Knowledge, Health, and Social Drivers of Frozen Vegetable Consumption in Women of Childbearing Age

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INTRODUCTION

Listeriosis is a serious food borne illness caused by the bacteria Listeria monocytogenes (LM). In pregnant women, it can cause miscarriage, still birth, or spontaneous abortion (Craig et al. 2019). There have been numerous recalls of frozen vegetables due to LM in recent years, yet the FDA has few regulations regarding LM in these products (USDA, 2020). These recalls occur because frozen vegetables are intended to be cooked prior to consumption, yet many consumers may eat them without prior heating. Therefore, it is necessary to investigate how women of childbearing age prepare frozen vegetable products to assess risky behaviors and identify opportunities for intervention.

STUDY OBJECTIVES

1) Identify the prevalence of uncooked frozen vegetable consumption in women of childbearing age
2) Understand which demographic, knowledge, awareness, and practice variable are associated with uncooked frozen vegetable consumption
3) Determine what proportion of women of childbearing age read the preparation instructions on frozen vegetable products

METHODS

A 10-question survey was designed to assess the following:
• Consumption of uncooked frozen vegetables
• Type of frozen vegetable consumed
• Reading preparation instructions
• Knowledge of listeriosis
• Concern about COVID-19 in frozen vs. fresh vegetables
• Concern about food safety in food prepared at home
• Potential changes in diet due to pregnancy
• Reasons for consuming frozen vs. fresh vegetables

The survey was distributed from May 25-28, 2020 via the Google Consumer Survey Methodology. Enrollment targeted women between the ages of 18-54 years old and stopped when sample size reached 1001 respondents.

Statistical Analysis

1) Descriptive statistics (Table 1, Fig 1-3): Bivariate logistic regression
2) Multivariable Analysis: Significant variables from the bivariate analyses were used to build the final logistic regression model through stepwise backward elimination using the likelihood ratio test (alpha=0.05). Results are displayed as odds ratios (ORs) and 95% confidence intervals (CI)

MAIN FINDINGS

• We found that 33.5% of women who consume frozen vegetables do so without prior heating (17.8% of 1001 respondents; Figure 2)
• Controlling for other factors, there is a significantly higher odds of consuming uncooked frozen vegetables (increasing likelihood of LM exposure) in individuals who have not heard of listeriosis, who have not read the preparation instructions on frozen vegetable products, and who are younger (Table 2)
• The majority of respondents (55.7%) indicated that they have read the preparation instructions on a frozen vegetable product (Figure 3)
• Controlling for other factors, there is a higher odds of reading preparation instructions on a frozen vegetable product in individuals who have heard of listeriosis (Table 3)

CONCLUSIONS

• Women of childbearing age, especially younger women, should be informed of the risk of LM in frozen vegetables
• Potential targets for interventions in women of childbearing age could be to increase education related to listeriosis
• These results could inform food labeling guidelines, education, and future research studies
• Future research may include investigating the preparation and consumption of other frozen foods that are at risk for listeriosis, including frozen prepared meals and frozen fruits

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REFERENCES


Available at: https://www.fda.gov


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