

# Losing weight online with POWeR: a randomised controlled trial of a web-based behavioural intervention in a community setting

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## Abstract

**Background** Recent reviews suggest web-based interventions are promising approaches for weight management but have identified difficulties with suboptimum usage. The published work suggests that offering some degree of human support to website users may boost usage and outcomes. The POWeR web-based intervention uses evidence-based techniques to develop long-term healthy habits. POWeR consists of weekly online sessions that emphasise weight monitoring, goal setting, and learning cognitive and behavioural weight management strategies. We disseminated POWeR in a community setting in the northeast of England. Our primary outcome was intervention usage, operationalised as completion of the core POWeR web-based sessions.

**Methods** Participants were recruited from a community sample with targeted mailouts, advertisements in the local press, notices on organisational websites, and social media. Participants had to be over 18 years of age, have a body-mass index of over 23, and have access to the internet. Participants self-screened for eligibility and registered online. 786 adults were randomised at an individual level through an online procedure to (a) the POWeR website (n=264), (b) the POWeR website plus telephone coaching (n=247), or (c) a waiting list control group (n=275). Those in the telephone coaching arm were contacted at about 7 and 28 days after randomisation for short telephone coaching phone calls aimed at promoting continued usage of the website and adherence to eating and physical activity plans. Website usage was tracked automatically. Weight was also assessed by online self-report at baseline and during the 8-week study period. Researchers were not masked to allocation but were not in contact with participants during the trial. In-depth interviews were undertaken with 19 purposively sampled users to obtain an insight into their experiences of using POWeR with and without coaching. This trial is registered, ISRCTN98176068.

**Findings** Of the 511 participants allocated to the two intervention groups many participants completed only one (n=152, 29.7%) or two (n=74, 14.5%) POWeR sessions, but a substantial minority continued using POWeR for at least the first three core sessions (n=47, 17.8% of the web only group; n=64, 25.9% of the web plus coach group). In the primary outcome analysis, participants in the website plus coaching group were 1.61 times more likely to complete the three core sessions than was the website only group ( $\chi^2$  [1, n=511] 4.93, p=0.026; odds ratio 1.61, 95% CI 1.06–2.47). An intention-to-treat analysis showed between-group differences in weight loss (F[2,782] 12.421, p<0.0001). Both intervention groups lost more weight than the waiting list control group (d 0.43, 95% CI 0.26–0.61 for coach compared with control; d 0.27, 0.09–0.44 for web only compared with control). Weight loss was slightly, but not significantly, greater in the coach group (d 0.17, 95% CI –0.01 to 0.34). Participants providing 8-week follow-up data reported mean losses of 2.86 and 3.17 kg in the web and coach groups, respectively. No adverse events were detected. 143 (58%) participants assigned to the website plus coach group refused phone calls or were uncontactable. However, users who did engage with coaching used the intervention more (t[55.186] –5.78, p<0.0001, d 0.94, 95% CI 0.61–1.28) and lost more weight than those who did not (t[50.459] 3.82, p<0.0001; d 0.62, 95% CI 0.30–0.95). Interview findings suggest the calls made users feel more supported and committed to the POWeR programme.

**Interpretation** This community rollout of POWeR attracted a diverse sample of users. The addition of telephone coaching to web-based weight management interventions may be acceptable, feasible, and effective, particularly for some types of users. Although some participants had minimum engagement with the intervention, the more committed users reported promising levels of weight loss over 8 weeks.

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### Contributors

SL, LD, LY, LM, PL, PR, SM, and EM designed the study. LD, SL, and DP ran the study (recruitment, data collection, etc). LD and LY led the data analysis and interpretation and drafted the manuscript. All authors contributed to the final manuscript.

### Conflicts of interest

LY and PL were among the original developers of the POWeR web-based intervention. However, POWeR is not a commercial venture. All other authors declare that they have no conflicts of interest.

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