

## Mothers' Self-Efficacy Regarding Dietary Behaviour and Physical Activity of Preschool Children

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### Abstract

#### Background

Obesity constitutes a crucial health issue during preschool period and has an impact on children regardless their ethnic backgrounds. The purpose of the study was to examine the self-efficacy perceptions of mothers and potential differences and correlations with dietary behaviour and physical activity of their preschool children in Finland.

**Materials and Methods:** The sample for this study consisted of 154 mothers from nine private nurseries who lived in greater Helsinki and have Finnish or other nationality. There were 7 categories of geographical regions from which mothers came from, according to the nationality they declared. For the data collection the "Parental Self-Efficacy Questionnaire" was used, which evaluates the self-efficacy of parents regarding the dietary behaviour and physical activity of their children.

**Results:** The age range of the children was between 3 up to 6 years of age (Mean=5.08 ± 0.96), while the age range of mothers was between 25 up to 54 years of age (Mean=37.7± 4.85). Positive correlations were found between maternal self-efficacy and children's physical activity as well as between maternal self-efficacy and dietary behaviour. As it occurs from the analysis of the results from Pearson correlations: dietary behaviour had a positive correlation with physical activity r=0.583, p <0.001. The analysis showed no statistically significant differences for dietary behaviour and physical activity related to the nationality of mothers, educational status, and occupational status of mothers.

**Conclusion:** Despite the non-statistically significant differences on these two factors, the results also showed high mean score values on maternal self-efficacy so in physical activity, as in dietary behaviour. Mothers who living in the same country which offers well structured guidelines about integrating nutrition and physical activity to help prevent lifestyle related diseases, possibly explains the fact that there are no differences related to ethnicity.

**Key Words:** Children, Dietary behaviour, Finland, Nationality, Physical activity.

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## 1- INTRODUCTION

Engagement in physical activity promotes healthy mental, social and of course physical development (1). Physical education has been gaining ground in different societies. The reason is that the benefits of physical activity for young people's health are numerous, especially when physical activity as a habit becomes a daily pattern at the beginning of preschool age and it later on affects the whole adult population's health (2). Physical activity, contributes significantly to the establishment of a healthy active lifestyle by improving the physical development and strengthening psychomotor skills of children. Despite the scientific recommendations for the need to raise physical activity level, more and more children around the world have reduced levels of participation in everyday physical activity which leads to several health problems (3) and an increased level of obesity (4). Information provided by researchers suggests that a child while at childcare centre may receive up to 50% of the daily-recommended physical activity hours (5). On the other hand, inactivity levels and dietary habits are the determinants for obesity risk, which are related to a person's way of living, these are the dietary habits and the physical activity level of participation (6).

Consequences of being overweight or obese for psychological health should also be taken under consideration as young children might lack confidence in their abilities and gradually they could face difficulties in interaction with their peers and end up socially isolated (7). Other researchers suggested that nationality and weight levels of parents define the weight of their child, with a higher probability of obesity for foreign children in contrast to the native Luxembourg children (8). Self-efficacy perception of individuals, is related to overcoming physical activity barriers or not and is closely related to the

levels of physical activity and inactivity. Authors mentioned that the weather conditions could impact young Canadian preschool aged children's participation in physical activity only because their parents may be unwilling to be active outside (9). At the same time other parents put as first priority the physical activity no matter what the weather conditions are (9). In Finland, it is commonly observed that seasonal change can affect children's outdoor physical activities (10). Quite often physical activity rate increases during a warm period. A study showed variations regarding the daily time 3-year-old children spent outdoors on a weekday while attending the daycare. The mean time (minutes) spent during winter being significantly lower compared to the time these children spent during autumn but there is no overall difference in the physical activity levels of the children because of the season (11).

Preschool age is a period in which certain behaviours such as healthy eating, regular sleeping pattern and sedentary habits are developed and established through adulthood (12). Therefore, early childhood is perhaps the best period for a focused intervention in order to prevent obesity and build a healthy lifestyle. Preschool children can establish a healthy dietary behaviour, which includes participating in physical activities as well as building nutrition knowledge and parents should therefore choose carefully what they offer their children to eat in order to have a balanced diet and avoid obesity (13). During this period of their life, children begin to set up on a firm basis their dietary patterns and physical activity habits which will determine their adulthood behavior (14). It is well noted that a healthy and balanced eating behavior in early life, which includes fruits and vegetables among other nutritional food and points out the health benefits, is firstly positively influenced by parental role modeling in the home

environment (15), especially by maternal support (since mothers are the ones who participate mostly in preparing the food) (16) as well as by genetic features and it is crucial for the healthy development in the future years (17) and the mitigation of childhood obesity (18). Self-efficacy describes the level at which the people believe in their own capabilities to perform in life and it affects also how they 'feel, think, motivate themselves and behave' (19, 20). Parental self-efficacy and food environment is linked to a child's nutrition habits (21). Children between 3-7 years old from lower socioeconomic status that had easy access to soft drinks, tended to consume more and therefore interventions should focus on lowering the availability and accessibility of those types of drinks to children along with a good role modeling parental behavior (22).

During the early years, a child will develop a positive attitude towards healthy food and new flavors, if he/she is given the opportunity to get familiar with and keeps being exposed to them repeatedly (23) without the pressure to eat these foods, otherwise the results will be for the child to develop negative approach towards the food (24). On the other hand, when a child is exposed to unhealthy food at any time during the early years, for example before the kindergarten or while he/she is a toddler, the consequences for the healthy eating can be in danger (25). Of course, the family food patterns and preferences depend also by the socioeconomic level and the cultural background (23).

Therefore, the purpose of the study is to examine potential differences and correlations of the maternal self-efficacy perception on dietary behaviour and physical activity of their preschool children in Finland, cause of their nationality, occupational and educational status. In addition, the factors, which affect parental self-efficacy towards a healthier lifestyle (dietary patterns and physical activity

participation) for their children and develop specialized strategies to further, encourage healthy dietary and physical activity behaviours were also evaluated.

## **2- MATERIALS AND METHODS**

### **2-1. Sample**

The sample for this study consisted of 154 mothers from 9 private kindergartens who lived in greater Helsinki area in Finland and had Finnish or other ethnicity. There were 7 categories of geographical regions from which mothers came from, according to the ethnicity that they declared.

### **2-2. Instruments**

For the data collection of the study were used:

- A Demographic information form: Sociodemographic data were collected and included variables regarding information about mothers' age, nationality, occupational status, educational status, information concerning the age and gender of the child and the number of children each family had.
- Parental Self-efficacy Questionnaire: Decker developed this particular questionnaire as an instrument to evaluate the self-efficacy of the family regarding the healthy diet and physical activity (24). This questionnaire includes 34 items, which refer to two subscales (dietary behaviours and physical activity behaviours), regarding the dietary behaviours and participation in physical activities of children.

After choosing the sample, the questionnaires were given in-person to the mothers. They rated their confidence on an 11-point Likert type scale, from "not at all confident" (0), to "mostly or totally confident" (10). It was mentioned in the introduction of the questionnaire that if the mothers had more than one child attending the school, they were allowed to choose

for which of their children they would fill the questionnaire in.

### **2-3. Data collection process**

After choosing the sample, the questionnaires were given in person to the mothers. Request for permission to conduct this study in the company's environment has been applied in advance to all the managers of the schools. A letter including information about the questionnaire and details explaining to them the reason why their participation is important was given to each parent separately. It was also mentioned to the parents that all collected data would only be used for research reason. All participants who filled in the questionnaire did so anonymously.

### **2-4. Statistical Analysis**

SPSS (version 23.0, SPSS Inc.) was used to perform data analyses. The analyses that were performed were: Cronbach's Alpha, Pearson Correlation analysis, and multivariate analyses of variance (MANOVAS). The significance level for the statistical analyses will was set at 0.05.

## **3- RESULTS**

### **3-1. Demographic characteristics**

Demographic characteristics of the sample are presented in detail in **Table.1**, including the nationality of the mothers, the gender of the child, the number of the children in the family, the educational status of the mothers and the work status of the mothers. The age range of the children was between 3 and 6 years old (Mean= 5.08, SD=.96) while the age range of mothers was between 25 and 53,5 years old (Mean= 37,7, SD= 4.85).

### **3-2. Summary of the variables**

In **Table.2** are presented collectively the results from all the items tested through

the present survey, along with their levels of internal reliability (Cronbach's alpha).

### **3-3. The correlations on maternal self-efficacy between the factors of the self-efficacy questionnaire, children's dietary behaviour and physical activity**

Positive correlations were found between maternal self-efficacy and children's physical activity as well as between maternal self-efficacy and dietary behaviour (**Table.3**). As it occurs from the analysis of the results from Pearson correlations: dietary behaviour has a positive correlation with physical activity  $r=0.583$ ,  $p < 0.001$ .

### **3-4. The impact of demographic characteristics of the mothers to the factors children's dietary behaviour and physical activity.**

Multivariate analysis of variance test (MANOVA) was used in order to test statistically significant differences between the independent variables (nationality, occupational status, educational status) and the 2 factors (dietary behaviour, physical activity). More specifically:

- 1) There was no statistically significant difference between the nationality of mothers and their self-efficacy levels regarding the dietary behaviours  $F_{(6,132)} = 1.585$ ,  $p=0.157$  nor the physical activity of their children  $F_{(6,132)} = 0.434$ ,  $p\text{-value}=0.855$ . More specifically mothers from Eastern European countries have greater mean scores in Physical activity and mothers from South Western European countries have greater scores in dietary behaviour.
- 2) There was no statistically significant difference between the educational status of mothers and their self-efficacy levels regarding the dietary behaviours  $F_{(4,133)} = 0.152$ ,  $p=0.96$  nor the physical activity of their children  $F_{(4,133)} = 0.357$ ,  $p\text{-value}=0.84$ .

3) There was no statistically significant difference between the occupational status of mothers and their self-efficacy levels regarding the dietary behaviours  $F_{(3,132)} =$

2.151,  $p=0.097>0.05$  nor the physical activity of their children  $F_{(3,132)} = 0.204$ ,  $p$ -value= 0.89.

**Table-1:** Demographic characteristics of the sample.

Variables		Frequency	Percentage
Gender of child	Boy	93	60.4
	Girl	61	39.6
Nationality	Finnish	79	51.6
	Northern European	14	9.2
	Asian	26	17.0
	Central-Western European	6	3.9
	South-Western European	10	6.5
	Eastern European	8	5.2
	Other	10	6.5
Educational status	Highest education	38	25.0
	High school or equivalent	9	5.9
	Bachelor's degree	39	25.7
	Master's degree	59	38.8
Working status	Full-time	98	64.1
	Part-time	16	10.5
	Home worker	25	16.3
	Self employed	14	9.2

**Table-2:** Descriptive data of variables.

Variables	Number	Min	Max	Percentage	Cronbach's Alpha
Physical activity	138	5.25	10	89.6%	0.83
Dietary behaviour	147	3.15	9.81	95.5%	0.88

**Table-3:** Pearson correlations analysis of the two factors.

Factors	Dietary behavior	Physical activity
Dietary behavior	1	*0.583
Physical activity	*0.583	1

Note: \* $p<.001$

#### 4- DISCUSSION

The purpose of this study was to examine the potential differences and correlations of maternal self-efficacy

perception on dietary and physical activity behaviors of preschool children (3-6 years old) in Finland and their relation to nationality, occupational and educational

status. The research hypothesis was that there will not be differences or correlations in mothers' self-efficacy perceptions due to nationality, occupational and educational status. Although there were various demographic groups in this study (Finnish, Asian, Northern European, Central-Western Europeans, South-Western Europeans), some nationality groups were not well represented in the sample collected for this study leading to a less diverse sample than expected. In this study, it was difficult to analyze and identify differences between the demographic groups as the number of participants of minority nationality groups was small and there was general homogeneity of the sample. The results of this study confirmed the research hypothesis. The results showed that the questionnaire was reliable and valid for use to children between 3-6 years old.

The current analyses, evaluates self-efficacy in a sample of mothers who live in Finland and come from various ethnical backgrounds. The results expand the existing literature and suggest that maternal self-efficacy perception and food environment is highly associated with children's healthy dietary behaviour in accordance with previous studies (25, 26). As it is suggested also in previous literature, when children participate in cooking activities with their parents actively, they develop a more positive attitude towards tasting new food including vegetables (27). As it is concluded, parents who include a variety of fruits and vegetables in their diet, provide a supportive environment for the children to consume more vegetables and fruits regardless the ethnic background. There was no statistically significant difference between the educational status of mothers and the dietary behaviour behaviour of children in contrast with previous studies (28, 29). Finally, the results showed no statistically significant

difference between occupational status and children's dietary behaviour. It was also indicated that maternal self-efficacy is associated with the physical activity levels of their child/ children which is confirmed by a previous study (25), in Turkish children.

#### **4-1. Limitations of the study**

- 1.The fact that the mothers of the preschool children have multicultural backgrounds and live in greater Helsinki area, prevents the results from being generalized to all Finnish mothers' self-efficacy behaviour.
2. Responses of the mothers might not be objective since the answers to the questionnaire are self-reported.

#### **5- CONCLUSION**

Parents' knowledge regarding healthy and balanced nutrition, physical activity practices as well as how to be role models to their children, can be enriched and of course be adjusted to the children's personality and behavioural characteristics, in order in order for parents to be able to provide a healthy lifestyle environment for their children. To accomplish this change, programs providing educational information to parents regarding options for a healthy diet and physical activity plan for their children are important and can offer support to the parents by increasing their confidence and self-efficacy.

Providing several resources about physical activity and healthy dietary behaviour will help to overcome any possible insecurities or difficulties that parents meet when trying to apply these behaviours to their children and this eventually will increase self-efficacy. Also, everyday exercise on the way to work and school is important as well as physical activity during recess at school or breaks at work. Future research could be targeted to a more diverse demographic sample at international level.

The participants of the new sample may even live in another European country or even in a country of different continent and have different cultural dietary and physical activity behaviors. Parents hold the key for the behavior changes addressing their kids and therefore interventions focusing on parents' self-efficacy are important. Interventions should focus on ways to enact healthy dietary and physical activity behaviors in children.

## **6- CONFLICT OF INTEREST:** None.

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