

## Manfaat Terapi Kelompok Mindfulness Based Stress Reduction (MBSR) Daring terhadap Kecemasan dan Afek Mahasiswa yang Mengerjakan Skripsi

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### Abstrak

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Sebagai prasyarat kelulusan pendidikan sarjana di Indonesia, para mahasiswa wajib menyelesaikan penulisan skripsi dan mempertahankannya dalam sebuah sidang pada tahun akhir perkuliahan. Diketahui bahwa penyelesaian skripsi adalah sebuah proses menantang yang menguji kemampuan mahasiswa dalam menyelesaikan masalah, menulis, dan mengadakan riset dalam bidang keilmuan yang ditekuninya. Studi ini ditujukan untuk meneliti manfaat terapi kelompok *Mindfulness Based Stress Reduction* (MBSR) berbasis daring dalam menurunkan kecemasan dan afek negatif serta meningkatkan afek positif pada mahasiswa yang sedang mengerjakan skripsi. Penelitian ini merupakan penelitian *randomized within-between group design with follow-up* dengan kelompok eksperimen ( $n=7$ ) dan kontrol ( $n=8$ ). Pengumpulan data dilakukan dalam 3 poin waktu (*pretest*, *posttest*, dan *follow-up* 1 bulan) dengan GAD-7 untuk mengukur tingkat kecemasan dan PANAS untuk mengukur tingkat afek positif dan negatif. Ditemukan bahwa para partisipan kelompok eksperimen memiliki skor kecemasan ( $F(2, 56) = 15.90, p = < .001$ ) dan afek negatif ( $F(2, 56) = 8.76, p = < 0.001$ ) yang secara signifikan lebih rendah saat *follow-up*. Dapat disimpulkan bahwa terapi kelompok MBSR berbasis daring efektif untuk menurunkan kecemasan dan afek negatif pada mahasiswa yang sedang mengerjakan skripsi.

**Kata kunci:** MBSR; Mahasiswa; Skripsi; Kecemasan; Afek

## The Effect of Online Mindfulness Based Stress Reduction (MBSR) Group Therapy on Anxiety and Affect of College Students who Work on Undergraduate Thesis

### Abstract

In order to complete an undergraduate degree, college students in Indonesia are mandated to finish their undergraduate thesis (usually called as '*skripsi*' in Indonesian) in their final year of study. Finishing an undergraduate thesis is known to be a challenging process as one's ability in problem solving, writing, and conducting research is tested. This study aims to determine the effectiveness of online group Mindfulness Based Stress Reduction (MBSR) in reducing anxiety and negative affect and also increasing positive affect in college students who are currently working on their undergraduate thesis. This study is conducted using a randomized within-between group design with follow-up including an experimental ( $n = 22$ ) and control group ( $n = 8$ ). The data is collected in 3 time points (pretest, posttest, and 1 month follow-up) using GAD-7 to measure anxiety and PANAS to measure positive and negative affect. It is found that the experimental group had significantly lower score of anxiety ( $F(2, 56) = 15.90, p = < .001$ ) and negative affect ( $F(2, 56) = 8.76, p = < 0.001$ ) at the follow-up. However, there was no significant mean difference in positive affect. In conclusion, online group MBSR is effective in reducing college students' anxiety and negative affect during the completion of undergraduate thesis.

**Keywords:** MBSR; College Student; Minor Thesis; Anxiety; Affect

### Introduction

Minor thesis (in Indonesian called *skripsi*) is the final project that undergraduate students must submit in order to graduate from college.

During the process, students should conduct a research or project in their field of study. The finished thesis paper will be presented in a defense to be evaluated by a team of lecturers. Sulandari et al, (2020) argued that

the process of finishing a minor thesis is an indicator of student competence in conducting research in their scientific field. Thus, the students are expected to not only hone their problem-solving, writing, and communication skills during the process, but also the capacity to work independently with the guidance of a supervisor (Sulandari et al, 2020).

Although the process of finishing a minor thesis provides an opportunity for students to apply their knowledge in the context of research, on the other hand, the challenging process can cause issues for their psychological conditions. Students might experience symptoms of anxiety that might worsen one's well-being (Suryawati, Purwaningrum, & Susilo, 2020). This creates a concerning situation as college students are generally in the young adult stage of development, which is a period associated with increased anxiety due to concerns regarding the future and instability in various life domains (Santrock, 2019; Sulandari et al., 2020; Varma et al., 2021).

There are several consequences that could happen when students are unable to properly regulate their anxiety during the process of completing a minor thesis. They might experience demotivation (Hariwijaya & Triton, 2005) and increased tendency to avoid uncomfortable situations that can further increase anxiety, such as writing the thesis report itself. Instead of improving one's progress and mental condition, these circumstances might negatively affect one's productivity, academic performance, and social functioning to the point of developing psychological disorders (American Psychiatric Association, 2013). In extreme cases, improperly managed anxiety caused several deaths due to suicide in the college student population (Dewi, 2020).

Apart from increased anxiety, the stressors experienced during completing a minor thesis can also impact the balance of affective states in college students. Affect is defined as a mental phenomenon that

encompasses one's fundamental or basic feeling that is experienced internally (Wundt & James in Barrett & Bliss-Moreau, 2007). Affect can be either positive (i.e., joy, energized, alert, enthusiastic, etc.) or negative (i.e., stress, worry, guilt, disgust, etc.) and both can be experienced at the same time with different intensity (Watson & Tellegen, 1985; Watson et al., 1988). Dodge et al. (2012) suggest that both positive affect (PA) and negative affect (NA) are important factors of well-being. Higher intensity and occurrence of NA (compared to PA) was known to impact an individual's state of well-being negatively (Fredrickson & Joiner, 2002). Furthermore, Asici et al, (2020) found that students who experience symptoms anxiety tend to experience significantly higher NA compared to PA. Previous studies show that this process can further affect the increase in stress, depression, fear, anxiety, insomnia, and also boredom felt in college students' daily lives (Permatasari et al. in Suryawati et al, 2020).

Although anxiety and NA cannot be fully avoided, there are several strategies that might help college students' daily function through coping and self-regulating strategies. The majority of psychological interventions available mainly focus on preventing anxiety or buffering the negative impacts of anxiety (Saman et al., 2017; Kalin, 2020). It is beneficial to study other approaches which aim to improve one's awareness of the root and symptoms of anxiety and also the impact caused by the anxiety itself; which then further increase one's ability to cope and self-regulate in stressful situations.

The aim of this research is to study the benefit of a group-setting psychological intervention called Mindfulness-Based Stress Reduction (MBSR) towards college students' level of anxiety and affect. MBSR is a modality that has been known to effectively reduce anxiety (Baer, 2003; Goldin & Gross, 2010; Hazlett-Stevens, 2012; Hofmann et al., 2010; Hofmann & Gomenz, 2017; Kabat-Zinn, 1990; Toneatto & Nguyen, 2007), improve overall

mental health (Brown et al., 2007), and improve self-regulation that decreases NA and improves PA in various populations (Ahmadi & Najafi, 2019; Chen et al., 2022; Goldin & Gross, 2010; Keng et al., 2021).

During the intervention, participants are guided to do mindfulness exercises (such as meditation, body scan, and yoga) to focus one's attention to the present moment with an open and non-judgmental attitude (Teasdale et al., 1995). The act of shifting awareness might help to reduce anxiety by redirecting one's attention to the here-and-now rather than constantly focusing on the danger and uncertainty of the future, which might increase anxiety (Craske et al, 2010). Mindfulness exercise also activates several brain structures and regulates the nervous system to non-activate the fight- or-flight response which decreases anxiety and increases PA (Hazlett-Stevens, 2021; Kabat-Zinn, 1990). Furthermore, mindfulness training in MBSR helps the participants to perceive thoughts and feelings associated with anxiety as a temporary experience instead of a permanent part of the self. Thus participants may be able to deal with their internal experience in a positive and adaptive manner, by allowing each thought and feeling to come and go as it is (Kabat-Zinn, 1990). Participants would be able to improve the ability of cognitive reappraisal and reduce expressive suppression, which will reduce NA related to anxiety and increase PA (Greeson et al., 2018; Irving et al., 2009; Teasdale, 1995). Some mindfulness exercises (such as loving-kindness meditation) were found to increase PA associated with well-being through promoting hypo-egoic states (Parks et al., 2018).

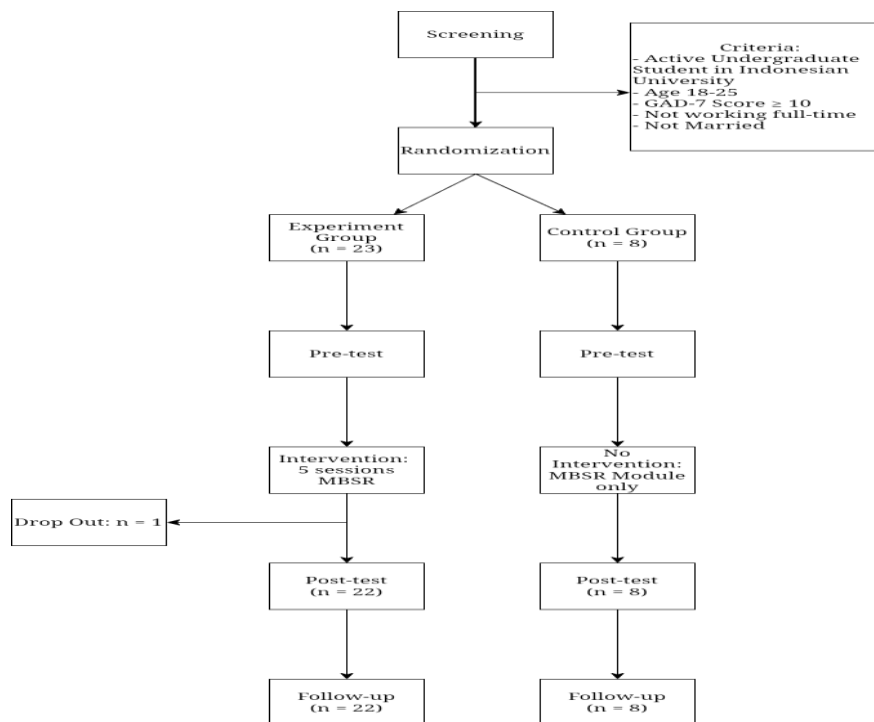
From a meta-analysis, MBSR was found to have superior efficacy for anxiety symptoms in a young adult population (Zhou et al., 2020). Research by Juul et al. (2021) and McVeigh et al. (2021) found that this modality can reduce psychological symptoms experienced by college students. In a longitudinal study by Dundas et al. (2016), MBSR was also found

to be effective in overcoming college students' anxiety regarding academic evaluation.

In conclusion, this study aimed to determine the effectiveness of an online-based group format MBSR on reducing anxiety symptoms, NA, and increasing PA in undergraduate students who are working on their minor thesis. The therapy was conducted online to minimize the spread of COVID-19 virus during the pandemic period in 2022 and to reach more individuals throughout all regions of Indonesia. MBSR in a group format can bring up factors that can support the emergence of hope, self-acceptance, the need to also help others, and a feeling of togetherness in the group (Brabender et al., 2004). In addition, the participants can also gain insight from other group members through the process of modeling and interaction within the group.

## **Methods**

This research is part of a collaborative study held by students of the Master Program of Professional Clinical Psychology in Universitas Indonesia which aimed to investigate the effect of online-based MBSR towards anxiety, perceived stress, repetitive negative thinking, and affect. The method used in this experimental research is randomized within-between group design with follow-up (Tikkanen, 2017). The participants in this study were split into either the experimental or control group through randomization. The experimental group received MBSR as an intervention, whereas the control group was given a digital module of MBSR exercises that can be practiced individually. In order to see the effect of intervention, the measurement for anxiety and affect was done in 3 time points which consist of pre-test (before starting the first session of MBSR), post-test (after the end of the last session), and follow-up (4 weeks after the last session) for both the experimental and control group. The outline of the design can be seen in the timeline below.



Picture 1. Research Outline

Although the main data in this research will be gathered and analyzed quantitatively, the researchers also collected qualitative data through interview and observation in order to complement the quantitative data.

#### Participants

The criteria for the participants in this research are 18-25 years old undergraduate students who are enrolled as an active student in an Indonesian university and currently working on their minor thesis, not married, and not working full-time. Furthermore, the baseline anxiety symptoms screened through GAD-7 should be at least 10 (moderate anxiety). The number of samples needed for this study was calculated using G\*Power v3.1.9.6 a priori power analysis (Faul, Erdfelder, Buchner, & Lang, 2009). Based on the calculation, the least amount of sample needed was 24.

The method of recruitment was through purposive sampling. The participants were gathered by broadcasting an announcement through various platforms of communications (social media and messenger) and needed to fill in an online registration form. Inside

the registration form, before starting the intervention, the eligible participants were given informed consent and confirmed their willingness to participate in the study.

After the recruitment process, a total of 31 participants were gathered. The experimental group was composed of 23 participants (1 participant dropped out after the first MBSR session), whereas the control group was composed of 8 participants. The experimental group participants who followed the entire procedure until follow-up were given incentives which included Rp150.000,00 of e-wallet balance to compensate for internet quota that was used during the online sessions and a digital MBSR module. On the other hand, the control group participants were given Rp50.000,00 of e-wallet balance as an incentive.

#### Measures

All of the measures were presented in Bahasa Indonesia. The participants' level of anxiety was measured by the Generalized Anxiety Disorder[dw1] [NK2] -7 (GAD-7) scale. This unidimensional scale was developed

by Spitzer et al. (2006) to assess symptoms of generalized anxiety disorders that are experienced in the last 2 weeks. The responses for the 7 items in the scale (i.e. "Feeling nervous, anxious or on edge" or "*Merasa gelisah, cemas atau amat tegang*") are measured through a 4-point likert scale ("not at all" or "tidak pernah", "several days" or "*beberapa hari*", "more than half of the days" or "*lebih dari separuh waktu yang dimaksud*", and "nearly every day" or "*hampir setiap hari*"). Each item was to be summed into a total score that ranged between 0-21. The higher the score, the higher the anxiety symptoms experienced during the 2-week period. GAD-7 was shown to have a good convergent validity (Spitzer et al., 2006). This measure was significantly correlated to the the Beck Anxiety Inventory ( $r = 0.72$ ), the anxiety subscale of The Symptom Checklist-90 or SCL-90 ( $r = 0.74$ ), and the eight item Patient Health Questionnaire Depression Scale or PHQ-8 ( $r = 0.75$ ). GAD-7 was also shown to have an excellent internal consistency (Cronbach's Alpha = .92). In this study, the researcher used the Indonesian version of GAD-7 developed by Spitzer et al. (2006) with a grant from Pfizer Inc. that is open for public use.

The participants' level of PA and NA was measured by the Positive and Negative Affect Schedule (PANAS). The scale was developed by Watson et al. (1988) to assess both types of affect that are experienced by an individual during a specific period of time that the researcher intended to study. In this research, the period of time that was set in PANAS scale is 2 weeks, similar to GAD-7. This scale contains 2 sets of 10 items that produce 2 separate scores, which are PA and NA. Each item presents a single adjective which reflects either positive (i.e. "active" or "*aktif*") or negative affect (i.e. "afraid" or "*takut*"). The responses in the scale are measured through a 5-point likert scale ("very slightly or not at all" or "*sangat sedikit atau tidak sama sekali*", "a little" or "*sedikit*", "moderately" or

"*sedang*", "quite a bit" or "*cukup banyak*", "extremely" or "*sangat kuat*") and the range of total score for each set of items are between 1-50. The higher the total score for the item set, the higher the level of positive or negative affect during the time period. In this study, the researcher used the Indonesian version of PANAS that was adapted by Novrianto and Marettih (2018). The adaptation process follows the guideline developed by Beaton et al. (2000). The Indonesian version of PANAS has a good construct validity (Chi-Square = 290.435,  $df = 169$  ( $p < .001$ ); RMSEA = .044 (90% CI .035, .053), CFI = .902, dan SRMR = .056) and internal consistency (Cronbach's Alpha of 0.776 for PA and 0.786 for NA).

#### *Treatment Procedure*

The intervention in this study consists of 3 phases: pre-session (for rapport building, explaining the rules in attending the MBSR sessions), 5 weekly MBSR sessions, and follow-up session that is held 1 month after the last MBSR session. All of the sessions are held through Zoom Meeting except for the follow-up that is held asynchronously through Whatsapp Group Chat. The sessions were facilitated by three clinical psychology graduate students; each was assigned to one group of 7-8 participants. The mindfulness exercises in the intervention were adapted from the practices that are used in the original 8-week MBSR program by Kabat-Zinn (Lehrhaupt & Meibert, 2017; Teasdale et al., 1995). After practicing each exercise, the participants were guided to reflect on their experience through filling in a worksheet and then sharing them with the group. On session 1-4 the participants were encouraged to do take-home mindfulness exercises that will be reviewed in the next session. At the end of each session, the participants filled in a manipulation check form containing several questions regarding the topic of discussion and exercises (e.g. "What is the example of 'Mind Trap'?"; "What is the name of the exercise done in this session?").

Described below are the activities of each MBSR sessions:

**Session 1:** After being introduced to the principles of mindfulness and its effect on mental health, theory regarding stress, and thought patterns that might contribute to stress, the participants were guided to gain more awareness of their current condition through ‘Mindful Check-in’ exercise and reflection of how habitual styles of thinking may affect stress in daily life. ‘Mindful Breathing’ exercise was also done to help participants learn a strategy to regulate their emotions through breathing. The take-home exercise to be reviewed in the next session consisted of daily practice of ‘Mindful Check-in’ and ‘Mindful Breathing’.

**Session 2:** The participants were guided to practice ‘Mindful Eating’ and learn how

the inner rules they held affect their thought, feeling, and behavior through ‘Mindful Self-Inquiry’. The take-home exercise in this session consists of challenging one’s inner rule through simple activities and reflecting its effect towards one’s thought, feeling, and behavior.

**Session 3:** Through ‘Loving-Kindness Meditation’, the participants were guided to build awareness of their own capacity to bring love and compassion towards themselves. After the practice, the participants were guided to reflect on how their inner judgment may affect their thought, feeling, and behavior and the importance of changing one’s inner dialogue to bring positive benefits to oneself. The take-home exercise in this session consists of adding self-care activities into their daily routine.

**Table 1.**

**Summary of Sessions**

<b>Session</b>	<b>Summary of Activities</b>
Pre-Session	Self-introduction; Forming Commitment for Treatment; Introduction of the Outline, Purpose, and Benefits of the Group Intervention
Session 1	Introduction of Principles and Effects of Mindfulness; Mindful Check-in Exercise; Mindful Breathing Exercise; Take-Home Exercise (Daily Mindful Check-in and Breathing)
Session 2	Reviewing Take-Home Exercise; Mindful Eating Exercise; Psychoeducation of Inner Rule; Mindful Self-Inquiry Exercise; Take-Home Exercise (Challenging Inner Rule through Daily Activities)
Session 3	Reviewing Take-Home Exercise; Loving-Kindness Meditation (to self); ‘Is Your Body-Mind Happy?’ Exploration; Take-Home Exercise (Daily Self-Care Activities)
Session 4	Reviewing Take-Home Exercise; Loving-Kindness Meditation (to others); ‘Is Your Body-Mind Happy?’ Exploration; Take-Home Exercise (Daily Self-Care Activities)
Session 5	Reviewing Take-Home Exercise; Mindful Yoga; Forming Commitment for Mindfulness Practice Post-Treatment; Termination
Follow-up (Asynchronous)	Inquiring Current Condition and Mindfulness Practice Post-Treatment

**Session 4:** Through the second part of ‘Loving-Kindness Meditation’, the participants were guided to build awareness of their own capacity to extend the love and compassion they have towards other people, including the people they resent. After the practice, the

participants were guided to reflect on the effect of resenting other people towards their well-being and the effect of changing one’s inner dialogue toward the resented person. The take-home exercise in this session is similar to the previous session.

**Session 5:** The participants were guided to practice ‘Mindful Yoga’ and construct a personal daily and weekly schedule of mindfulness practices which would be implemented after completing the MBSR sessions.

*Data Analysis*

In order to measure the effectiveness of MBSR, the quantitative data was analyzed using within-between repeated measures ANOVA to compare score differences on

different time periods (pre-test, post-test, and follow-up). The Shapiro-Wilk test of normality was also conducted beforehand. The statistical analysis was computed using JASP v0.14.0.0. On the other hand, the qualitative data was analyzed through a simple descriptive method.

**Results**

Table 2 contains the participants’ demographic and baseline measurements.

**Table 2.**  
**Demographic Characteristic and Baseline Measurements of Participants**

	Total (n = 31)		Experiment Group (n = 23)		Control Group (n = 8)		Comparison Statistics
	n/M	%/SD	n/M	%/SD	n/M	%/SD	
Age (M, SD)	22.23	1.02	22.44	1.08	21.63	0.52	$\chi^2 (3) = 7.50,$ $p = 0.60$
Gender (n, %)							
Male	2	6.45 %	1	4.35	1	12.8	$\chi^2 (1) = 0.65,$ $p = 0.42$
Female	29	9.55 %	22	95.65	7	87.5	
Faculty (n, %)							
Science & Technology	7	22.58 %	6	26.09	1	12.5	$\chi^2 (1) = 0.63,$ $p = 0.43$
Humanities & Social Sciences	24	77.42 %	17	73.91	7	87.5	
Semester (n, %)							
6	3	9.68 %	1	4.35 %	2	25 %	$\chi^2 (3) = 7.24,$ $p = 0.20$
8	17	54.84 %	11	47.83 %	6	75 %	
10	3	9.68 %	3	13.04 %	0	0 %	
11	1	3.23 %	1	4.35 %	0	0 %	
12	5	16.13 %	5	21.74 %	0	0 %	
14	2	6.45 %	2	8.70 %	0	0 %	
Primary Outcomes (M, SD)							
Anxiety	12.42	4.23	11.48	3.96	15.13	3.98	$t(29) = 2.24,$ $p = 0.03$
Positive Affect	27.58	5.40	27.13	5.35	28.88	5.67	$t(29) = 0.78,$ $p = 0.44$
Negative Affect	37.39	6.01	37.09	5.04	38.25	8.60	$t(29) = 0.47,$ $p = 0.65$

Note: M = Mean, SD = Standard deviation, Anxiety = The total scores of GAD-7, Positive Affect = The total scores of positive affect subscale of PANAS, Negative Affect = the total scores of negative affect subscale of PANAS.

The means for the scores of pre-test, post-test, and follow-up for the experimental and control group can be seen in Table 3.

**Table 3.**

**Mean Values at Individual Time Points and Percentage Change Between Time Points**

	Time Period			Gain (in %)	
	Pre M (SD)	Post M (SD)	FU M (SD)	Pre - Post	Post - FU
<b>Anxiety***</b>					
Experimental Group	12.6 (4.2)	8.7 (5.4)	10.1 (6.4)	-30.95 %	13.86 %
Control Group	15.1 (4.0)	9.5 (3.3)	9.9 (4.1)	-37.09 %	4.04 %
<b>Positive Affect</b>					
Experimental Group	27.3 (4.7)	32.4 (3.7)	29.6 (6.2)	18.68 %	-9.45 %
Control Group	28.9 (5.7)	29.9 (7.4)	30.6 (8.0)	3.46 %	2.29 %
<b>Negative Affect***</b>					
Experimental Group	37.8 (4.8)	30.6 (7.2)	30.1 (12.1)	-19.05 %	-1.66 %
Control Group	38.2 (8.6)	34.5 (7.6)	31.7 (10.3)	-9.69%	-8.83 %

Note: M = Mean, SD = Standard deviation, Pre = Pre-test assessment, Post = Post-test assessment, FU = One month follow-up assessment following the post-test, Anxiety = The total scores of GAD-7, Positive Affect = The total scores of positive affect subscale of PANAS, Negative Affect = the total scores of negative affect subscale of PANAS, Pre - Post = The mean gain between the pre-test and post-test periods is indicated by negative values for decreases and positive values for increases, Post - FU = The mean gain between the post-test and one month follow-up periods is indicated by negative values for decreases and positive values for increases, \*\*\* =  $p < 0.001$ .

Shapiro-Wilk Test was conducted before testing the hypothesis with Repeated Measures ANOVA. The Shapiro-Wilk test showed that most data were not non-normally distributed, except for anxiety post-test ( $W = 0.886$ ,  $p < 0.05$ ) and follow-up ( $W = 0.888$ ,  $p < 0.05$ ) in the experimental group. The NA pre-test in the control group was also shown to not have a normal distribution ( $W = 0.779$ ,  $p < 0.05$ ). The researcher will proceed in conducting

the ANOVA test since several literature found that data with non-normal distribution do not raise the possibility of false positive results significantly (Glass et al., 1972; Lix et al., 1996)

Mauchly's Test indicated that the assumption of sphericity was met for either anxiety  $\chi^2(2) = 5.92$ ,  $p = 0.052$ ; PA  $\chi^2(2) = 0.97$ ,  $p = 0.675$ ; and NA  $\chi^2(2) = 0.96$ ,  $p = 0.604$ . The detailed result of Repeated Measures ANOVA can be seen in the table 4 below.

**Table 4.**

**Repeated Measures ANOVA Between-Subject Scores**

Variable	df	F	p	$\eta^2$	$\eta^2p$
Anxiety	1	4.05	0.05	0.06	0.13
PA	1	0.02	0.88	$3.85 \times 10^{-4}$	$8.53 \times 10^{-4}$
NA	1	1.97	0.17	0.03	0.07



Repeated Measures ANOVA concluded that there were several significant within subject differences. Firstly, there was a statistically significant difference between the means of anxiety scores,  $F(2, 56) = 15.90, p < .001$ . Post Hoc Tukey test showed that the means of the experimental group's pre-test score ( $M = 11.48$ ) differed significantly from the post-test ( $M = 7.54$ ) and follow-up ( $M = 7.90$ ) at  $p < .001$ . Secondly, there was another statistically significant difference between the means of NA scores,  $F(2, 56) = 8.76, p < 0.001$ . Post Hoc Tukey test showed that the means of the experimental group's pre-test score ( $M = 37.09$ ) differed significantly from the post-test ( $M = 29.41$ ) and follow-up ( $M = 27.95$ ) at  $p < .001$ . These findings indicate that there was a trend of reduction of the experimental group's anxiety and NA scores starting from pre-test to follow-up. There was also a trend of increment of the experimental group's PA scores from pre-test ( $M = 27.13$ ), post-test ( $M = 32.59$ ), and follow-up (30.31).

Conversely, there were no significant difference of scores between subjects of the experimental and control group. This applies

to scores of anxiety,  $F(2, 28) = 4.05, p = 0.054$ ; PA,  $F(2,28) = 0.02, p = 0.88$ ; and NA,  $F(2,28) = 1.97, p = 0.17$ . Similar to these findings, there were also no significant interaction between group differences in anxiety,  $F(2, 56) = 4.30, p(0.68)$ ; PA,  $F(2, 56) = 0.99, p = 0.38$ ; and NA,  $F(2, 56) = 0.58, p = 0.57$ .

From the qualitative data gathered through the interview, 3 experimental group participants (initial AA, RA, and SA) had experienced sexual and emotional abuse. During the intervention AA and SA were also undergoing routine treatment from a psychologist, whereas RA never received any form of treatment. AA was also routinely taking psychiatric medication since 2020 and was diagnosed with PTSD. They perceived their current distress were majorly caused not only due to difficulty in finishing undergraduate thesis, but also by the memories of their traumatic experiences. Another participant, initial AFE, also had experienced adjustment difficulties after the passing of her father in 2020. These participants were observed frequently fidgeting and sometimes crying during mindfulness exercises.

**Table 5.**  
**Repeated Measures ANOVA Within-Subject Scores**

Variable	Cases	df	F	p	$\eta^2$	$\eta^2p$
Anxiety	Anxiety	2	15.9	<0.001*	0.19	0.36
	Anxiety* Groups	2	4.3	0.68	0.01	0.01
PA	PA	2	2.19	0.12	0.03	0.07
	PA*Groups	2	0.99	0.38	0.02	0.03
NA	NA	2	8.76	<0.001*	0.13	0.24
	PA*Groups	2	0.58	0.57	0.01	0.02

In the follow-up session, all participants reported that the mindfulness exercises taught during the intervention helped them to generally become more mindful of their thoughts and emotions. This condition contributed to their subjective feeling of being relaxed and 'clear-

headed' during daily activities, including finishing their undergraduate thesis. Moreover, 1 experimental group participant and 3 control group participants reported that they have completed writing their undergraduate thesis and finished the final defense.

## **Discussion**

The online-based group MBSR intervention was held in order to study its effectiveness in reducing anxiety, NA, and improving PA in college students who are working on their undergraduate thesis. The experimental group finished 5 weekly sessions of MBSR, whereas the control group were given a digital module of MBSR exercises. Through Repeated Measures ANOVA, there was a statistically significant difference between the means of anxiety scores. The experimental group's GAD-7 pre-score differed significantly from the post-test and follow-up. Secondly, there was another statistically significant difference between the means of NA scores. The experimental group's pre-test score differed significantly from the post-test and follow-up.

These findings indicated that there was a trend of reduction of anxiety and NA scores before and after receiving treatment. Both scores didn't change significantly nor return to baseline after the intervention ended. This result was complemented by the interview data gathered on the follow-up session, which showed that most participants felt more relaxed in their daily lives. All participants were able to answer all the manipulation check questions correctly, which confirms their attention and comprehension throughout all sessions, ensuring they're able to gain a long-lasting effect of the intervention. Therefore, online-based group MBSR is found to be effective in reducing anxiety and NA in college students who are working on undergraduate thesis.

This finding is in line with several study that pronounced MBSR as an effective therapeutic modality that in reducing anxiety and NA in various populations, including college students (Brown, Ryan, & Creswell, 2007; Dundas et al., 2016; Goldin & Gross, 2010; Gu, Strauss, Bond, & Cavanagh, 2015; Teasdale, 1995; Zhou et al., 2020). This effect is made possible through a specific mechanism

in MBSR that promotes mindfulness. In MBSR, the participants learn to regulate their internal experiences through mindfulness exercises which is done by an open, non-judgmental attitude (Teasdale et al., 1995). They learn how to be fully present and aware of one's present experiences, then letting thoughts and emotions come and go naturally. The participants' skill in regulating anxiety and negative emotions were trained by the ability to avert their attention from constantly worrying about the danger and uncertainty of the future and focus in the here-and-now (Craske et al., 2010), and to perceive their internal experiences as a temporary experience instead of a permanent part of the self (Kabat-Zinn, 1990). Thus, the participants could become more able to process their internal experiences adaptively, even the negative ones, and take action instead of avoiding their difficulties (Hazlett-Stevens, 2012; Kabat-Zinn, 1990). The mindfulness exercises that involve regulating one's posture and breathing could also help reduce anxiety and tension through deactivating the fight-or-flight response of the nervous system (Kabat-Zinn, 1990).

The reduction of anxiety and NA was also affected by various mechanisms in group-based interventions. During the intervention, the participants shared positive interaction through sharing their own personal experiences and supporting each other, thus promoting a sense of oneness. This process creates a group dynamic coloured by universality, altruism, cohesion, modeling, and cognitive and affective exploration. These factors enabled the participants to not only gain new insight in problem-solving, but also gain new perspective in perceiving and dealing with their own experiences (Brabender et al., 2004; Kabat-Zinn et al., 1992; Newsome et al., 2012).

Lastly, an increment was found in the experimental group's PA score, although insignificant. In this intervention the researcher added loving-kindness meditation and mindful

yoga, a mindful exercise known to improve joy and happiness, as an effort to increase the participant's PA (Ando et al., 2022; Butzer et al., 2016; Fredrickson et al., 2008; Lindsay et al., 2018), however the increase of PA score was minimum. It is known that MBSR might have a stronger impact towards NA instead of PA in populations without clinical depression (Keng et al., 2021). The researcher also posits that lack of increase of average PA might be caused by the individual differences in responding and reacting to the exercises. Few individuals had difficulties in reaping the benefits of several exercises during the intervention, such as experienced by AA, RA, and SA (whom experienced mental and sexual abuse and experienced PTSD symptoms) and AFE (whom experienced adjustment difficulties due to grieving). It is known that aversive experience could be a factor that affects young adults' increase in NA and decrease in PA which might affect the impact of MBSR (Purborini et al., 2021). Furthermore though some studies demonstrated the benefit of MBSR in reducing symptoms of PTSD (Boyd et al., 2018; Earley et al., 2014), some individuals need a more personalized approach and slow progression in practicing mindfulness to anticipate the potential of experiencing maladaptive response towards several exercises, especially those focusing on bringing awareness towards bodily sensations (Ciarrochi et al., 2022; Frewen & Lanius, 2015).

Although there were several within subject differences, a test of Repeated Measures ANOVA showed no significant difference of scores between both groups' participants. There was also no significant interaction between group differences. This applies for all variables in this study. It was found that there was a reduction of the control group participants' mean anxiety and NA, although not significant. This might be caused by 3 (almost half) of the control group participants having successfully finished their undergraduate thesis during the post-

test, meanwhile only 1 experimental group participant reported finishing their thesis. This condition may play a factor in explaining the significant reduction in the control group's anxiety and NA. There might be other external factors that happened within the control group participants that might affect their experience of anxiety, which the researchers weren't able to fully control.

## **Conclusion**

As portrayed by the result and discussion of this research, online-based group MBSR is an effective modality to decrease anxiety and NA in college students who are working on their undergraduate thesis. The data analysis showed significant differences in the experimental group when comparing the pre-test, post-test, and follow-up scores, which indicated a trend of decrease in anxiety and NA. All participants reported they became more aware of their thoughts and feelings and felt more calm in their daily life whilst proceeding to finish their undergraduate thesis, even though there was no significant difference in the experimental group's PA score.

For future researchers, it is suggested to: (1) study other related variables and populations that might benefit from MBSR; (2) add measure of personality traits as a moderating factor; (3) add measure of state mindfulness to gain insight about the participant's progression on each session; (4) add additional control variables (such as current major source of distress, current semester, current progress in completing undergraduate thesis, and diagnosis of mental disorders) to ensure the homogeneity of the group; (5) add more intervention sessions to produce more long-lasting effect.

Whereas for college students, it is recommended to include MBSR exercises in their daily routine as it is proven to be a practical tool in regulating anxiety and negative emotions. Seeking help to a positive

support system is also an important aspect in regulating emotions when facing academic difficulties. Therefore, the academic system is also recommended to implement MBSR inside a study group or mentoring/assistance program as a way to improve their students' well-being, especially those who are working on their thesis.

## References

- Ahmadi, S. M., & Najafi, M. (2018). The Effectiveness of Mindfulness-Based Stress Reduction Training on The Emotions and Life Satisfaction of The Personnel of Military Organization. *Military Psychology, 8*(32), 21-30.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). American Psychological Association.
- Ando, M., Ito, S., Matsuo, Y. and Kukihara, H. (2022) Efficacy of Mindfulness Yoga on Subjective Happiness, Mood, Fatigue, and Mindful Attention Awareness of Parents Raising Preschool Children. *Open Journal of Social Sciences, 10*, 208-216. doi: 10.4236/jss.2022.1013016.
- Asici, E., Arslan, U., & Uygur, S. S. (2020). Positive and Negative Affect in University Students: The Predictive Roles of Rumination, Mindfulness and Demographic Variables. *Educational Research and Development Journal, 23* (2), 1 - 21.
- Baer, R. A. (2003). Mindfulness Training as A Clinical Intervention: A Conceptual and Empirical Review. *Clinical Psychology: Science and Practice, 10*(2), 125.
- Barrett, L. F., & Bliss-Moreau, E. (2009). Affect as a Psychological Primitive. *Advances in Experimental Social Psychology, 41*, 167–218. [https://doi.org/10.1016/S0065-2601\(08\)00404-8](https://doi.org/10.1016/S0065-2601(08)00404-8)
- Brabender, V. M., Smolar, A. I., & Fallon, A. E. (2004). *Essentials of Group Therapy*. John Wiley & Sons.
- Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical Foundations and Evidence for Its Salutary Effects. *Psychological Inquiry, 18*(4), 211-237.
- Butzer, B., Ahmed, K., & Khalsa, S. B. (2016). Yoga Enhances Positive Psychological States in Young Adult Musicians. *Applied Psychophysiology and Biofeedback, 41*(2), 191–202. <https://doi.org/10.1007/s10484-015-9321-x>
- Chen, Y., Wang, R., Yu, J., Zhu, L., Lu, Y., & Deng, X. (2022). Effects of MBSR therapy on Negative Emotions, Fatigue, and Sleep Quality in “Post-ICU Patients”: A Randomized Controlled Clinical Trial Protocol. *Medicine, 101*(1):e28331. <https://doi.org/10.1097/MD.00000000000028331>
- Ciarrochi, J., Hayes, S.C., Oades, L. G., Hofmann, S. G. (2022). Toward A Unified Framework For Positive Psychology Interventions: Evidence-Based Processes of Change In Coaching, Prevention, and Training. *Frontiers in Psychology, 12*. doi:10.3389/fpsyg.2021.809362.
- Craske, M. G., Kircanski, K., Epstein, A., Wittchen, H. U., Pine, D. S., Lewis-Fernández, R., Hinton, D., DSM V Anxiety, OC Spectrum, & Posttraumatic and Dissociative Disorder Work Group (2010). Panic disorder: A review of DSM-IV Panic Disorder and proposals for DSM-V. *Depression and Anxiety, 27*(2), 93–112. <https://doi.org/10.1002/da.20654>
- Dewi, R. K. (2020, 15 Juli). Viral Soal Kasus Bunuh Diri Mahasiswa Karena Skripsinya Kerap Ditolak Dosen, ini Analisis Pengamat Pendidikan. *Kompas.com*. <https://www.kompas.com/tren/read/2020/07/15/120405165/viral-soal-kasus-bunuh-diri-mahasiswa-karena-skripsinya-kerap-ditolak-dosen?page=all>

- Dundas, I., Thorsheim, T., Hjeltnes, A., & Binder, P. E. (2016). Mindfulness Based Stress Reduction for Academic Evaluation Anxiety: A Naturalistic Longitudinal Study. *Journal of College Student Psychotherapy, 30*(2), 114–131.
- Dodge, R., Daly, A. P., Huyton, J., & Sanders, L. D. (2012). The Challenge of Defining Wellbeing. *International Journal of Wellbeing, 2*(3), 222–235. <https://doi.org/10.5502/ijw.v2i3.4>.
- Fredrickson, B. L., & Joiner, T. (2002). Positive Emotions Trigger Upward Spirals toward Emotional Wellbeing. *Psychological Science, 13*, 172–175.
- Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open Hearts Build Lives: Positive Emotions, Induced Through Loving-Kindness Meditation, Build Consequential Personal Resources. *Journal of Personality and Social Psychology, 95*(5), 1045–1062.
- Glass, G. V., Peckham, P. D., & Sanders, J. R. (1972). Consequences of Failure to Meet Assumptions Underlying The Fixed Effects Analyses of Variance and Covariance. *Review of Educational Research, 42*(3), 237–288. <https://doi.org/10.3102/00346543042003237>
- Goldin, P. R., & Gross, J. J. (2010). Effects of Mindfulness-Based Stress Reduction (MBSR) on Emotion Regulation in Social Anxiety Disorder. *Emotion, 10*(1), 83-91.
- Greeson, J. M., Zarrin, H., Smoski, M. J., Brantley, J. G., Lynch, T. R., Webber, D. M., Hall, M. H., Suarez, E. C., & Wolever, R. Q. (2018). Mindfulness Meditation Targets Transdiagnostic Symptoms Implicated in Stress-Related Disorders: Understanding Relationships Between Changes in Mindfulness, Sleep Quality, and Physical Symptoms. *Evidence-based Complementary and Alternative Medicine: eCAM, 2018*, 4505191. <https://doi.org/10.1155/2018/4505191>
- Gross, J.J., & John, O.P. (2003). Individual Differences in Two Emotion Regulation Processes: Implications for Affect, Relationships, and Well-Being. *Journal of Personality and Social Psychology, 85*, 348-362
- Gross J. J. (1998). Antecedent- and Response-Focused Emotion Regulation: Divergent Consequences for Experience, Expression, and Physiology. *Journal of personality and social psychology, 74*(1), 224–237. <https://doi.org/10.1037//0022-3514.74.1.22>
- Hariwijaya, M., & Triton, P. B. (2005). *Pedoman Penulisan Ilmiah Proposal dan Skripsi*. Oryza.
- Hazlett-Stevens, H. (2012). Mindfulness-Based Stress Reduction for Comorbid Anxiety and Depression: Case Report and Clinical Considerations. *Journal of Nervous and Mental Disease, 200*(11), 999-1003.
- Hofmann, S. G., & Gómez, A. F. (2017). Mindfulness-Based Interventions for Anxiety and Depression. *The Psychiatric Clinics of North America, 40*(4), 739–749. <https://doi.org/10.1016/j.psc.2017.08.008>
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The Effect of Mindfulness-Based Therapy on Anxiety and Depression: A Meta-Analytic Review. *Journal of Consulting and Clinical Psychology, 78*(2), 169-183.
- Irving, J.A., Dobkin, P.L. and Park, J. (2009) Cultivating Mindfulness in Healthcare Professionals: a Review of Empirical Studies of Mindfulness-Based Stress Reduction (MBSR). *Complementary Therapies in Clinical Practice, 15*, 61-66. <http://dx.doi.org/10.1016/j.ctcp.2009.01.002>
- JASP Team (2020). JASP (Version 0.14.0) [Computer software].
- Juul, L., Brorsen, E., Gøtzsche, K., Nielsen, B. L., & Fjorback, L. O. (2021). The Effects of a Mindfulness Program on Mental Health in Students at an Undergraduate Program

- for Teacher Education: A Randomized Controlled Trial In Real-Life. *Frontiers in Psychology*, 12(December), 1–14. <https://doi.org/10.3389/fpsyg.2021.722771>
- Kabat-Zinn, J. (2003). Mindfulness-Based Stress Reduction (MBSR). *Constructivism in the Human Sciences*, 8(2), 73-82.
- Kabat-Zinn, J. (1982). An Outpatient Program In Behavioral Medicine for Chronic Pain Patients Based on The Practice of Mindfulness Meditation: Theoretical Considerations and Preliminary Results. *General hospital psychiatry*, 4(1), 33-47.
- Kabat-Zinn, J. (1990). *Full Catastrophe Living*. Bantam Dell.
- Kabat-Zinn, J., A. O. Massion, J. Kristeller, L. G. Peterson, K. Fletcher, L. et al . (1992). Effectiveness of a Meditation-Based Stress Reduction Program in The Treatment of Anxiety Disorders. *American Journal of Psychiatry* 149(7), 936-943.
- Kalin, N. H. (2020). The Critical Relationship between Anxiety and Depression. *The American Journal of Psychiatry*. 1 May 2020. <https://doi.org/10.1176/appi.ajp.2020.20030305>
- KBBI. (n.d.). Skripsi. Dalam *Kamus Besar Bahasa Indonesia*. Dilansir 30 Maret 2021, dari <https://kbbi.web.id/skripsi>
- Keng, S.-L., Tong, E. M. W., Yan, E. T. L., Ebstein, R. P., & Lai, P.-S. (2021). Effects of Mindfulness-Based Sstress Reduction on Affect Dynamics: A Randomized Controlled Trial. *Mindfulness*, 12(6), 1490–1501. <https://doi.org/10.1007/s12671-021-01617-5>
- Lehrhaupt, L., Meibert, P., (2017). *Mindfulness-Based Stress Reduction: The MBSR Program for Enhancing Health and Vitality*. New Word Library.
- Lindsay, E. K., Chin, B., Greco, C. M., Young, S., Brown, K. W., Wright, A. G. C., Smyth, J. M., Burkett, D., & Creswell, J. D. (2018). How Mindfulness Training Promotes Positive Emotions: Dismantling Acceptance Skills Training in Two Randomized Controlled Trials. *Journal of Personality and Social Psychology*, 115(6), 944–973. <https://doi.org/10.1037/pspa0000134>
- Lix, L. M., Keselman, J. C., & Keselman, H. J. (1996). Consequences of assumption violations revisited: A Quantitative Review of Alternatives to The One-way Analysis of Variance *F* Test. *Review of Educational Research*, 66(4), 579–619. <https://doi.org/10.3102/00346543066004579>
- McVeigh, C., Ace, L., Ski, C. F., Carswell, C., Burton, S., Rej, S., & Noble, H. (2021). Mindfulness-Based Interventions for Undergraduate Nursing Students in a University Setting: A Narrative Review. *Healthcare (Switzerland)*, 9 (11), 1–10. <https://doi.org/10.3390/healthcare9111493>.
- Newsome, S., Waldo, M., & Gruszka, C. (2012). Mindfulness Group Work: Preventing stress and Increasing Self-Compassion Among Helping Professionals in Training. *The Journal for Specialists in Group Work*, 37(4), 297-311.
- Novrianto, R., & Maretih, A. K. E. (2018). Studi Validitas dan Reliabilitas Adaptasi Bahasa Indonesia Instrumen Positive and Negative Affect Schedule (PANAS). [Unpublished Manuscript].
- Parks, A. C., & Biswas-Diener, R. (2013). Positive Interventions: Past, Present and Future. In T. B. Kashdan & J. Ciarrochi (Eds.), *Bridging acceptance and commitment therapy and positive psychology: A practitioner's guide to a unifying framework*. Oakland, CA: New Harbinger
- Purborini, N., Lee, M. B., & Chang, H. J. (2021). Determinants of Positive and Negative Affect among Adolescents and Young Adults in Indonesia: A Population-Based Survey. *International journal of environmental research and public health*, 18(23), 12326. <https://doi.org/10.3390/ijerph182312326>

- Saman, A., Farida, A., & Bakhtiar, M. I. (2017). Mengatasi Kecemasan Sosial Melalui Pendekatan Behavioral Rehearsal. *Seminar Nasional Dies Natalis ke 56 Universitas Negeri Makassar*, 9 Juli 2017.
- Santrock, J. W. (2019). *Life-Span Development (17th ed.)*. McGraw-Hill Education.
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Sulandari, S., Prihartanti, N., Ali, Q., Salimah, M. R., Savitri, A. I., & Wijayanti, M. (2020). Gender, Research Approach, Type of Research, and Completion Period of The Minor Thesis (Skripsi). *International Journal of Education and Literacy Studies*, 8(1), 32. <https://doi.org/10.7575/aiac.ijels.v.8n.1p.32>
- Suryawati, C. T., Purwaningrum, R., & Susilo, A. T. (2020). Developing Anxiety Scale of Writing Thesis on students. *KONSELI : Jurnal Bimbingan dan Konseling (E-Journal)*, 7(2), 163–170. <https://doi.org/10.24042/kons.v7i2.7578>
- Teasdale, J. D., Segal, Z., & Williams, J. M. G. (1995). How Does Cognitive Therapy Prevent Depressive Relapse and Why Should Attentional Control (mindfulness) Training Help? *Behaviour Research and Therapy*, 33(1), 25-39.
- Toneatto, T., & Nguyen, L. (2007). Does Mindfulness Meditation Improve Anxiety and Mood Symptoms? A review of The Controlled Research. *Canadian Journal of Psychiatry*, 52(4), 260-266.
- Varma, P., Junge, M., Meaklim, H., & Jackson, M. L. (2021). Younger People are More Vulnerable to Stress, Anxiety and Depression During COVID-19 Pandemic: A Global Cross-Sectional Survey. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 109, 110236. <https://doi.org/10.1016/j.pnpbp.2020.110236>
- Watson, D., Clark, L. A., & Carey, G. (1988). Positive and Negative Affectivity and Their Relation to Anxiety and Depressive Disorders. *Journal of Abnormal Psychology*, 97(3), 346–353. <https://doi.org/10.1037/0021-843X.97.3.346>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of Positive and Negative Affect: the PANAS Scales. *Journal of Personality and Social Psychology*, 54(6), 1063–1070.
- Watson, D., & Tellegen, A. (1985). Toward a Consensual Structure of Mood. *Psychological Bulletin*, 98(2), 219–235. <https://doi.org/10.1037/0033-2909.98.2.219>
- Zhou, X., Gou, J., Lu, G., Chen, C., Xie, Z., Liu, J., & Zhang, C. (2020). Effects of Mindfulness-Based Stress Reduction on Anxiety Symptoms In Young People: A Systematic Review and Meta-Analysis. *Psychiatry Research*, 289. <https://doi.org/10.1016/j.psychres.2020.113002>