

NINA WEINGARTEN (ET AL.)

The Effect of Frustration and Boredom on Self-Harming Behaviour

Original Paper

Despite the increasing attention on self-harming behaviour, research lacks evidence-based understanding of factors that can influence or cause this phenomenon. This study focuses on the influence of boredom and frustration on self-harming behaviour. This was done by measuring the amount and intensity of self-administered electrical stimulation amongst 63 undergraduate psychology students. Frustration was manipulated with an unsolvable computer task and boredom with a movie. Participants in the frustration condition were expected to harm themselves more intensely, whereas participants in the boring condition were expected to harm themselves more frequently. For the induced boredom, there was an effect on the frequency of self-harming behaviour. However, the frustration manipulation demonstrated no effect on either intensity or frequency of self-harming behaviour by the participants. We argue that the effects of the induced frustration did not last long enough to have an effect on the later self-harming.

Keywords: Boredom, self-harming behaviour, frustration, electrical stimulation, non-suicidal self-injury (NSSI)

Nina Weingarten, Stephanie Römer, Sally Klein, Katja Marszalek,
Iris van der Meer, Maurits Nijenstein, Sofia Rivera Manga,
Samantha Stranc
Bachelor Psychology students
Maastricht University, Maastricht, The Netherlands
n.weingarten@student.maastrichtuniversity.nl

INTRODUCTION

Boredom is an emotion that is generally experienced as negative or unpleasant (Gerritsen, Toplak, Sciaraffa & Eastwood, 2014). Previous research has shown that it seems to have serious aversive consequences: Experiencing boredom is related to increased gambling behaviour (Blaszczynski, McConaghy & Frankova, 1990), psychopathology like anxiety and depression (Sommers & Vodanovich, 2000), and less attempts to stop smoking (Amos, Wiltshire, Haw & McNeill 2006). Moreover, there appears to be a positive correlation between self-reported boredom and mortality rates (Britton & Shipley, 2010). The negative consequences of boredom clearly show that it is not a trivial phenomenon. In a British survey, participants indicated experiencing approximately six hours of boredom in a week on average (Toohey, 2011), which demonstrates the prevalence of this possibly dangerous sentiment.

In order to escape this feeling of boredom, any form of distraction (or stimulation) is sought after; such as reading, watching television or increasing the amount of food that one eats (Koball, Meers, Storfer-Isser, Domoff & Musher-Eizenman, 2012). A possible explanation for distraction seeking could be that one aims to replace the feeling of nothing with the feeling of something good. However, there is evidence that stimuli which sought after can also be negative. In other words, the driving force behind stimulation seeking behaviour is not to experience positive affect, but to simply avoid monotony (Havermans, Vancleef, Kalamatianos & Nederkoorn, 2014). Havermans et al., (2014) demonstrated that in a state of induced boredom, there was an increase in the amount of chocolate eaten, as well as in the amount of electrical shocks self-administered, compared to the neutral condition. With reference to everyday life, boredom might therefore be seen as a trigger for self-administering aversive stimuli (such as self-harm) as a means to avoid monotony.

In general, it has been found that self-harming behaviour is correlated to the presence of negative affect, such as anxiety, frustration and sadness. It is suggested that self-harm might act not just as a distractor stimulus, but also as a coping mechanism to decrease negative feelings (Nock, 2009). This suggests being bored would allow for dwelling on negative thoughts, and self-harm would serve to distract from the numbness of lack of feeling, or to relieve stress from negative affect. This explanation is in line with Chapman's Experiential Avoidance Model (Chapman, Specht & Cellucci, 2006). This model states that deliberate self-harm, like scratching, burning, or cutting oneself (i.e. non-suicidal self-injury NSSI; Nock & Favazza, 2009), serves the purpose to avoid negative emotional experiences. The exact

prevalence of NSSI varies among different age groups. Among students 17%-41% (Whitlock, Eckenrode & Silverman, 2006; Aizenman & Jensen, 2007) reported to have performed self-harming behaviour at least once, whereas among adolescents the prevalence varies between 13%-23% (Jacobson & Gould, 2007; Muehlenkamp, Claes, Havertape & Plener, 2012). Among adults in the United States approximately 4% perform self-harming behaviour (Briere & Gil, 1998). NSSI is also related to the Borderline Personality Disorder, but it can also occur in the absence of a diagnosis (Briere & Gil, 1998). While at first glance boredom seems to play only a minor role in the act of self-harm, it has been found that boredom, or the need for stimulation, has been reported as a driving motive for self-harming behaviour (Nock, 2009).

Recently, Nederkoorn et al., (2016) tested whether self-harming behaviour serves the purpose of relieving negative feelings. The design was similar to that from Havermans et al., (2015), where movies served as mood induction and electrical stimulation was free accessible to participants. A third condition was added (sadness) to examine the effect of a different negative emotion on non-suicidal self-harming behaviour (electro shocks). They discovered that sadness did not increase self-administered electrical shocks, but boredom did. That supports the conclusion of Havermans et al., (2015) that experiencing boredom leads to an increased need to escape the monotony, instead of the need to relief negative feeling as argued by Nock et al., (2009).

The present study aims at further investigation of the role of negative emotions on self-harming behaviour, more specifically the role of boredom and frustration and the combination of both on self-harm. We expected that participants who are bored would shock themselves more frequently than participants who do not experience boredom, because of a need for stimulation. Furthermore, we hypothesized that subjects in the frustration condition would administer shocks at a higher intensity compared to the neutral and boredom condition. A more intense stimulation should serve to remove attention from the experienced negative feelings. In addition, we expected an interaction effect for both the intensity and frequency in the condition in which participants experience both boredom and frustration. In other words, people who are bored and frustrated were expected to shock themselves at a higher intensity and frequency than participants in other conditions. t>

METHOD

Participants

Sixty-three psychology students (37 women, M age = 21.35, SD =1.54) from Maastricht University participated in return for “participant points” needed to fulfil a course requirement. The participants were recruited through flyers located in the University and shared on social media. Exclusion criteria were pregnancy, heart and vascular problems, history of self-harming behaviours, schizophrenia, memory deficits and other cognitive impairments, and neurological diseases including epilepsy. Schizophrenia was selected, because it is strongly associated with self-harming behaviour (Haw, Hawton, Sutton, Sinclair & Deeks, 2005). The study was reviewed and approved by the ethical committee of the Faculty of Psychology and Neuroscience of Maastricht University.

Design

The experiment was announced as a study testing the influence of cognitive performance on perception. The experiment had a 2 (frustration vs. neutral, i.e. unsolvable vs. solvable task) x 2 (boredom vs neutral, i.e. repeated clip vs. movie) between-subjects design. Participants were randomly assigned to one of four conditions: frustration & boredom (14 participants), neutral & boredom (15 participants), frustration & neutral (16 participants) and neutral & neutral (15 participants). The dependent variables in this study were the frequency and intensity of self-administered electrical stimulations and the levels of self-assessed boredom and frustration. The independent variable was the participant’s condition.

Materials

Mood Questionnaire

The mood questionnaire was designed by the authors and consists of a series of mood related questions (i.e. how happy are you right now?) that were answered in a traditional Likert scale ranging from 1 to 10 (see appendix). The mood questionnaires did not include information about participant’s demographics. We obtained information about gender and age from the participant based on the consent form.

Word salad task

The word salad task consists of 20 words whose letters have been rearranged differently in order to create a nonsense word. The participants were asked to find the original word (e.g. dnaicng = dancing). Participants in the neutral condition received a version that was easily solvable whereas participants in the frustration condition received a version of the word salad task that was unsolvable (4 out of 20 were solvable in order to avoid suspicion). In addition, to increase the levels of frustration, participants in the frustration condition were told prior to the task that they would receive a monetary reward if they could outperform their peers. Since the task was unsolvable it was impossible for them to do well and they therefore never actually received the reward. Moreover, participants in the frustration condition were told that they performed worse compared to other participants.

Film fragments

The film fragments used were taken from the movie “Good Will Hunting” (Bender & Van Sant, 1997). Participants watched the film fragments for a total of 30 minutes. In the neutral condition participants watched the beginning section of the movie. The movie portrays a janitor, who is very talented in math and chemistry but does not realize his potential. Certain high arousal sections were excluded from the movie in order to avoid eliciting any long lasting emotions in the control condition. Examples of scenes that were deleted are a heated discussion between the main character and his therapist or a scene in which the main character is talking to a girl in a bar. In the boring condition participants viewed a 30 second clip on repeat taken from the same movie. In this particular clip the main character is able to solve a very complicated mathematical problem. Watching someone solving a puzzle, should serve as a frustration cue to the participants in the frustration condition. More precisely, after being exposed to an unsolvable puzzle, we expected that seeing someone solving a “mathematical puzzle” would serve as a frustration cue.

Electrical stimulation

Electrical stimulations were administered through two electrodes placed on the medio posterior part of the left forearm. The size of one electrode is approximately 1 cm. The

stimulations were controlled through buttons on the keyboard that allowed the participants to increase or decrease the intensity at will. The range of intensities varied from a minimum of 1mA to a maximum of 20mA. The frequency and intensity of the administered stimulations were recorded by a computer.

Procedure

Participants were invited by email to the lab for a session that lasted about 60 minutes. When entering the lab, the participants were asked to read and sign an informed consent highlighting the procedure and the exclusion criteria (see 2.1). In addition, participants were instructed to remove any possible distractions or time telling devices such as watches, tablets, laptops, and/or phones. Then participants were accompanied to the testing room. During the following procedure, the participant was alone inside the room, but the experimenter could see the participants on a screen. At the beginning of the testing session, participants filled in the first mood questionnaire. Afterwards they were asked to perform a word salad task as well as they could. Our first mood manipulation took part during this task. Immediately after finishing the task, the participants filled in the second questionnaire to assess their mood. In the next part of the study the electrodes were placed on the participant's forearm and instructions for the electrical stimulation machine were given as well as a small sheet of paper that contained the written instructions. Then, one of the two film fragment was shown to the participant, to serve as the second mood manipulation. Only during this part of the study could the participants self-administer electrical stimulations. After watching the movie, participants filled in the third questionnaire. Additionally, we conducted a calibration test to determine participant's pain threshold. A series of electric stimulations were applied to the participants, starting with an intensity of 1mA and each time increasing it by 1 mA. After each stimulation, the participants were asked how it felt. If the participant indicated that the stimulation was experienced as painful (rather than feeling unpleasant or weird), the stimulation was stopped immediately and the intensity was noted as that participant's pain threshold. Finally, participants were fully debriefed and given a course credit and a small gift (an eraser). The procedure is visualized in figure 1.

Statistical Analysis

First, an ANOVA with repeated measures was conducted to see if the mood manipulation was successful. To test the first hypothesis a GLM Univariate Analysis was performed. To test the

first hypothesis, the number of shocks was the dependent variable. To test the second hypothesis, the maximum intensity of the shocks was used. To test the third hypothesis, the average intensity of shocks was compared between conditions.

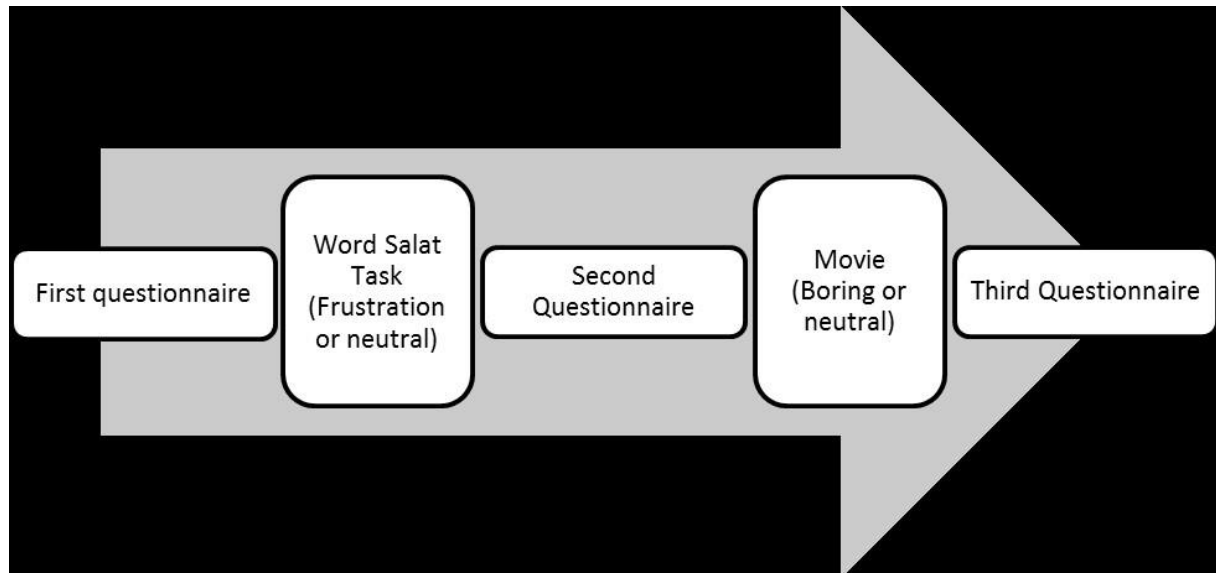


Figure 1. Timeline of Experimental Procedure

RESULTS

Manipulation check

The word salad task had a significant effect on frustration ($F(1, 61) = 21.53, p < 0.001$, figure 2). Participants in the frustration condition were more frustrated after doing the word salad task than before. However, after watching the movie, the frustration level returned to baseline (figure 2). The manipulation of frustration had no effect on boredom ($F(1, 61) = 0.996, p = 0.322$). In contrast, the boredom movie significantly increased boredom ($F(1, 59) = 46.701, p < .001$). These results suggest that our mood manipulation was immediately effective, though the induced frustration was not long lasting. In table 1 and 2, a summary of the changes in boredom and frustration levels in response to the different manipulations is provided. The overview is provided for every single condition.

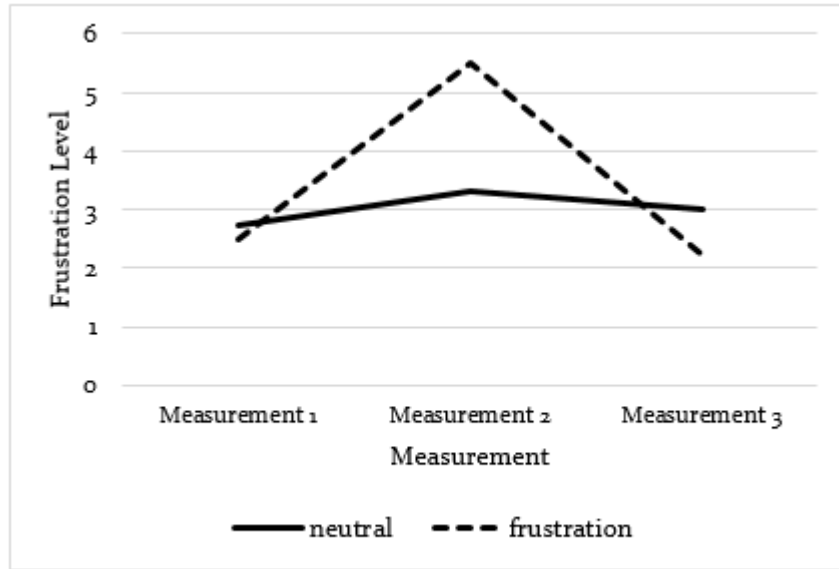


Figure 2. Frustration Level across all three Measurements.

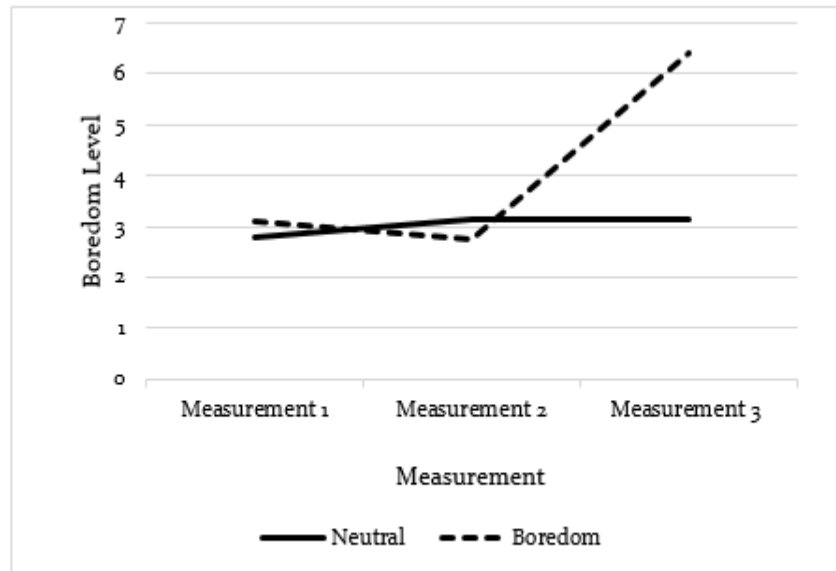


Figure 3. Boredom Level across all three Measurements.

Table 1. Results of Frustration Manipulation per Condition

	Frustration& Boredom	Boredom Only	Frustration only	Control
N	14	15	16	15
Mean (SD)				
1 st Measure	2.6 (1.76)	3.06(2.26)	2.63 (1.89)	2.38 (1.41)
2 nd Measure	5.07 (2.37)	3.25 (1.69)	6.13 (2.70)	3.25 (1.81)
3 rd Measure	3.53 (2.33)	3.75 (2.08)	2.19 (1.22)	2.00 (1.41)

Table 2. Results of Boredom Manipulation per Condition

	Frustration& Boredom	Boredom Only	Frustration only	Control
N	14	15	16	15
<u>Mean (SD)</u>				
1 st Measure	3.20 (1.78)	2.96 (1.54)	2.31 (1.30)	3.38 (1.71)
2 nd Measure	2.67 (1.17)	2.31 (1.30)	3.00 (2.28)	3.13 (1.78)
3 rd Measure	7.13 (3.18)	6.69 (2.30)	2.81 (1.80)	3.06 (1.48)

Effect of boredom and frustration on electric stimulation

Three of the 63 participants were excluded from the analysis. They were identified as outliers, because their number of self-administered electro shocks was 2.5 SD larger than the mean. One from the neutral-neutral condition, one from the neutral-boredom condition and one of the frustration-boredom condition. Mean and SD are provided in table 3.

Table 3. Analysis of the self-administered electro shocks per Condition

	Frustration& Boredom	Boredom Only	Frustration only	Control
N	14	15	16	15
<u>Mean (SD)</u>				
Number of				
Shocks	37.43 (40.69)	46.67 (39.03)	19.88 (28.18)	23.87 (24.87)
Maximum				
Intensity (mA)	7.57 (6.26)	9.40 (7.09)	6.56 (7.07)	7.07 (6.83)
Mean				
Intensity (mA)	3.19 (2.45)	4.85 (3.47)	3.25 (3.38)	4.05 (3.89)

Number of shocks, maximum intensity and mean intensity

In contrast to our hypothesis, there was no significant interaction effect between frustration and boredom on the number of shocks ($F(1,56) = 0.091$, $p = 0.764$). The interaction term was therefore, removed from the analysis. Boredom had a significant effect on the number of self-administered electric shocks ($F(1,57) = 5.477$, $p = 0.023$). People who were bored administered more shocks to themselves than people in the neutral condition, as can be seen in figure 4. In addition, frustration had no effect on the frequency of shocks ($F(1,57) = 0.573$, $p = 0.452$). There was no effect of boredom on the highest self-administered shock ($F(1,60) = 0.972$, $p = 0.328$). In addition, frustration had no effect on the maximum intensity ($F(1,60) = 0.524$, $p =$

0.472). There was neither an effect of boredom on the mean of shocks ($F(1,60) = 0.308, p = 0.581$) nor of frustration on the mean intensity of shocks ($F(1,60) = 2.526, p = 0.117$).

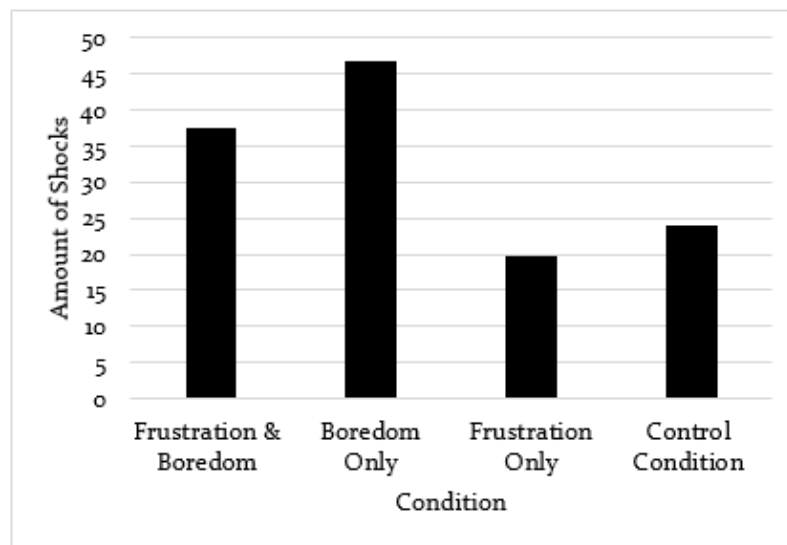


Figure 4. Number of Shocks per condition.

Pain threshold

The mean pain threshold was 9.556 mA, $SD = 4.623$. There were 17 participants (28.3%) who self-administered shocks above their pain threshold. Six of them were in the frustration-boredom condition, three in the neutral-neutral condition and four in each of the other two conditions. The chi-square test showed that this distribution did not differ between the frustration conditions ($\chi^2(1, N = 60) = 0.739, p = 0.390$), nor in the boredom conditions ($\chi^2(1, N = 60) = 1.045, p = 0.307$).

DISCUSSION

In our study we looked at the influence of boredom and frustration on self-harming behaviour and how they interact. We predicted that the induced state of boredom and frustration would both (independently) increase the amount of electrical stimulation that was self-administered. We also predicted an additive effect when boredom and frustration were experienced together and predicted this would lead to an increased tendency to harm.

The acquired mood ratings confirmed the effectiveness of both the boredom and frustration mood induction in participants immediately after the manipulation. It should be

noted that while participants were more frustrated after completing the unsolvable word puzzle tasks (compared to the solvable task), this frustration wore off after viewing the film for 30 minutes. Thus the effects of the frustration manipulation were effective but short lived.

For all conditions we measured the shock intensity and frequency that was self-administered by the participant. We did not find any interaction between frustration and boredom. However, the induced boredom increased the frequency of electrical stimulation but not the intensity. People in the boredom condition had a higher frequency of shocks compared to people in the non-boredom condition. This was in agreement with the hypothesis. Furthermore, we expected experiencing frustration would increase the intensity of electrical stimulation. However, this was not the case, where no effect of frustration on either intensity or frequency of shocks administered could be observed. In addition, there was no interaction effect between frustration and boredom.

The present study has some limitations, which are mainly based on the lack of effect frustration had on the intensity of administered shocks. This lack of effects could be due to several reasons, the first of which being that our induction of frustration was not effective and did not live up to real life standards. The unsolvable word puzzles might not have generated strong negative feelings, thus the induced frustration was not experienced to the same extent to which we experience frustration in stressful real-life situations. Not solving a puzzle was probably not important enough to the participants to evoke self-harming behaviour. In real-life, frustration arises due to more important events (e. g. being treated unfair, losing a phone, failing an exam...). It is therefore suggested to use a different method for manipulating frustration that better resembles a real-life situation.

Another explanation is that the feelings of frustration caused by the word salad task did not last long enough, which is can be supported by our data. At the second measurement, participants scored significantly higher on the frustration measurement. However, by the third measurement the levels of frustration were diminished, indicating that it was only a short-lasting immediately observable effect. Although participants were initially frustrated by their inability to solve the word problems, the feeling faded once the next task was introduced. Therefore, it would have less effect in causing self-harming behaviour. Due to the nature of the experiment, it was not possible to counterbalance the order of the frustration and boredom condition, because the dependent variable was the shocking behaviour. Therefore, we could not control for order effects, which is another limitation of the study. An additional limitation is that we used self-made questionnaires. They were not standardized and are therefore not

tested for reliability and validity. Possibly, the mood manipulation was successful, but the measurement instrument did not assess it correctly.

It is also possible that negative affect such as frustration does not influence self-harm, in contrast to what previous research suggested (Nock, 2009). However, in the current study, only healthy undergraduate students were tested and students with a history of self-harm were excluded. It is therefore possible that the participants could effectively regulate their emotions and did not need to revert to the electric stimulation. Perhaps people with less effective coping strategies might have more difficulty coping with anger and frustration. In a study performed by Nocks (2009), a common factor among many individuals who self-harmed regularly was having pervasive negative feelings. In turn, this might have an effect on how they develop their coping mechanisms.

In order to investigate the possible reasons explaining the absence of an effect of frustration on self-harming behaviour in this study, one should consider offering different stimuli to participants to perform self-harming behaviour. As mentioned earlier, NSSI can take many forms such as burning, cutting or hitting. One could do research on the relation of frustration/ boredom to other types of self-harming behaviour besides electro shocking. However, it is most important to prevent the participant from real harm. Therefore, one should carefully select stimuli that are offered to perform self-harming behaviour. Since electro shocking at a very low intensity is not dangerous, yet painful, more research is needed to define good alternatives. Moreover, it would be important to improve the induction and measurement of frustration on participants. Due to ethical reasons, inducing a more pervasive, long lasting feeling of frustration amongst the participants was not realistic. A possible avenue to pursue instead would be to conduct a quasi – experimental procedure, measuring the difference in experienced frustration in day-to-day lives between self-harmers and non-self-harmers. This additional information of the relevance of this emotion could help understand the impact negative affect has on such behaviour. It is especially important due to its high prevalence (especially among adolescents) and its relationship with a borderline personality disorder.

In conclusion, it is important to recall that while the effects of frustration did not seem to have an impact on self-harming tendencies – the influence of boredom did demonstrate significant effects. This is in accordance with the results of Havermans et al., (2015), where the search for stimulation leads to aversive as well as positive interactions. This non-discriminative search for aversive or approachable stimuli to relieve boredom suggests the potential risk boredom may play in many situations. It is important not to underestimate the role that lack

of stimulation or interest might have on the individual. The current results are relevant in understanding and dealing with self-harming behaviour. It gives insight into the mechanisms and factors of self-harm, which can help us to identify which therapies to use and how to improve therapies.

We hope further research aims to illuminate other factors that interact with the effects of boredom and search for stimulation.

REFERENCES

- Aizenman, M., & Jensen, M. A. C. (2007). Speaking through the body: the incidence of self - injury, piercing, and tattooing among college students. *Journal of College Counseling*, 10, 27-43.
- Amos, A., Wiltshire, S., Haw, S., & McNeill, A. (2006). Ambivalence and uncertainty: Experiences of and attitudes toward addiction and smoking cessation in the mid-to-late teens. *Health Education Research*, 21, 181-191.
- Bender, L. (Producer), Van Sant, G. (Director). (1997) *Good Will Hunting* [Motion Picture]. United States.
- Britton, A., & Shipley, M. J. (2010). Bored to death? *International Journal of Epidemiology*, 39, 370-371.
- Briere, J., & Gil, E. (1998). Self-mutilation in clinical and general population samples: Prevalence, correlates, and functions. *Journal of Clinical Orthopsychiatry*, 68, 609-620.
- Blaszczynski, A., McConaghy, N., & Frankova, A. (1990). Boredom proneness in psychopathological gambling. *Psychological Reports*, 67,35-42.
- Chapman, A. L., Specht, M. W., & Cellucci, T. (2005). Borderline Personality Disorder and Deliberate Self - Harm: Does Experiential Avoidance Play a Role?. *Suicide and Life-Threatening Behavior*, 35(4), 388-399.
- Gerritsen, C. J., Toplak, M. E., Sciaraffa, J., & Eastwood, J. (2014). I can't get no satisfaction: Potential causes of boredom. *Consciousness and Cognition*, 27, 27-41.
- Havermans, R. C., Vancleef, L., Kalamatianos, A., & Nederkoorn, C. (2014). Eating and inflicting pain out of boredom. *Appetite*, 85 (2015), 52-57.

- Haw, C., Hawton, K., Sutton, L., Sinclair, J., & Deeks, J. (2005). Schizophrenia and Deliberate Self - Harm: A Systematic Review of Risk Factors. *Suicide and Life-Threatening Behavior*, 35(1), 50-62.
- Jacobson, C. M., & Gould, M. (2007). The epidemiology and phenomenology of non-suicidal self-injurious behavior among adolescents: A critical review of the literature. *Archives of Suicide Research*, 11, 129-147.
- Koball, A.M., Meers, M.R., Strofer-Isser, A., Domoff, S.E., & Musher-Eizenman, D.R. (2012). Eating when bored: Revision of the Emotional Eating Scale with a focus on boredom. *Health Psychology*, 31(4), 621-524
- Muehlenkamp, J. J., Claes, L., Havertape, L., & Plener, P. L. (2012). International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. *Child and Adolescent Psychiatry and Mental Health*, 6, 1-9.
- Nederkoorn, C., Vancleef, L., Wilkenhöner, A., Claes, L. Havermans, R.C. (2016). Self-inflicted pain out of boredom. *Psychiatry Res*, 30, 127-132.
- Nock, M. K. (2009). Why do people hurt themselves? New insights into the nature and function of self-injury. *Current Directions in Psychological Science*, 18, 78-83
- Nock, M. K., & Favazza, A. (2009). Nonsuicidal self-injury: Definition and classification. In M. K.Nock (Ed.), *Understanding nonsuicidal self-injury: Origins, assessment, and treatment* (pp.9-18). Washington, DC: American Psychological Association
- Sommers, J., & Vodanovich, S. J. (2000). Boredom proneness: Its relationship to psychological- and physical-health symptoms. *Journal of Clinical Psychology*, 56(1), 149-155.
- Toohey, P. (2011). *Boredom: A lively history*. New Haven: Yale University Press.
- Whitlock, J., Eckenrode, J., & Silverman, D. (2006). Self-injurious behaviors in a college population. *Pediatrics*, 117, 1939-1948.

APPENDIX

Questionnaire 1

Participant: _____

Note your answer by circling the number on the ten-point scale.

On a scale from 1 to 10, in which 1 means not at all and 10 means very much:

- | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|----|
| -How frustrated are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How bored are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How excited are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How happy are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How angry are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How anxious are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How curious are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Questionnaire 2

Participant: _____

Note your answer by circling the number on the ten-point scale.

On a scale from 1 to 10, in which 1 means not at all and 10 means very much:

- | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|----|
| -How frustrated are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How bored are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How excited are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How happy are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How angry are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How anxious are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How curious are you at the moment? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -Did you find the word puzzle difficult? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -Do you like puzzling? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| -How well do you think you did? | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Questionnaire 3

Participant: _____

Note your answer by circling the number on the ten-point scale.

On a scale from 1 to 10, in which 1 means not at all and 10 means very much:

- How frustrated are you at the moment? 1 2 3 4 5 6 7 8 9 10
- How bored are you at the moment? 1 2 3 4 5 6 7 8 9 10
- How excited are you at the moment? 1 2 3 4 5 6 7 8 9 10
- How happy are you at the moment? 1 2 3 4 5 6 7 8 9 10
- How angry are you at the moment? 1 2 3 4 5 6 7 8 9 10
- How anxious are you at the moment? 1 2 3 4 5 6 7 8 9 10
- How curious are you at the moment? 1 2 3 4 5 6 7 8 9 10

- Did you find the movie interesting? 1 2 3 4 5 6 7 8 9 10
- Did you see the movie before? Yes / No
- Did you like the movie? 1 2 3 4 5 6 7 8 9 10

What did you think the experiment was about? Note your answer below.