

Fiscal Year 2020 Doctoral Dissertation(Abstract)

Experimental studies of the psychological and physiological effects of touching on
adults with Adverse Childhood Experience(ACE)

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Index	
Introduction.....	1
Chapter 1 Research Background on Adverse Childhood Experience (ACE) and Touching	5
Section 1 Adverse Childhood Experience (ACE).....	5
1-1. Adverse Childhood Experience (ACE).....	5
1-2. ACE and physical health.....	6
1-3. ACE and depression/psychological problems	7
1-4. ACE and developmental trauma disorder.....	9
1-5. ACE and touching	11
Section 1 Summary	11
Section 2 Touching	12
2-1. Psychological and physiological effects of touching	12
2-2. Touching and depression.....	14
2-3. Therapeutic touching.....	14
Section 2 Summary	19
Section 3 Respiratory Sinus Arrhythmia (RSA).....	19
3-1. Respiratory sinus arrhythmia (RSA).....	19
3-2. RSA and touching	20
3-3. RSA and depression.....	20
3-4. RSA and ACE.....	21
3-5. RSA and PTSD	22
Section 3 Summary.....	23
Chapter 2 Justification	24
Chapter 3 Research 1. Standardization of "ACE Questionnaire Japanese version" and "Developmental Trauma Scale".....	26
1-1. Research background	26
1.2. Research content and objectives	27
1-3. Experiment participants and extraction method.....	28
1-4. Ethical considerations.....	29
1-5. Scales used	29
1-6. Research method	33
1-7. Analytical method.....	34
1-8. Result.....	34
1-9. Discussion.....	43
1-10. Conclusion	45

1-11. Limitations of this research and future prospects.....	46
Chapter 4 Research 2. Comparative Study of Psychological and Physiological Effects of Touching on Different Parts of the Body1.	
Experiment 1. Psychological effects of touching on different parts of the body -comparative study between low ACE and high ACE group-	47
1-1. Research background	47
1-2. Research content and objectives	48
1-3. Experiment participant	48
1-4. Extraction method	49
1-5. Ethical considerations	49
1-6. Practitioner.....	49
1-7. Location	50
1-8. Experiment indices	50
1-9. Experiment method.....	50
1-10. Flow of experiment.....	51
1-11. Analytical method.....	52
1-12. Result	52
1-13. Discussion	56
1-14. Conclusion	58
1-15. Limitations of this research and future prospects	58
Chapter 5 Research 3. Comparative Study of Psychological and Physiological Effects of Touching on Different Parts of the Body2.	
Experiment 2. Psychological and physiological effects of simple touching on HPA related parts -Comparison between low and high ACE group -.....	60
2-1. Research background.....	60
2-2. Research content and objectives	60
2-3. Experiment participants.....	61
2-4. Extraction method	61
2-5. Ethical considerations	62
2-6. Practitioner	62
2-7. Location	62
2-8. Experiment indices	63
2-9. Experiment method	64
2-10. Flow of experiment	65

2-11. Analytical method	66
2-12. Result	67
2-13. Comparative study of results of low ACE and high ACE group	77
2-14. Discussion.....	78
2-15. Conclusion.....	81
2-16. Limitations of this study and future prospects	82
Chapter 6 Research 4. Research on Psychological and Physiological Effects of Therapeutic Touching 1	
Experiment 3-1. Psychological effects of Craniosacral touching on healthy experiment participants.....	84
3-1-1. Research background.....	84
3-1-2. Research content and objectives	84
3-1-3. Experiment participant	85
3-1-4. Extraction method	85
3-1-5. Ethical considerations	85
3-1-6. Practitioner	85
3-1-7. Location.....	85
3-1-8. Experiment indices	85
3-1-9. Experiment method	86
3-1-10. Flow of experiment.....	86
3-1-11. Analytical method.....	87
3-1-12. Result.....	87
3-1-13. Discussion.....	90
3-1-14. Conclusion	91
3-1-15. Limitations of this research and future prospects.....	91
Experiment 3-2. Experiment on psychological and physiological effects of Craniosacral touching on the individuals with ACE.....	92
3-2-1. Research background.....	92
3-2-2. Research content and objectives.....	92
3-2-3. Participants	93
3-2-4. Extraction method.....	93
3-2-5. Ethical considerations.....	93
3-2-6. Practitioner.....	94
3-2-7. Location.....	94
3-2-8. Experiment indices	94
3-2-9. Experiment method.....	95

3-2-10. Flow of experiment.....	96
3-2-11. Analytical method	96
3-2-12. Result.....	96
3-2-13. Discussion	102
3-2-14. Conclusion.....	103
3-2-15. Limitations of this research and future prospects	103
Chapter 7 Research 5. Research on psychological and physiological effects of therapeutic touching 2.	
Experiment 4. A comparative study on psychological and physiological effects of Craniosacral touching and SE™ touching on the individuals with ACE.....	105
4-1. Research background.....	105
4-2. Research content and objectives	106
4-3. Experiment participant.....	106
4-4. Extraction method.....	106
4-5. Ethical considerations.....	107
4-6. Practitioner.....	107
4-7. Location.....	107
4-8. Experiment indices	107
4-9. Experiment method.....	108
4-10. Flow of experiment.....	110
4-11. Analytical method.....	110
4-12. Result.....	110
4-13. Discussion.....	118
4-14. Conclusion	121
4-15. Limitations of this research and future prospects.....	122
Chapter 8 Research 6. Research on Psychological and Physiological Effects of Therapeutic Touching 3.	
Experiment 5. Psychological and physiological effects of SE™ Touching on the individuals with ACE -6 month longitudinal study-	123
5-1. Research background.....	123
5-2. Research content and objectives	124
5-3. Experiment participants.....	125
5-4. Extraction method	125
5-5. Ethical considerations	125
5-6. Practitioner.....	125

5-7. Location.....	126
5-8. Experiment indices.....	126
5-9. Experiment method.....	127
5-10. Flow of experiment.....	128
5-11. Analytical method.....	129
5-12. Result.....	129
5-13. Discussion.....	146
5-14. Conclusion.....	154
5-15. Limits of this research and future prospects.....	155
Chapter 9 Discussion.....	158
9-1. Results of this research.....	158
9-2. About ACE.....	172
9-3. About Psychological Questionnaires.....	174
9-4. Longitudinal Changes in Mood State	175
9-5. Summary.....	176
Chapter 10 Conclusion.....	177
Chapter 11 Future Outlook.....	178
Acknowledgments	
References	I
Appendices	a

Abstract:

Nowadays, millions of people leave their jobs due to their depressive mood, and /or have difficulties to pursue happiness. It is reported that there are 1.16 million people with depression in Japan. Meanwhile, it seems that Adverse Childhood Experience(ACE) has become a common phenomenon in Japan. People with ACE are more likely to have both mental and physical problems including depression. Furthermore, a precedent research indicates that they have low responsiveness to Cognitive Behavioral Therapy. Therefore, it would be useful to examined whether there is an effective intervention for individuals with ACE.

It is very likely that those with ACE had inappropriate touching or lacked appropriate touching in their childhood. It can be inferred that inappropriate touching is performed in physical and sexual abuse, and appropriate touching may have been missing in psychological abuse and neglect. Thus it shall be meaningful to examine the effects of appropriate touching on the individuals with ACE.

To measure psychological effects, psychological scales were used, including ACE Japanese version, POMS2 Japanese version, DTS Japanese version, and TDMS-st. To measure physiological effects, blood pressure and pulse were taken. In addition, Respiratory Sinus Arrhythmia(RSA) was measured, as one of the indices of relaxation.

In Research 1, the Japanese version of the ACE Questionnaire and the Developmental Trauma Scale were standardized. Both the ACE Questionnaire Japanese version and the Developmental Trauma Scale were created to assess whether the experiment participants had ACE. The coexistence validity of the two scales were examined against the Japanese version of CATS, which was already standardized in Japan. If the coexistence validity would be confirmed, the two scales would be used in the subsequent studies. As a result, the coexistence validity of the scales was confirmed. There was a strong correlation between the scales; ACE Japanese version and CATS Japanese version($r=.82$), and the Developmental Trauma Scale and CATS Japanese version($r=.64$).

In the Experiment 1, the appropriate body parts were identified for touching. As a result, back of the head, the shoulders, the upper arms, the back, and the ankles were found to be fine parts to be touched.

In the Experiment 2, the psychological and physiological effects of simple touching was

examined on the lower arms and the back, as one of the HPA axis related parts. HPA stands for the hypothalamus, the pituitary and the adrenal. There was some level of relaxation observed, but there was not a remarkable change after the touching. Touching on the lower arms was found to be appropriate.

In the experiment 1 and 2, 6 body parts were identified as appropriate parts to be touched; the back of the head, the shoulders, the upper arms, the lower arms, the back, and the ankles.

In the Experiment 3-1 and 2, therapeutic touching was examined to see if therapeutic touching would have positive effects on the individuals with ACE. In the Experiment 3-1, Craniosacral touching was performed for healthy experiment participants. If the outcome were successful, Craniosacral would be conducted upon those with ACE. Craniosacral was found to have strong and positive psychological effects on the healthy experiment participants. Effect size r of TDMS-st of the control and the intervention group was as follows; V-value(.11 vs. .32), S-value(.52 vs. .56), P-value(.42 vs. .54), A-value(.29vs. .40).

In the experiment 3-1, Craniosacral demonstrated positive psychological effects upon healthy individuals. Therefore it was applied to the individuals with ACE in the experiment 3-2. As a result, it was confirmed that Craniosacral had both psychological and physiological effects on those with ACE. The result of TDMS-st was as follows; V-value $r=.28$, S-value. $r=.48$, P-value $r=.52$, A-value $r=.25$. Their heart rate dropped significantly($r=.52$).

In the Experiment 4, a comparison of the effects of Craniosacral and SE™ was performed on the individuals with ACE. Both Craniosacral and SE™ had strong psychological and physiological effects. They demonstrated very similar performance. The heart rate decreased after Craniosacral($r=.47$), as well as after SE™($r=.42$). Concerning TDMS-st, there were positive psychological effects. Comparison of TDMS-st between Craniosacral and SE™ is as follows; V-value (-.57 vs. -.44), S-value(-.56 vs. -.60), P-value(-.97 vs. -.91), A-value(.14 vs. .28).

As both Craniosacral and SE™ demonstrated the comparable results, it was found to be effective to choose either of the methods depending on the individual needs of clients. In Craniosacral touching, a client is expected to remain in silence. In SE™, a client can talk about their difficult experiences in a titrated manner. Clients shall choose either Craniosacral or SE™ depending on their needs to be either quiet or to talk about their

experiences.

Finally, in the Experiment 5 long-term effects of SETM were examined. SETM was applied to the individuals with ACE for 6 months. A month after the completion of the intervention, the last measurement was performed as a follow up. At the time of follow up, TMD of POMS2 had decreased with a medium effect size ($r=.41$), and DTS had decreased with a large effect size ($r=.76$). The Developmental Trauma Scale also had decreased with medium effect size ($r=.44$). The heart rate decreased each time of the measurement, therefore, it was assumed that the experiment participants were relaxed after SETM. However, RSA, one of the outcome indices of physiological relaxation, increased with only a small effect size ($r=.13$) over the entire experiment period.

In this study, it was revealed that longitudinal touching intervention resulted in a significant improvement in the mood state and trauma-derived psychological state. However, there was only a slight improvement in physiological state over time. No significant change was observed even after 6 months of intervention. A small increase was recognized at the time of follow up measurement. It is assumed that physiological changes may occur after the mood states being improved. This became an area to be researched in the future.

In this study, it was clarified that longitudinal touching intervention, trauma derived mood states of those who had ACE were improved.