

Health and Wellness Coaching Implemented by Trainees: Impact in Worksite Wellness

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Abstract

Background: Lifestyle change programs have demonstrated encouraging improvements in the overall well-being of participants in clinical, worksite, and university settings. However, the majority of published research utilizes accredited, professional health coaches. This study seeks to establish the efficacy of health and wellness coaching implemented by coaching trainees in a workplace/university framework.

Methods: University faculty, staff, and students were recruited ($n = 74$) to participate in an 8-week health and wellness coaching program comprised of 3 coaching sessions. The wellness coaches were undergraduate students enrolled in a university Health and Wellness Coaching practicum course. Participants reported satisfaction in 12 wellness dimensions. Their satisfaction scores were used as proxy to encourage them to focus their behavior change within 1 or more of 12 wellness dimensions. The self-reported wellness dimension scores were recorded at baseline, and subsequent changes in the selected dimension scores were evaluated. The control group received telephonic and video conference-based coaching, while the intervention group participants were also offered face-to-face coaching and social-embedded support.

Results: Participants most frequently selected to work on 2 of the 12-wellness dimensions. No differences between groups were found in the initial wellness scores. A statistical analysis was performed on dimensions with 20 or more responses to determine whether the intervention (social support), coaching session, and other variables had a significant impact. A mixed model adjusted on group, coaching session, coaching trainee, and participant was performed. The eating/nutrition and thinking wellness dimensions exhibited a significant positive change in wellness scores in both groups ($P < .001$ and $P < .0143$, respectively).

Discussion: An increase in eating/nutrition and thinking wellness scores in both groups suggests that the coaching trainees were effective in motivating change to boost participants' well-being. The results justify further research to evaluate the cost-effectiveness, approaches, and efficacy of coaching trainees in worksite wellness programs.

Keywords

health and wellness coaching, university setting, trainees, social embeddedness, health dimensions

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Introduction

The drastic rise in health-care costs is largely attributed to chronic preventable diseases such as stroke, cardiovascular disease, cancer, and adult onset diabetes.¹ In 2010, 86% of the U.S. health-care expenditures were a result of 1 or more chronic medical conditions. Furthermore, 70% of mortalities were due to

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preventable conditions.¹ The majority of modern health complications are associated with lifestyle habits.² These chronic conditions often develop due to neglecting multiple aspects of wellness and unhealthy lifestyle-behavioral habits. The well-being of individuals may be enhanced through health education, coaching, and primary prevention strategies.

Health and wellness coaching (HWC) interventions have demonstrated valuable potential as a supplementary modality to the medical field and worksite wellness.^{3,4} HWC has rapidly grown as a primary and supplementary health promotion intervention to address issues related to preventable chronic disease.³ HWC has proven to provide patients with long-term, consistent improvements in health behaviors,⁴ quality of life,^{5,6} weight,⁶ and nutrition.^{2,7} In the past decade, the application of HWC has drastically increased in health care and worksite wellness.^{8–11} The holistic approach used in HWC encourages clients to view health systematically and focus on behavioral health habits that may establish positive autonomous life-long changes and reduce the rate of chronic disease.

HWC programs are not limited to clinical settings but are also effective in diverse worksite and university settings. According to the American College Health Association, wellness programs support change in the quality of life in university faculty and staff that can improve well-being.¹² A worksite/university wellness program conducted at Oklahoma State University resulted in a reduction of metabolic syndrome risk factors in university employees.¹³ In addition, the participants reported the program was beneficial to their health.¹³ Similar to our study, universities such as the University of Maine, Marquette University, and the University of Louisville have incorporated peer wellness coaching as a means to deliver HWC.^{14–16} However, there remains limited published studies on the efficacy of coach trainees. Employees participating in HWC have shown to possess fewer health-care claims and lower costs compared to nonparticipants.¹² In addition, biometric measures that included body mass index, cholesterol, and glucose levels improved, indicating a reduction in health risks.¹² They also displayed a significant increase in work capabilities and a reduction in employee burnout.¹³ The ability to manage and prevent chronic conditions may have subsequent economic advantages including enhanced work output and decreased health-care costs. Moreover, inclusive worksite health promotion programs improve working conditions and reduce risk factors.¹⁷

Social-embedded support plays a role in improving health and well-being.^{18,19} Social embeddedness is defined as the concept of how individual's actions are altered by the social associations in which they function.²⁰ Research has demonstrated the addition of

social-embedded support encourages individuals to lose more weight.¹⁸ Yorks et al. demonstrated that social group exercise lead to significant improvements in all quality of life measures, while solitary exercise only resulted in an improvement mental quality of life.¹⁹ On the contrary, a graduate and undergraduate student led HWC program at Ohio State University did not demonstrate HWC actively encourages students to engage with their community.²¹ There is limited supporting evidence of the efficacy of social-embedded support within health behavior interventions.¹⁸ Changes in wellness domains/dimensions have been explored. In 1976, the Dimensions of Wellness were developed to present a holistic view of the individual.²² Existing literature has demonstrated the efficacy of including wellness dimensions to improve health such as enhancing cognitive health and protection against mental deficits.²³ Based on a holistic view of individuals and recognition that various aspects of health and wellness are interconnected, HWC must be addressed from multiple dimensions.^{24–27}

There is an abundance of health improvement programs; however, few are effective or they display short-lived success.²⁵ A common problem encountered in these programs is the overwhelming amount of information available to the patient/client. Furthermore, there is often a lack of clarity and conflicting ideas. Health promotion programs that lack accountability, sense of community, and feedback mechanisms are more likely to fail.²⁵ The student trainees in our program collaborated with their clients to develop a wellness vision and establish action goals. Social- and university-embedded activities were incorporated in the coaching conversation in a manner that allowed coach and client to explore embedded support options that encouraged and narrow goal-setting decisions.

Purpose

The Commit to be Well (CtbW) Program was a workplace/university intervention delivered by undergraduate HWC trainees. This study investigated the impact undergraduate coaching trainees have on a wellness program carried out in a worksite/university setting and evaluated the impact of social-embedded support.

Methods

CtbW began in 2016 as a pilot study and demonstrated an overall improvement in participant well-being. In 2017, CtbW was available for its second year to Arizona State University (ASU). The final design of CtbW program employed participant recommendations gained from the pilot study to improve the program. The study acquired institutional review board approval through the university. Inclusion of participants was

based on maximizing access of interested participants in a university wellness program. Minors, pregnant women, and individuals who were unable to provide informed consent were excluded. CtbW was promoted in early January, 2 months before the program began. ASU faculty, staff, and students were recruited through marketing strategies that included internal newsletters, Sun Devil Fitness Complex (SDFC) website marketing, college newsletters, and Health Center digital boards. CtbW was conducted from March to April, and the data were analyzed through September 2017. A welcome letter was e-mailed to all participants, and they were requested to complete several assessments. Before starting the program, 2 orientation seminars were provided, 1 live one and 1 via video conference. All participants were asked to attend either live orientation seminar or watch the orientation video. Faculty, interns, and the Assistant Director of Wellness attended the meetings to explain program details, define the role and expectations of the coaching trainees, address concerns, and promote incentives and university services available.

CtbW was a voluntary-based study, and participants were provided with university incentives. Every participant received a free membership to the SDFC and open access to group fitness programs. A free nutritional education course was available to all participants. In addition, participants received information regarding additional services available through ASU SDFC and health services such as professional personal training sessions and consultations with a registered dietitian.

There were 93 university students, staff, and faculty who completed the CtbW application form. From this group, 74 individuals completed the required documents (consent, availability, and interest forms) and were deemed eligible. The 74 participants were provided with a confidentiality form which listed the objectives of the program and ensured the privacy of their identities. The program did not pose any significant harm or risk to the participants, save the time commitment.

Participants completed various assessments: ASU Wellness Profile Questionnaire, a VIA strength questionnaire, the Wellness Wheel Dimensions Scores, and a Wellness Vision Assessment. Participants were also provided with information on ASU Wellness Resources. The Wellness Profile Questionnaire was created by Wellsource specifically for use by ASU.²⁸ The ASU Wellness Profile Questionnaire evaluated participants' family health history, physical activity, eating practices, substance abuse, mental/social health, job satisfaction, readiness to change, and health interests. The Wellness Wheel was adapted from the Wellpeople's Wellness Inventory²⁹ and it rated participants' satisfaction in 12 wellness dimensions throughout the program. The Wellness Vision Assessment facilitated the development of the participants' wellness vision.

The VIA strength questionnaire was created by Dr Martin Seligman and concentrates on positive character traits. This survey contrasts with the majority of strength questionnaires because it does not focus on negative/neutral character traits. The strengths captured in VIA questionnaire were implemented in the coaching practice.³⁰ The VIA survey has been used in previous studies on university wellness coaching.^{6,31}

The health coaches were undergraduate students registered in the Healthy Lifestyle Coaching degree. There were 18 undergraduate ASU students who served as the health coach trainees. Ten student trainees were enrolled in a full-semester (16 weeks face-to-face) course, which served as the intervention group coaches. The remaining 8 coaching trainees were enrolled in a full-semester online synchronous course that served as the control group coaches. The coaching training was comprised of case-based readings and discussions, articles/books on key concepts of coaching psychology, and theories of health behavior. The student trainees also completed 5 live coaching practice sessions and a practical skills assessment. After completing the practical skills assessment, students received immediate feedback, and evaluations of adherence to coaching methods were noted by the instructor.

An availability survey was used to determine participants' availability and to assign them to the control or intervention group. The selection was based on participants coaching preference (face-to-face or video/telephonic coaching) and time/day they were available. The participants who expressed interest with in-person coaching were placed in the intervention group based in Phoenix, AZ. The health coaches enrolled in the online course were located all over the nation and were only able to communicate with their clients through telephone or video chat. Forty-one participants were assigned to the intervention group and 33 participants were placed in the telephonic control group. The coaching trainees obtained clients' consent to record each coaching sessions. The recorded sessions were assessed and evaluated by the instructor.

The CtbW program consisted of an 8-week commitment. During that time frame, participants were expected to attend 3 separate health-coaching meetings held every 3 weeks. The 12-dimension wellness wheel was used to estimate participants' sense of satisfaction with each wellness dimension. Similar holistic wellness assessments were previously validated.³²⁻³⁵ Wellness dimensions satisfaction have been evaluated in few HWC programs.^{6,13} The use of wellness dimensions aligns with the general approach of health promotion to incorporate a holistic view on health.²³ The health coaches assessed 12 "wellness dimensions": self-responsibility and love, breathing, sensing, eating/nutrition, movement, feeling, thinking, playing and working, communicating,

intimacy/relationships, and finding meaning/spirituality. Participants were then asked to choose up to 5 wellness dimensions they wished to improve upon throughout the program.

Health coach trainees used motivational interviewing (MI) techniques to assist in the development of goals/wellness visions and preserve their clients' autonomy. MI is a client-centered counselling style for electing behavior change. MI may also facilitate interpersonal relationships between coach and client.³⁶ The first coaching session had a duration of 60 to 90 minutes. The coach trainee and client worked as a team to explore values, motivators, strengths, barriers, past successes, and environmental and social support to determine the most important aspects of the participants' well-being. During the initial session, the health coach reviewed their clients' assessments and guide them to create a wellness vision. Health coaches also worked with their clients to select specific areas of their well-being that they wanted to improve and establish long-term goals and weekly smart goals that aligned with their selected wellness dimensions.

The initial session was followed by two 20- to 30-minute follow-up sessions every 3 weeks. Additional weekly support was provided as needed and requested by the participant. In supporting the participants' autonomy, some participants indicated their preference to receive a motivational weekly text or e-mail. In subsequent coaching sessions, health coaching trainees reviewed and recorded short-term goals, addressed barriers, adjusted plan of actions, monitored confidence, importance and motivation in achieving goals, inquire and recorded about changes in their perceived score in their selected wellness dimensions, and addressed client's perceived success. At the conclusion of the study, the clients were provided with an optional post questionnaire and exit questionnaire. Health and wellness coaching trainees recorded participants' data for each of the 3 coaching sessions.

The control group received coaching telephonically, while the intervention group received face-to-face coaching in addition to supplemental resources on university-/social-embedded activities. The intervention group was provided a form containing specific ASU and SDFC university-embedded programs and activities. In the form, clients were informed about how the selected activities were connected to each wellness dimensions. The coaches highlighted embedded support activities that supported clients' wellness vision and goals. In order to maintain autonomy, the intervention group was able to report if they "would participate," "decline to participate," or "maybe participate" in wellness dimension specific activities. The coaches then recorded participants' responses and completion of the

recommended social-embedded activities to measure its impact in each dimension score.

This study was a quasi-experimental design to measure and analyze the participants' selected self-reported wellness scores. *T* test and χ^2 test were performed to observe baseline characteristics between the groups. For dimension with more than 20 responses across the 3 coaching sessions, a statistical analysis was done using a mixed model. A mixed model with equal variance-covariance structure of the random effects adjusted on group, coaching session, coaching trainee, and participant was performed. All analyses were done using STATA Version 14.1 (College Station, TX), reporting 2-sided *P* values, with a level of significance for $<.05$.

Results

The original sample for this study had 74 participants. The intervention group was comprised of 41 participants, and the remaining 33 individuals were in control group. There were a total of 32 faculty and 42 students in the study. The control group was comprised of 19 faculty and 14 students. The intervention group was comprised of 13 faculty and 28 students. The overall completion rate of CtbW was 76%. The mean age of the participants in the study was 28 years. The youngest individual to participate in the program was 18 years of age. The oldest participant was 58 years old.

Only 47 participants completed their online Wellness Profile. Demographics of the study participants indicate that 44% of the population was Hispanic, 65% was overweight or obese, 80% had a physical examination within 1 to 2 years, and 93% had their blood pressure checked. The majority of the participants had a sedentary lifestyle, and more than 50% reported eating less than 2 cups of fruits and vegetables. CtbW participants reported to be in high energetic, happy, and positive mood yet 78% demonstrated interest in working on stress reduction. Many participants reported interest in working in healthy eating (76%), while 82% reported interest in weight management (Table 1).

There was a significant difference in the average age of participants between the control and intervention groups. The difference in gender distribution in the overall population sample was marginally significant; the majority of the participants in the study were women, with females comprising 87% of the population. There were no significant differences in the distribution of the university roles of the participants, their health perception, or their initial dimension scores by intervention group (see Table 2). There were no differences in the participant outcomes between students, faculty, and staff.

Goals were defined and modified throughout the duration of the study. The most frequent selected wellness areas were eating/nutrition, movement, playing and

Table 1. Baseline Characteristics of Participants that completed CtbW (N = 47).

	n (%)
Race/ethnicity	
Caucasian	15 (31)
African American	5 (10)
Hispanic/Latino	21 (44)
Asian	3 (6)
Native American	2 (4)
Other	1 (2)
Body mass index	
Underweight: <18.5	3 (6)
Normal weight: 18.5–24.9	13 (27)
Overweight: 25–29.9	16 (34)
Obese: 30+	15 (31)
Family health history	
Coronary heart disease, heart attack, or heart surgery before age 55 in men or 65 in women	4 (8)
Type 2 diabetes	10 (21)
Osteoporosis or fractures	6 (12)
Breast cancer	6 (12)
Colon cancer	2 (4)
Preventive health tests	
Physical examination within last 1 to 2 years	38 (80)
Blood pressure check within last 1 to 2 years	44 (93)
Cholesterol check within last 2 to 5 years	31 (65)
Dental examination within last year	37 (78)
Prostate examination within last 1 to 2 years (men age 50+)	1 (2)
Bowel examination within last 5 to 10 years (age 50+)	3 (6)
Annual flu immunization	20 (42)
Pneumonia immunization in last 10 years (age 65+)	0 (0)
PAP test in last 1 to 3 years (women)	17 (36)
Mammogram in last 1 to 2 years (women age 40+)	5 (10)
Exercise days	
Five or more days a week	7 (4)
Less than 5 days a week	40 (85)
Fruits	
Two or more cups daily	17 (36)
Less than 2 cups daily	30 (63)
Vegetables	
Two or more cups daily	23 (48)
Less than 2 cups daily	24 (51)
Smoking status	
Never smoked	44 (93)
Quit or presently smoke	3 (6)
Alcohol	
Male: 14 or less drinks a week	5 (10)
Male: more than 14 drinks a week	0 (0)
Female: 7 or less drinks a week	37 (78)
Female: more than 7 drinks a week	3 (6)

(continued)

Table 1. Continued

Work stress	
Never or sometimes	29 (61)
Often, permanent or continual	18 (38)
Happiness	
Pretty or very happy	43 (91)
Unhappy	4 (8)
Readiness, plan to change within a month to 6 months	
Be physically active	23 (48)
Practice good eating habits	21 (44)
Lose weight or maintain a healthy weight	28 (59)
Cope better with stress	12 (25)
Lower or maintain healthy cholesterol level	20 (42)
Lower or maintain healthy blood pressure	8 (17)
Live an overall healthy lifestyle	27 (57)
Health interests	
Nutrition/healthy eating	36 (76)
Weight management	39 (82)
Group fitness class	31 (65)
Walking group	19 (40)
Cholesterol reduction	16 (34)
Blood pressure reduction	5 (10)
Reducing diabetes risk	25 (53)
Men's health issues	3 (6)
Reducing coronary risk	2 (4)
Reducing cancer risk	21 (44)
Alcohol/drug help	0 (0)
Medical self-care	25 (53)
Healthy back	3 (6)
Stress reduction	37 (78)
Women's health issues	17 (36)
Dealing with depression	23 (48)

working, self-responsibility and love, and thinking. Study participants identified at least 1 to 5 wellness dimensions of interest and identified an average of 2 goals. After the program was completed, participants reported an average of 77% goal completion. A summary of the changes in the wellness dimension scores is presented in Table 3 and depicted in Figure 1. Both the intervention and control groups demonstrated an overall positive movement in the majority of dimensions. Telephonic, face-to-face, and video conference coaching sessions appeared to be equally effective. The social-embedded component of the intervention did not have an effect in improving lifestyle changes. In each of the 3 coaching sessions, the wellness dimensions that received 20 or more responses were incorporated in the mixed model. The 5 dimensions most commonly selected were kept in the model. Eating/nutrition and thinking dimensions had a significant increase in its score across all 3 coaching sessions ($P < .001$ and $.0143$, respectively; Table 4).

A satisfaction survey was completed at the end of the study; of the 52 participants, 60% completed the exit survey. Of the survey respondent, 83% reported that

Table 2. Commit to be Well Participants Baseline Characteristics by Group.

	Control	Intervention
N	33	41
Age, mean (SD)*	30.9 (11.7)	26.0 (9.7)
Gender, female, n (%)	31 (94)	33 (81)
Student or staff, n (%)		
Undergraduate student	13 (39)	27 (66)
Faculty/staff member	19 (58)	13 (32)
Graduate student	1 (3)	1 (2)
Overall health perception, n (%)		
Health fanatic	1 (3)	1 (2)
Very healthy	0 (0)	3 (7)
Healthy	17 (52)	22 (54)
Unhealthy	14 (42)	13 (32)
Very unhealthy	1 (3)	2 (5)
Wellness dimension score, mean (SD)		
Breathing	5.4 (2.6)	5.4 (2.2)
Communicating	6.9 (2.0)	6.9 (1.9)
Eating/nutrition	4.8 (2.2)	4.8 (2.0)
Feeling	6.5 (2.1)	7.1 (1.6)
Meaning/spirituality	6.2 (2.3)	6.7 (2.2)
Intimacy/relationships	7.2 (2.1)	7.4 (2.0)
Movement	7.5 (2.1)	7.6 (2.1)
Playing and working	6.0 (2.5)	5.6 (2.4)
Self-responsibility and love	6.2 (2.0)	6.3 (2.0)
Sensing	6.0 (2.4)	6.3 (1.7)
Thinking	6.7 (2.2)	7.4 (2.0)
Transcending	6.7 (1.9)	7.1 (2.0)
Number of participants and coaching sessions completed		
Coaching session 1	33	36
Coaching session 2	30	32
Coaching session 3	24	28
Number of goals, n (%)		
2	10 (35)	22 (63)
3	12 (41)	9 (26)
4	7 (24)	3 (9)
5		1 (3)

*P value<0.05.

Table 3. Changes in Wellness Scores by Dimension and Group.

Wellness Dimension	Control Score, Mean (SD) & N			Intervention Score, Mean (SD) & N		
	Coaching Session 1	Coaching Session 2	Coaching Session 3	Coaching Session 1	Coaching Session 2	Coaching Session 3
Breathing	8.0 (0.0) & 1	8.0 (0.0) & 1	8.0 (0.0) & 1	9.0 (0.0) & 2	9.0 (0.0) & 2	9.0 (0.0) & 2
Communicating	2.0 (0.0) & 1	9.0 (0.0) & 1	7.5 (3.5) & 2	7.0 (2.7) & 3	7.3 (2.1) & 3	6.7 (4.9) & 3
Eating/nutrition	5.7 (2.7) & 26	8.2 (2.1) & 25	9.2 (1.2) & 18	6.7 (2.9) & 29	7.7 (1.9) & 27	8.2 (1.5) & 21
Feeling	6.0 (4.4) & 3	9.5 (0.7) & 2	9.0 (1.4) & 2	10.0 (0.0) & 2	8.7 (0.6) & 3	8.3 (1.2) & 3
Meaning/spirituality	6.8 (2.7) & 5	9.0 (0.0) & 2	8.0 (0.0) & 1	7.3 (1.5) & 3	8.8 (1.3) & 4	9.0 (1.7) & 3
Intimacy/relationships	7.8 (1.3) & 6	9.8 (0.5) & 4	7.8 (2.9) & 5	7.5 (0.7) & 2	3.0 (1.4) & 2	7.6 (2.1) & 5
Movement	7.7 (1.6) & 23	8.0 (1.4) & 20	8.1 (2.6) & 17	7.7 (2.2) & 27	7.6 (1.8) & 28	7.9 (2.3) & 23
Playing and working	7.3 (1.3) & 4	7.5 (0.6) & 4	10.0 (0.0) & 1	5.5 (3.0) & 6	7.2 (2.3) & 9	7.4 (1.5) & 7
Self-responsibility and love	7.4 (1.9) & 9	7.3 (2.0) & 6	7.9 (2.1) & 8	7.6 (2.7) & 9	6.9 (1.9) & 10	7.7 (1.5) & 11
Sensing	–	10 (0.0) & 2	10.0 (0.0) & 1	–	8.7 (0.6) & 3	9.0 (0.0) & 2
Thinking	9.8 (0.5) & 4	9.0 (1.4) & 4	8.7 (1.5) & 3	7.5 (2.1) & 2	6.8 (2.0) & 6	8.0 (2.7) & 3
Transcending	9.0 (0.0) & 1	–	–	8.0 (2.8) & 2	1.0 (0.0) & 1	5.0 (0.0) & 1

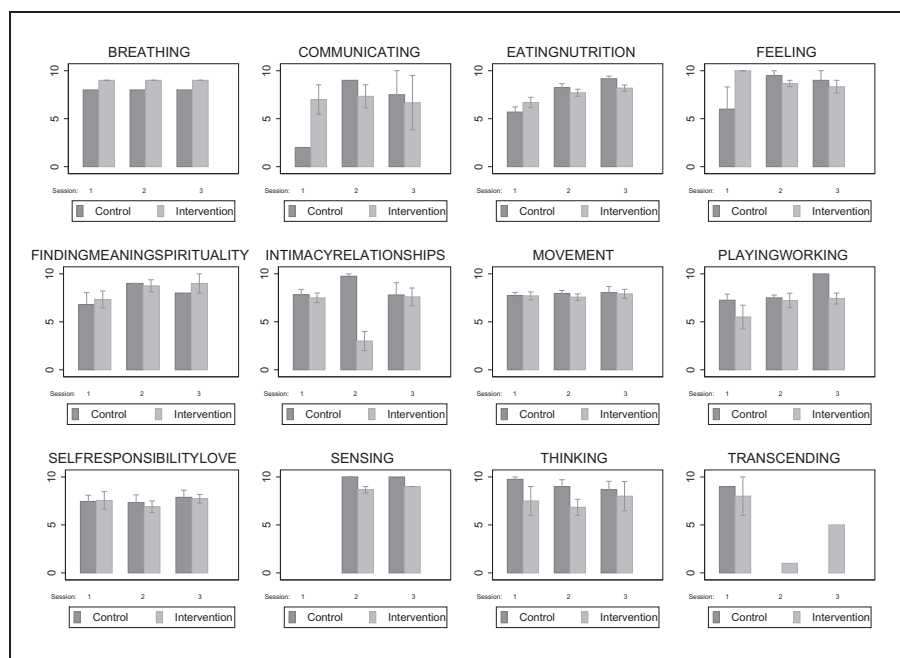


Figure 1. Summary of the Self-Reported Wellness Raw Scores Across the 3 Coaching Sessions of the Control and Intervention Groups.

Table 4. Mixed Model Adjusted on Group, Coaching Session, Coaching Trainee, and Participant.

Dimension	p-value	Group	Session	Trainee	Participant
Eating nutrition	<0.001*	0.977	2) <0.001* 3) <0.001*	<0.001*	0.767
Movement	0.6826				
Playing working	0.1597				
Self responsibility love	0.2612				
Thinking	0.0143*	0.042	2) <0.163 3) <0.573		<0.001*

*P value<0.05.

they were experiencing coaching for the first time, 88% would recommend the program to family and friends, 85% participants perceived that CtbW assisted them in improving their health and well-being, and 63% reported using the SDFC incentive.

Discussion

The aim of this study was to investigate if a HWC program conducted by coaching trainees in a university/worksite setting would have a positive impact on participants' health and well-being. Moreover, we wanted to evaluate the effects of HWC in wellness scores when face-to-face meetings and additional social-embedded support activities are offered to participants. HWC trainees in CtbW used several coaching strategies including coaching role definition, patient centeredness, visioning, participant self-determined goals through self-discovery, promotion

of self-mastery and growth mindset, strengths support, accountability and ownership setting, intrinsic motivation, and supporting environmental and social activities.

HWC approaches that are patient-centric, focus on wellness, and cultivate intrinsic motivation have demonstrated positive changes.^{4,36-38} Even though additional social support did not result in significant changes across wellness dimension scores, our results indicate that a brief 2-month HWC program guided by coaching trainees can lead to overall positive wellness changes across a wellness wheel comprised of 12 dimensions of wellness. Changes in wellness dimension scores suggest an optimistic perception of participant defined goal progress and attainment.³⁹ Participant exposure to wellness assessments has proven to be an effective tool in recognizing the necessity to employ healthy behavioral habits and assisting participants in determining the aspects of health they wish to improve.⁴⁰

Participants in both the control and intervention groups experienced significant changes in their wellness scores for nutrition/eating and thinking. The increased scores in the nutrition dimension appeared to be influenced by the coaching trainees and the continued exposure to the HWC. The increase in thinking wellness scores was appeared to be due the participants' and exposure to the HWC. Although not significant, the majority of the wellness dimension scores experienced a general increase as the program progressed. The results of our worksite wellness program are supported by existing literature. Previous studies have markedly improved their clients' self-reported health status and quality of living,³⁶ reduced employee health risks, and decreased health-care claims/costs.¹² CtbW along with additional workplace wellness programs have exhibited success in improving the well-being of its participants.

Our study is consistent with other patient-centered wellness studies where participants most frequently select nutritional and physical activity changes as the areas of behavioral change interest.^{38,41} In a university HWC study, it was demonstrated that students who dedicated more time toward their wellness dimensions, specifically the physical and environmental dimensions, acquired a higher GPA.⁴² Changes in the reported nutrition score were significantly higher in each coaching session regardless of intervention. Nutrition-focused HWC programs have shown success in reducing weight, improving nutritional habits, and increasing daily physical activity and energy expenditure.² The overall difference in gender and demographic distribution in both groups did not impact the study. According to the Wellness profile summary, 65% of the participants reported being overweight or obese. Existing literature on university HWC programs that focus on an obese population has proven to improve lifestyle behavioral habits and improve participant's confidence.³⁵

The participants in the control group communicated with their health coaches solely through telephonic means. In contrast, the intervention participants were able to communicate with their health coaches in-person. The differences in communication modality between the groups did not appear to have an impact on the final wellness scores of the participants. The respective groups attained similar levels of success regardless of the communication design. The suggested value of telephonic-based HWC and additional educational resources is supported by the trends in prior research.^{43,44} Existing literature has shown that HWC enhances participant inclination to develop healthy behavioral changes.³⁸ Similar to previous studies, CtbW implemented educational resources in conjunction with the HWC program. The additional component of wellness and educational resources may prove to be an adventitious intervention for future HWC program.

The results of CtbW may continue to enhance the well-being of university students, faculty, and staff. The use of social embeddedness may offer an effective way to reduce obesity and other health complications related to behavioral habits.¹⁹ The intervention group received social embeddedness and university activities in an attempt to support community engagement and further improve well-being. A definitive conclusion on the impact of the supplementary social embeddedness component within the wellness program could not be determined. Similar to existing literature, our study did not demonstrate additional social engagement in a university/worksite wellness program.²¹

Recommendations for future research include further evaluation of the impact health coach trainees may have on participants as compared to coaches in the field. The small sample size ($n = 74$) of the study limited our ability to generalize all the study's findings. The 3 coaching sessions were comprised of 488 self-reported dimension scores; however, only 5 dimensions received enough responses to hold significance. In future studies, we recommend a focus on the most common and frequently selected dimensions selected. The lack of completion of the additional social embeddedness activities restricted the ability to determine whether the intervention had an impact on the intervention group. Even though participants completed all forms delivered by the coach, the Wellness Profile was requested electronically. This appeared to present a barrier, as only 47 participants completed the initial Wellness Profile questionnaire. In order to further advance HWC, participant completion of wellness forms should be a requirement of participation or at least find some form of effective incentive for completion. Existing literature suggests that employee support, program inclusiveness, and the ease-of-access to facilities in a workplace setting promote employee participation. What is more, according to financial incentives in a worksite setting, possesses the greatest potential on increasing participation.⁴⁵ Future programs may implement greater incentives to increase the retention rate as well. This study supported the existing literature demonstrating the benefits of worksite/university wellness programs.⁴⁶⁻⁴⁸ The CtbW Program had a positive impact on the participants' overall well-being. Health and wellness coaching trainees were effective in assisting clients on reaching realistic progress as well as medical assistants.³⁷ Our program provides supplementary evidence of the benefits of worksite wellness, in addition to the efficacy of coaching trainees.^{18,19} The coaching trainee model of health coaching also has the potential to advance the competency of future health-care professionals through direct education, training, and experience.²¹ The results of the study suggest that coaching trainees possess valuable potential in HWC programs and are effective in improving the well-being

of their clients. This HWC program also presents a cost-effective and sustainable model for a university/worksite setting.

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References

1. National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). *Centers for Disease Control and Prevention*. <https://www.cdc.gov/chronicdisease/about/costs/index.htm>. [Online] Published April 2017. Accessed February 4, 2019.
2. Lancha AH, Sforzo GA, Pereira-Lancha LO. Improving nutritional habits with no diet prescription details of a nutritional coaching process. *Am J Lifestyle Med*. 2018;12:160–165.
3. Sforzo GA, Kaye MP, Todorova I, et al. Compendium of the health and wellness coaching literature. *Am J Lifestyle Med*. 2017;12:436–447.
4. Clark MM, Bradley KL, Jenkins SM, et al. Improvements in health behaviors, eating self-efficacy, and goal-setting skills following participation in wellness coaching. *Am J Health Promot*. 2016;30(6):458–464.
5. Clark MM, Bradley KL, Jenkins SM, et al. The effectiveness of wellness coaching for improving quality of life. *Mayo Clin Proc*. 2014;89(11):1537–1544.
6. Gust MA, Strand B. Impact of a wellness coaching program on physical activity and quality of life on bariatric surgery patients. *Int J Health Wellness Soc*. 2016;6(3):49–60.
7. Sonnenberg L, Regan S, Gelsomin E, Healey E, Thorndike, A. Effectiveness of a nutrition intervention in a worksite wellness program to promote healthy weight and physical activity. *J Am Diet Assoc*. 2008;108(9):A38.
8. Chapman LS, Lesch N, Baun MP. The role of health and wellness coaching in worksite health promotion. *Am J Health Promot*. 2007;21(6):1–10.
9. Murphy BM, Schoenman JA, Pirani H. Health insurers promoting employee wellness: strategies, program components and results. *Am J Health Promot*. 2010;24(5):1–10.
10. Dejonghe LAL, Becker J, Froboese I, Schaller A. Long-term effectiveness of health coaching in rehabilitation and prevention: a systematic review. *Patient Educ Couns*. 2017;100(9):1643–1653.
11. Härter M, Dirmaier J, Dwinger S, et al. Effectiveness of telephone-based health coaching for patients with chronic conditions: a randomised controlled trial. *PLoS One*. 2016;11(9):e0161269.
12. Merrill RM, Merrill JG. An evaluation of a comprehensive, incentivized worksite health promotion program with a health coaching component. *Int J Workplace Health Manag*. 2014;7(2):74–88.
13. McGonagle AK, Beatty JE, Joffe R. Coaching for workers with chronic illness: evaluating an intervention. *J Occup Health Psychol*. 2014;19(3):385–398.
14. The University of Maine. LiveWell Peer Wellness Coaching Website. <https://umaine.edu/wellness/programs/livewell/>. Accessed September 14, 2018.
15. Marquette University. Wellness Peer Education Website. <http://www.marquette.edu/medical-clinic/phe.shtml>. Accessed September 14, 2018.
16. University of Louisville. Get Healthy Now Website. <http://louisville.edu/gethealthynow/get-involved/wellness-coaching-1>. Accessed September 14, 2018.
17. Branch C. *A Worksite Wellness Coaching Component of a Total Worker Health Intervention in a Manufacturing Setting*. In: *1st International Symposium to Advance Total Worker Health*; October 6–8, 2014; Bethesda, MD. Iowa City, IA: The University of Iowa College of Public Health; 2014.
18. Poncela-Casasnovas J, Spring B, McClary D, et al. Social embeddedness in an online weight management programme is linked to greater weight loss. *R Soc*. 2015;12(104):20140686.
19. Yorks DM, Frothingham CA, Schuenke MD. Effects of group fitness classes on stress and quality of life of medical students. *J Am Osteopath Assoc*. 2017;117(11):17–25.
20. Granovetter M. Economic action and social structure: the problem of embeddedness. *Am J Sociol*. 1985;91(3):481–510.
21. Gibbs T, Larcus J. Wellness coaching: helping students thrive. *J Stud Aff*. 2015;24(23):23–31.
22. National Wellness Institute. The Six Dimensions of Wellness Website. http://www.nationalwellness.org/?page=six_dimensions. Accessed March 14, 2018.
23. Strout KA, David DJ, Dyer EJ, Gray RC, Robnett RH, Howard EP. Behavioral interventions in six dimensions of wellness that protect the cognitive health of community-dwelling older adults: a systematic review. *J Am Geriatr Soc*. 2016;64(5):944–958.
24. Abbott RA, Baun WB. The multi-dimensions of wellness: the vital role of terms and meanings. *Am J Health Promot*. 2015;29(5):TAHP8–10.
25. Glynn J, Newton C. The future evolution of employee wellness. *Health Fitness J*. 2011;15(5):45–47.
26. Nowack K. Using wellness coaching as a talent management tool. *Sel Dev Rev*. 2007;23(5):8–11. <http://www.getlifehub.com/resources/67-abstractFile.pdf>. Published 2007. Accessed February 20, 2018.

27. Young HJ, Erickson ML, Johnson KB, Johnson MA, McCully KK. A wellness program for individuals with disabilities: using a student wellness coach approach. *Disabil Health J*. 2015;8(3):345–352.
28. Personal Wellness Profile. Arizona State University Website. <https://wellness.asu.edu/wellness-programs/online-programs/personal-wellness-profile>. Accessed April 2017.
29. Well People. Wellness Inventory Website. <http://www.wellpeople.com/>. Accessed October 3, 2018.
30. The VIA Survey. VIA Institute on Character Website. <http://www.viacharacter.org/www/Character-Strengths-Survey>. Accessed April 2017.
31. Bolier L, Haverman M, Westerhof GJ, Riper H, Smit F, Bohlmeijer E. Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC Public Health*. 2013;13:119.
32. Brown CE, Applegate B, Yildiz M. Structural validation of the holistic wellness assessment. *Psychoeduc Assess*. 2015;33(5):483–494.
33. Palombi BJ. Psychometric properties of wellness instruments. *J Couns Dev*. 1992;71(2):221–225.
34. Cooke PJ, Melchert, TP, Connor K. Measuring well-being. *J Couns Psychol*. 2016;44(5):730–757.
35. Mcelligott D, Eckardt S, Dossey BM, Luck S, Eckardt P. Instrument Development of Integrative Health and Wellness AssessmentTM. *J Holist Nurs*. 2017;20(10):1–11.
36. Grenello PF, Witmer JM. *Wellness Counseling*. Upper Saddle River, NJ: Pearson; 2013.
37. Lawson KL, Jonk Y, O'Connor H, Riise KS, Eisenberg DM, Kreitzer MJ. The impact of telephonic health coaching on health outcomes in a high-risk population. *Glob Adv Health Med*. 2013;2(3):40–47.
38. Rutten GM, Meis JJ, Hendriks MR, Hamers FJ, Veenhof C, Kremers SP. The contribution of lifestyle coaching of overweight patients in primary care to more autonomous motivation for physical activity and healthy dietary behaviour: results of a longitudinal study. *Int J Behav Nurt Phys Act*. 2014;11:86.
39. Willard-Grace R, DeVore D, Chen EH, Hessler D, Bodenheimer T, Thom DH. The effectiveness of medical assistant health coaching for low-income patients with uncontrolled diabetes, hypertension, and hyperlipidemia: protocol for a randomized controlled trial and baseline characteristics of the study population. *BMC Fam Pract*. 2013;14:27.
40. Caldwell KL, Gray J, Wolever RQ. The process of patient empowerment in integrative health coaching: how does it happen? *Glob Adv Health Med*. 2013;2(3):48–57.
41. Zandvoort MV, Irwin JD, Morrow D. The impact of co-active life coaching on female university students with obesity. *Int J Evid Based Coach Mentor*. 2009;7(1):104–118.
42. Olsen JM, Nesbitt BJ. Health coaching to improve healthy lifestyle behaviors: an integrative review. *Am J Health Promot*. 2010;25(1):e1–e12.
43. Horton BR, Snyder CS. Wellness its impact on student grades and implications for business. *J Hum Res Hosp Tour*. 2009;8(2):215–233.
44. Turner BJ, Weiner M, Berry SD, Lillie K, Fosnocht K, Hollenbeak CS. Overcoming poor attendance to first scheduled colonoscopy: a randomized trial of peer coach or brochure support. *J Gen Intern Med*. 2008;23(1):58–63. doi: 10.1007/s11606-007-0445-4.
45. Wennberg DE, Marr A, Lang L, O'Malley S. A randomized trial of a telephone care-management strategy. *N Engl J Med*. 2010;363:1245–1255.
46. Hill-Mey PE, Kumpfer KL, Merrill RM, Hyatt-Neville JRB, Richardson GE. Worksite health promotion programs in college settings. *J Educ Health Promot*. 2015;4:12.
47. Baicker K, Cutler D, Song Zirui. Workplace wellness programs can generate savings. *Health Aff*. 2010;29(2):304–311.
48. Byrne DW, Goetzel RZ, McGown Paula W, et al. Seven-year trends in employee health habits from a comprehensive workplace health promotion program at Vanderbilt University. *J Occup Environ Med*. 2011;53(12):1372–1381.