What's cooking? Promoting 10-13 year old children's acceptance of fish through experiential learning

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Introduction

Danish children aged 10-17 years only eat 1/3 of the 350 grams of fish per week recommended by health authorities1. Eating fish, especially fatty fish, as a part of a varied diet, ensures a contribution of the polyunsaturated fatty acid D3 which is important to ensure children’s positive cognitive development and function, and over the life span reduces the risk of developing cardiovascular diseases 2,3,4.

In Danish public schools family and consumer sciences (it: Madkundskab, similar to Home economics) is mandatory for one year in either 4th, 5th, or 6th grade, which makes the school arena an unique setting for learning about and promoting healthy diverse food habits. Furthermore, according to Larson et al. (2006) young people who help to cook and thereby acquire cooking skills early in life tend to consume a healthier diet according to the nutrition recommendations later in life5.

The aim of this study is to examine if practical experience, e.g. cooking, in a school setting affects 10-13 year old children’s acceptance of fish.

Methods and Materials

Study population

Students age 10–13 years from 5th – 6th grade. The students in both the main group and the control group came from different public schools on Zealand. The main group from five schools and the control group from ten schools respectively.

Study design

This study is a interdisciplinary, quasi-experimental intervention with a main group (MG, n = 270) and a control group (CG, n = 299). Furthermore, the control group was randomly divided into two sub-groups: Control group 1 and 2 (CG1: n = 159; CG2: n = 140).

The main group participated in a five week theme course on fish developed for FCS in 5th – 6th grade (5 x 3 lessons of 45 min)6. Control group 2 had an oral lecture (2 x 45 min), based on the same themes: The senses, quality of fresh fish, taxility, filleting, cooking, food history, preservation, food waste, sustainability, nutrition etc.

Results and Discussion

Differences between MG and both control groups at baseline were analyzed, no significant differences were found (p > 0.05). Hence, the groups were considered similar

In liking of fish, means revealed a tendency for participants in the fish cooking course (MG), was demonstrated. In liking of fish, means revealed a tendency to decreased liking compared to baseline, especially in MG (table 1, p = 0.144, mean: illustration 2, bottom). Compared to CG a significant increase in self-evaluated fish cooking skills (table 1, p = 0.0005, mean: illustration 2, top) for participants in the fish cooking course (MG), was demonstrated. Compared to MG (table 1, p < 0.0005, mean: illustration 2, middle) – I like fish baseline MG: 309 Effect MG: 182 182 - 0.144 (0.032,0.219) n - Age n - Gender

The lack of increase in liking of fish in the main group after participating in the five week experiential sensory-based theme course on fish could be due to the fact that being faced with fresh whole fish with slime, blood, and internal organs is very different from the fish accessible in the supermarket, which typically is already cleaned and filleted. Wherefore it could be due to either distaste or disgust and the fear of contamination of the theory of disgust as laid out by Rozin and Fallon (1986)1, or a case of what Fischer (1980) calls gastro-anemia; a loss of the ability to identify foods as a result of industrial purification.

Although no significant increase in liking of fish was demonstrated in the main study after participation in the five week theme course an evaluative question detected that approximately 44% of the students in this group had become more curious towards fish (question 3), which is a significant difference from before (p = 0.013, CI: 0.04, 0.38).

Conclusions

In conclusion practical experience increases the students’ self-evaluated skills, but even though no increase in liking was observed in the questionnaire, there was an increase in curiosity for trying other fish, for those students that participated in the five week experiential sensory-based theme course. Thus, practical sensory-based experience with fish and gaining a practical skill increase positive views toward eating fish, which can set a direction for future motivation and curiosity to try fish.

References