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WHITE PAPER

The Life Benefits of Managing Energy

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SUMMARY

The Johnson & Johnson Human Performance Institute, founded in 1991, is the pioneer in delivering science-based energy management training to help individuals, teams and organizations achieve sustained high performance. Also known as Corporate Athlete® training, it is based on over 30 years of proprietary research and work with elite performers, including Olympic gold medalists, military Special Forces, hostage rescue teams, surgeons, and Fortune 500 CEOs.

The Johnson & Johnson Human Performance Institute's measurement-based training uses a multidisciplinary approach built on the sciences of performance psychology, exercise physiology, and nutrition to help create lifelong behavior change. By training to expand and manage energy levels both personally and professionally, individuals can achieve high performance and well-being in work and life.

The tenets of energy management rest on helping individuals articulate a clear purpose in life and use specific strategies to manage and improve their personal energy in service of that purpose. This paper explains how the energy management change process model of 1) Purpose, 2) Truth, and 3) Action is applied and translated into outcomes at the Johnson & Johnson Human Performance Institute (JJHPI). The most popular training model is the group 2.5-day Corporate Athlete® Course whose outcomes show improvements in established measures such as the General Health Short-Form 36 (SF-36) and the Work Productivity and Activity Impairment scale (WPAI). The largest and longest-lasting improvements are seen in the SF-36 subscales for Vitality (i.e., energy), General Health, and Mental Health. At the organizational level, improvements are demonstrated for high-performance behaviors and health ratings. In addition, these techniques can be made scalable via technology, as demonstrated by the Moms in Motion Energy pilot. Here, pre- and post-partum women showed significant improvements across domains of health, energy, and well-being. The success of the JJHPI model continues to be researched with more controlled studies in progress.

INTRODUCTION

We are hard-wired to do better, whether in sport, work, or play (Ryan & Deci, 2000). Individuals and organizations try to be more productive and perform at higher levels; however this is a difficult prospect. What's more, we are faced with new and powerful changes in the way we work and live. Technology and society have changed faster in the last 50 years than any other time in history. Many of these new elements of life interfere with our ability to meet life's challenges by taxing our attention, strength, and stamina. The result is what the Johnson & Johnson Human Performance Institute calls the "human energy crisis," which leads to fatigue, disengagement, judgment errors, stress, and burnout.

To address these issues, JJHPI has created an integrated training model that incorporates behavior change at its core, along with movement and nutrition components. The foundation for behavior change is grounded in psychological science, and has been translated into an intervention that can be delivered in 1, 2 or 2.5-day immersive trainings, as well as through an eCourse, appropriately coined Energy for Performance.® The sections below describe the fundamental tenets of the model and the change process, followed by a collection of outcomes across applications.

JJHPI Model and Process: The primary training goal is to improve personal performance and increase quality of life by aligning participants' direction in life with how and where they spend their energy. The model states that increased life engagement leads to enhanced performance through focusing personal resources on a defined purpose or mission. The intervention is based on two foundational models:

1) the model of human energy, called the Energy Management Model
2) the Change Process Model

The Energy Management Model includes a four-level pyramid where each level represents a domain of energy. At the top is spiritual, followed by mental, emotional, and physical *(see Figure 1)*. The spiritual domain consists of elements that help guide people through their lives. It includes individual purpose, commitment, personal values and principles, and passion. The mental domain consists of focus, awareness, mindfulness, and having effective stories about yourself and your life. Story has been a powerful tool for helping individuals understand themselves and where to go next. The emotional domain consists

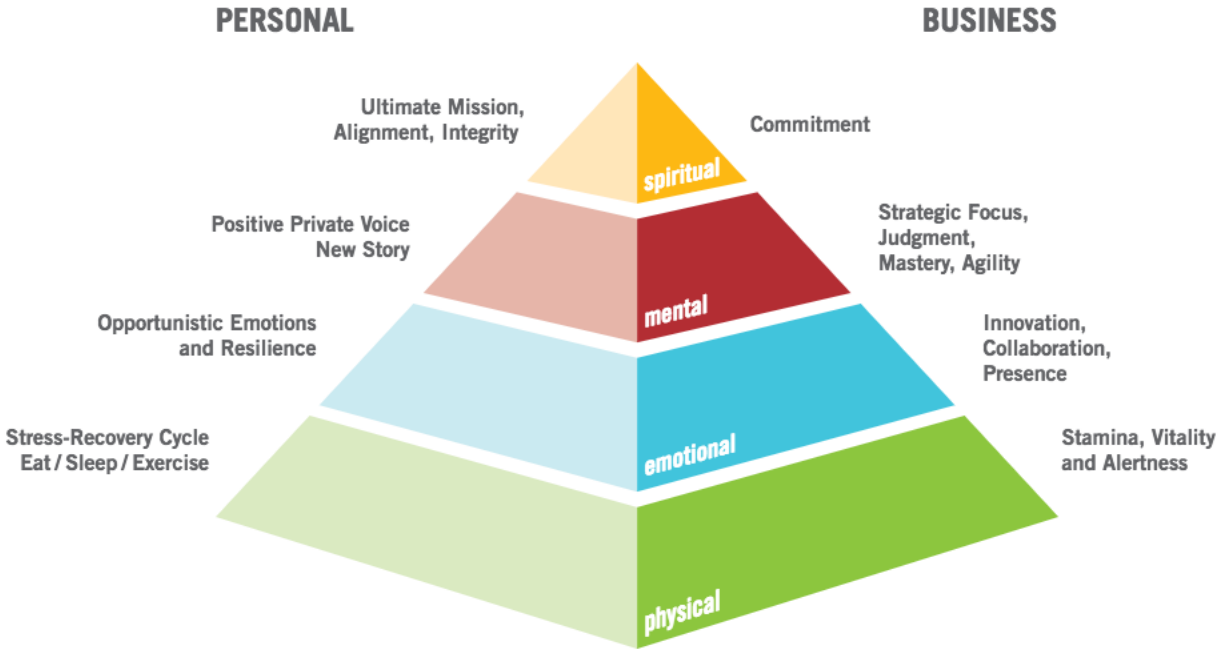

Figure 1: 4-level Pyramid of the JJHPI Energy Management Model.

of elements such as personal confidence, interpersonal effectiveness, and high-energy emotions. For example, high energy can be good, but if energy is high and negative it can quickly damage personal and professional relationships. Last, the physical domain consists of nutrition, fitness, sleep, and recovery, each of which contributes to people's perceptions of having energy. While nutrition and fitness get the most attention in modern times, sleep is often neglected, and nearly ignored is the important practice of recovery.

The JJHPI model is necessarily broad because it addresses the whole person. As a result, the outcomes cover functioning across mental, physical, social, and emotional health domains, and – perhaps most significantly – vitality (i.e., energy). The implications are also broad, to include helping build healthier and higher-performing individuals in work and in life (e.g., parenting), and enhancing the effectiveness of the organizations to which they belong.

The Change Process Model consists of three elements:

1) Purpose 2) Truth 3) Action

JJHPI trainers refer to identifying one's purpose in life as finding your "Ultimate Mission." Trainers facilitate the process of defining a mission, but the end result is entirely determined by the individual. Once a mission, or purpose, has been identified, individuals have an opportunity to confront the trajectory of their lives in light of their mission-based aspirations. Purpose is who you want to be, consistent with your deepest values and beliefs, and truth is the reality of who you really are. The tension or conflict between these two points of reference can serve as a powerful motivation for change and fuel action. If these are inconsistent, the next step is to acknowledge the "truth" (e.g., discard the old story and write a new, more accurate one) and take action to make the necessary changes. The aim is to align individuals' lives, thoughts, and actions with their stated purpose in order to achieve full engagement (the acquired ability to intentionally invest your full and best energy right here, right now). Within the training framework, the content is participant-driven, as each individual identifies his or her personal values. The aim is to connect participants with purposes and goals in life that are "intrinsically" motivating, which ensures that there is a natural reward from pursuit of these goals (i.e., mission). This realignment often leads individuals to prioritizing the activities that support one's mission and deprioritizing the activities that don't. Health improvement is not the primary aim of the program; however, it can become an inherent part of the process.

Evidence Supporting the Science and the Model:
The most important element of the training is helping individuals find and define a purpose or direction in life, which is critical to identifying motivating factors that help people make difficult changes. The rationale is to tap into what is called "intrinsic motivation," which, research shows, will facilitate more sustainable behavior change (Ryan & Deci, 2000). In fact, there is a robust body of literature suggesting that a strong sense of meaning or purpose in life is linked with improved health, well-being, and health-related behaviors. For example, having a strong purpose in life is associated with improved utilization of preventive health services (Kim, 2014), reduced mortality (Krause, 2009), increased enjoyment for intimacy (Prairie, 2011), improved outcomes in substance abuse treatment (Martin, 2011), and even (indirectly) immune cell telomerase activity (Jacobs, 2011).

JJHPI uses interventions that have been shown repeatedly to be effective in changing behavior and improving quality of life. They include Cognitive-Behavioral, and Acceptance and Commitment Therapy models (Hayes et al, 2006). These therapies directly target how people think, act, process emotions, and interact with others (Beck et al, 1979; Ellis, 1962; Craske & Barlow, 2001; Hayes et al, 2006).

So what is the expected outcome? If JJHPI training is effective, we should expect to see improvements that range across many outcomes. First and foremost, we should expect that participants report improvements in energy (i.e., vitality). Along with that, we should see improvements in categories that include:

1) quality of life and health
2) productivity
3) participant satisfaction
4) improved performance behaviors
5) improvements in families by enhancing individual role performance and satisfaction (e.g., mothers and parenting).

Data were assessed across 5,514 participants who underwent the Corporate Athlete® training program between 2010 and 2014. Follow-up assessments include data at 6 months for 1,044, 12 months for 770, and at 18 months for 417 participants.

Improvements in Quality of Life

Outcomes related to health status, quality of life, functioning and energy are based on the Short-Form 36 and Medical Outcome Survey (SF-36) (Ware et al, 2000). The SF-36 is a brief, multipurpose survey of patient health consisting of 36 questions. It yields an eight-scale profile of scores as well as physical and mental health summary measures. The SF-36 is one of the most widely established health outcomes measures available. The Johnson & Johnson Human Performance Institute used the SF-36 to survey participants before participating in the Corporate Athlete® Course and again in 6, 12, and 18 months. Outcomes are based on aggregate scores from 8 separate sub-scales calculated from participant responses.

Description of the Participants: Baseline data for participants were compared to national norms on the SF-36. Participants generally score higher *(see Figure 2)* indicating a higher overall health status, quality of life, functioning, and energy. Corporate Athlete® participants tended to be middle-aged (65% of participants 36 – 50 years old), and predominantly managers (41%) and executives (38%). An additional 11% were professionals, administrative, etc. In all, they are a high-functioning group and typically hold positions of significant responsibility. To improve on those who are already doing so well is a challenging task.

A brief summary of each sub-scale follows where a higher score indicates better health and functioning:

General Health: assesses overall health

Vitality: assesses differences in individuals' energy and fatigue, which can also approximate subjective well-being

Social Functioning: assesses the impact of an individual's health on their social activities

Role Emotional: assesses functional limitations that result from emotional issues

Mental Health: assesses 4 critical dimensions of mental health: anxiety, depression, loss of behavioral or emotional control, and psychological well-being

Role Physical: assesses functional limitations from physical health problems

Physical Functioning: assesses both the presence and extent of physical limitations/capabilities in typical daily physical activities

Bodily Pain: assesses the presence of bodily pain and the extent to which it interferes with daily activities

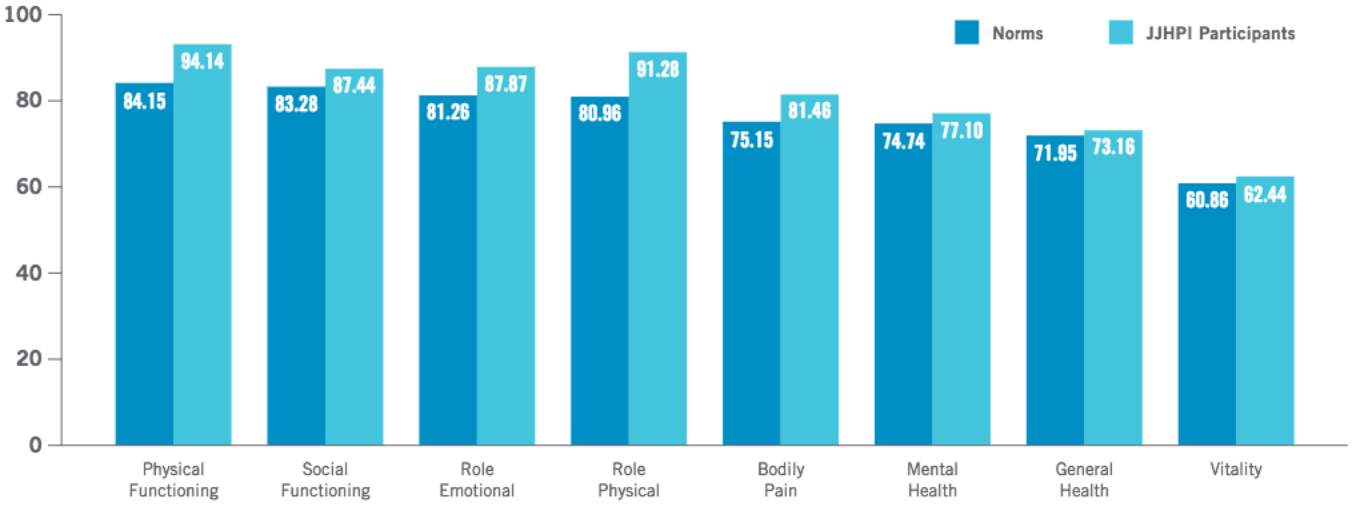

Figure 2. Comparison of average SF-36 baseline scores (note, higher scores indicate better health & functioning). (n=5,514)

PROGRAM OUTCOMES DATA (CONTINUED)

In order to determine the most comprehensive picture of participant data, we collapsed the post-training data across 18 months – each of the health scales are shown together in *Figure 3*. As discussed earlier, if the JJHPI training is effective, energy (i.e., Vitality sub-scale) should show a marked improvement. This was clearly the case, as energy was lowest at baseline, showed the most dramatic improvement, and had the greatest sustained change at 18 months. Similarly, the Mental Health scale improvements suggest that participants experienced meaningful improvements in their emotional lives and well-being. Third among the strongest improvements was General Health, which is the best depiction of how people are feeling across all the domains. To see improvements in this category is particularly impressive, because more global measures of health are usually hard to change (Lee, Jones, Goodman, & Heyman, 2005). In addition to these dramatic improvements were more modest, but still meaningful ones. These include Social Functioning and Emotional Role Functioning, which are important because they refer to an individual's ability to access and benefit from support from others and perform life functions that may have been too emotionally challenging before.
The Physical scale also showed improvements initially; however, this was a fairly healthy group at baseline, which limits the potential for score improvement. Last, there are scales such as Bodily Pain that are much less relevant to JJHPI training. Perhaps most notable, however, is that every scale showed improvement at 6 months.
The changes were all sustained over a year, and in some cases through 18 months. These results are fairly dramatic in light of the short duration of the JJHPI intervention.

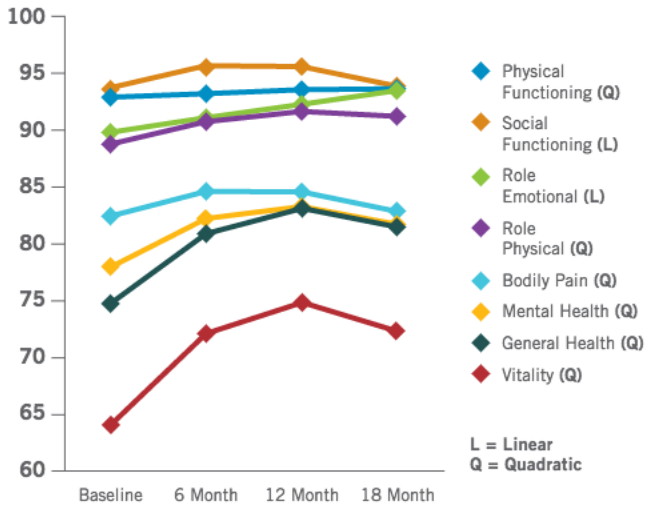

Figure 3. Growth trajectory modeling for any SF-36 follow-up completers.

Statistical Footnote: Growth Mixture Modeling was conducted using Mplus (Muthén & Muthén, 2012). Participants who completed at least the baseline assessment and one follow up were included (N=1,484). Missing data estimates used Full Information Maximum Likelihood. Overall, model fit met standards (Bentler & Hu, 1999; Yu, 2002) providing evidence that the trajectories, or growth curves, accurately reflect the data.

Those who only completed the baseline measure (N= 4030) were not included in the analyses due to minimal data requirements for the model. Comparisons between these two groups suggested those who completed baseline only were lower functioning by demonstrating lower scores on bodily pain, general health, vitality, social functioning and mental health subscales, with mean differences between 0.6 and 1.8 points.

Improved Productivity

Productivity outcomes were based on the Work Productivity and Activity Impairment (WPAI) questionnaire (Reilly et al, 1993). The WPAI is a self-report tool designed to assess productivity impairment. The scale contains 6 productivity-related questions that measure

1) work-time missed due to health-related and non-health-related issues
2) the time spent actually working
3) the extent to which health is affecting both work productivity and regular daily activities

Here, the WPAI was modified to identify energy as the impairment domain instead of general health problems. Outcomes assessed are based on four sub-scales from participant responses. In each sub-scale, a higher percentage indicates worse productivity. A brief summary of each sub-scale follows:

Absenteeism: a percentage of work-time lost due to low energy

Presenteeism: the degree to which low energy affects productivity while working

Overall Impairment: a combination of the percentage of work-time lost and the working productivity impact due to a low energy-related problem

Activity Impairment: the degree to which low energy impairs regular daily activities

We analyzed the productivity impairment data similar to the method above used for the SF-36. These data were graphed over an 18 month period to demonstrate long-term trends. Most remarkably, overall impairment, daily activity impairment, and presenteeism showed dramatic declines over the 1.5 year period. Overall work impairment and presenteeism had a linear decrease from a baseline of 20% and 19%, respectively, to 13% overall work impairment and 13% overall presenteeism at 18 month follow-up. Daily activity impairment decreased from 18% at baseline to 14% at 6 months, to approximately 12% at 12 month follow-up, with a flattening of change from 12 to 18 month follow-up. Each of these fell approximately 4-7% points over this time. This is important considering that the baseline productivity impairment level is approximately 3.4% in the healthiest populations (Riedel et al., 2009). For absenteeism there was not a significant decrease, but this was not surprising given that the group was relatively healthy. *Please see Figure 4.*

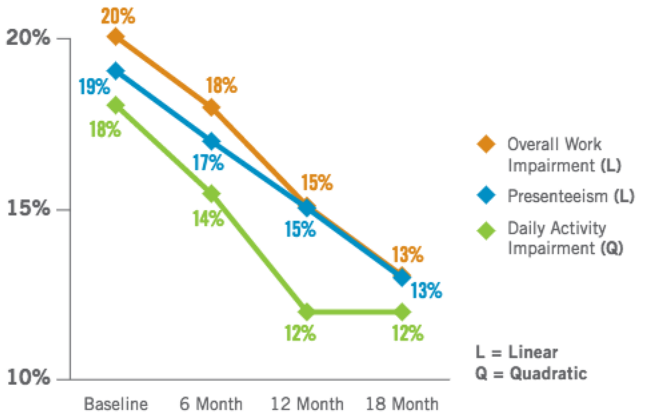

Figure 4. Productivity Changes Over Time

Statistical Note: To test changes in productivity impairment, growth modeling was used to examine the WPAI at baseline and 6, 12, and 18 month follow-ups. Model fit indices were adequate indicating that the model fit the data well. (n=1,451)

Participant Satisfaction: High Net Promoter Scores

The nature of health care and health-related interventions has taken a dramatic shift in recent years. There is an ever increasing focus on the importance of patient satisfaction in changing behavior and improving health. There are industry measures that help identify how much participants value the training. One of the leading indicators for this purpose is the Net Promoter Score (NPS),[1] which assesses whether individuals would recommend a product or program to another person. The most recent NPS for the JJHPI training is 87%, which is the highest score observed even among leading industry products and services. This score is a testament to the perceived value that individuals derive from the program, and their desire to share their recommendation with others. To put the JJHPI NPS score into context, consider the following scores from 2014 industry leaders (Satmetrix, 2014):

Industry or Product	Company	NPS Score
Department Stores	Costco	**82%**
Insurance	USAA	**81%**
Banking	USAA	**81%**
Laptops	Apple	**72%**
Airlines	Southwest	**66%**

Organizational Outcomes

If JJHPI's energy management training is effective, then providing it to an entire organization ought to have a system-wide impact on the performance and health of its employees. Two examples that follow are from case studies conducted by GlaxoSmithKline, which focus on outcomes related to high performance and changes in health care-related data.

Improving High Performance Behaviors

This study used an employee population and assessed the relationship between Corporate Athlete® training and changes in on-the-job behavior. The organization strategically identified six High Performing Behaviors described below based on their own work (Brandon et al, 2013) and used these as the primary outcomes. Scores were compared between training graduates (n=173) and non-graduates (n=36). In order to minimize group differences, all participants and non-participants were similar in grade and performance levels prior to the study. Non-graduates received the same training as graduates following completion of this study.

Program graduates achieved more favorable assessment ratings on all behaviors. *Please see Figure 5 for details.* Most notable was the increased individual engagement, specifically for "Developing People" behavior. Results suggest that investing in leaders may foster a culture of employee empowerment (Brandon et al, 2013).

Health Ratings

While the JJHPI training model is designed to improve life engagement and overall performance, other salubrious effects can occur. Improvements in health and health-related issues were assessed in a study that examined data from participants and a matched control sample before and after training (Brandon et al, 2013).

Compared to the matched control population, JJHPI participants were more likely to rate themselves to be in excellent health and more likely to improve lifestyle risk factors (most prominently diet). Additionally, participants showed a decrease in the percentage of impairment on each of the presenteeism sub-scales following JJHPI training, while the control group's presenteeism scores either increased or did not change. While none of the findings reached the threshold of statistical significance, all of the trends tended to be positive.

[1] "Net Promoter Score" and "NPS" are registered trademarks of Fred Reichheld, Bain & Company, and Satmetrix.

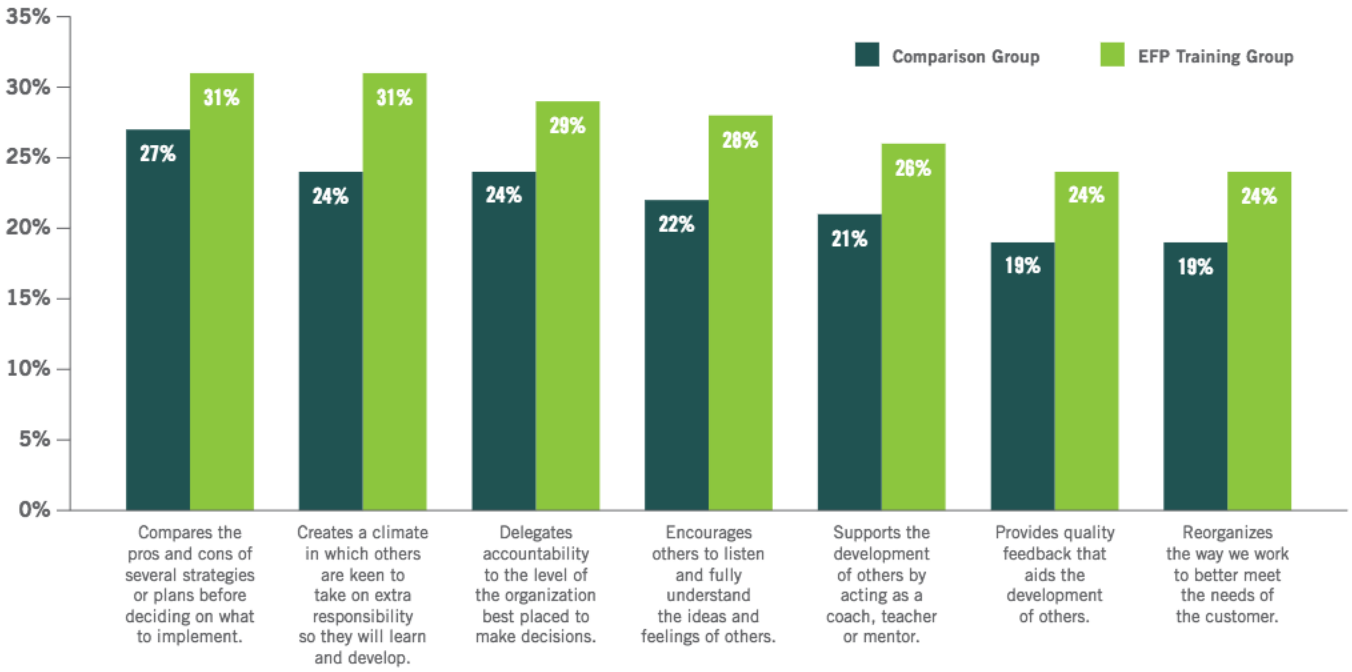

Figure 5. JJHPI Training Graduates vs. Control Group, findings from GSK 360° assessment ratings. Adapted from: Brandon et al. (2013). Note: EFP denotes Energy For Performance,® which is the name used for JJHPI Energy Management Training in this case. (EFP Training Graduates, n=173; Comparison Group, n=36)

Improving Families: Energy for Moms In Motion

Who is more important than mom? What is more important than helping mom when there is a new baby? That is the kind of thinking that inspired this novel application of energy management techniques.

A recent pilot program – the Moms in Motion (MIM) Energy pilot – sought to translate JJHPI's principles to help populations outside the traditional reach of the in-person training model (Nikolovski et al., 2014). The program included the self-directed online version of JJHPI's energy management training, referred to previously as the Energy for Performance® eCourse, teaching foundational topics each week accompanied by various products and support tools to help women incorporate the principles into their daily lives. In addition to the online course, participants also attended weekly formal fitness training led by the team leader (who also facilitated discussions around each week's energy course topic).

Following the program, three quarters of program participants reported that their energy had improved compared to when they started. Participants' energy levels significantly increased across the entire day. When rating their energy on a 0-10 scale, there were increases up to +34% at the end of the day. *Please see Figure 6.*

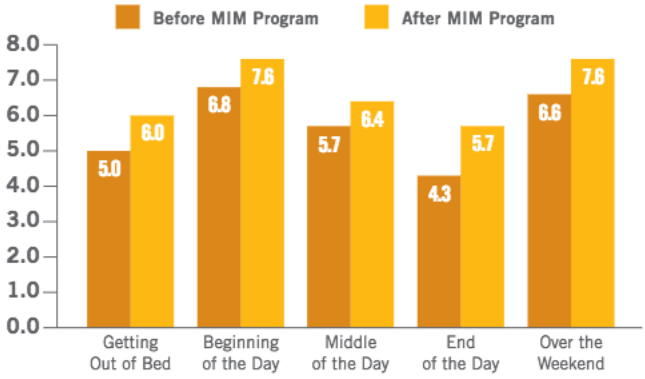

Figure 6. Self-reported participant energy levels throughout the day/week before & after program. (n=124)

PROGRAM OUTCOMES DATA (CONTINUED)

Participants also reported several positive changes in their fitness and health behaviors. Despite the fact that weight loss was never discussed as part of the formal program, 49% reported they lost weight. Stress levels, mood, and sleep all improved significantly; and following the program, women reported that they were more motivated to manage their energy, their stress, and to care for themselves. Participants reported improvements in their feelings of engagement with their own lives and with their families. They also said they felt more confident, better able to focus, and generally had a happier outlook on life.

Beyond the improvements in motivation we measured, participants showed strong engagement with the program and intentions to continue using the principles learned after the program concluded. The majority of the participants found this program to be unique, 82% would recommend it to friends, and 88% reported they plan to continue to work on their energy.

Mother is often described as the Chief Medical Officer of the family, a designation that is supported by research demonstrating the strong role of the mother in determining children's healthcare utilization (Janicke, Finney, & Riley, 2001). As such, there is a good chance that encouraging the mother in a family to embrace a healthy lifestyle could make it easier for the rest of the family to make similar improvements. A true impact on healthcare could be achieved as a result of these types of inside-to-outside strategies: small changes that start with individuals and spread outward to their families and communities.

CONCLUSIONS

Energy management training was developed from work with the most elite athletes and performers. Since then, it has been translated to a broader view of human performance to include the workplace and life roles such as parenting. Our aim here was to capture the accumulating evidence for energy management training and the wide variety of potential applications. The current outcomes capture specific domains such as perceived energy (i.e., vitality), but also include critical general health, and quality of life indicators such as mental, social, physical, and emotional functioning. The evidence shows that helping people to connect with their deeper meaning and purpose in life and teaching exercise and nutrition energy management techniques can lead to a broad range of positive effects. While energy management training aims to improve the lives of individuals, it also appears to have positive effects on larger social groups or organizations. In this paper, we referenced two case studies from GlaxoSmithKline. The first showed improvements in high-performance behaviors (e.g., supporting the professional development of colleagues) and the second in health-related ratings and behaviors. Together they suggest value for organizations, as well as individuals.

There is a continued need for improvement of high-performance behaviors and health in corporate settings. In many ways, modern-day leaders also need to be exemplars of health to their employees. Evidence shows that sustained behavior change happens when people are motivated from within, by what really matters to them (Ryan & Deci, 2000).

Last, the Moms in Motion Energy pilot study and the Energy For Performance® eCourse are two examples of recent work to make energy management training available to varied and larger populations through use of scalable and translatable technology. Now more people can access the training in a fashion that suits the modern-day busy lifestyle and allows them to progress at their own pace. In addition to such recent improvements, JJHPI will continue to research and develop superior applications for change process models that can be leveraged to realize industry-leading outcomes across diverse populations.

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