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**The Impact of Culinary Therapy through Social Media vs Group Therapy on Stress
in the Workplace**

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Abstract

Stress in corporate America is widespread as 80% of workers report feeling overly stressed and desire more relief (American Institute of Stress, 2019). There have been many suggested antidotes to stress including therapy and medication. However, there has been some preliminary evidence that creative projects can reduce stress-related symptoms (Lewis, 2016). The following study was an attempt to determine if culinary therapy would reduce stress as compared to group therapy and a control group.

The setting was the homes and colleges of 60 working adults who were currently attend college. The adults consisted of 34 females and 26 males. The age range was 24 years to 40 years of age and 43 adults were parents. The subjects were divided into two groups including: a creative culinary therapy group and subjects who participated in group therapy. A pre and post-test design was used to measure the stress levels utilizing the *Workplace Stress Survey* by the *American Institute of Stress*.

Stress in the Workplace

Stress has become a pandemic in corporate America. With 80% of Americans reporting being overly stressed at their work. *Forbes* (2019) has reported that stress in

corporate America is on the rise. 76% of Americans state that work stress negatively impacts their personal relationships and 66% are losing sleep. Sixteen percent of Americans simply quite their jobs because the pressure becomes too much.

Americans experience more stress than other first world countries. *Fortune Magazine* reported on a study of 19 countries, and it was discovered that Americans work on average 25% more hours. Also, many countries have mandatory vacation and some countries even make it illegal for supervisors to call employees after work hours. For instance, France has the *Right to Disconnect* law and laws limiting work hours to 35 per week with 31 paid vacation days per year. Many countries have a higher *Better Life Index* according to the *The Organisation for Economic Co-operation and Development (OECD)* (2019). For instance, Israel ranks higher due to every Israeli being entitled to healthcare and families living closer together. *The World Happiness Report* (2019) actually ranked Israel, Costa Rica and Denmark above the United States and gave Finland the number one spot. The United States ranked 15th. This measure takes into account levels of stress among its citizens, economics, well-being and national statistics. For instance, many citizens in Denmark live near or with many family members. Other Danish citizens live in hotel like housing with the residents eating together in a cafeteria area so neighbors get to know and support one another. Furthermore, these countries mostly pay 100% for a college education as well as retirement benefits. These countries also have free childcare.

Perhaps the greatest stress for workers is the mounting debt that Americans are suffering. According the *Federal Reserve Bank*, housing debt has hit an all-time high with Americans. Personal debt including things like credit cards and medical bills has reached an average of \$38,000 according to the *Northwestern Mutual 2018 Planning &*

Progress Study. *Debt.org* has determined that the average American owes over \$10,000 in medical bill debt alone and *The College Board* has determined that the Americans paying off a college loan owes an average of nearly \$30,000. These amounts can go up as much \$150,000 when paying interest over long periods.

Impact of Stress

The stressors of workers have created great problems for the United States in terms of health and the economy. According the *American Psychological Association*, higher stress increases cortisol levels which negatively effects the cardiovascular, endocrine, respiratory, nervous and digestive systems. Stress can also greatly hinder a woman's ability to have a child and stress can greatly harm the fetus.

The American Institute of Stress has published the following statistics:

Percent who say stress has a negative impact on their personal and professional life	48%
Employed adults who say they have difficulty managing work and family responsibilities.	31%
Percent who cited jobs interfering with their family or personal time as a significant source of stress.	35%
Percent who said stress has caused them to fight with people close to them	54%
Reported being alienated from a friend or family member because of stress	26%
Annual costs to employers in stress related health care and missed work.	\$300 Billion

Percent who say they are “always” or “often” under stress at work	30%
People who cited physical symptoms experienced the following	
Fatigue	51%
Headache	44%
Upset stomach	34%
Muscle tension	30%
Change in appetite	23%
Teeth grinding	17%
Change in sex drive	15%
Feeling dizzy	13%
People who cited psychological symptoms experienced the following	
Irritability or anger	50%
Feeling nervous	45%
Lack of energy	45%
Feeling as though you could cry	35%

One of the key statistics above is the \$300 billion cost to employers due to stress of their employees. *Forbes* has determined that workers being absent cost employers an average of \$3,600 per employee. So, if a business owner has 100 employees, the owner is losing \$360,000 every year due to workers simply not showing up. Also, stress cuts employee productivity significantly.

The cost to our healthcare system has been significant costing Americans over \$190 billion per year. As the stress hormone cortisol increases, it increases blood cholesterol, triglycerides, blood sugar, and blood pressure. This increases the likelihood of heart, muscle and skeletal diseases as well as migraines.

Culinary Therapy and Creativity to Combat Stress

There has been limited evidence as to the effect of culinary activities to reduce stress; however, some data exists on creative methods. In a study by *The Journal of Positive Psychology* (2016), 658 young adults took part in a 13-day daily diary study. Daily they would report how much time they spent on creative activities, daily positive and negative affect, and daily flourishing. The results supported that creative activities increased positive affect. There have been a number of studies to demonstrate the benefits of painting and other forms of artistic expression. *Art Therapy* (2016) published a study whereby cortisol levels were measured before and after subjects engaged in 45-minute art sessions. Post-test results showed a significant decrease in cortisol levels.

Very few if any scientific studies have been conducted on the impact of creative cooking activities on stress. The *Huffington Post* (2017) discussed how mental health professionals recommend cooking as a stress reliever. *Psychology Today* (2015) discussed the benefits of *Culinary Therapy* and quotes therapists advocating for this approach. Even the most prestigious business newspaper in the states *The Wall Street Journal* highly recommends creative cooking activities for reduction stress. However, with all these recommendations, empirical evidence is lacking.

Method

The method of the study included pre-testing 60 adults who both attend college and work full time. The adults consisted of 34 females and 26 males. The age range was 24 years of age to 40 years and 43 adults were parents. The subjects were divided into two groups including: a group therapy method and a culinary therapy group. Each group had 30 subjects each. Subjects were randomly assigned to each group. A pre and post-test

design was used to measure the stress levels utilizing the *Workplace Stress Survey* by the *American Institute of Stress*.

The creative group were required to choose a creative video from <https://first.media/blossom>. This social media group offers popular creative videos on Facebook, Youtube and other media outlets showing viewers how to cook creative and enjoyable dishes. The subjects were allowed to choose any video among the cooking activities they wished. Each subject was required to engage in a 45 minute or longer cooking activity at least two times a week over a two-week period. Blossom has over 1.3 billion views every month and is associated with BabyFirstTV with a board of doctors, educators and psychologists. The therapy group engaged in two 45-minute group therapy sessions each week over a two-week period. The group therapy session was conducted by a licensed PhD in psychology. The group therapy consisted of a Rogerian Humanistic Therapy approach.

Results

The Workplace Stress Survey by the *American Stress Institute* was administered before and after the treatments and time periods for all three groups. The survey has a minimum score of 10, and highest possible score of 100. A score between 10-30 equals the ability of handling your job well. A score between 40-60 demonstrates handling one's job moderately well. A score above 70 demonstrates problems that need to be resolved. Pre-tests were compared and no significant differences were found between the two groups before treatments. In the post-test results, the first t-test compared pre and post tests of the culinary therapy group.

P value and statistical significance:

The two-tailed P value equals 0.0003

By conventional criteria, this difference is considered to be extremely statistically significant.

Confidence interval:

The mean of Group One minus Group Two equals 6.23

95% confidence interval of this difference: From 2.98 to 9.49

Intermediate values used in calculations:

$t = 3.8325$

$df = 58$

standard error of difference = 1.626

Group	Pre-Test	Post-Culinary Group
Mean	74.83	68.6
SD	5.33	7.14
SEM	0.97	1.3
N	30	30

The results show a significant difference demonstrating that culinary therapy decreased stress among the participants.

The next t-test compares the pre and post tests results for the group therapy subjects.

P value and statistical significance:

The two-tailed P value is less than 0.0001

By conventional criteria, this difference is considered to be extremely statistically significant.

Confidence interval:

The mean of Group One minus Group Two equals 7.87

95% confidence interval of this difference: From 4.45 to 11.29

Intermediate values used in calculations:

$t = 4.6025$

$df = 58$

standard error of difference = 1.709

Group	Pre-Test	Group Therapy Post
Mean	75.3	67.43
SD	6.3	6.93
SEM	1.15	1.26
N	30	30

The results show that group therapy significantly decreased stress among the participants.

The final t-test compared the culinary therapy group with the group therapy participants.

P value and statistical significance:

The two-tailed P value equals 0.5231

By conventional criteria, this difference is considered to be not statistically significant.

Confidence interval:

The mean of Group One minus Group Two equals -1.17

95% confidence interval of this difference: From -4.80 to 2.47

Intermediate values used in calculations:

$t = 0.6425$

$df = 58$

standard error of difference = 1.816

Group	Group Therapy	Culinary Therapy
Mean	67.43	68.6
SD	6.93	7.14
SEM	1.26	1.3
N	30	30

The results show there was no significant difference between group therapy and culinary therapeutic creative methods.

Discussion

Both group therapy and culinary therapeutic methods significantly decreased stress among its participants. The fact that culinary therapy was just as effective as group therapy shows encouragement for individuals suffering from stress. First, since 80% of American workers report stress, culinary therapy may be an extremely cost-effective

method that an individual can do on their own timeline. Furthermore, both groups reported average scores above 70 on the *Work Stress Survey*. The *American Institute for Stress* reports that scores above 70 need interventions or treatment. Both treatments got each group below 70 on average. The treatments were able to bring each group within a manageable stress level according to the *American Institute of Stress* levels. It is important to note that the culinary therapy method was compared with group therapy. Group therapy can certainly be effective; however, several participants in the study made comments that they would have preferred individual therapy. Future studies should compare culinary therapy with individual therapeutic practices. Also, studies could explore combining culinary therapy with individual or group therapies. Furthermore, this study used the *Work Place Survey* to measure stress. Future studies could utilize measuring cortisol levels to gain more biological results.

One of the most important discoveries from the participants was that several mentioned that simply cooking the same meals for themselves or their children most likely would have had no effect; however, it was the creative element of these cooking activities that reduced their stress. *First Media* demonstrates in their videos creative methods to cook more appealing dishes. Simply heating up some frozen dinners most likely would not have had the same results. It was the artistic or creative elements of the culinary therapy that most likely made the difference.

This study shows promise for individuals suffering from stress. However, the authors of this study are not suggesting that culinary therapy should be used as a replacement for licensed psychologists. There are so many serious mental illnesses that need to be addressed with professional help. Psychologists, psychiatrists, behaviorists and

professional counselors are certainly needed and available. Culinary therapy can be seen as a tool that an individual can use or a therapist as one of many methods in their arsenal. More studies will allow us to see the future of this type of stress reducer.

Culinary therapy could be a tool for business owners to save money. The above studies demonstrate that corporations are losing billions due to the stress their employees suffer. There are many things that business owners can do including giving each employee *The Workplace Survey*. Business owners can certainly encourage employees to get professional help. However, culinary therapy may be a very cost-effective suggestion for those suffering from stress symptoms.

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