

The effect of reiki, a Japanese relaxation technique, on stress in middle schoolers

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SUMMARY

Reiki is a form of complementary therapy that has been proven to reduce stress in various studies. We wanted to see if reiki could be a helpful relaxation technique for middle schoolers. We hypothesized that stress would be reduced in middle schoolers after a reiki session. To test our hypothesis, 30 middle schoolers participated in a distance healing reiki session via Zoom. In the Zoom meeting, the participants rated their stress levels on a scale of 1 (no stress) to 5 (extreme stress) on a pre-session survey. Experimental subjects (selected randomly) received 20 minutes of the reiki distance healing session, while control subjects did not. After the 20-minute Zoom session, participants answered the post-session survey on their updated stress level. When comparing stress level averages, both groups had similar stress levels before, but the experimental group had a lower stress level after the reiki treatment. The ANOVA results of $p < 0.05$ for stress reduction overall showed the results were not due to chance. Nearly three-fourths of the experimental group had stress reduction, in comparison to less than half of the control group participants. These results suggest that other middle schoolers could consider complementary therapy, like reiki, to de-stress and focus on mental health and well-being.

INTRODUCTION

Reiki is a simple and natural system of touch healing that promotes balance and well-being (1). It's also one of the most studied complementary therapies and has been used in the clinical setting (1, 2). Reiki is a safe and relaxing healing modality that activates the parasympathetic nervous system (nerves that relax the body after periods of stress) and is effective in reducing pain, anxiety, and depression to improve quality of life (3, 4). A reiki session does not interfere with conventional medicine, so it can be used concurrently without any known contraindications and has not been found to have any adverse effects (5). Reiki sensations are reactions to reiki as energy flows between the practitioner and recipient, and they include sleepiness, tingling, and yawning, which were measured as well (6). A study indicates that a single reiki session improves both physical and psychological health (7). Distant reiki has been indicated as a validated alternative therapy to reduce anxiety and stress without any need for face-to-face contact because of the pandemic (8).

Reiki is often used to treat stress, which is your body's reaction to something that makes you tense, called a stressor

(9). Parents with a positive reiki experience were interested in reiki for kids (10). Reiki has been used by some parents to relieve their kids of anxiety, as well as supporting their children when addressing a serious medical diagnosis (11). A pilot study on the effects of reiki in patients undergoing knee replacement indicated that the people who received reiki showed a significant reduction in pain (12). Reiki can play a beneficial role in reducing anxiety, depression, and stress symptoms; for example, a nine-year-old female with a medical history of stroke, seizure, and diabetes responded positively to reiki sessions (13). The patient felt relaxed and had a positive change in sleep patterns (13, 14).

We conducted this experiment since the effects of distant healing reiki sessions on reducing stress in middle schoolers has not yet been studied. We hypothesized that if middle schoolers received a reiki healing session, they would experience reduced stress levels. Results showed that a majority of the experimental group and a small portion of the control group did experience stress reduction. Both groups also had participants that experienced reiki sensations. In the end, the hypothesis was supported; reiki did reduce stress amongst this sample of middle schoolers.

RESULTS

In the experiment, which attempted to analyze the stress-relieving effects of reiki on middle schoolers, we subjected 30 students (aged 11-14) to a timed 20-minute reiki distance healing session. This experiment helped determine the effects of complementary therapy on the sample of middle schoolers. We randomly chose participants to be in the experimental (received reiki) or control (didn't receive reiki) group. Our results below analyze/interpret responses from the participants regarding: age, gender, stress level before and after the session, experience of reiki sensations, and overall thoughts if the session worked or not (Table 1).

Each group had 15 participants. Stress levels were indicated on a scale of one to five (1 – No Stress, 2 – Mild Stress, 3 – Moderate Stress, 4 – Much Stress, and 5 – Extreme Stress). Based on the survey responses, the average stress level pre-session for both groups were 2.3 (Figure 1A). Pre-session stress levels for the experimental group ranged from 1 – 3, and the control group ranged from 1 – 4. Average stress level reduced post-session in both the experimental (to 1.3) and control (to 1.8) groups. Post-session stress levels reported for the experimental group were 1 – 2 (moderate stress levels dwindled to mild and no stress levels). The control group ranged from the same stress levels of 1 – 4 but with different distributions in each stress level (Figure 1B).

In the experimental group, 26.67% of participants did not report a change in stress level before and after the session, and 46.67% of participants reported that their stress had

t-Test: Two-Sample Assuming Unequal Variances		
	Control	Experimental
Mean	0.46666667	1
Variance	0.40952381	0.571428571
Observations	15	15
Hypothesized Mean Difference	0	
df	27	
t Stat	-2.085548984	
P(T<=t) one-tail	0.023300682	
t Critical one-tail	1.703288446	
P(T<=t) two-tail	0.046601364	
t Critical two-tail	2.051830516	

Table 1: T-test showing sample assuming unequal variances. T-test shown that represents p-values at <0.05, showing that the results were not caused due to change. From data of trials, analyzes if reiki did contribute to stress reductions.

reduced by one level (either from 2 - mild to 1 - no stress or 3 - moderate to 2 - mild stress) post-session. 26.67% of participants said their stress reduced from moderate to no stress post-session. By contrast, 60% of the control group did not report a change in stress level. 33.33% of participants reported a change in stress level in a similar pattern as the experimental group (either from 2 - mild to 1 - no stress or 3 - moderate to 2 - mild stress). 6.67% of participants reported a two-level reduction in stress and had no stress post-session and moderate stress pre-session (**Figure 1C**).

73.33% of participants in the experimental group experienced one or more of the reiki sensations during the session, and 60% reported reduced stress levels post-session; 13.33% did not report a change in stress level before and after the session. 46.67% of participants in the control group reported one or more of the reiki sensations, and that population includes 33.33% that reported reduced stress levels (**Figure 2**).

In the experimental group, 73.33% of participants responded that reiki sessions helped reduce their stress levels, and this population also reported reduced stress levels post-session. A similar pattern was also observed for 40% of the participants in the control group. Out of the 26.67% of participants who responded unsure in the experimental group, 20% did report a change in stress level. However, the 40% who responded unsure in the control group did not report any change in stress after the session. 20% of the control group who responded that reiki did not work for them to help reduce stress included the population who had no stress before the session (**Figure 3**). Statistically, the p-values for stress reduction in the groups were <0.05, thus showing that the results were not due to chance (**Table 1**).

In addition to the stress reduction measure for the whole population, we recorded stress levels by age. Based on the pre-session stress levels by age for the study population, we observed that the age group 11 and 12 had participants with no stress pre-session, which did not exist in the age group 13 and 14. Based on the distribution, a higher percentage of participants aged 11 and 12 experienced mild stress, but those aged 13 and 14 experienced moderate stress (**Table 2**).

DISCUSSION

Based on our results, the average stress level was reduced by 43% for the experimental group and 22% for the control

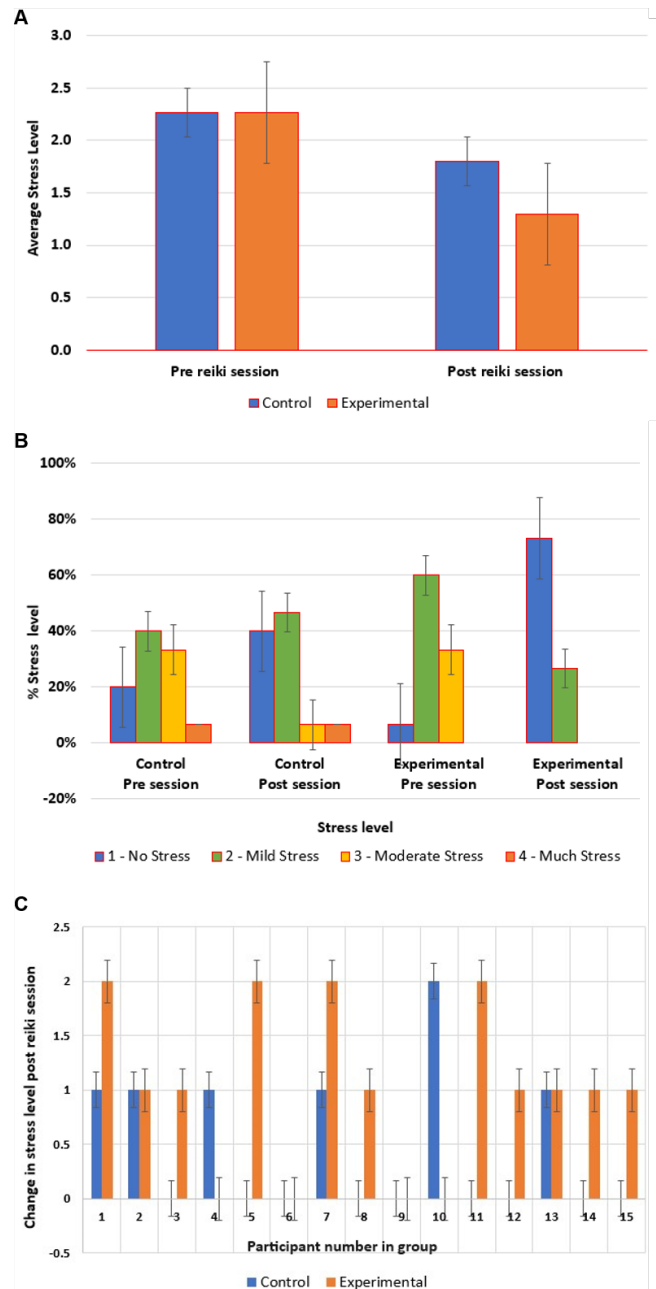


Figure 1: Stress levels before and after reiki sessions. A) Average stress levels before and after reiki sessions between experimental and control groups. One-way ANOVA, $p < 0.05$ pre- and post-session based on averages from reiki session. **B)** Comparison of stress levels before and after reiki sessions between groups. One-way ANOVA, $p < 0.05$, from responses of participants to analyze effect of reiki in stress reduction. **C)** Comparison of total change in stress levels after reiki sessions between groups. Percentages showing level changes with no change (same levels before and after), one-level change (e.g., 2 – Mild Stress to 1 – No Stress), and two-level change (e.g., 3 – Moderate Stress to 1 – No Stress) based on questions about stress levels before and after. Data collected from surveys administered before and after reiki sessions in which participants were asked about stress levels.

group after the session (**Figure 1A**). 73.33% had reduced stress levels in the experimental group, and 40% reported reduced stress levels in the control group (**Figure 1B**). Both

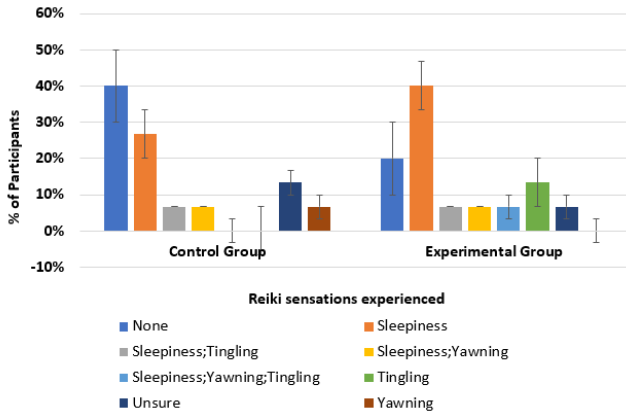


Figure 2: Comparison of reiki sensations experienced during the session between groups. Percentages based on the question regarding reiki sensations – sensations experienced included: sleepiness, tingling, and yawning, with participants also answering that they had no sensations or were unsure if they did.

the groups indicated a reduction in stress level reduced up to 2 levels with varying percentages in the categories of “no change,” “reduced 1 level,” and “reduced two levels” (Figure 1C). Reiki sensations were experienced by the participants during the session, and “sleepiness” was the primary sensation experienced by both groups (excluding None/Unsure) (Figure 2). 73.33% of the experimental group participants indicated that the reiki session helped reduce stress, and 40% of the control group supported the same (Figure 3).

Before the study, we expected that no stress change and no reiki sensations would be experienced in the control group as they did not receive the session. However, the results show that the control group did experience some of the reiki sensations and reported a change in stress. It could be attributed to the placebo effect while the participants were one-on-one with the practitioner, in which the brain convinces the body that the session will work (15). The article indicates that resting with eyes closed can calm the mind and could have contributed to reduced stress levels in the control group and the sleepiness sensation experienced during the session (16).

Results indicate that reiki helped reduce stress in middle school participants of the study. A previous study found that reiki may be more effective in treating some areas of mental health than a placebo and indicates that it has a greater therapeutic effect over a placebo for some symptoms of mental health (17). Though reiki has been shown to aid with mental illness, we only looked at general stress amongst the population of this study. Future studies could examine how reiki helps middle schoolers dealing with mental illness.

An element of the experiment that could be improved would be to capture the stress level as a number in the range of one to ten instead of using a stress scale where the participant had to round their stress level to the nearest integer. A limitation of this study is a low sample size as we included 30 participants. There was a reluctance with volunteers due to a lack of prior knowledge about reiki, which led to fewer participants than anticipated. This study can be repeated with a greater sample number by educating volunteers about reiki.

Although both groups experienced a reduction in stress, the comparison of the average stress level reduction of the

experimental group showed a significant difference in relation to the control group. The results of the experiment support the hypothesis that middle schoolers experienced reduced stress levels after a reiki healing session. Awareness about complementary therapy amidst middle schoolers could help them find resources to combat stress for their mental and emotional well-being.

MATERIALS AND METHODS

Reiki healing session

The researcher, who conducted the distance reiki sessions, underwent training for reiki before the study and received attunement in first-, second-, and third-degree reiki therapy and is a certified reiki practitioner. During a distance healing session, the participant sat upright, with eyes closed. Only one participant (logged in on their device) was present in a Zoom session at a given point in time. The practitioner and participant were muted during the session, as it was almost completely silent. The practitioner let the participant know how much time was remaining every 5-7 minutes. The participant (if in experimental group) was the subject of a timed 20-minute reiki distance healing session. Control group participants didn't receive the healing session, but they, too, sat upright with eyes closed. This experiment had 30 participants (15 experimental and 15 control): 6 eleven-year-olds, 13 twelve-year-olds, 7 thirteen-year-olds, and 4 fourteen-year-olds. There were 22 females and 8 males.

Human consent forms

Volunteers in the age group of 11 to 14 provided student assent and parent-signed consent forms to participate in the study (Appendix A). The consent form indicated the purpose of the study and what to expect from the reiki distance healing session, including risks, benefits, and time required for participation.

Participant assignment

We assigned each participant an identifier in the format of gender (M for male and F for female) and assigned sequence number randomly based on order of arrival (sample identifier: M01). Participants were flagged as control or experimental based on the number assigned, with odd numbers being experimental and even ones being control, thus randomizing selection. There was an equal number of participants placed in each group. Participants were unaware of the group they were placed in. Before the study, a Zoom meeting link was provided

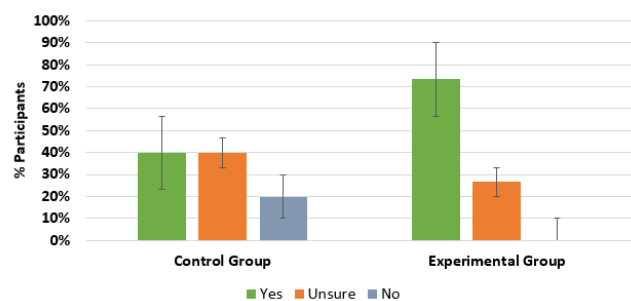


Figure 3: Comparison on the perception that reiki helped reduce stress between groups. Percentages based on the question asking if the participant felt if the session reduced stress overall (allowed to answer yes, no, or unsure).

Age	1 - No Stress	2 - Mild Stress	3 - Moderate Stress	4 - Much Stress
11	6.67%	13.33%	0%	0%
12	6.67%	23.33%	13.33%	0%
13	0%	10.00%	13.33%	0%
14	0%	3.33%	6.67%	3.33%

Table 2: Pre-session stress levels by age. Percentages of stress levels (ranging from 1 – No Stress to 4 – Much Stress) by age levels as answered in the question asking participants' ages.

to the participant. Participants could keep their videos turned off during the Zoom meeting.

Survey collection

When the participant logged into the Zoom meeting, they filled out a Google Forms pre-session survey answering the following questions: a. What is your age? b. What is your gender? c. How would you rate your stress level now? (one to five based on the five-point Likert type stress scale: 1 – No stress, 2 – Mild stress, 3 – Moderate stress, 4 – Much stress, 5 – Extreme stress (18).

After the timer was complete and the session was over, the participant completed a post-session Google Forms survey with the following questions: a. How would you rate your stress level now? (1 – No stress, 2 – Mild stress, 3 – Moderate stress, 4 – Much stress, 5 – Extreme stress) b. Did you experience any of the below reiki sensations? (sleepiness, yawning, tingling, none, unsure) c. Overall, do you feel that the reiki session helped reduce stress? (yes, no, unsure). After filling out the post-session survey, the participant left the meeting. The steps were repeated for all 30 participants.

Pre- and post-reiki session survey responses were collected digitally on a survey (**Appendix B**). Data were analyzed by exporting data from Google Forms to Microsoft Excel and using as needed. After creating tables with data on Excel, graphs and statistical analysis were performed using Excel's "Data" feature for more analysis.

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APPENDICES

The appendices show a copy of the survey answered by volunteers and informed consent form given to students and parents/guardians.

APPENDIX A

Below is the “Human Subject Consent Form” provided to participants.

Student: Balaji, Ameya

School: Cathedral Chapel School

Project Title: Reiki: Unwind your mind

I am asking for your child’s voluntary participation in my project. Please read the following information. Please sign in the appropriate space below if you would like your child to participate.

Purpose of the project: Through this study, I hope to test the effect of reiki to see if middle schoolers feel stress relief.

Participant procedures:

1. All volunteers under 18 (survey study age group: 11-14) need the permission of a parent/legal guardian to participate in this study.

2. A Zoom meeting link will be provided to the volunteer ahead of the study.

3. Only one volunteer would be present in a Zoom session at a given point in time.

4. If the volunteer feels uncomfortable at any point, they may opt out of the Zoom session. At that point, they can participate in the post-session survey. Volunteers may also keep their videos turned off during the Zoom meeting.

5. The participant would be requested to fill out a Google Forms pre-session asking the following questions:

a. What is your age? b. What is your gender? c.

How would you rate your stress level now? (1-5 based on the five-point Likert type stress scale: 1 – No Stress, 2 – Mild Stress, 3 – Moderate Stress, 4 – Much Stress, 5 – Extreme Stress)

6. After filling out the survey, the participant, if placed in experimental study group, will be the subject of a 20-minute reiki distance healing session for the. [Note: Volunteers would be requested to sit with footwear and eyes closed.]

7. After the session, the participant would be requested to complete a Google Forms survey with the following questions:

a. How would you rate your stress level now? (1-5 based on the five-point Likert type stress scale: 1 – No Stress, 2 – Mild Stress, 3 – Moderate Stress, 4 – Much Stress, 5 – Extreme Stress)

b. Did you experience any of the below reiki sensations (sleepiness, yawning, tingling, other – specify) during the session? yes-no-unsure

c. Overall, do you feel that the reiki session helped reduce stress? yes-no-unsure

8. Participants would leave the meeting after filling out the post-session survey.

Equipment needed: You will need a digital device (laptop, tablet, phone, etc.) and Zoom meeting platform.

Time required for participation: 25 minutes (approx.).

Risks to you: The risk involved is partaking in a spiritual session, which may cause discomfort for participants. For most recipients, the session is sensationless, but some recipients may experience slight tingling/buzzing or sleepiness (and yawning). Below is information about reiki:

a. What is reiki? a Japanese stress-relief energy healing technique.

b. What is a reiki distance healing session? A Reiki master (in this case, me) would guide the flow of healthy energy through the volunteer’s body to reduce stress and promote healing.

Benefits to you: You could relax your mind through the session, encouraging you to care for your mental health. Your survey responses will help me analyze the effects of reiki.

Confidentiality: The Google Forms survey shall be anonymous (except for gender and age). No personal details will be shared. Screenshots will not expose participants. All test subjects will be named with gender and test number (ex: F19). F is for female; M is for male.

Online survey consent: Google forms would be used for the survey. Age, gender, stress level and before and after effects of reiki are the only documented fields.

There is always the possibility of tampering from an outside source when using the internet for collecting information. While the confidentiality of your responses will be protected once the data were downloaded from the internet, there is always a possibility of hacking or other security breaches that could threaten the confidentiality of your responses. Please know that you are free to decide not to answer any question.

For participants and their parent/guardian to sign:

I have read and understood the information above, and I freely give my consent to participate or permission for my child to participate in this Human Subject Project.

I also provide consent for my child to participate in the online survey as part of the study and provide their email to the researcher to coordinate on the online Zoom meeting session.

Student informed consent:

Name of student research subject:

Email:

Date reviewed & signed:

Signature:

Parent/guardian informed consent:

Name of parent/guardian:

Date reviewed & signed:

Signature:

APPENDIX B

A copy of the questionnaire given to participants is shown below.

Pre-Session: Answer these questions BEFORE the session.

1. What is your age?

a. 11

b. 12

c. 13

d. 14

2. What is your gender?

a. Male

b. Female

3. How would you rate your stress level now? (based on a Likert-type scale)

a. 1 – No Stress

b. 2 – Mild Stress

- c. 3 – Moderate Stress
- d. 4 – Much Stress
- e. 5 – Extreme Stress

Post-Session: Answer these questions AFTER the session:

1. How would you rate your stress level now? (based on a Likert-type scale)

- a. 1 – No Stress
- b. 2 – Mild Stress
- c. 3 – Moderate Stress
- d. 4 – Much Stress
- e. 5 – Extreme Stress

2. Did you experience any of the following reiki sensations?

- a. Sleepiness
- b. Yawning
- c. Tingling
- d. None
- e. Unsure

3. Overall, do you think the reiki session helped reduce stress?

- a. Yes
- b. No
- c. Unsure