Diet, Exercise, Self-Monitoring, Technology, and Motivational Interviewing for Weight Loss in Adults

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Significance of Problem

- Obesity, an epidemic in the United States affected 42.4% of adults as of 2017-2018 (Hales, 2020)
- Healthy People 2030 (n. d.) aims to reduce the number of adults aged 20 years and older who fall into the obesity category by 2.6% by 2030
- In 2019, the prevalence of self-reported obesity among adults in Indiana was 35.3% (CDC, 2021d)

PICOT

In adult patients aged 19 years or older who are considered overweight or obese as measured by BMI of ≥ 25 kg/m² (P), how effective is a low-fat and low sugar diet, 30 minutes of walking five times per week, self-monitoring, and a phone application along with regular motivational interviewing and feedback (I) compared to standard care (C) at lowering BMI (O) over a 12-week period (T)?

Review of Literature

Database	Evidence	LOE/Quality
Cochrane Library	Hooper et al. (2020)	I[a]/High[b]
Joanna Briggs Institute	Pamaiahgari (2021)	I[a]/High[b]
	Minooee (2021)	I[a]/High[b]
	Fong (2020)	I[a]/High[b]
Turning Research Intro Practice	Orringer et al. (2020)	I[a]/High[c]
	VA/DoD (2020)	I[a]/High[c]
Cumulative Index to Nursing and Allied Health	Baer et al. (2020)	II[a]/High[b]
	Katzmarzyk et al. (2020)	II[a]/High[b]
	McVay et al. (2019)	II[a]/Moderate[b]
	Bennett et al. (2018)	II[a]/High[b]
	Eaton et al. (2016)	II[a]/High[b]
Medline	Marques et al. (2021)	I[a]/Moderate[b]
	Durrer Schutz et al. (2019)	I[a]/Moderate[c]
	Semlitsch et al. (2019)	I[a]/High[b]
	USPSTF (2018)	I[a]/High[c]
	Alghamdi (2017)	II[a]/High[b]

[a] Melnyk & Fineout-Overholt; [b] Critical Appraisal Skills Programme (CASP) checklists; [c] AGREE II tool

Best Practices

- Intensive 12-week, patient-centered, comprehensive lifestyle intervention (Alghamdi, 2017; Durrer Schutz et al., 2019; Eaton et al., 2016; Katzmarzyk et al., 2020 Semlitsch et al., 2019; VA/DoD, 2020)
- Dietary and exercise goals (Fong, 2020; Hooper et al., 2020; Orringer et al., 2020)
- Self-monitoring (USPSTF, 2018)
- Technology with a phone application (Marques et al., 2021; USPSTF, 2018)
- In-person visits and telephone calls to provide feedback and motivational interviewing at regular intervals (Baer et al., 2020; Bennett et al., 2018; Marques et al., 2021; Minooee, 2021; Pamaiahgari, 2021)

Implementation

Setting: Large underserved primary care clinic in Northern, IN.
Participants: 38 adults aged 19 years or older with a BMI ≥ 25 kg/m².
Intervention: Comprehensive lifestyle intervention using diet, exercise, self-monitoring, a phone application, motivational interviewing and regular feedback.
Timeline: 12-weeks, rolling recruitment lasting 25 days.

Evaluation

- **Primary Outcome:** Weight and BMI
  - Intervention (without dropouts) vs comparison groups
  - Intervention (without dropouts) vs comparison group combined with dropouts

Demographics

	Intervention (n = 19) n (%)	Comparison (n = 14) n (%)	Dropout (n = 19) n (%)
Age Mean/*SD* Range	57 / 12.77 32 – 77	55.79 / 9.82 40 – 70	53.37 / 13.79 26 - 71
Gender Male Female	5 (26.3) 14 (73.7)	8 (57.1) 6 (42.9)	5 (26.3) 14 (73.7)
Pre Weight (lbs) Mean/*SD* Range	215.94 / 54.63 151 - 358	224.50 / 52.93 165 - 377	237.58 / 58.78 161 - 408
Pre BMI (kg/m²) Mean/*SD* Range	32.73 / 6.06 26.91 – 47.23	34.45 / 6.52 27.61 – 49.73	38.08 / 10.72 25.46 – 65.85

Data Analysis

Intervention Group (n = 19) compared to Comparison Group (n = 14)			
	t	df	Sig
Weight	1.575	31	.125
BMI	0.869	31	.109

Intervention Group (n = 19) compared to Comparison Group and Dropout Group without outliers (n = 30)			
Weight	2.727	47	.009
BMI	3.261	47	.002

Findings / Recommendations

- **Findings:**
  - Using an independent t test, there was found to be no statistically significant difference between intervention group and comparison group for reduction of weight or BMI.
  - Using an independent t test, there was found to be a statistically significant difference in weight and BMI reduction for the intervention group (n = 19) compared to the comparison group (n = 14) combined with the dropout group (n = 19) when outliers were removed.

- **Recommendations:**
  - More research is needed to determine the effect of regular follow-up by family nurse practitioners on weight loss/adherence to a weight loss program in the primary care setting.
  - Considerations for future use includes using in-person follow-up visits and a larger group of participants.

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