Identifying Malnutrition in Pediatric Population

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Background
- Pediatric malnutrition is defined as an imbalance between nutrient requirements and intake that results in cumulative deficits of energy, protein, or micronutrients that may negatively affect growth, development, and other relevant outcomes (Wolf, 2016).
- Children who are born with or acquire a disability often face significant issues related to nutrition. A high incidence/prevalence of malnutrition is often reported in children with disabilities, and this may result in poorer health and development, leading to a perpetuating cycle of suboptimal nutrition, disability and worsening health status.
- Children with disabilities (e.g., Down syndrome) may have a variety of reasons for malnutrition. A tool like this would allow dietitians to better assess the child and provide more focused nutrition intervention and improve quality of treatment.
- The research is still new and limited, but malnutrition in children with disabilities can lead to more complicated hospitalizations due to the progression of the underlying disease or condition, poor wound healing, or allow return to previous level of activity, complications that can significantly increase the length of stay and cost of hospitalization. A comprehensive assessment using the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N) indicators can help identify the need for nutritional intervention and address nutrient deficiencies thus reducing the cost of hospitalizations and improve health outcomes overall for pediatric patients.

Aims
- My primary goal is to create a tool for registered dietitians, nurses, physicians, and other health professionals to use more frequently to assess nutritional status in children, with and without disabilities. My hope is that this tool will help create awareness around pediatric malnutrition.
- For the assessment tool, I chose to use the updated indicators in A.S.P.E.N 2016 Consensus Statement because it is based on the most current evidence-based research. I wanted to create an assessment that covers a head-to-toe physical exam including: anthropometrics (height; weight; skinfold thickness; waist circumference, hip, and chest), growth parameters (height-for-weight; height-for-length; weight gain velocity), and common micronutrient deficiencies for healthcare providers to look for.

Methods
- Design: The design of this project included 1) an overview and literature review of current assessment tools which thus informed 2) the development of my assessment tool for La Rabida Children’s Hospital.
- Procedures for data collection: I performed a literature review on malnutrition in pediatrics, malnutrition in children with disabilities, and effective assessment tools used in pediatric clinical settings. In addition to the literature review, the A.S.P.E.N 2016 Consensus Statement influenced the assessment tool developed for La Rabida Children’s Hospital.
- Procedures for implementation: The literature review gave insight to the prevalence of malnutrition in children, with and without disabilities. Additionally, the A.S.P.E.N indicators gave the most current set of standards for hospitals to implement in their health and physical assessments, based off evidence-based research.

Results
The assessment tools most frequently used in clinical settings have both pros and cons. The table below shows an overview of the five current assessment tools for malnutrition in pediatrics: Pediatric Nutrition Risk Score (PNRS), Subjective Global Nutrition Assessment (SGNA), PediatricYorkhill Malnutrition Score (PYMS), Screening Tool for the Assessment of Malnutrition in Pediatrics (STAMP), and Screening Tool for Risk on Nutritional Status (GROWths). In 2016, A.S.P.E.N recommended that a standardized set of diagnostic indicators be used to identify and document pediatric malnutrition (undernutrition) in routine clinical practice (Becker, 2016). The purpose is to help identify a basic set of indicators that can be used to diagnose and document undernutrition in the pediatric population ages 1 month to 18 years old, with or without disabilities. The indicators are intended for use in multiple settings (acute, ambulatory care/outpatient, residential care). In the United States, undernutrition frequently occurs in hospitalized acute and/or chronically ill patients, and patients with special health care needs. Below are the assessment tools currently used in clinical settings, as well as the new indicators of pediatric malnutrition. Additionally, I have copies of the assessment tool developed in addition to the A.S.P.E.N. Pediatric Nutrition Care Pathway.

Conclusion
- The universal use of a single set of diagnostic parameters will expedite the recognition of pediatric undernutrition, lead to the development of more accurate estimates of its prevalence and incidence, direct interventions, and promote improved outcomes. A standardized diagnostic approach will also inform the prediction of the human and financial responsibilities and costs associated with the prevention and treatment of undernutrition in this vulnerable population and help to further ensure the provision of high-quality, cost-effective nutritional care.
- The most important takeaway from this project is that malnutrition evaluation should be incorporated into the routine clinical appointment. The assessment tool developed for this project can be used in many pediatric settings. The tool is simple, two-sided, and captures the A.S.P.E.N updated indicators.
- Previous pediatric assessment tools have not been updated since the new indicators were released. Although they are good sources and recommendable, research has shown that a more complete, updated, and standardized tool will be more beneficial, for the patient and the hospital.
- To conclude, pediatric malnutrition assessments are not performed as frequently as or in-depth as they should be. Creating a new tool using the A.S.P.E.N guidelines takes time, collaboration, and expertise. I have created a tool that has filled in the gaps of previous assessments, and can be implemented in hospitals today. La Rabida Children’s Hospital will be the first to test this tool out.

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References