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Staff Education for Prevention and Management of Obesity in Adolescents From Underserved Communities

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Walden University

College of Nursing

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Doris Mtarubkwa

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Walden University
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Executive Summary: Staff Education Project
Staff Education for Prevention and Management of Obesity in Adolescents From
Underserved Communities

by

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Executive Summary Submitted in Partial Fulfillment
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Summary

This DNP project implemented a targeted staff education intervention designed to bridge the practice gap in obesity management among adolescents in underserved communities. A comprehensive chart review of 45 patients revealed that only 3% of encounters adequately addressed obesity using evidence-based practice (EBP) guidelines, establishing the urgent need for healthcare provider education and competency development. Adolescents in underserved communities face complex barriers to health and wellness, with obesity representing a critical public health concern. The literature demonstrated that childhood and adolescent obesity serves as a significant risk factor for multiple chronic conditions in adulthood, including Type 2 diabetes, hypertension, coronary heart disease, stroke, obstructive sleep apnea, elevated cholesterol levels, and metabolic syndrome (Salam et al., 2018). These findings underscore the essential role of healthcare providers in implementing evidence-based prevention and management strategies for this vulnerable population. The intervention was delivered through an integrated educational approach utilizing PowerPoint presentations, online resources, and validated pre- and post-test assessments. Data from 12-item multiple-choice assessments were collected and analyzed using Microsoft Excel and descriptive statistics to evaluate changes in staff competency regarding EBP application for obesity management. Results demonstrated significant improvement in healthcare provider competency and knowledge regarding the implementation of evidence-based obesity interventions. Beyond immediate clinical outcomes, the project promotes positive social change by enhancing health awareness and knowledge among adolescents and their family support systems, while fostering sustainability.

Background

The practicum site for this project is a primary care clinic located in Southwest Houston, in Harris County, Texas. The clinic serves all age groups, and the majority of the population in this area has a low socioeconomic status, which significantly affects their overall health outcomes. More than 90% of adolescents present in the clinic are overweight and obese, with chronic diseases caused by this condition. The clinic facility currently lacks a structured, evidence-based educational intervention targeting adolescent obesity prevention and management. Although routine anthropometric measurements (i.e., weight, height, and body mass index [BMI] documentation) are consistently performed during every clinical encounter, and providers deliver generic health-promotion counseling encouraging physical activity and healthy lifestyle choices, the care delivery lacks disease-specific, actionable obesity education aligned with clinical practice guidelines. The widespread incidence of obesity in adolescents in the United States is a critical public health concern that requires immediate EBP interventions to ensure a healthier future. Despite different approaches to addressing obesity in adolescents, the rate continues to rise, as explained earlier. Interventions to adequately prevent childhood and adolescent overweight and obesity are largely unsuccessful (Whitehead et al., 2021).

Primary care is considered the most suitable context to deliver obesity management healthcare across the world (Norman et al., 2023). However, the healthcare providers lack the knowledge to utilize EBP approaches to address obesity in the target population. Norman et al. (2023) further detailed that healthcare providers in primary care have a significant role in the multidisciplinary team and deliver obesity healthcare in

general practice contexts. Yet, there is little focus on the nurse's perspective on weight management. This gap in targeted, evidence-based patient education, combined with the absence of systematic behavioral counseling, nutritional guidance, or environmental modification strategies, contributes to the adolescent population's continued engagement in high-calorie food consumption and sedentary behaviors, perpetuating progressive weight gain and escalating obesity rates within this underserved community. To address the growing obesity epidemic and successfully implement obesity science, healthcare professionals must first be equipped with the proper knowledge and implementation skills. Yet, numerous studies have demonstrated that obesity education is lacking (Laddu et al., 2024).

This gap indicates a need for translating the complexity of obesity science into practice with an increased emphasis on the diagnosis, prevention, and treatment of obesity (Laddu et al., 2024). There is a clear lack of knowledge in addressing obesity among the target population, making it essential to equip healthcare providers to bridge this gap in practice. Therefore, it is crucial to educate healthcare providers, as they are essential and play diverse roles in health promotion, disease prevention, and disease management, ultimately enhancing the well-being of those who utilize healthcare services. Their core responsibilities include ensuring patient well-being and delivering high-quality EBP to address the practice gap.

The project question is: In adolescents from underserved communities (P), how does improving healthcare providers' knowledge and implementing evidence-based management strategies (I), compared to standard care (C), affect awareness and lifestyle modifications for weight management?

Staff Education Project Development

The Purpose of the Project

This staff education initiative was designed to enhance healthcare providers' knowledge regarding EBP implementation strategies for adolescent obesity management in the primary care setting. The project required increasing clinical awareness of obesity prevention and intervention approaches while promoting patient-centered lifestyle modifications that support improved health outcomes and behavioral changes in adolescent populations. The aim of this project was to evaluate whether implementing an educational intervention for healthcare providers in primary care settings on the application of EBP strategies to assess, intervene, monitor, and counsel adolescents regarding the etiologies and health consequences of obesity would enhance healthcare providers' competency and effectiveness in delivering education to the target population. The project aimed to improve the quality and consistency of provider-delivered health education and motivational interventions, along with cultural competence, ultimately resulting in measurable improvements in clinician behavior change, patient engagement with evidence-based obesity prevention and management strategies, and obesity prevalence reduction within the target underserved adolescent population.

EBPs are interventions that have been proven effective through rigorous research. One key strength of this project is that it is grounded in evidence. After pinpointing the practice gap, I conducted a literature review that revealed an EBP method to tackle the identified issue. The supporting evidence for this project is both current and of high quality. Furthermore, gaining support from key stakeholders is another strength of this initiative. The important strength was training healthcare providers in EBP strategies to

help them tackle the practice gap. The staff showed a strong willingness and enthusiasm to learn about the new EBP implementations, and the management offered substantial support, facilitating the project's development and implementation.

The participants in this project were 10 individuals with different credentials: three nurse practitioners (NPs), a primary care provider (PCP), and the project manager (DNP student), three nurses, one social worker, and one nutritionist, along with medical assistance. Each team member played an active role in patient care and supported the organization's initiatives to combat adolescent obesity. Their participation was an essential component of project implementation, ensuring that all staff received consistent training and standardized information on managing obesity in the target population using EBP strategies and validated tools. The project's development began with a thorough assessment of the current patient care practices.

Sources of Evidence and Brief Evidence Summary

I conducted a thorough literature search using the Walden University Library as the primary database to identify peer-reviewed journal articles, systematic reviews, expert analyses, and case reports focused on adolescent obesity, encompassing its etiology, associated health outcomes, and evidence-based management strategies. The search encompassed major databases such as PubMed, CINAHL, Nursing Journals @Ovid, MEDLINE, Cochrane, and PsycINFO, as well as authoritative websites including the Centers for Disease Control and Prevention (CDC), Healthy People 2020, WHO, and the U.S. Preventive Services Task Force (USPSTF), along with sources from the American Academy of Pediatrics (AAP) and the American College of Lifestyle Medicine (ACLM). Other information was gathered from professional expertise, organizational data,

scientific literature, and stakeholder values and inputs. These sources included a comprehensive literature search, analysis of facility statistics and databases, personal experience within the clinical setting, information from professional organization websites, ongoing reports from clinicians in the PCP office, and discussions with collaborative healthcare providers. Additionally, keywords such as “overweight and obesity management” and “EBP strategies guidelines for adolescent obesity” were used. Nonetheless, due to a lack of up-to-date EBP resources at the project sites to benefit the target populations, I relied on the aforementioned resources to gather all needed materials.

The consistent use of standardized tools during the implementation and evaluation phases is critical. This project utilized multiple standardized instruments for screening, intervention, monitoring, and evaluation of adolescent obesity. These standardized tools are the AAP Clinical Practice Guideline. AAP guideline emphasizes holistic care, considering the family, community, and social determinants of health. As supported by Bondyra-Wiśniewska et al. (2021), the analyzed studies suggest that interventions related to lifestyle changes, including diet and physical activity, participation of a dietician or nutritional specialist, and a physician in a therapeutic team, as well as a longer duration of intervention, are effective in treating childhood and adolescent obesity. Personalized interventions are crucial; therefore, healthcare providers must perform a comprehensive assessment and identify the underlying causes that contribute to obesity. The CDC’s (2018) BMI percentiles are determined using CDC growth charts and align with recognized family healthy weight programs. The ACLM promotes a family-centered, weight-neutral approach that uses motivational interviewing and readiness to change to

guide personalized care. ACLM supports early habit formation through six core lifestyle interventions while addressing social determinants and reducing disparities from costly obesity treatments (Amati & Brackbill, 2024). The 2017 USPSTF advises screening all children and adolescents aged 6 and older for obesity using BMI percentiles specific to age and sex. Youth with a BMI in the 95th percentile or higher should be referred to comprehensive behavioral interventions lasting at least 26 hours (USPSTF et al., 2017).

Summary of Implementation and Evaluation Methods

The Walden University Ethics Pledge approval was secured and granted before the start of the project's implementation. To initiate the implementation phase, all 10 staff members participated in a pretest designed to assess their foundational understanding of EBP strategies applicable to obesity management within the identified population. Following this, a PowerPoint presentation titled "Staff Education for Addressing Obesity" (see Appendix A) was delivered. The presentation emphasized the advantages of applying EBP approaches, the importance of empowering healthcare staff, and strategies to bridge the practice gap by engaging adolescents and their families. Questions from participants were addressed throughout the session. Upon completion of the training, staff members participated in a posttest to measure knowledge acquisition and assess any changes in understanding. Evidence was gathered through a pretest–posttest design to assess the effectiveness of the educational intervention. All 10 clinical staff members took part in the data collection process. Knowledge of EBP strategies for addressing obesity in the target population was evaluated using a 12-item multiple-choice assessment.

To establish baseline knowledge, staff members completed a 12-item pretest (see Appendix B) immediately before attending the educational session, with all data collection occurring on a single calendar date. This assessment evaluated their baseline understanding of the importance of implementing EBP strategies to address adolescent obesity. The pretest preceded a 40-minute educational session through which staff acquired foundational knowledge regarding the implementation of the EBP intervention designed to bridge the identified practice gap. Following the educational intervention, the same 12-question assessment was given to the 10 staff participants to evaluate knowledge acquisition (see Appendix B).

Results

Descriptive Statistics

Individual participant performance data in Table 1 displays the pretest and posttest results for the 10 participants who completed the staff education program on obesity management. Examination of individual participant data reveals universal improvement across all 10 participants, with score gains ranging from 4 to 9 points. Participant 1 demonstrated the greatest absolute improvement with a 9-point gain (from 3 to 12), whereas Participant 7 showed the smallest gain of 4 points (from 7 to 11). Notably, Participant 7 began with the highest pretest score, suggesting a potential ceiling effect where those starting with higher baseline knowledge had less room for improvement. Conversely, participants starting with lower pretest scores (P1, P3, P4, P9) generally showed larger gains, indicating that the intervention was particularly effective for those with the greatest knowledge deficits at baseline. These findings highlight the

program's effectiveness in enhancing staff knowledge on implementing EBPs to address obesity within the target population.

Table 1

Pretest and Posttest Scores by Participant

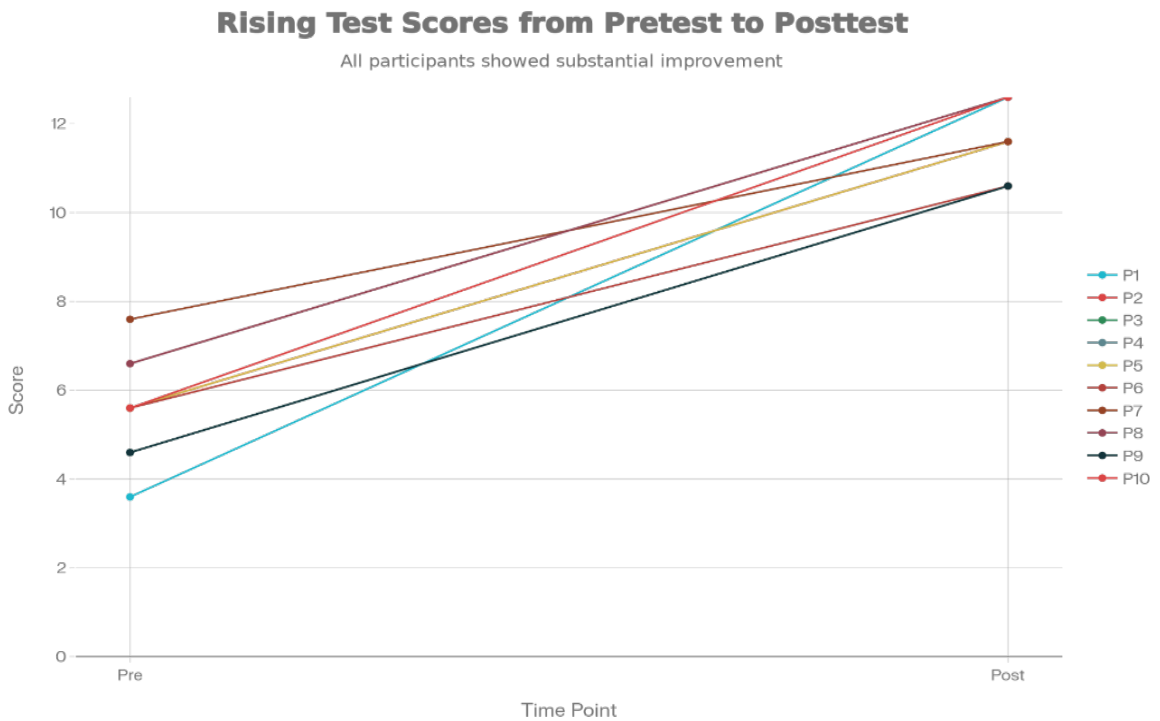
Participant	Pretest score	Posttest score	Difference
P1	3	12	+8
P2	5	11	+8
P3	4	10	+7
P4	4	10	+8
P5	5	11	+6
P6	5	10	+5
P7	7	11	+5
P8	6	12	+6
P9	4	10	+6
P10	5	12	+7
Average	4.8	10.9	6.6

The implementation results demonstrate improvement in participant knowledge scores following the educational intervention. Analysis of the 10 participants revealed substantial gains across all individuals, with a mean improvement of 6.6 points on the assessment measure. The pretest scores averaged 4.8 points ($SD = 1.14$, range 3–7), indicating relatively low baseline knowledge among participants. Following the intervention, posttest scores increased dramatically to a mean of 10.9 points ($SD = 0.88$, range 10–12). This represents a 127% improvement from baseline. The posttest scores also demonstrated reduced variability compared to pretest scores, with a standard deviation of 0.88 versus 1.14, suggesting that the intervention effectively brought participants to a more uniform level of knowledge mastery. The consistency of posttest scores within the narrow range of 10–12 points indicates that nearly all participants achieved similarly high levels of competency after the training.

The individual trajectory analysis (see Figure 1) demonstrates that 100% of participants showed improvement with no exceptions. All trajectory lines slope upward from pretest to posttest, with the steepest slopes observed for participants who started with the lowest baseline scores. This pattern suggests that the intervention was inclusive and effective across varying levels of initial knowledge. Participants starting at different baseline levels all converged toward high posttest scores in the 10–12 range, indicating that the educational content successfully addressed knowledge gaps regardless of starting point. The parallel upward trajectories across all participants provide visual confirmation of the intervention’s consistent effectiveness.

Figure 1

Trajectory Patterns



Statistical Significance and Effect Size

A paired samples *t* test was conducted to determine whether the observed improvement from pretest to posttest was statistically significant. The analysis revealed a *t* statistic of 14.992 with a $p < .000001$, indicating that the improvement was highly statistically significant and extremely unlikely to have occurred by chance. The probability that these results occurred due to random variation is less than 0.0001%, providing strong evidence that the intervention directly caused the observed knowledge gains. Furthermore, Cohen's *d* effect size of 4.74 represents an exceptionally large effect, far exceeding the conventional threshold of 0.8 for large effects. This magnitude of effect size indicates not only statistical significance but also substantial practical significance, demonstrating that the intervention produced meaningful and clinically relevant improvements in participant knowledge.

Recommendations

The educational intervention proved highly effective, producing consistent improvements across participants as evidenced by pretest and posttest results and showing promise for broader use. Ongoing monitoring and follow-up at 3 and 6 months can assess long-term retention, while focusing on staff with lower initial knowledge may enhance outcomes and promote consistent competency across primary care teams

The Impact of Limitations to the Project

Implementation of the adolescent obesity prevention initiative encountered multifaceted organizational and patient-level barriers, including insufficient healthcare provider capacity, temporal constraints limiting staff development activities, and inconsistent patient engagement patterns. Nevertheless, despite these systemic

challenges, targeted educational interventions successfully enhanced clinician competency and EBP adoption, culminating in demonstrable improvements across key quality and clinical outcome metrics within the primary care setting.

Conclusions

EBP implementation serves as a strategic mechanism for organizational transformation by advancing clinical competence, enhancing decision-making rigor, and positioning care delivery within institutional strategic imperatives. Systematic integration of EBP fosters a culture of accountability, scholarly inquiry, and continuous professional development, thereby translating research evidence into measurable improvements in quality metrics and organizational performance outcomes. EBP strategies that foster healthy lifestyle behaviors among adolescents in underserved communities directly mitigate health disparities. This project ensures equitable access to quality care and promotes holistic well-being through targeted evidence-based interventions designed to improve long-term health outcomes and advance sustainable health equity. The project was effectively implemented and is strongly endorsed for its ability to strengthen organizational capacity, enhance professional development, and support enduring improvements in individual and community health.

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Appendix A: PowerPoint Presentation

Title: Empowering Staff/
Providers to Address
Adolescent Obesity Through
Utilizing EBP Strategies

Setting: Primary Care Clinic/
Zoom

–Staff Education Training

Duration: 30-40 minutes

Facilitator: DNP Student
Doris Mtarubukwa

Agenda

- Overview of the Problem
- Evidence Review
- Assess and evaluate the practice gap
- Standardize measures and screening
- Advance EBP and holistic care approach
- Effective communication
- Evaluation and Wrap-Up

Overview of the Problem

- The alarming rate of increase in obesity in adolescents.
- Risk factors:
 - Family history
 - Low Socioeconomic Status
 - Low physical activity, Poor nutrition,
 - Limited access to healthcare
- The prevalence of associated comorbidities:
 - Diabetes, HTN, depression, Heart diseases, SleepApnea, and High cholesterol

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Evidence Review

- U.S. Preventive Services Task Force (USPSTF):
- American Academy of Pediatrics (AAP),
- The American College of Lifestyle Medicine (ACLM)
- Centers for Disease Control and Prevention (CDC)

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Objectives:
At the end of the presentation, staff will be able to:

- Assess and evaluate obesity in adolescents in the clinic
- Use standardized measures to screen for obesity in adolescent patients
- Emphasize a holistic approach, family involvement, and patient-centered care using EBP guidelines
- Utilize effective communication to address the practice gap

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Screening for Obesity (USPSTF, 2017)

- Use standardized measures
 - Measures:
 - BMI percentile chart
- Online Resources”
[BMI calculator](#)

References: Amati et al., 2024; O’Connor et al., 2024)

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Screening for Obesity (USPSTF, 2017)

- The BMI categories typically are:
 - Underweight: BMI below 18.5
 - Healthy weight: BMI 18.5 to 24.9
 - Overweight: BMI 25.0 to 29.9
 - Obesity: BMI 30 or above
 - Severe Obese BMI ≥ 40 kg/m²
- Metric formula:
 - $BMI = \frac{\text{weight in kilograms}}{(\text{height in meters})^2}$

References: Amati, et al., 2024; Smith & Jone, 2023

The power of
communication



Patient- and Family-Centered Communication

• EBP strategies

- Effective communication
 - Collaborative, motivational communication strategies
 - Use of objective, visual tools and Multimedia
 - Active Listening and Empathy
 - Cultural sensitivity and personalization
 - Use of empathy and a non-judgmental approach
 - Coordinate care for patients and their family support.
- Reference: Amati and Brackbill (2024).

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Interprofessional Collaboration:

- Enhances the quality and accessibility of care to address the practice gap
 - Enhanced care coordination:
 - Comprehensive support
 - Implementing Team -Based Interventions
 - Improved outcomes

References: AAP: Kaufman et al., (2020), Cardel et al., (2020)

- Johnson et al., (2020)

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Adolescent Obesity: Understanding the Alarming Trend

OBESITY IN CHILDREN AND ADOLESCENTS

Childhood obesity in the United States has reached an epidemic level.



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Case Studies

Questions:

1. A 16-year-old female in an underserved urban area has a BMI at 120% of the 95th percentile, meeting criteria for severe obesity. She has intermittent asthma, depressive symptoms, and reports bullying at school. Her single parent works two jobs and struggles to attend appointments. The clinic has a part-time patient advocate/community health worker and limited on-site behavioral health services.
 1. Is her weight status classified as severe obesity (BMI at or above 120% of the 95th percentile)=T/F
 2. What is the key role for the patient advocate in this case?
 - A. Independent diagnosis and prescription of medications
 - B. Coordinate care, address barriers, and connect the family to the community and behavioral resources
 - C. Set national guidelines on obesity
 - D. Perform laboratory testing

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Case Study Continue

During a staff education session, a new nurse practitioner asks, "Why should we focus so much on obesity prevention during adolescence specifically? Wouldn't it be more effective to intervene in early childhood or wait until adulthood when patients are more motivated?"

Q 3. Why is adolescence a critical period for obesity prevention?

- A. Weight rarely changes after adolescence
- B. Habits formed can persist into adulthood
- C. Metabolism is highest at this stage
- D. Genetics plays no role in adulthood

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Q & A sessions

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Appendix B: Assessment Tools

Pretest/Posttest

Codename was used:

1. Which BMI percentile is used to classify obesity in adolescents according to CDC guidelines?
 - A. Above 85th percentile
 - B. Above 90th percentile
 - C. Above 95th percentile
 - D. Above 97th percentile
2. Which is a recommended initial step when addressing obesity in underserved communities?
 - A. Prescribe weight loss medication immediately
 - B. Assess social determinants of health
 - C. Schedule surgery consultation
 - D. Avoid discussing nutrition
3. When providing culturally competent care, what strategy helps engage adolescents effectively?
 - A. Ignore cultural food preferences
 - B. Use standardized materials only
 - C. Incorporate culturally relevant examples and dietary options
 - D. Focus solely on physical activity
4. Which screening tool is commonly used in primary care to identify overweight adolescents?
 - A. Waist-to-hip ratio
 - B. Skinfold caliper
 - C. BMI percentile chart
 - D. DEXA scan
5. Why is follow-up important after implementing an obesity intervention?
 - A. To bill insurance
 - B. To ensure continuity and assess progress
 - C. To avoid documentation errors
 - D. To reduce provider workload

6. In underserved settings, what is a barrier to consistent obesity screening?
 - A. Excessive provider training
 - B. High patient motivation
 - C. Limited resources and staff time
 - D. Abundance of educational materials
7. What is a key role of patient advocates in adolescent obesity prevention?
 - A. Perform clinical diagnosis
 - B. Coordinate care and connect families to resources
 - C. Set national guidelines
 - D. Conduct laboratory testing
8. Which intervention is most effective for long-term weight management in adolescents?
 - A. Crash diets
 - B. Surgery under age 18
 - C. Sustainable lifestyle changes involving family
 - D. Meal skipping
9. Why is adolescence a critical period for obesity prevention?
 - A. Weight rarely changes after adolescence
 - B. Habits formed can persist into adulthood
 - C. Metabolism is highest at this stage
 - D. Genetics plays no role in adulthood
10. Which is an example of an EBP strategy to address adolescent obesity?
 - A. Basing interventions on personal beliefs
 - B. Implementing a peer-reviewed, guideline-based nutrition counseling program
 - C. Ignoring community preferences
 - D. Restricting care to hospital settings only
11. When evaluating an obesity intervention program, which outcome is most aligned with EBP assessment?
 - A. Participant satisfaction with snacks
 - B. Reduction in average BMI percentile
 - C. Number of leaflets distributed
 - D. Hours spent preparing presentations
12. True or False: Family eating patterns and home environment can influence obesity risk.