



Food preferences in young Dutch children and recommendations for feeding intervention in developmental disabilities

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ABSTRACT

Total and chronic food refusal (i.e., the refusal of all types of food during a prolonged period) in young children with developmental disabilities can be treated effectively using a combination of environmental interventions. However, no guidelines for the selection of food items to offer the child in these interventions are available. The aim of the present study was to assess the preferences for specific food items of young Dutch nondisabled children ($N = 254$) in order to enable trainers to select food items that maximize success of feeding interventions. Results indicate that 54 out of 107 food items were found to be preferred. The mean appreciation scores of boys and girls did not differ significantly for these preferred food items, except for raisins and brown bread. Also, there were no differences between the distinguished age-groups, except for peach. Recommendations for the selection of food items within feeding intervention for total and chronic food refusal in young children with developmental disabilities are given.

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1. Introduction

Young children with developmental disabilities often demonstrate feeding problems (Luiselli, 1994). Some of them refuse all types of food during a prolonged period. This total and chronic food refusal can be treated effectively using a combination of environmental interventions. According to Kedesdy and Budd (1998, p. 115), the content of these interventions is an interplay of four major components: (1) meal characteristics (i.e., the selection and provision of developmentally appropriate menus and repeated exposure to different kinds of foods and textures), (2) schedule of intake (i.e., meal frequency and duration), (3) setting characteristics (i.e., altering the physical surrounding, feeding position and body support of the child, and activities before and after eating), and (4) interactions (i.e., reciprocity between child and feeder, the appliance of social contingencies by the use of behaviour management procedures). Several of these components should be combined in a feeding intervention program to lead to optimal results. The present study is related to the first component and addresses one aspect of meal characteristics, namely the selection of food items regarding feeding intervention in young children with total and chronic food refusal.

The selection of food items to offer the child in a feeding intervention program can be based on the professional experience of the trainer, parental report on feeding history of the child and its previous food consumption, preference assessments of food items, and/or general guidelines regarding developmentally appropriate types, quantities, and varieties

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of food (Kedesdy & Budd, 1998). However, all these sources of information for selecting food items have their limitations in the case of total and chronic food refusal: the choice of food based on the professional experience of the trainer is mostly not underpinned by empirical findings and depends heavily on his/her expertise, the information from parental report on feeding history may be inconclusive due to the child's present refusal of previously accepted types of food, and preference assessments cannot be performed in these children, because of their refusal of any kind of food. And finally, although general guidelines for developmentally appropriate food items do exist, they are often based on nutritional science knowledge concerning the children's health, dietary needs and capabilities at different stages of physical maturation (Ocke et al., 2008; Pipes & Trahms, 1993; Satter, 1986, 1987), but they do not necessarily coincide with the preferences of children for specific types of food. Because the goal of feeding intervention programs in children with total and chronic food refusal is the mere acceptance of oral food instead of healthy eating, new guidelines for the selection of food items based on the preferences for specific types of food in young children are needed.

Food consumption habits of young children are primarily based on food preferences (Skinner, Carruth, Bounds, & Ziegler, 2002). These preferences are mainly determined by taste. Three to five year olds show a preference for familiar and sweet tastes (Anliker, Bartoshuk, Ferris, & Hooks, 1991) and an aversion towards bitter and sour tastes (Rozin & Vollmecke, 1986). These results are supported by studies that examined which types of food infants and young children eat (e.g., De Moor, Didden, & Korzilius, 2007a; Fox, Pac, Devaney, & Jankowski, 2004; Wardle, Sanderson, Gibson, & Rapoport, 2001). In these studies, a low vegetable, fruit and meat consumption were found. Unfortunately, some of these studies only focused on a small number of food items, did not determine the appreciation or preferences for food items and/or did not assess stability of food preferences. The longitudinal study by Skinner et al. (2002) is the only one that addresses the stability of food preferences in children over time. They concluded that the food preferences of children for general food categories (e.g., vegetables, meat and fruits) and the number of liked foods were stable between the age of two and eight. Weaknesses of the study were that the degree of food preference was not determined (i.e., only like or dislike), so no conclusions can be drawn about the preference for one specific food item over the others. Also, the food list used was developed more than twenty years ago and may not represent current food patterns. For feeding intervention in children with total and chronic food refusal, it is important to know which preferences for specific food items remain stable over time, because the provision of such an item will strengthen the maintenance of the effect of the treatment.

The aim of the present study was to assess the preferences for specific food items of young Dutch nondisabled children in order to enable trainers to select food items that maximize success of feeding interventions for total and chronic food refusal in young children with developmental disabilities. More specifically, our aim was to assess the opinions of parents on the frequency in which specific food-items are eaten by nondisabled young children, their appreciation of these specific food-items and the correlation between frequencies and mean appreciation scores. Based on these mean appreciation scores, an indication towards preferences for specific food items can be made. Furthermore, the relationship between the appreciation of specific food items and gender, as well as stability of the appreciation of food items in young children was examined.

2. Method

2.1. Participants

Parents were recruited from 22 day care facilities for children in the age of two to four years affiliated with one foundation for day care facilities in the mixed rural–urban district of Heerlen, a mid-sized city located in the southern part of the Netherlands. All parents of children known within these facilities (i.e., $N = 715$) were approached for participation. To use 95% level confidence intervals and 5% level significance tests for this population, a sample of between 248 and 254 parents was needed (Payne & Morris, 1967).

Parents were sent a questionnaire accompanied by a covering letter, explaining the nature and purpose of the study. Parents returned the questionnaire anonymously in a blank and sealed envelope to the day care facility, where they were picked up by the authors. A total of 254 questionnaires were returned, constituting a response rate of 35.5%. According to the standard of Payne and Morris (1967), this sample is representative for the population of young children within day care facilities in the southern part of the Netherlands.

Table 1 presents demographic characteristics of the children in the sample. The children had a mean age of 3;0 years ($sd = 0.33$; range: 2;0–3;11), 52.2% of them were boys, 59.1% were first born and they predominantly were born in the Netherlands (i.e., 97.6%). Ethnic background of parents was predominantly Dutch (i.e., fathers 84.4%, mothers 87.3%), and those with another ethnic background were mostly Moroccan, Turkish, Indonesian, German and Polish. Educational level of mothers was in 16.7% of the cases low, in 56.1% middle, and in 27.2% high. Educational level of fathers was in 20.9% of the cases low, in 50.7% middle, and in 28.4% high. In comparison with Dutch statistics over the year 2009, the mean educational level of parents in this sample is lower than the mean educational level of the Dutch population. In contrast, the number of single-parent families and respondents with a non-Dutch ethnic background are representative.

2.2. Questionnaire

The main section of the questionnaire included a list of specific food items, of which parents had to report both the frequency of intake and their opinion on the appreciation by the child. For this list, 107 food items were selected and divided

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