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"What can I do when he/she doesn't want to eat?": Maternal strategies for ensure children's food consumption in early childhood

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ABSTRACT

This cross-sectional analysis aimed to analyze the strategies used by mothers of children aged 2–3 to ensure their food consumption as well as to investigate the maternal and family characteristics associated with using these strategies. Data of 463 mothers who use the public health care system in Porto Alegre, Brazil, were analyzed. Among these mothers, 58.5% (n = 271) used some type of strategy. However, 42.4% (n = 115) of mothers did not identify their behavior as a strategy to ensure their children's food consumption. In regard to the type of strategy used, 69% (n = 187) were classified as information strategies and 43.2% (n = 117) as trading strategies. Maternal age and educational level were inversely associated with the use of trading strategies ($p < 0.05$), indicating that the adolescent mothers and mothers with less schooling more often used strategies that have been shown by the literature not to be conducive to positive long-term results. In 46.9% (n = 123) of the cases, some types of food were involved in the mothers' strategies, generally ultra-processed foods (46.3% n = 57). We conclude that the use of strategies to promote children's food consumption considered appropriate by the mothers is a fairly common practice. Health care professionals should consider mothers' perceptions and attitudes about the subject in order to conseil them as to the best feeding practices for their children, as the use of these strategies can be detrimental to the formation of eating behaviors.

1. Introduction

The first three years of life are fundamental to developing diet-related behaviors because some very important dietary practices are established in this period, such as breastfeeding (or offering a substitute food), the introduction of complementary food and a child's entry into the family's habitual dietary patterns (Cooke & Fildes, 2011; Nicklaus, 2015; Schwartz, Scholtens, Lalanne, Weenen, & Nicklaus, 2011). Thus, studying the factors that influence infant eating behavior at the beginning of life, such as practices adopted by their caretakers, becomes important to clarifying the dynamic related to the formation of child eating behavior and enables health professionals to make informed decisions about how to conduct nutritional education and health intervention programs aimed at this age group.

Although some aspects of eating behavior may be influenced by genetic factors (such as an innate preference for certain flavors), it is known that a child's environment shapes his/her food preferences. Specifically, the behaviors experienced and learned in the first years of life can determine an individual's dietary style for the rest of his/her life (Kral & Rauth, 2010; Ventura & Worobey, 2013). Such behaviors are generally experienced and learned in the family environment given that, in early childhood, this is a child's main life context and the greatest influence on his/her eating habits and preferences, as it is the parents who provide their children with their first experiences related to food and eating (Scaglioni, Salvioni, & Galimberti, 2008). In this regard, studies have shown that there are many parental behaviors that can influence children's eating habits - e.g. their own eating behaviors, the foods they make available to their children and the way they

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feed them (Musaad et al., 2017; Scaglioni et al., 2008), the practice of physical activities, sleep duration and even their socioeconomic level (Ochoa & Berge, 2016). This indicates the importance of the family environment to the formation of children's eating behaviors.

The main responsibility for child care has traditionally fallen upon women (Moura & Araújo, 2004; Ramos & Almeida, 2003). Therefore, mothers still play a central role in raising and feeding their children. One recurrent concern among mothers (especially those of children in the first years of life) is providing appropriate food to their children (in terms of quality and quantity) that will ensure their growth and healthy development (Michaelsen, Larnkjaer, Lauritzen, & Molgaard, 2010). This concern is consistent with the important role that diet plays in an individual's current and long-term health (Johnson, Goodell, Williams, Power, & Hughes, 2015).

Due to this concern and in the face of children's refusal to eat, mothers often use strategies to ensure that they eat or that they eat a greater amount of food among those they consider ideal (Adamo & Brett, 2014). These maternal strategies to ensure children's food consumption can range from using playful incentives and explanations about the importance of food to health, to rewarding desired behaviors or even using more coercive mechanisms, such as mild or severe punishments (Hendy, Williams, Camise, Eckman, & Hedemann, 2009; Mayer, Weber, & Ton, 2014; Tung & Yeh, 2014; Ventura & Birch, 2008).

The mothers' use of these strategies is influenced by their children's characteristics, such as birth weight, nutritional status in the first years of life, health outcomes and personality/behavioral characteristics. These characteristics can influence or even determine parental feeding styles, leading parents to adopt strategies such as pressuring their children to eat (Carnell, Benson, Driggin, & Kolbe, 2014; Fildes, Van Jaarsveld, Llewellyn, Wardle, & Fisher, 2015; Jansen et al., 2012) or restricting certain kind of foods and/or amounts (Hendy et al., 2009).

The literature shows that strategies that attempt to stimulate a child to eat in the face of his/her refusal can be detrimental to the formation of the child's eating behaviors, as they may cause dietary self-regulation problems. These difficulties, in turn, can lead to eating disorders, obesity, emotional eating, the restriction of certain kind of foods and overeating at times when access to food is not restricted (Hendrie, Sohonpal, Lange, & Golley, 2013; Kröller, Jahnke, & Warschburger, 2013; Scaglioni et al., 2008). Therefore, the present study aimed to identify the types of strategies used by mothers of children aged 2–3 to ensure their food consumption as well as the mothers' perceptions about this use. It also aimed to investigate potential maternal and family characteristics associated with the use of different types of strategies.

2. Method

2.1. Design

This is a cross-sectional analysis of data collected in a follow-up study, specifically from the fourth data collection stage, in which the children were between 2 and 3 yeas of age (Vitolo, Louzada, & Rauber, 2014). This larger study aimed to assess the impact of an educational intervention conducted with health care center (HCC) professionals on health outcomes of children whose mothers were treated by these professionals during pregnancy. In regard to the present study's sample randomization in relation to the larger study's group allocation (intervention or control), no significant association was found for any of the variables analyzed in the present study. Therefore, the randomization was not considered in the other analyses conducted.

2.2. Participants

We interviewed 476 women for the present study. Of these, 13 (2,73%) were excluded because they did not respond to questions about the strategies they used to ensure their children's food consumption. Therefore, a sample of 463 (97,27%) mothers was considered. The participants' socio-economic and demographic characteristics are shown in Table 1.

2.3. Procedures and instruments

The members of the data collection team went to the randomized HCC and identified women in their third trimester of pregnancy. The potential participants were informed about the study's aims and were invited to participate by signing a Consent Form. They then filled out a questionnaire on socio-economic, demographic and family data. Also were obtained the expected date of birth, address and telephone number for subsequent home visits. In this first data collection stage, 715 women were interviewed.

The larger research project involved collecting data at the participants' home in three subsequent stages: when the children were aged 6–9 months (n = 633), 12–16 months (n = 545) and 2–3 years (n = 476). Data on the children's health and diet were collected during these visits. Exclusion criteria were HIV-positive women and children born with congenital diseases (Chart 1). It is worth highlighting that the data collection team was comprised of undergraduate and post-graduate students in nutrition and psychology who were trained on the study's procedures.

The present study analyzed maternal data related to the use of strategies to ensure their children's food consumption collected when the children were 2–3 years old. The following questions were considered to investigate such strategies: *"Do you need to use a strategy to make your child eat? If so, what?* (Q1) *If not, what do you do if he/she doesn't want to eat?"* (Q2). It is important to emphasize that the frequency of use of these strategies was not the focus of the present study's investigation. The researchers' interest was to find out about their use and whether such use was noticed by the mothers as well as to understand the types of strategies used. During the other data collection stages (6–9 months and 12–16 months of the children's age) no data were collected on the mothers' strategies to ensure food consumption.

The socioeconomic and demographic variables analyzed were

Table 1
Socio-demographic characteristics of the sample (n = 463).

Characteristics	n	%
Mother's age		
<20 years	84	18.1
>=20 years	379	81.9
Marital Status		
Does not have a partner	105	22.7
Has a partner	358	77.3
Mother's occupation		
Unpaid	304	65.7
Paid	159	34.3
Parity		
Primiparous	203	43.8
Multiparous	260	56.3
Mother's schooling		
<= 8 years	216	46.7
>8 years	247	53.3
Family Income		
<= 2 Brazilian minimum wages[a]	209	46.7
>2 Brazilian minimum wages[a]	239	53.3

*Data lacking (n = 15).
[a] 1 Brazilian minimum wage corresponds an amount to approximately U$125.00 for month at the time of data collection.