in kilograms) divided by height squared (in meters) using measured values of weight and height obtained by trained field staff. Wealth index was derived using principal component analysis based on household amenities (separate cooking room and toilet facilities) and assets (television, refrigerator, washing machine, microwave, mixer-grinder, mobile phone, DVD player, computer, car, motorized bike, and bicycle).¹⁴ Women were enrolled from each category of BMI-by-wealth index (Table 1).

Sociodemographic characteristics including age, educational attainment, employment status, household size, monthly household income, and religion were also obtained from the CARRS dataset. The CARRS survey questions were derived from questionnaires used in the Chennai Urban Population Study, the Chennai Urban Rural Epidemiological Study, and the Sentinel Surveillance Study,¹³ and all surveys were administered in person by trained field staff.

This study was approved by the Institutional Review Boards of the University of North Carolina at Chapel Hill and Harvard University, and the Centre for Chronic Disease Control Ethics Committee. Written informed consent was obtained from all participants. Participants were not compensated for their participation.

Table 1. Distribution for Sample Selection of Women Aged 20–35 Y (n = 38)

Body Mass Index, kg/m ²	Wealth Index (Tertile)		
	1	2	3
18.5–24.9	6	6	6
≥25	6	6	8

Note: Data are shown as n. Wealth index was derived using principal component analysis based on household amenities (separate cooking room and toilet facilities) and assets (television, refrigerator, washing machine, microwave, mixer-grinder, mobile phone, DVD player, computer, car, motorized bike, and bicycle).

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