Table S1. Full factorial model effect estimates and hypothesis tests

Effect	Estimate	t	p	95% Confidence Interval
Baseline				
Intercept	91.093	114.382	0.000	89.529, 92.658
Cohort	-2.170	-1.899	0.058	-4.414, 0.075
Coaching^0	-0.106	-0.185	0.853	-1.227, 1.016
PCP^0	0.796	1.393	0.164	-0.326, 1.917
Text^0	0.242	0.423	0.672	-0.880, 1.363
Meal^0	-1.114	-1.951	0.052	-2.236, 0.008
Buddy^0	0.464	0.813	0.417	-0.658, 1.586
3-Months				
Time	-3.761	-25.237	0.000	-4.054, -3.468
Time×Coaching	0.061	0.406	0.685	-0.232, 0.353
Time×PCP	-0.076	-0.509	0.611	-0.369, 0.217
Time×Text	-0.047	-0.317	0.751	-0.340, 0.246
Time×Meal	0.004	0.024	0.981	-0.289, 0.296
Time×Buddy	-0.282	-1.891	0.059	-0.575, 0.011
Time×Coaching× PCP	-0.045	-0.306	0.759	-0.337, 0.246
Time×Coaching×Text	0.002	0.012	0.991	-0.290, 0.293
Time×Coaching×Meal	0.007	0.050	0.960	-0.284, 0.299
Time×Coaching×Buddy	-0.077	-0.516	0.606	-0.368, 0.215
Time×PCP×Text	-0.130	-0.878	0.380	-0.422, 0.161
Time×PCP×Meal	0.109	0.737	0.461	-0.182, 0.401
Time×PCP×Buddy	-0.149	-1.006	0.315	-0.441, 0.142
Time×Text×Meal	0.168	1.132	0.258	-0.124, 0.460
Time×Text×Buddy	0.142	0.958	0.339	-0.150, 0.434
Time×Meal×Buddy	0.035	0.233	0.816	-0.257, 0.326
Time×Coaching×PCP×Text	-0.144	-0.971	0.332	-0.436, 0.148
Time×Coaching×PCP×Meal	0.208	1.402	0.162	-0.084, 0.500
Time×Coaching×PCP×Buddy	0.173	1.168	0.243	-0.118, 0.465
Time×Coaching×Text×Meal	0.013	0.085	0.932	-0.279, 0.304
Time×Coaching×Text×Buddy	-0.006	-0.039	0.969	-0.297, 0.286
Time×Coaching×Meal×Buddy	0.020	0.138	0.891	-0.271, 0.312
Time×PCP×Text×Meal	-0.087	-0.587	0.557	-0.379, 0.205
Time×PCP×Text×Buddy	0.281	1.894	0.059	-0.010, 0.573
Time×PCP×Meal×Buddy	0.036	0.242	0.809	-0.256, 0.328
Time×Text×Meal×Buddy	-0.048	-0.321	0.748	-0.339, 0.244
Time×Coaching×PCP×Text×Meal	0.195	1.317	0.189	-0.096, 0.487
Time×Coaching×PCP×Text×Buddy	-0.150	-1.013	0.312	-0.442, 0.141
Time×Coaching×PCP×Meal×Buddy	-0.219	-1.473	0.141	-0.510, 0.073

Time×Coaching×Text×Meal×Buddy	-0.077	-0.518	0.605	-0.369, 0.215
Time×PCP×Text×Meal×Buddy	-0.011	-0.077	0.939	-0.304, 0.281
Time×Coaching×PCP×Text×Meal×Buddy	-0.130	-0.875	0.382	-0.422, 0.162
6-Months				
Time	-4.841	-22.284	0.000	-5.268, -4.415
Time×Coaching	0.124	0.572	0.567	-0.303, 0.551
Time×PCP	-0.023	-0.104	0.917	-0.449, 0.404
Time×Text	0.084	0.387	0.699	-0.343, 0.511
Time×Meal	0.108	0.498	0.619	-0.319, 0.535
Time×Buddy	**-0.435**	**-2.003**	**0.046**	**-0.862, -0.008**
Time×Coaching× PCP	-0.130	-0.601	0.548	-0.556, 0.296
Time×Coaching×Text	-0.179	-0.824	0.411	-0.604, 0.247
Time×Coaching×Meal	-0.096	-0.444	0.657	-0.522, 0.330
Time×Coaching×Buddy	-0.085	-0.394	0.694	-0.511, 0.341
Time×PCP×Text	-0.211	-0.974	0.331	-0.637, 0.215
Time×PCP×Meal	0.093	0.429	0.668	-0.333, 0.519
Time×PCP×Buddy	-0.276	-1.273	0.204	-0.702, 0.150
Time×Text×Meal	0.101	0.465	0.642	-0.325, 0.527
Text×Buddy	0.217	1.003	0.316	-0.208, 0.643
Time×Meal×Buddy	0.041	0.188	0.851	-0.385, 0.467
Time×Coaching×PCP×Text	-0.074	-0.342	0.733	-0.500, 0.352
Time×Coaching×PCP×Meal	0.362	1.6700	0.096	-0.064, 0.788
Time×Coaching×PCP×Buddy	0.090	0.413	0.680	-0.336, 0.515
Time×Coaching×Text×Meal	-0.062	-0.286	0.775	-0.488, 0.364
Time×Coaching×Text×Buddy	0.068	0.313	0.755	-0.358, 0.494
Time×Coaching×Meal×Buddy	0.008	0.035	0.972	-0.418, 0.434
Time×PCP×Text×Meal	-0.165	-0.760	0.448	-0.591, 0.261
Time×PCP×Text×Buddy	**0.424**	**1.956**	**0.051**	**-0.002, 0.850**
Time×PCP×Meal×Buddy	0.112	0.517	0.606	-0.314, 0.538
Time×Text×Meal×Buddy	-0.186	-0.856	0.392	-0.612, 0.240
Time×Coaching×PCP×Text×Meal	0.204	0.941	0.347	-0.222, 0.630
Time×Coaching×PCP×Text×Buddy	**-0.383**	**-1.769**	**0.078**	**-0.809, 0.042**
Time×Coaching×PCP×Meal×Buddy	**-0.376**	**-1.736**	**0.083**	**-0.802, 0.050**
Time×Coaching×Text×Meal×Buddy	-0.171	-0.790	0.430	-0.597, 0.255
Time×PCP×Text×Meal×Buddy	-0.027	-0.123	0.902	-0.454, 0.400
Time×Coaching×PCP×Text×Meal× Buddy	-0.164	-0.755	0.451	-0.590, 0.262

[0]Main effects from coaching to buddy represent component effects at baseline (time zero) and therefore do not test the hypotheses of interest.

*Important interactions (p<.10) at 6 months are designated in bold.

Table S2: Mean weight change (kg) at 6 months by component (factor) level.

	Estimate	95% Confidence Interval Lower Bound	Upper Bound
Coaching			
12	-4.96582	-5.56895	-4.36269
24	-4.7171	-5.321457	-4.112736
PCP			
Off	-4.8189	-5.433222	-4.204574
On	-4.86402	-5.456996	-4.27104
Texts			
Off	-4.92546	-5.53316	-4.31775
On	-4.75746	-5.357221	-4.157702
Meal			
Off	-4.94957	-5.557619	-4.341519
On	-4.73335	-5.332758	-4.133937
Buddy			
Off	**-4.40618**	**-5.018361**	**-3.793999**
On	**-5.27674**	**-5.871927**	**-4.681546**

*Factor designated in bold $p<.05$; also see Tables 4 and S1

Figure S1: Opt-IN App Interface. App depicts personalized goals for diet and MVPA and shows traffic light colors to depict progress towards goals. Also shown are different colored ribbons signifying adherence "streaks" of varying lengths: i.e., number of consecutive days/weeks of entering diet data into the app or meeting MVPA goals.

Figure S2: Opt-IN Participant Online Dashboard. Allows users to link to app user instructions, information about diet and MVPA, setting SMART goals, and PDF lessons and homework to be used in conjunction with coaching calls.

Figure S3: Opt-IN Coach Dashboard. Allows coaches to view individual participant data, send texts/messages, and view sent texts/messages and accumulated ribbons.

Figure S4:   Effect of *Buddy×Meal×PCP×Coaching* interaction on weight change (kg) at six months. Plots A and B (upper row) show weight change among those who received 12 calls; Plots C and D (lower row) show weight change among those who received 24 calls. Plots A and C on the left show weight change among those who received buddy training (as well as

meal replacements or no replacements, and PCP report or no PCP report). Plots B and D on the right show weight change among those who received no buddy training (as well as meal replacements or no replacements and PCP reports or no reports). Error bars depict the 95% confidence interval of each estimated mean. Abbreviations: BUDDY=Buddy training; PCP=Report sent to primary care provider; MEAL=meal replacements

Figure S5: Effect of *Buddy×PCP×Text×Coaching* interaction on weight change (kg) at six months. Plots A and B (upper row) show weight change among those who received 12 coaching calls; Plots C and D (lower row) show weight change among those who received 24 calls. Plots A and C on the left show weight change among those who received buddy training (as well as texts or no texts, and PCP report or no PCP report). Plots B and D on the right show weight change among those who received no buddy training with or without texts and PCP reports. Error bars depict the 95% confidence interval of each estimated mean. Abbreviations: BUDDY=Buddy training; PCP=Report sent to primary care provider; TEXT=text messaging

Opt-IN App Interface
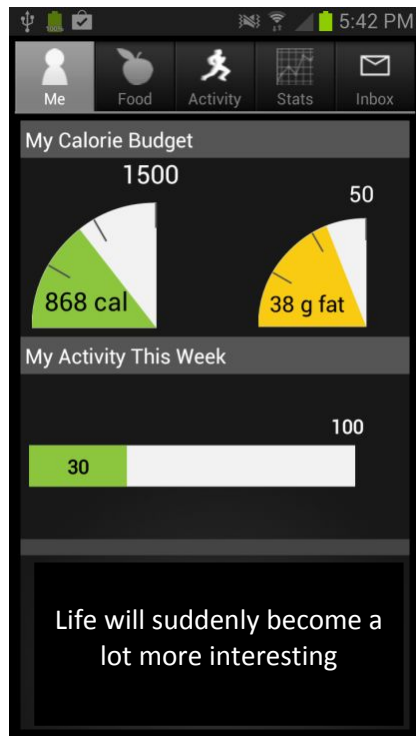
Daily calorie allowance (goal) is 1500, shown on larger left fan. Participant has consumed 868 calories. Calorie consumption is shown in green traffic light color, signifying that $\geq$40% of calorie allowance remains.

Daily saturated fat allowance (goal) is 50 g, shown in smaller right fan. Participant has consumed 38 g fat. Fat consumption is shown in yellow traffic light color, signifying that <40% of fat allowance remains. Red traffic light color would signify exceeding goal allowance.

Activity goal thermometer shows weekly MVPA goal = 100 min. Participant has accumulated 30 min, shown in green because 6 days remain to reach this week's 100 min goal.

Fortune is one of two alternative incentives participant can earn for entering a weight in the app. A joke is the other incentive.

Ribbons of different colors are shown on the app to reward different durations of consistently successful adherence behavior ("streaks").

Calorie Ribbon:
- Blue Ribbon → Entered food for 1-2 days
- Silver Ribbon → Entered food for 3-5 days
- Gold Ribbon → Entered food for 6-7 days
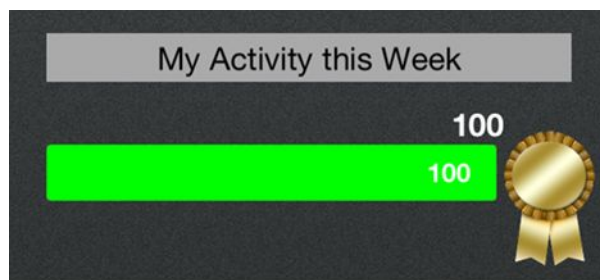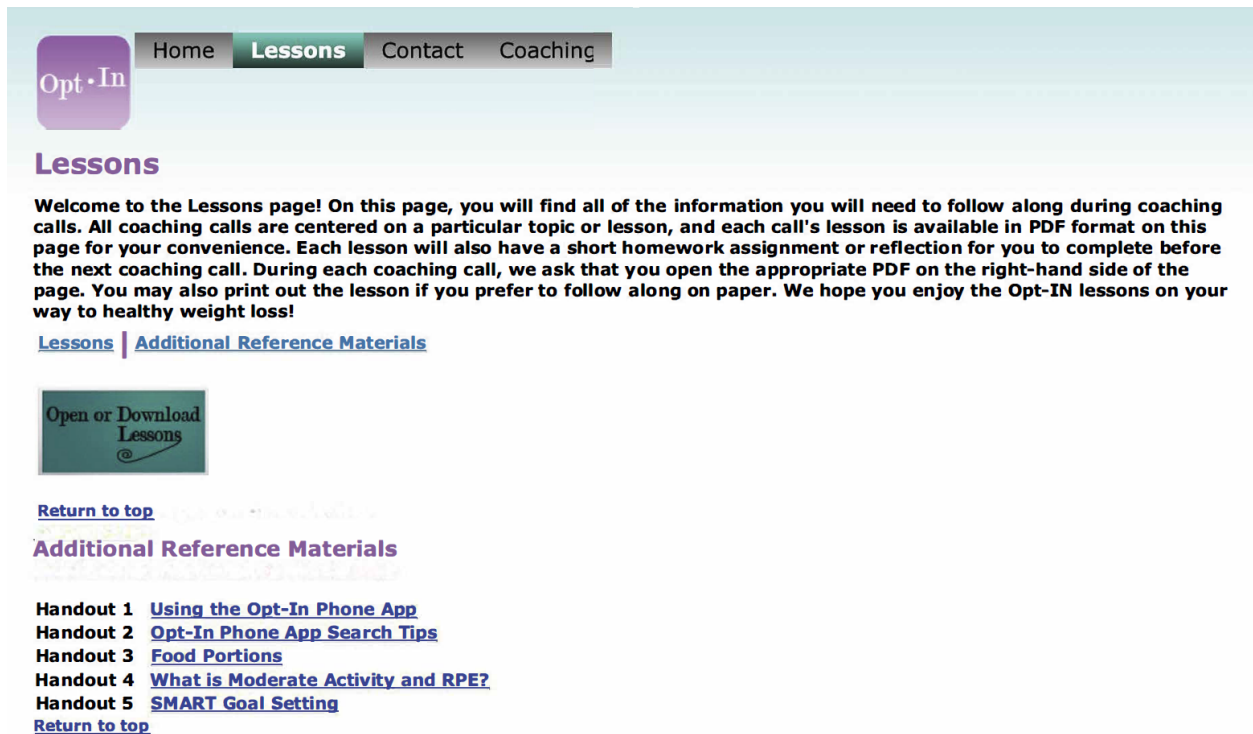
Physical Activity Ribbon:
- Blue Ribbon → Met or exceeded PA goal for 1 week
- Silver Ribbon → Met or exceeded PA goal for 2 consecutive weeks
- Gold Ribbon → Met or exceeded PA goal for ≥ 3 consecutive weeks

Figure S1: Opt-IN App Interface. App depicts personalized goals for diet and MVPA and shows traffic light colors to depict progress towards goals. Also shown are different colored ribbons signifying adherence "streaks" of varying lengths: i.e., number of consecutive days/weeks of entering diet data into the app or meeting MVPA goals.

Opt-IN Online Participant Dashboard

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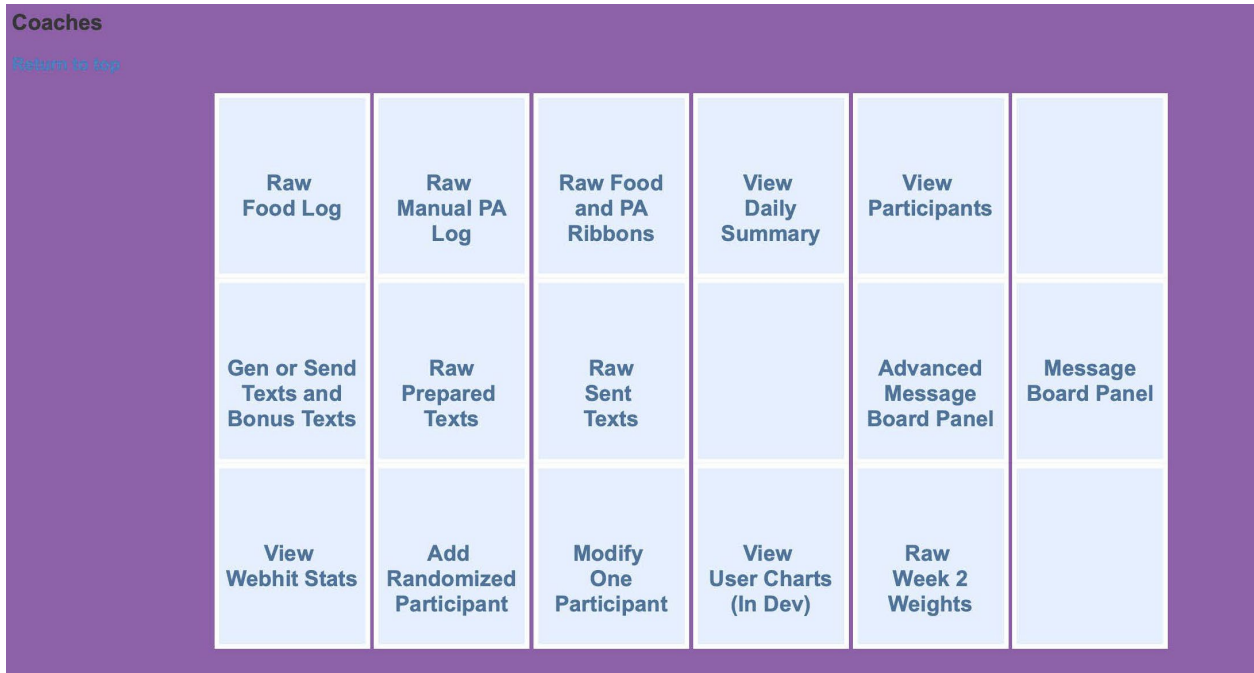
Opt-IN Coach Dashboard

Figure S3: Opt-IN Coach Dashboard. Allows coaches to view individual participant data, send texts/messages, and view sent texts/messages and accumulated ribbons.
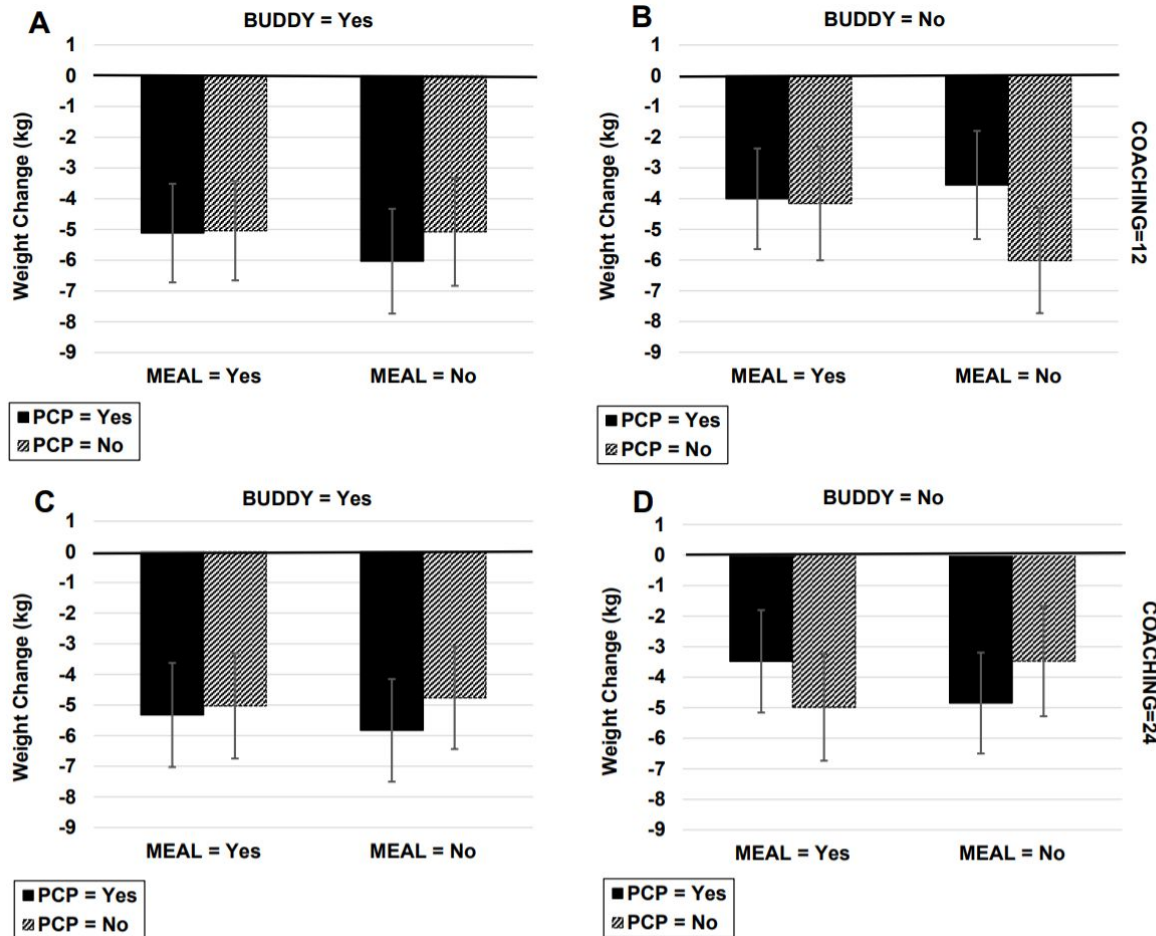
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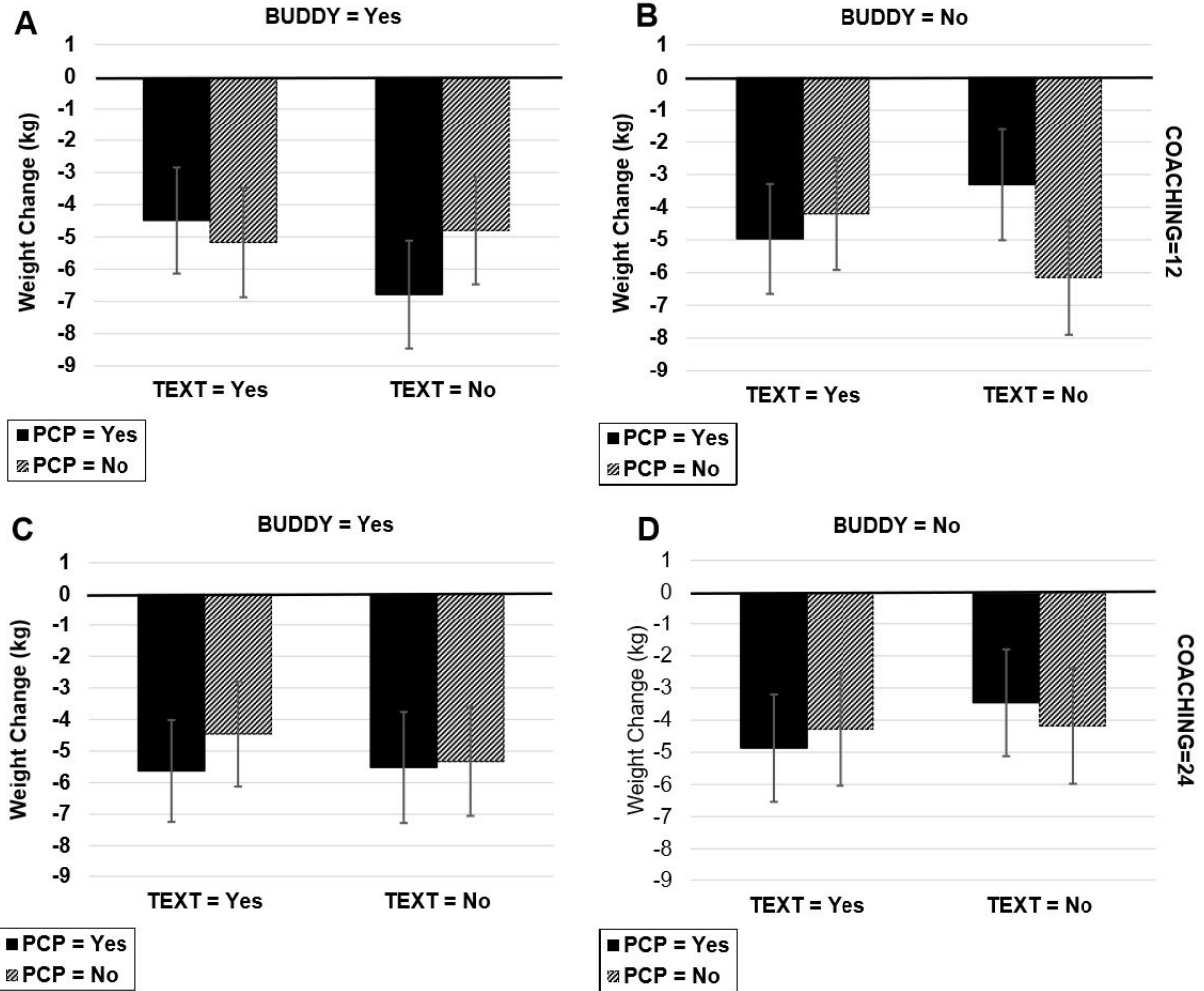
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