

Examining how A Mindfulness Intervention Will Affect the Overall Life

Satisfaction Rates and Stress Levels of Office Workers

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Abstract

Research has found that certain stimuli can have very long-lasting effects on individuals; mindfulness is an example of a stimulus that can have huge positive effects on people's daily lives.

Mindfulness is a state of intentional, nonjudgmental focus on the present moment. There are two different forms of mindfulness: internal and external. Internal mindfulness is when a person is aware of their own experiences and is able to focus in on them. External mindfulness is when external factors are incorporated into a person's decision making. Many studies found that achieving internal mindfulness (i.e. practicing meditation) was effective in making people live better lives, but there is not much research proving how external mindfulness can change the day to day lives of office workers. Achieving external mindfulness may help build a person's ability to pay attention and focus as well as reduce a person's stress levels and improve their overall personal outlook.

This research examined how external mindfulness specifically effected life satisfaction and stress levels in an office place through the use of an external mindfulness intervention. In this experiment, participants from an office first completed surveys to measure their life satisfaction and stress levels, and then completed one week of mindfulness training. After they finished the training, they took the life satisfaction and stress levels surveys again. This study came to the conclusion that an external mindfulness intervention did, in fact, improve the life satisfaction levels of office workers, and it reduced their stress levels. This research is extremely important. Having a simple practice of external mindfulness helps people not only in the workplace, but in all other contexts as well, live a more satisfying life.

1.0 Introduction

Certain stimuli can have very long-lasting effects on people. Whether it be positive or negative, decisions are made based on stimuli. Mindfulness, as a way of being, can have huge effects on the daily lives of many individuals. Mindfulness is a state of intentional, nonjudgmental focus on the present moment. The most important aspect of attaining mindfulness is external mindsets, which is when external factors are incorporated into a person's decision making. Several studies found that mindfulness training was as effective as antidepressant medications in preventing a depression relapse. A person becomes more mindful as they pay attention. Over time, this training can improve a person's life satisfaction and reduce workplace stress levels.

2.0 Review of Literature

Studies suggest that interviewers in natural settings use confirmatory strategies, underscoring the importance of additional research on "self-fulfilling prophecies." Once they have a first impression of a person, they tend to stick to this. (Dougherty et. al 1994) Confirmatory assessment strategies are commonly defined as questions (or other assessment strategies) that elicit information from the client to support a mental health counselor's initial diagnostic impression. (Haverkamp, 1993) If a person receives a stimulus they like, this stimulus will begin to have long lasting effects in a person's life. They begin to see this and all relating stimuli as "good". (Zayas et. al 2016) Participants' automatic evaluations of subliminally presented objects also influence how they interpreted subsequent, unrelated objects. Automatic evaluations can influence deliberate judgments of subsequent stimuli, even when the only shared dimension between the initially evaluated objects and the judged objects is an evaluative one. (Ferguson et. al 2005) Sometimes, people generate impressions and tentative judgments, which might be

accepted, blocked, or corrected by controlled processes. (Morewedge et. al 2010) Controlled processes are the processes that are under the intentional control of the individual. The person is consciously aware of this decision.

Mindfulness challenges individuals to awaken from these mind-habits and appreciate the little things. But this definition lacks a bit in specificity around what is happening when mindfulness is achieved. Mindfulness can be achieved in many different ways, the most important of which is external mindfulness. External mindfulness relates to means awareness of the thoughts, body movements, and emotions of others. It is about awareness of a person's thoughts as they relate to the world around them. A mindful outlook helps people to avoid automatic behaviors that rely on pre-existing or underlying assumptions and evaluations that might not be applicable to the current situation. Ellen Langer's concept of mindfulness is characterized by the process of actively making new distinctions about a situation and its environment, rather than relying on automatic categorizations from the past. ("Being Mindful about Mindfulness", 2015) Being mindful is the simple act of drawing novel distinctions. It leads us to greater sensitivity to context and perspective, and ultimately to greater control over our lives. (Langer 2000) Mindfulness has a dynamic quality. When a person is mindful, they notice what is new or different in the particular context, whether in the external environment or in our own reactions and responses. When they let themselves take in new information and experience, they are more likely to be grounded in the present, sensitive to context, aware of change and uncertainty, and attuned to possibility. (Dunoon and Langer 2011)

Mindful behavior also has major effects on cognition. External mindfulness training enhances working memory processes, which plays a key role in higher cognitive functions and can change the way people work. (Wimmer 2016) A point of pragmatic concern for

psychologists is the consistently inferior performance of certain individuals with respect to social, psychological, and physical skills when they are clearly capable of superior performance. (Langer 1981) Mindfulness, for Ellen Langer, is a state of alertness and lively awareness that is characterized by: (a) active information processing, (b) the continual creation of new categories and distinctions, (c) the exploration of (and attention to) multiple perspectives, and (d) an awareness of context. In a mindless state, an individual can act like an automaton. (Albert 1990) In studies with an internal mindfulness intervention in the workplace, in the pre-intervention period, there was a greater association with greater reductions in burnout and perceived stress, improvements in mindfulness, well-being, and increases in team and organizational climate and personal performance. (Kersemakers et. al 2018) There have also been discoveries that support and extend the current efforts underway to apply mindfulness interventions in work contexts to enhance employee health, wellness, and performance. (Hilton et. al 2019) Past research, however, mainly focuses on how internal mindfulness can have effects on office workers. This is a small amount of the research available regarding how external mindfulness can affect the overall life satisfaction rates of office workers.

There is a lot of research already known about how mindfulness can affect decision making and thought processes, but there is not much known about how mindfulness can specifically affect overall satisfaction in the office place through the use of external influences. Instead, many research papers have looked into how mindfulness training has an impact on burnout rates and office performance. Studies have proven how an internal mindfulness training like meditation has increased workplace attendance, but there is not sufficient research showing how an external intervention can have impacts on office workers. (Schlefer 2016) There is also not sufficient information on how external mindfulness can affect office workers. This research aims to

address the gap in the existing literature on impacts of mindfulness. This experiment will aim to complete an intervention with short bursts of mindfulness practices every day. This work will examine how people's lives will be improved after they have been exposed to a stimulus. This stimulus will be the exposure to external factors that can have an impact on the mindset of office workers. It is conceptually a form of a mindfulness induction. Improved mindfulness through attention to one's surroundings, X, will improve workplace and life satisfaction, defined as Y (measures that are important in satisfaction). First, office workers will receive two surveys that examine life satisfaction (Pavot et. al 1993) and perceived stress levels (Cohen et al. 1983). Then, I will ask the office workers to expose themselves to external stimuli to engage their minds after a period of time. Next, I will reexamine their stress levels and life satisfaction using the same survey. Adult participants will be exposed to short exposures of stimuli, less than 10 minutes a day. This correlation pilot study will mainly be examining life satisfaction rates and overall stress levels.

3.0 Research Objective

The objective for this research paper is to discover if an external mindfulness intervention will reduce the stress levels and increase the life satisfaction of office workers. By completing this intervention, the lives of said office workers will not only improve overall, but they will be able to be more attentive and focused throughout their entire day. There are two different hypotheses being testing in this experiment.

1. H₁ The mindfulness intervention will increase the life satisfaction of office workers.
H₀ The mindfulness intervention will have no effect on the life satisfaction of office workers.
2. H₁ The mindfulness intervention will decrease the stress levels of office workers.

H₀ The mindfulness intervention will have no effect on the stress levels of office workers.

4.0 Methods

4.1 Participants

Participants included 32 office workers from Standard Motor Products Inc. These workers vary in profession and because the surveys were anonymous, each individual's exact job is not known. They were all adults over the age of 18. No other demographic data was collected to keep surveys fully anonymous.

4.2 Design

In this study, participants were recruited through an email contact at Standard Motor Products Inc. Participants were told that they can stop the study at any point if they feel uncomfortable and they could email me with any questions they had. The introductory email was sent a day before the experiment started (see appendix A). Before the mindfulness intervention, participants were asked to take the Satisfaction with Life Scale and Perceived Stress Scale surveys which were condensed into one survey but were analyzed separately. Participants received online versions of the survey sent by email. The Satisfaction with Life survey is used to help determine if a person has a positive outlook on their life. It gave me a benchmark as to how satisfied they were with where their life was. Participants were asked to select how much they agree with certain statements on a scale from 1 to 7, 1 being completely disagree and 7 being completely agree. The survey was modified to fit this research plan and make it easier for the participants. The Perceived Stress Scale is used to determine stress levels in a person. Participants were asked to select how they feel about the statement in terms of never, almost never, sometimes, fairly often, or very often. Questions 1-5 were for the Life Satisfaction Survey and questions 6-15 were for the Perceived Stress Scale survey (see appendix B). The survey was

made through Microsoft Forms to make sure the data was kept confidential. The responses to the surveys were anonymous. The responses were laid out as individual 1, individual 2, individual 3, etc. to keep the names of the participants out of the research. Participants then completed one week of a mindfulness intervention. Participants were asked to take 10 minutes every day at the time of their choosing to go out on a walk and when they returned, they were asked to follow the activity schedule below to see what they should complete each day.

Sunday: Write down 8 things you saw in a way you had never seen them before.

Monday: Write down 1 problem that you solved today.

Tuesday: Write down a negative situation that you turned into a positive situation today.

Wednesday: Write down something you are excited to do today.

Thursday: Write down a goal that you completed today.

Friday: Write a couple of sentences on why today was a good day.

Saturday: Write down a reasonable goal you have for the future.

If the weather was bad, they were told to take 10 minutes to walk around the parts of their houses where they do not normally go every day. Or they could take 10 minutes to look out their window to contemplate what they were seeing. They did this for one week and then were asked to complete the survey again by receiving another email with the same online survey that they completed before the intervention. During the week of the experiment, participants were sent two reminder emails to make sure they were completing the mindfulness exercise and a final email thanking them for their participation (see appendix C, D, and E). The pre- and post-data was then analyzed using a T test to determine statistical significance of the correlation coefficient. The diaries of the participants were not collected. The only possible risk to participants was if they were to feel uncomfortable answering some of the survey questions. This risk level was very low

and if participants felt uncomfortable answering any of the questions, they were told that they did not have to and could stop the study at any time. An Employee Assistance Program link was not available for me to include for this particular company. Participants agreed to consent to this study in the first email sent to them. This study's IRB was approved before the research was completed. Since the surveys were anonymous and they were all adult participants, consent forms were not needed according to the IRB board. Specifically, they agreed to consent to the study by completing the first surveys.

4.3 Surveys

The Life Satisfaction Scale is the first 5 questions on the survey given out to participants. It was developed to assess satisfaction with the respondent's life as a whole. This scale has been tested and shown sufficient sensitivity to be potentially valuable to detect change in life satisfaction during the course of clinical intervention. (Pavot et. al 1993) The Perceived Stress Scale is questions 6-15 on the survey given out to participants. The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives (Cohen 1994). (See appendix B)

5.0 Results

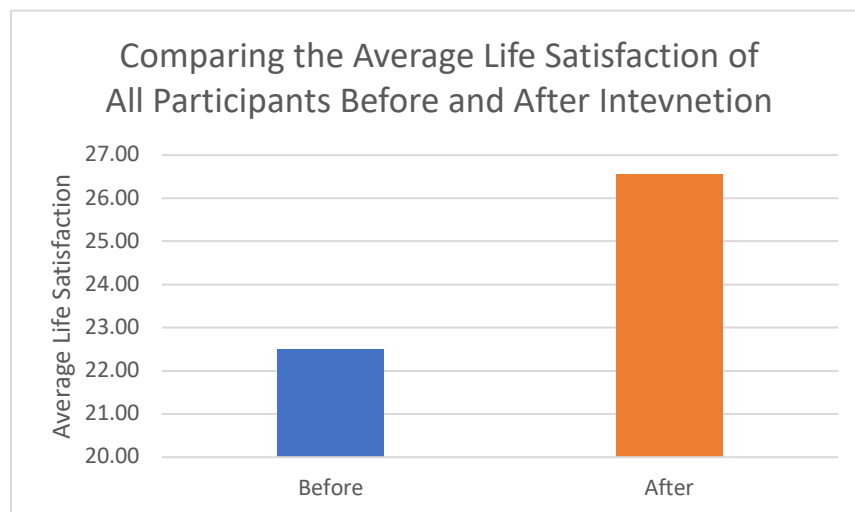
This study involved 32 participants. These 32 participants filled out the first survey, and all 32 participants continued with the study and filled out the second survey as well. In the survey, the first five questions referred to the satisfaction with life survey, and questions six to fifteen referred to the perceived stress levels survey. The data from the before and after surveys were broken up into two parts so the satisfaction with life data could be analyzed with the

perceived stress levels data. First, the satisfaction with life data was analyzed. Each response was given a point value of 1-7 based on the individual responses. For each individual, their total point score was totaled for both the before and after data (figure 1).

Before Intervention Life Satisfaction	After Intervention Life Satisfaction
15	22
23	29
24	14
29	25
18	27
25	25
23	22
19	25
18	29
18	28
20	30
19	28
19	30
22	31
20	27
24	30
25	31
28	30
28	27
10	30
20	30
29	29
17	25
29	21
24	30
19	24
20	25
29	26
29	22
29	25
23	26
25	27

(Figure 1) Note that the order is randomized, and one line is not one individual's before and after responses.

The average life satisfaction for participants before the mindfulness intervention was 22.50. The average life satisfaction for participants after the intervention was 26.56, an 18% increase. This is illustrated in figure 2. To then prove if this increase in the average life satisfaction for participants was significant, a two tailed, paired sample t-test was then performed with this data. The standard deviation for the before data was 4.81 and the standard deviation for the after data was 3.67. This made the variance for the before data 23.61 and the variance for the after data 13.48. A two tailed, paired sample t-test was done with this data. The t score for this data set was 3.80. Since there was a sample size of 32, the degree of freedom for this sample set is 31. Since 3.80 is greater than the critical value on the t-table 2.03 and the p value is less than .00001, this data set is statistically significant.



(Figure 2)

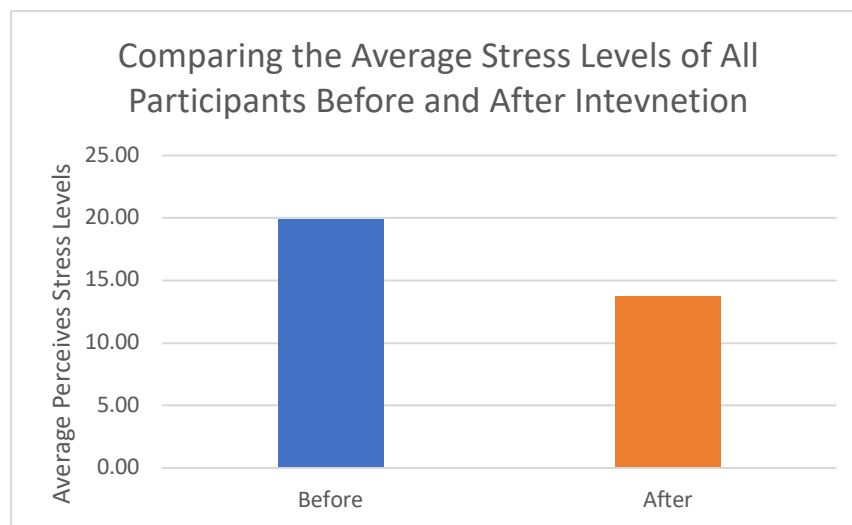
The same statistical analysis was then done for the questions regarding the participants' perceived stress levels. Each response was given a point value of 0-4 based on the individual responses. The scores for questions 9, 10, 12, 13, were reversed (0=4, 1=3, 2=2, etc.) because they are positively stated items. For example, if someone was to answer with a 1 on a positively stated item, this would be scored as a 3 because it is a sign of high stress levels. If someone were

to answer with a 3 on a negatively stated item, this would be kept as a 3 because it is also a sign of high stress levels. For each individual, their total point score was totaled for both the before and after data (figure 3).

Before Intervention Stress Levels	After Intervention Stress Levels
24	16
26	16
21	21
10	8
21	16
26	17
20	11
17	13
23	20
16	10
24	18
25	12
23	15
23	13
25	20
24	11
16	12
20	15
21	10
23	12
23	18
18	7
26	9
23	21
23	15
20	12
17	4
7	15
4	6
22	19
19	15
8	12

(Figure 2) Note that the order is randomized, and one line is not one individual's before and after responses.

The perceived stress levels for participants before the mindfulness intervention was 19.94. The average perceived stress levels for participants after the intervention was 13.72, a 31% decrease. This is illustrated in figure 4. To then prove if this decrease in the average perceived stress levels for participants was significant, a two tailed, paired sample t-test was done with this data. The standard deviation for the before data was 5.68 and the standard deviation for the after data was 4.39. This made the variance for the before data 32.25 and the variance for the after data 19.24. The t-value for this data set was 4.90. Since there was a sample size of 32, the degree of freedom for this sample set is 31. Since 4.90 is greater than the critical value on the t-table 2.03 and the p value is less than .00001, this data set is statistically significant.



(Figure 4)

6.0 Conclusions and Discussion

In this study, both data sets were proven statistically significant. Therefore, the null hypothesis can be rejected, and it can be said with 95% certainty that a mindfulness intervention increases the life satisfaction and decreases the perceived stress levels of office workers.

While the study was proven significant, there were some limitations to it. One limitation is that this study only had 32 participants. While this is a good sample size for this type of research, having more participants in future research could further prove the significance of the study. Another limitation was that this study only took place over one week. Further research could investigate longer periods of time. Overall, this type of research is very significant in the real world because it can help people live better lives. Mindfulness isn't just a practice; it is way of life that is used simply to help people. The goal of this research was to have office workers life satisfaction increase and their stress levels decrease, and in these parameters, it has succeeded.

This type of result and data makes sense because the mindfulness intervention was specifically made to help improve the lives of office workers. It was clear when the data was first being analyzed that there was an increase in the levels of life satisfaction and a decrease in stress levels. Taking the time to step back and evaluate life decisions clearly made a positive impact on participants.

This study simply focused on office workers, but it can be applied to a much larger spectrum of people. Future research could involve using more participants from different places of work or broadening the spectrum all together. This same survey and intervention can be given to high schools or even universities to help students live better lives.

Appendix

A) Email #1 sent to participants:

Hello volunteers of SMP,

First of all, thank you so much for agreeing to participate in my Science Research project. It means so much to me. Secondly, I would like to introduce myself and explain a little more in detail the aspects of my project and the importance of it. My name is Jennifer Harris. I am a senior at Briarcliff High School. I have been involved in this Science Research program since I was a sophomore. This experiment will be very simple for you to complete and my hope is that it will increase not only your life satisfaction levels, but also your workplace satisfaction levels. There is a lot of research already known about how mindfulness can affect decision making and thought processes, but there is not much known about how mindfulness can specifically affect overall workplace and life satisfaction through the use of external influences. External mindfulness is the opposite of internal mindfulness. Internal mindfulness can be thought of as meditation or yoga. External mindfulness is all about focusing the mind. First, I would like you all to complete the attached survey in the link below. Next, I am asking you all to take 10 minutes every day, whenever and wherever is easiest for you, and simply go on a walk. When you get back from your walk, please follow the schedule below to see what you should be doing each day of the week. You can keep this list for yourself, you do not ever need to show it to anyone. Starting Sunday, I would like you to follow this schedule of activities after your walk every day for 7 days (Sunday-Saturday). Finally, on the following Monday, I will be resending you the surveys to take a second time to see how the external mindfulness intervention has helped you. By filling out these surveys, you consent to participating in this study. You may stop this experiment at any point if you feel uncomfortable. The surveys will be anonymous. My email is included below as well if you have any questions. Thank you so much for your participation!

Schedule:

Sunday: Write down 8 things you saw in a way you had never seen them before.

Monday: Write down 1 problem that you solved today.

Tuesday: Write down a negative situation that you turned into a positive situation today.

Wednesday: Write down something you are excited to do today.

Thursday: Write down a goal that you completed today.

Friday: Write a couple of sentences on why today was a good day.

Saturday: Write down a reasonable goal you have for the future.

Link to Life Satisfaction and Perceived Stress Levels Survey Part 1:

https://forms.office.com/Pages/ResponsePage.aspx?id=gamCU_emuk25U_DseFKB6zhMHwHWBbJDni8hDiIuC7NUQ09NNDU3RFQ0VEU2Q05ETjNFMVFJQ0FXUC4u

Sincerely,

Jennifer Harris

Briarcliff High School Science Research Program

Email: JenHarris2211@gmail.com

B) Life Satisfaction Survey and the Perceived Stress Scale condensed to one survey

given to participants:

Life Satisfaction and Perceived Stress Levels Surveys

Please answer the following questions in terms of how you feel about the statement. Questions 1-5 are part of the Life Satisfaction Survey and questions 6-15 are part of the Perceived Stress Levels Survey.

1. "In most ways my life is close to my ideal." Rate your agreement with this statement using the scale 1-7. 1 being completely disagree and 7 being completely agree.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

2. "The conditions of my life are excellent." Rate your agreement with this statement using the scale 1-7. 1 being completely disagree and 7 being completely agree.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

3. "I am satisfied with my life." Rate your agreement with this statement using the scale 1-7. 1 being completely disagree and 7 being completely agree.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

4. "So far, I have gotten the things I want in life." Rate your agreement with this statement using the scale 1-7. 1 being completely disagree and 7 being completely agree.

- 1
- 2
- 3
- 4
- 5
- 6
- 7

5. "If I could live my life over, I would change almost nothing." Rate your agreement with this statement using the scale 1-7. 1 being completely disagree and 7 being completely agree.

- 1
- 2

3
4
5
6
7

6. In the last week, how often have you been upset because of something that happened unexpectedly?

- 0- Never
- 1- Almost Never
- 2- Sometimes
- 3- Fairly Often
- 4- Very Often

7. In the last week, how often have you felt that you were unable to control the important things in your life?

- 0- Never
- 1- Almost Never
- 2- Sometimes
- 3- Fairly Often
- 4- Very Often

8. In the last week, how often have you felt nervous and stressed?

- 0- Never
- 1- Almost Never
- 2- Sometimes
- 3- Fairly Often
- 4- Very Often

9. In the last week, how often have you felt confident about your ability to handle your personal problems?

- 0- Never
- 1- Almost Never
- 2- Sometimes
- 3- Fairly Often
- 4- Very Often

10. In the last week, how often have you felt that things were going your way?

- 0- Never
- 1- Almost Never
- 2- Sometimes
- 3- Fairly Often
- 4- Very Often

11. In the last week, how often have you found that you could not cope with all the things that you had to do?

- 0- Never
- 1- Almost Never
- 2- Sometimes
- 3- Fairly Often

4- Very Often

12. In the last week, how often have you been able to control irritations in your life?

0- Never

1- Almost Never

2- Sometimes

3- Fairly Often

4- Very Often

13. In the last week, how often have you felt that you were on top of things?

0- Never

1- Almost Never

2- Sometimes

3- Fairly Often

4- Very Often

14. In the last week, how often have you been angered because of things that happened that were outside of your control?

0- Never

1- Almost Never

2- Sometimes

3- Fairly Often

4- Very Often

15. In the last week, how often have you felt difficulties were piling up so high that you could not overcome them?

0- Never

1- Almost Never

2- Sometimes

3- Fairly Often

4- Very Often

C) Email #2 sent to participants:

Hello Everyone,

I hope you all have had a fantastic day so far. Today is Tuesday, which means that it is day 3 of this mindfulness experiment. Today you should be writing down a negative situation that you turned into a positive situation. I hope you all have been successful in keeping up with the schedule. Please make sure that you do this every day. The activity is posted below as well if you need a reminder. Thank you again!

Schedule:

Sunday: Write down 8 things you saw in a way you had never seen them before.

Monday: Write down 1 problem that you solved today.

Tuesday: Write down a negative situation that you turned into a positive situation today.

Wednesday: Write down something you are excited to do today.

Thursday: Write down a goal that you completed today.

Friday: Write a couple sentences on why today was a good day.

Saturday: Write down a reasonable goal you have for the future.

Sincerely,

Jennifer Harris
 Briarcliff High School Science Research Program
 Email: JenHarris2211@gmail.com

D) Email #3 sent to participants:

Hello Again,

It is now Thursday and the 5th day of this experiment! You all are doing an amazing job sticking with this experiment and making sure that you take those walks every day. Only 2 more days to go! Again, feel free to email me with any questions or concerns. Also, please remember that the final day of this experiment is on Saturday and the final surveys will be sent to you on Monday. There is no need to continue this experiment on Sunday. The activity is posted below as well if you need a reminder.

Schedule:

Sunday: Write down 8 things you saw in a way you had never seen them before.

Monday: Write down 1 problem that you solved today.

Tuesday: Write down a negative situation that you turned into a positive situation today.

Wednesday: Write down something you are excited to do today.

Thursday: Write down a goal that you completed today.

Friday: Write a of couple sentences on why today was a good day.

Saturday: Write down a reasonable goal you have for the future.

Sincerely,

Jennifer Harris
 Briarcliff High School Science Research Program
 Email: JenHarris2211@gmail.com

E) Email #4 sent to participants:

Hello Everyone,

Hooray! You have successfully completed this experiment! I would like to thank you all again for your amazing participation. Attached below is the link to the final survey that I would like you to complete. I hope you all can tell from this survey that your life satisfaction has gone up and your stress levels have gone down since beginning this experiment. Please remember to take this survey on the same computer you took the last one so I can gather accurate results.

Thank you again!

Link to Life Satisfaction and Perceived Stress Levels Survey Part 2:

https://forms.office.com/Pages/ResponsePage.aspx?id=gamCU_emuk25U_DseFKB6zhMHwHWBbJDni8hDiIuC7NUN1JBTjBDSDEwMU1YR1JYUldOREU1UU9BRC4u

Sincerely,

Jennifer Harris
 Briarcliff High School Science Research Program
 Email: JenHarris2211@gmail.com

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