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Benchmark: Impact of Weight Loss Education on Obese Patients

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To

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Acknowledgments

I want to take this time to thank God for giving me this opportunity and guidance to continue my education to serve others better. Through God, all things are possible. Also, I would like to thank my family, friends, and professors for supporting me through this challenging time and helping me to see my true potential.

Executive Summary

Obesity is a preventable disease that is infecting individuals worldwide. “Most of the world's population live in countries where overweight and obesity kills more people than underweight” (World Health Organization, 2021). Implementing a weight loss program into an internal medicine or family medicine practice that individualizes patient weight loss strategies and involves the patient in the plan of care will increase positive outcomes and decrease commodities. Educating patients in a way that they will understand and including them in their plan of care for weight loss is critical for compliance and change. With an epidemic as severe as obesity, it is paramount that healthcare professionals be aware of the overarching adverse effects the disease can contribute to the human body. If constructive dialogue can be achieved between patient and provider without suspicion of bias or judgment, we would potentially experience a high willingness of patients to follow treatment steps.

Rationale for the Project

According to the WHO (2021), obesity has tripled worldwide since 1975. In 2016, over 340 million children and adolescents aged 5-19 were overweight or obese, and over 1.9 billion adults (18 years and older) were overweight (WHO, 2021). In recent years, obesity has become more acceptable to society. Many overweight individuals do not consider themselves overweight and describe their weight as “about right” or view obesity positively (Burke & Heiland,

2018). This has negatively impacted society and healthcare. According to the CDC, the average healthcare-related cost for obese patients is $1,861 more than those who maintain a healthy weight (2022). Obesity also reduces the quality of life and life expectancy, is associated with poorer mental health outcomes, and increases the risk for comorbidities such as heart disease, diabetes, stroke, and some cancers (IBISWorld, 2022).

Literature Synthesis

Various articles and resources were extracted from credible databases for a systematic review to support the PICOT. McVay et al. (2019) determined that primary care providers educated patients with weight loss interventions versus just general weight loss counseling saw an average of 3.1kg more weight loss. Similarly, Befort et al. (2020) found in a non-specific rural area that strategies, such as in-clinic referrals and direct patient mailing, enhanced provider engagement and increased patient participation in weight loss interventions. Providers educating and discussing interventions with patients regarding weight loss can decrease body mass index (BMI) and decrease the risks of comorbidities in patients.

Providers can educate patients on nutrition, and exercise, encourage motivation, manage positive influences, and manage tension, which is beneficial for maintaining weight loss (Greaves et al., 2017). Personalizing nutrition education can also positively impact weight loss and create more sustainable lifestyle modifications for patients (Celis-Morales et al., 2017). Along with personalized nutrition, providers can give out educational booklets to reinforce information for patients. Normayanti et al. (2020) found a decrease in BMI, body circumferences, and blood pressure and a significant correlation between physical activity and energy intake in adolescents who used the educational booklets. With moderate lifestyle and diet

intervention changes, patients can see about 4–6% body weight loss from baseline body weight (Bauer et al.,2020).

See Appendix.

Project Stakeholders

The stakeholders affected by this change would include physicians, practitioners, managers, nurses/medical assistants, health coaches, and nutritionists. The physician and practitioner's primary role would be to oversee the patient's overall care, provide the initial education, and generate referrals to the health coach and nutritionist, as needed. The manager would ensure office synergy and process efficiency and conduct conflict resolution within their scope. The nurse/medical assistant would ensure the patients are scheduled appropriately, referrals for the health coach and nutritionist are sent/received and calls to follow up with patients to ensure all questions and concerns are addressed. Finally, the educator and nutritionist will provide personalized dietary and lifestyle proposals for the patients to construct long-term health habits.

Implementation Plan

The initial step is finding a family practice office willing to implement the proposed change. This step should take an average of one to two weeks to complete. Then, the next step would be to explore utilizing the current office staff versus adding additional staff. The office may be willing to train staff for the role of an educator or health coach or decide to partner with an outside source. This would be completed within the first couple of days to one week. Researching outside sources for an educator or health coach may be an added step, depending on the office's decision. Once the staff is trained or an outside source is identified, the next step may

be initiated. Patients categorized as obese based on increased BMI will be advised to schedule a follow-up to discuss weight loss education and interventions. At the follow-up appointment, patients will be encouraged to discuss any obstacles and questions regarding their weight loss journey, including physiological, social, environmental, or psychological influences. Patients should be seen a minimum of every four weeks to evaluate results. This step will be completed for the remainder of the three months allowed for this change project.

Timetable/Flowchart

- One-Two weeks- finding an office to implement the proposed change
- Five-Seven days- explore utilizing the current office staff versus adding additional staff
- One-Two weeks- scheduling patients with BMI over 30 for an appointment
- Three months- continue to schedule patients, document results, and collect data

See Appendix B for the flow chart.

Data Collection Methods

The data collection method I would like to see is as follows: the patients who agree and consent to the program will have measurements done via standing scale and body tape measure at the initial and each four-week follow-up visit afterward until the end of the program at three months. Patients will be instructed to wear similar clothing as the initial visit to ensure the accuracy of results. The measurements will consist of body mass index (BMI), pounds for weight, centimeters for mid-upper arm circumference, centimeters for mid-upper thigh circumference, and centimeters for the waist and hips. A form with an outline of the human body will be available to document precisely where and the size of measurements are collected to ensure consistency. The measurements must be consistently in the exact location and accurately

recorded to decrease the chance of false data being collected. Suppose the clinic has elected to utilize an external resource, such as a nutritionist or health coach. In that case, records will be requested, and patients will still come into the office for measurements every four weeks for consistency.

The interventions utilized by the patient and measurements will be documented in the patient's electronic medical record (EMR) and onto an Excel spreadsheet using the patient's initials for identification and to protect the patient's privacy. The Excel spreadsheet will make a line graph to visualize each patient's progress. The following link can help create a line graph in Excel, https://www.excel-easy.com/examples/line-chart.html. The data will be evaluated for results at the end of the three-month program. Significant weight, BMI, and measurement improvements will determine the program's success.

Cost/Benefit Discussion

The medical practice and the patient can mutually benefit cost-wise from implementing this change. According to the cost estimator of Healthcare Blue Book, the average cost of a level 1 office visit with health insurance is $68, and without insurance, $171 (deGraft-Johnson, 2023). This increases revenue for the office when adding additional visits to discuss and treat obesity, along with saving the patient money due to decreasing comorbidities. According to the CDC, the average healthcare-related cost for obese patients is $1,861 more than those who maintain a healthy weight (2022). By decreasing the patient's BMI and educating on implementing lifestyle changes, the patient can maintain a healthy weight and decrease the need to seek medical treatment for diseases acquired through obesity.

Discussion of Results

This benchmark could not be implemented at this time due to COVID precautions and limited office staff in the majority of the clinical sites inquired about in the area.

Conclusions/Recommendations

In conclusion, obesity is a disease that requires more one-on-one education from healthcare providers. The prevalence increases as “more than 4 in 10 Americans are obese now” (Gordon, 2020). Bringing awareness to the negative impact of this disease with the proposed change, BMI can decrease, comorbidities can be reduced, disability condensed, increased quality of life and life expectancy.

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Appendix A

Synthesis Table

Legend: BA= uncontrolled pre-post intervention without group comparison, BMI: body mass index, BWL= body weight loss, BP= blood pressure, DM= Disease Management, DV= dependent variable IV=Independent Variable, LOE= level of evidence; N=number in the study; PCMH= patient-centered medical home, PCT=Randomized controlled trial, SR=systemic review T=Table

Source	**Level of Evidence**	**Design**	**Sample size**	**Independent Variable(s) (Interventions)**	**Dependent Variable(s)** **(Outcome)**	**Measurement** **(Instruments)**	**Findings**	**Implications**
Author/year	I to VII	Abbreviate in Legend	Only the #	Relevant to your question	Relevant to your question	Of the Outcome	Relevant to your question	Relevant to your question
KS 1 Small, L., Lane, H., Vaughan, L., Melnyk, B., & McBurnett, D. (2013).	II	SR	9	IV1: Portion sizes IV2: Energy density of food IV3: age	Scottish Intercollegiate Guidelines Network [SIGN] Consolidated Standards of Reporting Trials [CONSORT])	Portion=grams	Although many studies have focused on various portion-related interventions, the influence of portion education on the contents of young children has not been well researched. More research is needed to	Portion control education should be implemented in a healthcare setting.

							understand the effect of parent-focused, portion-education interventions that encourage appropriate energy intake and healthy weight attainment in young children.	
KS 2 Celis-Morales C, Livingstone KM, Marsaux CF, Macready AL, Fallaize R, O'Donovan	II	RCT	1269	IV1: Sex IV2: Age IV3: Ethnicity IV4: Weight IV5: Smoking IV6: Physical activity IV7: Medication	STATA v13 was used for analyses.	Levels and tables	Among European adults, PN advice via internet-delivered intervention produced more significant and more appropriate changes in	A PN education should be implemented for patients who need to decrease their BMI.

CB, Woolhead C, Forster H, Walsh MC, Navas-Carretero S, San-Cristobal R, Tsirigoti L, Lambrinou CP, Mavrogianni C, Moschonis G, Kolossa S, Hallmann J, Godlewska M, Surwillo A, Traczyk I, Drevon CA, Bouwman J, van Ommen B, Grimaldi K, Parnell LD, Matthews							dietary behavior than a conventional approach.	

JN, Manios Y, Daniel H, Martinez JA, Lovegrove JA, Gibney ER, Brennan L, Saris WH, Gibney M, Mathers JC; (2017)								
KS 3 Greaves, C., Poltawski, L., Garside, R., & Briscoe, S. (2017).	II	SR	710	IV1: Maintenance of tension IV2: Sources of tension IV3: Modifiers of tension IV4: Managing tension IV5: Reducing tension	Sensitivity analysis	Number of studies	Created model of weight loss maintenance.	Acknowledge the struggles of maintaining weight loss goals and educate the patient about these everyday struggles.

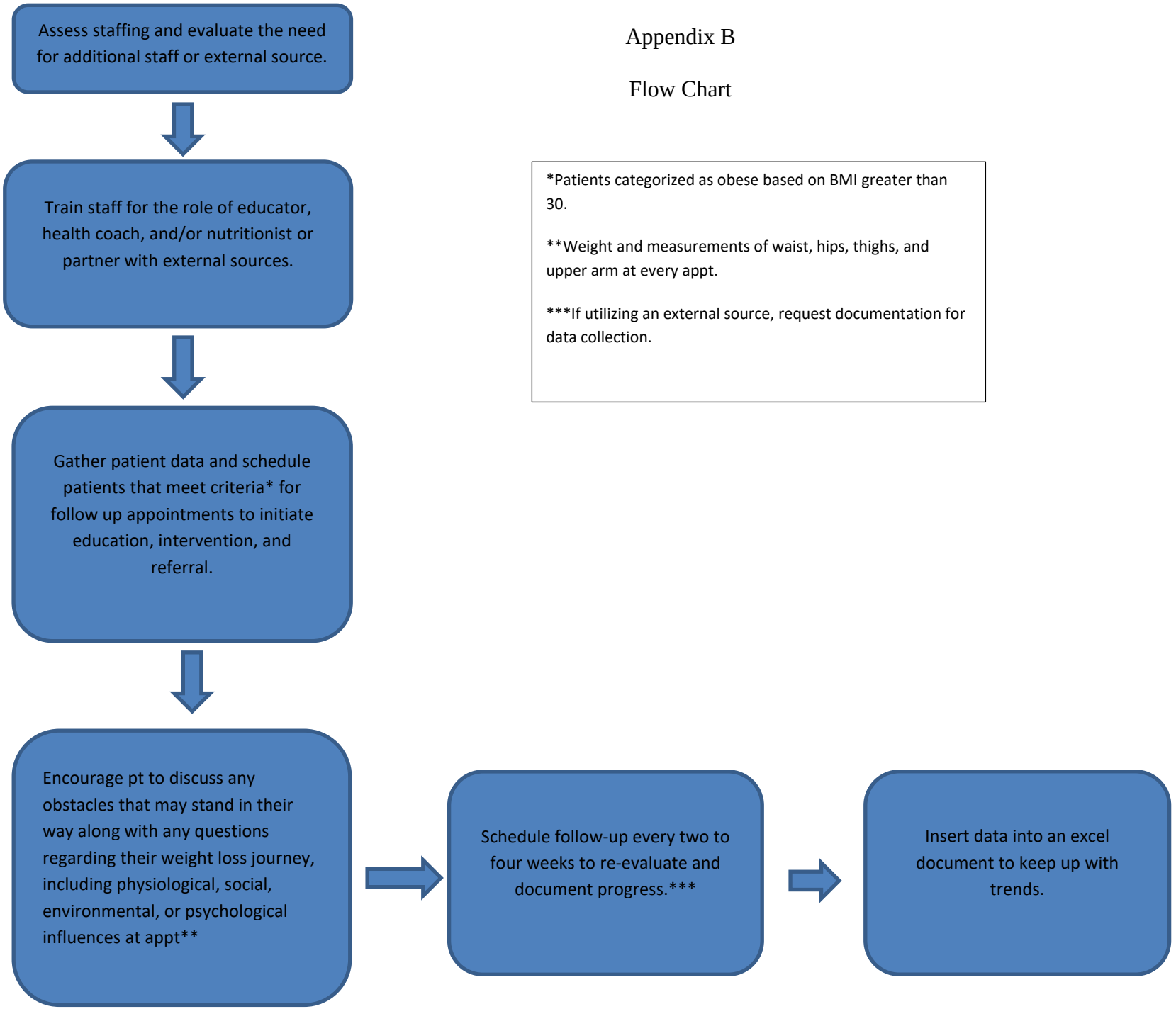
KS 4 Befort, C. A., Kurz, D., VanWormer, J. J., & Ellerbeck, E. F. (2020).	I	RCT	36	IV1: Individual face-to-face 15-min office visits modeled after the fee-for-service provision for the Centers for Medicaid and Medicare Intensive Behavior Therapy IV2: 60-min group visits conducted after hours within the local practice modeled after PCMH standards that emphasize coordinated, comprehensive care with enhanced access IV3: 60-min group, conference call	T1: Percent of patients from different recruitment sources among patients who contacted the study T2: Number of patients who were ineligible or declined to participate, and a percentage of patients screened by study arm Demographics and BMI of enrolled participants versus non-participants who were patients at	Participants VS Nonparticipants	T1: n=2479 T2: n = 1931 T3: Enrolled participants (n = 1432) Non-participants (n = 17,497)	Implementing diet and exercise education in a clinical setting.

				visits, conducted centrally modeled after a DM approach	participating clinics T3: Medical co-morbidities and healthcare utilization of participants versus non-participants who were patients at a subset of clinics			
KS 5 Bauer, K., Lau, T., Schwille, K. J., Schild, S., Hauner, H., Stengel, A., Zipfel, S., & Mack, I. (2020)	II	SR	1218	IV1= RCT IV2= RT IV3= BA	T1: Characterization of RCTs by obesity class T2: Quantitative analysis of randomized controlled trials T3: Quantitative pre-post analysis	Number of studies	IV1=32 IV2&3=91 Excluded: 1095	They are educating patients on lifestyle c.hanges vs. fad—diDietsto decrease BMI.

KS 6 Normayanti, Suparyatmo, J. B., & Prayitno, A. (2020).	II	RCT	60	IV: Nutritional education via booklet	DV1: BMI DV2: waist circumference DV3: BP DV4: Upper arm circumference	DV1: kg/m2 DV2: cm DV3: mmHg DV4: cm	The Diet Approach to Stop Hypertension (DASH) in the nutrition education booklet has been shown to have benefits and is recommended as a diet applied to obese adolescents.	Implementing giving patients nutrition education booklets when encouraging a decrease in BMI.

Appendix B

Flow Chart



Appendix C

Evaluation Table

Legend: Admin- Admission, BA= uncontrolled pre-post intervention without group comparison, BED= binge-eating disorder, BMI: body mass index, BWL= body weight loss, BP= blood pressure, DM= Disease Management, DV= dependent variable, FR= food responsiveness, IV=Independent Variable, LOE= level of evidence; MI= motivational interviewing, N=number in study, NP= nutrition psychoeducation; PCMH= patient centered medical home, PCT=Randomized controlled trial, ROC= regulation of cues, ROC+= ROC combined with BWL, SR=systemic review T=Table TPE= therapeutic patient education

Citation: author(s), date of publication& title	**Purpose of Study**	**Conceptual Framework**	**Design/ Method**	**Sample/Setting**	**Major Variables Studied and Their Definitions**	**Measurement of Major Variables**	**Data Analysis**	**Study Findings**	**Worth Practice: LOE Strengths/Weaknesses RECOMMENDATION**
KS#1 McVay et al. Provider Counseling and Weight Loss Outcomes in a Primary Care-Based Digital Obesity	To determine if primary care providers' weight counseling is associated with weight change during a weight loss	None	RCT	N= 351 Mean Age= 51 BMI= 30-44.9	DV1: Age DV2: Weight DV3: Sex DV4: Education DV5: Race	DV1: years DV2: kg DV3: Male/Female DV4: Less than HS, HS grad, Some college, 4-	T1: Baseline Characteristics of Study Participants Included in Participant-Reported and Provide	T1: Participant-reported analytic sample (N=141) Provider-documented analytic sample (N=134) Shows the portion of participants	1)Level II 2)Strengths: The association was examined in a low-income, socially disadvantaged population, and the ability to examine these relationships with multiple measures of provider/patient interaction 3)Limitations: The counseling groups in this secondary

Treatment. J Gen Intern Med. 2019 Jun;34(6):992-998. Doi 10.1007/s11606-019-04944-5. Epub 2019 Mar 19. PMID: 30891688; PMCID: PMC6544687.	intervention				DV6: Marital status	year college or higher DV5: Non-Hispanic Black, Non-Hispanic White. Hispanic, non-Hispanic other DV6: not married or living with a partner, married or living with a partner	r-Documented Analyses T2: Table 2 Participant-Reported and Provider-Documented Counseling Groups and Unadjusted Weight Change Among Intervention Arm	who reported weight counseling and who had provider documentation of counseling T2: Provider-documented weight counseling from 0–6 to 6–12 months was not associated with weight change	analysis were not randomly assigned, and we cannot conclude a causal relationship between counseling and weight. No objective data (e.g., audio recordings) on patient-provider interactions or extensive medical visit data exists. 4) Conclusion: Efforts to enhance a provider's ability to communicate empathy and concern may also result in more significant weight loss 5)Recommendation: Future research using an experimental design is warranted to confirm the role of intervention-specific provider weight counseling on weight outcomes.

							Participants		
KS#2 Celis-Morales, et al. (2017) Food4Me Study. Effect of personalized nutrition on health-	Test hypothesis that personalized nutrition (PN) advice based on individualized information would promote more appropriate and	None	RCT Adults from seven European countries were recruited to an internet-	N=1269 Age 18-79 years	IV1: Sex IV2: Age IV3: Ethnicity IV4: Weight IV5: Smoking IV6: Physical activity IV7: Medication	Levels and tables	STATA v13 was used for analyses.	Among European adults, PN advice via internet-delivered intervention produced more significant and more appropriate changes in dietary behavior than a conventional approach	1) Level II 2)Strength: Food4Me study is the most oversized internet-based delivery of the intervention, easy to use, Weakness: Limit measures collected 3)Longer trails

related behavior change: evidence from the Food4Me European randomized controlled trial.	sustained changes in dietary behavior.		delivered intervention (Food 4Me) and randomized to: (i) conventional dietary advice (control) or to PN advice based on: (ii) individual baseli						

			ne diet; (iii) indivi dual baseli ne diet plus phen otype (anthr opom etry and blood bioma rkers) ; or (iv) indivi dual baseli ne diet plus phen otype plus						

			genotype (five diet-responsive genetic variants). Outcomes were dietary intake, anthropometry, and blood biomarkers measured at baseline						

			and after 3 and 6 months of intervention.						
KS#3 Greaves et al. (2017). Understanding the challenge of weight loss maintenance: a systematic review and synthesis of	Understanding the challenge of weight loss maintenance	None	Qualitative SR and thematic synthesis (Thomas & Harden, 2008) of qualitative studies of	N=710	IV1: Maintenance of tension IV2: Sources of tension IV3: Modifiers of tension IV4: Managing tension IV5: Reducing tension	Biological databases searched SR performed Model created	Sensitivity analysis	Created model of weight loss maintenance.	1)Level II 2)Strength: generation of a coherent and parsimonious model Weakness: transferability of the data to bariatric surgery 3)More studies on contextual influences.

qualitative research on weight loss maintenance. Health Psychology Review			weight loss maintenance. The study protocol is available on the PROSPERO register (CRD42014008666), and this report follows ENTREQ guidance for report						

			ing qualitative syntheses (Tong, Flemming, McInnes, Oliver, & Craig, 2012).						
KS#4 Befort, et al. (2020). Recruitment and reach in a pragmatic behavioral weight	Identify factors that impact the uptake of an evidence-based obesity treatment program within a pragmatic cluster	None	RCT Method: Cluster randomized trial comparing three	N= 36 rural primary care practices	IV1: individual face-to-face 15-minute office visits modeled after the fee-for-service provision for the Centers for Medicaid and Medicare Intensive	Participants VS Nonparticipants	T1: Percent of patients from different recruitment sources among patients who contact	T1: n=2479 T2: n = 1931 T3: Enrolled participants (n = 1432) Non-participants (n = 17,497)	Level I Strengths: Participation rates were consistent across clinics randomized to the three study arms. Weaknesses: Unable to examine the impact of receiving information about the study from multiple sources, and it could be that a

loss randomized controlled trial: implications for real-world primary care practice. *BMC Family Practice*, *21*(1), 1–10. https://doi-org.ezproxy.uttyler.edu/10.1186/s12875-020-01117-w	randomized controlled trial comparing three care delivery models.		models		Behavior Therapy, IV2: 60-min group visits conducted after hours within the local practice modeled after PCMH standards that emphasize coordinated, comprehensive care with enhanced access IV3: 60-min group, conference call visits, conducted centrally modeled after a DM approach		ed the study T2: Number of patients who were ineligible or declined to participate, as a percent of patients screened by the study arm Demographics		particular combination of referral sources has the most significant effects and unable to fully account for potential provider selection biases in creating the patient lists. Recommendations: Further research is needed to develop strategies for enhancing provider engagement in referring patients to behavioral weight loss programs, particularly men and younger patients.

							and BMI of enrolled participants versus non-participants who were patients at participating clinics T3: Medical co-morbidities and healthcare utilization of		

							participants versus non-participants who were patients at a subset of clinics		
KS#5 Bauer, et al. (2020). Conventional weight loss interventions across the different BMI obesity	Provide an overview of BWL across these classes in moderate lifestyle/diet intervention programs.	None	SR Quantitative Method: A systematic literature search was conducted, and the	N= 1,218 RCTs, RTs, and BAs	IV1= RCT IV2= RT IV3= BA	Number of studies	T1: Characterization of RCTs by obesity class T2: Quantitative analysis of	IV1=32 IV2&3=91 Excluded: 1095	Level II Strengths: f this review is that we aggregated many RCTs, RTs, and BAs to create a large data basis. Weakness: Blinding the participants and research personnel is impossible; therefore, the risk of performance bias may be high.

classes: A systematic review and quantitative comparative analysis. European Eating Disorders Review, 28(5), 492–512. https://doi-org.ezproxy.uttyler.edu/10.1002/erv.2741			evidence of randomized controlled trials (RCTs) and pre-post design studies synthesized. The outcome was BWL				randomized controlled trials T3: Quantitative pre-post analysis		The review is not considering the long-term effects of the interventions The search was not limited to specific standardized treatment. Recommendation: More studies on contextual influences

KS#6 Normayanti, et al. (2020). The Effect of Nutrition Education on Body Mass Index, Waist Circumference, Mid-upper Arm Circumference and Blood Pressure in Obese Adolescents. *Ele*	Determine the effect of nutrition education in the form of DASH diet booklets on body mass index, waist circumference, mid-upper arm circumference, and blood pressure in obese adolescents.	None	RCT Quasi-experimental, which is pre-test and post-test with control group design	N=60 Adolescent females 14-17 y/o	IV: Nutritional education via booklet DV1: BMI DV2: waist circumference DV3: BP DV4: Upper arm circumference	DV1: kg/m2 DV2: cm DV3: mmHg DV4: cm	T1: Characteristics of the study subjects before the study (n = 60) T2: Changes in BMI, waist circumference, mid-upper arm circumference, and blood pressur	The Diet Approach to Stop Hypertension (DASH) in the nutrition education booklet has been shown to have benefits and is recommended as a diet applied to obese adolescents.	Level II Strengths: Evenly split with a controlled group and a teaching group Weakness: limited to adolescent females Recommendation: Expand the research to other genders and ages.

ctronic Journal of General Medicin e, *17*(5), 1–8. https://doi-org.ezproxy.uttyler.edu/10.29333/ejgm/7884							e before and after the interve ntion in the treatm ent and control groups T3: Change s in BMI, waist circumf erence, MUAC, and blood pressur e betwee n the		

							treatment and control groups T4: Changes in energy intake and physical activity before and after the intervention in the treatment and control groups		

							T5: Differences in energy intake and physical activity after the intervention in the treatment and control groups T6: Correlation of changes in energy		

							intake and physical activity with BMI, waist circumference, MUAC, and systolic blood pressure after the intervention		
KS 7 Herrera-Espiñeira, C., Martínez-Cirre,	evaluate the impact of an educational interventi	None	RCT	273 Hospital admin	1) weight, 2) age 3) work situation 4) smoker	1) kg 2) years 3) employed	The intervention was effective at	Both groups evidenced a progressive improvement over the three follow-up	Level: II Strengths: Both groups showed significant

M. del C., López-Morales, M., Lozano-Sánchez, A., Rodríguez-Ruíz, A., Salmerón-López, L. E., Gómez-Crespo, M. I., & Expósito-Ruíz, M. (2022, June 16). Hospital intervention to reduce overwei	on on dietary habits and physical exercise in overweight patients admitted to internal medicine departments, comprising a pre-discharge decision-making session with follow-up and reinforcement by telephone at 3, 6, and 12 months post-discharge.					Vs. nonemployed 4) yes or no	three months, reducing both SBP and DBP and improving some aspects of overweight-related dietary habits and health self-assessment with VAS; however, there	periods in weight, SBP, and dietary habits but a worsening of EQ-5D-5L-value-assessed HRQOL.	improvements at 3, 6, and 12 months in the weight loss, SBP, CC, and HD, despite the adverse effects of the ongoing COVID-19 pandemic on outside physical activity and diet during some of the follow-ups. Weaknesses: failure to reach the estimated sample size, despite extending the planned initial one-year enrolment period for a further year. Recommendation: Repeat the study now that COVID is not as problematic.

ght with educational reinforcement after discharge: A multicenter randomized clinical trial. MDPI. https://doi.org/10.3390/nu14122499							was a worsening of EQ-5D-5L-assessed HRQOL. Both groups (intervention and control) showed improvements over time (at 3, 6, and 12 months) in weight, SBP, and some		

							aspects of their dietary habits, possibly due to the benefits of the administration of questionnaires on overweight-related healthy habits in both groups during the three follow-up calls or to a placeb		

							o effect, although EQ-5D-5L values worsened. Further research is warranted to determine whether a minimum intervention with an educational leaflet, follow-up phone calls,		

							and questionnaires on overweight-related healthy habits, as in the present control group, may be an equally effective strategy without specific individual educati		

							onal input.		
KS 8 Morgan, C., de Wildt, G., Prado, R. B., Thanikachalam, N., Virmond, M., & Riley, R. (2020). Views and experiences of adults who are overweight and obese on the barriers and	identify the barriers and facilitators to weight loss as perceived by patients to reduce the burden of obesity-related diseases on patients and healthcare services.	None	Qualitative	15 patients registered at the health center, over the age of 18, males and females, BMI greater than 25 kg/m2, able to give informed consent,	1)Age 2)Lifestyle 3)education 4)motivation	1) 2) Cost of a healthy lifestyle, Time management, Personal safety, Mobility, Junk food advertising 3)Sustaining weight loss, Mental health, Lack of support, 4) Accessibility to weight loss information.	Expert patients should be utilized as an education method, as they increase motivation, promote the facilitators and provide realistic expectations of the weight	Novel findings included the use of expert patients as health educators and the perceived lack of accessibility to weight loss treatment through the SUS as a barrier to weight loss	Level: II Strengths: The use of a local interpreter provided benefits as they could explain cultural contexts to the researcher and provide insight into the meaning of responses. Weaknesses: use of interpreters leading to the bias of misinterpretation. Three interpreters were used during the interviews. Recommendation: At a societal level, removing the barriers and promotion the facilitators have the

facilitators to weight loss in southeast Brazil: A qualitative study. International Journal of Qualitative Studies on Health and Well-Being, 15(1), 1852705. https://doi.org/10.1080/174826							loss process		potential to achieve successful weight loss and a reduction in obesity rates

31.2020.1852705									
KS 9 Correia, J. C., Waqas, A., Huat, T. S., Gariani, K., Jornayvaz, F. R., Golay, A., & Pataky, Z. (2022, September 15). Effectiveness of therapeutic patient education interventions in	present a critical synthesis of the development of TPE interventions for DM and obesity and the efficacy of these interventions across a range of biomedical, psychosocial, and psychological outcomes.	None	RCT	54 studies patients with obesity and diabetes	1) Age 2) DM type	1) years 2) 1 or 2	There was substantial heterogeneity in the reporting of these outcomes, with a significant improvement noted in serum HbA1c levels difference and	TPE interventions bring about significant improvements in biomedical outcomes among patients with DM and obesity	Level: II Strengths: review delineates the strategies and content of interventions and their associations with the effectiveness of interventions. Weaknesses: There is a chance of missing relevant studies and only meta-analyzed the primary outcomes presented by RCTs included in this review Recommendation: Interventionists consider qualitative and process evaluations in the future to identify effective and acceptable approaches

obesity and diabetes: A systematic review and meta-analysis of randomized controlled trials. MDPI. https://doi.org/10.3390/nu14183807							body weight in the intervention group.		
KS 10 Small, L., Lane, H., Vaughan, L., Melnyk,	(1) find, appraise, and synthesize studies that examined the effect	None	SR	9 Studies Age 3-5 years	IV1: Portion sizes IV2: Energy density of food IV3: age	Portion=grams	Scottish Intercollegiate Guidelines Networ	Although many studies have focused on various portion-related interventions, the influence of portion	Level II Strengths: Randomization, Moderate sampling,

B., & McBurnett, D. (2013). A Systematic Review of the Evidence: The Effects of Portion Size Manipulation on Children and Portion Education/Training Interventions on Dietary Intake	of altering portion sizes on young children's dietary intake and (2) determine the effect of portion education or training interventions						k [SIGN] Consolidated Standards of Reporting Trials [CONSORT])	education on parents of young children has not been well researched. More research is needed to understand the effect of parent-focused, portion-education interventions that encourage appropriate energy intake and healthy weight attainment in young children.	Weakness: time and monetary constraints, sampling bias Recommendation: More studies need to be done.

with Adults									
KS 11 Boutelle, K. N., Eichen, D. M., Peterson, C. B., Strong, D. R., Kang-Sim, D.-J. E., Rock, C. L., & Marcus, B. H. (2022). Effect of a novel intervention targeting appetitive traits	evaluate the efficacy of ROC; ROC combined with BWL (ROC+), BWL, and an active comparator (AC) over 12 months of treatment and 12 months of follow-up.	None	RCT	1488 volunteers included body mass index (BMI) of 25 to 45, age 18 to 65 years, and lack of comorbidities or other exclusionary criteria that would interfere with participation.	1) BMI 2) Age	2) years	These findings suggest that ROC and ROC+ provide alternative weight loss approaches for adults	the use of ROC and ROC+ as alternative models for treatment of overweight or obesity and could be used in personalized medicine for those individuals with high levels of FR	Level: II Strengths: e the evaluation of a novel intervention, ROC, which is, to our knowledge, the first weight-loss intervention targeting appetitive traits and e the targeting of and measuring specific mechanisms underlying overeating Weaknesses: It was a treatment-seeking sample, and these results cannot be generalized to the general population. Recommendation:

on body mass index among adults with overweight or obesity. JAMA Network Open, 5(5). https://doi.org/10.1001/jamanetworkopen.2022.12354									
KS 12 Barnes, R. D., Ivezaj, V., Martino, S., Pittman,	examine whether weight loss could be further improved by combinin	None	Combination Trial	31 adults	1) Age 2) BMI	1) Years	MINP resulted in weight and psychological improvements	MI plus nutrition psychoeducation on weight loss trial in primary care resulted in statistically significant	Level: II Strengths: Weaknesses: A small sample with an even smaller number

B. P., Paris, M., & Grilo, C. M. (2018). Examining motivational interviewing plus nutrition psychoeducation for weight loss in primary care. Journal of Psychosomatic Research, 104,	g MI and NP,						post-treatment and three months after treatment completion.	weight losses for individuals with overweight or obesity regardless of BED status	of individuals meeting the criteria for BED Recommendation: Future studies should include a dismantling weight loss RCT within primary care to clarify the current results further

101–107. https://doi.org/10.1016/j.jpsychores.2017.11.013									