Development of a Psychoeducational Program for Mitigating the Psychological Impact of Disaster

Introduction

The objectives of the sessions of the psychoeducational program we developed were: (1) to determine the effects of a 10-second breathing exercise to relieve stress, (2) to examine cognitive distortion that may arise following a disaster, and (3) to realize the importance of having or experiencing confidential relationships with others in coping with and overcoming psychological trauma.

This study aims to assess the validity of the psychoeducational program using a synchronous effects model. Therefore, we formed the following hypotheses:

a) Efficacy in controlled breathing (objective of the first session) promotes cognitive distortion (objective of the second session).

b) Cognitive distortion (objective of the second session) promotes trusting interpersonal relationships (goal of the third session).

To examine these hypotheses, we evaluated the efficacy and validity of the psychoeducational program.

Method

Participants:
The programs participants comprised 225 students in the fifth and sixth grades of an elementary school in Japan. The participants answered pre- and post-test questionnaires.

Implementing psychoeducational program:
The goal of each program was as follows: 1) The first program aimed to alleviate stress by promoting awareness of the seriousness of the disaster, providing against them, and monitoring the effect of the 10-second breathing technique. 2) The second program focused on understanding stress responses after a disaster, learning about the cognitive distortions and Fuwa Fuwa Kotoba (maintaining harmonious and warm relationships with others). 3) The third program examined the importance of confidential relationships with others.

Measures:

Efficacy of Controlled Breathing: A three-item-questionnaire using a four-point scale to assess the degree of effects for the ten-second breathing technique.

Cognitive Distortion: A four-item-questionnaire using a four-point scale to assess the degree of understanding and cognitive distortion.

Interpersonal Relationships of Trust: A five-item-questionnaire using a four-point scale to assess the state of being able to trust others.

Results and Discussion

Synchronous effect models are widely used in the analysis of panel data, or data collected more than once on the same individuals or units over time (Finkel, 1994). The relationships between efficacy of controlled breathing, cognitive distortion, and interpersonal relationships of trust were examined on the basis of a synchronous-effect and cross-lagged model. To test the model, structural equation modeling was used. A structural equation model was applied to examine the relationship between efficacy of controlled breathing, cognitive distortion, and interpersonal relationships of trust. The synchronous effects model demonstrated an acceptable fit ($\chi^2=2.632$, $df=9$, $p=0.996$, AGFI = 0.972, CFI = 1.000, RMSEA = 0.000).

Thus, the efficacy of controlled breathing at post-test was found to have an effect on cognitive distortion during post-test ($\beta = 0.20$, $p < 0.05$) (Figure 1). Cognitive distortion at post-test had an effect on interpersonal relationships of trust at post-test. Cognitive distortion during post-test was also found to have an effect on interpersonal relationships of trust at post-test ($\beta = 0.25$, $p < 0.01$). Moreover, interpersonal relationships of trust at post-test were also found to have an effect on cognitive distortions at post-test ($\beta = 0.21$, $p < 0.01$). Interpersonal relationships of trust at post-test had an effect on efficacy of controlled breathing at post-test ($\beta = 0.17$, $p < 0.05$).

We found that each variable affected the others. This depicts a clear cyclical process. Therefore, we emphasize the interconnectedness of the three.

Conclusions

- The 10-second breathing method proved to be useful for modifying cognitive distortions. This modification was also found effective for improving interpersonal trust. Furthermore, it also improved the efficacy of controlled breathing. Thus, this study provided support for the validity of the program.
- Future studies should utilize a sample with a broader age range and identify any long-term effects. We currently have two challenges for the future: 1. We need to examine a cause-and-effect process through longitudinal measurement or examining actual cases. 2. We need to examine whether our results reflect a psychological process peculiar to Japan through comparison with other countries.