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Determining Stress Management Activities for Various Myers-Briggs Personality Types

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Stress, a component of everyday life, can be detrimental to health. Previous research has shown an increase in studies on stress in recent years, but little on linking stress and personality type. Because of this, new and innovative research in stress management is of utmost importance. This study combined the personality type theory of Myers-Briggs with de-stressing activities to determine which personality types found which de-stressing activities the most effective. The study focused on teenagers to bring more light to their stress management. There were different correlations, but they were insignificant. A conclusive statement cannot be made about the original research question, but a plethora of useful information was still discovered. While the results were varied, the conclusion of this study was that it was possible to determine which activities would most benefit people with certain personality types.

Keywords: stress, Myers-Briggs, personality, stress management, Jung

Introduction

It is important to study methods of stress management because over time, stress has dire health consequences (Kumar, Rinwa, Kaur, & Machawal, 2013). Because stress and its sources are different for every person, the unique approach of using personality was taken to account for individuality within the participants. The process of stress has been extensively researched, as well as the managing of stress, but using personality type to determine the best de-stressing activities for individuals has not had a large amount of scientific research. Thus, this study contributes to the research by collecting data on the trends found between one's Jung-based personality type and which de-stressing activities one found effective.

Literature Review

Stress is, perhaps unfortunately, a phenomenon to which anyone can relate, as people experience stressful situations everyday. Generally, stress is defined as responses to demands imposed on the body. Even though this topic has seen a surge in research in the past few decades, there is still uncertainty surrounding its fundamental mechanisms because it involves a wide array of cellular activities (Kumar, Rinwa, Kaur, & Machawal, 2013). Upon sensing a stressor – defined as anything causing the stress reaction – the brain sends signals to the body which catalyzes a chain of events to ready the person to take action in a stressful situation (Fritz, 2014). However, experiencing stress for a prolonged period of time wreaks havoc on the body (Toussaint, Shields, Dorn, & Slavich, 2016).

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Long-term stress is associated with a variety of physical, physiological, and psychological ailments, such as: anxiety, depression, infertility, memory impairment, obesity, and dementia. It is a key factor in neuropsychiatric disorders such as PTSD. Stress can be even more detrimental than other well-known risk factors, such as drug-use, alcohol use, and physical inactivity, which can lead to, “substantial morbidity and mortality” (Toussaint, Shields, Dorn, & Slavich, 2016, p. 1). Based on these sources, and given the fact that the stress response is crucial to human life, it is clear that research on stress management is important.

Humans experience a variety of stressors every day. Stress is a part of everyday life, which is no different for today’s average teenager. While a teenager typically does not face the same stressors as an adult, they still have their fair share: academics, sports, peer/family conflict, college or career decisions, various social pressures, relationships, etc. (Fritz, 2014).

Previous research displayed millions of results when searching for “stress” and “stress management,” indicating a proliferation of studies on stress. In order to narrow down this vast field, a unique, less extensively researched niche was selected: stress in relation to personality.

There is a personality system created to categorize people by how they handle stress, called the Type A or B personalities. Type A personality is typically described as more high-strung, more competitive, with a great sense of urgency. Type B is much more relaxed, indulgent, more accepting of failure, and has lower aspirations (McLeod, 2014). This model was not used in this research study because this personality type has strong indications Type A handles stress with more difficulty than Type B, and there are only two options for any individual.

Instead, the personality type used in the present study was the Myers-Briggs personality type, measured by the Myers-Briggs Type Indicator (MBTI). The MBTI is derived from the archetypes of famous psychiatrist Carl Jung, one of the founders of modern depth psychology (Hollis, 2013). The MBTI is a self-assessed, forced-choice, multi-item questionnaire which results as one of 16 personality types indicated by four letters (*The Myers-Briggs Foundation*). MBTI personality was used for this research study because it is based on four psychological categories, each category having two preferences. According to Myers-

Briggs Type theory, everyone uses all eight preferences, but more easily and naturally uses only four, one from each category (Hirsh & Kummerow, 1989). The first letter is I or E, for the “Introversion- Extraversion” category. Introversion is obtaining energy during solitude, from one’s internal mindscape. Extraversion is obtaining energy from social interactions and one’s external world (Hirsh & Kummerow, 1989). The second letter is S or N, for “Sensing- iNtuition (Intuition).” Sensing focuses on practical facts, details, and events the five senses interpret, while Intuition focuses on the big picture, underlying patterns, and following “gut feeling.” The third letter is either T or F, for “Thinking-Feeling.” Thinking is known for logical reasoning in decision-making, while Feeling is known for deciding upon personal values. The fourth letter is J or P, for “Judging-Perceiving.” Judging preference indicates one making confident, concrete decisions, while Perceiving leaves life plans more open-ended, and more apt to change (Hirsh & Kummerow, 1989).

Most studies that utilized MBTI personality were concerned with how it affected peoples’ careers. One such study at the University of East London investigated the relationship between executive coaching styles and the Myers-Briggs types of the coaches. The paper mentions that while each person has their preference of the four binary categories, everybody has the ability to use and strengthen their non-preference; it just requires more energy and practice. For example, a person with the preference for Introversion will have a natural tendency to be less social and more reflective, but if they are social and outgoing enough, they can learn to utilize their Extraversion non-preference. However, if this person is subject to stress, they will operate under their preference of Introversion. This is how, “The four preferences do not operate independently,” but rather fluidly and interchangeably (Holloway, Passmore, & Rawle-Cope, 2010, p. 3). The fact that this fluidity in personality is present with the Myers-Briggs personality type is precisely the reason this personality type was chosen for this study. It accounts for the adaptability within an individual.

Another study measured desirable qualities within job performance using Myers-Briggs types. This study drew conclusions such as ENFP types typically had the highest job performance score (Shybut, 1993). These conclusions further support that Myers-Briggs personalities can be manifested within everyday life

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and affect one's job. A similar study by the American Counseling Association supported these conclusions by developing its own situations for the participants by administering twelve different, real-life "career obstacles" and measuring participants' responses to those obstacles over the course of one month. Each participant took the MBTI to determine which preferences affected the obstacles that were challenging for the participants. For instance, it was found that Sensing-Thinking types were reluctant to change, which was consistent with the type as they were "wanting to analyze facts impersonally to reach decisions" (Healy & Woodward, 1998). This led to the current hypothesis that those with Sensing over Intuition or Thinking over Feeling would yield less positive results in de-stressing because stress can be emotionally charged, which these types are less able to navigate. The American Counseling Association study, while using career obstacles instead of stress levels, still supports Myers-Briggs relevance to an individual's day-to-day life, especially regarding problem-solving or reacting to situations. Both aforementioned studies also support the fact that Myers-Briggs type is valid in researching personality influences on daily life.

Because personality type could affect one's behavior, it follows it could also affect one's interactions with stress. Previous research indicates countless studies have focused on stress, and several related stress levels and their effects on psychological tendencies or personality traits. In one study done at Robert Morris University, Myers-Briggs personality type was examined in relation to worry. One of the results was that those who use Introversion more than Extraversion tended to worry more, as they were more inclined to reflect and concentrate within their inner world (Ragozzino, 2011). This led to the hypothesis for the current study that people with the Introversion preference would have higher stress levels, but also yield more positive results when focusing on activities meant to lower stress levels. While the Robert Morris study did not relate the particular notion of stress to one's personality, it did demonstrate an interest in relating personality to negative effects on one's life, and also used the Jung Type Indicator, a personality test based on the MBTI, to categorize one's personality. These studies show that Jung-based personality types can be used to discover how different people perceive stress.

In other studies, individuals were assessed on their stress levels and also tested for their personality type, such as a study done on kindergarten teachers in Hong Kong. This study administered the MBTI and a General Health Questionnaire to the teachers to determine their personality types and their mental health in their workplace. It found ESFP types were the most likely to be satisfied with their jobs and have the most positive scores on the health survey (Yau-ho & Li-fang, 2014). This suggests personality type can have a positive impact on one's health, as it affects satisfaction in a certain environment which in turn impacts mental health. Because different personalities thrive in different situations and because personality type affects mental health, it was concluded that personality types could be used to indicate how different personalities handle stress.

None of the reviewed studies, however, assessed one's personality, their stress, and how to best manage the measured stress based on the assessed personality type. Personality was found to be used as simply another data point and was never ultimately used as a tool used to decrease stress. This lack of research was identified as the gap to be covered, and therefore produced the research question of this investigation: which de-stressing activities were the most effective for which Jung-based personality types?

Method

The current study utilized survey analysis and case study to discover which of these de-stressing activities were beneficial to which personality types through quantitative and qualitative measures.

Participants

The 10 participants were juniors at a public high school. All participants were 16-17 years old, and 8 were female while 2 were male. Participants were not offered any incentive to complete the study and all voluntarily consented to join. Each participant was given a number, from 1 through 10, that was known only to the researcher and that participant. This number ensured the participants' anonymity throughout the study.

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Materials

Stress Test. The Stress Test is a self-assessment the researcher created with questions pertaining to a participant's stress level in various areas of their life: academic life, home life, sports, extracurricular activities, and social life. Participants were asked to rate their stress level in each area on a scale of 1-5, with 1 being little to no stress and 5 being a large amount. The total stress score ranged from 5-25. The assessment also asked what classes the participants were taking, denoting AP, online, and dual-enrollment, which sports if any, and which extracurriculars. The researcher created an assessment tool rather than finding a pre-existing one because it was more feasible, and it also gave the researcher control over which areas of the study were investigated.

Jung Type Indicator. The Jung Type Indicator (JTI) is an online, 64-item self-assessment in which the results compute one's JTI personality type. Items are phrased as statements, such as "You think everything in the world is relative," with 5 possible answers: "YES," "yes," "uncertain," "no," and "NO." The JTI result is a compilation of four letters, with each letter having two options. The letters are identical to those used in the MBTI, with E or I, S or N, T or F, and J or P. The test is a free alternative to the widely-used MBTI, which was the reason the MBTI itself was not used.

De-Stressing Activities. The De-Stressing Activities documents are comprised of three activities designed to lower a participant's stress levels and were given to participants to start their five-week de-stressing period. The activities were meant to be performed for a duration of 5-10 minutes, and participants were asked to do 2-3 per week for 5 weeks. The first activity was "Deep Abdominal Breathing Exercises," (DABE) which instructed the participant to breathe deeply and slowly while in a standing position. The exercise was meant to counteract the rapid, shallow breathing that can accompany stressful situations (Antai-Otong, 2001). This activity was chosen because focusing on breathing is a practice of mindfulness, a process proven to be helpful in allowing adolescents to relax (Monshat et al., 2013). The second activity was "Visualization or Imagery," (VI) which instructed the participant to use a deep breathing exercise to prepare and then visualize, in detail, a relaxing scene. The exercise was meant to provide an entire-body escape from stressful

feelings (Antai-Otong, 2001). This activity was chosen because, like the deep breathing activity, it promoted mindfulness in the participants, but gave the option to let the mind be active in imagination, which can be easier to do than focus on breathing alone. Lastly, the third activity was "Mandala Coloring," (MC) which instructed the participant to spend time coloring any of four mandala designs. This exercise was meant to be a mindless activity that focused thought and energy on creating a pleasing picture rather than whatever was stressing the participant. This activity was chosen because therapeutic mandalas were first advocated by Jung himself for their, "calming and healing effect on [their] creator" (Henderson, Rosen, & Mascaro, 2007, p. 149).

De-Stressing Journals. The De-Stressing Journal is a document packet comprised of 15 copies of a single form that participants were asked to fill out after each time they performed an activity. The form identifies the activity, asks if the participant felt it helped in de-stressing, whether the task was easy or difficult to perform, whether the participant actually liked the task or not, if the participant had performed the activity before for de-stressing purposes, and whether or not the participant thought they could use it in the future. The journals are qualitative data in which the researcher can find and evaluate trends or patterns among the participants, based on their answers to these questions and also to their JTI personality type.

Wrap-Up Questions. The Wrap-Up Questions are documents surveying participants on their overall experience in the study. They rated each activity on effectiveness and if it was a positive experience on a scale of 1-5, with 1 being poor and 5 being great, and also explained their rating. Other questions included whether there were any challenges that arose that would compromise their de-stressing during the investigation. These questions were designed to see which activities overall participants felt were the most effective in de-stressing, and also if there were any events that came up that impeded the study's effect.

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Procedure

This study received IRB approval prior to beginning the investigation. The notion that stress would be measured through a survey was derived from the Hong Kong study, where they tested a variety of ailments, such as stress in the workplace, in correlation to Myers-Briggs personality. In this study, researchers used the General Health Questionnaire to provide the stress data because it is streamlined and informative, which is why they were used in this study. However, since this researcher did not have access to a professional stress survey, one was created. Because participants' reactions to certain, guided activities were needed, Research Journals were developed

as a way for participants to record their responses in real time, for added accuracy with their end results.

Participants took the Stress Test and JTI before the five-week de-stressing period. They were then given the De-Stressing Activities, and the Research Journals to complete on their own time. At the end of their five weeks, the journals were returned to the researcher, and the Stress Test was administered once more to test their overall stress levels again, and the Wrap Up Questions were given last.

Table 1: JTI Results Acronyms Explained

INFJ	Introversion iNtuition Feeling Judging
ENFP	Extraversion iNtuition Feeling Perceiving
ENFJ	Extraversion iNtuition Feeling Judging
INFP	Introversion iNtuition Feeling Perceiving
INTP	Introversion iNtuition Thinking Perceiving
INTJ	Introversion iNtuition Thinking Judging

Table 2: JTI Results of All Participants

Participant #	JTI Result	E / I and %	S / N and %	T / F and %	J / P and %
1	ENFP	E (34)	N (22)	F (34)	P (22)
2	ENFP	E (66)	N (16)	F (16)	P (12)
3	ENFJ	E (78)	N (22)	F (12)	J (25)
4	INFP	I (28)	N (19)	F (9)	P (12)
5	INTP	I (67)	N (9)	T (6)	P (12)
6	INTJ	I (69)	N (53)	T (81)	J (50)
7	ENFJ	E (25)	N (16)	F (3)	J (28)
8	INFJ	I (38)	N (19)	F (34)	J (28)
9	INFJ	I (62)	N (50)	F (12)	J (31)
10	INFJ	I (41)	N (19)	F (44)	J (34)

Higher percentages indicate a stronger favor for the shown preference.

Results

The purpose of this research study was to investigate if one could use an individual's JTI personality type to determine which de-stressing activities would be most effective. After data collection, participant results were analyzed quantitatively and qualitatively by comparing stress scores, De-Stressing Journal entries, and Wrap-Up answers to their JTI result.

Quantitative Results

The results from the JTI showed that among the ten participants, six of the sixteen possible types were represented. There were three INFJs, two ENFPs, two ENFJs, one INTP, one INFP, and one INTJ. Table 1 expands each acronym for clarification purposes.

Table 2 displays each participant with their JTI result and their percentage within each preference. For example, an N (22) refers to a 22% of Intuition, meaning that participant had a 22% preference for Intuition over Sensing.

Table 3 displays each participant and their stress score. The highest possible score was a 25 while the lowest possible score was a 5. There is seemingly no correlation between personality type and overall stress. For example, Participant 8, who has INFJ type, had a relatively low-stress score while the other two INFJ types had higher stress scores. There was a correlation between the pre-activities scores and the post-activities scores, however it was not significant (see Table 4). Furthermore, all four participants stated in their post-Activities Stress Tests that there was a direct, outside cause of their decrease of stress in certain areas.

Where:

r = The Pearson Product Moment Correlation

r^2 = Shared Variance

t = Student's t

df = $N-2 = 8$

Although a correlation of 0.866 appears strong, the t -test for significance between pre-test and post-test stress scores fell below the $P < .05$ critical value (2.306), meaning it was not statistically significant.

Table 3: Stress Scores of All Participants

Participant #	JTI Result	Pre-Activities Stress Score	Post-Activities Stress Score
1	ENFP	15	15*
2	ENFP	11	10
3	ENFJ	15	13
4	INFP	12	11
5	INTP	10	12
6	INTJ	12	15
7	ENFJ	10	12
8	INFJ	8	9
9	INFJ	17	17
10	INFJ	19	17

*Participant 1 reported an increased amount of stress in a certain area of their life, but since their score was already at ceiling (5), it could not change.

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Table 4: The Relationship Between Pre-Test and Post-Test Stress Scores

Participant #	Pre-Test Stress Score	Post-Test Stress Score	Difference
1	15	15	0
2	11	10	-1
3	15	13	-2
4	12	11	-1
5	10	12	2
6	12	15	3
7	10	12	2
8	8	9	1
9	17	17	0
10	19	17	-2
			r=0.866059
			r ² =0.750059
			t=0.726314

The effectiveness of the De-Stressing Activities was varied. In Figure 1, all ten participants and their ratings of the activities are shown. The lowest effectiveness rating was a 1 and the highest effectiveness rating was a 5. None of the participants gave the DABE a score lower than a 3, and none of the participants rated the VI a 5.

Of the five participants who rated DABE a 5, three had an Introversion preference, and the other two had very high Extraversion preferences at 66% and 78%. Every participant had Intuition: four had a slight preference, while one had a moderate preference. Four had a moderate Feeling preference, while the fifth only had a marginal Thinking preference. There were three Perceiving and two Judging preferences, all of which were slight to moderate.

Of the three participants who rated the Mandala Coloring a 5, two moderately preferred Extraversion while one moderately preferred Introversion. All slightly preferred Intuition. Two moderately preferred Feeling while one marginally did. One slightly

preferred Perceiving, and two moderately preferred Judging at 28%.

The ENFPs found activities that they rated a 5, but they were different. Participant 1 rated MC a 5 while Participant 2 rated DABE a 5. Participant 1 rated the others highly while Participant 2 rated VI mediately at 3 and Mandala Coloring at 1.

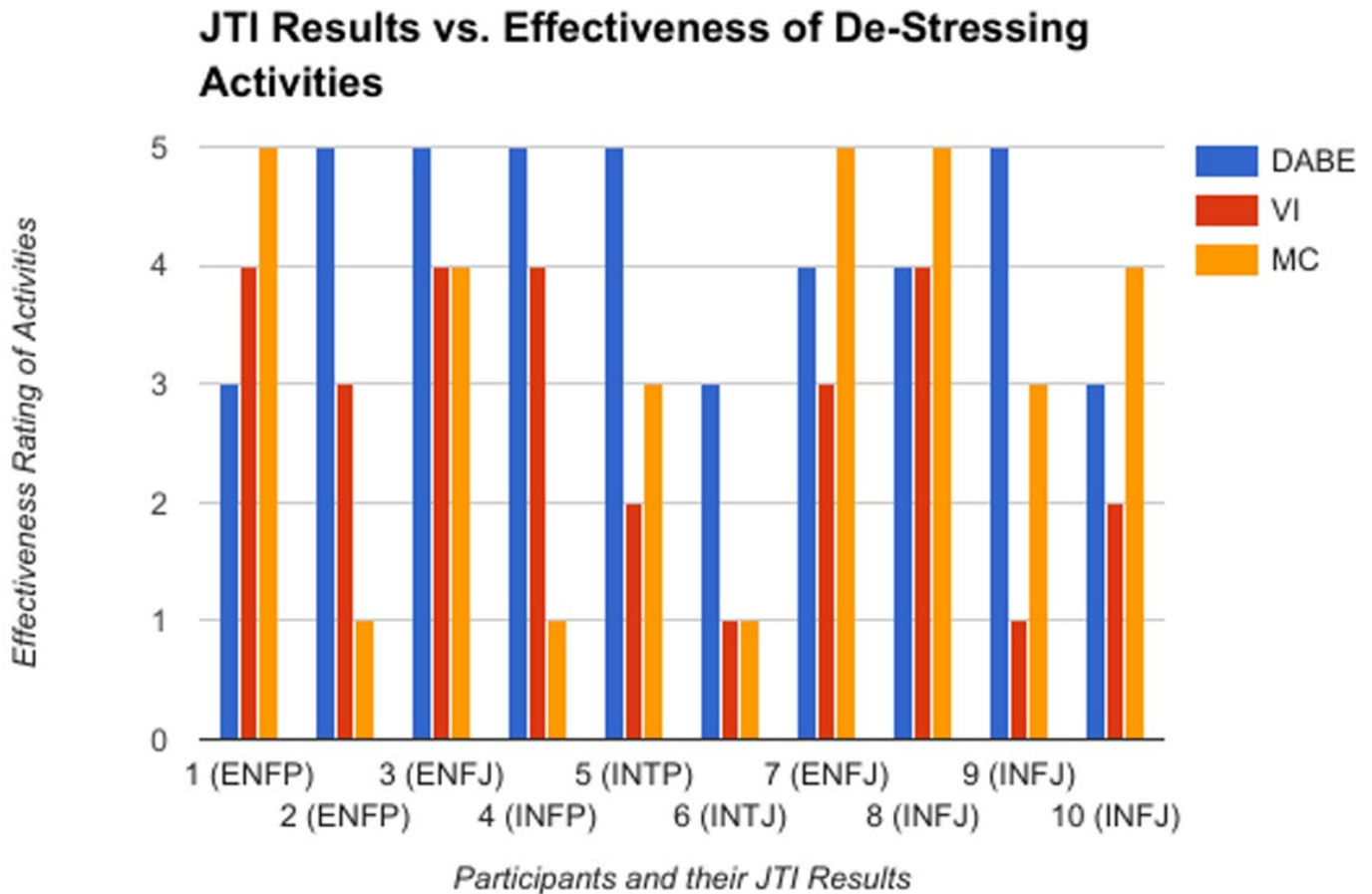
The two ENFJs rated all activities 3 or above, and again, their 5's they administered were for different activities: Participant 3 rated DABE at 5, and Participant 7 rated MC at 5.

Two of the three INFJs, Participants 8 and 10, rated the MC the highest while Participant 9 rated DABE the highest.

Participant 6, the INTJ, had the least effective ratings for the activities, rating them all either 3 or below. Participants 4 and 5, the INFP and INTP respectively, rated DABE a 5. However, Participant 4 rated the VI higher than MC, whereas Participant 5 did the opposite.

Since participants were not instructed to perform the activities the same number of times, each par-

Figure 1

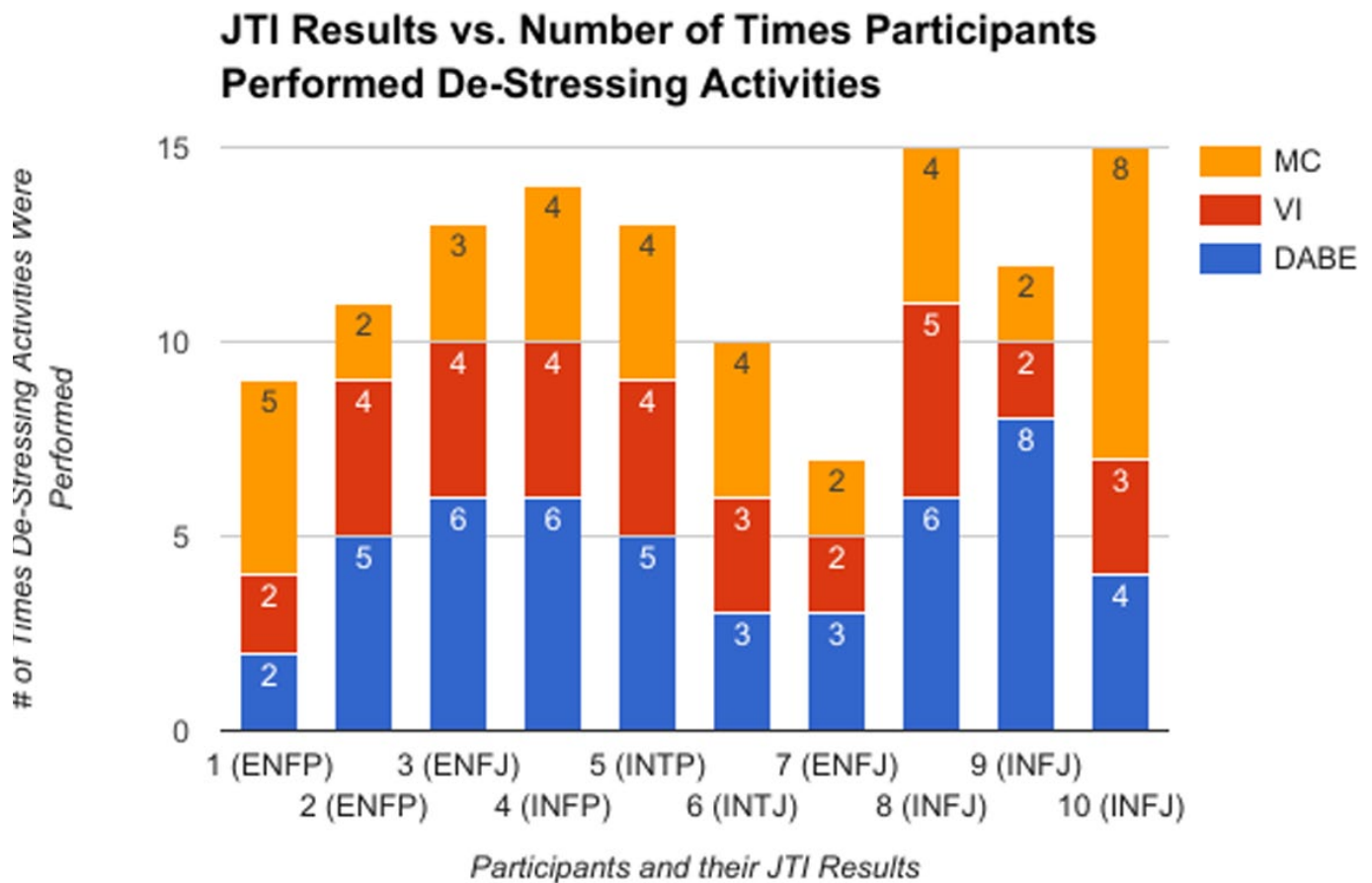


participant had a different ratio of how many times they performed each one within the total amount. Each participant was also not required to perform the full 15 times, so the total number of activities completed varied as well. Figure 2 displays every participant.

Correlations were developed in order to determine if there was a relationship between a participant’s JTI score and the number of times they chose a specific activity. The results are found in Tables 5-8. The JTI scores were converted to a continuum for statistical analysis. The original scores are bi-directional rang-

ing from 0-100, meaning the scale ranges 200 points. The continuum moves the 0 so that the 200-point scale goes in one direction. To do the calculations for the Extraversion/Introversion category, 100 is added to an Extraversion score. To calculate an Introversion score, the score is subtracted from 100. For example, an Extraversion score of 34 would be converted to 134. An Introversion score of 28 would be converted to 62. This calculation strategy is applied to all four categories.

Figure 2



Tables 5-8 represent the participants' number, their JTI preference, their JTI score, their JTI continuum score, their pre-test and post-test stress scores, their growth, the number of times they performed each activity, and the total number of activities they performed. Pearson Product Moment Correlations were calculated for the continuum score, the number of times each activity was performed, and the total. Although a few of the correlations appear strong, the results show no statistical significance. This is most likely due to the small sample size.

Qualitative Results

Participants were also asked whether they would do each of the activities in the future for de-stressing purposes. When the participants were asked if they had performed any of these activities prior to the study for de-stressing purposes, the only activity any of them had performed was DABE. Participants 2, 3, 6, 7, and 8 had all done the same or a similar breathing activity prior to this study. When the participants were asked if these activities had an overall positive or negative impact on them, seven answered positive, two answered neutral, and one answered neutral-positive.

For qualitative results on the effectiveness of the activities, refer to Tables 9-14.

Table 5: Relationship Between Extraversion / Introversion and Preferred Choice of De-Stressing Activities

Participant #	Preference	Score	Continuum	Pre-Test	Post-Test	Growth	DABE	VI	MC	Total
1	E	34	134	15	15	0	2	2	5	9
2	E	66	166	11	10	-1	5	4	2	11
3	E	78	178	15	13	-2	6	4	3	13
4	I	28	72	12	11	-1	6	4	4	14
5	I	67	33	10	12	2	5	4	4	13
6	I	69	31	12	15	3	3	3	4	10
7	E	25	125	10	12	2	3	2	2	7
8	I	38	62	8	9	1	6	5	4	15
9	I	62	38	17	17	0	8	2	2	12
10	I	41	59	19	17	-2	4	3	8	15
			r=	0.000456644	-0.296975815	-0.47688811	-0.183278434	0.012370436	-0.31356597	-0.335875433
			r ²	2.08524E-07	0.088194635	0.227422269	0.033590984	0.000153028	0.098323618	0.112812306
			t=	0.001884754	0.726314211	9.36327E-07	0.000746406	0.021956202	0.464157896	2.26008E-06

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Table 6: Relationship Between Sensing / Intuition and Preferred Choice of De-Stressing Activities

Participant #	Preference	Score	Con- tinuum	Pre-Test	Post-Test	Growth	DABE	VI	MC	Total
1	N	22	78	15	15	0	2	2	5	9
2	N	16	84	11	10	-1	5	4	2	11
3	N	22	78	15	13	-2	6	4	3	13
4	N	19	81	12	11	-1	6	4	4	14
5	N	9	91	10	12	2	5	4	4	13
6	N	53	47	12	15	3	3	3	4	10
7	N	16	84	10	12	2	3	2	2	7
8	N	19	81	8	9	1	6	5	4	15
9	N	50	50	17	17	0	8	2	2	12
10	N	19	81	19	17	-2	4	3	8	15
			r=	-0.330889455	-0.576807902	-0.267217054	-0.149824787	0.409670018	0.162310186	0.172725745
			r ² =	0.109487831	0.332707356	0.071404954	0.022447467	0.167829523	0.026344596	0.029834183
			t=	6.62561E-07	0.726314211	9.36327E-07	0.000746406	0.021956202	0.464157896	2.26008E-06

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Table 7: Relationship Between Thinking / Feeling and Preferred Choice of De-Stressing Activities

Participant #	Preference	Score	Con- tinuum	Pre-Test	Post-Test	Growth	DABE	VI	MC	Total
1	F	34	134	15	15	0	2	2	5	9
2	F	16	184	11	10	-1	5	4	2	11
3	F	12	188	15	13	-2	6	4	3	13
4	F	9	191	12	11	-1	6	4	4	14
5	T	6	94	10	12	2	5	4	4	13
6	T	81	19	12	15	3	3	3	4	10
7	F	3	103	10	12	2	3	2	2	7
8	F	34	134	8	9	1	6	5	4	15
9	F	12	112	17	17	0	8	2	2	12
10	F	44	144	19	17	-2	4	3	8	15
			r=	0.150185178	-0.351713922	-0.862035929	0.372286949	0.369115794	-0.017938733	0.390991026
			r2=	0.022555588	0.123702683	0.743105943	0.138597572	0.136246469	0.000321798	0.152873982
			t=	5.58268E-05	0.726314211	9.36327E-07	0.000746406	0.021956202	0.464157896	2.26008E-06

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Table 8: Relationship Between Judging / Perceiving and Preferred Choice of De-Stressing Activities

Participant #	Preference	Score	Continuum	Pre-Test	Post-Test	Growth	DABE	VI	MC	Total
1	P	22	122	15	15	0	2	2	5	9
2	P	12	112	11	10	-1	5	4	2	11
3	J	25	75	15	13	-2	6	4	3	13
4	P	12	112	12	11	-1	6	4	4	14
5	P	12	112	10	12	2	5	4	4	13
6	J	50	50	12	15	3	3	3	4	10
7	J	28	72	10	12	2	3	2	2	7
8	J	28	72	8	9	1	6	5	4	15
9	J	31	69	17	17	0	8	2	2	12
10	J	34	66	19	17	-2	4	3	8	15
			r=	-0.18311436	-0.36453782	-0.220534502	-0.0905776	0.137741434	-0.054442919	-0.044288227
			r ² =	0.033530869	0.132887822	0.048635467	0.008204302	0.018972703	0.002964031	0.001961447
			t=	1.01095E-05	0.726314211	9.36327E-07	0.000746406	0.021956202	0.464157896	2.26008E-06

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Table 9: Will You Use the Deep Breathing in the Future and Why?

Participant / JTI Result	Yes or No?	Felt calmed, relaxed, or soothed	Easy and / or quick	Focused (on something else) or cleared head	Felt it was useful / versatile or good for them	Ineffective
1 - ENFP	1x yes, 1x no					x
2 - ENFP	Yes	x	x	x	x	
3 - ENFJ	Yes	x	x	x	x	
4 - INFP	Yes	x	x			
5 - INTP	Yes	x		x		
6 - INTJ	2x no, 1x maybe					x
7 - ENFJ	Yes	x	x		x	
8 - INFJ	Yes	x	x		x	
9 - INFJ	Yes	x	x			
10 - INFJ	3x yes, 1x maybe				x	

Table 10: Will You Use Visualisation in the Future and Why?

Participant / JTI Result	Yes or No?	Felt it was fun / easy / effective	Liked with an aid	Depend on situation / if they got better at it	Could be used in many situations	Good during time performing it	Hard to concentrate/ ineffective
1 - ENFP	1x yes, 1x maybe		x				x
2 - ENFP	1x yes, 3x no			x			
3 - ENFJ	Yes				x		
4 - INFP	Yes	x					
5 - INTP	No					x	
6 - INTJ	No						x
7 - ENFJ	No						x
8 - INFJ	4x yes, 1x no		x	x			
9 - INFJ	No						
10 - INFJ	Maybe			x			

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Table 11: Will You Use the Mandala Coloring in the Future and Why?

Participant / JTI Result	Yes or No?	Felt it was calming/relaxing	Fun/good for them	Felt it was a chore/overall ineffective
1 - ENFP	Yes	x	x	
2 - ENFP	No			x
3 - ENFJ	Yes		x	
4 - INFP	No			x
5 - INTP	No			x
6 - INTJ	No			x
7 - ENFJ	1x yes, 1x no		x	
8 - INFJ	Yes	x	x	
9 - INFJ	1x yes, 1x no		x	
10 - INFJ	Yes	x	x	

Table 12: Did the Deep Breathing Help You Destress and Why?

Participant / JTI Result	Yes or No?	Felt calmed / relaxed	Cleared their head	Could focus on something else / refocus	Ineffective	Had lots going on
1 - ENFP	1x yes, 1x no				x	
2 - ENFP	Yes		x			
3 - ENFJ	Yes	x	x	x		
4 - INFP	Yes	x		x		
5 - INTP	Yes	x	x	x		
6 - INTJ	2x yes, 1x no	x				x
7 - ENFJ	2x yes, 1x no	x		x		
8 - INFJ	Yes	x				
9 - INFJ	Yes	x				
10 - INFJ	Unclear	x				x

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Table 13: Did the Visualization Help You Destress and Why?

Participant / JTI Result	Yes or No?	Felt calmed / relaxed	Took mind off of worries	Had difficulty focusing / performing task	Ineffective
1 - ENFP	Yes			x	
2 - ENFP	1x yes, 3x no			x	x
3 - ENFJ	3x yes, 1x no	x	x		x
4 - INFP	Yes	x	x		
5 - INTP	No				x
6 - INTJ	No			x	x
7 - ENFJ	No			x	x
8 - INFJ	Yes		x	x	
9 - INFJ	No				x
10 - INFJ	No			x	x

Table 14: Did the Mandala Coloring Help You Destress and Why?

Participant / JTI Result	Yes or No?	Felt calmed / relaxed	Helped focus on something (else)	Found it fun	Found it effortful, tedious, or annoying	Ineffective
1 - ENFP	Yes	x	x	x		
2 - ENFP	No				x	x
3 - ENFJ	2x yes, 1x no		x			
4 - INFP	No				x	x
5 - INTP	2x yes, 2x no					x
6 - INTJ	No				x	x
7 - ENFJ	No			x		
8 - INFJ	Yes	x	x			
9 - INFJ	Yes	x	x			
10 - INFJ	6x yes, 2x no	x				x

Discussion

This is the first study, compared to those discovered within the literature review, to attempt to measure personality and effectiveness of de-stressing activities, as well as examine if personality could be utilized to determine which de-stressing activities would most effectively be used for teenagers. Because of the extensive amount of data collected and the lack of conclusiveness of this data, the original question of determining which de-stressing activities were best for which personality types was not answered. Instead, this study offers an exploration into the relationship between personality types, ratings of de-stressing activities, and ratings of overall stress levels.

The Stress Test scores suggest that the activities did not decrease stress over a period of five weeks, because participants either had an increase, a decrease due to outside factors or stayed the same. The hypothesis that those with the Introversion preference would have higher levels of stress was not supported, as there was no difference between stress levels of those who preferred Introversion or Extraversion. However, because the Stress Test has never been validated as a reliable measure of stress, it is possible that the activities could actually have affected the participants in a meaningful way, and the data-collecting methods simply did not reflect that. Further research is needed for a strong conclusion.

In contrast, even though the activities may not have decreased overall stress, the results show they did help the participants in the moment. While the statistical analysis did not prove any significance in the results, the qualitative analysis did. The activities were clearly helpful in aiding participants in general in their de-stressing, because of the high ratings of effectiveness for MC and especially DABE. The effectiveness of the MC is consistent with previous research, such as the Texas A&M University study that describes the mandala as, "a meditative tool...thought to promote psychological healing and integration when used by an individual" (Henderson, Rosen, & Mascaro, 2007, p. 149).

The Sensing over Intuition hypothesis could not be tested as no participants preferred Sensing. The Thinking over Feeling hypothesis was supported as the two participants who had the Thinking preference expressed overall less effective stress management than the rest of the sample.

ENFP

The fact that both Participant 1 and Participant 2 rated 5's for different activities alludes to their widespread interests and enthusiasms (Hirsh & Kummerow, 1989). Their 5 ratings to their respective activities indicate their enthusiasm for perceiving the activities as effective, and their effective activities being different shows that one ENFP can enjoy an activity more than another ENFP. Their mutual moderate rating of VI could also allude to the fact that ENFPs are creative and imaginative, and enjoy dreaming (Hirsh & Kummerow, 1989), to which VI is most alike out of the three. Participant 2 displays enthusiasm in their answer for the question, "Will you use the Visualization Activity in the future and why?" because even though they answered three times out of four "No," their use of it in the future depended on the situation or if they could improve. Participant 1 supports ENFPs love of drawing (Hirsh & Kummerow, 1989) by rating MC a 5. The 5 results also are consistent with MBTI Practitioner Susan Storm's stance on the stress management of ENFPs; DABE and MC, because they require mindfulness, can be thought of as forms of meditation, which Storm has stated as a helpful de-stressing activity for ENFPs (Storm, 2015).

ENFJ

The number of times ENFJ personality types performed activities overall was inconsistent with their supposed trait of "loyalty" (Hirsh & Kummerow, 1989). While Participant 3 performed an adequate number of activities for this study, Participant 7 performed roughly half as many, resulting in an inadequate number of times performing the designated activities. Participant 3 displayed loyalty to participating in the study while Participant 7 did not, even performing the lowest amount of activities out of the sample. However, both participants displayed the supposed traits of ENFJs by expressing enthusiasm, expressiveness, and energy. Participant 3 was one of the most responsive in answering the qualitative data questions, providing the most detail and also displaying high regard for each of the activities, finding future uses for and positive things to say about each one. Participant 7 displayed enthusiasm when asked if the MC helped them de-

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stress because they described it as being a fun activity, even though they answered no to its effectiveness. Enthusiasm was also supported in that both ENFJs rated each activity 3 or higher, displaying their perceptions of the study as positive even though Participant 7 did not express as many benefits as Participant 3.

INFP

Participant 4 rated DABE and VI a 5 and 4 respectively, indicating a high regard for the more introspective activities. This is consistent with their Introversion preference, as drawing energy from themselves, rather than others, by practicing mindfulness in solitude could lower stress levels, thus increasing their effectiveness. Their supposed trait of “adaptable” was inconsistent, as their responses to questions concerning MC were generally negative and continually describing it as worse than the other two activities. A display of adaptability would suggest an over-time shift in perspective about an activity that did not work out for them at first. Storm’s (2015) interpretation of effective ways for an INFP to de-stress included, “Give them space and time alone to sort their feelings.” This is consistent with the INFP’s highly rated activities, as both of them gave full attention to whatever topics were on their mind, without the hindrance of the “annoying lines” of the mandalas the INFP complained about staying within.

INTP

Interestingly, Participant 5 was the only participant to perform one activity several times before moving on to another, instead of performing them interspersed with each other. This is consistent with their described “systems-building approach to their work,” (Hirsh & Kummerow, 1989) because the INTP performed in the study within a system they themselves created as they were not asked to perform the activities in this way. The tendency for INTPs to perceive inconsistencies negatively (Hirsh & Kummerow, 1989) is another validated claim according to this study. The INTP’s effectiveness ratings for DABE, VI, and MC were a 5, 2, and 3, respectively. These results show negativity towards inconsistencies because of

the process of actually performing each of these activities; to perform DABE at any given time, the actions an individual does are the exact same, whereas VI can be performed a multitude of different ways. MC then falls somewhere in the middle, as the same tools are needed each time it is done but the way in which the tools are used can vary.

INTJ

There are several reasons why Participant 6 of this study had the poorest experience within the sample. According to *Life Types*, INTJs are logical, independent, and “systems-minded.” Systems-minded means INTJs believe everything can be explained by a certain model or system. This is closely related to the fact that most INTJs feel as though the world ought to be certain way (Hirsh & Kummerow, 1989). An INTJ’s need for logical systems could prove a major hindrance in attempting to de-stress, as stress itself is variable and at times, a subconscious event. Attempting to lower stress when its source and impact are inconsistent could be difficult for an INTJ to do, as certain “systems” or perhaps “models of de-stressing” may produce inconsistent outcomes. If these inconsistencies did not fit the INTJ’s model, the results could have been frustrating, and the reason the activities were overall ineffective. Also, INTJs are value-oriented, and tend to have strong opinions on what is right for them and worth their time (Hirsh & Kummerow, 1989). It is possible Participant 6 simply did not place any importance on lowering their stress levels and thereby did not perform these activities with either the adequate amount of time, patience, interest, or motivation that it would have taken to perceive these activities as effective.

INFJ

The two participants out of the entire study, Participant 8 and Participant 10, who performed the activities the full 15 times were both INFJs. According to *Life Types*, INFJs tend to be extremely dedicated to their endeavors, describing how one should “not...underestimate the amount of perseverance, energy, and time INFJs give to their priorities,” so this claim is supported by this finding. This book also describes how

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this commitment allows INFJs the ability to foresee and complete long-term goals. This claim is supported by this study because in the questions concerning if the participants would use these activities in the future, all three INFJ participants said “Yes” at least once for every activity, except for Participant 9 and VI. The INFJs also, more often than not, had positive things to say about the activities they performed, which shows support for their supposed traits of “conceptual,” “idealistic,” and “holistic.” This would then explain why most of the effectiveness ratings were high, because that means INFJs would perceive de-stressing activities as a positive experience as a whole, especially if the participants idealized relieving their own stress.

Limitations

Because there were only ten participants in this sample, the distribution of personality types was not a sufficient representation of the overall population of the world, as some personality types were absent. Also, the fact that there were uneven distributions within the six represented types is another limitation.

The Stress Test itself is a limitation, as the researcher created it and it has never been used before. The Stress Test presents adequate face validity, however there is no proof it is a valid measure of an individual's overall stress or change in stress. It was used nonetheless as there were no other adequate stress surveys available at the researcher's disposal. Because of this, when analyzing the participants' results, it is imperative one does not compare one participant's score to another's, as the survey was created with the subjectivity of stress in mind. One person's perception of their own stress will be different than another's, even if they have the same objective stressors in their lives.

Implications

Jungian theory-based practices are few and far between in the world of scientific research, which has led to its regard being essentially spiritual, artistic, and overall un-scientific (Henderson, Rosen, & Mascaro, 2007). Although the MBTI is controversial due to its theoretical construct based on Jungian ideas, it is often used in personnel testing to determine personal

ity characteristics of employees, as well as used recreationally. In this study, the MBTI model-based JTI was used to add to the scientific research, because the lack of research contributes to Jungian-theory controversy. While this study is but one, conducted on limited time and resources, it is important in the fact it adds to the available research conducted on Jungian theory in the psychological field. Adding more knowledge to the research studies on Jungian theory further increases the scientific community's understanding of Jungian type and how to best utilize it, as well as increases its ability to determine if Jungian theories are scientifically verifiable at all.

This leads to the second implication: understanding of stress management for all types of people. Because this study aimed to discover which techniques worked for which individuals based on their JTI personality type, it supplied information potentially useful to people with those same personality types. Even people whose personality types were not represented can benefit by referring to results of people who share one to three of the same preferences as them, and gain insight from there on which activities were helpful and which were not. For example, an ENFP could obviously refer to the ENFPs results to decide which activities are most likely to be effective for them, but they could also refer to the ENFJ results. Furthermore, an ESFP could examine ENFP results.

Also, this study sheds additional light on research regarding stress relief for teenagers, given that the sample consisted of strictly teenage high school juniors. While stress in teenagers is not an uncommon topic for the scientific community, the psychological and subjective perspective of this study could further the community's conclusions about stress management in teens. Teenagers can often be more volatile and impulsive, and in order to alleviate teen stress, creative measures should be taken.

Finally, because this study contributes to the conversation of stress management, it also contributes to helping people live a healthier life. As mentioned in the literature review, stress can have serious health consequences, and because this study focuses on stress management, it also focuses on reducing the risk of these consequences. That offers great importance, as improving life quality for the masses is a worthwhile goal.

Further research is needed on this topic. As pre-

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viously stated, this study did not cleanly answer the research question. However, it certainly discovered a wealth of information on how personality types manage their stress and how they view how they manage their stress. In the technical sense, because preference for the Sensing type had no representation, investigating these activities' effects on individuals with Sensing type is needed for accurate conclusions. As aforementioned, Jungian theory is not widely investigated in scientific research, and more studies would benefit the scientific community for more insight on its objective validity, integrity, and utility.

Conclusion

While this study has its limitations, it still has value. Even though the original question of research, to discover which personality types found which stress-relieving activities effective, was perhaps only attempted, the study was successful in obtaining new information that can be useful to researchers in the future.

Further research in this area would include a replicated version of this study, but with more participants to increase its reliability. With more participants, a new study could also separate them into different groups with all personality types represented and have each group perform a different activity. This would perhaps investigate the hypothesis more clearly, since the different groups would be performing different activities. Another phenomenon that could be studied is what actually causes teenagers to be stressed, such as strenuous academic course load, and how to either eliminate that from happening or investigate why some teenagers overwhelm themselves in the first place. Yet another suggestion is possibly having one or more of the de-stressing activities involve exercise. All three in this study were static and done by staying still. Finally, future research could investigate essentially the same research question as this study, but with a control group. The control group would consist of participants who were unaware of their personality type, while the experimental group was aware of theirs. The experimental group would be identical to this study, while the control also did everything the same, except without taking the JTI. This would eliminate the possibility that some participants reported

their results as they did based on what they believed about their own personality and how it "should" make them behave.

Although the results of the study were inconclusive, they still shed light on the relationship between personality type and stress in teenagers. Research on the connection between stress and personality will greatly benefit those who wish to decrease the stress in their lives.

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