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# **Research Article**

# IMPACT OF ALTERNATIVE MEDICINE THERAPY PROGRAMME ON WORK RELATED STRESS MANAGEMENT OF IT PROFESSIONALS

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#### ABSTRACT

Stress management is the ability to reduce or cope with stressors by controlling frequency, intensity, and duration of the stress reaction to decrease unhealthy conditions. In the broadest sense, stress management may include any type of stress intervention; however, it may also include a narrow set of individual-level interventions. Organizations need to clearly identify the causes of work related stress and, the physical and emotional symptoms that employees have based on these causes while designing stress management programme. This research study was undertaken to evaluate the effectiveness of alternative medicines to help alleviate work related stress symptoms of IT (Information Technology) professionals. For this study, data was collected from 128 IT professionals, to identify a subset of professionals experiencing high levels of work place stress. 53 of 128 professionals reported work related issues as primary factor contributing to stress, in the survey response. The top three causes of work related stress, the top three physical symptoms associated to stress and top three emotional symptoms associated to stress were determined for this subset of IT professionals. These 53 professionals were asked to administer a two month alternative medicine therapy programme that involved ten sessions, one session per week and duration of each session ranging from 45 to 60 minutes. Pre and post rating given by 21 professionals that attended all sessions in the programme, for the top three causes of work related stress, the top three physical symptoms associated to stress was used to determine the impact of the Alternative Medicine (AM) Therapy programme in stress management of IT professionals.

Keywords: Stress, Psychology, Alternative Medicine, IT

# INTRODUCTION

Occupational stress is a topic that has generated a tremendous volume of research in Industrial and Organizational Psychology over a surprisingly short period of time<sup>1,2</sup>. Cox<sup>3</sup>; defines stress as a "perceptual phenomenon arising from a comparison between the demand on the person and his ability to cope." The interaction model of stress implies that varying demands are made on individuals in any situation. These demands may be physical, emotional or environmental in nature. The degree of stress experienced by an individual in any single situation will vary due to personal factors. An individual's reaction to stress can also be physiological (state of arousal)<sup>4</sup>. This necessarily means that stress can manifest as emotional and physical symptoms in an individual. According to Sternberg, disruption in communication among the major biological systems during and after serious stress or the accumulation of multiple, minor, difficult events increase the risk for physical and emotional illness<sup>5</sup>. Employee assistance in enterprises involve structured programmes that utilize technical, administrative, and professional human services, on either a contractual or employment basis, to meet the need of troubled employees (Myers, 1984)<sup>6</sup>. An employee assistance programme can also be described as a work based intervention programme aimed at the early identification and/or resolution of both work and personal problems that may adversely affect performance (Burgess, 1996)<sup>7</sup>. Stress Management programme at enterprise level is usually handled under employee assistance. Organizations are constantly exploring innovative and effective options for stress management of IT professionals. It is very important to conduct study of stress at industry/domain level so that effective stress management programs can be designed that will be beneficial and meets the needs of professionals in the specific industry. There is several industry specific stress studies conducted in healthcare,

academic and defense industry. Some of the popular studies published recently on industry specific stress study are given in reference<sup>8-10</sup>. Multiple research studies have showed the effectiveness of preventative, as opposed to reactive coping strategies<sup>11,12</sup>. For organizational stress management it is suggested to come up with preventive coping strategies. Preventative coping involves developing resources to lessen the consequences of stressful events<sup>13</sup>, which can be achieved using organizational stress management programs.

# MATERIALS AND METHODS

This research was conducted with corporate employees in IT industry. An Alternative Medicine (AM) Therapy programme was presented to corporate employees to establish whether it would have an effect on their stress levels. First parameters were defined to analyze for effectiveness of Alternative Medicine therapy programme. Data for the parameters were collected before the therapy and after the AM therapy programme, to determine the impact of the programme in stress management of IT professionals. For this study, data was collected from 128 IT professionals, to identify a subset of professionals experiencing high levels of work place stress. In the survey, out of the 128 professionals, 53 stated work related issues as primary contributor for work related stress. The stress response and symptoms response of these 53 professionals were used in defining the parameters to analyze for effectiveness of Alternative Medicine. The parameters under study were the top 3 physical symptoms associated to work related stress and top 3 emotional symptoms associated to work related stress. The control parameters were the top 3 causes of work related stress. The top three causes of work related stress identified for the sample under study were irregular work hours, too high workload, and lack of positive feedback from managers<sup>14</sup>. The top three most frequently experienced physical symptoms associated with work related stress were - headaches, back pain and tiredness<sup>14</sup>. The top three most frequently experienced emotional symptoms associated with work related stress were - trouble concentrating, fell irritated or easily annoyed, and feel insecure. These professionals experiencing high work place stress were requested to take a two month alternative medicine therapy programme that involved ten sessions, one session per week and duration of each session ranging from 45 to 60 minutes. Each Stress management session in the AM therapy programme consisted of 3 phases, starting with psychotherapy based conceptualization technique used in stress inoculation training which extended for about 15-20 minutes. This was followed by Yoga therapy with exercises for mind-body control which spanned duration of 20-25 minutes and finally self-hypnosis training for duration of 10-15 minutes. At the end of the therapy programme, data was again collected from 21 professionals that attended all sessions in the therapy, to identify if the top three most frequently experienced physical and emotional symptoms being analyzed in this study have alleviated over the past two months, also validating if the top three work related issues causing extreme stress were still present. The pre and post data were compared in the analysis stage using paired samples t-test. The design approach used in the study is summarized in Figure 1.

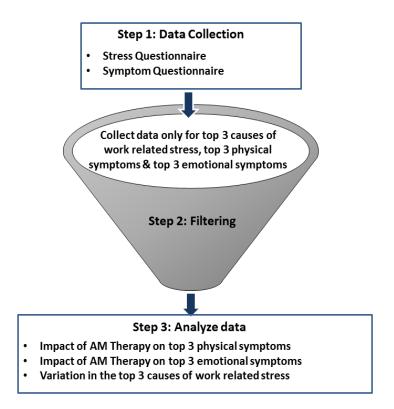


Figure 1: Research approach used in this study

The following hypotheses were tested as part of this study: Hypothesis 1, 2 and 3: One each relating to top 3 physical symptoms

- H0 = AM Therapy programme has no effect on frequency of work stress related physical symptom (top 3) in IT professionals
- H1 = AM Therapy programme has effect on frequency of work stress related physical symptom (top 3) in IT professionals

Hypothesis 4, 5 and 6: One each relating to top 3 emotional symptoms

- H0 = AM Therapy programme has no effect on frequency of work stress related emotional symptom (top 3) in IT professionals
- H1 = AM Therapy programme has effect on frequency of

work stress related emotional symptom (top 3) in IT professionals

Hypothesis 7, 8 and 9: One each relating to variation in top 3 work related stress parameters

- H0 = Intensity of work related stress from a specific cause of work stress (top 3) has not changed when the AM therapy programme was conducted.
- H1 = Intensity of work related stress from a specific cause of work stress (top 3) has changed when the AM therapy programme was conducted.

The characteristics of the sample comprising of 21 IT professionals used in the study are shown in Figure 2.

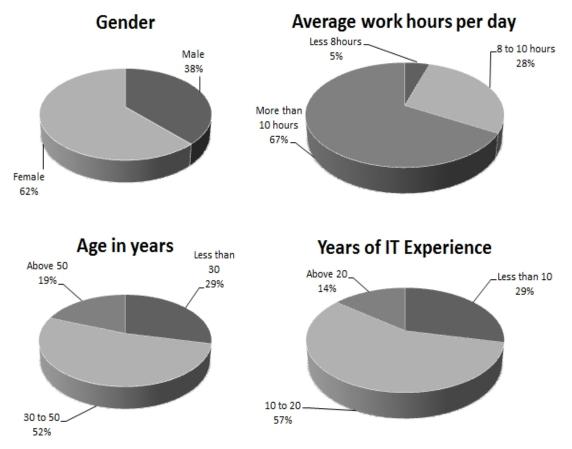


Figure 2: Characteristics of sample under study

Before the AM Therapy programme, the participants completed a survey questionnaire on work related stress and symptoms. The same questionnaire was retaken at the end of the programme, to identify change in rating of causes of stress and frequency of symptoms. In the symptoms questionnaire, the participant was expected to read through the list of symptoms and based on his or her experience in last two months, decide up to which degree they had these symptoms due to stress at work. The degree is expressed in a rate scale having zero corresponding to non-occurrence of the symptom and 4 corresponding to highest frequency of occurrence of the specific symptom. Paired samples t-test was then used to compare the rating before and after the AM Therapy session for the top three physical symptoms, top three emotional symptoms and top three causes of work related stress. This was done to ensure that the results obtained were statistically significant.

# RESULTS

Results of the study provided data to test the hypothesis. The response of the IT professionals helped in showing the impact of alternative medicine therapy programme on their work stress related physical and emotional symptoms. The results of the study are presented in "Table 1" to "Table 9".

	Before Therapy Programme (Headache Rating)	After Therapy Programme (Headache Rating)
Mean	2.857142857	1.761904762
Variance	1.028571429	1.19047619
Observations	21	21
Pearson Correlation	0.238833973	
Hypothesized Mean Difference	0	
Df	20	
t Stat	3.860234248	
P(T<=t) one-tail	0.000487641	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.000975282	
t Critical two-tail	2.085963447	

#### Table 1: t-Test Result on Headache Frequency Rating - Paired Two Sample for Means

	Before Therapy Programme (Back Pain Rating)	After Therapy Programme (Back Pain Rating)
Mean	2.80952381	1.904761905
Variance	0.761904762	1.09047619
Observations	21	21
Pearson Correlation	-0.020896919	
Hypothesized Mean Difference	0	
Df	20	
t Stat	3.015493159	
P(T<=t) one-tail	0.00341662	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.00683324	
t Critical two-tail	2.085963447	

#### Table 2: t-Test Result on Back Pain Frequency Rating - Paired Two Sample for Means

#### Table 3: t-Test Result on Tiredness Frequency Rating - Paired Two Sample for Means

	Before Therapy Programme (Tiredness Rating)	After Therapy Programme (Tiredness Rating)
Mean	2.857142857	1.761904762
Variance	1.328571429	1.09047619
Observations	21	21
Pearson Correlation	0.261110354	
Hypothesized Mean Difference	0	
Df	20	
t Stat	3.75088642	1
P(T<=t) one-tail	0.00062938	1
t Critical one-tail	1.724718243	]
P(T<=t) two-tail	0.001258761	
t Critical two-tail	2.085963447	]

#### Table 4: t-Test Result on Trouble Concentrating Rating - Paired Two Sample for Means

	Before Therapy Programme (Trouble Concentrating Rating)	After Therapy Programme (Trouble Concentrating Rating)
Mean	2.904761905	2
Variance	0.79047619	0.9
Observations	21	21
Pearson Correlation	0.177838427	
Hypothesized Mean Difference	0	
Df	20	
t Stat	3.516107748	
P(T<=t) one-tail	0.001086274	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.002172548	
t Critical two-tail	2.085963447	

#### Table 5: t-Test Result on fell irritated or easily annoyed Frequency Rating

	Before Therapy Programme (fell irritated or easily annoyed rating)	After Therapy Programme (fell irritated or easily annoyed rating)
Mean	2.619047619	1.714285714
Variance	0.947619048	0.814285714
Observations	21	21
Pearson Correlation	0.268337028	
Hypothesized Mean Difference	0	
Df	20	
t Stat	3.649799064	
P(T<=t) one-tail	0.000796433	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.001592866	
t Critical two-tail	2.085963447	

	Before Therapy Programme (Feel Insecure Rating)	After Therapy Programme (Feel Insecure Rating)
Mean	2.238095238	1.380952381
Variance	1.29047619	0.947619048
Observations	21	21
Pearson Correlation	0.546880625	
Hypothesized Mean Difference	0	
Df	20	
t Stat	3.872983346	
P(T<=t) one-tail	0.000473335	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.000946671	
t Critical two-tail	2.085963447	

#### Table 6: t-Test Result on Feel Insecure Rating - Paired Two Sample for Means

#### Table 7: t-Test Result on Too High Workload Rating - Paired Two Sample for Means

	Before Therapy Programme (Too High Workload Rating)	After Therapy Programme (Too High Workload Rating)
Mean	3.476190476	3.428571429
Variance	0.461904762	0.357142857
Observations	21	21
Pearson Correlation	-0.158276803	
Hypothesized Mean Difference	0	
Df	20	
t Stat	0.22416792	
P(T<=t) one-tail	0.412450396	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.824900791	
t Critical two-tail	2.085963447	

#### Table 8: t-Test Result on Irregular Work Hours Rating - Paired Two Sample for Means

	Before Therapy Programme (Irregular Work Hours Rating)	After Therapy Programme (Irregular Work Hours Rating)
Mean	3.619047619	3.333333333
Variance	0.247619048	0.333333333
Observations	21	21
Pearson Correlation	0.11602387	
Hypothesized Mean Difference	0	
Df	20	
t Stat	1.825741858	
P(T<=t) one-tail	0.041429449	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.082858897	
t Critical two-tail	2.085963447	

#### Table 9: t-Test Result on lack of positive feedback from managers rating

	Before Therapy Programme (Lack of Positive Feedback from managers Rating)	After Therapy Programme (Lack of Positive Feedback from managers Rating)
Mean	3.333333333	3.095238095
Variance	0.633333333	0.49047619
Observations	21	21
Pearson Correlation	0.478457751	
Hypothesized Mean Difference	0	
Df	20	
t Stat	1.419904586	
P(T<=t) one-tail	0.085518079	
t Critical one-tail	1.724718243	
P(T<=t) two-tail	0.171036158	
t Critical two-tail	2.085963447	

The hypothesis was formulated to identify if the top three most frequently experienced physical and emotional symptoms being analyzed in this study have alleviated during the two months of AM Therapy, also validating if the top three issues causing extreme work related stress were still present. The hypothesis helps to make inference on effectiveness of alternative medicine therapy in stress management programmes, considering the causes of work related stress does not change much in an enterprise and only the method of coping with stress can be improved with stress management programmes.

# DISCUSSION

Hypothesis 1:

- H0 = AM Therapy program has no effect on frequency of work stress related headache in IT professionals
- H1 = AM Therapy program has effect on frequency of work stress related headache in IT professionals

Based on findings summarized in Table 1, we can reject Null Hypothesis as t value 3.86 is significantly higher than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating of headache frequency after therapy program is lower than before the therapy program. This shows that AM therapy program resulted in reduction of work related stress symptom. As t Stat value is significantly higher than t critical, the results showing decrease in headache frequency is statistically significant. We can conclude that the AM Therapy programme decreased the frequency of work stress related headaches to a level that was significant to make an inference.

Hypothesis 2:

- H0 = AM Therapy programme has no effect on frequency of work stress related back pain in IT professionals
- H1 = AM Therapy programme has effect on frequency of work stress related back pain in IT professionals

Based on findings summarized in Table 2, we can reject Null Hypothesis as t value 3.02 is significantly higher than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating of back pain frequency after therapy programme is lower than before the therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptom. As t Stat value is significantly higher than t critical, the results showing decrease in back pain frequency is statistically significant. We can conclude that the AM Therapy programme decreased the frequency of work stress related back pain to a level that was significant to make an inference.

Hypothesis 3:

- H0 = AM Therapy programme has no effect on frequency of work stress related tiredness in IT professionals
- H1 = AM Therapy programme has effect on frequency of work stress related tiredness in IT professionals

Based on findings summarized in Table 3, we can reject Null Hypothesis as t value 3.75 is significantly higher than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating of tiredness frequency after therapy programme is lower than before the therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptom. As t Stat value is significantly higher than t critical, the results showing decrease in tiredness frequency is statistically significant. We can conclude that the AM Therapy programme decreased the frequency of work stress related tiredness to a level that was significant to make an inference.

Hypothesis 4:

- H0 = AM Therapy programme has no effect on frequency of work stress related trouble concentrating experienced by IT professionals
- H1 = AM Therapy programme has effect on frequency of work stress related trouble concentrating experienced by

Based on findings summarized in Table 4, we can reject Null Hypothesis as t value 3.52 is significantly higher than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating for frequency in trouble concentrating after therapy programme is lower than before the therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptom. As t Stat value is significantly higher than t critical, the results showing decrease in frequency of work stress related trouble concentrating, experienced by IT professionals is statistically significant. We can conclude that the AM Therapy programme decreased the frequency of work stress related trouble concentrating experienced by IT professionals to a level that was significant to make an inference.

Hypothesis 5:

- H0 = AM Therapy programme has no effect on frequency of work stress related "fell irritated or easily annoyed" symptom experienced by IT professionals
- H1 = AM Therapy programme has effect on frequency of work stress related "fell irritated or easily annoyed" symptom experienced by IT professionals

Based on findings summarized in Table 5, we can reject Null Hypothesis as t value 3.65 is significantly higher than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating for frequency in "fell irritated or easily annoyed" symptom; after therapy programme is lower than before the therapy programme. This shows that AM therapy programme resulted in reduction of work related stress symptom. As t Stat value is significantly higher than t critical, the results showing decrease in frequency of work stress related "fell irritated or easily annoyed" symptom, experienced by IT professionals is statistically significant. We can conclude that the AM Therapy programme decreased the frequency of work stress related fell irritated or easily annoyed, emotional symptom to a level that was significant to make an inference.

Hypothesis 6:

- H0 = AM Therapy programme has no effect on frequency of work stress related "fell insecure" symptom experienced by IT professionals
- H1 = AM Therapy programme has effect on frequency of work stress related "fell insecure" symptom experienced by IT professionals

Based on findings summarized in Table 6, we can reject Null Hypothesis as t value 3.87 is significantly higher than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating for frequency in "fell insecure" symptom after therapy programme is lower than before the therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptom. As t Stat value is significantly higher than t critical, the results showing decrease in frequency of work stress related "fell insecure" symptom, experienced by IT professionals is statistically significant. We can conclude that the AM Therapy programme decreased the frequency of work stress related feel insure, emotional symptom to a level that was significant to make an inference. Hypothesis 7:

- H0 = Intensity of work related stress from too high workload has not changed when the AM therapy programme was conducted.
- H1 = Intensity of work related stress from too high workload has changed when the AM therapy programme was conducted.

Based on findings summarized in Table 7, we can accept Null Hypothesis as t value 0.22 is significantly lower than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating for intensity of work related stress from too high workload has not changed significantly before and after therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptoms even when the cause of work related stress had not changed significantly. We can conclude that during the AM Therapy programme, the cause "too high workload" for work related stress did not change to a significant level for IT professionals, and hence we can infer that any change in the work related physical and emotional symptoms would be a result of the AM Therapy programme.

Hypothesis 8:

- H0 = Intensity of work related stress from irregular working hours has not changed when the AM therapy programme was conducted.
- H1 = Intensity of work related stress from irregular working hours has changed when the AM therapy programme was conducted.

Based on findings summarized in Table 8, we can accept Null Hypothesis as t value 1.83 is lower than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating for intensity of work related stress from irregular working hours has not changed significantly before and after therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptoms even when the cause of work related stress had not changed significantly. We can conclude that during the AM Therapy programme, the cause "irregular working hours" for work related stress did not change to a significant level for IT professionals, and hence we can infer that any change in the work related physical and emotional symptoms would be a result of the AM Therapy programme.

Hypothesis 9:

- H0 = Intensity of work related stress from lack of positive feedback from managers has not changed when the AM therapy programme was conducted.
- H1 = Intensity of work related stress from lack of positive feedback from managers has changed when the AM therapy programme was conducted.

Based on findings summarized in Table 9, we can accept Null Hypothesis as t value 1.42 is lower than t critical of 2.09, for 95 % significance (alpha = 0.05) in this two tail test of hypothesis. The mean rating for intensity of work related stress from lack of positive feedback from managers has not changed significantly before and after therapy program. This shows that AM therapy programme resulted in reduction of work related stress symptoms even when the cause of work related stress had not changed significantly. We can conclude

### CONCLUSION

Data from this study showed that the alternative medicine therapy resulted in reduction of physical and emotional symptoms, associated with work related stress. For the sample under study, the top three physical and emotional symptoms alleviated, while the top three causes of work related stress were still present. These findings lend support to the use of alternative medicines in work related stress management of IT Professionals. The alternative medicine therapy programme empowered participants to self-regulate their symptoms and optimize their health. This study focuses on validating the effectiveness of alternative medicine therapy as a stress management strategy for IT professionals. Besides the physiological and other health benefits of alternative medicine, by making such a resource available to IT professionals also serves to inform, educate and expand their knowledge regarding health care alternatives and options. The Information Technology (IT) industry is growing at a rapid pace and the work pressure and expectations from IT workers is increasing exponentially. There is a pressing need for emphasis to be placed upon research to address the role of stress and its function and its impact on mental and physiological health of IT professionals. Research in this direction will help IT organizations to come up with effective low-cost strategies and interventions to combat, reduce, or prevent the effects of stress. Reducing some of the sources of stress like workload and irregular work hours, may not be productive for the enterprise. Hence stress is inevitable for IT professionals. However, knowledge of effective stress management strategies will help in empowering IT professionals to become more self-efficacious in the management of their health and well-being.

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