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# Food behavior in student residence halls: a setting for health promotion

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## ABSTRACT

**OBJECTIVE:** To qualitatively describe food practices of students living in a residence hall.

**METHODS:** A quantitative and qualitative study was carried out in a drawn sample of 100 university students living in a residence hall in the city of Campinas, Southeastern Brazil, in 2004. Students were interviewed using a questionnaire to collect 24-hour food recall information including open questions on shopping and intake practices. Criteria were established for the analysis of meal quality. The Chi-square and the exact Fisher test were used at a 5% significance level. Representations based on Moscovici's theory of social representations were obtained in the interviews and analyzed.

**RESULTS:** Assessment of 24-hour food recall: breakfast – 30% of the students skipped it, 13% had full, 37% had standard and 20% had partial meal; lunch – 5% skipped, 72% had full, and 23% had partial meal; dinner – 1% skipped, 36% had full, and 63% had partial meal. Lunch was the best quality meal and of those who had lunch, 63% had it at the university cafeteria. Of all respondents, 48% had no fruit and 39% had no milk. Most (69%) showed an individual food behavior and 43% thought that having meals together had a positive impact on their food behavior. The experience of becoming the provider of their own food changes the students' food behaviors and representations.

**CONCLUSIONS:** Diet quality, patterns of commensality and social representations of food provide input for developing healthy diet care and health promotion.

**KEYWORDS:** Students. Feeding behavior. Food habits, Food and nutrition education. Health promotion. Student's food behavior

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## INTRODUCTION

Nutrition is a major element for health promotion.\* The implementation of targeted actions is a guideline included in the National Brazilian Policy for Food and Nutrition,\*\* and also an important recommendation of the 57th Assembly of the World Health Organization.\*\*\* The study of food behavior opens up more opportunities for health promotion since multiple approaches can be applied in the large study field of this concept. It was adopted the theoretical framework of Diez Garcia concept's of eating behavior:\*\*\*\* “procedures

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\* Organização Pan-Americana da Saúde. Carta de Ottawa. Primeira Conferência Internacional sobre promoção da saúde, Ottawa; 1986. Disponível em: <http://www.opas.org.br/promocao/uploadArq/Ottawa.pdf> [acesso em 20 mai 2004]

\*\* Ministério da Saúde. Política nacional de alimentação e nutrição, 2ª ed. Brasília: Ministério da saúde, 2003. Available at: <http://dtr2004.saude.gov.br/nutricao/> [access on Sept 15 2006]

\*\*\* World Health Assembly. Global strategy on diet, physical activity and health [relatório na internet]. Geneva; 2004. [WHA57.17]. Available at: [http://www.who.int/gb/ebwha/pdf\\_files/WHA57/A57\\_R17-en.pdf](http://www.who.int/gb/ebwha/pdf_files/WHA57/A57_R17-en.pdf). [access on Oct 20, 2006]

\*\*\*\* Garcia RWD. Representações da comida no meio urbano. [doctoral thesis]. São Paulo: Faculdade de Psicologia da USP, 1999.

related to food practices in human groups (what, how much, how, when, where and with whom people eat; food choice and aspects related to food preparation) associated to social and cultural characteristics, i.e., to individual and collective subjective aspects related to eating and food (food and preparations adequate to different situations, food choice, food combination, desired and valued food, values attributed to food and preparations and what we believe we eat or what we would like to have eaten)". This concept allows appraising the eating event from the following different perspectives: historical,<sup>4</sup> social and anthropological,<sup>3,6,18</sup> nutritional, and educational. The first two perspectives examine the social and cultural construction of human beings based on the assessment of what and how we eat. The nutritional perspective<sup>7,15</sup> assesses what and how much is consumed as a major determinant of social construction of the health-disease process. The educational perspective<sup>2</sup> offers an opportunity for creating healthy diet practices by means of systematic interventions involving the multiple dimensions of food behavior and planning actions in both public policies<sup>20,21</sup> and care actions,<sup>21,\*</sup> health promotion,<sup>\*\*</sup> and health education.<sup>2</sup> As eating is at the same time a biological and cultural event, education interventions need to be based on intake knowledge. There is also a need to understand the meanings people give to their practices within the whole eating event.<sup>12</sup> The symbolic universe of food behavior can be understood according to the theory of social representations conceived by Moscovici<sup>16</sup> as "an arranged body of knowledge and a psychic activity through which human beings make social and physical reality intelligible, and they become part of a group developing a daily exchange relationship and losing up their power of imagination".

The practice of eating together, known as commensality, meaningfully shows this subjective knowledge through food sharing,<sup>8</sup> comprising meanings not necessarily associated to intrinsic food characteristics.<sup>19</sup> There are major issues such as the complex food system of different cuisine cultures with their own rules, representations, and practices.

Understanding food behavior and group relationship through commensality, giving priority to the individual and to intersubjective relationships for health production, makes it feasible to construct interventions from the perspective of the theoretical concept of health promotion: "the process of capacitating the community to act for improving the quality of life and health with greater involvement in its management".

Based on these references, the present study aimed to qualitatively describe food practices among university students living in residence halls and to assess the associated patterns of individuality/collectivity.

## METHODS

The study sample was drawn from 253 households in a residence hall comprising a total of 825 undergraduate and graduate students in the city of Campinas, Southeastern Brazil, in 2004. A pilot sample was drawn consisting of 20 households for a pre-test to collect information on food shopping habits (individual/collective) of the subjects. Based on this information collected, it was estimated a representative sample of 100 households randomly selected. A student, interlocutor of the household food behavior, was selected based on the following criteria: being an undergraduate or graduate student, living in the residence hall for at least a year, being 18 years or more, and showing willingness to participate in the interview. There were excluded studios and smaller houses with family residents (mothers and children or couples) where not all of them were necessarily associated to the university.

A participating observation approach and structured interview were applied.<sup>14</sup> Data were entered in an exclusively developed form. There was collected information on the respondent's food behavior in the last 24 hours (food recall), the household's food shopping habits, representation of healthy food and commensality-related behaviors.

Food practices were assessed based on intake information. The 24-hour food recall data was evaluated taking into account only whether food was or was not taken during the meals following adapted Gambardella et al<sup>7</sup> criteria (Table 1). Meals were classified according to these criteria based on food that should be included in the daily intake.<sup>17,\*</sup>

The study questionnaire form comprised structured questions regarding food shopping habits and food intake in the household: frequency and kind of shopping (either individual or collective) of each food item (salt, sugar, oil, bread, milk, fruits, vegetables, meat, eggs, and pasta). Based on information collected in the interview, the respondents' food behavior was classified. Students who bought collectively salt, sugar, and oil only were classified as having an individual behavior. Those who collectively bought bread, milk, fruits, and vegetables were classified as having a collective behavior since these items require to be bought more often, emphasizing the collective nature of the group. Those

\* Ministério da saúde. Guia alimentar para a população brasileira: promovendo a alimentação saudável. Brasília: Ministério da Saúde; 2005. Available at: <http://dtr2004.saude.gov.br/nutricao/> [access on Sept 15, 2006]

\*\* Organização Pan-Americana da Saúde. Carta de Ottawa. Primeira Conferência Internacional sobre promoção da saúde, Ottawa; 1986. Disponível em: <http://www.opas.org.br/promocao/uploadArq/Ottawa.pdf> [acesso em 20 mai 2004]

who bought collectively some food items (except for salt, sugar and oil) but not all of them were classified as having a mixed behavior.

To describe the sample profile according to the study variables, frequency tables were created and descriptive statistics were calculated. The Chi-square test and Fisher's exact test at a 5% significance level were used to make comparison analyses between the variables.

A qualitative approach was applied in the analysis of representations of healthy diet and commensality practices as well as the analysis of interview contents based on Moscovici's theory of social representations.<sup>16</sup>

The study was approved by the Research Ethics Committee of Faculdade de Ciências Médicas of Universidade de Campinas (process No. 257/2003).

## RESULTS AND DISCUSSION

### Meal quality

There were interviewed 100 students, 32% females and 68% males, a similar proportion to the population living in the residence hall at the time of the study. Respondents' ages ranged between 19 and 39 years old, and most (72%) aged 20-25 years. Of all, 78% were undergraduate students and the remaining were graduate students.

In regard to the time period students were not living with their families, 80% had left their parents' home five years or less before, 16% between six and 10 years and 4% between 12 and 14 years. Most respondents (80%) came from the Southeastern region, especially from the State of São Paulo (66%), 10% came from the Northeastern region, 4% from the Northern region and 3% from the Mid-Western and Southern regions. Of all, 3% were foreigners. Students reported visiting their parents' twice to four times per university semester (54%), twice to three times a month (17%), and once to twice a year (23%).

As for food intake, 30% skipped breakfast and of those who had it, most (67%) took it in the residence hall (Table 2). This meal, regardless of where it was taken, was classified as skipped or partial by half of the respondents. The best quality meal was lunch (Table 2) and 72% had the full meal. This proportion is associated to the fact that most respondents (63%) lunched at the university cafeteria (Table 3) that offers lunch and dinner from Monday through Friday. While lunch is routinely taken at the university cafeteria, students regularly have dinner at the residence hall (54%) and partial meal was reported by 63% of the respondents (Table 2).

Gambardella et al,<sup>7</sup> in a study on food practice among adolescents, underline breakfast is the most neglected meal and dinner is being replaced by a snack including food that are sources of protein and calcium.

Vieira et al,<sup>24</sup> in their study on food behavior among freshmen of a public university, reported 60% of respondents did not have the habit of having the three meals (breakfast, lunch, and dinner). Only 15% used to have dinner including food commonly eaten in the traditional Brazilian lunch and 37% skipped breakfast.

The respondents had inadequate intake of fruits and milk, 48% had no fruits in the day prior to the interview, 25% one fruit, and 27% more than one. As for milk, 39% did not have any in the 24 hours prior to the interview, 44% had one serving, and 17% had two or more servings. There was a significant difference ( $p=0.008$ ) in this food intake between undergraduate and graduate students; 90% of graduate students had one or two servings of fruits while only 11% of undergraduate students took this same amount.

In respect to income, 80% of students, either from undergraduate or graduate programs, had grants. Graduate students received grants ranging between R\$ 750,00 and R\$ 1,140,00, three-times the worth of any undergraduate grant (work, food, and transportation allowance, and scientific research grants for beginners). This finding points out to the need for further exploring the impact of financial independence on food behavior.

**Table 1.** Classification of meals taken by students living in a university residence hall. Campinas, Southeastern Brazil, 2004

Meal	Quality	Food
Breakfast	Standard	Calcium and energy supply: milk and its products; bread, crackers and cakes with or without side dishes.
	Full	Calcium and energy supply and regulatory food.
	Partial	Any other food not included in the full or standard breakfast here described.
	Skipped	No food
Lunch and dinner	Full	Meals including constructors, energetic and regulatory food with vegetables required.
	Partial	When one or more components mentioned in full lunch or dinner is missing.
	Skipped	No food

**Table 2.** Distribution of the quality of meals taken by students living in a university residence hall. Campinas, Southeastern Brazil, 2004.

Quality of meals	Meals (%)		
	Breakfast	Lunch	Dinner
None	30	5	1
Partial	20	23	63
Standard	37	-	-
Full	13	72	36

**Table 3.** Distribution of places where meals were taken by students living in a university residence hall. Campinas, Southeastern Brazil, 2004.

Places where meals were taken	Meals (%)		
	Breakfast	Lunch	Dinner
University residence	67	16	54
Snack bar	1	8	6
University cafeteria	0	63	28
Others	2	8	11
Skipped	30	5	1

Jaime & Monteiro<sup>10</sup> report, based on data from 2002-2003 IBGE (Brazilian Institute of Statistics and Geography) family income survey, that one in every five people eats fruit and vegetables everyday and only one in every eight follows the international intake recommendations – five or more servings a day.\*

Fisberg<sup>5</sup> et al, while assessing the diet quality of people living in inland São Paulo, based on the application of the Healthy Eating Index,<sup>11</sup> found that 12% had a

“healthy” diet, 74% had a diet that needed changes and 14% had an inadequate diet.

These comparisons show the present study findings corroborate those found in similar studies in Brazil.

There is a need for health promotion associated to food behavior for improving quality of breakfast and dinner and increasing intake of fruits and milk based on the students' actual perception to “taking care” of their food habits.

### Collectivity and commensality

It was found 69% of respondents showed an individual shopping habit, 24% mixed, and 7% collective habit. Food items most commonly bought were bread, milk, crackers, and pasta, while less frequently bought food items were eggs, meat, and fruits (Table 4).

In the households where collective shopping habits predominated, respondents reported a higher frequency of shopping of all food items. Among them, 57% reported they were never short of fruits and vegetables at home. This is because all residents naturally shared the chore of food shopping, and the food items mentioned before were replaced as they were consumed. Among those households with individual and mixed shopping habits, only 12% and 1% reported never being short of these food items at home.

For 43% of respondents, eating together has a positive impact on food behavior, as evidenced in the following speeches:

E86: *“The affect changes food behavior a lot, eating together with someone you like is not the same as*

**Table 4.** Distribution (%) of students living in a university residence hall according to the pattern of food shopping. Campinas, Southeastern Brazil, 2004.

Food items	Respondents' shopping (%)			
	Never	Seldom	Sometimes	Always, never short at home
Crackers	4	26	40	30
Meat	28	28	35	9
Candies	10	40	32,	18
Fruits	12	31	39	18
Vegetables	22	32	33	13
Milk	10	10	30	50
Pasta	16	23	31	30
Eggs	28	35	24	13
Bread	3	13	31	53

\* World Health Organization. The World Report 2002: reduction risks, promotion healthy life. Geneva: World Health Organization; 2002. Available at [www.who.int/whr/2002/en/Overview\\_E.pdf](http://www.who.int/whr/2002/en/Overview_E.pdf) [Feb 4, 2007]

*eating with any person as well as eating at home with your family is not the same as eating in the university cafeteria.”*

Those students, whose answers alternated between “yes” and “no” (37%), sometimes having an impact and sometimes not, referred time circumstances as factors strongly impacting on their opinion on commensality practices:

E35: *“Yes, when someone invites you to eat something different, not when you don’t have time available.”*

E29: *“Yes, when food is prepared at home, not when you eat in the cafeteria.”*

Among those who were negative about the impact of eating together on healthy food behavior, a common reasoning was as follows:

E2: *“Eating is an obligation and eating together with other people is not encouraging.”*

Among those who believed eating together does not have an impact on food behavior (20%), it was perceived a feeling of surprise at the suggestion that eating either alone or together could somehow affect diet quality.

To provide one’s own food is a new experience for the students leaving their parents’ home. There can be perceived a feeling of failure in taking care of one’s diet (E5) as this task was no longer was part of the family universe but belonged to a new context of taking charge of one’s own life and experiencing a new life, the university life.

E5: *“My diet has become very poor (...) before my mother used to take care of what I eat but here in the hall it is up to me...”*

This feeling of failure in taking care of one’s own diet is associated to a failure of taking care of oneself. A possible explanation for this finding would be that care requires time and dedication and rivals with the student’s need to become part of the university and experience its life (E46). Some claimed that “enjoying” the university life meant having a good academic performance, a good network of relationships and becoming involved in the cultural life potentially offered by the university, or even living at its most all these new experiences. This indicates that providing and caring for one’s food is not a priori included in this new experience as something relevant and worthy.

E46: *“The time I have available to eat depends on the time period in the semester; during the exam period, my diet is poorer, I eat what is faster and cheaper and food is never a priority.”*

Students devised several strategies to improve their diets. Some look for their parents’ as a compensation mechanism for the neglect with their eating (E13), others try to provide it at home in the hall, opening up opportunities to develop their cooking skills and finding food of their taste, according to their restrictions of physical and financial access (E25):

E13: *“I try to make up during weekends at my parents’ and have what I can’t either buy or eat during the week.”*

E25: *“I had to learn to cook so I started to eat what I like most.”*

However, this same environment that justifies the neglect in some cases can be assumed as a representation of independence and freedom in other discourses (E79) and an opportunity to take advantage of their free choice of food instead of their family control over what they eat (E11).

E79: *“My food habits have become consistent with my individuality.”*

E11: *“I’ve stopped with the neurosis of gaining and losing weight (...) my mother was no longer hounding me to be on a diet (...) now I’m able to keep my weight more peacefully”.*

These representations either reveal feelings of failure to become a provider or positive feelings associated to the challenge towards the appropriation of the human dimension of caring for oneself (E1).

E1: *“My stomach became more sensitive with my current diet...before I used to have rhinitis only but now I even have asthma...so I realized I had to take care of myself.”*

The university as an institution has an important role in developing habits, not only the intellectual knowledge likely to be learned in this setting but also by offering physical and financial support. This was verified in some respondents’ discourses:

E62: *“The fact that I have been receiving a grant and living in the hall made me eat better.”*

E21: *“If the cafeteria food would be more enjoyable I would eat better.”*

According to Mauss,<sup>13</sup> eating is a whole social fact involving social and individual aspects on one side, and physical (or physiological) and psychic aspects on the other.<sup>12</sup> In this sense, “sharing” implies in exchange relationships involving more than the amount, quality, source or added value of the food shared. Exchange relationships involve subjective appropriation and reciprocity of individualities by means of the object

given, the object shared. Thinking sharing in the sense of “giving, receiving, and paying back” is to understand that food behavior warrants a social contract of identities and creates both an alliance and a communion. However, non-compliance to any element of this triad is actually a declaration of “cold war” between individuals who do not acknowledge each other, different people who do not share the same social regimen and do not consent to share their essences. Exchange relationships are essentially blends:<sup>13</sup> “Souls are blended into things; things are blended into souls. Lives are blended and that’s the way blended people and things come up, each one out of its own sphere and they are blended: that is exactly the contract and the exchange.”

The respondents’ discourses agree with Ackerman’s<sup>1</sup> words on food: “great source of pleasure, a complex world of satisfaction both physiological and emotional that saves most our childhood remembrances”. Consistently, Diez Garcia<sup>8</sup> adds that food is a mean of pleasure and desire. The former fulfills the body and the latter the memory and through eating one immerses in the hidings of subjectivity.

Sharing food is an essential rite of social connection to assert the common identity as members of a family or a group. Choosing someone to eat together is considered universally a serious act that should not be taken frivolously.<sup>9</sup>

The analysis of students’ representations shows care with their diets relies on someone else – other person, usually a female – who takes charge of it. In addition, the need of caring is a new discovery as most students have not yet realized the care provided to them by other people and their inability to effectively appropriate this element of life. Their awareness is generally raised through negative experiences resulting from neglect (disease development, dissatisfaction with one’s self-image, among others). The students’ discourses on this discovery do not reflect on their intent of incorporating this care as part of their daily life.

The representations of care with food habits are shaped by elements of their life history (affective values, and cultural, social, and environmental factors, among others). As a consequence, their success or failure is not only affected by information or physical conditions where eating takes place but it also involves rescuing culturally accepted care practices.

The experiences in both the domestic and extra-domestic settings related to people’s life conditions are important for constructing representations in the food/care environment. A positive factor for improving students’ life condition is the social support offered by the university: work-related grants (financial aid to students working around 12 hours weekly in addition or not to meal tickets) and health education programs, among others. Besides social inclusion, these benefits are positive for developing healthy practices among university students.

The study findings suggest that interventions on health promotion focusing on food behavior could be associated to *care with one’s diet*. These interventions should aim at constructing individuals’ autonomy based on the perceived need for appropriation of their own care with their diet for improving life conditions.

Collective behavior can also be a major factor for improving the quality of one’s diet as well as the quality of living together in the same household, a privileged environment of social integration.

On the other hand, the university cafeteria, affordable to the students, should be encouraged to provide adequate meals given they already have a positive symbolic representation about it.

Public and private food services in university campuses should have a major role and be involved in developing strategies for health promotion given their influence on the students’ food behavior, especially to what concerns promoting healthy eating habits and commensality.

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