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Therapeutic alliance in dietetic practice for weight loss: Insights from health coaching

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Recommended Citation

Nagy, Annaliese; McMahon, Anne T.; Tapsell, Linda C.; Deane, Frank P.; and Arenson, Danielle, "Therapeutic alliance in dietetic practice for weight loss: Insights from health coaching" (2018). *Faculty of Science, Medicine and Health - Papers: part A*. 5360.
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Therapeutic alliance in dietetic practice for weight loss: Insights from health coaching

Abstract

Aim: The psychological construct of 'therapeutic alliance' can be used to better understand the effectiveness of consultations, particularly goal setting for weight management. We analysed audio-recorded health coaching sessions during a weight loss trial to explore relationships between therapeutic alliance and various contextual factors. **Methods:** Audio recordings of 50 health coaching sessions were analysed. After assessing fidelity to the protocol, therapeutic alliance was measured using an adapted Working Alliance Inventory Observer-rated Short Version (WAI-O-S), and examined by (i) identifying relationships between contextual factors and WAI-O-S scores (Spearman's coefficients); (ii) testing the impact of preparatory exercises and body mass index on WAI-O-S scores (one-way analysis of variance and least-squared differences tests) and (iii) comparing differences in WAI-O-S scores based on relationship status, gender and follow-up session completion (independent samples t-tests). **Results:** Fidelity was high (mean 88%). WAI-O-S total scores ranged from 55 to 70 (out of 84). Session duration was significantly correlated with WAI-O-S component of 'Bond' ($r=0.42$, $P=0.002$). Those who completed preparatory exercises had significantly higher total WAI-O-S scores, 'Goal' and 'Task' scores. Participants who completed the follow-up session scored significantly higher for 'Goal' compared to no follow-up. **Conclusions:** Spending more time in a session appears related to increased bonding, a key component of therapeutic alliance. Preparatory work may help build therapeutic alliance and agreement on goals appears to influence follow-up completion. These exploratory findings provide directions for research addressing the professional relationship in dietetic consultations for weight loss.

Disciplines

Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

Nagy, A., McMahon, A., Tapsell, L., Deane, F. & Arenson, D. (2018). Therapeutic alliance in dietetic practice for weight loss: Insights from health coaching. *Nutrition and Dietetics*, 75 (3), 250-255.

ORIGINAL RESEARCH

Therapeutic alliance in dietetic practice for weight loss: Insights from health coaching

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Obesity is a major health problem across the globe.¹ In Australia, the latest national health survey reports nearly two-thirds (63%) of the adult population are either overweight or obese.² Weight management is a major practice area for Accredited Practising Dietitians in Australia as poor diet can contribute to weight gain.³ The Dietitians Association of Australia Best Practice Guidelines for the Treatment and Management of Overweight and Obesity⁴ and 10-Point Plan⁵ are available to guide dietetic patient consultations for weight loss, however, little is known about how dietitians interact with patients to assist with sustained weight loss.

Within the discipline of psychology, 'therapeutic alliance' is a term that describes the practitioner–patient relationship. Bordin⁶ suggested a structured framework of therapeutic alliance, referred to as 'working alliance', breaking it down into 'Goal', 'Task' and 'Bond' components. 'Goal' refers to agreement on goals for therapy between practitioner and patient, 'Task' to the agreement on actions needed to achieve those goals and 'Bond' to the connection established between practitioner and patient.⁶ Therapeutic alliance has been researched extensively and found to be positively related to positive outcomes in psychotherapy and chronic disease.^{7–9} These findings were based on results of multiple, systematic tools for assessing therapeutic alliance, including the proven valid and reliable Working Alliance Inventory (WAI),¹⁰ which is based on Bordin's framework. However unlike psychology, systematic and evidence-based assessment of the dietitian–patient relationship appears limited, particularly in relation to patient outcome. Despite variation in what comprises health coaching, it is broadly recognised as being patient-focused and aimed at enhancing motivation for behavioural changes.^{11–13} Research shows positive outcomes of health coaching within chronic disease and weight loss.^{11,14} Similarities are evident between health coaching and dietetic practice as both utilise a motivational counselling approach.^{11,15,16}

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Accepted November 2017

The aim of this analysis was to explore relationships between therapeutic alliance and various contextual factors in health coaching sessions held within a weight loss trial.

Methods

This research utilised secondary data from a lifestyle intervention trial, the HealthTrack study (Australian New Zealand Clinical Trials registry number ACTRN12614000581662).¹⁷ The HealthTrack study was a 12-month randomised controlled trial with three study arms: a control group who received usual care, intervention group A whose participants received multidisciplinary lifestyle support and intervention group B whose participants received multidisciplinary lifestyle support and 30 g of walnuts per day. Multidisciplinary support targeted diet, exercise and behaviour.

Ethics approval for the HealthTrack study was provided by University of Wollongong, Illawarra Shoalhaven Local Health District Human Research Ethics Committee (HE 13/189). Consent for secondary analysis of audio recordings of health coaching sessions and participant information was given by participants as part of the HealthTrack study.

Telephone health coaching sessions were based on acceptance commitment therapy.¹⁸ Two health coaches received training from psychologists prior to the study commencing. Both coaches were female and from a health professional background involving dietetics or psychology. Participants received four telephone health coaching sessions, of approximately 15 minutes duration, over 12 months. Sessions were based on clarifying values underlying the desire to lose weight, increasing motivation, mindfulness and self-compassion. Participants received a booklet with information and exercises to complete for each session. A written script was developed for health coaches to follow throughout the sessions.¹⁷

Digital audio recordings of the first telephone health coaching sessions were obtained for 50 participants, who were randomly selected from 205 participants who had completed the first health coaching session as part of the intervention arms of the HealthTrack study (groups A and B). Half ($n = 25$) were randomly selected from each of the two health coaches using simple random sampling¹⁹ generated by a web-based randomisation tool.²⁰ Data from the first session only were used to determine the effect of early therapeutic alliance on completion of the follow-up session. Inclusion and exclusion criteria were determined by the HealthTrack study and have been published elsewhere.¹⁷

Fidelity of participants' first health coaching sessions to scripted content, outlined by the HealthTrack study protocol, was assessed. This was to ensure participants received the designed coaching intervention, and thus, there was no variation within session content that may influence results. A 3-point Likert scale was used to rate nine scripted session components. This method was tested for inter-rater reliability on a separate sample ($n = 18$). Two researchers rated fidelity independently and discussed discrepancies to reach an agreed rating.

An adapted version of the Working Alliance Inventory Observer-rated Short Version (WAI-O-S) was used to rate therapeutic alliance between health coaches and participants.²¹ Each of the 12 WAI-O-S items were rated using a 7-point Likert scale (1 = never, 7 = always), using an adapted version of the Manual for the WAI-O Revision IV.²² The tool and manual were adapted by altering wording and the scoring system to be relevant to health coaching. The adapted version of the WAI-O-S was tested for inter-rater reliability on a separate sample ($n = 18$). Given this was the first known time the WAI-O-S had been used within health coaching; certainty and relevance scores were added to each item.

The WAI-O-S has three subscales: Goal, Task and Bond. Each component comprises four items that were summed to obtain a subscale score (range of 4–28 based on four items on a 7-point Likert scale). The total WAI-O-S score for all 12 items was calculated (score range of 12–84). Example items of each component are as follows:²¹

Goal: The health coach and participant are working on mutually agreed-upon goals for the session.

Task: There is agreement about the steps taken to help improve the participant's situation.

Bond: The participant feels that the health coach appreciates them as a person.

Variables were assessed against WAI-O-S ratings to explore potential covariates of therapeutic alliance strength. Variables included the session duration, participant's age, gender, body mass index (BMI) (actual and categorised) and relationship status (in relationship or not in relationship), participant completion of preparatory exercises for the first health coaching session (all exercises completed, some exercises completed or no exercises completed) and participant completion of the follow-up health coaching session (completed or not completed). The follow-up session was the second health coaching session within the HealthTrack study.

Duration of sessions was determined from the time displayed on the recording. Participants' completion of preparatory exercises for the first health coaching session was determined from the review of the digital audio recordings between health coaches and participants, as this was one of the first items assessed during the interaction. Participant completion of the follow-up health coaching session was identified by completion records kept in the HealthTrack database.

SPSS software²³ (IBM, Armonk, New York, USA) was used for statistical analysis. Descriptive statistics were applied to participant demographic data. Spearman's coefficients were used to identify relationships between participants' age and actual BMI, session duration and WAI-O-S scores. For further analysis, participants' BMI was categorised into healthy, overweight and obese classes 1, 2 or 3, as outlined by the World Health Organisation.²⁴ Participants' relationship status was re-categorised into either 'relationship' or 'no relationship'. One-way analysis of variance (ANOVA) was applied to groupings to test the impact of participants completing preparatory exercises (all exercises

Table 1 Correlations (and *P*-values) between participants' age, actual BMI, session duration and adapted WAI-O-S scores

	WAI-O-S component scores			
	Goal	Task	Bond	Total
Age	0.27 (0.06)	-0.03 (0.85)	0.18 (0.22)	0.09 (0.53)
Actual BMI	-0.20 (0.16)	-0.10 (0.50)	-0.21 (0.14)	-0.15 (0.29)
Session duration	0.17 (0.24)	0.12 (0.40)	0.42 (0.002)	0.27 (0.06)

BMI, body mass index; WAI-O-S, Working Alliance Inventory Observer-rated Short Version.

Correlation coefficients shown are Spearman's coefficients.

Bold value indicates significance at $P < 0.01$ (two-tailed).

completed, some exercises completed or no exercises completed) and their BMI category on WAI-O-S scores. If one-way ANOVA results were significant, step-down comparisons between groups were assessed using least-squared differences tests. Independent sample *t*-tests were applied to compare differences in WAI-O-S scores between groupings based on relationship status, gender and participants' completion of the follow-up health coaching session (completed or not completed). Significance was set at $P < 0.05$ for all statistical analyses because of the exploratory nature of this research.

Results

Participants' mean age was 45 years with a standard deviation of 7.8 years. The majority were female (66%), in obese BMI categories (76%) and in a relationship (80%).

The mean percentage of fidelity across all script components and health coaches was high (mean 88%). Adapted WAI-O-S scores ranged from 55 to 70 (out of 84). Interrater reliability results for assessing fidelity showed the average percentage of agreement across script components was 94% based on independent ratings. The range was 83–100%. Following independent ratings of the adapted WAI-O-S, the range of percentage raw agreement between raters across all 12 items was 61–100% and the kappa coefficients ranged from 0.20 to 0.90.

Table 1 shows relationships identified between the contextual factors of age, BMI and session duration with WAI-O-S scores. Session duration showed a significant positive correlation with WAI-O-S component 'Bond', $r(48) = 0.42$, $P = 0.002$. Participants' age and actual BMI did not significantly correlate with WAI-O-S component or total scores.

There were mixed results for categorical variables. No significant impact of participants' BMI category on WAI-O-S scores was found. No significant differences were found in WAI-O-S scores between groups for participants' gender and relationship status (all $P > 0.05$).

There were significant differences between groups for participant completion of preparatory exercises for the first session (all exercises completed, some exercises completed and no exercises completed) on Goal ($F(2,47) = 6.76$, $P = 0.003$), Task ($F(2,47) = 3.78$, $P = 0.03$) and total WAI-O-S scores ($F(2,47) = 4.88$, $P = 0.012$). For these significant results, the least-squared differences test showed differences between participants that had read and completed

either all or some of the material and those that had not (see Table 2).

There was a significant difference in WAI-O-S goal scores for those participants who completed the follow-up health coaching session compared to those who did not, $t(20.61) = 2.29$, $P = 0.03$ (see Table 3 for means).

Discussion

The present study explored relationships between therapeutic alliance and various contextual factors in health coaching sessions held within a weight loss trial. A significant finding of the present study was that the Goal component of therapeutic alliance was significantly related to participants' completion of preparatory exercises for the first health coaching session (see Table 2). Similarly, Task and total WAI-O-S scores were also significantly related to participants' completion of preparatory exercises. These results indicate that patients who have dedicated time to completing exercises in preparation for their health coaching session may develop a stronger therapeutic alliance with their health coach. Specifically, it appears they may be more likely to agree on their goals with their health coach and tasks they need to perform to achieve their goals.

From a dietetic practice perspective, this may mean patients who have dedicated time to completing work prior to a consultation, such as completing a food diary, may be able to develop a stronger therapeutic alliance with their dietitian, particularly around goals and tasks. A possible explanation may be that as a result of completing their food

Table 2 Least-squared differences tests assessing difference in WAI-O-S scores between levels of participant completion of preparatory exercises (all, some and none)

	All ($n = 14$)		Some ($n = 23$)		None ($n = 13$)	
	M	SD	M	SD	M	SD
Goal	5.09 ^(a)	0.19	5.01 ^(b)	0.12	4.87 ^(a,b)	0.19
Task	5.39 ^(a)	0.57	5.22	0.36	4.94 ^(a)	0.37
Bond	5.39	0.34	5.30	0.35	5.10	0.40
Total	5.29 ^(a)	0.31	5.18 ^(b)	0.24	4.97 ^(a,b)	0.29

M, mean; WAI-O-S, Working Alliance Inventory Observer-rated Short Version.

^(a,b) Groups within rows that share a superscript are significantly different using least-squared differences tests at $P < 0.05$ (two-tailed).

Table 3 Independent samples *t*-tests between those who completed or did not complete the follow-up health coaching session and WAI-O-S scores

	Follow-up health coaching session completed				df	t	P	Cohen's d	95% CI
	Yes (n = 35)		No (n = 15)						
	M	SD	M	SD					
Goal	5.04	0.15	4.90	0.21	20.61	2.29	0.03	0.75	0.01 to 0.26
Task	5.26	0.44	5.05	0.47	48	1.50	0.14	0.46	−0.07 to 0.48
Bond	5.30	0.36	5.22	0.40	48	0.73	0.47	0.22	−0.15 to 0.31
Total	5.20	0.28	5.06	0.31	48	1.60	0.12	0.48	−0.04 to 0.32

M, mean; WAI-O-S, Working Alliance Inventory Observer-rated Short Version.

Bold value indicates significance at $P < 0.05$.

diary, they have invested in the consultation, are better able to engage in discussion with their dietitian and consequently may be able to develop a more effective relationship.

Similarly, other significant findings suggest those participants who completed the follow-up health coaching session were also more likely to agree on their goals with their health coach in the first session. This finding supports similar results within health-related literature. A positive association between the agreement on patient's goals and patient's completion of subsequent therapy sessions has been commonly found within psychotherapy research.²⁵ This association is also being increasingly found in treatments for physical health problems.⁷ The main implication from this is that early clarification and agreement around goals during health consultations are important in determining a patient's completion of subsequent consultations. This may be an important finding for dietitians working with patients over multiple subsequent consultations, such as those patients seeking weight loss. Considering this, it appears there is a need for more research on what relationship-building and goal-planning skills are needed for effective dietetic practice. For dietitians, this may mean further articulation is required on specific skills to assist patients with goal setting and for planning changes patients can make to achieve their goals and improve their outcomes.

We found that the participants' age had no apparent influence on therapeutic alliance scores. Our findings show within the telephone health coaching context, other participant demographics were also not significantly associated with therapeutic alliance. Studies in psychotherapy contexts have also reported mixed results between participant demographics and therapeutic alliance.^{26–28} Findings related to participants' BMI may be of particular relevance to dietitians working within weight loss. BMI is an anthropometric measure directly related to weight, therefore is relevant to dietetic practice. Also, research shows a stigma exists towards overweight or obese people amongst health professionals that can negatively affect patients.²⁹ Therefore, it was thought those patients within overweight or obese BMI categories may behave differently with a health professional and this may influence therapeutic alliance. However, we found participants' BMI had no apparent influence on

therapeutic alliance scores. This may be related to health coaching sessions taking place via telephone and therefore results may vary from this in a face-to-face context. Overall, these findings from health coaching sessions appear to provide some insight for dietitians regarding their therapeutic alliance with patients within weight loss practice, particularly in regard to factors that may influence effective therapeutic alliance development. In doing so, this research highlights how dietetic patient management may be enhanced to potentially benefit patient outcome.

Our findings highlight a multitude of research opportunities. More research on the goal-setting skills of dietitians may be necessary as part of building an effective dietitian–patient relationship. Research on communication skills such as active listening may also be important, as effective goal setting involves hearing what patients are saying and identifying their needs. Based on Cohen's table of effect size magnitudes,³⁰ our findings show a medium positive correlation between the duration of health coaching sessions and the bond developed between health coaches and participants (see Table 1). This indicates that research into how dietetic consultation times affect relationships with patients may also be needed, particularly as our findings are non-directional. Further research may be required to investigate whether a stronger bond allows for a longer consultation, or conversely whether a longer consultation allows for a stronger bond to form. Furthermore, given the therapeutic alliance construct appears useful within the present study and similarities exist between health coaching and dietetics, research into the role of this construct in assessing the dietitian–patient relationship appears important. Systematic and evidence-based assessment of the dietitian–patient relationship may also allow for further research into how the relationship influences patient outcome within dietetics.

Although findings are drawn from a telephone health coaching context, dietitians utilise counselling skills similar to those within health coaching and to this extent, the findings have implications for dietetic practice. While health coaching and dietetics may be seen as different types of service delivery, the expertise and training of dietitians is recognised as being well suited to health coaching.¹⁶ Both focus on patient-centred care and empowering individuals to make positive changes to their health through a

counselling approach.^{11,15} Health coaching differs from dietetics as coaches are not able to prescribe a specific treatment plan. Their role is to coach patients in making decisions and improving lifestyle-related choices.¹¹ Dietitians working in the clinical domain develop 'treatment' in the form of a nutrition care plan.¹⁵ Similarities between health coaching and dietetics lie within the counselling aspect that is fundamental to each. It may be that these findings within a health coaching context have some relevance to dietetic practice given both services utilise a counselling approach. Thus, these findings within a health coaching context have some relevance to dietetic practice.

Consideration of the tool used to measure therapeutic alliance between health coaches and participants is important in light of findings. An adapted version of the WAI-O-S²¹ was used. The original 12-item tool is based on the longer, 36-item, WAI.¹⁰ A meta-analysis by Martin *et al.*⁹ suggests that for most research the WAI is a suitable method as it was developed to assess therapeutic alliance in all types of therapy. Validity and reliability of the tool is also supported.^{9,31} The original WAI and short version have shown to be interchangeable.³² Both versions of the tool have also been found to have consistently high reliability estimates, within standards of acceptability.³³ These findings support the use of the WAI-O-S to measure therapeutic alliance developed between health coaches and participants within the present study.

Despite similarities being recognised between health coaching and dietetics,¹⁶ caution needs to be taken when considering applicability of findings. These relationships were only established with two health coaches and were not specific to dietetics. Furthermore, the small sample size of 50 participants limits interpretation and generalisability of results. Assessable variables were restricted as data collected were predetermined by the HealthTrack study. Also, as health coaching sessions were telephone-based, body language may have provided useful data but could not be assessed.

Within these health coaching sessions, spending more time in a session appears to help with bonding between the health coach and participant, which is recognised as a key component of therapeutic alliance. Participants completing exercises in preparation for their consultation may help to build their alliance with their health professional. Agreement on goals appears to influence completion of follow-up sessions. These exploratory findings provide directions for research addressing the professional relationship in dietetic consultations for weight loss.

Funding source

No funding was received for the present study.

Conflict of interest

The authors have no conflicts of interest to declare.

Authorship

AN contributed to the study design, completed data collection and analysis and wrote the main manuscript draft. AM and LT contributed to the study design and critically reviewed the manuscript prior to submission. FD contributed to the study design, completed data analysis and assisted with interpretation of results and critically reviewed the manuscript prior to submission. DA completed data collection to determine inter-rater reliability of methods. All authors are in agreement with the manuscript. The authors wish to declare the content of this paper has not been published or submitted for publication elsewhere.

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