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An Innovative Card Game Based on Positive Psychology Theory: Application to Enhance Well-being in Adolescents

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Abstract: Adolescent mental health issues require a de-stigmatizing, highly implementable, and universal intervention approach. Combining face-to-face group games with psychological games is an effective approach. Based on multiple psychological intervention approaches and positive psychology theory, this study innovated a face-to-face group card game and recruited 10 participants to conduct a field study in a homeschool. The paired sample tests demonstrated the positive effects of this innovative card game in enhancing adolescents' perseverance, optimism, interpersonal relationships, happiness, and positive emotions by analyzing the results of the EPOCH Adolescent Well-Being Scale and PANAS Mood Scale before and after the game.

Keywords: card game, teenager, well-being, relationship, perseverance, optimism

1. Introduction

Adolescence is a critical developmental period for mental health disorders [1]. Nearly 75% of adolescents with mental health problems do not have access to mental health services [2]. Stigma and negative beliefs about mental health services are the most significant barriers to adolescents seeking help [3]. To address the current stigmatization and inefficiency of adolescent mental health services, positive psychology interventions may be effective. Positive psychological traits developed through positive education are associated with academic achievement, less risky behavior, and better physical health in adulthood [4,5,6,7,8].

Positive psychology interventions have also been validated by many studies to positively impact levels of mental health, such as counting your blessings [9], practicing kindness, expressing gratitude [10] and using personal strengths [10] to increase well-being. However, these activities in most cases take the form of self-help activities and lack peer interaction. A study found that organized activities in peer groups improved adolescents' psychological and social well-being [11]. Therefore, how to design a collective, organized game for adolescents that can be applied for repeated use in different scenarios and that can improve overall well-being should be considered.

This study integrates psychological interventions that have been shown to be effective and innovates a face-to-face card game, which incorporates face-to-face activities, group activities, and virtues and strengths [12], expressions of gratitude [10], and Gloria Willcox feeling wheel [13]. The implications of the game are to diminish the stigma of psychology among adolescents and to enhance adolescent well-being while ensuring that cards circulate among a broad collective of adolescents.

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The purpose of this study is to explore the effects of this positive psychology intervention game on adolescents.

2. Research Methods

2.1. Participants

Participants were from a home school in Shanghai, China, which had 17 students, and 30 teachers and staff. The current survey includes 8 students (2 females) with an average age of 15.4 (SD=1.11) randomly selected from the 17 adolescents. The age range was between 15 and 17, with two 14-year-olds, three 15-year-olds, one 16-year-olds and two 17-year-olds. It is important to note that among the ten experimenters, one male student was diagnosed with selective mutism. To better observe adolescents' needs for group play and to monitor the effects of the game, the researcher of this trial lived with 10 participants for 20 days and preformed 2 randomized group games with no recorded data.

2.2. Questionnaire Development and Assessment Procedures

For the scale selection, I chose the EPOCH Adolescent Well-Being Measure questionnaire that judges the five dimensions of the PERMA model. the EPOCH Adolescent Well-Being Measure contains 20 items, and it assesses engagement, perseverance, optimism, connection with others, and well-being [14]. To better assess the effect of the game on positive emotions, this experiment also used The Positive and Negative Affect Schedule for Children [15] including 30 questions which assesses 15 positive and 15 negative emotions. Participants were asked to answer the questionnaire on a 5-point Likert scale ranging from very mild or not at all (1) to extremely (5).

At the beginning of the experiment, the researchers have lived with the participants for 10 days to understand the interpersonal interactions and well-being of the students. The scale for this trial was in the form of paper and pencil responses. Monitoring of the final game was completed over three days. Subjects spent 50 minutes playing the game each day for three days. To monitor the emotional experience of the game more accurately for the participants, the PANAS and EPOCH scales were administered before the first day of game play and a follow-up PANAS scale was administered at the end of the first day. To better measure the improvement in long-term well-being of the adolescents, the participants took the EPOCH measure again on the third day.

3. Data Analyses and Results

In this study, paired-samples t-test analyses were conducted on the pre-game and post-game measures of participants' participation, and the significance of the comparison results was determined using the SPSS program. The results of the experiment were as follows.

3.1. Improvement on Well-being in Life

This study tested changes in participants' engagement, perseverance, optimism, connection with others, and well-being.

The results of the analysis indicated that in perseverance (P1=3.03, SD1=0.83; P2=3.38, SD2=0.74), optimism (O1=3.68, SD1=0.74; O2=4.03, SD2=0.66), connection with others (C1=2.88, SD1=0.60; C2=3.81, SD2=0.86), and well-being (H1=3.78, SD1=0.71; H2=4.44, SD2=0.55) were significantly different in terms of their enhancement. The most significant category was connection with others (p=0.002), the others were optimism (p=0.014, happiness (p=0.017), and perseverance

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(p=0.020) in that order. The results of the data analysis were not significant (p=0.133) in terms of engagement (E1=3.38, SD1=0.72; E2=3.81, SD2=0.88).

This finding suggests that this card game, based on positive psychology theory, has a positive effect on adolescents' perseverance, optimism, connection with others, and happiness, but there was no significant increase in engagement (see figure 1,2).

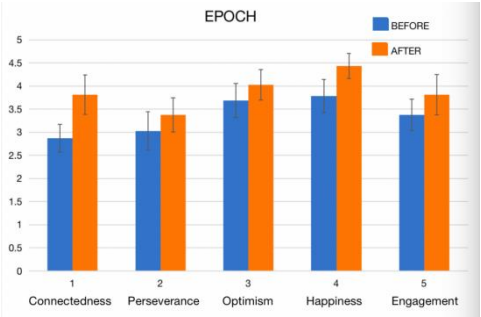

Figure 1: Result of EPOCH.

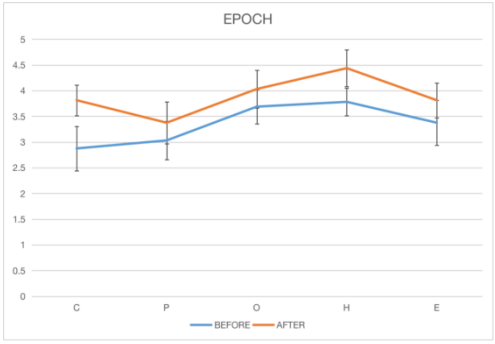

Figure 2: Result of EPOCH.

3.2. Participants' Reactions to Positive and Negative Emotions

The PANAS scale was used in this study to measure the differences between participants before and after playing the game. The results of the analysis indicated there is no significant change (p=0.476) in positive emotions (P1=3.76, SD1=0.59; P2=3.8, SD2=0.64) after completing a game. The change in negative mood (N1=2.44, SD1=0.23; N2=2.54, SD=1.00) was not significant (p=0.799) (see Figure 3,4). This suggests that this innovative game game does not have a credible effect on the mood of adolescents. This may be the result of some limiting factors.

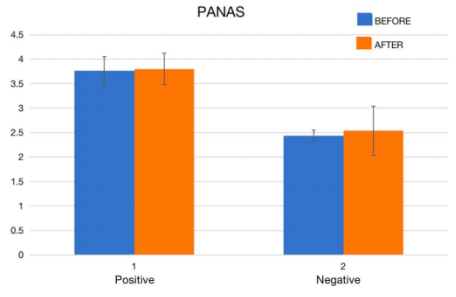

Figure 3: Result of PANAS.

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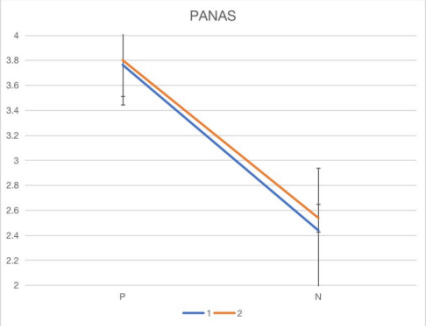

Figure 4: Result of PANAS.

4. Discussion

The results of the study proved that the game had a significant increase in all four dimensions of perseverance, optimism, connection with others, and happiness. There are several reasons for this. First, the game meets the social and psychological needs of adolescents. During the development phase of the game, the researchers lived with the teens for one month. After gaining an in-depth understanding of adolescents' socialization, the game was modified twice, taking into account the game's difficulty and scenario limitations. Second, the game integrates a series of psychological intervention methods that have been proven to be effective, and on this basis, the intervention was innovated and enhanced. Third, the format of the game is relaxed and de-stigmatized.

The role of games in engagement has not been proven.Gander et al. [16] also demonstrated in a pilot intervention study, based on Seligman's [17] five-component theory of well-being, that these five components of well-being can be addressed simultaneously in the intervention. We can tentatively believe that if this innovative card game can work on the other four elements, then the long-term effects may also enhance engagement. Engagement may be affected by some limitations in the current study. For example, when adolescents are distracted by younger children in private schools while playing the game. The results of the study did not show an effect on the card game on mood. This may be because the post-measurement scale was not administered immediately after the game ended, resulting in changes in the adolescents' moods.

Participants in the study included a boy who was diagnosed with selective mutism. After three game sessions, excluding the positive changes in the scale, he showed substantial improvement in his life in terms of interpersonal relationships and emotional control. And, he really enjoyed the parts of the game that involved gratitude and strengths. This raises the expectation that this game will be developed as an effective intervention program for the selective mutism group.

Future research could also be conducted in the following directions: Increase the sample size and randomization. Increase the number of studies of this game in different countries and regions. Consider applying the game to specific groups of adolescents, such as the ADHD group, the autism group, etc.

5. Conclusion

This study incorporates the Gloria Willcox feeling wheel, which helps adolescents identify emotions, as well as practicing kindness, expressing gratitude [10] and using personal strengths [10] several elements to innovate a face-to-face card game. This study successfully confirmed the positive effects of this card game in improving the latitude of adolescents' well-being, interpersonal relationships, perseverance, and optimism, as well as enhancing the positive mood of adolescents.

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