

Extended Abstract

The Effect of Reiki on the Autonomic Nervous System as Measured by Entrainment Ratios of Heart Rate Variability

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The purpose of this study was to use the popular energy healing modality known as Reiki to reduce measurably the level of stress in a recipient. Specifically, the Reiki treatments would target an element of the recipient's autonomic nervous system (ANS), namely the heart, and use heart rate variability (HRV) to measure the of the amount of stress reduction resulting from the Reiki treatments. The goal was to cause a change in the recipient's HRV, which is theoretically not under the subject's willful control, by a statistically significant amount, ideally to a "healthier level" from that experienced when Reiki was not applied.

The study employed forty participants, equally divided into control and intervention groups. After an initial session to obtain a baseline reading, Reiki was applied to the intervention group in an A-B-A-B fashion, where A = no Reiki applied and B = Reiki applied. The length of each A and B session was fifteen minutes. HRV data were recorded and analyzed using a HeartMath pulse sensor attached to the subjects' finger and the Freeze Framer computer program. This program measured HRV to obtain a relative level of entrainment, where the heart's rhythms were synchronized, a condition that was associated with reduced stress levels. Higher entrainment levels were considered "better."

The PI executed a quantitative research design for this study that included all of the necessary elements, those being randomization, control, and manipulation. The hypothesis of the experiment was that application of specific Reiki treatments over two fifteen-minute periods with the intent of balancing the ANS would alter the functioning of the recipient's ANS in a manner that could be measured via a shift to higher ratio levels of entrainment of HRV. Technically speaking, this study sought to determine if the application of Reiki energy would be sufficient to override the signals produced by the SA node of the intervention subject's heart. The study's dependent variables were HR and HRV (as measured by three entrainment values – high, medium, and low). The independent variable was the Reiki intervention, that is, the application of Reiki at specific time periods.

For each of the following calculations, the alpha level was set at $p = 0.05$, meaning that we have 5 chances in 100 of making a type 1 error. Statistically speaking, the null hypothesis was that there would be no difference between the means of each group. The hypothesis would be proved if the null hypothesis was disproved. The null hypothesis The Effect of Reiki on The Autonomic Nervous System would be disproved if the $F > 0.05$ (the critical F ratio, or F critical) or if $p < 0.05$. Failing to disprove the null hypothesis ($F < F_{\text{critical}}$ or $p > 0.05$) would not necessarily mean that the hypothesis was invalid; merely that the patterns of data that had been collected during the test didn't differ significantly enough between the groups for there to be a proven correlation.

Table IV depicts a summary of the statistical results of the acquired data as processed by SPSS. Each of these group differences is covered individually in the following pages. Appendix G contains the "raw" data obtained during the experiment. Appendix H contains the full statistical details. In summary, none of the data collected indicated a significant statistical difference between the control and intervention groups, as in each case $p > 0.05$. There was no significant interaction of groups (hands-on vs. no hands-on) by repeated measured ($F [3,20] = 0.32, p = 0.81$). Stated differently, the treatment and control groups did not differ significantly from each other in their patterns of HRV over the time span of four measurement intervals.

There were several areas of the experiment that the PI believes could be modified to improve how the experiment was conducted. Interaction Between the Reiki Master and Subject In this experiment, the Reiki Master entered and left the room just prior to and immediately after giving Reiki to the intervention group subjects. No one entered the rooms of the control groups during the testing period. This procedure was used because of time constraints and a lack of additional research assistants to take part in the experiment.

Although the subjects were blindfolded, It is possible that the intervention group subjects were aware of the presence of the Reiki Master as she entered and left the room. This could have in some way influenced the outcome by eliminating the independence of the data taken when the Reiki Master was in the room and when she was not. In a similar vein, the Reiki Master did not enter the room of the control subjects at all. Even though they were blindfolded, subjects in the control group might have been able to determine The Effect of Reiki on The Autonomic Nervous System that no one had entered their room during the experiment, and therefore somehow influenced the data taken.

An additional problem was the layout of the treatment rooms. They were relatively small and cramped, and the door (which opened inward) could not be opened all of the way due to the presence of the chair in which the Reiki Master sat when giving treatments. It is possible that, in the process of entering the room and getting into

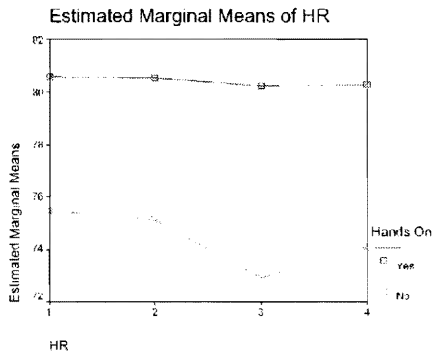


Figure 8. Group differences in HRV based on HR.

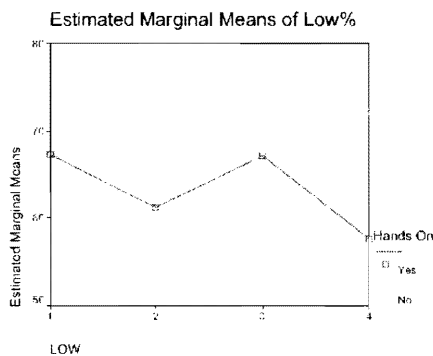


Figure 9. Group differences in HRV based on low HRV entrainment.

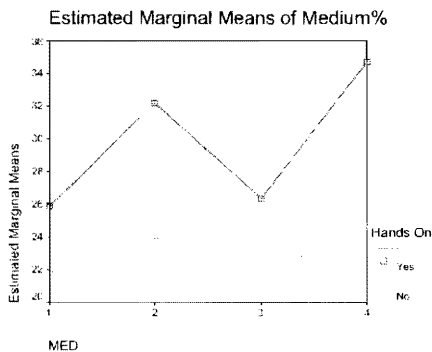


Figure 10. Group differences in HV based on medium HRV entrainment

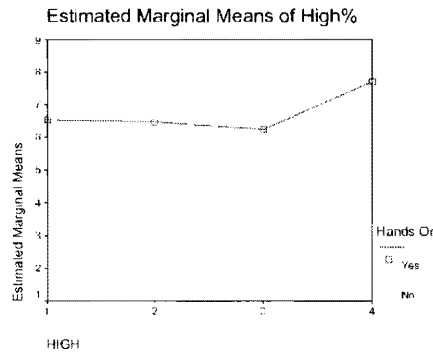


Figure 11. Group differences in HV based on high HRV entrainment

Table IV
Summary of Results

Intervention Group (hands on) vs. Control Group (hands off)

| Measurement | # Measurement | Intervals | Results |
|-------------|---------------|-----------|------------------------------|
| HR | 4 | | $F(3,20) = 0.32, p = 0.81$ |
| Low | 4 | | $F(3,20) = 1.20, p = 0.336$ |
| Medium | 4 | | $F(3,120) = 1.35, p = 0.338$ |
| High | 4 | | $F(3,120) = 1.35, p = 0.917$ |

and out of the chair, the Reiki Master made sufficient noise that the intervention subjects could tell roughly when they were getting treatment and when they were not. This awareness by the subjects could have influenced the experiment in some way.

Future experiments should use a room that has sufficient space in which to move about, and should have the Reiki Master remain in the room of both control and intervention subjects for the entire duration of the experiment, and sitting in the chair as much as possible during this time to reduce detectable movement. If it is not feasible for the Reiki Master to be in the room of the control group, then an actor or surrogate should take the Reiki Master's place so that the subject perceives someone s/he believes to be the Reiki Master to be in the room with him/her. In this manner, the subjects would have fewer overt cues to indicate whether or not they are receiving treatment

There was no significant interaction of groups (hands-on vs. no hands-on) by repeated measures ($F [3,20] = 0.32, p = 0.81$). Stated differently, the treatment and control groups did not differ significantly from each other in their patterns of HRV over the time span of four measurement intervals. See Figure 8 for a graph of this data.

There was no significant interaction of groups (hands-on vs. no hands-on) by repeated measures ($F [3,120] = 1.20, p = 0.336$). Stated differently, the treatment and control groups did not differ significantly from each other in their patterns of HRV over the time span of four measurement intervals. See Figure 9 for a graph of this data.

There was no significant interaction of groups (hands-on vs. no hands-on) by repeated measures ($F [3,20] = 1.35, p = 0.338$). Stated differently, the treatment and control groups did not differ significantly from each other in their patterns of HRV over the time span of four measurement intervals. See Figure 10 for a graph of this data.

There was no significant interaction of groups (hands-on vs. no hands-on) by repeated measures ($F [3,120] = 1.35, p = 0.917$). Stated differently, the treatment and control groups did not differ significantly from each other in their patterns of HRV over the time span of four measurement intervals. See Figure 11 for a graph of this data.

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