

THE BUSINESS CASE FOR STRESS MANAGEMENT AND HEALTH PROTECTION PROGRAMS IN THE WORKPLACE

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This paper opens with summaries of research reports that have been found that attempted to measure the longer term impacts of health and stress workplace interventions on both individuals and their organizations. Following this, additional studies on the predicted or potential cost effectiveness of such interventions are presented. The overall conclusion is that there are significant indications that stress management and health protection workplace interventions (including training seminars, lectures, coaching sessions, and inclusion in strategic planning processes) offer a potentially significant Return On Investment (ROI).

The specific conclusion that is most overwhelmingly clear in these summaries is that there are enormous *potential* cost savings for organizations and that the work of the seminar leaders, coaches, and so on must be explicitly supported by the leadership of the organization in order to realize these potential savings. A successful program that results in improved health and reduced stress problems creates a competitive advantage for the organization.

Building a strong case for the Return on Investment (ROI) in stress management and health promotion education and the need for support in the workplace is quite difficult. For example, it is not possible to measure the number of *prevented* heart attacks that result from such training and coaching efforts. It is equally impossible to measure the number of people who *stop abusing alcohol or drugs* if we do not know how many people are abusing these substances in the first place.

However, a “before and after” research study could be designed that measures variables including health risk factors, improved decision making effectiveness, reduction in turnover rates, increases in productivity, reductions in absenteeism, and even improved judgment. To date this study has never been carried out to my knowledge. A few longitudinal studies were found in the research literature which assessed the longer term impact of stress management and health promotion programs. These studies are summarized below.

When evaluation studies are carried out on organizational interventions, there are at least four different focuses or levels that are possible for analysis (as developed by Kirkpatrick, D.L. (1994). *Evaluating Training Programs: The Four Levels*. San Francisco, CA: Berrett-Koehler.).

In Kirkpatrick’s model, Level One Evaluations are the satisfaction measures typically taken at the end of a seminar. These are the most frequent and widespread evaluations. They are intended to measure course-end feelings about how well the objectives were met, how well the trainer performed, and how useful the participants expect their learning to be. More rarely, Level Two Evaluations are conducted. These assessments require a pre- and post- test to measure how much new knowledge was received and, after some period of time, how much of that new knowledge was retained. More rarely still, Level Three Evaluations attempt to measure the extent to which participants practice new behaviors in an enduring way after some period of time.

Level Four Evaluations are necessary to fully assess the ROI capability of a training program. These evaluations, which are almost never carried out, attempt to measure the systemic impact of the training intervention on the functioning of the target individual and/or system. In relation to Stress Management interventions, Level Four Evaluations would assess whether or not the individual's health actually improved and his or her performance on the job was also improved. The actual physiological and performance measures that are required for such a study are difficult to collect, and in most countries, many of the data types are protected by individual privacy laws.

Impact of Organizational Stress Management and Health Promotion Programs

In spite of these difficulties, a few Level Four evaluation studies of the longer range impact of stress management and health protection workplace interventions have been published, and the results of three representative examples of these are summarized here.

Van der Klink, J.J.L., Blonk, R.W.B., Schene, A.H., and van Dyke, F.J.H. (2001). The benefits of interventions for work-related stress. *American Journal of Public Health*. February. 91(2). 270-276.

Van der Klink et al. reviewed 48 studies, involving 3736 participants, carried out between 1977 and 1996, which focused on two contexts for stress management intervention: 1) increasing individual resources to cope effectively (through stress management training); and 2) changes to the organizational context (through organizational development and job redesign).

This Netherlands based research team asked the question 'What kinds of stress interventions are most effective?' They also explored moderating variables such as job characteristics, nature of the intervention (remedial or preventive), and the length of the intervention. The assessment resulted in four kinds of interventions that demonstrated positive outcomes – three individually focused and one organizationally focused.

1. Cognitive-Behavioral focus: teaching new thinking patterns and new behavioral responses (18 studies)
2. Relaxation focus: teaching a variety of relaxation techniques (17 studies)
3. Multi-modal focus: combinations of the cognitive-behavioral and relaxation techniques (8 studies)
4. Organizational focus: consideration of work pressures, sense of control, conditions, management and colleague support (5 studies)

17 of these studies showed statistically significant positive impacts. The strongest positive outcomes were found in studies that focused upon Cognitive-Behavioral change instruction (8 of 18 = 44%). Relaxation interventions were effective in five studies (of 17 = 29%). Multi-modal studies found three effective outcomes (of 8 = 38%). Organizationally focused studies found one effective outcome (of 5 = 20%). Since the number of studies is small, we can only conclude that properly delivered and implemented interventions have a good chance of being effective.

Sims, J. (1997). The evaluation of stress management strategies in general practice: An evidence-led approach. *British Journal of General Practice*. September. 4. 577-582.

This study reviews the effectiveness of research studies focused on reducing the stress levels in the workplace in a similar manner to the previous article. 26 separate studies that found either positive cognitive-behavioral outcomes (18 studies) or positive relaxation outcomes (8 studies) are summarized. In her overall conclusions, the author points out that there were methodological concerns (e.g. no control groups) in most of the studies that make the results less certain. While concluding that behavioral-cognitive and relaxation approaches appear to have efficacy, she calls for more thorough research studies. She also found that group training methods are more cost-effective than individual counseling, and that the expertise of the trainer or consultant is of utmost importance.

McMahon, A., Kelleher, C.C., Helly, G. & Duffy, E. (2002). Evaluation of a workplace cardiovascular health promotion program in the Republic of Ireland. *Health Promotion International*. 17(4) 297-308.

This article is a comprehensive evaluation of the impact of a single workplace health promotion program. The program evaluated has been for many years sponsored by the Irish Heart Foundation (The Happy Heart at Work Program) and is intended to promote a healthy lifestyle through a range of stress management and health promotion modules. The program was found to be successful, but the success level and durability is a function of how clearly the management actively supports the program and its outcomes following delivery. Program outcomes were also affected positively by high level employee “ownership” of the program. In addition to improved (i.e. health-promoting and risk-reducing) life style habits, outcomes included improved workplace morale and productivity, as well as reduced absenteeism and turnover. Company image in the community was also enhanced.

The essential element of management and organizational support, emphasized in this report, but missing from most evaluation studies, is also emphasized in my chapter, summarized next, for a U.S. Government workplace health publication. *Without effective and long term organizational support for these interventions, the efficacy of the programs is likely to be severely diminished.*

Comprehensive program design features

Adams, J. D., (1987). Creating and maintaining comprehensive stress management training. In (L.R. Murphy & T.F. Schoenborn, Eds.), *Stress management in work settings*. DHHS NIOSH Publication No. 87-111. 93-107.

This chapter is a review of learning arising from the author’s many years of successfully implementing organizationally based stress management and health promotion training programs. *In order to realize as much positive and enduring change as possible, a systematic approach to design and delivery of these programs is clearly called for.* The success criteria of an organizationally based highly cost-effective stress management and health promotion program described in this chapter include:

1. Specific, measurable, achievable participant learning goals
2. Joint focus on individual and organizational benefit
3. Top level support from the organization’s management

4. Feedback loops for system response to ideas and issues that emerge from the training program
5. Discrete steps for planning the program that include
 - Assessment of each employee's stress level
 - Assessment of present adaptive and maladaptive coping strategies
 - Identify major workplace stressors
 - Explanation of what stress is
 - Identify individuals' symptoms of excessive stress
 - Identify personal causes of stress
 - Describe various stress management and health promotion response strategies
 - Self management (life style) strategies
 - Coping with unavoidable changes
 - Addressing unavoidable chronically stressful conditions
 - Optimal performance management
 - Life Management choices and cognitive support
 - Develop personalized action plans for improvement
6. Develop Readiness for Stress Management Training
 - Assess position of top management
 - Identify organizational areas of concern
 - Coordinate with relevant departments (e.g. medical, HR)
 - Identify and agree to program goals
 - Identify training resources
 - Anticipate and prepare for criticisms
 - Develop impact assessment
 - Identify target population
 - Determine course objectives and content
 - Select a title that communicates the desired effects
 - Select experienced and proven instructors
7. Overcoming Resistance to Stress Management Programs
 - Present data on potential cost effectiveness
 - Cultivate understanding that the stress response is a natural biological response, and not a sign of individual weakness or an indicator of poor mental health
 - Establish that the program is for preventing problems and improving performance, and that it is not a form of treatment or psychotherapy
 - Demonstrate that many approaches and techniques will be taught, more than merely "relaxation."
8. Common Errors to avoid (Adapted from McCauley and Bellingham, New York Telephone, 1984.)
 - **FRAGMENTATION:** developing unrelated and unintegrated programs
 - **ACTIVITIES:** creating diverse activities without articulating desired results limits impact
 - **ILLNESS FOCUS:** a successful program focuses on establishing and maintaining well-being. This does not mean there should not be referrals for conditions requiring treatment
 - **LACK OF INVOLVEMENT:** the more people involved in some way with program development and conduct, the greater the enthusiasm and involvement.

- UNAPPLIED KNOWLEDGE: facts do not change behavior; "portable" skills and motivation are the tools for success
- INDIVIDUAL FOCUS: if the organization's culture is not addressed, the impact will be limited
- EMPHASIS ON START-UP: a successful program must be based on a long term view.

While it is challenging to present a clear set of research results that support a strong Return on Investment associated with stress management and health promotion programs, there are a number of cost-effectiveness factors that can be considered. We must conclude that ROI is possible if the programs are well conceived and well supported by the management of the organization. In order to realize positive outcomes from the investment in such programs, it is necessary for a significant number of individuals to exert the discipline necessary to make enduring changes in one or more of their fundamental lifestyle and / or stress management habits. It is also necessary for the leadership and culture of the organization to come under scrutiny, in order to identify both sources of unnecessary stress generation and means for supporting desirable changes.

It is well known that deeply ingrained habits are difficult to change, and if there is widespread regression from commitments at the end of a program, the net result may be few enduring changes six months or a year later. Thus, the commitment of the organization to supporting individuals in making changes is of utmost importance.

Organizational Leadership Implementation Success Factors

Here is a list of 19 success factors for the implementation of any program in any work setting in which habit patterns and organizational culture must change (i.e. almost every improvement initiative – including stress management and health promotion). These 19 factors can be used as a checklist by organizational senior managers for guiding their support of a stress management and health promotion program. These success factors are summarized from a number of different research studies on effective implementation.

General Qualities

1. Able to engage in productive conflict with ideas and not to attack people
2. Never stops improving relationships
3. Has a systematic and comprehensive theory / approach to implementing the changes
4. Continues to learn on the go and invites others to learn

Initiation of Change

5. Courage to question present conditions, willingness to generate uncertainty, and to search without knowing
6. Able to generate an understanding, acceptance, and sense of urgency in relation to the need for change
7. Able to build the belief that the change is both desirable and possible
8. Establishes new mindsets that hold the desired state as essential and the status quo as unacceptable

Diffusion of Change

9. Always tells the truth and forms “until further notice” expectations
10. Naturally generates a passionate commitment to the desired outcomes (perhaps through metaphor rich stories)
11. Articulates specific deliverables and ensures that all key people know what to do next
12. Deliberately uses new governance processes and parts arrangements to ensure that the desired state is top priority in people’s minds, and that action is taken
13. Able to work with intervention processes that bring the whole system into the room
14. Ensures that the governance process rewards movement towards the desired state and removes rewards from maintenance of the status quo
15. Remembers to constantly scan the “boundaries of the change” for potential problems, resources and new agreements
16. Builds critical masses of alignment (Getting early adopters into alignment and giving them things to do) around each essential component of the change vision through engaging and mobilizing agreement

Integration of New State

17. Maintains an appreciative stance of encouraging and rewarding what is already working in the newly emerging change process
18. Demonstrates patience and perseverance in supporting all in moving forward
19. Visible, vocal, consistent and persistent with the “story” of the change

Sources of success factors:

- Adams, J. (2003). Successful change: Paying attention to the intangibles." *OD Practitioner*. Winter 35(4).**
- Holt, D.T., Armenakis, A.A., Feild, H.S. & Harris, S.G. (2007). Readiness for Organizational Change: The Systematic Development of a Scale. *Journal of Applied Behavioral Science*. 43(232 – 255).**
- Doppelt, J. (2003). *Leading change toward sustainability*. Sheffield, UK: Greenleaf Publishing Limited.**
- Kotter, J. (1996). *Leading change*. Cambridge, MA: Harvard Business School Press.**

How Much is Each Costing Your Organization?

(from a wide variety of public health sources)

Cardiovascular Disorders

- ❑ 30% of an average US organization’s employees are at significant risk
- ❑ A nonfatal heart attack costs over \$200,000 to treat in the US
- ❑ US organizations spend \$700,000,000 per year to recruit and train replacements for employees aged 45-65 who die of heart attacks
- ❑ People with high blood pressure in the US (20% of the adult population) seek medical attention 50% more often than those with normal blood pressure and average \$2,200 per year in lost work time
- ❑ Approximately 55% of cardiovascular risks are attributable to poor health habits and poor stress management
- ❑ Smoking and being significantly overweight each double the risk of a heart attack
- + Stress management interventions reduced heart attacks 75% more than medication alone

Cancer

- ❑ Approximately 37% of cancer risks are attributable to life style habits – especially eating and smoking
 - An operable lung cancer costs \$210,000 to \$250,000 to treat in the US
- ❑ Smoking increases the risk of lung cancer ten fold
- ❑ High fat / high chemical / low fiber diets contribute significantly to gastrointestinal cancer risks

Smoking

- ❑ The undisputed number one health risk factor – approximately 1200 Americans die as a result of smoking *every day*
- ❑ 23% of the average US organization’s work force are regular smokers
- ❑ Smoking employees cost American organizations approximately \$60 billion annually in lost productivity
- ❑ 51% of males and 15% of females are regular smokers in Poland

Substance Abuse

- ❑ Approximately 10% of the average US organization’s workforce is abusing alcohol and/or drugs
- ❑ Substance abusers are absent three times as often as nonusers
- ❑ Substance abusers have 3.6 times as many accidents as nonusers
- ❑ The average substance abuser’s performance is diminished by 25%

Stress

- ❑ Approximately 10% of the US workforce is experiencing high levels of stress on any given day
- ❑ Those under high levels of stress are almost certain to have diminished performance – to drift – accounting for a 25% reduction in productivity
- ❑ The “invisible overhead” costs associated with excessive stress are high, and include:
 - Poor decisions and bad judgment
 - Loss of innovation and intellectual capital – superficial, simplistic, routine thinking
 - “Unresolvable” conflicts & diminished teamwork
 - Workplace violence and threats
 - Diminished customer service
 - More frequent accidents
 - More frequent mistakes
 - More frequent absences and illnesses (550,000,000 days per year lost to stress related absenteeism in the US)
 - Reduced productivity or “down-shifting” (per US employee: 16 days absence plus \$8000 each in lowered effort)
 - Stress-related job turnover & replacement (40% is stress related)

- + Both Procter & Gamble and General Motors have estimated \$3.14 in performance improvement benefits for every program dollar spent
- + An insurance company experienced 30% reduction in workmen's compensation claims
- + A waste management company estimated productivity increases valued at \$3,750 to 15,000 per employee following a stress management program

General

- ❑ An average of approximately 60% of all ill health is caused by poor life style habits and poor stress management
- ❑ Those with poor health habits and poorly managed high levels of stress have 86% more work absences, and are twice as likely to have significantly diminished performance
- ❑ The American health care bill is 15.2% of the GDP in 2004. This means that nearly one dollar of every seven is spent on health care. In contrast health care expenditures in Poland comprised 6.3% of GDP in 2004 (5.2% in 1997).
- ❑ A rough estimate of the annual per employee cost to US organizations due to poor stress management and poor health habits is over \$10,000 per year
- ❑ This “invisible overhead” cost is largely recoverable through employee education and screening programs, and through promotion of *real* work-life balance support. Such initiatives have proven to be very cost-effective.
- ❑ A healthy workforce made up of people who know how to handle stress provides a competitive advantage.

Focus on Prevention

As the following information indicates, establishing a widely shared preventive mindset is essential for successful stress management and health promotion programs. These data are drawn from UN World Health Organization, US Centers for Disease Control, and the author's impact studies.

Predicted Life Expectancies – the impact of “prevention thinking”

Poland (Spends relatively little on prevention of illness)

Life expectancy for women born in 2007	79.4	Rank 45
Life expectancy for men in born 2007	71.8	Rank 67

U.S.A. (Spends a moderate amount on prevention of illness)

Life expectancy for women born in 2007	81.0	Rank 30
Life expectancy for men in born 2007	75.7	Rank 30

Andorra (Very healthy and active life styles)

Life expectancy for women born in 2007	86.6	Rank 1
Life expectancy for men in born 2007	80.6	Rank 1

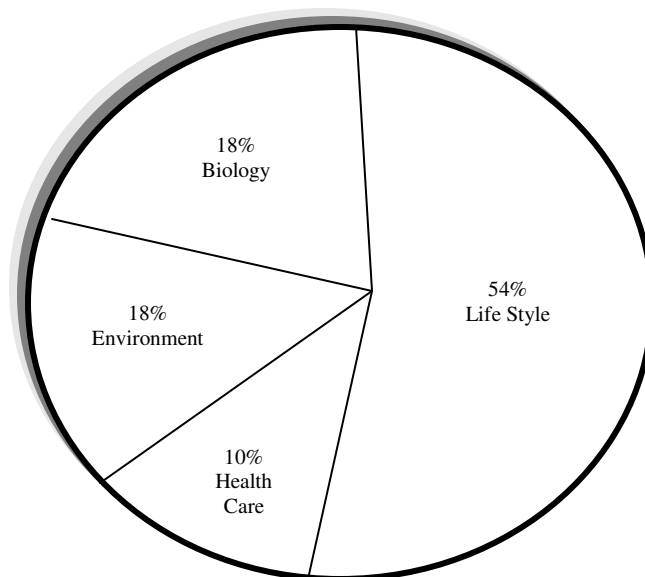


Figure 1
Health Risk Factor Overall Breakdown

Cause of Death	Percentage of Total Deaths	Primary Lifestyle Risk Factors
1. Heart Diseases	28.0%	Smoking, hypertension, diet, high cholesterol, Type A behavior, lack of exercise, diabetes mellitus, obesity, stress (54% of risk is life style)
2. Cancers	24.0%	Smoking, alcohol, diet, environmental carcinogens, obesity (37% of risk is life style)
3. Unintentional Injuries	5.9%	Alcohol, drugs, driving habits, not using seat belts (60% + of risk is life style)
4. Strokes	5.1%	Hypertension, smoking, high cholesterol, stress (50% of risk is life style)
5. Chronic, obstructive lung disease	5.1%	Smoking
6. Diabetes Mellitus	2.9%	Obesity, diet (34% of risk is life style)
7. Pneumonia & Influenza	2.4%	Smoking, alcohol (23% of risk is life style)
8. Suicide	2.1%	Stress, alcohol, drugs (60% of risk is life style)
9. Kidney Diseases & Cirrhosis	1.7%	Alcohol (70% of risk is life style)
10. Alzheimer's Disease	1.5%	Blood pressure, cholesterol, diabetes mellitus, mental lassitude
Other	21.3%	

Table 1: Percentage of total deaths and lifestyle related Risk factors for the 10 leading causes of death in the U.S. (Centers for Disease Control, 2004)

In a study, led by the author, of self-reported cognitive-behavioral changes six months after a stress management program in three US Government agencies (level two and level three evaluations), some very clear results of the program can be seen (Adams, J.D., Fischer-Quigley, E., and Schmidthorst, J. (1984). *Improving the health and stress management of federal workers*. In Warrick, D.D. (Ed.). *Contemporary organization development: Current thinking and applications*. Glenview, IL: Scott, Foresman and Company.)

In the table below, there are three populations:

The first two columns indicate the number of people who reported improvements (IMP) and the number who reported declines (DEC) on 29 life style and workplace factors in a control group of 47.

The next two columns indicate the number of people who reported improvements and declines on these same 29 factors, who had completed a self-scoring and self-interpreting health risk and life style appraisal only, but received no training or coaching.

The final two columns indicate the number of people who reported improvements and declines on these 29 factors six months after completing the health risk and life style appraisal as a part of a comprehensive four day training program on stress management and health promotion.

In all three samples, the respondents were asked to rate their current effectiveness or beliefs on a five point “Likert scale.” All three groups completed this survey twice. The control group completed the survey at six month intervals. The two test groups completed the survey once before any intervention, and a second time six months after the intervention (questionnaire only or questionnaire plus four days’ training).

A reported improvement (IMP) or a decline (DEC) was tallied whenever the before-after scores were different by two or more points. One limitation of this study is that all reporting is self reporting, and no attempt could be made to validate the responses through follow-up interviews or observations. However the trends and patterns are consistent enough to warrant some confidence in the outcomes.

Summary of Before-After Changes by Item

Number of changes of two or greater						
Questionnaire Item	Control Group (N=47) No Treatment		Questionnaire Only (N=37)		Questionnaire plus Training (N=108)	
	IMP	DEC	IMP	DEC	IMP	DEC
1. Meet or beat work deadlines	2	3	3	3	8	4
2. work as much as expected	1	1	0	1	6	7
3. Work as well as expected	1	1	2	1	4	1
4. Overall job satisfaction	1	6	5	2	15	12

5. Learning and growing on the job	2	10	5	2	21	12
6. Sense of fulfillment and accomplishment	0	7	2	1	22	9
7. Wear seatbelts	4	2	4	1	12	3
8. Use tobacco	1	1	0	0	7	2
9. Moderate use of alcohol	5	5	7	3	13	13
10. Maintain recommended weight	3	8	7	3	27	3
11. Three balanced meals a day	1	4	9	0	26	4
12. Breakfast everyday	2	6	5	1	19	5
13. Sufficient sleep	1	7	5	5	22	3
14. Regular vigorous exercise	5	8	9	3	34	6
15. Regular stretching exercise	6	10	3	5	37	8
16. Responsible for own well-being	1	1	3	1	16	3
17. Behave assertively	3	5	4	2	13	1
18. Striving for self-knowledge	0	0	1	1	16	3
19. Regular relaxation practice	4	11	8	3	37	8
20. Use time well	0	4	2	0	15	3
21. Sufficient close friends	6	2	5	1	21	4
22. Supported adequately at work	3	8	2	2	14	13
23. Aware of primary sources of stress	2	1	4	1	23	2
24. Self responsible for stress removal	3	3	4	2	24	4
25. Aware of consequences of poor stress management	1	2	5	0	34	0
26. Adequacy of stress management skills	2	4	12	0	48	2
27. Responsible for life situation	0	3	1	3	15	1
28. Satisfaction with life style	2	4	6	1	15	1
29. Supported by spiritual / religious beliefs	4	3	7	3	19	1
TOTALS	66	130	130	51	575	135
Avg. number of changes per participant	1.4	2.8	3.5	1.4	5.3	1.2

Most frequent improvements in questionnaire plus training group

26. Adequacy of stress management skills (n=48 of 108)

19. Regular relaxation practice (37)

14. Regular vigorous exercise (34)

25. Aware of consequences of poor stress management (34)

10. Maintain recommended weight (27)
11. Eat three balanced meals daily (26)
18. Striving for self knowledge (25)

Most frequent declines in questionnaire plus training group

9. Moderate alcohol use (n=13 of 108)
22. Supported adequately at work (13)
4. Overall job satisfaction (12)
5. Learning and growing on the job (12)

As can be seen, those items on which improvements occurred most frequently represent basic habits necessary for preventing illness, coping with stress, and building health. With the exception of alcohol use, the items on which declines occurred most frequently are job related. While the apparent increase in alcohol use by 13 of the 108 participants in the questionnaire plus training program group is of concern, the declines in job factors is of even more concern.

Stress management and health promotion education that includes a workplace component may help make people more aware of, and therefore somewhat less satisfied with, the stressful nature of their everyday work. Upon returning from such a training program, many people attempt to do things to reduce their on-the-job stress and meet resistance from others in the workplace who did not take part in the program – thereby reducing the level of support they are experiencing on the job.

On the positive side, participants who most need to make improvements seem to be the ones making improvements. While this does not show up in the table above, earlier analysis indicated that those with the lowest “Before” scores made a disproportionate number of the positive changes reported in this table.

While more research with more sophisticated design is still needed, all of the indications are that stress management and health promotion education are having a durable, significant, positive effect on a large percentage of the participants. 68% of all responding participants in the questionnaire plus training group have made significant overall positive changes, and each participant has reportedly maintained an average of 5.3 specific item changes. The fact that the specific improvements are spread across all 29 items on the before-after questionnaire suggests that participants learn to identify what their own specific needs for improvement are, and that they are acting to make those improvements subsequent to the program completions.

**Summary: Success Factors for Successful Stress Management
and Health Promotion Programs**

In reviewing all of the above, it should be clear that there are several factors that are necessary to increase the chances of a successful program. First, any program should be fully accepted and actively supported by the leadership of the organization. Second, it should be based on the idea that preventing stress and health problems requires attention to how habit patterns – both individual and those shared habits reflected in the organization’s culture – can be changed.

Of course there need to be specific supports on both the individual and the organizational levels for successfully maintaining agreed to habit changes.

Third, the focus of the program should be multi-faceted. Some people need to eat differently while others need to manage their time more effectively. A wide variety of ideas and assessments need to be presented to encourage individuals and teams to tailor their follow-up responses. Everyone taking part will not find every stress and health program module to be top priority. Fourth, the providers of stress management and health promotion programs should be highly experienced in delivering all the facets of a multi-modal program. Finally, “before and after” impact evaluations should be carried out to monitor the on-going cost-effectiveness of each program, and to establish a solid ROI argument for such programs.