



Virtual Look AHEAD Program: Initial Support for a Partly Virtualized Intensive Lifestyle Intervention in Type 2 Diabetes

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The Look AHEAD (Action for Health in Diabetes) program produces clinically significant weight loss and improvements in glycemic control, blood pressure, and quality of life in patients with type 2 diabetes (1,2), yet lifestyle interventions are time-intensive and less effective when delivered with lower intensity in primary care settings (2). Obesity guidelines endorse using technology to increase the reach of effective lifestyle interventions in the population (2), and therefore we conducted a pilot evaluation of a partly virtualized intervention that delivered content from the 16 initial group sessions of the Look AHEAD program along with 6 monthly visits with a registered dietitian.

The theoretical framework for this pilot evaluation was self-determination theory, which is an organismic approach to human motivation that has applications to health-behavior change and maintenance. We posited that perceptions of the virtual clinician (VC) as supportive of the basic psychological needs for autonomy, competence, and relatedness would be associated with higher levels of motivation (autonomy and perceived competence) for managing weight loss and that motivation for managing weight loss would be associated with higher levels of percentage

weight loss and decrease in waist circumference.

Participants were 33 English-speaking adults (19 female, 14 male) with type 2 diabetes, a BMI >25 kg/m² (>27 kg/m² if taking insulin), and a home computer with broadband Internet connection. Participants completed questionnaires at 1, 2, and 4 months after baseline, which assessed a variety of motivation and quality-of-life outcomes. Responses to all measures were made on a 7-point scale from 1 (either strongly disagree or not at all true) to 7 (either strongly agree or very true).

The Health Care Climate Questionnaire (3) assessed perceptions of the VC as need supportive (15 items; e.g., I feel a lot of trust in my VC). The Locus of Causality Scale (4) assessed experiences of choice around exercise and diet (3 items per behavior; e.g., I exercise because I like to rather than because I feel I have to). The Perceived Competence Scale (5) assessed experiences of feeling capable around exercise, diet, and weight loss (4 items per behavior; e.g., I feel capable of exercising regularly).

Bivariate correlations revealed significant associations between perceived need support from the VC and both autonomy and perceived competence across the 1-, 2-, and 4-month assessments;

those perceptions were unassociated with percentage weight loss and decrease in waist circumference. Autonomy was associated with marginally more percentage weight loss, and perceived competence was associated with significant decrease in waist circumference (Table 1).

The use of technology in clinical settings is of interest because virtualized interventions can reduce clinical contact time and increase reach in the population. The Virtual Look AHEAD Program demonstrated that a VC can be perceived as supportive of the basic psychological needs for autonomy, competence, and relatedness and that those perceptions predict motivation for managing weight loss, which has significant or marginal associations with weight-loss outcomes. These results highlight an opportunity to enhance the effectiveness of practitioners through the implementation of need-supportive, online lifestyle interventions.

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Table 1—Correlations among the study measures

	1	2	3	4	5
1. Perceived need support from the VC	0.92				
2. Autonomy	0.50**	0.76			
3. Perceived competence	0.39*	0.65***	0.95		
4. Percentage weight loss	−0.12	0.34+	0.29	−	
5. Decrease in waist circumference	0.04	0.18	0.42*	0.42*	−

Scale reliabilities (Cronbach's α) are shown on the diagonal. Estimates represent correlations between the average value of study measures across the 1-, 2-, and 4-month assessments. + $P < 0.10$, * $P < 0.05$, ** $P < 0.01$, and *** $P < 0.001$.

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