



Telemark University College

The relationship between the intake of fruit and vegetables and parental level of education in fourth grade children in Telemark County, Norway

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A stronger correlation was observed between the mother's level of education and intake frequency (vegetables: $r=0,112$, $p<0,001$; fruit: $r=0,168$, $p<0,001$ and combined $r=0,178$, $p<0,001$; Spearmans-rho) than between the father's level of education and intake frequency (vegetables: $r=0,048$, n.s.; fruit: $r=0,079$, $p=0,018$ and combined $r=0,102$, $p=0,002$; Spearmans-rho). The frequency of the children's totally daily intake of fruit and vegetables according to their mother's education level is shown in Figure 1

Introduction

The Norwegian national food guidelines recommend a daily intake of two portions of fruits and three portions of vegetables. Nationwide studies have earlier shown that the intake of fruit and vegetables in children is too low compared to this goal (1, 2). The objective of this study was to compare the frequency of the daily intake of fruit and vegetables in fourth grade (9 year old) children in Telemark County, Norway in 2007 to the official recommendations of "5-a-day", and to investigate the relationship between the intake frequency and the parental level of education.

Methods

A cross-sectional study of diet and socio-demographic background was performed in 1045 children and their parents. The children's fruit and vegetable intake was reported by their parents using a retrospective food frequency questionnaire which asked how often fruit and vegetables were consumed during one week (based on the latest half year's consumption). The alternative categories were: 3 or more times per day, twice a day, once a day, 4-6 times a week, 1-3 times a week, 1-3 times a month and rarely/never. These were converted into approximate intake per day. The parent's level of education was classified using six different categories (figure 1).

Results

Intake frequencies: Totally, 67 % of the children consumed fruit (including juice), and 50 % consumed vegetables (including potatoes) daily. Only 38 % of the children consumed fruit twice a day and 3% consumed vegetables three times per day. When combined into the recommendation of "5-a-day", only 8 % fulfilled the goal (table 1).

Parental education: An increase in intake frequency was observed with the parents' level of education, but even at the highest levels only about 10 % fulfilled the goal of "5-a-day" and about half of the children consumed fruit and vegetables less than 3 times a day.

Table 1 Frequencies of fruit and vegetable intake

Frequencies	Percent of the children (n=1009)
Fruit (incl. juice) daily	67%
Vegetables (incl. potatoes) daily	50%
Fruit (incl. juice) twice a day	38%
Vegetables (incl. potatoes) three times a day	3%
Recommended "5-a-day"	8%

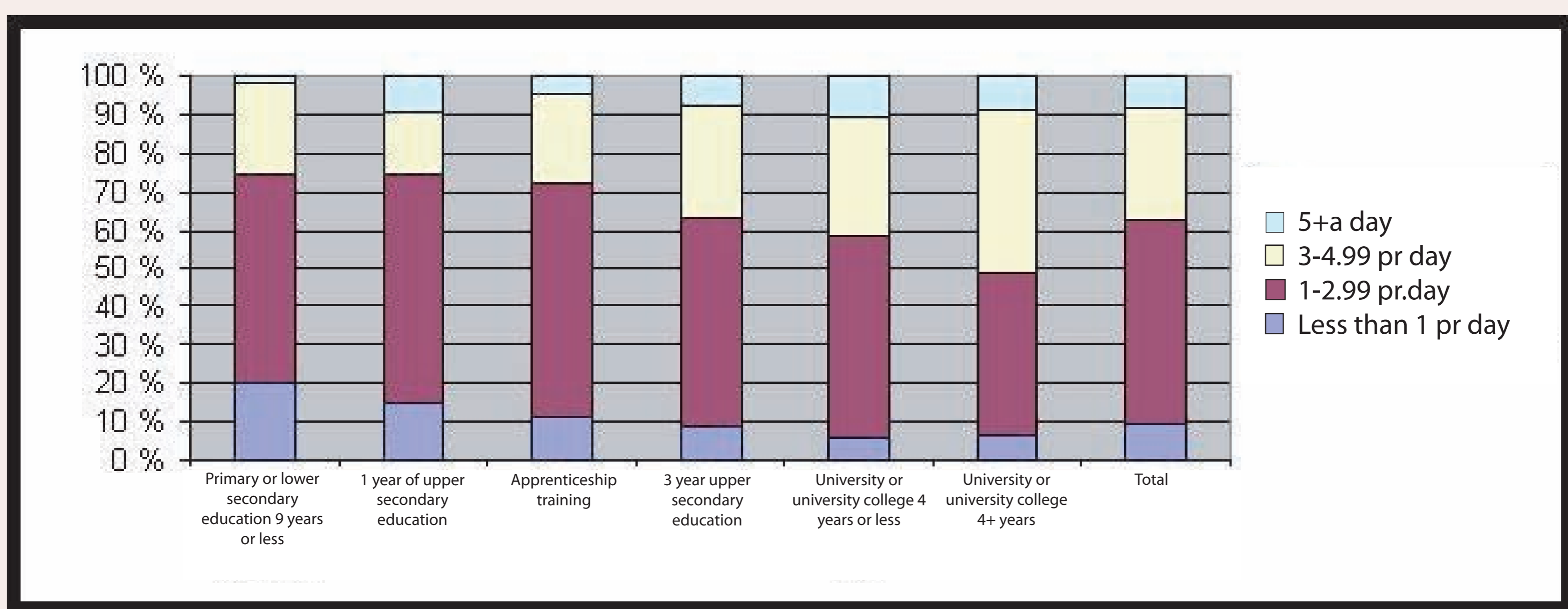


Fig. 1. Frequency of the children's totally daily intake of fruit and vegetables according to their mother's level of education (Linear-by-linear; $p<0.001$).

Conclusions

The intake frequency of fruit and vegetables in the studied population was low compared to the official recommendations of "5-a-day", especially for the intake of vegetables. The results are in agreement with data from Norwegian nationwide studies performed in 2000-2002 (1, 2). Thus, a continued focus on the target of "5-a-day" is needed. A main general challenge will be to increase the vegetable intake. Special efforts should be made to find measures to increase the intake of fruit and vegetables in families with low parental level of education, especially where the mother's level of education is low.

References

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