

Characterizing dietary changes during pregnancy using data from the danish national birth cohort

Erica E. Eberl

University of Copenhagen, Denmark

Background: Pregnant women are often advised to make changes to their diet to optimize foetal growth and minimize the risk of adverse gestational outcomes. However, motivation to do so may be challenged in the face of personal beliefs, sociocultural values, as well as pregnancy-related symptoms. The aim of this study is to describe and classify the dietary changes in Danish pregnant women and to evaluate these changes in relation to socio-demographic characteristics and pregnancy-related symptoms. **Methodology:** The Danish National Birth Cohort (DNBC) 1996-2003, invited 100,000 pregnant women across Denmark to respond to both open- and closed-ended questions regarding the specific changes they made to their diet since becoming pregnant. Dietary changes were assessed in gestational week 25 using two open-ended questions about specific foods avoided and introduced during pregnancy. Free-text responses were manually coded into 58 minor categories and 17 major categories. Both food classifications were validated using EIR, a supervised machine learning framework which was pre-trained on a Danish language processing model (RøBÆRTa). The types of foods added and stopped were analyzed from 67,398 pregnancies. Multiple correspondence analysis and cluster analysis were used to identify groups of dietary habits. **Findings:** Among 42,865 women that reported a dietary change, 87% reported a food avoidance and 53% reported a food addition. The most common foods stopped were alcohol (43%), coffee and tea (32%), whereas the most common foods added were milk products (39%), and fruit (24%). Dietary changes differed depending on maternal characteristics, including age and parity, as well as the presence of nausea and vomiting. **Conclusion:** This study is the first to develop a machine learning model to classify foods from Danish free-text and provides a detailed insight into pregnant women's eating behaviors. These findings are valuable for the development of targeted and effective interventions aimed at optimizing prenatal nutrition.

Biography

Erica Eberl is an Accredited Practicing Dietitian and PhD fellow at the Novo Nordisk Foundation Center for Basic Metabolic Research at the University of Copenhagen, Denmark. She is part of the Novo Nordisk Foundation Copenhagen Bioscience PhD program, a fully-funded four year PhD program for international students. She holds a Masters in Nutrition and Dietetics and is a member of Dietitians Australia. Her PhD focuses on understanding pregnancy-induced appetite changes in both Scandinavian and African populations. She will present her work on characterizing dietary changes during pregnancy using data from the Danish National Birth Cohort.

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