

Food Insecurity Increased During the COVID-19 Pandemic in a Pediatric Cystic Fibrosis Population but Was Not Associated With Weight or Pulmonary Function

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Objectives: This study's purpose is to determine changes in household food security status and nutrition-related anthropometrics and pulmonary function of children with Cystic Fibrosis during the COVID-19 pandemic.

Methods: This retrospective study included caregivers of children ages 2–18 years old with Cystic Fibrosis who had Ohio residency, a Forced Expiratory Volume in 1 second (FEV₁) above 30% and consumed at least half of nutrient needs by mouth. After contacting all eligible households by phone, 30 subjects (50% response) enrolled. The validated 18 item Food Security survey module along with several supplemental questions was used to assess household food security status before and after the onset of the COVID-19 pandemic. A medical chart review collected demographics as well as weight (kg) and FEV₁ (%) for the visit closest to the start of the pandemic (Jan-Mar 2020) and the

most current visit (July-Dec 2020). Change in weight was categorized as desirable/undesirable based on clinic standards for using the fiftieth percentile as desirable. A paired t-test was used to determine change in FEV₁ since the pandemic. Changes in food security status in relation to change in weight and change in FEV₁ were determined using Fisher's test and Welch's t-test, respectively.

Results: Participants were caregivers of children who were 9.96 ± 5.02 years old, 56% female, and 83% Caucasian. Ten % of participants ($n = 3$) reported household food insecurity before the pandemic, which increased to thirty % ($n = 9$) after the pandemic. Fifty percent of participants ($n = 15$) experienced an undesirable weight gain ($2.71 \text{ kg} \pm 6.32 \text{ kg}$; mean \pm std dev). There was no change in FEV₁ during the pandemic ($-0.6\% \pm 9.02$; $P = .74$). Changes in weight and FEV₁ were not related to change in household food security status ($P = 0.287$ and $P = .088$ respectively).

Conclusions: Food insecurity increased during the COVID-19 pandemic; however, it was not related to undesirable weight change or decrease in FEV₁. The second part of this study will use semi-structured interviews to elucidate how families with children with cystic fibrosis coped with food insecurity during the pandemic.

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