EVALUATING THE SUSTAINED PSYCHOLOGICAL BENEFITS OF ON-SITE EMPLOYEE HEALTH PROGRAMS

By

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A Thesis
Submitted to the Faculty of the
University of Tennessee at Chattanooga
In Partial Fulfillment of the Requirements
For the Degree of Master of Science
in Psychology

The University of Tennessee at Chattanooga
Chattanooga, TN

May 2012

ABSTRACT

The present study was conducted to explore whether employee wellness programs actually promote long term changes in participating employees' psychological health. Forty four participants were included in the final sample from a large southeastern organization currently offering three different structured wellness programs to its employees. A semi-longitudinal study design was implemented involving three data points over a 5 month time frame. Analyses were conducted to examine factors impacting participation in the programs and the changes those programs have on employees' perceived levels of stress, psychological well-being, job-satisfaction, and organizational commitment. Results suggest that participation in these programs does result improved levels of perceived stress and psychological well-being, but trends show these improvements were not sustained over time. Participants' levels of exercise self-efficacy were also found to impact participation in employee health programs.

DEDICATION

I would like to dedicate this research to the members of my family. They are my biggest fans and their constant love and support throughout this entire process was truly the force that kept me going.

ACKNOWLEDGEMENTS

I must first start by acknowledging Dr. Chris Cunningham, my thesis chair, who I am still thoroughly convinced had no idea what he was getting into when he agreed to take on my thesis. His patience and constant willingness to help throughout this entire experience have helped instill in me a fondness for research I did not think possible. I am truly grateful for the wisdom he shared on conducting a true research project. Much gratitude is also due to Dr. Brian O'Leary and Dr. Bart Weathington for serving on my thesis committee and providing me with the added guidance to make this research successful.

I would also like to acknowledge the consenting members of the participating organization for placing trust in my ability to as researcher and allowing me to use their employees throughout this study. Finally, I would like to thank the members of the University of Tennessee at Chattanooga for giving me the opportunity to continue my education in the I-O Psychology program, which has led to more opportunities than I could have imagined.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Since the 1970s and 1980s, organizations have increasingly recognized that a focus on improving employee health can serve as a means of saving money on healthcare-related issues and also has the potential to reduce many negative employee behaviors (Gebhardt & Crump, 1990). As a result, many organizations have turned to employee wellness programs as a means of promoting employee health and other corollary benefits. A (2006) report by Parry, Molmen, and Jinnett found that nearly 85% of larger organizations and 45% of smaller companies had already implemented some type of employee health program (EHP). As could be expected, with this widespread acceptance of EHPs has come great variety in terms of program intensity level, overall purpose, and scope (Gebhardt & Crump).

Gebhardt and Crump (1990)state that an EHP can target three levels of health intervention. *Level one* programs are those that only serve to raise awareness about healthy lifestyles. The main intervention tool that level one programs implement is health seminars designed to educate employees about healthy living choices. A *level two* program is one that attempts to educate employees about healthy living choices and also attempts to change employees' behavior by providing access to health promoting services such as a gym membership. A *level three* program builds on the level two approach by also offering employees the ability to work out at an on-site exercise or fitness facility. An important distinguishing characteristic between these types of EHPs and the more passive approach of simply offering

exercise facilities for employees to use on their own is the proactive approach taken within EHPs to educate, train, develop, and motivate employees to better health. As such, EHPs are typically marketed within organizations to employees with the goal of achieving the highest rate of participation possible. Financially, high levels of employee participation is also desired given the cost of offering EHPs, especially when these programs are managed by external providers.

From an organizational perspective, multiple studies have identified the financial return on investment (ROI) of an EHP, highlighting reductions in insurance premiums, training costs (due to reduced turnover), and absenteeism rates (DeGroot & Kiker, 2003; Gebhardt & Crump, 1990; & Ozminkowski et al., 2002). As one example, Ozminkowski et al.'s longitudinal study of the Johnson & Johnson (J&J) group found that, after only four years of implementing an organization-wide EHP, the company was saving an average of $224 in health care costs per employee when the savings from reduced doctors' visits, mental health visits and in-patient hospital visits had been factored together (p. 27). Considering the 11,000 employees working at J&J, even this apparently minimal return equates to a potential annual savings of over $240,000. Although total ROI estimates vary widely across organizations, a positive ROI for EHPs has been consistently shown in other organizations (Gebhardt & Crump).

In addition to financial benefits and savings, EHPs are also implemented with the more altruistic aim of improving the health of employees. At an employee level, studies have identified the obvious physical benefits to employees of participating in health and wellness programs, which include lower cholesterol levels, increased physical strength, increased aerobic ability, and lower risks of cardiac problems (Anshel, Brinthaupt, & Kang, 2010; & Goetzel et al., 2009). Goetzel et al.'s longitudinal study found that employees participating in an EHP showed significant reductions in 8 of 13 areas of health risk such as high cholesterol, high blood

pressure, and even high stress. Studies have also shown psychological benefits to employees such as reduced anxiety and stress, lower levels of depression, and increased perceptions of job satisfaction and organizational commitment among employees participating in EHPs (Anshel et al.).

A major issue associated with EHP that has not been fully and empirically examined is whether changes in employees' healthy attitudes, beliefs, and behaviors are sustained (and to what extent) once employees complete their participation in structured EHP. Multiple studies have been conducted that demonstrate EHPs positively influence psychological outcomes such as healthy attitudes, beliefs, and behaviors that include being motivated to want to continue living healthy, believing in the importance of eating healthy and exercise, and actually participating in healthy behaviors such as working out and eating a healthier diet. These outcomes have, in turn, been associated with large financial benefits for organizations (Blair, Jr, Powell, & Jacobs, 2012; Goetzel et al., 2009; Tsai, Baun, & Bernacki, 1987; Warner, Wickizer, Wolfe, Schildroth, & Samuelson, 1998). One problem with many of these financial estimate projections, however, is that they are based on the assumption that the positive psychological and physical outcomes created by EHPs will remain constant over time. It is, therefore, important to understand whether these outcomes decrease after participation in a structured EHP ends, and if so, identify what can be done to maintain the positive effects. It is also important to understand whether the type of EHP moderates these effects.

Some initial research supports the assertion that many researchers do not properly evaluate whether or not their estimated benefits of EHP participation hold true over time. For example, Mills, Kessler, Cooper, and Sullivan (2007) found significant reductions in health related risks and negative job related behaviors like absenteeism among employees participating

in corporate wellness programs over a 12-month period. However, attempts were not made to further contact these employees down the road to determine whether these levels had begun to return to their previous levels or not. Their study serves as one example of many well-conducted "longitudinal" studies that examine the effects of EHP participation on employees, but then fails to evaluate the effects of such participation after the program is completed.

A threat to the long-term benefits for employees or ROI of EHPs is the distinct possibility that employees may revert back to unhealthy habits and negative work behaviors when they are no longer receiving the support or instruction that an EHP provides. Given this risk, a primary objective of the present research is to determine whether there is a significant change in employees' levels of healthy attitudes, beliefs, and behaviors upon completion of an EHP and whether these attitudes are sustained over time. A second objective of the present study is to test whether the type of EHP moderates these relationships.

The following sections detail factors that are likely to influence employees' decisions to participate in an EHP from its inception to its conclusion. Following a discussion of these antecedent factors, discussion will turn to empirically supported psychological outcomes of EHP participation. At this point, the moderating potential of different forms of EHP will be present along with the study hypotheses**.**

Antecedents of Employee Participation

To understand fluctuations in the outcomes of an EHP over time, it is important to first understand the factors preceding these outcomes. In some cases, factors such as barriers to exercise, or exercise self-efficacy may be the root cause for the fluctuation in outcome levels when a program is complete. It is important, therefore, to understand how they can impact an employee's cognitions about EHP participation before addressing EHP outcomes.

Barriers to exercise. One factor that may explain why employees choose not to participate in EHP is the presence or perception of physical, psychological, and social barriers to engaging in physical exercise within the workplace (Marcus, Bock, & Pinto, 1997; Payne, Jones, & Harris, 2002; Schwetschenau, O'Brien, Cunningham, & Jex, 2008; Steinhardt & Dishman, 1989). These obstacles can inhibit employees from participating in exercise within the work environment and with one's coworkers (Schwetschenau et al.). Additional obstacles can be created by inadequate EHP marketing within an organization, failure to provide specifically tailored exercise programs that are based on individual needs, failure to target employees who are likely to benefit from EHPs, low levels of social support from managers and peers, and inconvenient workout times for employee participants (Milano, 2007).

Physical and perceived barriers have both been shown to predict an employee's amount of participation in physical activity (Mavis, Stachnik, Gibson, & Stoffelmayr, 1992; Sallis, Hovell, & Hofstetter, 1992; Schwetschenau et al., 2008). Mavis et al. found barriers to exercise to seriously impact participation levels in a newly established EHP, with over 70% of participants citing some type of barrier as detrimental to their participation in the company EHP. Clearly, encountering such barriers lowers the likelihood that employees will participate in an EHP (Schwetschenau et al.). Barriers may also impact the amount of effort given and commitment experienced by an employee who has chosen to participate in an EHP (Harrison & Liska, 1994). This is potentially problematic given that an employee's success in an EHP is dependent on the amount of effort put into EHP activities. When an employee participating in an EHP perceives many barriers, it is likely that he or she will not be as dedicated to participating in the EHP, resulting in effects that are less likely to endure. It may even be possible that these perceived barriers could lead to a relapse of sorts into an employee's previously unhealthy

behaviors. These barriers may also impact an individual's confidence in his or her ability to actually participate in an EHP. As such, it is hypothesized that:

H1a*:* Employees participating in EHPs will report fewer perceived barriers to exercise than non-participating employees at baseline measurements (T1) prior to EHP startup.

H1b*:* Employees participating in an EHP will see decreases in their levels of perceived barriers at the conclusion of their respective EHP (T2), while non-participants' levels of perceived barriers will remain relatively the same.

H1c*:* EHP participants' levels of perceived barriers to exercise will moderate the outcomes of EHP participation over time; such that those with higher perceptions of barriers at the final time point (T3) will demonstrate the most pronounced reversion to initial psychological health and attitude outcomes compared to those with lower levels of perceptions of barriers at T1. Non-participants' levels are expected to remain relatively the same.

Exercise self-efficacy. Related to perceived barriers to exercise is the personality characteristic of exercise self-efficacy. In general, self-efficacy can be thought of as a person's belief in his or her ability to perform the actions necessary to complete a difficult task (Bandura, 1982, p. 123). This characteristic is derived from Bandura's (1977) Social Cognitive Theory, which posits that behavior is influenced by a person's cognitions and their perceptions of the social and physical environment around them. Bandura believed that the level of efficacy a person experienced could predict the level of motivation and effort that person was likely to demonstrate when faced with obstacles and trying situations. An individual's perception of the environment around them,

therefore, whether it is supportive or non-supportive of physical activity, could greatly influence whether a person merely contemplates participating in an EHP or actively participates in an EHP (Lechner & De Vries, 1995, p. 631).

As such, a person's self-efficacy toward physical activities such as fitness and exercise plays an important role in all stages of a fitness program (Lechner & De Vries, 1995; Schwarzer, Luszczynska, Ziegelmann, Scholz, & Lippke, 2008). Lechner and De Vries found that people with higher perceptions of exercise self-efficacy are more likely to actively participate in their company sponsored EHP than those individuals with low exercise self-efficacy. Self-efficacy also plays an essential role in determining whether individuals will consistently adhere to an exercise regimen after completing an EHP. Schwarzer and his colleagues found that following an EHP's completion, individuals with higher levels of exercise self-efficacy were more likely to adhere to an exercise regimen after an injury than those with low levels of self-efficacy, and that these individuals demonstrated a faster and more complete recovery (see also Shields, Brawley, & Lindover, 2006). Because adherence is very important to ensuring the desired outcomes of an EHP are achieved (Brewer et al., 2000), it is important to determine whether a person's exercise self-efficacy is maintained consistently over the course of a person's involvement with an EHP. Given the role of self-efficacy in guiding human behaviors, it is expected that:

> H2a: Employees participating in EHPs will report higher levels of exercise self-efficacy than non-participating employees at baseline measurements prior to EHP startup.
>
> H2b: Employees participating in an EHP will see increases in their levels of exercise self-efficacy at the conclusion of their respective EHP, while non-participants' levels of exercise self-efficacy will remain relatively the same.

H2c: EHP participants' levels of exercise self-efficacy will moderate the outcomes of EHP participation over time; such that those with lower levels of self-efficacy at the final time point (T3) will demonstrate the most pronounced reversion to initial psychological health and attitude outcomes compared to those with lower levels of perceptions of barriers at T3. Non-participants' levels are expected to remain relatively the same.

Outcomes of Employee Health Programs

Psychological well-being. Research has shown that participation in EHP results in higher levels of positive psychological well-being. Psychological well-being is defined here as involving low levels of anxiety and depression, and high levels of perceived self-control, self-esteem, vitality, and general health (Anshel et al., 2010; Thogersen-Ntoumani, Fox, & Ntoumanis, 2005). Interestingly, it also seems that well-being related benefits of exercise may not all emerge at the same time. A recent survey of corporate employees by Nohammer, Stummer, and Schusterschitz (2011) suggests that employees feel the emotional effects related to exercise more so than the physical effects when they first begin participating in a program. Nohammer et al. also suggest that EHP participation may do more for an employee's emotional and psychological well-being than their actual physical health.

Along these lines, Thogersen-Ntoumani et al. (2005) examined how EHP participation affects well-being by examining specific factors found to influence well-being in other research. These factors include job-satisfaction, self-esteem, perceptions of physical self-worth, and enthusiasm for work. They found that employees participating in an EHP reported significantly higher levels of self-esteem and more positive levels of perceived physical self-worth upon their completion of the EHP. These same employees also reported higher levels of vitality and

positive affect towards their work. These finding are consistent with Anshel et al. (2010) who found that employees participating in an EHP reported significantly lower levels of depression and anxiety and significantly higher levels of vitality and perceived self-control. Given these findings, it is expected that:

> H3a: Employees participating in EHPs will demonstrate moderately higher levels of perceived psychological well-being (depending on their EHP) than non-participants at baseline measurements prior to EHP startup.
>
> H3b: Employees participating in an EHP will demonstrate increases in psychological well-being throughout the EHP, while non-participants' levels of psychological well-being will remain relatively the same.

Stress. In the present study, stress is defined as the experience of arousal in response to perceived stressors that can often lead to physical strain (Sonnentag & Frese, 2003). The effects of stress on the human mind and body are well documented in many studies (e.g.,Goetzel et al., 2009; Hillier, Fewell, Cann, & Shephard, 2005). Stress can lead to many physical consequences such as chronic heart disease, back pain, and heart attacks (Cooper & Cartwright, 1994). Psychologically, stress can lead to job dissatisfaction, burnout, and depression (Cooper & Cartwright; Goetzel et al.). Research has shown, however, that participation in an EHP can help reduce these risks by reducing employees' levels of perceived stress (Goetzel et al.).

Along these lines, Loeppke, Edington, and Beg (2010) found that completion of a comprehensive, 12 month EHP lead to significant reductions in stress among high-risk employees, suggesting that participating in an EHP and being physically active can reduce perceived stress. These findings are consistent with earlier studies examining the effects of EHP

participation on employee stress levels (Imm, 1990; Pronk, Pronk, Sisco, & Ingalls, 1995). Given these previous findings, it is expected that:

H4a: Employees participating in EHPs will demonstrate lower levels of perceived stress than non-participants at baseline measurements prior to EHP startup.

H4b: Employees participating in an EHP will see decreases in their levels of perceived stress throughout the EHP, while non-participants' levels of perceived stress will remain relatively the same.

Job Attitudes. Although promoting higher job attitudes is not typically the primary reason an organization implements an EHP, studies still show that EHP participation contributes to positive work affectivity. More specifically, EHP participation has been connected with higher levels of job satisfaction and organizational commitment (DeGroot & Kiker, 2003; Lemon et al., 2010). Promoting these positive employee job attitudes towards work can have significant implications for an organization. One reason for this, is that job satisfaction has consistently been shown to have a positive relationship with employee productivity (Halkos & Bousinakis, 2010; J. H. Westover, Westover, & Westover, 2010). Studies have also shown that EHP participation has a moderate positive relationship with employee job-satisfaction (DeGroot & Kiker; Parks & Steelman, 2008). Establishing the existence of a relationship between EHP and job-related attitudes is important given the difficulty many organizations have in establishing links between EHP and more objective outcomes such as financial ROI (Goetzel et al., 2009). If an organization can demonstrate that employees are more satisfied with their jobs, then it can be at least partially assumed that employee performance may also increase, eventually yielding positive financial ROI.

Organizational commitment is another job-attitude that can be impacted by an EHP. When an organization implements an EHP, it gives the impression that it cares about its employees and their overall well-being, regardless of whether this was a part of the original intent (Hillier et al., 2005). Multiple studies have set out with the original purpose of examining how EHPs affect the physical outcomes of employees only to find that one of the more significant interactions of the study was the level of impact EHP participation had on an employee's level of organizational commitment (Lemon et al., 2010). Lemone et al. found a significant negative relationship between employee participation in an EHP and organizational commitment among 800 corporate employees participating in an EHP. They operationalized participation in terms of BMI reduction (higher levels of participation resulted in lower BMI) and found that as the BMI of participants decreased, perceptions of organizational commitment increased.

H5a: Employees participating in EHP will demonstrate moderately higher levels of positive job-attitudes (depending on their EHP) than non-participants prior to the start of their EHP.

H5b: Participating employees will see increases in their levels of positive job attitudes throughout the EHP, while non-participants levels' of positive job attitudes will remain the same

The Present Study

To address the second general objective outlined in the introduction – testing the possible moderating effects of type of EHP -- the present study will take place at a large southeastern organization that currently provides its employees with three separate EHP options.

Each program is developed for a specific demographic of employee at the organization. The first of these programs is an beginner level program targeted at individuals considered to be at "chronic" levels for risk factors such as coronary heart disease, diabetes, high cholesterol, and high blood pressure. This program is more focused on educating participants about healthy life style choices and to provide them with information that will help them live healthier lives than engaging employees in intense physical exercise. The second program is intermediate level and is a slightly more advanced program than the "beginner" program. It is targeted at employees who are already somewhat active and have a sound base knowledge of healthy lifestyle choices. Participants in this program complete more complicated exercises than in the "beginner" program and the weekly counseling sessions are more so to help participants better tailor a workout plan that will help them meet their physical needs. The final program is for physically advanced employees that are currently highly active or exercise on a consistent basis. The program is based on a popular "Cross-Fit" training system that emphasizes cardiovascular training.

Conducting the study within an organization with three separate and distinguishable EHP makes it possible for the present study to make additional contributions to existing EHP literature. First, it will allow for cross-comparisons of three different groups of employees participating in programs with different health-related objectives. These comparisons can provide insight as to the effectiveness of each of these programs within a single organizational population. It is also likely that the effects will be different across the different programs. For example, one would expect participants in the beginner program to display higher gains in health-related knowledge than the intermediate program because it has a more education based

focus and participants in the advanced program are assumed to already have that knowledge. In addition, it will allow researchers to determine the strengths and weaknesses of each program.

The second advantage to the present study is that it will essentially utilize two types of comparison groups within the same study. Aside from a clearly established comparison group of non-participants that will be used to evaluate the programs' overall efficacies, the advanced program will also serve as a hypothetical "high intensity exercise" control group. Being that employees in this program are already regularly active before participating in the program, it is expected that they will have higher scores throughout the study compared to the employees within each of the other two programs.

The third contribution of the present study to the existing literature is that it will be one of the first to attempt to determine whether positive psychological outcomes associated with participation in an EHP can be sustained following completion of an EHP. This will be accomplished by assessing participating employees at three separate times: before beginning their respective EHP, immediately after completing the initial EHP, and approximately one to two months after completing the initial EHP.

CHAPTER II

METHOD

Participants

For this study, approximately 235 employees of the collaborating organization, a large insurance company in the southeastern U.S., were recruited to participate. To be eligible, employees had to be involved in one of the three previously described EHPs. All three existing EHPs were classified as level 3 interventions, providing both health education services and on-site fitness facilities to employees throughout the programs. In total, 40 participants from the beginner program, 40 participants from the intermediate program, and 20 participants from the advanced program were recruited for the study. As a comparison group, 135 non-participating employees were also recruited via a quasi-random sampling of the workers within the organization who were neither participating in an EHP, nor actively using the on-site fitness center to serve as the comparison group. Within the overall final sample (N = 113), approximately 24% of participants were Caucasian, 75% were females, and the mean age of participants was 42.11 years (SD = 9.317).

Measures

All measures are presented in Appendix A.

Demographics. Participants were asked to report age, sex, marital status, race/ethnicity, height, weight, current levels of physical activity, organization tenure, and employment status (e.g., salary versus hourly) for the purposes of sample description and to use as possible covariates in the analyses. BMI scores were calculated for each participant using the formula: weight (lb) / [height (in)]^2 x 703 Center for Disease Control, 2011). Recent exposure to stressful work events was also captured via a single, self-reported item ("How stressful has your life been over the last month?"; c.f., Clark et al., 2011), given the potential of such events to impact participants' overall affectivity.

Core Self-Evaluations. Participants' levels of core self-evaluations (CSE) were measured to determine their overall sense of self-worth and general positive disposition toward their own psychological states and mental appearances. Because CSE is believed to be a trait characteristic (Gardner & Pierce, 2009; Judge, Erez, Bono, & Thoresen, 2003), it was dealt with in the present study as a personality covariate. Including CSE in this fashion was an important aspect of the present study because it allowed us to more clearly test whether participation in EHPs actually influenced our hypothesized outcomes, or whether the outcomes were merely influenced by participants' own internal dispositions. CSE was measured using the Core Self-Evaluation Scale (CSES;Judge et al.). The scales contains 12 items with a 5 point response scales ranging from 1 (strongly disagree) to 5 (Strongly Agree). Higher scores on CSES indicate a higher core self-evaluation. The scale demonstrated strong reliability at all three survey intervals with Cronbach's alphas of .81 (Time 2), .82 (Time 2), and .83 (Time 3). These reliabilities are consistent with past research using the CSES (Judge et al.).

Perceived barriers to exercise. Participants' perceived barriers to exercise were measured using the Corporate-Exercise Barriers Scale (C-EBS) developed by Schwetshenau et al. (2008). The scale consists of 17 items designed to determine the types of perceived barriers present in a corporate setting that might partially or fully inhibit employees' participation in an EHP. The scale utilizes a seven-point Likert scale with scores ranging from 1 (strongly disagree) to 7 (strongly agree) and 8=NA. Higher scores indicate a stronger perception of barriers to exercising within the work environment. Prior to testing the hypotheses, a factor analysis revealed that item 6 did not load well with the other items in its respective subscale, and item 13 was not relevant to the present sample. Although Schwetshenau et al. demonstrated sub dimensions to this measure, for the present purposes, the overall average rating of the items of this scale was used as an indication of overall perceptions of barriers. The slightly adapted C-EBS (excluding these two items) demonstrated strong overall reliability for all time intervals in the present study with alpha coefficients of .88 (Time 1), .87 (Time 2), and .87 (Time 3).

Exercise self-efficacy. Participants' exercise self-efficacy was measured using the Exercise Self-Efficacy scale (Linde, Rothman, Baldwin, & Jeffery, 2006). This scale is composed 10 items, with two subscales relating to eating self-efficacy and exercise self-efficacy. For this study, only the five items relating specifically to exercise self-efficacy were included in the analyses. Responses to the items are on a seven-point scale ranging from 0 (not at all) to 7 (totally confident). Higher scores indicate a higher level of exercise self-efficacy. The scale demonstrated high reliability across all time points with Cronbach's alpha coefficients of .91(Time 1), .92 (Time 2), and .93 (Time 3).

Psychological well-being. The Psychological General Well-Being Short Form (PGWB-S) scale was used to assess participants overall levels of psychological well-being (Grossi et al., 2006). The PGWB-S was adapted by Grossi et al. from the original Psychological General Well Being Index (Dupuy, 1984), and is a six-item scale designed to measure participants' emotional states of anxiety, depression, positive well-being, perceived self-control, general health, and vitality. Participants responded to items by selecting one of six options for each item. Higher overall scores indicate higher levels of psychological well-being. Reliability for the PGWB-S was strong across all times with reported alpha coefficients of .81 (Time 1), .84 (Time 2), and to .81 (Time 3) respectively. These reliabilities align with previous studies utilizing the PGWB-S (Anshel et al.; Grossi et al.).

Perceived stress. Participants' levels of perceived general occupational stress were measured using the Stress in General (SIG) scale (Lake, Gopalkrishnan, Sliter, & Withrow, 2010). The 15-items of this scale are different items or phrases used to describe an employee's job. Participants indicate whether each statement describes their job, choosing either Yes, No, or Unsure (?). Higher scores indicate a higher level of perceived stress. Reliability for the SIG was strong across all three time points throughout the study with alpha coefficients of .80 (Time 1), .85 (Time 2), and .85 (Time 3).

Job satisfaction. An abbreviated version of the Job in General (JIG) scale (Ironson, Smith, Brannick, Gibson, & Paul, 1989) was used to assess employees' levels of job-satisfaction. The abbreviated version of the scale consists of 8 items (Lake et al.,

2010). Similar to the SIG, the items of the abbreviated JIG present employees with adjectives that can be used to described their jobs. Employees are asked to indicate to what degree they believe the word applies to their jobs overall. Responses are made on a three-point scale as either Yes, No, or Unsure (?). A higher overall score reflects a greater level of job satisfaction. The JIG proved to be a strongly reliable instrument during the study with reported alpha coefficients of .87 (Time 1), .88 (Time 2), and .87 (Time 3).

Organizational commitment. The Organizational Commitment Scale (OCS) was used to measure participants' levels of *affective* (AC), *continuance* (CC), and *normative* (NC) commitment (Allen & Meyer, 1990). This scale consists of 24 items (8 pertaining to each construct), to which participants rate their level of agreement on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on each subscale reflect a stronger sense of each respective form of commitment and a higher overall score across all items indicates a stronger general sense of commitment to the organization. Items one and four on the continuance commitment subscale ("If I quit my job without having another one lined up, I am not afraid of what might happen." and "It wouldn't be too costly for me to leave my organization now.") were removed because they contained double-negatives and were not easily interpreted by the participants in the present study. Items on the affective commitment subscale demonstrated strong internal consistency reliability across all time points in the study with overall alpha coefficients of .86 (Time 1), .84 (Time 2), and .91 (Time 3). Moderate internal consistency reliability was shown for the continuance commitment subscale with overall alpha coefficients of .74 (Time 1), .76 (Time 2), and .79 (Time 3). Items on the normative commitment

subscale demonstrated strong internal consistency reliability across all time points in the study with overall alpha coefficients of .85 (Time 1), .85 (Time 2), and .84 (Time 3)

Procedure

All procedures were first approved by the institution's Institutional Review Board (Appendix B). All participation was voluntary, although small incentives were offered to encourage employees to respond to the multiple rounds of data collection in this study. Due to the collaborating organization's legal regulations and policies, however, participants choosing to drop out from the study could not be contacted individually. The implications of this are discussed later.

Because employees had previously registered to participate in one of the three EHPs voluntarily, random assignment to treatment conditions was not possible. Therefore, participants in each of the programs were treated as separate pre-existing experimental groups. To promote participation across the three time points, the lead researcher met in-person with all three of the EHP groups to inform them about the study. Participants were informed about the procedures for this study and that their first survey pertaining to their EHPs and their typical exercise routines would be sent to them via their work email addresses. Details specific to the study were not discussed to help prevent biased responses.

As an incentive, employees participating in the corporation's overall wellness program already each received a $200 quarterly bonus for their participation in the EHPs (due to an existing company policy). Employees in the non-participating, comparison group each received a small token of appreciation (e.g., gift cards for a free smoothie, gift cards for a free 15 minute massage, or a gift card to an on-site coffee shop) for their completed submissions at each round of data collection. As an additional incentive, non-

participants could also choose to provide their emails at the conclusion of each survey to be entered into a raffle for a free MP3 music player. One winner was chosen at random after each survey interval.

Participants in all four groups were sent a pre-intervention questionnaire (See Appendix A) via email during the first week of their EHP's startup. Questionnaires were administered using SurveyMonkey, an online survey distribution tool. The pre-intervention survey contained an informed consent letter, demographic questionnaire, CSES, C-EBS, Exercise Self-Efficacy Scale, PGWBI-S, SIG, JIG, and OCS. All participants were given approximately one calendar week to submit their completed questionnaires. Following this initial data collection, participants in the EHPs began their programs, each of which took approximately 10 weeks to complete.

As discussed previously, each EHP had a particular focus. The purpose of beginner program is to raise awareness among participants about how to eat healthier, the consequences of eating a better diet, and the basics behind being physically active. Participants in this program attended a health seminar once a week where they received information from speakers in various fields such as a dietician or psychologist. These participants also attended brief fitness sessions twice a week in which they learned the basics of certain exercises and fitness related behaviors. The purpose of the intermediate program is to delve deeper into the fitness side of EHP. While employees in this program participated in health seminars, they were not on a weekly basis like *Genesis*. Instead, these employees met with a physical trainer during their first week and worked with them to create a personalized fitness regimen based upon their biometric measures. They then attended three fitness sessions a week for the remainder of the program. The final program is designed to be advanced for employees that are already highly physically active or in good

physical shape. This program is extremely intense with participants meeting three to four times a week to participate in very difficult physical exercises and training. Attendance and completion rates were recorded by the onsite training center in order to measure participants' levels of adherence and completion of the program.

Following the completion of these EHPs, two additional rounds of data collection were conducted. Surveys in both rounds matched the format and structure of the pre-intervention survey (See Appendix A), but all demographic-related questions were removed. The first post-intervention survey was distributed immediately following the completion of the EHPs (approximately 11 weeks post-baseline). An identical, second post-intervention survey was administered to participants five weeks after employees completed their EHPs (approximately 16 weeks post-baseline).

CHAPTER III

RESULTS

Preparatory Steps

Preliminary analyses were conducted to address the psychometric quality (e.g., normality, skew, reliability) of scale items and to account for missing data. Due to the small sample sizes within each of the four groups, it was necessary to make the most of all data that were provided (i.e., listwise deletion was not the preferred option). Although only approximately 0.5% of all responses were missing data, each of these missing data points was carefully considered. Where missing data were identified as missing-at-random (i.e., sporadic and rare, within any single participant's responses to a particular set of items), and where Likert scales were used (e.g., Motive Perception Scale, CSES, C-EBS, SIG, and AJIG), these isolated cases were replaced with a "neutral" rating on the response scale. For the Exercise Self-Efficacy Scale, isolated missing values were replaced with participants' means over the other items in this scale Participant. Participants leaving large portions of the survey incomplete (over 80%) were removed from the analyses. Of the 232 originally recruited participants, 96 participated at Time 1, yielding an initial responses rate of 41.4%; 44 participants provided complete data on all of the key demographic and target variables across all three time points (a final response rate of 18.9%).

Although data were gathered from three separate treatment (i.e., EHP) groups, the number of respondents across all three time points in the advanced EHP condition was so low (n = 5 for some variables) as to cause concern about the representativeness of these individuals as a

sample of participants at this level of EHP participation. A closer comparison of the participants in the intermediate and advanced conditions revealed sufficiently strong similarities, especially at Time 2 and Time 3, that these two subgroups of participants were combined into a single advanced group. Thus, the hypothesis tests were based on comparisons among non-participants (n = 20), beginner (n = 10), and advanced (n = 14) EHP participants.

To remain consistent with past literature (Anshel et al., 2010; Mills et al., 2007; Schwetschenau et al., 2008) marital status, age, gender, ethnicity, BMI, and self-reported stress levels were included as covariates in all analyses. To add to the existing practices in this area, participants' Core Self Evaluations and baseline level of typical exercise intensity were also included as a pertinent covariate in all analyses. Each condition's inter-scale correlations and reliability scores for each scale are found in Tables 1, 3, and 4. Descriptive statistics for each subsample are presented in Tables 2, 4, and 6.

Table 1

Bivariate Correlations for All Study Variables (Beginner EHP Subsample)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Age																
2. Gender	[a]															
3. Marital Status	.44	[a]														
4. Ethnicity	-.34	[a]	-.51													
5. BMI	-.37	[a]	-.54	.78 **												
6. Stress (Month)	.14	[a]	.14	.21	.00											
7. Exercise Intensity	-.27	[a]	-.13	-.27	-.14	-.70 *										
8. Core Self Evaluations	-.06	[a]	.01	-.66 *	-.52	-.65 *	.33	**.76**								
9. Perceived Barriers (T1)	.04	[a]	-.35	.00	.12	.59	-.30	-.25	**.91**							
10. Perceived Barriers (T2)	.03	[a]	-.17	-.35	-.05	-.18	.27	.29	.51	**.88**						
11. Perceived Barriers (T3)	-.35	[a]	-.44	.30	.69 *	.18	-.04	-.37	.62	.48	**.82**					
12. Exerc. Self Efficacy (T1)	.31	[a]	.62	.11	.04	.11	-.28	-.34	-.62	-.71 *	-.34	**.92**				
13. Exerc. Self Efficacy (T2)	-.13	[a]	.31	.44	.08	.29	-.62	-.23	-.38	-.58	-.33	.52	**.86**			
14. Exerc. Self Efficacy (T3)	.01	[a]	.32	.35	-.01	-.17	-.11	-.08	-.63 *	-.57	-.58	.46	.72 *	**.93**		
15. Psych Well Being (T1)	.06	[a]	-.20	-.10	-.04	-.47	.28	.38	-.46	-.16	-.46	.04	-.17	.07	**.48**	
16. Psych Well Being (T2)	.54	[a]	.51	-.18	-.32	.35	-.59	-.02	-.12	-.20	-.51	.39	.43	.26	.33	**.69**
17. Psych Well Being (T3)	.29	[a]	.22	-.46	-.48	-.47	.31	.57	-.38	.15	-.65 *	-.11	-.13	.25	.72 *	.50
18. Perceived Stress (T1)	-.19	[a]	-.52	.18	.43	.24	.10	-.33	.70 *	.63	.85 **	-.52	-.54	-.78 **	-.30	-.44
19. Perceived Stress (T2)	-.27	[a]	-.51	.26	.60	-.11	.42	-.33	.41	.56	.82 **	-.41	-.62	-.55	-.13	-.60
20. Perceived Stress (T3)	-.14	[a]	-.38	.05	.48	-.05	.36	-.27	.41	.43	.81 **	-.23	-.70 *	-.72 *	-.21	-.64 *
21. Job Satisfaction (T1)	.16	[a]	.12	.11	-.15	-.31	-.27	.37	-.49	-.18	-.61		9	.70 *	.36	.51
22. Job Satisfaction (T2)	.31	[a]	.37	.21	-.09	.00	-.35	-.06	-.41	-.29	-.58		6 *	.81 **	.24	.70 *
23. Job Satisfaction (T3)	.22	[a]	.18	.27	.01	.00	-.44	.01	-.30	-.35	-.52	.23	.64 *	.78 **	.27	.63 *
24. Affctve Org Comm (T1)	.16	[a]	.07	-.17	-.04	-.51	-.10	.56	-.44	.19	-.30	.06	.19	.19	.57	.47
25. Affctve Org Comm (T2)	.41	[a]	.23	-.13	-.26	-.37	-.22	.47	-.41	-.08	-.63	.12	.36	.59	.40	.56
26. Affctve Org Comm (T3)	.40	[a]	.25	-.54	-.51	-.69 *	.23	.80 **	-.48	.18	-.56	.01	-.08	.21	.36	.18
27. Cont Org Comm (T1)	.58	[a]	-.06	.03	.04	-.06	.00	-.14	-.06	-.32	-.33	.19	-.26	.16	.48	.28
28. Cont Org Comm (T2)	-.03	[a]	.06	.37	.55	-.20	.11	-.40	-.53	-.42	.13	.70 *	.10	.11	.27	-.05
29. Cont Org Comm (T3)	.20	[a]	.12	.46	.23	.06	-.11	-.48	-.34	-.67 *	-.15	.61	.33	.50	-.28	-.21
30. Norm Org Comm (T1)	.54	[a]	.25	-.38	-.11	-.08	.00	.11	.23	.50	-.01	-.17	-.34	-.09	.25	.48
31. Norm Org Comm (T2)	.26	[a]	.27	-.14	.02	-.34	.26	.02	-.09	-.01	-.02	.11	-.18	.35	-.25	-.24
32. Norm Org Comm (T3)	.83 **	[a]	.55	-.56	-.50	-.02	.03	.11	-.01	.02	-.44	.21	-.27	.11	.11	.43

Note. N = 10; a. could not be computed because at least one of the variables was constant; * p < .10; ** p < .05; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities. Scores in bold represent the Beginner condition's internal consistency reliability (alpha) coefficients for each scale

Table 1 Continued

Bivariate Correlations for All Study Variables (Beginner EHP Subsample)

	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.
17. Psych Well Being (T3)	**.79**															
18. Perceived Stress (T1)	-.48	**.90**														
19. Perceived Stress (T2)	-.33	.86 **	**.88**													
20. Perceived Stress (T3)	-.49	.83 **	.90 **	**.83**												
21. Job Satisfaction (T1)	.56	-.66 *	-.62	-.82 **	**.94**											
22. Job Satisfaction (T2)	.53	-.65 *	-.56	-.80 **	.84 **	**.93**										
23. Job Satisfaction (T3)	.47	-.67 *	-.58	-.80 **	.85 **	.94 **	**.92**									
24. Affctve Org Comm (T1)	.62	-.32	-.27	-.39	.74 *	.48	.46	**.93**								
25. Affctve Org Comm (T2)	.68 *	-.69 *	-.61	-.74 *	.92 **	.79 **	.82 **	.75 *	**.87**							
26. Affctve Org Comm (T3)	.64 *	-.50	-.42	-.38	.60	.27	.24	.69 *	.74 *	**.79**						
27. Cont Org Comm (T1)	.35	-.27	-.09	-.07	.09	.26	.35	-.02	.32	.12	**.87**					
28. Cont Org Comm (T2)	-.20	.00	.25	.34	-.16	-.04	-.12	.09	-.20	-.17	.18	**.54**				
29. Cont Org Comm (T3)	-.45	-.31	-.16	-.03	-.01	.12	.12	-.39	-.03	-.11	.33	.44	**.93**			
30. Norm Org Comm (T1)	.61	.02	.12	-.01	.15	.35	.32	.36	.42	.26	.43	-.19	-.44	**.52**		
31. Norm Org Comm (T2)	.07	-.30	.03	.06	-.01	.13	.18	-.18	.23	.24	.40	-.01	.44	.33	**.57**	
32. Norm Org Comm (T3)	.49	-.37	-.29	-.19	.08	.30	.25	.03	.41	.41	.66 *	-.16	.11	.68 *	.58	**.75**

Note. N = 10; a. could not be computed because at least one of the variables was constant; * p < .10; ** p < .05; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities. Scores in bold represent the Beginner condition's internal consistency reliability (alpha) coefficients for each scale

Table 2

Descriptive Statistics for All Study Variables (Beginner EHP Subsample)

	M	*SD*
Age	48.70	9.03
Gender	1.00	0.00
Marital Status	0.70	0.48
Ethnicity	0.10	0.32
BMI	50.66	12.26
Stress (Month)	4.00	1.70
Exercise Intensity	3.80	1.03
CSEtotT1	42.10	5.88
barriersT1	42.10	14.32
barriersT2	35.50	12.53
barriersT3	31.90	11.72
ExerciseSelfEffT1	23.30	5.52
ExerciseSelfEffT2	19.10	4.68
ExerciseSelfEffT3	20.60	6.38
PsyGenWellT1	26.00	3.46
PsyGenWellT2	27.40	4.62
PsyGenWellT3	27.20	4.71
signewtot	12.15	8.47
signewtotT2	10.50	8.06
signewtotT3	9.30	7.71
AJIGtot	17.60	7.49
AJIGtotT2	19.80	7.10
AJIGtotT3	18.80	6.89
AffOrgCommT1	26.80	7.83
AffOrgCommT2	29.30	6.02
AffOrgCommT3	30.80	5.03
ContOrgCommT1	24.60	4.38
ContOrgCommT2	20.60	3.27
ContOrgCommT3	24.10	4.53
NormOrgCommT1	28.50	3.21
NormOrgCommT2	29.20	3.12
NormOrgCommT3	29.40	3.41

Table 3

Bivariate Correlations for All Study Variables (Advanced EHP Subsample)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Age																
2. Gender	-.01															
3. Marital Status	.09	-.35														
4. Ethnicity	-.15	.06	.42													
5. BMI	.12	.09	.42	.53 *												
6. Stress (Month)	.11	.02	.05	.50	.48											
7. Exercise Intensity	-.15	-.16	-.25	.01	-.36	.32										
8. Core Self Evaluations	.07	-.12	-.17	.12	-.29	.05	.39	**.85**								
9. Perceived Barriers (T1)	-.19	.11	-.46	-.33	-.02	.48	.19	-.15	**.72**							
10. Perceived Barriers (T2)	-.48	-.19	-.20	.08	-.04	.29	.45	-.25	.43	**.80**						
11. Perceived Barriers (T3)	-.59 *	-.01	-.42	-.10	-.10	.13	.09	-.41	.53	.78 **	**.93**					
12. Exerc. Self Efficacy (T1)	.27	.04	.66 **	.52	.44	.06	-.61 *	-.08	-.50	-.61 *	-.56 *	**.88**				
13. Exerc. Self Efficacy (T2)	.41	-.16	.42	.03	.29	-.05	-.22	.43	-.24	-.56 *	-.69 **	.34	**.97**			
14. Exerc. Self Efficacy (T3)	.36	-.05	.19	-.03	.16	-.21	-.44	.24	-.16	-.72 **	-.68 **	.47	.70 **	**.97**		
15. Psych Well Being (T1)	.12	-.05	-.38	-.46	-.50	-.63 *	.09	.39	-.28	-.16	-.20	-.37	.33	.23	**.80**	
16. Psych Well Being (T2)	.26	-.18	.05	-.43	-.12	-.21	-.33	-.33	.20	-.38	-.17	.12	.27	.59 *	.13	**.51**
17. Psych Well Being (T3)	.37	.12	-.29	.11	.04	.28	-.13	.53	.21	-.24	-.23	.06	.49	.47	.28	.10
18. Perceived Stress (T1)	-.20	.06	-.18	.16	.32	.53	.22	.15	.44	.37	.46	-.36	-.11	-.45	-.41	-.51
19. Perceived Stress (T2)	.43	-.18	-.20	-.24	.18	.12	.23	-.16	.17	.15	-.04	-.42	.19	.16	.27	.35
20. Perceived Stress (T3)	-.04	-.19	-.23	-.19	-.01	-.03	.40	-.11	.16	.30	.27	-.63 *	-.07	-.11	.13	.14
21. Job Satisfaction (T1)	.25	.23	-.15	.09	-.06	-.36	-.13	.37	-.50	-.36	-.53	.18	.36	.46	.69 **	-.04
22. Job Satisfaction (T2)	.38	.15	-.18	.22	-.19	-.23	-.26	.30	-.57 *	-.31	-.24	.29	.04	.10	.41	-.21
23. Job Satisfaction (T3)	.40	.10	-.44	-.15	-.37	-.40	-.23	.26	-.35	-.22	-.13	.01	-.10	.14	.50	-.12
24. Affctve Org Comm (T1)	.19	-.03	-.17	.15	-.28	-.28	.05	.47	-.45	-.11	-.34	.01	.19	.26	.63 *	-.15
25. Affctve Org Comm (T2)	.15	.18	-.06	.40	-.12	-.20	-.31	.42	-.52	-.33	-.29	.39	.17	.28	.33	-.21
26. Affctve Org Comm (T3)	.16	.16	-.08	.29	-.16	-.31	-.25	.37	-.59 *	-.31	-.34	.31	.18	.27	.49	-.18
27. Cont Org Comm (T1)	.03	.03	.10	-.20	.66 *	.13	-.39	-.61 *	.33	.06	.19	-.01	.03	.06	-.34	.21
28. Cont Org Comm (T2)	-.12	-.07	.23	.14	.54 *	-.01	-.22	-.26	.06	.38	.12	-.07	.18	.11	-.05	-.16
29. Cont Org Comm (T3)	-.12	-.10	-.42	-.29	.17	-.11	.15	-.01	.14	.32	.27	-.57 *	-.14	-.18	.27	-.27
30. Norm Org Comm (T1)	.17	-.21	.19	.13	.07	-.37	-.53	.09	-.52	-.40	-.34	.40	.38	.51	.41	.24
31. Norm Org Comm (T2)	.00	.03	-.08	.10	-.23	-.46	-.21	.09	-.47	-.07	-.16	.07	.00	.21	.50	-.03
32. Norm Org Comm (T3)	.15 **	-.11	-.04	.08	-.02	-.28	-.15	.24	-.30	-.04	-.30	.04	.32	.43	.57 *	.02

Note. $N = 14$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities. Scores in bold represent the Beginner condition's internal consistency reliability (alpha) coefficients for each scale

Table 3 Continued

Bivariate Correlations for All Study Variables (Advanced EHP Subsample)

	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.
17. Psych Well Being (T3)	**.83**															
18. Perceived Stress (T1)	.11	**.93**														
19. Perceived Stress (T2)	.17	.01	**.85**													
20. Perceived Stress (T3)	-.17	.32	.72 **	**.82**												
21. Job Satisfaction (T1)	.43	-.56 *	.13	-.25	**.92**											
22. Job Satisfaction (T2)	.44	-.28	-.13	-.35	.63 *	**.80**										
23. Job Satisfaction (T3)	.38	-.28	.01	-.17	.57 *	.85 **	**.92**									
24. Affctve Org Comm (T1)	.51	-.39	.15	-.12	.84 **	.73 **	.69 **	**.86**								
25. Affctve Org Comm (T2)	.57 *	-.26	-.28	-.43	.68 **	.90 **	.71 **	.80 **	**.72**							
26. Affctve Org Comm (T3)	.49	-.39	-.14	-.37	.82 **	.89 **	.71 **	.90 **	.96 **	**.94**						
27. Cont Org Comm (T1)	-.21	.28	.37	.24	-.31	-.51	-.39	-.51	-.55 *	-.49	**.50**					
28. Cont Org Comm (T2)	.00	.16	.33	.23	.11	-.26	-.12	.08	-.11	-.06	.52	**.71**				
29. Cont Org Comm (T3)	-.06	.34	.49	.47	.12	-.12	.13	.13	-.21	-.07	.51	.47	**.70**			
30. Norm Org Comm (T1)	.39	-.43	.08	-.21	.62 *	.59 *	.44	.68 **	.69 **	.77 **	-.04	.13	.06	**.91**		
31. Norm Org Comm (T2)	.26	-.45	.08	-.09	.71 **	.63 *	.59 *	.87 **	.72 **	.85 **	-.27	.19	.16	.79 **	**.90**	
32. Norm Org Comm (T3)	.49	-.41	.30	-.08	.81 **	.48	.50	.88 **	.61 *	.74 **	-.14	.45	.28	.75 **	.85 **	**.84**

Note. $N = 14$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities. Scores in bold represent the Beginner condition's internal consistency reliability (alpha) coefficients for each scale

Table 4

Descriptive Statistics for All Study Variables (Advanced EHP Subsample)

	M	*SD*
Age	41.29	9.227
Gender	.8571	.36314
Marital Status	.5714	.51355
Ethnicity	.5714	.51355
BMI	30.2929	5.54290
Stress (Month)	3.07	1.328
Exercise Intensity	4.36	1.737
CSEtotT1	50.4286	5.59827
barriersT1	28.7857	11.13676
barriersT2	24.8571	8.18871
barriersT3	29.1429	14.70666
ExerciseSelfEffT1	23.6429	6.28315
ExerciseSelfEffT2	21.5000	9.37878
ExerciseSelfEffT3	22.4286	8.50081
PsyGenWellT1	29.0714	3.77164
PsyGenWellT2	28.2143	6.48286
PsyGenWellT3	30.3571	3.00275
signewtot	10.0714	7.24000
signewtotT2	7.1786	5.97626
signewtotT3	10.1786	7.25791
AJIGtot	19.0714	7.48809
AJIGtotT2	20.0000	4.11377
AJIGtotT3	19.5000	6.09855
AffOrgCommT1	29.0000	6.88365
AffOrgCommT2	29.1429	7.45094
AffOrgCommT3	28.0000	9.25701
ContOrgCommT1	20.2857	3.91110
ContOrgCommT2	20.5000	6.45398
ContOrgCommT3	22.4286	4.41526
NormOrgCommT1	25.6429	7.86039
NormOrgCommT2	26.5000	7.88133
NormOrgCommT3	25.6429	7.17482

Table 5

Bivariate Correlations for All Study Variables (Non EHP Participant Subsample)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Age																
2. Gender	-.34															
3. Marital Status	.52 *	-.29														
4. Ethnicity	-.33	-.18	-.08													
5. BMI	-.04	-.13	-.13	-.08												
6. Stress (Month)	-.18	-.01	-.18	.15	.05											
7. Exercise Intensity	.20	-.06	.24	.15	-.44	-.12										
8. CSEtotT1	.23	-.27	.43	-.20	-.43	-.02	.29	**.77**								
9. barriersT1	-.07	.03	-.10	-.31	.55 *	.32	-.57 **	-.25	**.85**							
10. barriersT2	-.21	-.03	-.03	-.05	.46 *	.27	-.54 *	-.16	.78 **	**.79**						
11. barriersT3	-.19	.05	-.29	.08	.33	.19	-.43	-.34	.64 **	.78 **	**.85**					
12. ExerciseSelfEffT1	.20	.11	.33	-.07	-.45 *	.07	.71 **	.28	-.23	-.37	-.38	**.83**				
13. ExerciseSelfEffT2	.12	-.28	.28	-.10	.13	-.11	.26	.17	-.05	-.24	-.45 *	.39	**.83**			
14. ExerciseSelfEffT3	.08	-.21	.33	-.21	-.09	.22	.20	.42	-.11	-.30	-.50 *	.46 *	.68 **	**.89**		
15. PsyGenWellT1	.02	-.13	.36	-.10	-.35	-.41	.48 *	.59 **	-.56 *	-.45 *	-.65 **	.33	.48 *	.30	**.87**	
16. PsyGenWellT2	.11	-.34	.36	.27	-.06	-.35	.27	.43	-.52 *	-.40	-.55 *	-.07	.37	.27	.64 **	**.88**
17. PsyGenWellT3	.01	-.19	.37	.03	-.23	-.32	.25	.55 *	-.45 *	-.37	-.69 **	.12	.42	.27	.82 **	.76 **
18. signewtot	.00	-.48 *	.04	.32	.23	.66 **	-.04	-.10	.15	.27	.21	.06	.21	.28	-.27	-.10
19. signewtotT2	.00	.04	.20	.00	.15	.29	.16	-.08	.11	.14	-.03	.50 *	.30	.16	.01	-.32
20. signewtotT3	.12	.10	.28	.07	.26	.14	-.30	-.25	.39	.40	.15	.03	.13	.02	-.44	-.20
21. AJIGtot	-.02	.24	-.03	-.10	-.13	-.45 *	-.02	.45 *	-.32	-.26	-.14	-.25	-.32	-.12	.25	.31
22. AJIGtotT2	.11	.05	-.12	-.10	.03	-.34	-.03	.31	-.11	-.32	-.21	-.23	.06	.08	.13	.31
23. AJIGtotT3	-.02	.26	-.36	-.13	-.21	-.05	.30	.30	-.25	-.51 *	-.38	.11	.04	.13	.22	.16
24. AffOrgCommT1	-.25	.23	-.21	.20	-.14	.40	-.02	.44	.05	-.02	.01	.11	-.15	.26	-.10	.07
25. AffOrgCommT2	-.24	.12	-.18	.22	.16	.12	-.14	.34	.16	.07	.08	-.12	.02	.15	.02	.25
26. AffOrgCommT3	-.28	.21	-.31	.21	.01	.24	-.01	.34	.08	-.01	.01	-.01	-.06	.20	-.04	.19
27. ContOrgCommT1	-.02	.08	-.30	-.02	.45 *	-.11	-.34	-.40	.09	.09	-.05	-.36	-.12	-.40	.00	.12
28. ContOrgCommT2	.00	.38	-.32	-.25	.12	-.19	-.63 **	-.25	.23	.23	.22	-.48 *	-.38	-.53 *	-.12	-.18
29. ContOrgCommT3	-.08	.47 *	-.32	-.15	.23	-.24	-.25	-.48 *	-.04	.03	-.01	-.26	-.41	-.46 *	-.13	-.12
30. NormOrgCommT1	.05	.10	-.02	-.01	.15	.19	-.02	.44	.25	.16	.13	-.04	.04	.18	-.01	.18
31. NormOrgCommT2	-.10	.14	-.18	.08	.35	.07	-.04	.16	.32	.13	.14	-.13	.08	.04	-.06	.22
32. NormOrgCommT3	-.17	.22	-.13	.07	.11	.14	-.07	.36	.26	.21	.11	-.07	.03	.13	.03	.16

Note. $N = 20$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities. Scores in bold represent the Beginner condition's internal consistency reliability (alpha) coefficients for each scale

Table 5 Continued

Bivariate Correlations for All Study Variables (Non EHP Participant Subsample)

	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.
17. PsyGenWellT3	**.87**															
18. signewtot	-.17	**.70**														
19. signewtotT2	.02	.53 *	**.84**													
20. signewtotT3	-.12	.28	.49 *	**.81**												
21. AJIGtot	.29	-.60 **	-.39	-.26	**.82**											
22. AJIGtotT2	.10	-.60 **	-.62 **	-.28	.66 **	**.89**										
23. AJIGtotT3	.21	-.42	-.30	-.44	.51 *	.66 **	**.77**									
24. AffOrgCommT1	.01	-.03	-.13	-.04	.45 *	.43	.51 *	**.93**								
25. AffOrgCommT2	.04	-.18	-.30	-.15	.47 *	.67 **	.50 *	.81 **	**.90**							
26. AffOrgCommT3	.04	-.12	-.26	-.13	.47 *	.57 **	.64 **	.91 **	.92 **	**.95**						
27. ContOrgCommT1	.11	-.14	-.11	-.12	-.13	-.07	-.05	-.25	-.03	-.14	**.79**					
28. ContOrgCommT2	-.12	-.41	-.28	-.09	.14	.12	.00	-.12	.09	-.05	.67 **	**.70**				
29. ContOrgCommT3	-.19	-.37	-.12	-.04	.07	-.04	-.05	-.25	-.11	-.13	.69 **	.67 **	**.88**			
30. NormOrgCommT1	.04	-.06	-.15	.05	.48 *	.53 *	.43	.75 **	.80 **	.82 **	-.25	-.08	-.24	**.92**		
31. NormOrgCommT2	.05	-.16	-.21	.04	.41	.56 *	.46 *	.63 **	.79 **	.79 **	-.05	-.04	-.14	.90 **	**.87**	
32. NormOrgCommT3	.09	-.17	-.21	.01	.45 *	.55 *	.53 *	.76 **	.87 **	.89 **	-.17	.03	-.17	.92 **	.87 **	**.91**

Note. $N = 20$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities. Scores in bold represent the Beginner condition's internal consistency reliability (alpha) coefficients for each scale

Table 6

Descriptive Statistics for All Study Variables (Non EHP Participant Subsample)

	M	*SD*
Age	43.55	9.77
Gender	0.55	0.51
Marital Status	0.75	0.44
Ethnicity	0.15	0.37
BMI	31.02	8.81
Stress (Month)	4.10	1.68
Exercise Intensity	2.45	1.57
CSEtotT1	45.10	5.35
barriersT1	39.05	13.03
barriersT2	39.05	10.97
barriersT3	37.85	12.16
ExerciseSelfEffT1	16.20	5.39
ExerciseSelfEffT2	15.10	4.81
ExerciseSelfEffT3	15.95	6.10
PsyGenWellT1	27.25	5.39
PsyGenWellT2	27.50	5.03
PsyGenWellT3	29.05	4.55
signewtot	11.55	6.02
signewtotT2	12.98	7.29
signewtotT3	11.78	7.04
AJIGtot	18.70	5.71
AJIGtotT2	17.95	7.30
AJIGtotT3	20.50	5.04
AffOrgCommT1	27.80	8.52
AffOrgCommT2	27.20	6.70
AffOrgCommT3	27.70	8.62
ContOrgCommT1	20.60	5.53
ContOrgCommT2	21.60	4.45
ContOrgCommT3	20.95	5.60
NormOrgCommT1	27.90	7.14
NormOrgCommT2	26.25	5.88
NormOrgCommT3	26.55	6.68

Tests of Hypotheses

Hypothesis tests for all Time 1-related hypotheses (H1a, H2a, H3a, H4a, and H5a) were conducted using hierarchical regression with orthogonal coding contrasts. This approach is often seen as more appropriate than using analysis of variance (ANOVA) when working with unequal sample sizes and a desire to include relevant covariates (e.g., Pedhazur, 1997, p. 407). Not only does this technique provide an advantage over ANOVA in dealing with unequal sample sizes, but it also permits simultaneous consideration of categorical and continuous variables (Pedhazur, p. 406). All other hypotheses were tested with repeated measure ANOVAs. Given the minimal consequences of a Type I error in the present context, results of these analyses were considered as significant if the probability associated with a result was less than alpha = .10.

Hypothesis 1: perceived barriers and exercise-related outcomes. Hypothesis 1a stated that employees participating in EHPs would demonstrate lower levels of perceived barriers than non-participants, prior to EHP startup. The core set of covariates were entered first, followed by an orthogonal contrast code to compare EHP participants against the non-participant comparison group. Results from the regression can be found in Table 7. The overall adjusted R^2 (.47) of the final model was not significant, with the comparison between participants and non-participants accounting for no additional variance in perceived barriers at Time 1 over the covariates alone. Further, the results clearly indicated that non-participants did not report significantly higher levels of perceived barriers than EHP participants at baseline, $t(34) = -.15$, $p > .10$. These results do not support Hypothesis 1a.

Table 7

Hierarchical Regression Results for Baseline Perceived Barriers to Exercise

	Perceived Barriers to Exercise			
	β		*t*	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	-0.11	-0.11	-0.83	-0.83
Gender	-0.07	-0.07	-0.54	-0.55
Marital status	-0.17	-0.17	-1.36	-1.33
Ethnicity	-0.44	-0.45	-3.62 **	-3.48 **
BMI	0.30	0.29	2.26 *	1.90
Stress (Month)	0.46	0.47	3.98 **	3.88 **
Exercise Intensity	-0.14	-0.15	-1.12	-1.07
Core Self-Evaluation	-0.01	-0.01	-0.06	-0.10
Orthogonal Contrasts		-0.03		-0.12
ΔR^2	0.58	0.00		
ΔF	6.01 **	0.02		
Adjusted R^2	0.48	0.47		
F	6.01 **	5.20 **		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Hypothesis 1b stated that EHP participants would demonstrate decreased levels of perceived barriers upon completion of their programs, while non-participants' levels would remain the same as at baseline. To test this, a repeated measures ANOVA (including covariates) was conducted to evaluate the effects of time and EHP participation on perceived levels of barriers to exercise from Time 1 to Time 2. There was a significant interaction between time and EHP participation, $F(1, 34) = 4.71$, $p < .10$. A separate repeated measures ANOVA was conducted to explore the effects comparisons of changes in barrier perceptions for EHP participants' versus non-participants'. Results indicate that participants' barrier perceptions from Time 1 to Time 2 were significantly different, $F(1, 23) = 4.49$, $p < .10$. Whereas non-participants' perceptions were

not significantly different from Time 1 to Time 2, $F(1, 19) = .00$, $p > .10$. The overall main effect for time on barrier perceptions was non-significant with $F(1, 34) = .00$, $p > .10$. Therefore, Hypothesis 1b was supported.

Hypothesis 1c stated that EHP participants' initial levels of perceived barriers to exercise would moderate the change in psychological and attitudinal outcomes over the course of EHP involvement. Repeated measures ANOVAs were conducted examining the relationship of time and EHP participation on each of the expected EHP outcomes using levels of barrier perceptions at Time 1 as a moderator. As is shown in the following subsections, only partial support was found for this hypothesis.

Psychological Well-Being. Data for this analysis indicated the assumption of sphericity been violated, $\chi^2(2) = .80$, $p < .05$. Because the estimate of sphericity was greater than .80, Huynh-Feldt's corrected F was used to evaluate the results of this statistical test (c.f., Field, 2009, p. 461). The overall interaction between time and barrier perceptions at Time 1 was non-significant, $F(2, 66) = 3.31$, $p > .10$. Results indicated a significant interaction between time and EHP participation, $F(2, 66) = 3.32$, $p < .05$. This implies that amount of change in employees' levels of psychological well-being depended significantly on whether they were participating in an EHP. Contrasts were conducted to examine this relationship further. For each group of participants, levels of perceived barriers were significantly different from Time 2 to Time 3, $F(1, 33) = 4.10$, $p < .10$. As predicted, however, each group's scores did not differ significantly from Time 1 to Time 3, $F(1, 33) = .01$, $p > .10$. The main effect of time on psychological well-being was also significant with $F(2, 66) = 3.66$, $p < .05$.

Perceived Stress. The overall interaction between time and barrier perceptions at Time 1 was non-significant, $F(2, 66) = 1.56$, $p > .10$. However, there was a significant interaction between time and EHP participation on perceived stress levels, $F(2, 66) = 2.77$, $p < .10$. To break down this interaction, contrasts were performed comparing each participants' and non-participants' perceived stress scores at each time point. For each group, scores at Time 2 and Time 3 were not significantly different from each other, $F(1, 33)= 2.55$, $p > .10$. Similarly, scores at Time 1 and Time 3 were also not significantly different from each other, $F(1, 33) = .69$, $p > .10$. There was no significant overall main effect for time on perceived stress, $F(2, 66) = .27$, $p > .10$.

Job Satisfaction. The overall interaction between time and barrier perceptions at Time 1 on job-satisfaction was non-significant, $F(2, 66) = .64$, $p > .10$. In addition, there was not a significant interaction between time and EHP participation on participants' job satisfaction, $F(2, 66) = 1.70$, $p > .10$. The main effect of time on job satisfaction was also non-significant with $F(2, 32) = 1.46$, $p > .10$. Therefore, no other tests are reported with respect to this outcome.

Affective Commitment. The overall interaction between time and barrier perceptions at Time 1 on affective commitment was non-significant, $F(2, 66) = 1.17$, $p > .10$. Similarly, the interaction between time and EHP participation on participants' affective commitment was non-significant, $F(2, 66) = .59$, $p > .10$. The main effect of time on affective commitment was also non-significant with $F(2, 66) = .06$, $p > .10$. Therefore, no other tests are reported with respect to this outcome.

Continuance Commitment. The overall interaction between time and barrier perceptions at Time 1 on continuance commitment was non-significant, $F(2, 66) = .73$, $p > .10$. The interaction between time and EHP participation on participants' of normative commitment was

non-significant, $F(2, 66) = .77$, $p > .10$. The main effect of time on normative commitment was also non-significant with $F(2, 66) = .36$, $p > .10$. Therefore, no other tests are reported with respect to this outcome.

Normative Commitment. The overall interaction between time and barrier perceptions at Time 1 on normative commitment was non-significant, $F(2, 66) = .53$, $p > .10$. The interaction between time and EHP participation on participants' normative commitment was non-significant, $F(2, 66) = .14$, $p > .10$. The main effect of time on normative commitment was also non-significant with $F(2, 66) = 2.13$, $p > .10$. Therefore, no other tests are reported with respect to this outcome.

Hypothesis 2: exercise self-efficacy and exercise-related outcomes. Hypothesis 2a stated that employees participating in EHPs would demonstrate higher levels of exercise self-efficacy prior to EHP startup than non-participants. The core set of covariates were entered first, followed by an orthogonal contrast code to compare EHP participants against the non-participant comparison group. Results from the regression can be found in Table 8. The overall adjusted R^2 (.46) of the final model was significant, with the comparison between non-participants and EHP participants accounting for an additional 8.6% of variance in exercise self-efficacy at Time 1 over the covariates alone. Further, the results clearly indicated that non-participants reported significantly lower levels of exercise self-efficacy than EHP participants at baseline, $t(34) = -2.63$, $p < .05$. These results support Hypothesis 2a.

Table 8

Hierarchical Regression Results for Baseline Exercise Self-Efficacy Levels

	Exercise Self-Efficacy			
	β		*t*	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	0.21	0.16	1.50	1.19
Gender	0.40	0.25	3.05 **	1.83 *
Marital status	0.42	0.43	3.06 **	3.39 **
Ethnicity	0.34	0.25	2.49 **	1.91 *
BMI	0.12	-0.07	0.80	-0.45
Stress (Month)	-0.03	0.03	-0.24	0.24
Exercise Intensity	0.19	0.04	1.40	0.29
Core Self-Evaluation	0.09	-0.01	0.57	-0.08
Orthogonal Contrasts		-0.45		-2.63 **
ΔR^2	0.49	0.08		
ΔF	4.19 **	6.90 **		
Adjusted R^2	0.37	0.46		
F	4.19 **	5.12 **		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Hypothesis 2b stated that EHP participants would demonstrate higher levels of exercise self-efficacy upon completion of their programs, while non-participants' levels would remain the same as at baseline. A repeated measures ANOVA (including covariates) was again conducted to evaluate the effects of time and participation in an EHP on exercise self-efficacy from Time 1 to Time 2. The interaction between time and EHP participation was non-significant, $F(1, 34) = .10$, $p > .10$. The main effect for time on exercise self-efficacy was also non-significant, $F(1, 34) = 1.23$, $p > .10$. Therefore, no support was found for Hypothesis 2b.

Hypothesis 2c stated that EHP participants' initial levels of exercise self-efficacy would moderate the change in psychological and attitudinal outcomes over the course of EHP

involvement. Repeated measures ANOVAs (including covariates) were conducted examining the relationship of time and EHP participation on each of the expected EHP outcomes using levels of exercise self-efficacy at Time 1 as a moderator. As is shown in the following subsections, only partial support was found for this hypothesis.

Psychological Well-Being. The assumption of sphericity was again violated for this analysis, so corrected Huynh-Feldt *F* statistics were reported. The overall interaction between time and exercise self-efficacy at Time 1 on psychological well-being was non-significant, $F(2, 66) = .78$, $p > .10$. However, data indicated a significant interaction between time and EHP participation, $F(2, 66) = 3.16$, $p < .05$. Therefore, contrasts were conducted to examine this relationship further. Results show that for each group, changes in levels of psychological well-being were significantly different from Time 2 to Time 3, $F(1, 33) = 2.18$, $p = .10$. As predicted, however, each group's scores did not differ significantly from Time 1 to Time 3, $F(1, 33) = .65$, $p > .10$. The main effect of time on psychological well-being was non-significant with $F(1, 66) = .48$, $p > .10$.

Perceived Stress. The overall interaction between time and exercise self-efficacy scores at Time 1 on perceived stress levels was significant, $F(2, 66) = 3.18$, $p < .05$. Within subject contrasts for this interaction revealed that employees' levels of perceived stress were significantly different from Time 2 to Time 3, $F(1, 33)= 8.00$, $p < .05$; yet they did not differ significantly between Time 1 and Time 3, $F(1, 33)= .68$, $p > .10$. There was also a significant interaction between time and EHP participation, $F(2, 66)= 4.71$, $p < .05$. This means that the amount of change in perceived stress levels an individual experienced was dependent on whether he or she chose to participate in an EHP. Contrasts were conducted for this interaction as well comparing

both participants' and non-participants' perceived stress scores across all time points. For both groups, perceived stress scores at Time 2 and Time 3 were significantly different from one another, $F(1, 33)= 7.57$, $p < .05$. As predicted, however, scores at Time 1 and Time 3 were not significantly different from one another $F(1, 33)= .15$, $p > .10$. There was no significant main effect for time on perceived stress, $F(2, 66) = .97$, $p > .10$.

Job Satisfaction. The overall interaction between time and exercise self-efficacy at Time 1 on job-satisfaction was significant, $F(2, 66) = 2.61$, $p < .10$. Contrasts were conducted for this interaction comparing the impact of exercise self-efficacy scores on participants' perceived stress scores across all time points. Results indicated that changes in job satisfaction ratings from Time 2 to Time 3 were significantly impacted by participants' levels of exercise self-efficacy, $F(1, 33) = 5.15$, $p < .05$. Similarly, participants levels of exercise self-efficacy also influenced changes in job satisfaction from Time 1 to Time 3, $F(1, 33) = 4.29$, $p < .05$ There was no significant interaction between time and EHP participation on participants' levels of job satisfaction, $F(2, 66) = 2.21$, $p > .10$. In addition, the main effect of time on job satisfaction was also non-significant with $F(2, 66) = 1.21$, $p > .10$.

Affective Commitment. The overall interaction between time and exercise self-efficacy at Time 1 on affective commitment was non-significant, $F(2, 66) = .31$, $p > .10$. The interaction between time and EHP participation on participants' affective commitment was also non-significant, $F(2, 66) = .80$, $p > .10$. The main effect of time on affective commitment was also non-significant with $F(2, 66) = .29$, $p > .10$. Therefore, no other tests are reported with respect to this outcome.

Continuance Commitment. The overall interaction between time and exercise self-efficacy at Time 1 on continuance was non-significant, $F(2, 66) = .13$, $p > .10$. The interaction between time and EHP participation on participants' continuance commitment was non-significant, $F(2, 66) = .41$, $p > .10$. The main effect of time on normative commitment was also non-significant with $F(2, 66) = .14$, $p > .10$. Therefore, no other tests are reported with respect to this outcome.

Normative Commitment. The overall interaction between time and exercise self-efficacy at Time 1 on normative commitment was non-significant, $F(2, 66) = 1.02$, $p > .10$. Similarly, the interaction between time and EHP participation on participants' normative commitment was also non-significant, $F(2, 66) = .55$, $p > .10$. Yet the main effect of time on normative commitment was significant with $F(2, 66) = 2.58$, $p < .10$. Main effect contrasts were conducted to examine this effect further. Regardless of EHP participation, results indicate that scores at Time 2 and Time 3 were significantly different, $F(1, 33) = 2.95$, $p < .10$. Scores were not significantly different from Time 1 to Time 3, $F(1, 33) = .24$, $p > .10$.

Hypothesis 3: psychological well-being as an EHP outcome. Hypothesis 3a stated that employees participating in EHPs would demonstrate higher levels of exercise psychological well-being prior to EHP startup than non-participants. The core set of covariates were entered first, followed by an orthogonal contrast code to compare EHP participants against the non-participant comparison group. Results from the regression can be found in Table 9. The overall adjusted R^2 (.32) of the final model was not significant. Results indicated that non-participants did not report significantly lower levels of psychological well-being than EHP participants at baseline, $t(34) = .701$, $p > .10$. Therefore, Hypothesis 3a is not supported.

Table 9

Hierarchical Regression Results for Baseline Psychological Well-Being Levels

	Psychological Well-Being			
	β		*t*	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	-0.03	-0.01	-0.21	-0.10
Gender	-0.08	-0.03	-0.58	-0.22
Marital status	0.00	-0.01	-0.03	-0.06
Ethnicity	-0.12	-0.09	-0.86	-0.64
BMI	-0.07	-0.01	-0.45	-0.07
Stress (Month)	-0.36	-0.37	-2.69 **	-2.75 **
Exercise Intensity	0.17	0.21	1.17	1.35
Core Self-Evaluation	0.34	0.38	2.13 **	2.22 **
Orthogonal Contrasts		0.13		0.70
ΔR^2	0.45	0.01		
ΔF	3.64 **	0.49		
Adjusted R^2	0.33	0.32		
F	3.64 **	3.24 **		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Hypothesis 3b stated that EHP participants would demonstrate higher levels of psychological well-being upon completion of their programs, while non-participants' levels would remain the same as at baseline. To test this, a repeated measures ANOVA (including covariates) was conducted to evaluate the effects of time and EHP participation on psychological well-being from Time 1 to Time 2. There was a significant interaction between time and EHP participation on psychological well-being, $F(1, 34) = 4.16$, $p < .10$. This suggests that the amount of change in participants' psychological well-being scores differed from Time 1 to Time 2 depended significantly on whether they participated in an EHP. Highlighting the significant interaction, however, the differences from Time 1 to Time 2 were positive for EHP participants and negative

for non-participants. The main effect for time on psychological well-being was also significant with $F(1, 34) = 3.00$, $p < .10$. These results support Hypothesis 3b.

Hypothesis 4: stress as an EHP outcome. Hypothesis 4a stated that employees participating in EHPs would demonstrate lower levels of perceived stress prior to EHP startup than non-participants. The core set of covariates were entered first, followed by an orthogonal contrast code to compare EHP participants against the non-participant comparison group. Results from the regression can be found in Table 10. The overall adjusted R^2 (.32) of the final model was not significant. Results did not, therefore, indicate a difference in perceived stress at baseline for non-participants vs. EHP participants, $t(53) = -1.21$, $p > .10$. Therefore, Hypothesis 4a was not supported.

Table 10

Hierarchical Regression Results for Baseline Perceived Stress Levels

	Perceived Stress			
	β		*t*	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	-0.08	-0.08	-0.56	-0.49
Gender	-0.31	-0.29	-2.23 **	-1.85 *
Marital status	-0.19	-0.20	-1.35	-1.35
Ethnicity	0.02	0.03	0.12	0.20
BMI	0.30	0.32	1.95 *	1.85 *
Stress (Month)	0.49	0.48	3.62 **	3.45 **
Exercise Intensity	0.16	0.18	1.12	1.13
Core Self-Evaluation	0.05	0.06	0.29	0.35
Orthogonal Contrasts		0.06		0.31
ΔR^2	0.43	0.00		
ΔF	3.31 **	0.10		
Adjusted R^2	0.30	0.28		
F	3.31 **	2.88 **		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Hypothesis 4b stated that EHP participants would demonstrate lower levels of perceived stress levels upon completion of their programs, while non-participants' levels would remain the same. A repeated measures ANOVA (including covariates) was conducted to evaluate the effects of time and EHP participation on perceived stress from Time 1 to Time 2. There was a significant interaction between time and EHP participation, $F(1, 34) = 5.31$, $p < .05$. This implies that the amount of change an individual perceived in stress scores from Time 1 to Time 2 was dependent on whether he or she participated in an EHP. Highlighting the significant interaction, however, these differences from Time 1 to Time 2 were positive for non-participants and negative for EHP participants. The main effect for time on perceived stress was not significant with $F(1, 34) = .01$,

$p > .10$. A significant improvement in average general well-being was only seen across all participants in our study when EHP participation was taken into account. Therefore, Hypothesis 4b was supported.

Hypothesis 5: job-attitudes as EHP outcomes. Hypothesis 5a stated that employees participating in EHPs would demonstrate higher levels of job attitudes (job satisfaction and organizational commitment) prior to EHP startup than non-participants. The core set of covariates were entered first, followed by an orthogonal contrast code to compare EHP participants against the non-participant comparison group. Results from the regressions can be found in Tables 11, 12, 13, and 14. As the following subsections illustrate, there was no support for Hypothesis 5a.

***Job satisfaction*.** The overall adjusted R^2 (.30) of the final model was significant, with the comparison between non-participants and EHP participants accounting for an additional 4.6% of variance in job-satisfaction at Time 1 over the covariates alone. However, careful consideration of the results clearly indicated that non-participants reported significantly higher levels of job-satisfaction than EHP participants at baseline, $t(34) = 1.69$, $p = .10$. This is contradictory to the anticipated relationship in this hypothesis.

Table 11

Hierarchical Regression Results for Baseline Job Satisfaction Levels

	Job Satisfaction			
	β		t	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	0.23	0.27	1.51	1.79 *
Gender	0.25	0.36	1.79 *	2.39 **
Marital status	-0.10	-0.10	-0.66	-0.74
Ethnicity	0.17	0.24	1.21	1.64
BMI	0.03	0.16	0.16	0.94
Stress (Month)	-0.33	-0.37	-2.37 **	-2.71 **
Exercise Intensity	-0.40	-0.29	-2.70 **	-1.83 *
Core Self-Evaluation	0.48	0.56	2.86 **	3.27 **
Orthogonal Contrasts		0.33		1.69 *
ΔR^2	0.41	0.05		
ΔF	3.00 **	2.86 *		
Adjusted R^2	0.27	0.31		
F	3.00 **	3.12 **		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Affective commitment. The overall adjusted R^2 (.19) of the final model was non-significant. Further, results clearly indicated that non-participants did not report significantly lower levels of affective commitment than EHP participants at baseline, $t(34) = 1.06$, $p > .10$.

Table 12

Hierarchical Regression Results for Baseline Affective Commitment Levels

	Affective Commitment			
	β		*t*	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	0.06	0.09	0.38	0.54
Gender	0.20	0.28	1.38	1.69 *
Marital status	-0.15	-0.15	-0.96	-0.99
Ethnicity	0.13	0.17	0.83	1.08
BMI	0.08	0.17	0.49	0.91
Stress (Month)	0.11	0.08	0.78 *	0.57
Exercise Intensity	-0.26	-0.19	-1.70	-1.12
Core Self-Evaluation	0.65	0.70	3.66 **	3.81 **
Orthogonal Contrasts		0.21		1.03
ΔR^2	0.34	0.02		
ΔF	2.23 *	1.05		
Adjusted R^2	0.19	0.19		
F	2.23 *	2.14 *		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Continuance commitment. The overall adjusted R^2 (.20) of the final model was non-significant. In addition, results clearly indicated that non-participants did not report significantly lower levels of continuance commitment than EHP participants at baseline, $t(34) = -.79$, $p > .10$.

Table 13

Hierarchical Regression Results for Baseline Continuance Commitment Levels

	Continuative Commitment			
	β		*t*	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	0.20	0.18	1.25	1.10
Gender	0.06	0.00	0.38	0.00
Marital status	-0.14	-0.14	-0.93	-0.90
Ethnicity	-0.03	-0.06	-0.17	-0.37
BMI	0.31	0.24	1.91 *	1.31
Stress (Month)	-0.13	-0.11	-0.93	-0.76
Exercise Intensity	-0.11	-0.17	-0.74	-0.99
Core Self-Evaluation	-0.26	-0.29	-1.46	-1.61
Orthogonal Contrasts		-0.16		-0.79
ΔR^2	0.36	0.01		
ΔF	2.41 *	0.62		
Adjusted R^2	0.21	0.20		
F	2.41 **	2.18 *		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Normative commitment. The overall adjusted R^2 (.03) of the final model was non-significant. Similarly, results clearly indicated that non-participants did not report significantly lower levels of normative commitment than EHP participants at baseline, $t(34) = .70$, $p > .10$.

Table 14

Hierarchical Regression Results for Baseline Normative Commitment Levels

	Normative Commitment			
	β		t	
Predictors	Step 1	Step 2	Step 1	Step 2
Age	0.15	0.17	0.84	0.94
Gender	0.08	0.13	0.49	0.74
Marital status	0.06	0.05	0.33	0.30
Ethnicity	0.01	0.04	0.05	0.23
BMI	0.27	0.34	1.51	1.65
Stress (Month)	0.03	0.01	0.19	0.05
Exercise Intensity	-0.39	-0.34	-2.31 **	-1.80 *
Core Self-Evaluation	0.43	0.47	2.23 **	2.32 **
Orthogonal Contrasts		0.16		0.70
ΔR^2	0.22	0.01		
ΔF	1.23	0.49		
Adjusted R^2	0.04	0.03		
F	1.23	1.13		

Note. $N = 44$; * $p < .10$; ** $p < .05$; Gender coded 1 = Female, 0 = Male; Marital Status coded 1 = Married, 0 = Single/Divorced/Widowed; Ethnicity coded 0 = White, 1 = All other ethnicities.

Hypothesis 5b stated that EHP participants would demonstrate higher levels of job attitudes upon completion of their programs, while non-participants' levels would remain the same. A repeated measures ANOVA (including covariates) was conducted to evaluate the effects of time and EHP participation on job attitudes from Time 1 to Time 2. As the following subsections illustrate, there was no support for Hypothesis 5b.

Job Satisfaction. There was no significant interaction between time and EHP participation on job satisfaction, $F(1, 34) = 2.76$, $p > .10$. Similarly, the main effect for time on job satisfaction was non-significant with $F(1, 34) = 1.12$, $p > .10$.

Affective commitment. There was no significant interaction between time and EHP participation on affective commitment, $F(1, 34) = .95$, $p > .10$. The main effect for time on affective commitment was non-significant with $F(1, 34) = .42$, $p > .10$.

Continuance commitment. There was not a significant interaction between time and EHP participation on continuance commitment, $F(1, 34) = 1.34$, $p > .10$. The main effect for time on continuance commitment was non-significant with $F(1, 34) = .05$, $p > .10$.

Normative commitment. There was no significant interaction between time and program type on normative commitment, $F(1, 34) = .29$, $p > .10$. However, the main effect for time on normative commitment was significant with $F(1, 34) = 4.49$, $p < .10$. This suggests that regardless of participating in an EHP, a significant improvement in normative commitment was seen on average across all participants in our study.

CHAPTER IV

DISCUSSION

There were two main objectives for the present research. The first goal was to examine the sustainability of various psychological outcomes found to result from participating in an EHP (Anshel et al., 2010; DeGroot & Kiker, 2003; Lemon et al., 2010; Loeppke et al., 2010). The second goal was to provide further support to existing literature regarding antecedents to EHP participation (Lechner & De Vries, 1995; Schwetschenau et al., 2008).

Results from Hypothesis 1a suggest that employees choosing to participate in an EHP do not perceive significantly fewer barriers than non-participating employees, which is contradictory to previous findings (Mavis et al., 1992). In fact, employees participating in EHPs demonstrated a higher average baseline of barrier perceptions (M= 36.80) than non-participating employees (M= 36.09). One possible explanation for these results may lie within the present study's sample organization. Employee wellness is actively promoted and encouraged throughout the participating organization, which makes many attempts to provide a variety of alternatives to employees that will allow them to participate. These efforts may have impacted employees' barrier perceptions in such a way that they did not perceive barriers to exercise at levels found in previous literature.

Tests of Hypothesis 1b provided strong support for the efficacy of each EHP with respect to changes in perception of barriers over the course of one's participation in an EHP. Consistent with past literature (Mavis et al., 1992; Schwetschenau et al., 2008), results showed that

employees participating in an EHP perceived significantly lower levels of barriers to exercise than non-participants at Time 2. This is illustrated in Figure 1. The significant interaction between time and participation on barrier perceptions, coupled with the lack of a main effect for time, suggests that the reduction in perceptions was due in large part to each program's level of effectiveness and employees' decisions to participate in them. Looking specifically at each of the EHP subgroups, Figure 2 shows that the advanced programs' participants demonstrated the most significant reduction in perceived barriers. This is an interesting finding because the assumption behind the advanced condition was that participants in these programs would demonstrate lower initial levels of perceived barriers with only minimal deduction in barriers since they were already active. One might have expected that participants in the beginner condition would demonstrate the most significant reduction in perceived barriers since the purpose of the program was to essentially reduce perceived barriers. This is important to note because it implies that the educational component of the beginner program may not be providing participants in the beginner condition with enough support to help them overcome their perceived barriers.

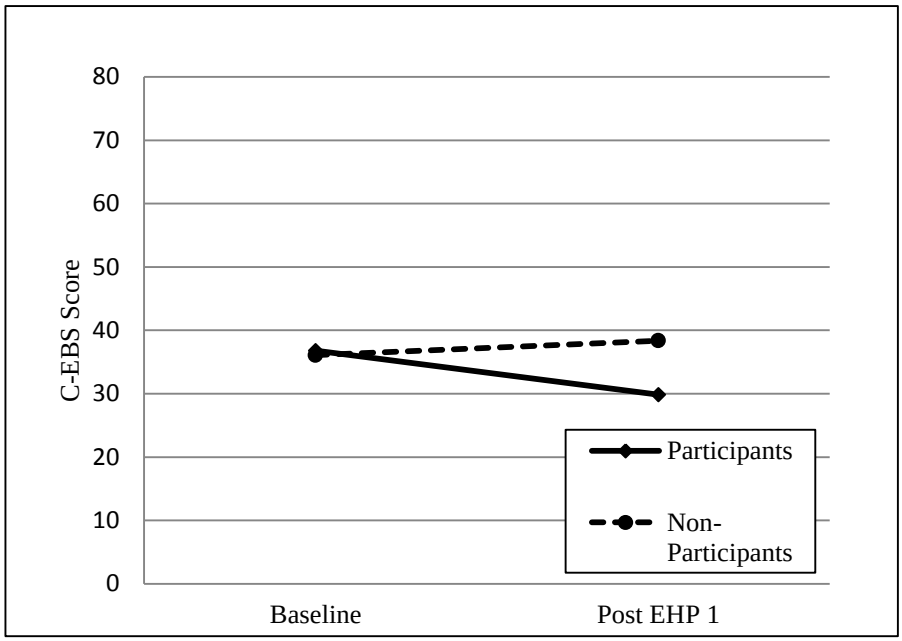

Figure 1 Participants' and non-participants' mean C-EBS scores from Time 1 to Time 2

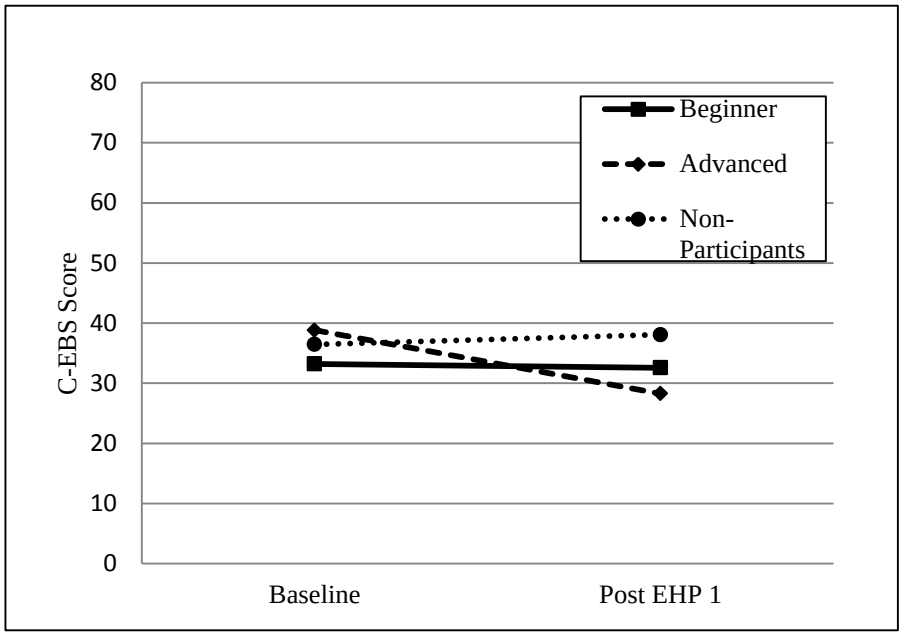

Figure 2 Comparison of mean C-EBS scores from Time 1 to Time 2 among all groups

Hypothesis 1c focused on the relationship between participants' perceived barriers to exercise and their impact on EHP outcomes over time. Contrary to the anticipated effects, no significant interactions were found between time and Time 1 barrier perceptions for any of the measure outcomes. Significant interactions were found, however, between time and EHP participation on participants' levels of psychological well-being and perceived stress. These results suggest that although barrier perceptions at Time 1 did not moderate outcomes scores from Time 2 to Time 3, results did trend in the hypothesized directions. For example, the interaction contrasts for both perceived stress and psychological well-being indicate that participants' scores from Time 1 and Time 3 were not significantly different, while their scores at Time 2 and Time 3 were. This demonstrates a significant reverting trend among participants toward to their baseline levels of outcomes over time. Figures 3 and 4 present these trends for each group. Figure 3 shows that for the EHP participants, scores on the psychological well-being measure increased at Time 2, but then began to revert to initial levels at Time 3. Figure 4 demonstrates the same conceptual effect for perceived stress as EHP participants' levels dropped at Time 2, but began to return to initial levels at Time 3. These trends represent an area for future research because they suggest that while EHP participation may yield immediate benefits for employees, they cannot be expected to continue over time.

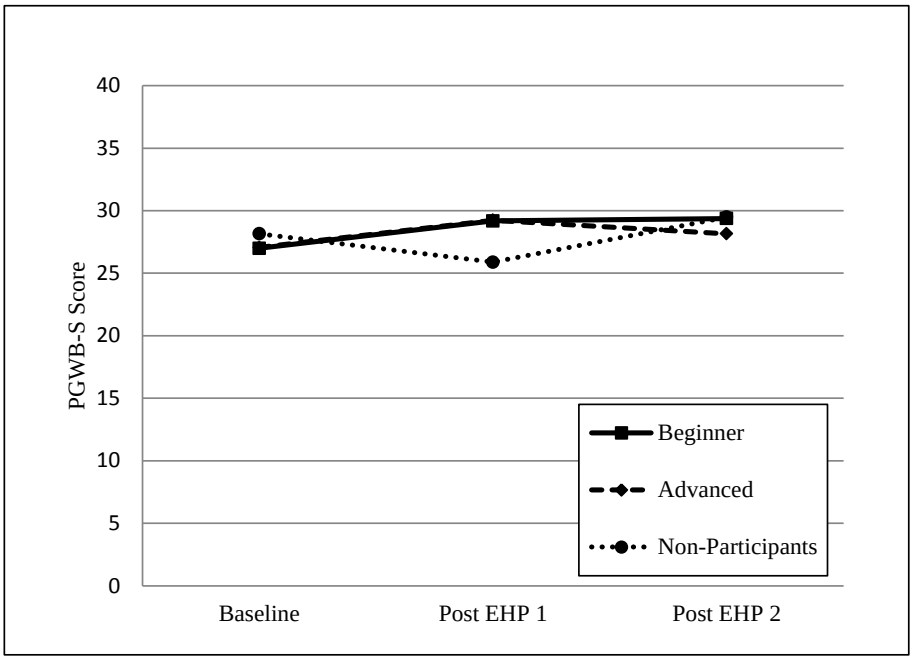

Figure 3 Comparison of each program's mean PGWB-S scores at all time points.

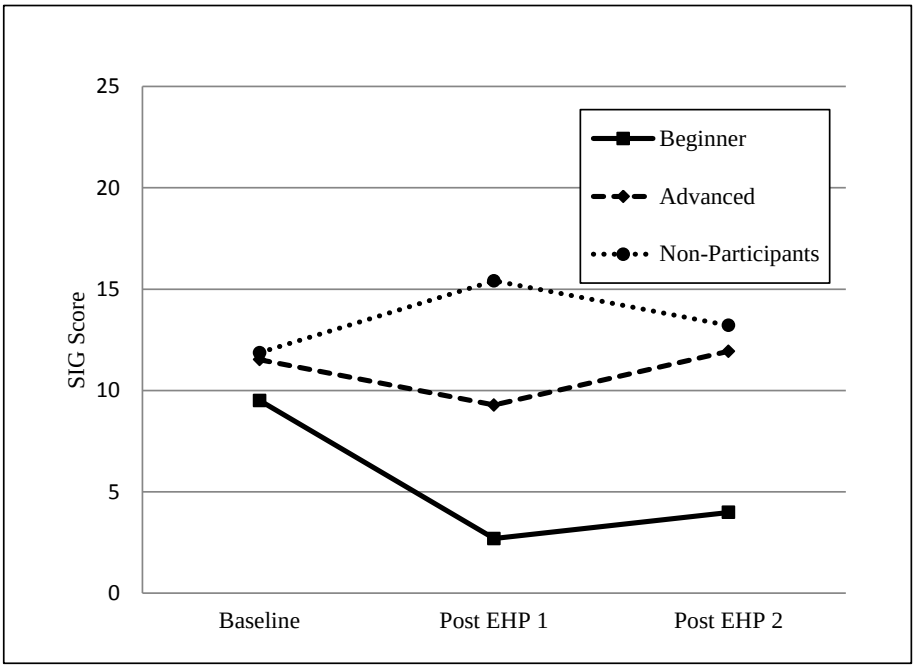

Figure 4 Comparison of each program's mean SIG scores at each time point.

Results for Hypothesis 2a demonstrated that exercise self-efficacy plays a significant role in an employee's decision whether to participate in an EHP. Similar to the findings of Lechner and De Vries (1995), employees that chose to participate in an EHP reported significantly higher levels of exercise self-efficacy at baseline than non-participants. This implies that organizations may be able to improve EHP participation rates by focusing on developing strategies to improve exercise self-efficacy prior to EHP start-up.

In the present study, however, exercise self-efficacy levels were not significantly altered by participating in an EHP. This was a surprising result since one overarching goal for these types of EHPs is to help promote exercise self-efficacy. Figure 5 shows that in almost all cases exercise self-efficacy scores went down in all groups. It is possible the programs were too physically demanding for some members of these participation groups, which may have contributed to the decreases at Time 2. It is logical to assume that employees' self-efficacy levels would decrease if they were consistently faced with physical activities they found too difficult to complete. Another related explanation is that participants in the beginner group may have become intimidated once they were educated on the amount of work it would require to reach their health goals. The scales used to measure exercise self-efficacy might have impacted these results. Items on the Exercise Self-Efficacy scale asked an employee to rate his or her confidence in being able to adhere to an exercise regimen in various situations. It is possible that participants in the beginner condition may have entered lower ratings for these items because their program was primarily education based rather than fitness based. Finally, it may be that positive changes in this type of efficacy take longer to develop than was captured in the three time points of data gathered during the present study. This is certainly an area for future research.

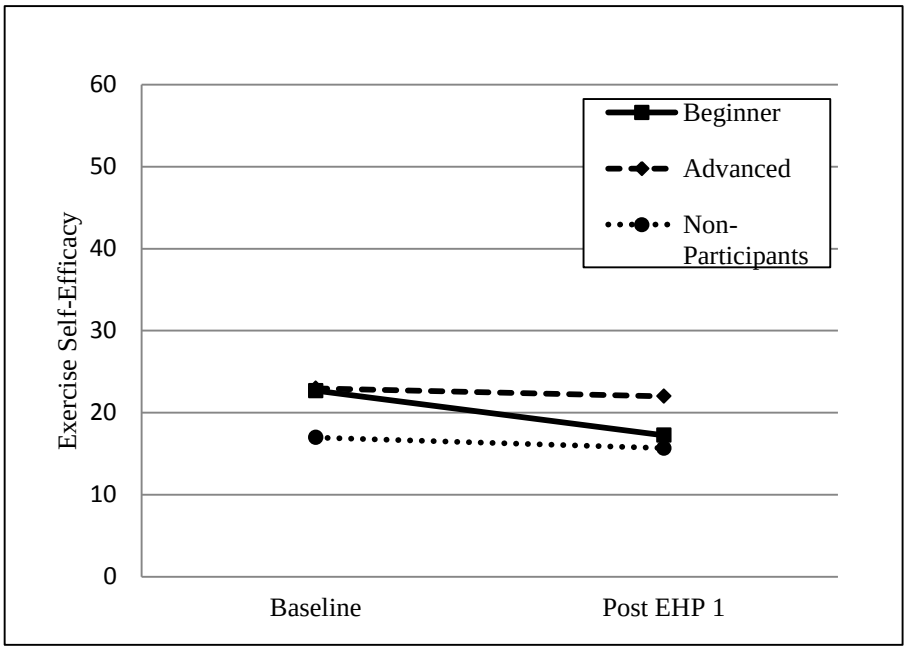

Figure 5 Mean exercise self-efficacy scores from Time 1 to Time 2 among all groups

Throughout the study, exercise self-efficacy significantly influenced employees' levels of perceived stress and job satisfaction. Results from Hypothesis 2c suggest that Time 1 exercise self-efficacy scores significantly influenced the amount of changes employees demonstrated in their levels of perceived stress and job-satisfaction over time. Specifically, EHP participants' levels of perceived stress dropped significantly at Time 2 from Time 1, but then began to revert back to their baseline levels at Time 3. This is illustrated in Figure 6. The nature of the interaction between time and exercise self-efficacy suggests that EHP participants' increased stress perceptions at Time 3 were impacted by their exercise self-efficacy levels.

Results from the test of Hypothesis 2b demonstrated that EHPs did not significantly improve exercise self-efficacy. Therefore, it is possible that EHP participants' perceived stress levels at Time 3 were higher because their exercise self-efficacy that gave them the confidence to continue their workout regimen post-EHP completion. The same can also be said about the trends in job-satisfaction presented in Figure 7. Baseline exercise self-efficacy levels significantly

influenced participants' levels of perceived change job-satisfaction, resulting in lower job satisfaction at Time 3. These trends are again important to highlight because they support the notion that EHPs do not promote sustained psychological outcomes. Future research should take a more in-depth look at these relationships.

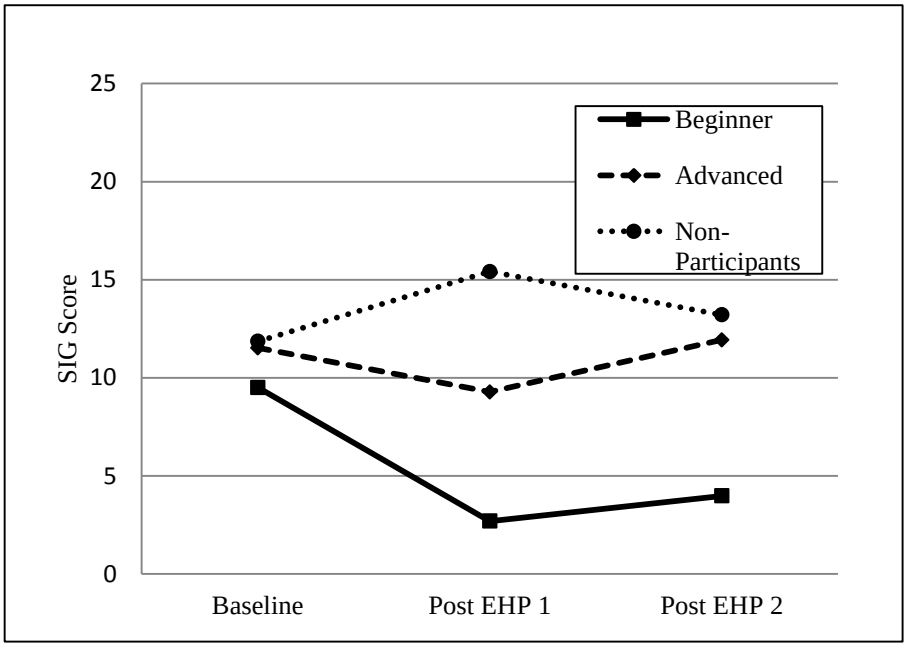

Figure 6 Mean SIG scores for each EHP at all three time points. Time 1 exercise self-efficacy scores included as a potential moderator

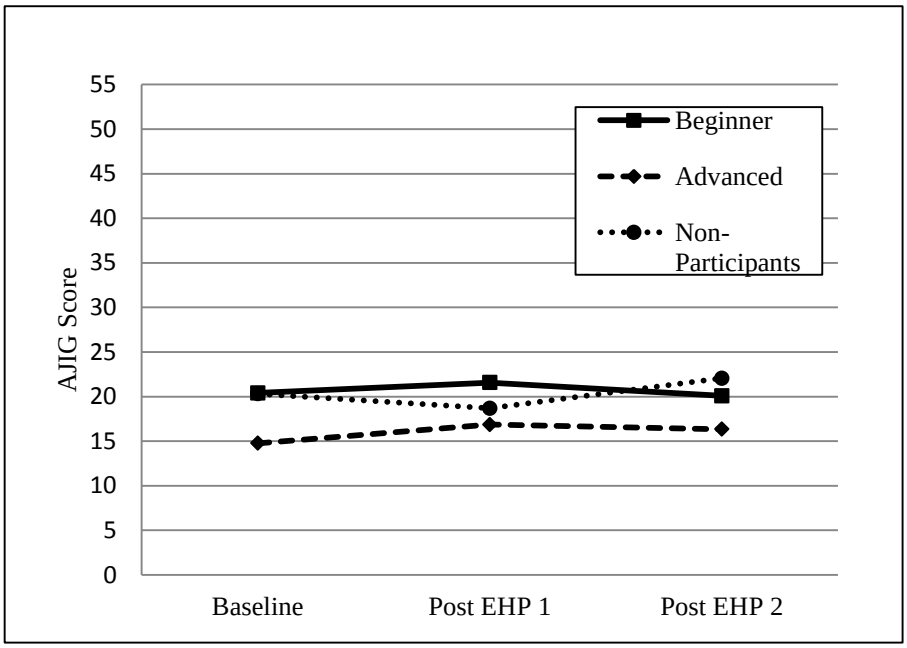

Figure 7 Mean AJIG scores for each EHP at all three points. Time 1 exercise self-efficacy scores were included as a potential moderator

Although results from Hypothesis 3a yielded no significant differences between EHP participants' and non-participants' psychological well-being at baseline, a closer look at the data suggests this may have been caused by temporarily higher levels of stress among EHP participants at Time 1. Looking back at Table 9 one can see that EHP participants reported significantly higher levels of stress on the single item stress covariate than non-participants. The item asked employees to rate their levels of stress over the past month, so employees who perceiving increased levels of stress at that time may have also reported lower levels of psychological well-being. This was contradictory to previous literature (Anshel et al., 2010) suggesting that employees with lower levels of perceived stress are more likely to engage in physical activity.

At Time 2, however, results showed that individuals participating in an EHP reported significantly improved levels of psychological well-being. As illustrated in Figure 8, participants in both the beginner and advanced conditions saw significant improvement in well-being from

Time 1 to Time 2, while non-participants' levels actually declined. Results from Hypothesis 4b are consistent with previous research (Anshel et al., 2010; Thogersen-Ntoumani et al., 2005) and provide evidence that the EHPs played a significant role in improving well-being scores.

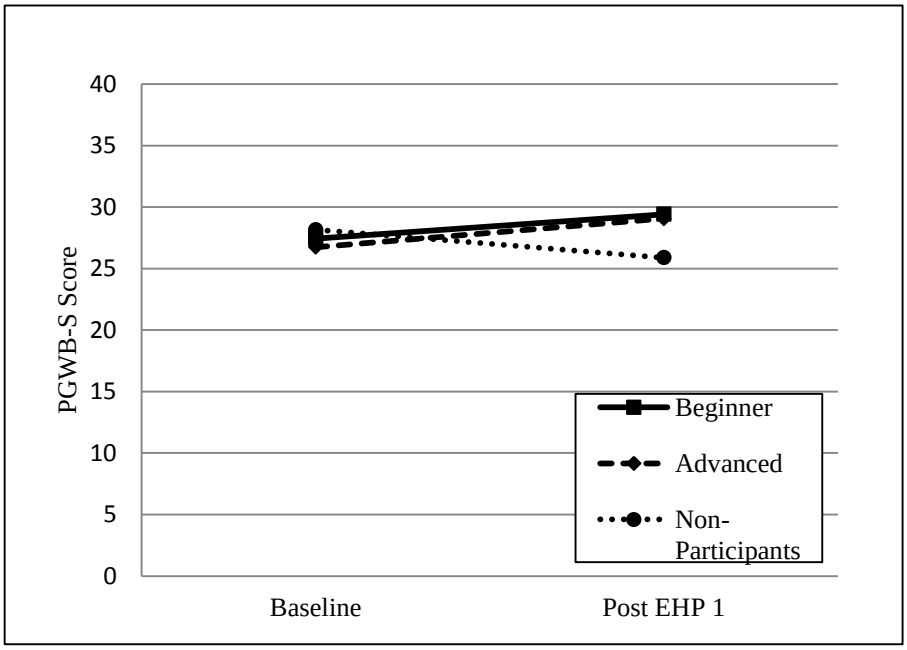

Figure 8 Comparison of each EHP's mean PGWB-S scores from Time 1 to Time 2

Based on results from Hypothesis 4a and Hypothesis 4b, it is evident that participating in an EHP helps to reduce stress levels. EHP participants' perceived stress levels were not significantly different from non-participants' at baseline. However, after completing their respective EHPs employees in the two experimental conditions reported significantly lower levels of perceived stress. In fact, the trends in Figure 9 indicate that non-participants' level of perceived stress actually increased at Time 2 while EHP participants' scores decreased. Since there was no main effect for "time" in Hypothesis 4b, it is reasonable to assume that these changes in stress level were influenced by EHP participation.

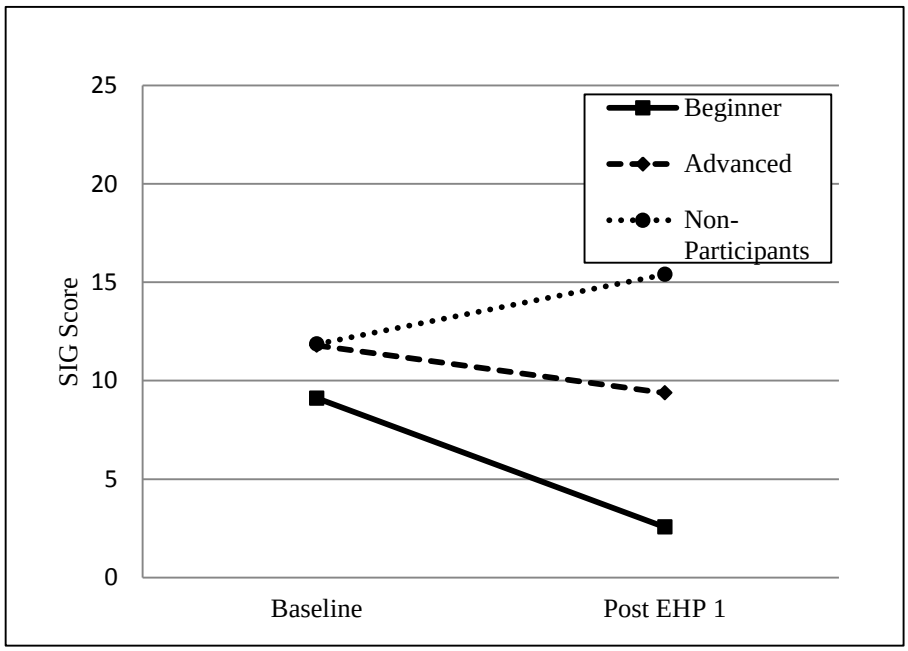

Figure 9 Comparison of each EHP's mean SIG scores from Time 1 to Time 2

The only job attitude found to be significantly different among EHP participants and non-participants at baseline was job-satisfaction. However, results indicate that non-participants actually demonstrated higher job-satisfaction levels than EHP participants. This contradicts Hillier et al.'s (2005) suggestion that by simply offering EHPs to employees an organization can promote commitment. If this were true, one would have expected EHP participants to demonstrate at least moderately higher levels of organizational commitment. Data from Hypothesis 5a showed the opposite relationship. Non-participants demonstrated higher baseline levels of both affective and normative organizational commitment.

Limitations

Several study limitations need to be addressed. The primary limitation of this study was the small sample size. An ideal sample size for an exploratory study such as this would be larger. Associated with this limitation is the possibility that the 44 participating employees in the present

study may not be representative of the broader working population. In addition, the small sample also impacted the statistical power of all statistical analyses in the study. It is important to point out, however, that the present sample size is indicative of the samples that researchers in this applied area of study are likely to work with, even within large organizations. Thus, this is a natural challenge to this type of applied field research, and every attempt was made to design and follow a strong quasi-experimental design to make up as much as possible for the challenges imposed by this sample size limitation (e.g., using a randomly selected non-participant comparison group and actively encouraging participation from all members of the existing EHP groups that participated in this research).

An additional limitation was the inability to conduct follow-up interviews with employees who opted out of the study after the baseline data collection. The participating organization's legal policies prevented the researchers from contacting employees individually once they ceased participating. Therefore, it was impossible to determine if employees had simply chosen not to continue participating in the study or if they had actually stopped participating in their EHPs. In addition, data gathered from follow-up surveys may have impacted results in the analyses given the nature of the variables being measured. For example, certain perceived barriers to exercise or low exercise self-efficacy may have played a role in an employee's decision to not continue participating in the study. This is an issue for future researchers to be aware of and hopefully to plan for when designing their own research along these lines.

Another potential limitation to the study was the amount of the incentive offered to EHP participants by the participating organization. It was believed that the pre-existing $200 quarterly incentive provided by the sample organization to EHP participants would be sufficient to encourage these individuals to also participate in the data collections that were a necessary part of

the present research. Apparently this was not the case, as is evident in the high rates of attrition over time. These attrition rates make some sense when it is recognized that the quarterly bonus was awarded to EHP participants regardless of their willingness to complete the surveys that provided data for the present research. As such, participants in the present study who were also participating in one of the EHP programs were not being directly rewarded for participating in the study in contrast to the non EHP participants, who were receiving a small incentive to provide data (but no quarterly bonus from the organization). More research, quite possibly qualitative in nature, and conducted in advance of a longitudinal study of this nature with the likely participants (i.e., as prework) might help researchers to establish more enticing incentive plans that could encourage higher rates of participation over time.

Additional Future Research

Future research needs to continue to examining EHP outcomes from a long term perspective. Presently, most EHP studies rely on measuring data from only two time points (Anshel et al., 2010; Blair et al., 2012; Mills et al., 2007; Warner et al., 1998). Researchers then attempt to draw long term conclusions based upon those results regarding employee health and financial ROI. More long-term empirical evidence is needed to determine whether these assumptions hold true.

More research is also needed to examine the possible causes as to why EHP outcomes tend to revert back to baselines measures over time. One possible reason is that employees no longer receive the support and guidance that are provided in a structured EHP, so they are more likely to "revert to old habits." Another explanation for the identified trends goes back to the "carrot versus the stick" argument. It is possible that participants were only engaging in EHPs to receive their quarterly incentive bonus and get lower insurance premiums, which would help to explain the

reversion to baseline results at Time 3. Motives for participating in an EHP should be examined further. Brewer et al. (2000) suggest that employees' exercise self-efficacy levels impact their adherence to exercise programs. Results from the present study support this assertion, demonstrating a positive relationship between exercise self-efficacy and positive EHP outcomes. However, the programs examined in the present study did not appear to increase participants' levels of exercise self-efficacy. Future research should focus on identifying strategies that would ensure beginner or orientation level EHPs are efficacy building.

Future research should is also needed to further examine the impact of core self-evaluations on EHP outcomes. Participants' core self-evaluations were significantly correlated with many of the measured EHP outcomes, which may have implications regarding the efficacy of EHPs. Although it was only used as a covariate in the present study, it is possible that the observed outcomes were due in part to participants' overall self-dispositions rather than the effectiveness of the EHP in which they participated. Judge and Bono (2001) found a significant relationship between core self-evaluations and some of the outcomes measured in the present study (e.g. self-efficacy and psychological well-being). Future research should work to isolate EHP participants' core self-evaluations and examine the impact they have on EHP outcomes versus the EHPs themselves.

Implications and Conclusions

The present study further supports previously identified antecedents and outcomes to EHP participation. Employees participating in EHPs demonstrated many of the same outcomes previously reported in literature. However, one of the main research goals of this study was to determine if the effects of EHP participation are sustained over time. The present results suggest that these benefits may not be sustained over even a short period of time. Indeed, the present data

indicate that the perceived psychological benefits of EHP participation begin to diminish quite quickly following the completion of such programs (i.e., within the first month). Bearing this in mind, organizations are advised to make a concerted effort to promote continuous employee involvement in EHPs or to develop and offer longer-term focused programs of this nature to ensure that the benefits of involvement with this type of health-promoting experience can be sustained. It is evident that offering isolated 10-week programs is not sufficient for organizations seeking to instill true and lasting health behavior changes among their employees.

Organizations and their employees can both benefit from the present research. For organizations, these findings provide further insight on how to tailor EHPs to particular employee populations and what types of psychological outcomes might be worth including in target outcomes for change as a result of such programs. The present results can, therefore, help to guide efforts to develop more accurate estimates of the long term ROI of EHPs. For employees, this study further supports the notion that participating in an EHP can have psychological benefits, including lowered levels of perceived stress and improved levels of psychological well-being. There is ample evidence supporting the implementation of EHPs in organizations. It is now time for organizations to take the next step in employee wellness by improving the long term impact of these programs.

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APPENDIX A

SURVEY MEASURES GIVEN TO PARTICIPANTS

Informed Consent Form

Purpose of the Study

This study is being conducted by Spencer Clancy, a graduate student at the University of Tennessee at Chattanooga, under the supervision of Dr. Chris Cunningham. The purpose is to examine the psychological outcomes occurring from participating in company-sponsored employee wellness programs. It will also be used to help examine the relationship between barriers to exercise and exercise self-efficacy that keep employees from participating in company sponsored health promotion programs.

What will I have to do?

If you agree to participate you will be asked to complete three 20-30-minute surveys over a period of four months that include questions about your overall job attitudes, general health perceptions, and a few demographic questions to help us describe the final group of respondents in general terms.

What are the risks to me?

There are very few risks to you if you participate in this study. If any question makes you uncomfortable, you can skip that question or withdraw from the study completely. If you decide to quit at any time before you have finished the survey, your answers will NOT be recorded. **We really need complete surveys, though, so we greatly appreciate your full cooperation.**

Confidentiality

Your responses will be kept completely confidential and anonymous (no one will know your name or identity and your answers will only be viewed by the researchers). Your employer will only see an average summary across all respondents when the study is finished.

Voluntary participation

Your participation in this study is completely your choice. You may stop or withdraw at any time.

How the findings will be used

Results of the study will be used to improve the quality of health promotion programming in your organization and to educate other professionals in educational settings or professional conferences, and in professional journals.

Contact information

If you have any concerns or questions about this study, please contact Spencer Clancy at Spencer.Clancy@gmail.com or Dr. Chris Cunningham at Chris-Cunningham@utc.edu or 423-425-4264. You may also contact the chair of the UTC IRB committee, Dr. Weathington at 423-425-4289. By completing and returning this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty. Thank you in advance for your assistance and participation.

The Institutional Review Board of The University of Tennessee at Chattanooga (FWA00004149)
has approved this research project (#11-097)

***By indicating your consent below, you are acknowledging that you reviewed the information above and are willing to participate in this research.**

◯ Yes, I consent to participate in this study.

Please respond to the following questions to the best of your ability.

Your honest and full responses are appreciated.

***To help us link your responses throughout this study, please enter your BCBST Employee ID number (Your 6 number ID with no letters).**

***Do you currently participate in one of Blue Cross Blue Shield's company-sponsored employee fitness programs (e.g. Genesis, Thrive, or Get Fit)?**

◯ Yes ◯ No

***If you responded "Yes" to the previous question, please indicate which program you are a participant of.**

◯ Genesis ◯ Thrive ◯ Get Fit ◯ I do not currently participate in one of these programs

If you are not currently involved in one of the BCBS programs mentioned above, do you still exercise in the company-sponsored fitness facility or a non-workplace exercise facility?

◯ Yes ◯ No ◯ N/A

Please answer the following questions about your exercise behaviors by entering a number (example: 3) in the spaces provided.

How many times per week do you use the company sponsored exercise facilities? _____

How many minutes would you say your typical exercise experience lasts on any one of these days? _____

How would you rate your typical exercise experience with regards to level of intensity?

◯ Not at all intense
◯ A little intense
◯ Somewhat intense
◯ Moderately intense
◯ Quite a bit intense
◯ Very intense
◯ Extremely intense

Which of the following best describes your typical, day-to-day level of physical activity?

◯ Vigorous activity ◯ Moderate activity ◯ Minimal activity ◯ Sitting/No activity

Please respond to the following questions to the best of your ability.

Thank you for your honest and complete responses.

Please respond to each of the following to questions to help us better understand the nature of the work you do

How long have you worked for BCBS?

In what department/area of BCBS do you work?

Please select your job status:

- ◯ Salary Policy
- ◯ Trades & Labor
- ◯ Specialist/Excluded

How stressful has your life been over the last month?

- ◯ Not at all intense
- ◯ A little intense
- ◯ Somewhat intense
- ◯ Moderately intense
- ◯ Quite a bit intense
- ◯ Very intense
- ◯ Extremely intense

Within the past month, have you experienced any type of positive work event (e.g. being promoted or getting a raise in pay)?

Within the past month, have you experienced any type of negative work event (e.g. being disciplined or demoted)?

Please enter your age

(round to the nearest year):

Please provide the following general physical information about you so that we may better understand the impact of the Workplace Health and Wellness Programs.

My current weight is (in lbs. - type in just the number):

My current height is (in feet and inches - type the number of feet, number of inches; no other characters or spaces):

What is your primary ethnicity/race?

- ◯ Hispanic or Latino
- ◯ White (Not Hispanic or Latino)
- ◯ Black or African American (Not Hispanic or Latino)
- ◯ Native Hawaiian or Other Pacific Islander (Not Hispanic or Latino)
- ◯ Asian ((Not Hispanic or Latino)
- ◯ American Indian or Alaska Native (Not Hispanic or Latino)

I am...

◯ Male ◯ Female

I am...

◯ Married/Living as Married ◯ Single ◯ Divorced/Widowed

Please respond to the following questions to the best of your ability.

Thank you for your honest and complete responses.

Please indicate in the blank next to each statement the extent to which you feel the given statement represents the reason your organization provides Health and Wellness programs, such as *Thrive* and *Genesis*, to employees. If you do not participate in the programs answer in terms of why you think BCBS offers these programs to employees.

Answer based on the following 7-point scale.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
In order to motivate employees	◯	◯	◯	◯	◯	◯	◯
To enhance the organization's reputation	◯	◯	◯	◯	◯	◯	◯
To attract better employees	◯	◯	◯	◯	◯	◯	◯
To prevent employees from leaving	◯	◯	◯	◯	◯	◯	◯
To decrease employee absenteeism	◯	◯	◯	◯	◯	◯	◯
Because it is the "right thing to do"	◯	◯	◯	◯	◯	◯	◯
To reward long time employees	◯	◯	◯	◯	◯	◯	◯
As an alternative monetary compensation	◯	◯	◯	◯	◯	◯	◯
To increase job satisfaction	◯	◯	◯	◯	◯	◯	◯
To reward employees for doing a good job	◯	◯	◯	◯	◯	◯	◯
Because of government regulations and laws	◯	◯	◯	◯	◯	◯	◯
Because of contractual obligations	◯	◯	◯	◯	◯	◯	◯
Because employees expect this benefit to be offered	◯	◯	◯	◯	◯	◯	◯
To promote psychological health	◯	◯	◯	◯	◯	◯	◯
To promote physiological health	◯	◯	◯	◯	◯	◯	◯

Are there any other reasons why BCBS provides these programs to employees?

Below are several statements about you with which you may agree or disagree. Using the response scale below, indicate your agreement or disagreement with each item by selecting the appropriate option on the scale

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am confident I get the success I deserve in life.	◯	◯	◯	◯	◯
Sometimes I feel depressed.	◯	◯	◯	◯	◯
When I try, I generally succeed.	◯	◯	◯	◯	◯
Sometimes, when I fail I feel worthless.	◯	◯	◯	◯	◯
I complete tasks successfully.	◯	◯	◯	◯	◯
Sometimes, I do not feel in control of my work.	◯	◯	◯	◯	◯
Overall, I am satisfied with myself.	◯	◯	◯	◯	◯
I am filled with doubts about my competence.	◯	◯	◯	◯	◯
I determine what will happen in my life.	◯	◯	◯	◯	◯
I do not feel in control of my success in my career.	◯	◯	◯	◯	◯
I am capable of coping with most my problems.	◯	◯	◯	◯	◯
There are times when things look pretty bleak and hopeless to me.	◯	◯	◯	◯	◯

Please respond to the following questions to the best of your ability.

Thank you for your honest and complete responses.

Please indicate your level of agreement or disagreement with each of the following statements on the scale provided.

I am discouraged from participating in my organization's fitness program because...

	Disagree Strongly	Disagree Moderately	Disagree Somewhat	Neutral	Agree Somewhat	Agree Moderately	Agree Strongly
...My job demands don't allow me to take the time	◯	◯	◯	◯	◯	◯	◯
...I don't have time due to family	◯	◯	◯	◯	◯	◯	◯
...I'm too stressed	◯	◯	◯	◯	◯	◯	◯
...I'm too tired	◯	◯	◯	◯	◯	◯	◯
...I don't feel motivated enought to work out	◯	◯	◯	◯	◯	◯	◯
...I don't like the way exercise makes me feel	◯	◯	◯	◯	◯	◯	◯
...I don't want to improve my health or fitness	◯	◯	◯	◯	◯	◯	◯
...I don't see the benefit of exercise	◯	◯	◯	◯	◯	◯	◯
...I am embarrassed to exercise around co-workers	◯	◯	◯	◯	◯	◯	◯
...I am embarrassed for others to see my body	◯	◯	◯	◯	◯	◯	◯
...I am embarrassed to wear non-professional clothing	◯	◯	◯	◯	◯	◯	◯
...my current health problems prevent me from exercising	◯	◯	◯	◯	◯	◯	◯
...traveling prevents me from using the Fitness Center	◯	◯	◯	◯	◯	◯	◯
...membership costs are too high	◯	◯	◯	◯	◯	◯	◯
...the facility is not nice enough	◯	◯	◯	◯	◯	◯	◯
...fitness hours are inconvenient	◯	◯	◯	◯	◯	◯	◯
...I don't know what exercise to do	◯	◯	◯	◯	◯	◯	◯

Please respond to the following questions to the best of your ability.

Thank you for your honest and complete responses.

Please rate your confidence regarding each of the following statements on the scale provided.

How confident are you that you would be able to . . .

	Not at all	A little bit	Somewhat	Moderate	Quite a bit	Very	Completely
Follow your eating plan when you are in a bad mood (e.g. anxious, depressed,irritable)?	◯	◯	◯	◯	◯	◯	◯
Follow your eating plan when you are bored?	◯	◯	◯	◯	◯	◯	◯
Follow your eating plan on the weekends?	◯	◯	◯	◯	◯	◯	◯
Follow your eating plan when you are at a party or at dinner with friends and family?	◯	◯	◯	◯	◯	◯	◯
Follow your eating plan when many appealing high-calorie foods are available?	◯	◯	◯	◯	◯	◯	◯
Follow your exercise plan when you get very busy?	◯	◯	◯	◯	◯	◯	◯
Follow your exercise plan when it interferes with spending time with your friends or family?	◯	◯	◯	◯	◯	◯	◯
Follow your exercise plan when you are sore or tired?	◯	◯	◯	◯	◯	◯	◯
Follow your exercise plan when you are in a bad mood (e.g. anxious, depressed, irritable)?	◯	◯	◯	◯	◯	◯	◯
Follow your exercise plan when your exercise workout is not enjoyable?	◯	◯	◯	◯	◯	◯	◯

Instructions: For each question below, check the answer that applies to you in regard to how you feel and how things have been going for you.

Have you been bothered by nervousness or your "nerves" in the past month?

◯ Extremely so- to the point where I could not work or take care of things

◯ Very much so

◯ Quite a bit

◯ Some- Enought to bother me

◯ A little

◯ Not at all

How much energy, pep, or vitality did you have or feel during the past month?

◯ Very full of energy- lots of pep

◯ Fairly energetic most of the time

◯ My energy level varied quite a bit

◯ Generally low in energy or pep

◯ Very low in energy or pep most of the time

◯ No energy or pep at all- I felt drained, sapped

I felt downhearted and blue during the past month

- ◯ None of the time
- ◯ A little of the time
- ◯ Some of the time
- ◯ A good bit of the time
- ◯ Most of the time
- ◯ All of the time

I was emotionally stable and sure of myself during the past month

- ◯ None of the time
- ◯ A little of the time
- ◯ Some of the time
- ◯ A good bit of the time
- ◯ Most of the time
- ◯ All of the time

I felt cheerful, lighthearted during the past month

- ◯ None of the time
- ◯ A little of the time
- ◯ Some of the time
- ◯ A good bit of the time
- ◯ Most of the time
- ◯ All of the time

I felt tired, worn out, used up, or exhausted during the past month

- ◯ None of the time
- ◯ A little of the time
- ◯ Some of the time
- ◯ A good bit of the time
- ◯ Most of the time
- ◯ All of the time

Please respond to the following questions to the best of your ability.

Thank you for your honest and complete responses.

Do you find your job stressful?

For each of the following words or phrases, mark:

- **"Yes" if it describes your job**
- **"No" if it does not describe it**
- **"?" if you cannot decide**

	Yes	No	?
Demanding...	◯	◯	◯
Pressured...	◯	◯	◯
Hectic...	◯	◯	◯
Calm...	◯	◯	◯
Relaxed...	◯	◯	◯
Many things stressful...	◯	◯	◯
Pushed...	◯	◯	◯
Irritating...	◯	◯	◯
Under Control...	◯	◯	◯
Nerve Wracking...	◯	◯	◯
Hassled...	◯	◯	◯
Comfortable...	◯	◯	◯
More stressful than I'd like...	◯	◯	◯
Smooth-Running...	◯	◯	◯
Overwhelming...	◯	◯	◯

Think of your job in general. All in all, what is it like most of the time?

For each of the following words or phrases, mark:

- **"Yes" if it describes your job**
- **"No" if it does not describe it**
- **"?" if you cannot decide**

	Yes	No	?
Pleasant	◯	◯	◯
Bad	◯	◯	◯
Ideal	◯	◯	◯
Waste of time	◯	◯	◯
Good	◯	◯	◯
Undesirable	◯	◯	◯
Worthwhile	◯	◯	◯
Worse than most	◯	◯	◯
Acceptable	◯	◯	◯
Superior	◯	◯	◯
Better than most	◯	◯	◯
Disagreeable	◯	◯	◯
Makes me content	◯	◯	◯
Inadequate	◯	◯	◯
Excellent	◯	◯	◯
Rotten	◯	◯	◯
Enjoyable	◯	◯	◯
Poor	◯	◯	◯

Please respond to the following questions to the best of your ability.

Thank you for your honest and complete responses.

This scale consists of a number of items that describe how you act at work. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you generally feel this way. Use the following scale to record your answers.

Think about your current workplace...

	Strongly Disagree	Slightly Disagree	Neutral	Slight Agree	Strongly Agree
I would be very happy to spend the rest of my work career with my current organization.	◯	◯	◯	◯	◯
I enjoy discussing my organization with people outside it.	◯	◯	◯	◯	◯
I really feel as if my organization's problems are my own.	◯	◯	◯	◯	◯
I think I could easily become as attached to another organization as I am to my current job.	◯	◯	◯	◯	◯
I do not feel like "part of the family" at my organization.	◯	◯	◯	◯	◯
I do not feel "emotionally attached" to my organization.	◯	◯	◯	◯	◯
This organization has a great deal of personal meaning for me.	◯	◯	◯	◯	◯
I do not feel a strong sense of "belonging" to my organization.	◯	◯	◯	◯	◯

Respond to the following statements using the scale provided...

	Strongly Disagree	Slightly Disagree	Neutral	Slight Agree	Strongly Agree
If I quit my job without having another one lined up, I am not afraid of what might happen.	◯	◯	◯	◯	◯
It would be very hard for me to leave my organization right now, even if I wanted to.	◯	◯	◯	◯	◯
Too much in my life would be disrupted if I decided I wanted to leave my organization now.	◯	◯	◯	◯	◯
It wouldn't be too costly for me to leave my organization now.	◯	◯	◯	◯	◯
Right now, staying with my organization is a matter of necessity as much as desire.	◯	◯	◯	◯	◯
I feel that I have too few options to consider leaving my organization now.	◯	◯	◯	◯	◯
One of the few serious consequences of leaving my organization would be the scarcity of available alternatives.	◯	◯	◯	◯	◯
One of the major reasons I continue to work for my organization is that leaving would require considerable personal sacrifice – another organization may not match the overall benefits I have now.	◯	◯	◯	◯	◯

Respond to the following statements using the scale provided...

	Strongly Disagree	Slightly Disagree	Neutral	Slight Agree	Strongly Agree
I think that people these days move from compant to company to often.	◯	◯	◯	◯	◯
I do not believe that a person must always be loyal to his/her organization.	◯	◯	◯	◯	◯
Jumping from organization to organization does not seem at all unethical to me.	◯	◯	◯	◯	◯
One of the major reasons I continue work for my organization is that I believe loyalty is important and I therefore feel a sense of moral obligation to remain.	◯	◯	◯	◯	◯
If I got another offer for a better job elsewhere I would not feel it was right to leave my organization.	◯	◯	◯	◯	◯
I was taught to believe in the value of remaining loyal to one organization.	◯	◯	◯	◯	◯
Things were better in the days when people stayed with one organization for most of their careers.	◯	◯	◯	◯	◯
I do not think that wanting to a "company man" or "company woman" is sensible anymore.	◯	◯	◯	◯	◯

Thank you for completing the survey! If you wish to enter your name into the drawing for the MP3 music player please enter your name and email below. This information will be be stored separate from your responses and will only be used in the drawing

APPENDIX B

IRB APPROVAL LETTER

THE UNIVERSITY of TENNESSEE CHATTANOOGA

Institutional Review Board
Dept. 4905
615 McCallie Avenue
Chattanooga, TN 37403-2598
Phone: (423) 425-4443

MEMORANDUM

IRB #: 11-097

TO: Spencer Clancy
Dr. Chris Cunningham

FROM: Lindsay Pardue, Director of Research Integrity
Dr. Bart Weathington, IRB Chair

DATE: June 28, 2011

SUBJECT: Evaluating the Psychological Benefits of On-Site Employee Health Programs

The IRB has reviewed and approved your application and assigned you the IRB number listed above. You must include the following approval statement on research materials seen by participants and used in research reports:

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project (# 11-097).

Please remember that you must complete Form C when the project is completed or provide an annual report if the project takes over one year to complete. The IRB Committee will make every effort to remind you prior to your anniversary date; however, it is your responsibility to ensure that this additional step is satisfied.

You must contact the IRB Committee immediately if you make any significant changes to your current research design or any instruments used in conducting the study. You also must notify the IRB Committee immediately if you encounter any significant, adverse effects that pose a risk to your subjects.

For any additional information, please consult our web page http://www.utc.edu/irb or email instrb@utc.edu

Best wishes for a successful research project.

VITA

Spencer Clancy is from Knoxville, Tennessee. He attended Maryville College and received a Bachelor of Arts in Psychology with a minor in Spanish in May 2009. While at Maryville College he engaged in various research projects with professors including a senior thesis. Spencer also served as a captain of Maryville College's varsity football team where he earned Academic All-Conference honors in each of his four seasons. Spencer began graduate studies in August 2010 at The University of Tennessee at Chattanooga. He has worked as a graduate assistant in UTC's Walker Teaching Resource Center, interned with a local government agency, and partnered with local organizations to conduct research throughout his time at UTC. Spencer was inducted into the Golden Key Honor Society while at UTC. Spencer graduates in May 2012 with a Master of Science in Psychology: Industrial – Organizational.