

Efficacy of In-Person vs Online Motivational Interviewing-Based Health Coaching



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Abstract

PURPOSE: Utilization of health coaching is growing in the health care field. Research has shown that there are different methods of health coach delivery. This study evaluated the effectiveness of in-person vs online health coaching in delivering motivational interviewing and promoting behavior change.

METHODS: Eighty-seven participants (23 males and 64 females) completed an 8-week intervention study. A unique aspect of the study design was that participants selected how they wanted to receive health coaching (in-person or online) and a goal they wanted to work on (diet, physical activity, and weight management). Fifty-one participants (15 males and 36 females) chose in-person coaching and thirty-six (8 males and 28 females) elected to receive online health coaching. In terms of the goals, 15 participants chose diet, 24 chose physical activity, 48 chose weight management. A battery of surveys was given to each participant pre- and post-intervention to assess their use of strategies related to performing healthy behaviors (nutrition, physical activity, weight management, and meals). Weight, physical activity, and diet were assessed pre- and post-intervention. Physical activity was measured for a week using a personal activity monitor (SenseWear® armband) and participants recorded their diet for three days using the accompanying software (BodyMedia FIT 3.0). Depending on the self-selected health coaching method (in-person or online), participants then either met with or corresponded via email with their health coach weekly. Regardless of coaching method, motivational interviewing techniques were used to guide participants in setting weekly goals to promote behavior change. Primary outcomes included weight, physical activity (average minutes per day of moderate/vigorous physical activity; MVPA), and diet quality (Healthy Eating Index; HEI). A series of 2 way (group by goal) ANOVAs were run to determine within and between group changes in behavioral strategies and health outcomes over the intervention.

RESULTS: In terms of the behavioral strategies, there was no significant difference between groups in improvement in the four behavior strategies scales ($p>0.05$). To examine changes in primary outcomes, percent change values were calculated for each of the primary outcome measures (HEI, MVPA, and weight). For HEI, the group by goal interaction effect was significant [$F(5,41)=2.7, p=0.03$] indicating that the in-person participants improved more than the online participants. The interaction was not significant for MVPA [$F(5,66)=1.22, p=0.31$] or percent weight change [$F(5,80)=0.18, p=0.97$].

CONCLUSION: There were few observable differences in outcomes between in-person or online health coaching supporting the benefits of providing participants with choice in coaching format and targeted goals. Changes in diet favored groups receiving in-person coaching so there may be some benefits of in-person health coaching over online coaching when discussing diet and nutrition behavior change. Clinicians and researchers should consider providing participants with more autonomy when designing nutrition interventions.

Introduction

Health coaching is a growing field that utilizes motivational interviewing (MI), social cognitive theory, and other theories and techniques to promote behavior change. The mode of delivery of health coaching varies in each study.

Purpose

To evaluate the efficacy of in-person vs online health coaching in various self-reported behavior changes and objective measurements.

Methods

PARTICIPANTS

Participants were allowed to self-select into either In-Person or online health coaching to be consistent with the MI principle of autonomy.

- 87 completers of the 8-week intervention
 - 51 In-Person group
 - 36 Online group

MEASURES

Self-report and objective measurements were taken at baseline and post-intervention to measure behavior change.

Self-report measures:

- An established behavior change strategies (Nothwehr et al) captured behaviors related to diet, physical activity, and meal preparation/portioning.

Objective measures:

- Percent change in weight
- Moderate/vigorous physical activity minutes (MVPA) measured using the SenseWear® Armband
- Health Eating Index (HEI)

ANALYSES

The Behavior Change Strategies Survey was analyzed by individual subscales:

- Nutrition Strategies
- Physical Activity Strategies
- Meal Strategies

Aggregate of scores (mean) was scored as overall Weight Control Strategies

2x2 ANOVAs determined differences between the two treatment groups.

Effect size calculations were used to compare magnitude of difference between groups.

Results

Participant Characteristics

Characteristic	All	In-Person	Online
N (male:female)	87 (23:64)	51 (15:36)	36 (8:28)
Mean Age (Range)	42.95 (23-73)	42.06 (23-73)	44.222 (26-67)
Marital Status (N[%])			
Married	62 [71.26]	37 [72.55]	25 [69.44]
Divorced	11 [12.64]	6 [11.76]	5 [13.89]
Single	14 [16.09]	8 [15.69]	6 [16.67]
Race (N[%])			
Caucasian	79 [90.80]	45 [88.24]	34 [94.44]
Black	3 [3.45]	3 [5.88]	0 [0.00]
Asian	3 [3.45]	1 [1.96]	2 [5.56]
Mixed	1 [1.15]	1 [1.96]	0 [0.00]
Income (N[%])			
< \$25,000	2 [2.30]	1 [1.96]	1 [2.78]
\$25,000-49,999	16 [18.39]	13 [25.49]	3 [8.33]
\$50,000-74,999	17 [19.54]	9 [17.65]	8 [22.22]
\$75,000-99,999	17 [19.54]	8 [15.69]	9 [25.00]
>\$100,000	35 [40.23]	20 [39.22]	15 [41.67]
Anthropometrics (N(SD))			
Weight	83.62 (18.72)	84.33 (18.91)	82.63 (18.67)
BMI	29.46 (5.93)	29.49 (5.45)	29.42 (6.62)
Body Fat Percentage	33.8 (7.28)	33.8 (7.5)	33.8 (7.06)
HEI Score (N(SD))	52.75 (14.14)	52.06 (15.65)	53.87 (11.65)
MVPA Minutes (N(SD))	85.03 (45.59)	89.74 (48.71)	78.27 (40.56)

Behavior Strategy Percent Change

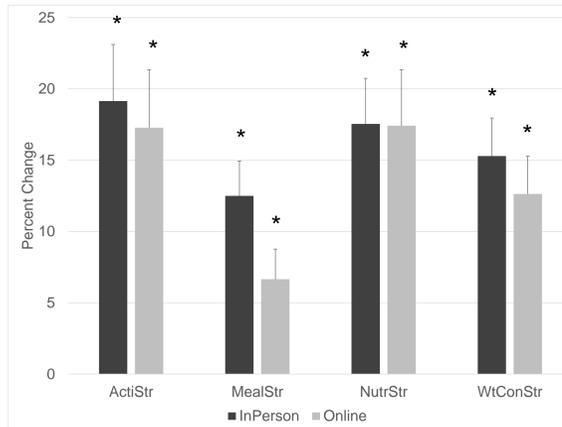


Figure 1. Both groups improved behavior change strategies from baseline.

Weight Loss Percent Change

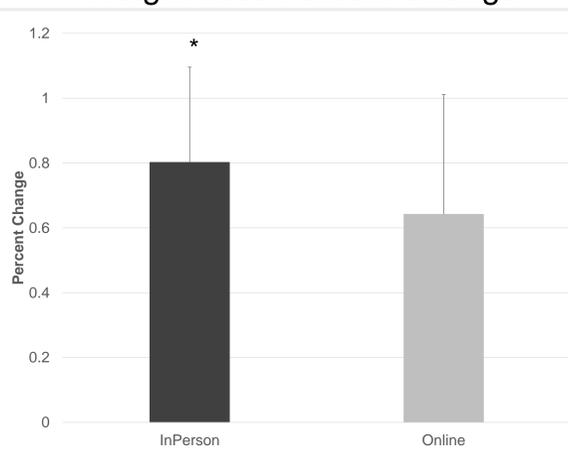


Figure 2. In-person participants lost a significant amount of weight from baseline but changes for online participants were not significant.

HEI Percent Change

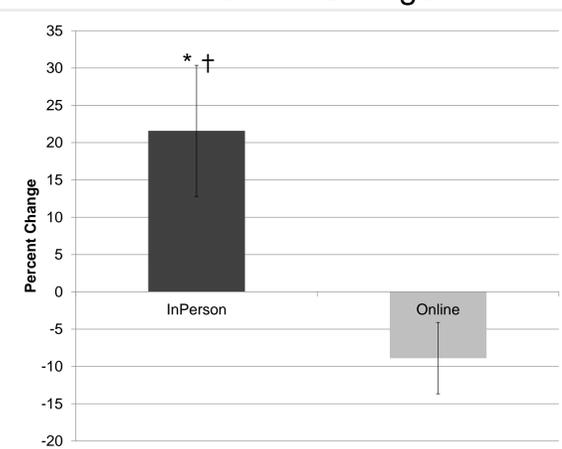


Figure 3. In-person participants significantly improved HEI score from baseline but online participants did not.

MVPA Percent Change

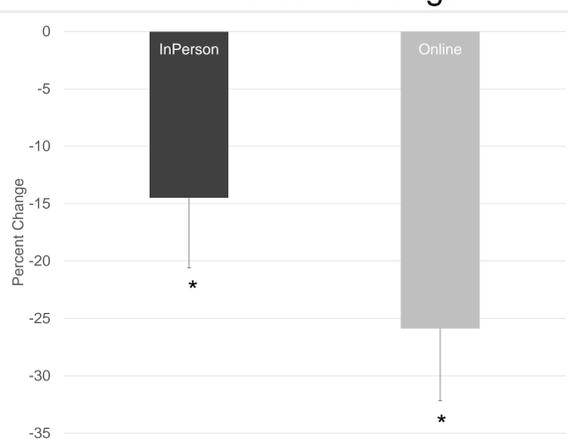


Figure 4. In-person and online participants both had significant declines in physical activity compared to baseline.

Effect Size (ES) Calculations

Variable	In Person			Online			Effect Size
	N	X	SD	N	X	SD	
NutrStr %Change	51	17.54	22.82	36	17.42	23.52	0.005
PAStr %Change	51	19.15	28.3	36	17.28	24.34	0.07
Meal %Change	51	12.5	17.42	36	6.66	12.66	0.37
WtStr %Change	51	15.29	19.02	36	12.63	15.84	0.15
HEI %Change	29	21.57	47.32	18	-8.89	20.28	0.77
MVPA %Change	42	-14.49	39.58	30	-25.87	34.57	0.30
Wt %Change	50	0.8	2.09	36	0.64	2.22	0.07

Key: * Indicates $p<0.05$ from baseline
† indicates $p<0.05$ between treatment groups
ActiStr= activity behavior strategies
MealStr=Meal behavior strategies
NutrStr= Nutrition behavior strategies
WtContStr= Weight Control Strategies

Key Findings

Self-Report Measurements (Figure 1)

- Both treatment groups significantly improved from baseline in reported use of targeted behavior change strategies.
- Direct comparisons between the two groups revealed non significant differences in the degree of improvement in strategies between in-person and online health coaching (ES ranged from 0.00 - 0.37)

Objective Measurements (Figure 2-4)

- In-Person coaching led to significant reductions in weight. No differences between groups (ES = 0.15)
- In-Person coaching led to significant improvements in HEI score and these differences were statistically larger than for Online (ES = 0.77)
- Both groups had significant declines in physical activity (attributed to reactivity from monitor use at baseline) but no differences between groups (ES = 0.3)

Conclusion

Outcomes of this study indicate that people may benefit more with in-person health coaching when wanting to change diet habits than online health coaching.

As health coaching becomes more popular in the health care field, it is important to determine the most effective and cost-effective way to deliver health coaching.

Future behavior change interventions should explore the efficacy of other methods of health coaching.

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