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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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 SE™ were examined. SE™ was applied to the individuals with ACE for 6months. 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 SE™. 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.