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The Implementation of an Evidence-Based Intervention to Increase Physical Activity in Overweight and Obese Children

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Background

- Obesity is a chronic condition of childhood (CDC, 2019)
- Children do not meet daily physical activity recommendations (AAP, 2006)
- Tennessee has the highest childhood obesity rate in the U.S. (Kelman, 2019)
- At the project site, an estimated 15-20% of pediatric patients are overweight or obese
- Patients wait up to seven months to be seen in an outpatient weight management clinic

Purpose and Aim

- **Purpose:** To implement a behavioral intervention, such as a pedometer, in children who are overweight or obese to increase physical activity and promote weight loss

- **Aim:** To increase physical activity amongst 25% of the project participants within three months

Theoretical Framework

This evidence-based intervention was implemented using the Rosswurm and Larrabee Model (1999)

Assess need for change in practice

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Link problem interventions and outcomes

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Synthesize best evidence

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Design practice change

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Implement and evaluate change in practice

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Integrate and maintain change in practice

PICOT Question

"In overweight and obese children in a primary care clinic, how does a behavioral intervention compared to no intervention, affect physical activity, weight, and body mass index (BMI) in three months?"

Synthesis of Evidence

Four articles were critically appraised using the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Research Evidence Appraisal Tool

- The JHNEBP tool was used to guide critical appraisal, determine quality rating and validity of the literature, and determine recommendations for practice change.
- The four articles remaining from the literature search were appraised for their relevance to the PICOT question based on study conduction, results yielded, and the influence on future practice change

Evidence suggests that he **impact of pedometer with a daily step goal**, is more effective at decreasing a child's weight and BMI and increasing physical activity

Outcome	Staiano, A. et al. (2017)	Finkelstein, E. et al. (2013)	Groffik, D. et al. (2008)	Allafi, A. (2020)
Physical Activity	↑s	↑s	↑c	↑s
Weight	↓s	↓c	∅	∅
Body Mass Index (BMI)	↓s	↓c	∅	∅
Level of Evidence	II	I	I	I
Quality of Evidence	A	A	B	B

Outcomes and Measurement Plan

The outcome measures that will determine the success of this project are those that align with the goals of the project

Goals:

- Increasing physical activity by 10%
- Maintaining or decreasing weight by 2%
- Creating a downward trend in BMI results within the proposed three-month time frame.

Methods

- Evidence-based practice project
- Private pediatric practice in Eastern Tennessee
- Participants referred for intervention by provider
- 12-week weight management intervention to monitor weight, BMI, and physical activity
- Pedometer with step goals (100 steps/day above baseline)
- Weight, height and BMI measured at baseline and week 12
- Paired t-test was performed to examine difference for change in weight, BMI, and activity levels

Findings

- Participants were 8-17 years of age (mean 11 years), 55% female
- **Activity time increased** 26.27 min, from 141.27 min to 167.55 min **(p=0.031)**
- **Pedometer steps increased** 1393 steps, from 5313 steps to 6706 steps **(p=0.031)**
- There was no significant change in BMI (p=0.498). Baseline BMI was 24.61 and week 12 BMI was 24.44.

Implications for Practice

Providing children with pedometers and individualized step goals can be an effective approach to increase activity and promote weight loss

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