

2016

# The Effects of Self-Care Meditation Behaviour on Undergraduate Students' Reported Stress

Anna Smallwood

aim.smallwood22@gmail.com

Follow this and additional works at: [https://ir.lib.uwo.ca/psych\\_uht](https://ir.lib.uwo.ca/psych_uht)



Part of the [Psychology Commons](#)

---

## Citation of this paper:

Smallwood, Anna, "The Effects of Self-Care Meditation Behaviour on Undergraduate Students' Reported Stress" (2016).

*Undergraduate Honours Theses*. 23.

[https://ir.lib.uwo.ca/psych\\_uht/23](https://ir.lib.uwo.ca/psych_uht/23)

THE EFFECTS OF SELF-CARE MEDITATION BEHAVIOUR ON UNDERGRADUATE  
STUDENTS' REPORTED STRESS

by

Anna Isabelle Matrosovs Smallwood

Department of Psychology

Submitted in Partial Fulfillment

of the requirements for the degree of

Bachelor of Arts

in

Honours Psychology

Faculty of Arts and Social Science

Huron University College

London, Ontario

April 13, 2016

© Anna Isabelle Matrosovs Smallwood, 2016

HURON UNIVERSITY COLLEGE

CERTIFICATE OF EXAMINATION

Advisor: Dr. Mark Cole, PhD

Reader: Dr. Christine Tsang, PhD

The thesis by:

Anna Isabelle Matrosovs Smallwood

entitled:

The Effects of Self-Care Meditation Behaviour on Undergraduate Students' Reported Stress

is accepted in partial fulfilment of the requirements for the degree of

Bachelor of Arts

in

Honours Psychology

May 5, 2016  
Date

Dr. Christine Tsang, PhD  
Chair of Department

## Abstract

The goal of this research study was to provide undergraduate post-secondary students with a self-care behaviour that: a) was self-help based; b) could become a routine part of their schedules; and c) was effective in lowering their stress responses. One group of participants was asked to rate their stress on a 7-point scale, twice a day, for 10 business days. A second group of participants was also asked to rate their stress following the same instructions however they were also asked to perform a 5-minute mindfulness-based meditation twice a day, immediately following the stress ratings. A 2 (Week 1 vs. Week 2) x 2 (Daytime vs. Evening) x 2 (Meditation vs. Non-Meditation) mixed ANOVA was used to analyze the data that was grouped into 4 means for each participant in each of the between subject groups: Week 1 Daytime; Week 1 Evening; Week 2 Daytime; and Week 2 Evening. Of the 33 participants who initially enrolled in this study, 20 submitted enough data to be analyzed. A significant main effect of Week was found, sphericity assumed [ $F(1, 18) = 5.41, p = .03, \text{partial } \eta^2 = .23$ ]. No other significant main effects or interactions were found. Overall the study did not succeed in demonstrating that 5 minutes of mindfulness-based meditations a day was effective in reducing undergraduate university students' reported stress. Reasons for this were discussed.

Keywords: Self-care, Stress, Mindfulness, Students.

## Acknowledgments

First and foremost, I would like to thank my parents. Your belief in me has been unwavering over my entire academic career. Due to your support, I never doubted my ability to achieve anything that I worked hard towards. I would also like to thank my best friends Alex Furlought and Ashley Bosse. Just like my parents, you two have unconditionally supported me throughout university. Alex - through venting about marks, sending me your old anatomy notes, and just being someone who could relate to what I was going through. Ashley – through late nights at the library, quizzing me on my notes, and always checking in with me after tests, projects and exams. Thank you as well to all my family members for your support over the years.

I would like to thank the entire Psychology faculty at Huron University College. It has been such a wonderful experience to be part of such an encouraging faculty. Every professor I have encountered in this department truly cared about the success of their students. I would especially like to thank Dr. Tsang for being my second reader on my thesis and for encouraging me to take the opportunity to become involved in the Huron Psychology Association this year. Being president was a wonderful experience and I loved the opportunity to get to know my fellow Huron Psychology students better.

My final thank you goes to my thesis advisor Dr. Cole. You have been a phenomenal professor and advisor. Your courses have provided me with the most unique experiences of my university career that I truly value and will never forget. You were so helpful during the planning stages of my thesis and your edits were much appreciated.

The past four years at Huron University College have been absolutely amazing. I will always look back with fondness at my time at this wonderful institution. I could not have picked a better school or program to attend.

## Table of Contents

	Page
CERTIFICATE OF EXAMINATION .....	ii
Abstract .....	iii
Acknowledgments .....	iv
Table of Contents .....	v
Introduction .....	1
Method .....	5
Participants .....	5
Materials and Procedure.....	5
Results .....	9
Discussion .....	11
References .....	17
Appendix I .....	20
Appendix II .....	21
Appendix III .....	22
Appendix IV .....	23
Curriculum Vitae .....	24

## Introduction

Stress has been defined as “the non-specific mental or somatic result of any demand upon the body” (Poole, Cox & Matheson, 2016, p.26). Stress has also been defined as “a state that has been manifested by specific changes to the body system as a reaction to non-specific agents or stressors” (Selye, 1956, p.54). Whereas both of these definitions describe the concept, it is important to keep in mind that stress is a very personalized state (Poole et al., 2016, p.26). When defining what a stressor is, Selye indicated that something “is more or less a stressor in proportion to the degree of its ability to produce stress” (Selye, 1956, p.64). A situation that is viewed as stressful by one person or population may not be stressful to another. As a population in general, post-secondary students could benefit from *eustress* which is defined as “a state of physical or psychological well-being that is associated with increased motivation and the acceptance of challenge” (Poole et al., 2016, p.28). However, while acute stress can sometimes be seen positively, chronic stress can have detrimental effects both physically and mentally (Poole et al., 2016, p.29).

For many years, stress has been shown to be a major concern for post-secondary students. In a study conducted as part of a dissertation examining student stress levels, Olpin (1996) showed that college students reported issues related to their academic life as the primary stressor they were experiencing. In a newspaper article discussing a survey conducted by the Canadian Association of College and University Student Services between January and April 2013, it was revealed that almost 90% of the student respondents said that “they felt overwhelmed by all they [had] had to do in the past year” (Miller, 2013). The factor that affected students’ academic performance within the last 12 months that was mentioned most frequently was stress at 38.6% (Canadian Association of College and University Student Services, 2013). When asked how they would rate their overall level of stress within the last 12 months, over half of the respondents,

57.6%, answered “More than average stress” or “Tremendous stress” (Canadian Association of College and University Student Services, 2013). When examining past literature on post-secondary student stress, the majority of the post-secondary students who have participated in previous studies reported feeling stressed; however, typically these past studies specifically examined medical students or graduate students (Gold et al., 2015; Greeson, Toohey, & Pearce, 2015).

Olpin (1996) also looked at how students currently cope with their stress. While the results indicated that students used activities that reduced stress as a by-product, activities such as watching television or socializing, rather than activities that were specifically designed to reduce stress, analysis also suggested that these preferred methods were not effectively reducing the stress of the students. In an online survey conducted as part of a study on how to deliver mental health information that is meaningful to undergraduate post-secondary students, researchers found that 93% of the respondents answered “yes” when asked if they wanted to know about how to cope with stress (Armstrong & Young, 2015). Stress is actively felt by post-secondary students at both the undergraduate and graduate levels and is a major concern for many students, but students require guidance with respect to how to effectively lower their stress levels.

With regard to how post-secondary students wish to find ways to cope with stress, Armstrong and Young (2015) asked participants questions about various ways of seeking help for mental health concerns. The respondents answered “yes” more often when asked if they wanted to know about self-help techniques than when asked if they want to know about different options for therapy or about the mental health services in the community. These findings indicate that these students would prefer to engage in self-help techniques rather than to seek out help from mental



health professionals. There are likely a variety of reasons for this preference; however one possibility may be the flexibility of self-help with respect to fitting into their schedules.

One method of self-help is to engage in self-care. Coons, McGahn, Bootman, and Larson defined self-care as “activities initiated or performed by an individual to regain, maintain or improve his or her health” (as cited in Peters, 2007). The idea behind self-care is to encourage the person to engage in positive activities to improve their own health and therefore it is the sort of self-help that post-secondary students indicated they wished to receive information on. Self-care can focus on physical health; however, when relating to stress, the focus of self-care is more on mental/psychological health. A significant negative correlation between self-care and perceived stress has been found in a study on the associations between physiological and perceived stress, and quality of life, self-care, and impairment (Peters, 2007). This finding indicates that as self-care behaviours increase, perceived stress should decrease. Furthermore, overall self-care seems to be associated with overall health and well-being (Fuselier, 2003). The post-secondary student population, however, appears to be in need of information on techniques to increase their focus on self-care. Not only are students feeling stressed, but research indicates that students tend to neglect their self-care to focus on other obligations such as academic performance (Gold et al., 2015). One study found that health behaviours, including self-care, have been shown to worsen in times of academic stress (Weidner, Kohlmann, Dotzauer, & Burns, 1996). In particular, behaviours that required more effort, when compared to behaviours that were seen as more routine, were decreased the most under times of stress (Weidner et al., 1996). Self-care was noted as being somewhere in between the two categories (Weidner et al., 1996). A self-care intervention that requires relatively little effort and which can become a routine part of a student’s day may be the least likely to be discarded in times of academic stress.

However, the aforementioned study on perceived stress and self-care that found a negative correlation used a sample of purely post-secondary students at the graduate level. In fact many of the studies on the self-care of post-secondary students only focus on medical students (Greeson, Toohey, & Pearce, 2015) or those in a graduate program (Fuselier, 2003; Peters, 2007). Therefore focusing on the effects of self-care on undergraduate students as a relatively untapped population is what the present study will be examining.

There are many components to self-care including ones that are focused on a person's physical, mental, and spiritual well-being (Fuselier, 2003). A major focus of past research on post-secondary student self-care has been on the mindfulness aspect of self-care (Felton, Coates, & Christopher, 2013; Greeson, Toohey, & Pearce, 2015). For example, a four-week mindfulness-based workshop showed significant results with respect to decreasing stress and increasing student self-care (Greeson, Toohey, & Pearce, 2015). In a study carried out by Beauchamp-Turner and Levinson (as cited in Fuselier, 2003) found that frequent meditators tended to have less perceived stress than infrequent meditators. Mindfulness is defined as "paying attention without judgement to whatever is happening at the moment" (Spiegler & Guevremont, 2010). This concept has been applied in a clinical setting through the development of mindfulness-based cognitive therapy and promoted to the more general population through media such as magazines (Spiegler & Guevremont, 2010; How to Do It, 2014). Often mindfulness is promoted through mindfulness-based meditation. This practice allows one to focus on the moment by taking some time to calmly sit, breath, and to focus on recognizing what thoughts come to mind but not judging the thoughts (Spiegler & Guevremont, 2010).

Therefore the present study will employ a mindfulness-based meditation as the assigned self-care behaviour for the meditation group to perform. A modified guide to mindfulness-based

meditation from a mindfulness magazine will be used to specify the kind of self-care behaviour half of the participants will be asked to complete (How to Do It, 2014).

I am hoping find a way to use self-care behaviours, specifically a mindfulness-based meditation, to decrease the feelings of stress reported by post-secondary undergraduate students. The self-care behaviour is designed to allow students to complete it by themselves, with minimal instruction, and at a time that fits conveniently into their schedule. The flexibility is an important factor in order to try to allow the self-care to become more of a routine rather than be seen as involving extra effort with regards to the two types of health behaviours discussed earlier.

## **Method**

### **Participants**

Participants in this study were all post-secondary students at the University of Western Ontario or one of its affiliated colleges. The study was first advertised only to students enrolled in the first year psychology course at Huron University College and of the 33 participants who completed this study, 18 were from the first round of advertising. The study was then advertised to a greater range of students with participant recruitment including verbal invitations and posters. The remaining 15 participants came from the second phase of recruiting. Table 1 in Appendix II shows the distribution of participants across method of recruitment and group (meditation and non-meditation). Demographic characteristics such as age, gender, and current year of enrollment in post-secondary education were not collected.

### **Materials and Procedure**

Recruitment of participants started in late November with participation only being advertised to students enrolled in a first-year psychology course at Huron University College. Recruitment was then stopped to ensure that the participants would not be recording stress levels

during the university's examination period. Recruitment was started again at the beginning of second semester in January. This study employed a modified multiple baseline design in which participants could begin to participate in the study at any time throughout the recruitment periods. Therefore there were a total of 20 different dates on which one or more participants began reporting data for this study.

Participants were sorted into one of two groups depending on the order in which they signed up for an information session. The first participant was put into the non-meditation group and the second participant was put into the meditation group and so on. If a participant decided not to participate in the study, the next participant to sign up was sorted into the same group as the participant who had indicated that he or she did not wish to complete the study. This was done in order to keep groups balanced while using random assignment.

An attempt to keep the participants from each phase of recruiting equally split between the non-meditation group and the meditation group was made. However some of the participants originally assigned to the meditation group did not complete the study. The study was reopened to the first-year psychology course students in order to try to equalize the two groups. When no more first-year psychology course students wished to enroll in the study, three students recruited from poster advertisements were purposely sorted into the meditation group to even out the number of non-meditation and meditation participants.

Participants completed an information session during which they read a letter of information and signed a consent form. Any questions the participants had for the researcher were also answered. If the participant was a student in the first-year psychology course, he/she received one participation credit for attending the information session and at least reading the letter of information. Participants who had been randomly assigned to the meditation group

received a paper copy of a meditation guide. The guide was a modified version of a six-step mindfulness meditation guide that was retrieved from the website of a mindfulness-focused magazine called Mindful (How to Do It, 2014). Additional dialogue detailing suggestions for how a participant could keep track of the 5 minutes for which he/she was asked to complete the meditation was added to the meditation guide. The participants were instructed to sit in a comfortable position with their arms open to their sides. They could close or keep their eyes open but if they chose to keep their eyes open they were instructed to notice but not fixate on anything in their view. The participants were instructed to settle and follow their breath as it comes in and out (How to Do It, 2014). They were instructed to do the meditation for 5 minutes and to track the time by either counting in intervals or using an alarm that was not too loud or jarring when it went off. The aim of this meditation was to allow the students 5 minutes to focus on their breathing and therefore be mindful in the moment. Participants in the non-meditation group were not given any information on mindfulness nor were they asked to engage in mindfulness exercise.

After the information session, the researcher sent the participant an email that re-iterated the key information from the letter of information and stated that participant's start and end dates for the study. The email also provided participants in both groups with a template that outlined the information required in each data submission. For the non-meditation group, the participants were required to submit: (1) the date; (2) the time at which the rating was done; and (3) the number of the actual stress rating. In the meditation group, the participants were required to submit the same information as participants in the non-meditation group as well as a short description of their 5-minute meditation confirming that the participant had followed the outline for the meditation that was outlined in the meditation guide. If the participant was in the

meditation group, the email also included an electronic copy of the meditation guide that they received during the information session.

Participants started the study the day after their information session. Participants in the non-meditation group were instructed to rate their stress twice a day on the seven-point scale. The scale ranged from “none at all” to “an extreme amount”. One rating had to be completed and sent to the researcher via email by 4:59 pm and the other rating had to be completed and sent to the researcher by 11:59 pm. Participants received \$1.00 compensation per email that was sent to the researcher by the time deadlines and included the necessary information. Participants in the meditation group had to complete the same stress ratings using the 7-point scale during the same time durations. These participants were also instructed to complete a 5-minute mindfulness-based breathing meditation, using the guide that they had been provided, **after** they had completed each of the ratings. Again, participants received \$1.00 compensation per email that was sent to the researcher by the time deadlines and included the necessary information. The researcher sent reminder emails between 3:30 pm and 4:00 pm and before 10:00 pm to participants who had not yet submitted a rating.

Participants were instructed to complete the above-mentioned ratings and meditation, if applicable, for 10 consecutive weekdays. Each participant was therefore eligible to receive up to \$20.00 in cash for completing the study. Participants were asked not to record on Saturdays or Sundays because classes do not take place over weekends and students may not have school work to complete on an average weekend. It was thought that, as a result, students might naturally have less stress. Participants were allowed to complete ratings over the university’s Reading Week, although no classes took place during that week, because many courses schedule

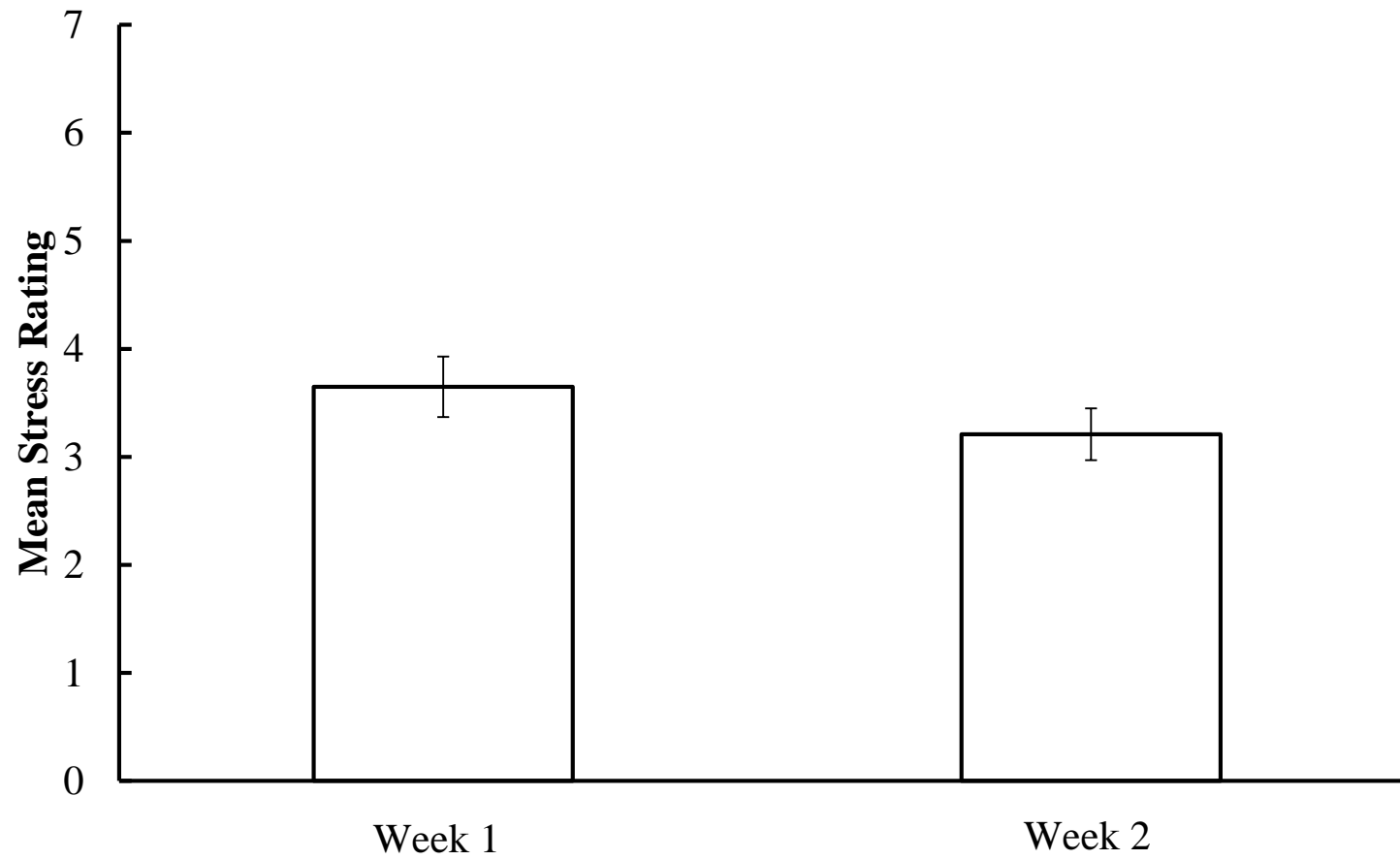
projects to be due, or midterms to occur, the week after and therefore many students still have work to complete over the week.

After the participant had been enrolled in the study for 10 weekdays, he/she received an email announcing that their 10 days had been completed and requesting their availability to arrange for a debriefing meeting. During the debriefing meeting the participants received their compensation, signed a receipt for the researcher, and received a debriefing form.

### **Results**

The reported stress ratings from each participant in this study were first calculated into four means per participant: (1) Week 1 Daytime; (2) Week 1 Evening; (3) Week 2 Daytime; and (4) Week 2 Evening. If a participant did not submit at least three out of the five responses for each of the calculations, all the data from that person were excluded from the results of the data analysis. Of the 33 participants who signed consent forms to complete the study, 13 were disqualified, leaving 20 participants whose stress ratings were examined, 10 in the non-meditation group and 10 in the meditation group. Of those disqualified, 9 (69%) were recruited in the first round from the first-year psychology course, and 4 (31%) were recruited in the second round from posters and verbal invitations. In terms of group distribution, 6 (46%) of the participants who were disqualified were in the non-meditation group and 7 (54%) were in the meditation group.

A 2x2x2 mixed ANOVA on student stress was conducted with group (Non-Meditation, Meditation) as the between-subjects factor and week (Week 1, Week 2) and time of day (Daytime, Evening) as the within-subjects factors. A significant main effect of week was found, sphericity assumed [ $F(1, 18) = 5.41, p = .03, \text{partial } \eta^2 = .23$ ]. Figure 1 displays the difference in mean stress ratings between Week 1 and Week 2. Figure 2 illustrates the mean stress rating for



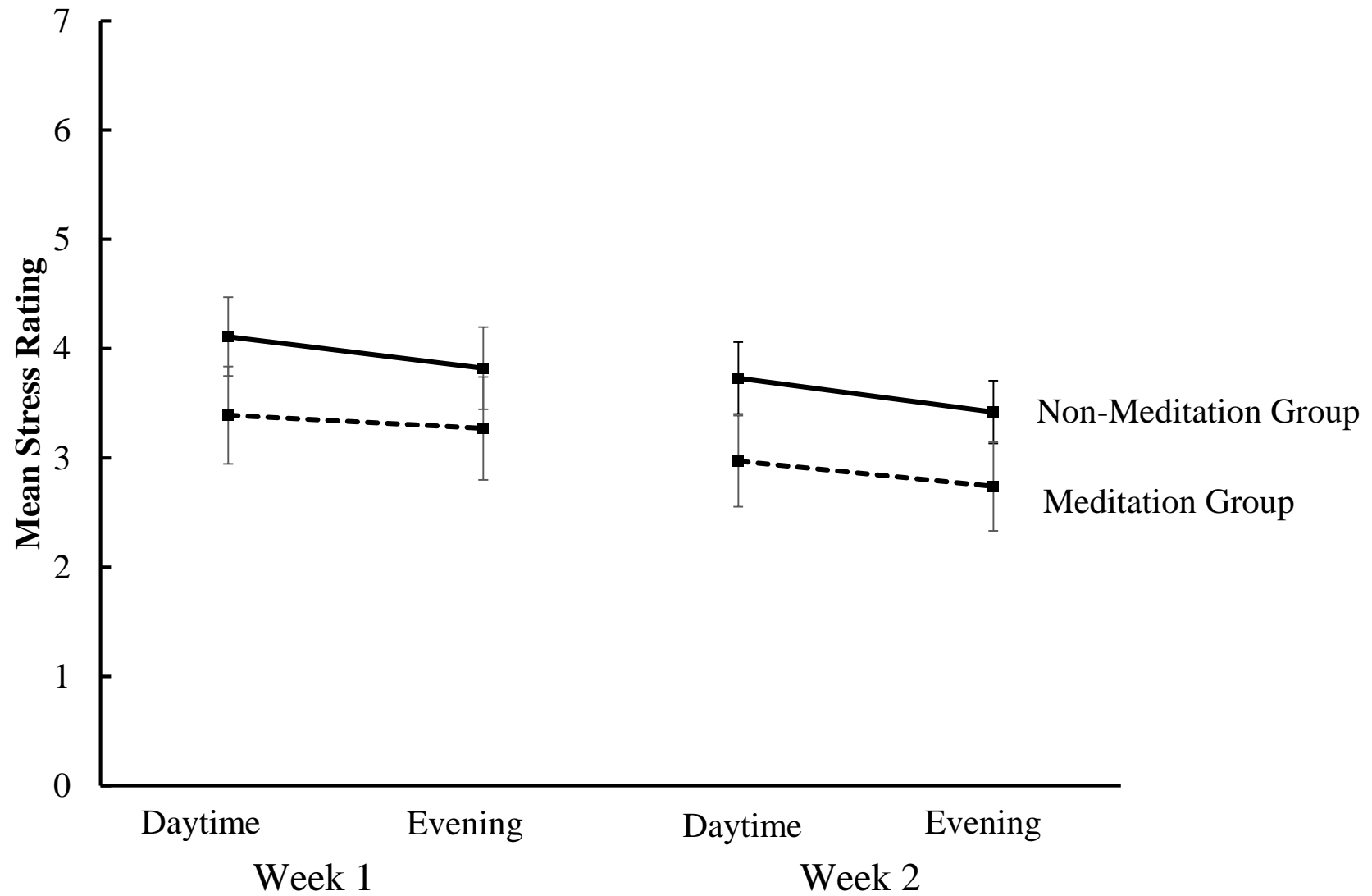
*Figure 1.* Mean stress ratings for all participants compared between Week 1 and Week 2.



each participant for Week 1 and Week 2, separated by non-meditation group and meditation group. No other significant main effects were found. No significant interactions were found. Means, standard deviations, and standard errors of the means for the non-meditation and meditation participants for Week 1, Week 2, Daytime, and Evening are presented in Table 2 in Appendix III. Table 3, in Appendix IV, reports the *SS*, *df*, *MS*, *F*, *p* and partial  $\eta^2$  values for all of the variables tested in the 2x2x2 mixed ANOVA.

### **Discussion**

One interesting finding produced by this study was the significant difference between the participants' mean stress ratings in Week 1 and Week 2. The analysis found that participants reported a significantly lower mean stress rating in Week 2 than in Week 1. This was independent of group placement or time of day. Since the difference in Week was not dependent on Group the lower stress ratings in Week 2 cannot be attributed to the mindfulness meditation. However due to the modified multiple baseline design of this study, participants completed the study across various times throughout the academic year and therefore it is unlikely that students simply had fewer stressors, academic or otherwise, during Week 2. One hypothesis that might be advanced to explain this significant difference in stress levels is that perhaps the difference is due to participants in both groups actively reflecting on their stress levels. Both groups were asked to rate their stress twice a day and therefore would have had to reflect on their stress for at least a little amount of time in order to assess a rating. The self-awareness of their state of stress may have an inadvertent lowering effect on their stress levels. A study conducted with Portuguese war veterans found that within veterans who had recovered from PTSD, self-awareness of mental states was one of the key processes in promoting recovery. It was also found that participants who reported low levels of self-awareness of their mental states showed higher severity of



*Figure 2.* Mean stress ratings for the non-meditation group and the meditation group for daytime and evening ratings for Week 1 and Week 2. Error bars represent standard errors of the mean.

post-traumatic stress disorder (PTSD) and more depressive symptoms (Ferrajão, & Oliveira, 2014). This finding suggests that becoming more self-aware of mental states could have a lessening effect on the severity of both PTSD and depressive symptoms. If self-awareness of mental states can lower the severity of disorders such as PTSD and depression, then it could very likely lower one's stress level as well.

Another possible explanation for the impact that regularly reflecting on and rating stress may have on stress levels of undergraduate university students is that engaging in the reflections on their stress level twice a day was a form of self-monitoring. Self-monitoring is a behavioural therapy technique in which clients observe and record a target behaviour or feeling on their own (Spiegler & Guevremont, 2010). Although participants in this study were not asked to specifically record their stress levels during times in which they felt stressed or directly after, doing the observations twice a day for 10 days may have become an augmented form self-monitoring. Self-monitoring can bring about reactivity on the part of the participant in which the participant changes some aspect about the behaviour because he/she is aware that the behaviour is being monitored (Spiegler & Guevremont, 2010). In terms of this study, the participants may have augmented how stressed they interpreted themselves as feeling because they were aware that they were supposed to be reporting their stress levels. However if reactivity due to engaging in the twice daily stress ratings is what caused a statistically significant decrease between Week 1 and Week 2 in the mean stress levels of the participants then the reactivity could be a useful tool to lower undergraduate student stress. While changes in behaviour due to self-monitoring are sometimes short-lived, there is a possibility that specific populations such as undergraduate university students could benefit from a monitoring program such as this (Spiegler & Guevremont, 2010). Undergraduate university students have a unique characteristic to their

population in which the change resulting from the self-monitoring does not need to be long-lasting per se. If students were to engage in a twice daily, simple stress rating form of self-monitoring regularly throughout a year or a 4-year degree, then the effects of lowering stress would not necessarily have to persist past that point, especially since academic oriented stressors have been reported as the primary cause of stress for students (Olpin, 1996). Future research should be conducted to examine the impact of encouraging students to engage in a routine of simple self-monitoring through recording their stress levels on a scale twice a day, such as the behaviour completed by both groups in this study, to see if it does result in a lessening effect on undergraduate student stress levels. If the regular stress ratings are found to be effective at lowering student stress then the behaviour could be simple enough to be incorporated into a daily routine for undergraduate university students with the hope that the stress ratings would then be continued during times of heightened stress.

The analysis of the data collected in this study resulted in no significant difference being found between the participants who were in the meditation group and those who were in the non-meditation group. Therefore the hypothesis of this study was not supported. There could be a number of reasons why the mindfulness-based meditation was not successful in decreasing stress levels for these students. One explanation may be that the meditation guide that was selected because of its simplicity was in fact not thorough enough of a training guide for the participants. In the future it may be beneficial to first give the participants who will be completing mindfulness-based meditations a training workshop with someone who practices the meditation themselves. This may give the participants a more-thorough understanding that the guide used in this study could then reinforce as they follow it for their daily meditations.

Since monitoring of whether the participants actually did the meditation was done via self-report there is a possibility that the participants did not actually complete the meditations. However, if that is the case then the study failed in trying to create a self-care behaviour that was easy enough for students to do and that could become routine and therefore not be dropped during times of increased stress.

Another aspect that indicates that the self-care behaviour may have failed in its goal to fit well into the schedules of the student participants is the rate of drop out and reports not sent in by a sizeable proportion of participants in this study. Of the 33 participants who signed consent forms, five (15%) stopped sending data by the start of Week 2 and four (12%) sending only one or not even one report. Of the remaining 28 participants, eight (29%) could not be included in the analysis due to not meeting the necessary requirement of having at least three out of five data points to create each of the four means. However, when comparing which group these 13 participants belonged to it was interesting to note that they were relatively equally distributed between the non-meditation group and the meditation group, 46% and 54% respectively. This finding indicates that the incompleteness rate was probably not related to the mindfulness-based meditation intervention itself. If the intervention had been the key factor then there should be a greater number of participants in the meditation group, who were asked to complete the 5-minute mindfulness-based meditation, who did not fully complete the study. Another possible explanation for the incompleteness by some of the participants may be the time deadlines imposed as part of this study. Both groups had the same two time deadlines: 4:59 pm for the daytime rating and 11:59 pm for the evening rating. The rationale for this choice of time deadlines was that if a participant did have a busy schedule close to these deadlines he/she could have completed their required rating and meditation, if applicable, at an earlier time. What may have

happened instead is that the participants found that they were unable to complete the rating and meditation, if applicable, and submit it in time.

Overall this study was not successful in developing an effective mindfulness-based meditation intervention that would: a) decrease the stress levels of undergraduate post-secondary students; and b) be easy enough for students to fit into their schedules and therefore become routine in hopes that the students would continue the self-care practice during times of heightened stress.

## References

- Armstrong, L. L., & Young, K. (2015). Mind the gap: Person-centred delivery of mental health information to post-secondary students. *Psychosocial Intervention, 24*, 83-87. doi: <http://dx.doi.org/10.1016/j.psi.2015.05.002>
- Canadian Association of College and University Student Services (2013). *Canadian Reference Group Executive Summary Spring 2013*. Retrieved from [http://www.cacuss.ca/health\\_data.htm](http://www.cacuss.ca/health_data.htm)
- Felton, T., Coates, L., & Christopher, J. (2013). Impact of Mindfulness Training on Counseling Students' Perceptions of Stress. *Mindfulness, 6*, 159-169. doi: 10.1007/s12671-013-0240-8
- Ferrajão, P. C., & Oliveira, R. A. (2014). Self-awareness of mental states, self-integration of personal schemas, perceived social support, posttraumatic and depression levels, and moral injury: A mixed-method study among Portuguese war veterans. *Traumatology: An International Journal, 20*, 277-285. doi: <http://dx.doi.org/10.1037/trm0000016>
- Fuselier, D. (2003). *Self-care among psychology graduate students and psychologists: implications for physical, mental, and spiritual well-being* (Doctoral dissertation). Retrieved from ProQuest (AAI3130527).
- Gold, J., Johnson, B., Leydon, G., Rohrbaugh, R., & Wilkins, K. (2015). Mental Health Self-Care in Medical Students: A Comprehensive Look at Help-Seeking. *Academic Psychiatry, 39*, 37-46. doi: 10.1007/s40596-014-0202-z
- Greeson, J., Toohey, M., & Pearce, M. (2015). An Adapted, Four-Week Mind–Body Skills

Group for Medical Students: Reducing Stress, Increasing Mindfulness, and Enhancing Self-Care. *EXPLORE: The Journal of Science and Healing*, 11, 186-192.

doi:10.1016/j.explore.2015.02.003

How to Do It. (2014, September 9). Retrieved October 10, 2015, from

<http://www.mindful.org/mindfulness-how-to-do-it/>

Miller, A. (2013, Jun 17). Post-secondary students feel stress, anxiety, have suicidal thoughts:

Survey. *The Canadian Press*. Retrieved from

<http://search.proquest.com/docview/1369735356?accountid=15115>

Olpin, M. N. (1996). *Perceived stress levels and sources of stress among college students:*

*Methods, frequency, and effectiveness of managing stress by college students* (Order No.

9708771). Available from ProQuest Dissertations & Theses Global: Health & Medicine;

ProQuest Dissertations & Theses Global: Social Sciences. (304302199). Retrieved from

[https://www.lib.uwo.ca/cgi-](https://www.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com/docview/304302199?accountid=15115)

[bin/ezpauthn.cgi?url=http://search.proquest.com/docview/304302199?accountid=15115](http://search.proquest.com/docview/304302199?accountid=15115)

Peters, B. M. (2007). *The relationships among physiological and perceived stress, quality of life,*

*self-care, and impairment in doctoral students* (Doctoral dissertation). Retrieved from

ProQuest (3282936).

Poole, G., Cox, D. N., & Matheson, D. H. (2016). *The psychology of health and health care: A*

*Canadian perspective* (5th ed.). Toronto, ON: Pearson Canada.

Selye, H. (1956). *The stress of life*. New York, NY: McGraw-Hill Book Company.

Spiegler, M. D., & Guevremont, D. C. (2010). *Contemporary behavior therapy* (5th ed.).

Belmont, CA: Wadsworth, Cengage Learning.

Stanley, N., & Manthorpe, J. (2001). Responding to students' mental health needs: Impermeable



systems and diverse users. *Journal of Mental Health*, 10, 41-52. Retrieved from  
<http://search.proquest.com/docview/619682829?accountid=15115>

Weidner, G., Kohlmann, C., Dotzauer, E., & Burns, L. R. (1996). The effects of academic stress on health behaviors in young adults. *Anxiety, Stress & Coping: An International Journal*, 9, 123-133. Retrieved from  
<http://search.proquest.com/docview/618884087?accountid=15115>

## Appendix I

### Meditation Guide:

---

1. Take your SEAT. Whatever you're sitting on – a chair, a cushion – find a spot that gives you a stable, solid seat; don't perch or hang back.
2. If on a cushion on the floor, cross your LEGS comfortably in front of you. (If you already do some kind of seated yoga posture, go ahead.) If on a chair, it's good if the bottoms of your feet are touching the floor.
3. Straighten – but don't stiffen – your UPPER BODY. The spine had natural curvature. Let it be there. Your head and shoulders can comfortably rest on top of your vertebrae.
4. Place your upper arms parallel to your upper body. Then let your HANDS drop onto the tops of your legs. With your upper arms at your sides, your hands will land in the right spot. Too far forward will make you hunch. Too far back will make you stiff.
5. Drop your chin a little and let your GAZE fall gently downward. You may let your eyelids lower. If you feel the need, you may lower them completely, but it's not necessary to close your eyes when meditating. You can simply let what appears before your eyes be there without focusing on it.
6. Be there for a few moments, SETTLE. Now you can follow the next breath that comes out.

If you wish, you may keep track of your 5 minutes by counting or by using an alarm. If counting, it is suggested that you count in short intervals and then keep a running tally of the number of intervals. 30 counts of 10 seconds or 15 counts of 20 seconds are recommended. If using an alarm, please ensure the alarm is quiet so that it does not startle you out of your meditation and therefore disrupt the calm state you have achieved.

Source: <http://www.mindful.org/mindfulness-how-to-do-it/>

## Appendix II

Table 1  
*Participation Distribution by Group and Recruitment*

	Round 1 (first-year psychology course)	Round 2 (posters and verbal invitations)	Total
<u>Before Disqualification</u>			
Non-Meditation Group	9	7	16
Meditation Group	8	9	17
Total	17	16	
<u>After Disqualification</u>			
Non-Meditation Group	5	5	10
Meditation Group	3	7	10
Total	8	12	

### Appendix III

Table 2  
*Descriptive Statistics of Each Cell*

	<i>M</i>	<i>SD</i>	<i>SEM</i>
Non-Meditation, Week 1, Daytime	4.11	1.14	.36
Non-Meditation, Week 1, Evening	3.82	1.19	.38
Non-Meditation, Week 2, Daytime	3.73	1.04	.33
Non-Meditation, Week 2, Evening	3.42	.91	.29
Meditation, Week 1, Daytime	3.39	1.41	.45
Meditation, Week 1, Evening	3.27	1.49	.47
Meditation, Week 2, Daytime	2.97	1.32	.42
Meditation, Week 2, Evening	2.74	1.29	.41

### Appendix IV

Table 3  
*Results of the 2x2x2 Mixed ANOVA*

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>	<u>Partial <math>\eta^2</math></u>
Week	3.72	1	3.72	5.41	.03*	.23
Week x Group	.04	1	.04	.06	.81	.00
Error(Week)	12.38	18	.69			
Time of Day	1.11	1	1.11	2.40	.14	.12
Time of Day x Group	.08	1	.08	.17	.68	.01
Error(Time of Day)	8.34	18	.46			
Week x Time of Day	.02	1	.02	.09	.77	.01
Week x Time of Day x Group	.01	1	.01	.04	.85	.00
Error(Week x Time of Day)	4.95	18	.28			
Group	9.19	1	9.19	1.96	.18	.10
Error(Group)	84.57	18	4.70			

\* $p < 0.05$

## Curriculum Vitae

Name: Anna Isabelle Matrosovs Smallwood

Place and Year of Birth: Ontario, Canada, 1994

Secondary School Diploma: Ontario Secondary School Diploma, Bradford District High School, Bradford, ON, Canada

Experience: President of the Huron Psychology Association, Huron University College (2015/2016)  
Peer Support Centre Volunteer, University of Western Ontario (2014/2015)  
Volunteer Coordinator of the Western Psychology Association, University of Western Ontario (2014/2015)

Awards: Dean's List, Huron University College (2014/2015)  
Entrance Scholarship, Huron University College (2012)  
Ontario Scholar, Bradford District High School (2012)  
Excellence in Education Award, Simcoe County District School Board (2012)

Publications: Smallwood, Anna Isabelle Matrosovs (2015) "Examining Sex Differences in Physical Activity Motivation," *The Huron University College Journal of Learning and Motivation*: Vol. 53: Iss. 1, Article 10. Retrieved from: <http://ir.lib.uwo.ca/hucjlm/vol53/iss1/10>