ABSTRACT

Diarrhea and acute bronchitis are among the top 10 diagnoses among children 0-84 months and younger in the outlying Intibucá region of Honduras. Micronutrient deficiencies, particularly of iron and zinc, are relatively common in this population. This study investigated the impact of a commercially available fortified beverage on diarrhea and acute bronchitis morbidity among children in Intibucá, ages 6-60 months at the start of the intervention. Monthly incidence of diarrhea, acute bronchitis, cough, and upper respiratory infection were compared for the year prior to the intervention and the year of the intervention using data collected three times for all children enrolled in the MANI 2 program. Monthly incidence was reduced by 78% for diarrhea (p<.01) and 73% for acute bronchitis (p<.01) compared to children in the region who did not receive Chispuditos®. For diarrhea, acute bronchitis and upper respiratory infection, the decrease in morbidity was greater when compared to children in the region who did not receive Chispuditos®.

INTRODUCTION

Diarrhea and pneumonia are among the leading causes of mortality among children under 5 in developing countries. In Honduras, diarrheal disease, acute respiratory infections, and malnutrition are common problems among young children in this region. Children in Intibucá have a high incidence of diarrhea and acute bronchitis compared to children in the same age group in other municipalities in Honduras. Moreover, due to limited healthcare delivery, most children are likely to be malnourished and micronutrient deficiencies are common among this population.

RESEARCH OBJECTIVE

This study evaluated the impact of a fortified beverage on diarrhea and acute bronchitis among young children in the outlying Intibucá region.

METHODOLOGY

Through the MANI 2 program ("Micronutrient Administration for the Intibucá Children"), interventions were delivered in municipalities in Intibucá ages 6-60 months at the start of the intervention. The MANI 2 program included a fortified beverage in Honduran schools for children ages 6-24 months for the intervention year and yearly follow-up. Monthly incidence of diarrhea and acute bronchitis was compared between children who received Chispuditos® and a control group of children who did not receive Chispuditos®. Monthly incidence of diarrhea and acute bronchitis were reduced by 78% (p<.01) and 73% (p<.01) among the intervention group compared to children in the untreated group.

RESULTS

Monthly incidence of diarrhea and acute bronchitis were reduced by 78% (p<.01) and 73% (p<.01) among the intervention group compared to children in the untreated group. Significant decreases in monthly incidence were observed for both diarrhea and acute bronchitis. For diarrhea, there were 32.7 fewer cases per month (61% decrease, p<.01) in the intervention group compared to children in the untreated group. For acute bronchitis, there were 40.9 fewer cases per month (50% decrease, p<.01) in the intervention group compared to children in the untreated group.

CONCLUSIONS

The provision of a commercially available fortified beverage was associated with a significant decrease in diarrhea and acute bronchitis among young children in the study population. Further study is warranted to determine the impact of fortified beverages on other child health and wellness outcomes and on overall health care costs.

ACKNOWLEDGEMENTS

This study was funded by The Mathile Institute for the Advancement of Human Nutrition, Dayton, Ohio. Support provided by The Shedd Institute for Nutrition Education and Behavior.

CONTACT INFORMATION

Laura Feeney, Amy Paxton-Aiken, Kerri Kruse, Jeffrey E. Heck, Richard Buten and Gregory A. Reinhart

Micronutrient Supplement Decreases Diarrhea and Respiratory Morbidity in Rural Honduran Children.

Laura Feeney, Amy Paxton-Aiken, Kerri Kruse, Jeffrey E. Heck, Richard Buten and Gregory A. Reinhart

The Mathile Institute for the Advancement of Human Nutrition

January 2015

Abstract Number: 3920