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REPORT FROM THE FIELD:

Effect of Workplace Laughter Groups on Personal Efficacy Beliefs

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Abstract

This study measured the impact of a purposeful aerobic laughter intervention on employees' sense of self-efficacy in the workplace. Participants were 33 employees of a behavioral health center. They met for 15-minute sessions on 15 consecutive workdays and engaged in a guided program of non-humor dependent laughter. The primary outcome measure was the Capabilities Awareness Profile, a self-report self-efficacy questionnaire. Employees demonstrated a significant increase in several different aspects of self-efficacy, including self-regulation, optimism, positive emotions, and social identification, and they maintained these gains at follow-up. Purposeful laughter is a realistic, sustainable, and generalizable intervention that enhances employees' morale, resilience, and personal efficacy beliefs.

Key Words: laughter, workplace wellness, self-efficacy

Effect of Workplace Laughter Groups on Personal Efficacy Beliefs

In today's world, individuals are bombarded with the idea that "laughter is the best medicine." There are accounts all over the popular media that proclaim the supposed physical, emotional, social, and spiritual benefits of laughter. Still, some researchers warn that our popular understanding about the positive effects of laughter has gotten ahead of the science that is investigating these claims (Martin, 2001; Provine, 2000; Salovey et al., 2000). They point out that the research investigations in this area have been subject to numerous methodological problems, such as the failure to distinguish between laughter and humor, the failure to confirm the presence of laughter, inadequate control conditions, and small sample sizes. There are not enough research findings for us to suggest that laughter is an all-around healing agent, but there is sufficient evidence for us to believe that laughter has some positive, quantifiable effects on certain aspects of health. This article describes a field study that examined the impact of laughter on individuals' sense of self-efficacy.

One of the biggest methodological problems in the research on laughter is the failure to distinguish between humor and laughter. Humor is a construct, while laughter is a physiological event (Mahony et al., 2002). While the effects of humor are cognitive (e.g., the recognition of some incongruity and perhaps an increase in perceived control), the effects of laughter are physical (e.g., increasing your circulation and exercising your skeletal muscles). Humor is a stimulus, and laughter is one of several possible behavioral responses to that stimulus (Fry, 1992). When this distinction is made, it is easier to see that humor and laughter are distinct (although often associated) events. Humor can occur without laughter, and laughter can occur without humor. In this study, the focus is on laughter that occurs in the absence of humor.

In the research that examines the hypothesis that laughter is beneficial to one's health, there are several purported pathways that link laughter with healthy outcomes (Martin, 2001; Salovey et al., 2000). First, laughter may lead to direct changes in physiological systems, and this may have a beneficial effect on health. Second, laughter may lead to more positive emotional states, which in turn may have a beneficial effect on health. Third, laughter may lead to more effective strategies for coping with stress, which may decrease the negative impact that stress can have on health outcomes. Finally, laughter may increase one's social support, which in turn may improve health.

There is some evidence to support these pathways, although most studies fail to separate out the effects of humor and laughter. Scientists have attempted to demonstrate the physiological benefits of laughter in the management of pain and discomfort (e.g., Cogan et al., 1987; Rotton & Shats, 1996; Weisenberg et al., 1998), the control of blood glucose levels in people with diabetes (Hayashi et al., 2003), the functioning of the immune system in normal subjects (e.g., Dillon et al., 1985; Labott et al., 1990; Lefcourt et al., 1990), the reduction of allergic responses in patients with atopic dermatitis (Kimata, 2001), and the functioning of blood vessels in healthy volunteers (Miller, 2005).

While some of these research attempts have been successful, others (for example, the immune system studies) have raised great controversy because of the failure to control for other experimental effects such as distraction (Provine, 2000). Critics have warned that the research on laughter and physical health does not acknowledge the complexity of physiological systems and the individual differences in the experience of laughter (Martin, 2001; Saper, 1988). Nor does the research differentiate between laughter's unique physiological profile and the profile of other active vocalizations such as shouting or cheering (Provine, 2000).

Researchers have examined the impact of humor and laughter not only on physical health, but also on emotional health. More specifically, researchers have

focused on aspects of emotional health such as perceived control, optimism, and acceptance of limitations. For example, Solomon (1996) asked 155 adults to complete questionnaires that measured their propensity to use humor and laughter, their satisfaction with the aging process, and their perceived control. The instrument that measured perceived control was comprised of three scales: personal efficacy, interpersonal relationship control, and sociopolitical control. The personal efficacy scale included statements such as “When I make plans, I am certain to make them work,” and “When I get what I want, it’s usually because I worked hard for it.” The results of the study showed that laughter and humor affected participants’ satisfaction with the aging process through the variable of perceived control. Solomon speculated that being able to laugh gave participants a sense of control over their situation, and it is known that people who have a sense of control over their daily life are more satisfied with their housing arrangements, lives, and selves, all of which are important to the process of aging well. In addition, having a sense of self-efficacy allows people to be capable of laughter. Or, as Solomon explained it, “People who believed they could make their plans work also believed that it is better to laugh than cry and that people are not too serious than is good for them...” (p.265).

Purpose

The present study was designed to expand the research that examines the impact of laughter on emotional health. The purpose of the study was to form workplace laughter groups and measure the impact of group participation on employees’ sense of self-efficacy. The study is unique in that the intervention consisted of “laughter without humor;” that is, participants engaged in exercises designed to evoke the physiological act of laughter without relying on humorous stimuli. In this way, laughter was isolated as a pure independent variable, not confounded by the cognitive effects of humor. This study is also unique because to

our knowledge, there are no published studies that document the benefits of workplace laughter groups.

Self-Efficacy and Work Performance

Self-efficacy is the belief in one's ability to organize and carry out the courses of action necessary to achieve a goal or manage a situation (Bandura, 1986). This personal belief influences the choices people make, the effort they put forth in working toward a goal, how long they persist when confronted with obstacles, and how they feel in the process of working toward goals. There are four principle sources of information from which personal efficacy beliefs are constructed. First, individuals experience greater self-efficacy when they are successful in taking small steps toward their goals (i.e., mastery experiences). Second, vicarious experiences can increase self-efficacy when individuals observe the achievements of others who are similar to themselves. Third, verbal persuasion can increase self-efficacy when significant others express faith in an individual's capabilities and these positive appraisals lead to self-affirming beliefs. Finally, individuals are more inclined to make positive judgments of their capabilities when they are not bothered by aversive physiological or affective arousal (Bandura, 1986).

Self-efficacy beliefs affect performance in the workplace. Before workers initiate effort on a task, they weigh, evaluate, and integrate information about their perceived capabilities. When workers perceive a high sense of self-efficacy, they activate sufficient effort to get the task done well, and they likely produce successful outcomes. In contrast, workers who perceive a low sense of self-efficacy do not activate sufficient effort and likely fail on the task (Bandura, 1997).

Expectations of personal efficacy influence workers' resilience, as well. If workers perceive themselves as being highly capable, they are more likely to sustain their task-related effort in the face of obstacles or aversive organizational demands. They engage in problem-solving coping and determine ways to restructure their work

situations or manage their job demands better (Bandura, 1997). However, if they perceive low self-efficacy, the obstacles prompt them to cease their efforts prematurely and retain feelings of futility concerning their personal competence. The low self-efficacy workers engage in escapist coping, performing their work in an indifferent and superficial manner and withdrawing their involvement in the work life. Their self-debilitating expectations about their performance create a sense of defeat and perpetuate further self-debilitating expectations (Bandura, 1997).

A recent meta-analysis of research findings regarding the relationship between self-efficacy and work performance reviewed 114 studies and found a 28% gain in task performance due to self-efficacy (Stajkovic & Luthans, 1998). This gain in task performance far exceeds the estimated gain from goal setting (10.39%), feedback interventions (13.6%), and organizational behavior modification (17%) (see Stajkovic & Luthans for references). This suggests that organizational managers can improve the performance of their employees in an efficient and relatively inexpensive manner by enhancing employees' personal efficacy beliefs. They may accomplish this by creating a workplace environment that creatively fosters the four sources of self-efficacy described earlier.

Laughter and Self-Efficacy

Workplace laughter groups may be one mechanism for creating a workplace environment that fosters mastery experiences, vicarious experiences, verbal persuasion, and a reduction in aversive physiological and affective states. In the workplace laughter groups we designed, participants would complete a series of exercises that built upon each other and took small steps toward the goals of experiencing and sustaining laughter. In this way, participants would experience small successes early on and then enhance their sense of mastery over the course of fifteen days.

The laughter groups would naturally lead to vicarious experiences of success, as group members observe others achieving the benefits of laughter. The groups were designed to have a strong social component and to facilitate a safe environment by discouraging any derisive laughter. We posited that as coworkers began to relate to each other in a new and somewhat unconventional manner, they would strengthen their connections with each other. This social bonding is predictable based on what researchers call the “open-loop” nature of the brain’s emotional centers, the limbic system. This line of research has found that one person transmits signals that can alter the emotions and physiology of another person, thereby making emotions “contagious” whenever people are near one another, even if the contact is nonverbal (Goleman et al., 2002).

The workplace laughter groups were designed so that verbal persuasion would be a prominent characteristic of the groups. The group leader would give generous praise to the participants for their efforts. She would also give frequent encouragement and express faith in the participants’ capabilities.

When individuals make a judgment about their perceived efficacy, they rely partly on the somatic information contained within their physiological and emotional states. If they are tense and viscerally aroused, or if they perceive the physiological activation that accompanies negative mood states, they are less likely to expect success. In contrast, if they are not experiencing aversive arousal, they are more inclined to construct positive self-efficacy beliefs. The act of vigorous laughter energizes our physiology in much the same way that aerobic exercise does, increasing heart and respiration rate and activating various muscle groups. After an episode of laughter, however, our bodies enjoy a relaxation effect. It follows, then, that individuals who engage in workplace laughter groups would be likely to perceive less visceral arousal after practicing sustained episodes of laughter, thereby leading them to form more positive self-efficacy judgments than individuals who do not participate.

One of the factors that can be most debilitating to one's sense of self-efficacy in the workplace is the perceived inability to turn off disturbing ruminations about negative work experiences (Bandura, 1997). Bandura suggests that to counteract these ruminations, workers need to develop diversionary efficacy, or the ability to achieve recuperative breaks from the demands of work. Since laughter creates a positive emotional state and increases perceived control, it follows that individuals who engage in workplace laughter groups would be better able to interrupt ruminative thinking patterns that sustain negative emotions and to form more positive self-efficacy judgments than individuals who do not.

Hypotheses

The purpose of this study was to form workplace laughter groups and measure the impact of group participation on employees' perceived self-efficacy. The main hypothesis was that participation in regular workplace laughter would increase workers' sense of self-efficacy, especially in four dimensions: (1) self-regulation, or the perceived competence in managing and controlling thoughts and feelings under stress; (2) optimism, or the perceived ability to remain positive about the future even in the face of stress or obstacles; (3) positive emotions, or the perceived capacity to experience and sustain positive emotions; and (4) social identification, or the perceived capacity to feel connected with others.

Method

Participants

Participants were recruited from staff employed at a large behavioral and mental health facility in the Midwest. The institutional review board of the facility approved the project. All day staff in three specific offices of the facility received an e-mail message that explained the project in broad terms (i.e., examining laughter as an approach to stress management) without revealing the specific hypotheses of the

study. Participants volunteered by responding to the message. Participants received an informed consent form that explained possible risks and benefits, the process for ensuring confidentiality and anonymity of results, and the process of debriefing after the intervention. In total, 195 staff members were invited to participate. Of this group, 37 persons entered the study and completed the pre-test (a 19% response rate), and 33 completed the intervention and post-test (an 89% completion rate). Twenty-two individuals completed a 60-90 day follow-up assessment. Of the 33 participants who completed the intervention, there were 4 males and 29 females. The average age was 48. Participants represented a variety of professions including psychologist, physician, secretary, nurse, social worker, financial counselor, and switchboard operator.

Measures

The principle measure was the Capabilities Awareness Profile, a 124-item self-report self-efficacy questionnaire (Hays et al., 2003). The CAP is a reliable and valid instrument based on Bandura's research on self-efficacy (1986; 1997), and the instrument incorporates recent developments in the areas of emotional intelligence and positive psychology (Hays et al., 2003). The CAP contains 12 subscales measuring a variety of perceived competencies that group into three categories: self, relational, and role competencies. Self competencies include self-awareness, self-acceptance, self-actualization, self-regulation, adaptability, motivation, optimism, and assertiveness. Relational competencies include social identification, empathy, and positive emotions. Role competency is a single scale. Appendix A describes each of the scales. Participants completed the CAP as the pre-test (during the week before the groups commenced), the post-test (during the week after completion of the groups), and the 60-90 day follow-up assessment.

Design and Procedure

The current study used a pre-post, follow-up design. Laughter Links is a program teaching non-humor dependent, yoga-based, purposeful aerobic laughter in a group setting. It is based upon the work of Dr. Madan Kataria, a cardiologist in Mumbai, India who combined medical research, modern science, and yoga breathing to create his own laughter technique (Kataria, 1999). Workplace laughter groups made use of this technique and met for 15 consecutive workdays. A professional laughter coach who had direct training in Dr. Kataria's approach led the classes. The program began with a 45-minute orientation session covering the background and rationale for the intervention. The orientation session emphasized the following important points:

1. Humor is highly subjective due to each individual's tastes, preferences, values, language, and culture; therefore, it can be offensive to some.
2. Laughter, on the other hand, is instinctive behavior that comes from our biological being; therefore, it is accessible and acceptable to almost everyone.
3. It is important to practice laughter in an atmosphere that fosters respect for others.
4. Laughter produces an aerobic effect similar to that of moderate exercise. Participants with health issues should check with their physician before starting a laughter program.

For the next 14 days, participants spent 15 minutes before work or during their lunch break engaging in purposeful laughter. Each class began with participants practicing the basic yoga-based laughter stance (Kataria, 1999) and then some gentle stretching. Participants then engaged in guided exercises to practice abdominal laughter. The basic exercise started with a vocalization of "Ho-ho-ho, Ha-ha-ha, He-he-he" and then proceeded with hearty, unbounded laughter. More advanced exercises blended laughter with a variety of activities, such as shaking hands, looking each other in the eye, or playing interactive games. At no point was humor used to

facilitate laughter, although participants found humor in some aspects of the class. At times, the challenge of laughing on cue became the trigger for involuntary laughter. Individual attendance was tracked.

Analysis

To prepare data for analysis, raw scale scores from the CAP were adjusted for gender norms (Hays et al., 2003) and converted to standard scores (mean = 100, SD = 10), a process which allows comparison between scales. To determine the impact of the Laughter Links Program, within-subject change in standard scores was calculated for each pairwise comparison (pre/post, pre/follow-up, and post/follow-up). Change scores were then averaged for each comparison and divided by the standard deviation of the change scores to determine effect sizes for each comparison. Paired sample t-tests for comparison of means were used to evaluate the significance of change in standard scores. The Pearson product moment correlation was used to examine the relationship between attendance and change in self-efficacy scores. Finally, the Pearson product moment correlation was also used to examine the relationship between follow-up self-efficacy scores and frequency with which participants continued to use the skills learned in the class.

Results

Table 1 shows raw scores for the 12 subscales of the CAP at pre, post, and 90-day follow-up. Figures 1-3 graphically depict changes in standardized scores for the three CAP summary scores, for the self competency subscales, and for the relational competency subscales, respectively. Table 2 shows effect sizes and significance of two-tailed t-tests for each comparison. Power analyses adjusted for paired samples revealed that there was sufficient power to detect differences between pre- and post-test scores, pre- and follow-up scores, but not sufficient power to detect differences

between post- and follow-up scores. This was due to the small magnitude of change in this comparison as well as increased variability of scores and reduced sample size at follow-up.

Thirty-three participants completed the intervention. For these participants, there was a significant positive change in each of the four hypothesized CAP subscales immediately following completion of the three-week laughter group: self-regulation ($t = 5.91, p < .001$), optimism ($t = 5.07, p < .001$), positive emotions ($t = 5.32, p < .001$), and social identification ($t = 4.82, p < .001$). Twenty-two participants completed a 90-day follow-up CAP profile. For these participants there remained a significant positive change in the four hypothesized self-efficacy subscales after 90-days post intervention: self-regulation ($t = 5.40, p < .001$), optimism ($t = 4.00, p < .001$), positive emotions ($t = 3.07, p < .01$), and social identification ($t = 2.24, p < .05$).

The consistent trend that can be seen from Table 1 and Figures 1-3 is a considerable increase in self-efficacy immediately following the laughter group, followed by a small reduction in self-efficacy at 90-days post intervention. Pairwise comparisons (Table 2) showed a statistically significant increase in all 12 self-efficacy subscale scores from the beginning to the end of the laughter group, with effect sizes ranging from .59 (medium) to 1.03 (large). At 90-day follow-up all subscales showed some mild regression to the mean, although comparisons between pre and 90-day follow-up still showed significant improvements for all subscales except for empathy. Changes in self-efficacy between post and 90-day follow-up were non-significant with only one exception (self-acceptance).

With regards to the three overarching categories of self-efficacy (self, relational, and role competencies; see Figure 1), self competencies showed relatively larger positive gains than relational competencies following the laughter program, although gains in each category were significant. Individual subscales showing the strongest increases and maintenance of positive change were self-regulation,

motivation, optimism, and assertiveness, all of which are self competencies. The role compliance subscale showed a strong increase across the study, as well, and this has important implications for occupational health.

Correlation analyses showed no relationship between attendance and change in self-efficacy scores or between follow-up self-efficacy scores and frequency with which laughter exercises were utilized during the 90-day follow-up period. In addition, of the 22 people who completed a follow-up CAP, there was considerable variability in the frequency with which they utilized the laughter skills, making it less likely that follow-up CAP scores were differentially affected by attrition.

Discussion

The four hypotheses in this study were supported. Increases in self-regulation, optimism, positive emotions, and social identification were significant and maintained at 90-day follow-up. These results, coupled with significant changes in a broad array of self, relational, and role competencies, are encouraging for the context in which this study took place as well as for broader organizational wellness applications. The staff at this facility routinely face increased workloads, burnout, negative ruminations and anxiety about the future, and a sense of social disconnectedness as productivity expectations increase and organizational expansion separates people. That a daily, 15-minute intervention could produce such significant positive changes in key areas of self-efficacy without changing any other environmental factors is encouraging for the field of occupational health. It was surprising to find a significant increase in role compliance: individuals' belief in their capabilities to comply with the rules and regulations of their work. This was unexpected since another common theme in this workplace is increasing resentment about rules, regulations, paperwork, and compliance standards. The laughter program was a simple and effective way to

enhance compliance with organizational regulations and provided a refreshing adjunct to the punitive and labor-intensive efforts typically employed.

The finding that self competencies increased more than relational competencies is not surprising, may be specific to the population being studied, and is consistent with other findings in the behavioral health literature; namely, that helping professionals typically demonstrate stronger relational/helping competencies than self competencies. Note the common expressions “doctors make the worst patients” and “physician, heal thyself.” This may help explain why participants not only began the study with relatively lower self competencies but also achieved greater gains in these areas. This is significant as it relates to organizational wellness in terms of helping people build resilience against burnout, set healthier boundaries, and focus on self-care. For example, one social worker commented that during the second week of the program, she began noticing a different attitude toward the piles of paperwork on her desk and found the motivation to begin a methodical effort to complete the work. A nurse who participated in the study was taken off all of his blood pressure medication during the third week of the program, and, one year later, he is still managing his blood pressure by daily use of the laughter exercises on his way to work.

Hays et al. (2003) have defined ranges of scores on the CAP that have clinical significance for interpretation based on the analysis of over 2,000 CAP profiles from clinical and non-clinical populations. Standard scores between 60-79 are categorized as “Growth Challenges” and suggest that a person may lack confidence in his or her abilities and function ineffectively in that area at least some of the time, especially under conditions of elevated stress. Scores between 80-99 are called “Growth Potentials” and indicate caution, as a person may tend to show some inconsistencies in perceived competence and effective functioning for that domain of self-efficacy. Growth Potentials are fertile areas for growth and development. Scores ranging from 100-120 are considered “Growth Assets” and suggest a person will be able to engage

in effective to enhanced functioning most of the time and will seek out opportunities to utilize this area of competency.

Examination of Figures 1-3 show that in all subscales except for empathy, participants began the study in the Growth Potential range and ended the study, even at 90-day follow-up, in the Growth Assets range. This clinically significant shift would be expected to manifest in daily workplace behaviors in four areas outlined by Bandura (1986): the choices people make, the effort they put forth in working toward a goal, how long they persist when confronted with obstacles, and how they feel in the process of working toward goals. Although not specifically assessed, anecdotal reports from participants and their colleagues supported this expectation.

This study had several limitations. First, the lack of a control group makes it difficult to rule out history and maturation effects, and the lack of adequate comparison groups makes it difficult to determine whether it was laughter specifically that led to the positive changes in self-efficacy, or whether it might have been some other aspect of the program (e.g., engaging in aerobic activity, engaging in a respiratory act, socializing with coworkers, finding humor in the experience, taking a break from the workday, etc.). Related to this was the fact that a single laughter leader led all of the groups, so it is difficult to differentiate specific intervention effects from the impact of the group leader's personal characteristics (warmth, charisma, or energy). A second limitation was that there were gains across all domains of self-efficacy, which makes it difficult to pinpoint any specific mechanisms of action that account for the success of the laughter program. However, the program was designed specifically to have maximum broad-ranging positive impact on internal (self) and social (relational) factors that impact workplace functioning and productivity.

A third limitation was potential bias in the sample due to the self-selection of study participants. For example, individuals with low personal efficacy may have refrained from volunteering for the laughter program because of a perceived lack of

benefits, and this may have biased the sample toward individuals who were more amenable to the intervention. A fourth limitation was the use of a self-report measure as the predominant outcome measure. This makes it difficult to sort out whether the demonstrated increases in personal efficacy were attributable to the intervention or, at least in part, to the expectations of the research team. Future studies should consider incorporating third party ratings, such as supervisor ratings of self, relational, and role competencies.

A strength of this study was the measurement of self-efficacy at 90 days after completion of the program. Positive findings at follow-up suggest that a time-limited intervention can have a lasting impact on self-efficacy. However, ongoing workplace laughter groups would likely have a stronger and more sustained impact.

A follow-up study that utilizes appropriate comparison groups, provides the intervention to several different workplace populations, and accounts for the impact of different group leaders would enhance scientific rigor and add substantially to the knowledge regarding the impact of such programs on occupational wellness and self-efficacy. A follow-up study should also consider whether actual changes in work behavior occur (i.e., changes in objective measures of productivity, health outcomes, benefit utilization) as a result of a laughter intervention. Nevertheless, this study presents the first step in looking at the impact of purposeful, non-humor dependent laughter on self-efficacy in the workplace.

The positive outcomes seen in this study lead to the preliminary conclusion that a workplace laughter group can appeal to a diverse range of employees, can be effective with minimal investment of time, and may have sustained positive effects on self-beliefs that have been shown to correlate with positive workplace behaviors.

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Table 1

Mean Raw Scores (Standard Deviations) for Subscales of the Capabilities Awareness Profile (CAP) at Pre-Test (N = 37), Post-Test (N = 33), and 90-day Follow-Up (N = 22)

CAP Subscale	Pre-Test Score	Post-Test Score	Follow-Up Score
<i>Self Competencies:</i>			
Self-Awareness	63.19 (13.34)	70.37 (14.42)	68.30 (15.68)
Self-Acceptance	64.56 (16.49)	73.41 (14.87)	69.20 (15.38)
Self-Actualization	63.86 (18.32)	71.30 (16.38)	68.56 (14.46)
Self-Regulation	54.88 (16.22)	65.62 (13.71)	62.84 (12.18)
Adaptability	60.30 (16.78)	68.11 (14.96)	64.77 (12.02)
Motivation	58.81 (17.33)	67.80 (15.05)	65.52 (13.53)
Optimism	62.05 (20.09)	72.63 (18.05)	68.18 (17.54)
Assertiveness	52.53 (17.40)	64.27 (14.36)	65.34 (11.16)
<i>Relational Competencies:</i>			
Social Identification	65.22 (15.31)	73.00 (14.89)	71.48 (14.04)
Empathy	71.13 (15.60)	77.27 (14.69)	75.00 (14.65)
Positive Emotions	63.36 (17.01)	74.59 (16.73)	71.69 (13.45)
<i>Role Competency:</i>			
Role Compliance	74.03 (16.81)	79.44 (14.43)	77.59 (13.91)

Table 2

*Effect Sizes for Pairwise Comparisons on Subscales of the Capabilities Awareness Profile (CAP). * = t-test for comparison of means significant to .05. ** = t-test for comparison of means significant to .01 *** = t-test for comparison of means significant to .001.*

CAP Subscale	Pre-Post (N = 33)	Post-Follow-Up (N = 22)	Pre-Follow-Up (N = 22)
<i>Self Competencies:</i>			
Self-Awareness	.75***	-.26	.59*
Self-Acceptance	.80***	-.45*	.50*
Self-Actualization	.62***	-.14	.46*
Self-Regulation	1.03***	-.28	1.15***
Adaptability	.70***	-.21	.58**
Motivation	.88***	-.19	.83***
Optimism	.88***	-.28	.85***
Assertiveness	.91***	-.09	1.08***
<i>Relational Competencies:</i>			
Social Identification	.84***	-.34	.50*
Empathy	.59**	-.15	.38
Positive Emotions	.91***	-.40	.64**
<i>Role Competency:</i>			
Role Compliance	.77***	-.41	.53*

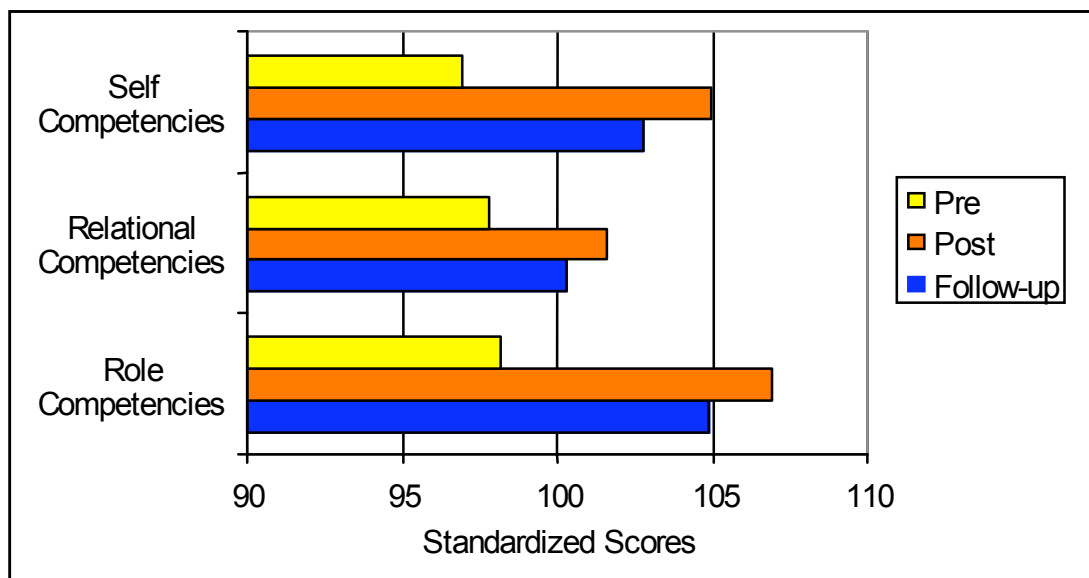
Figure Captions

Figure 1. Standardized scores for self, relational, and role competency at pre-test, post-test, and 90-day follow-up.

Figure 2. Standardized scores for self competency subscales at pre-test, post-test, and 90-day follow-up.

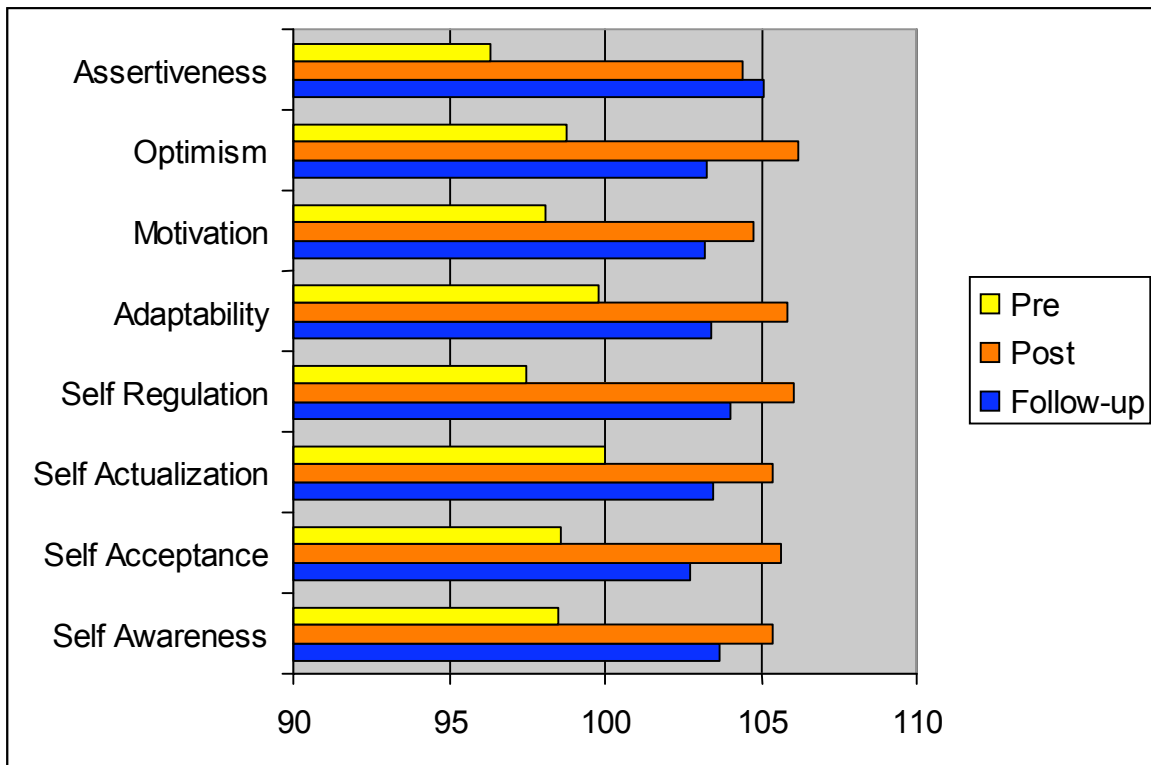
Figure 3. Standardized scores for relational competency subscales at pre-test, post-test, and 90-day follow-up.

Figure 1



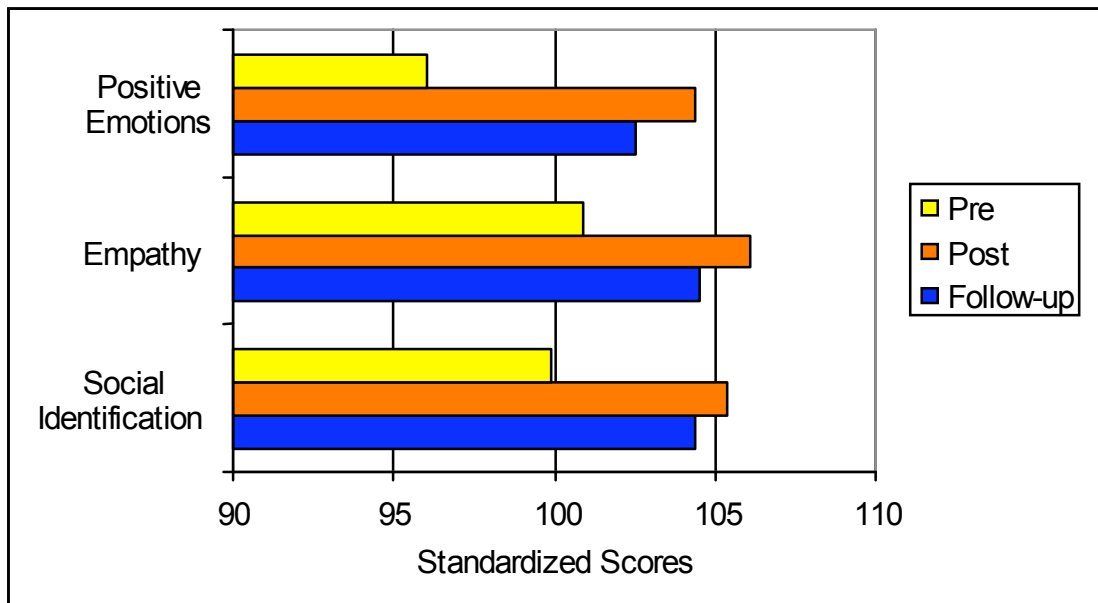
Note: Scale scores are standardized to account for norm differences and allow comparison across scales. All standard scores have a mean of 100, standard deviation of 10.

Figure 2



Note: Scale scores are standardized to account for norm differences and allow comparison across scales. All standard scores have a mean of 100, standard deviation of 10.

Figure 3



Note: Scale scores are standardized to account for norm differences and allow comparison across scales. All standard scores have a mean of 100, standard deviation of 10.

Appendix A

Subscales of the Capabilities Awareness Profile (CAP)

Self Competencies:

1. **Self-Awareness:** This scale assesses your awareness of your beliefs, values, expectations, needs, and feelings. It reflects your awareness of your limits and weaknesses, and your perceived ability to accept responsibility for your mistakes.
2. **Self-Acceptance:** This scale describes your ability to accept both positive and negative aspects of yourself. Not being critical of yourself, experiencing confidence in yourself, feeling good about yourself, and believing in yourself are characteristics of this scale.
3. **Self-Actualization:** This scale measures your ability to live up to your potential through the pursuit of challenging goals, setting high personal standards, and pursuing tasks that take you out of your comfort zone. It is associated with seeking activities and challenges that lead to a more meaningful and full life.
4. **Self-Regulation:** This scale describes your perceived competence in controlling thoughts and feelings under stress. It involves the capacity to remain calm and to work effectively under pressure.

5. **Adaptability:** This scale describes your ability to solve problems by being flexible, creative, and translating ideas into action. It is the ability to see the big picture, to look at situations from different viewpoints, and to prioritize problems based on their importance.
6. **Motivation:** This scale indicates the strength of your ability to begin and sustain behaviors to accomplish goals. An important part of coping with stress involves perseverance, and the ability to stick with difficult situations and tasks.
7. **Optimism:** This scale measures your ability to be positive and hopeful about the future even in the face of stress, setbacks, or disappointments. It reflects your capacity to look at the future with confidence and to maintain a positive attitude.
8. **Assertiveness:** This scale measures your ability to express your thoughts and feelings in a nondestructive manner. It reflects your capacity to communicate ideas and feelings in straightforward ways.

Relational Competencies:

1. **Social Identification:** This scale assesses your perceived capacity to feel connected with others. This is manifested through a sense of belonging, acceptance, and feeling secure with others.
2. **Empathy:** This scale reflects your ability to be aware of, sensitive to, and appreciative of others' thoughts and feelings. It reflects your ability to respond to others in an understanding and caring manner.

3. **Positive Emotions:** This scale assesses your capacity to experience positive emotions. The ability to experience and sustain positive emotions is associated with greater satisfaction and contentment in your work and personal life. People who are able to experience and sustain positive emotional experiences tend to be healthier and live longer.

Role Competency:

1. **Role Compliance:** This scale describes your capacity to comply with the rules and expectations of your work or school environment.

We are so pleased to have been accepted for publication by The Journal of Primary Prevention. Please note the following reference:

Article reference: Beckman, H., Regier, N., & Young, J. (2007). Effect of workplace laughter groups on personal efficacy beliefs. The Journal of Primary Prevention, 28, 167-182. The original publication is available at www.springerlink.com.