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Case Report

Telehealth as a Gateway to Better Nutrition in Pediatrics

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Abstract

Pediatric feeding disorders are multifactorial in nature and thus provide management challenges for caregivers and their providers. The COVID-19 pandemic has presented additional challenges for these families including rising rates of food insecurity, and difficulty locating recommended formulas, supplements, and preferred foods. However, the implementation of telehealth has been beneficial because it has permitted clinicians the unique perspective of evaluating the child in their natural environment. This has resulted in identifying challenges in the child's care management that would not have otherwise been realized and allowed our clinicians to better tailor their recommendations to the individual child and family situation. Furthermore, telehealth has given families the opportunity to meet with their clinicians while in their home environment, thus reducing the logistical and financial burden of in-person visits.

ABBREVIATIONS

PFD: Pediatric Feeding Disorder; COVID-19: SARS-CoV-2; GNP: Growth and Nutrition Program; SLP: Speech-Language Pathologist; RD: Registered Dietitian

INTRODUCTION

Pediatric feeding disorders (PFDs) are often multifactorial in nature and the gold-standard of treatment is a multidisciplinary team approach [1]. In addition to medical, nutritional, feeding skill, and behavioral contributors to feeding difficulties, there are many other psychosocial factors which can impact nutritional status, including food insecurity and parental distress/mental health.[1] With the COVID-19 pandemic, there were many additional challenges that families and patients with PFDs encountered, including difficulty locating recommended formulas, supplements, and preferred foods for children with selective eating patterns, in the setting of rising rates of food insecurity. These families also experienced disruptions accessing in-person care. There were, however, several changes in how multidisciplinary treatment of PFDs was conducted which resulted in improved care for these families [2]. The current paper highlights some of these changes through several de-identified cases.

The Growth and Nutrition Program (GNP) specializes in caring for children ranging in age from newborn through 7-years-old that have feeding difficulties and slow growth. Our team includes physicians, nurses and nurse practitioners, speech-language pathologists (SLP) with a focus on feeding, registered dietitians (RD), social workers, and pediatric psychologists. Prior to the COVID-19 pandemic, families would meet with several clinicians at either our main hospital outpatient clinic or community-based satellite locations. When possible, the appointments were scheduled as a coordinated visit or with overlapping appointment times. Visits involved families providing an updated medical history, diet recall, anthropometric measurements, and a physical exam. Families were asked to bring food, and our clinic provided an appropriately sized child seat for feeding trials. Some of the challenges with these in-person visits were the length of time families spent in clinic, that many families forgot to bring foods for these feeding trials, and children were often reticent to eat in an unfamiliar environment with multiple clinicians observing. Families were also requested to bring all the medications their child was taking to be reconciled with providers, however, this rarely occurred during in-person visits. Once the provider visits concluded, clinicians attempted to meet to formulate a collaborative care plan, with one provider typically returning to the room to review the plan with the family. When this was not feasible, clinicians discussed the patient's care after clinic, and one provider contacted the family with recommendations.

CASE PRESENTATION (CASES HAVE BEEN DE-IDENTIFIED)

Case Study 1

Patient A is a two-year-old female followed in GNP since five-months of age. The family is Spanish speaking and requires the use of an interpreter for visits. At five-months of age, the child was diagnosed with an allergy to dairy and soy. By nine-months of age, several additional allergens were identified including eggs

and peanuts. As a result, she consumed a hypoallergenic formula until one year of age at which time she was transitioned to the hypoallergenic toddler formula. Her first virtual visit with our team due to the COVID-19 pandemic was at 16-months of age. The following month, under the guidance of her team, her diet was liberalized to allow introduction of soy-based products. She was able to tolerate soy-based ice cream, sour cream, and cheese; however mother noted despite other signs of tolerance she remained "itchy". She was seen by her allergist a few months later and advised to continue avoiding dairy, eggs, and peanut as well as eliminate soy from her diet again. By 22-months of age, she was noted to have poor growth and persistent itching which was negatively impacting sleep. During this telehealth visit with her family, our team requested mother show us the foods she was offering while on camera. Our team realized that the family was still offering products containing her allergens (soy and dairy) as the family had been unable to read the nutrition labels which were in English. The use of telehealth was instrumental in helping our team identify challenges in managing this patient's care.

Case Study 2

Patient B is an 11-month-old (eight-month corrected age) preterm infant born at 26-weeks gestation who has been followed in GNP clinic since three months of life. He has a history of bronchopulmonary dysplasia, reflux, dysphagia, and has required supplemental nasogastric tube feedings due to poor oral intake. As a result of the pandemic, and due to his complex medical needs, visits were initially conducted via telehealth. During this telehealth encounter, Patient B was found to have lost significant weight since his last clinic visit one month prior. The patient had not experienced any inter-visit illness. Upon further review, it was noted the patient's diet had been changed from 100% breastmilk to a combination of breastmilk and formula at the prior visit. The team asked the caregivers to demonstrate via live the live telehealth platform how they were making the formula bottles. We discovered the caregivers were incorrectly mixing the formula thus providing 15kcal/oz rather than the 20kcal/oz prescribed, which explained the weight loss.

Case Study 3

Patient C is a six-year-old male with a history of developmental delay, pediatric feeding disorder, and poor weight gain. He was initially referred to GNP at four-years of age during the height of the pandemic, thus all clinic visits were conducted via telehealth. He presented to this telehealth appointment demonstrating suboptimal growth despite the addition of cyproheptadine which had been prescribed six months prior to promote gastric accommodation, hunger, and weight gain. The family had been advised to start the cyproheptadine once per day in the evening for one week, then to add a second dose in the mornings. On review with the family, the caregivers reported they instead decided to give the dose once per day. When the family was asked to demonstrate how they were preparing the medication, it was noted they were only giving half the prescribed dose once per day as they had incorrectly calculated the volume needed. As a result, the medication dosage was subtherapeutic and thus not providing the intended benefit. This error was discovered because the family had the medication bottle and syringes readily available at home for the clinician to review with them.

DISCUSSION

Due to the COVID-19 pandemic, our clinic had to rapidly shift operations from a solely in person clinic to 100% virtual with services delivered via a live telehealth platform. Even with anticipated challenges in the transition to telehealth during the pandemic, and with the understanding of the barriers our families of children with PFDs faced, we have been able to highlight cases in which ongoing concerns were identified and resolved because of this telehealth transition. Since this change, patients are now scheduled with all needed clinical providers together. This has allowed our team to work collaboratively with the patient and their family providing real-time recommendations. This collaborative approach has received support in other studies conducted with children with PFDs and their families [3]. Raatz et al., also noted the positive benefits of evaluating and treating a child's feeding difficulties in their own environment which we also experienced [4]. These in-home feeding trials have provided our team with a more accurate representation of a child's feeding skills as well as given us insight into the feeding structure and set up in the home. For example, we have identified families that did not have access to a highchair or an appropriate set up to feed the child safely.

Telehealth has also allowed our team to uncover several issues that would not have been recognized had these visits been conducted in-person. For example, we identified several instances of incorrect formula preparation in our medically complex infant population by having caregivers demonstrate how they are preparing formula for their child. With the implementation of telehealth, we can have caregivers read back the recipe to make certain they understand how to prepare it, have them show us the mixing spoons and bottles they will use, then prepare a bottle while we observe. This return demonstration and feedback is crucial for the team when adjusting the caloric density and ensures better accuracy. For the older child consuming solids, our dietitians can show families specific food products using screen sharing, and families can share the food products they are using and have available in their home. This helps ensure that families are purchasing correct products with appropriate caloric density and minimizing allergen exposures. Further, this has helped our clinicians better understand ingredients that may be unfamiliar, particularly with ethnic foods, and allows us to make recommendations based on the products the family has already purchased.

The full range of advantages of telehealth is outside the scope of the current paper, but includes shorter appointment duration, less travel time to clinic, reduced financial burden including parking and other transportation related expenses, and in many instances helps to alleviate the childcare burden for siblings [5,6]. Although there are some challenges in delivering care via this modality, families continue to request telehealth visits to a greater extent than in-person visits, which supports telehealth as an effective model of care. The cases included in the current paper highlight improvements in nutritional care that are possible because of utilization of telehealth for children with PFDs.

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