

# A Study on Effect on Internet Game Addiction, Ego Resilience, and School-Life Adjustment of Internet Game Addiction Prevention Program for Multicultural Children

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## Abstract

**Objectives:** The present research aims to propose a preventive program for internet game addiction and identify how the program affects multicultural children's game addiction, ego-resilience and school life adjustment. **Methods/Statistical Analysis:** The research subjects consist of an experimental group of 8 and a control group of 6 multicultural children, who attend upper class of elementary school, located in S city and have potential risk of internet game addiction. They were selected from the multicultural children support center in that city. A set of 8 sessions of prevention program were administered to the experimental group. A pretest was conducted before the program began and a post-test was given after the program to see differences. **Findings:** It was found that internet game addiction did decrease significantly in the experimental group, whereas their ego-resilience and school life adjustment also significantly increased. Thus, we might conclude that the proposed program exerted positive influence on all the three factors. **Improvements/Applications:** Such a result of the current research is expected to help multicultural children lead healthy lives.

**Keywords:** Internet Game Addiction, Multicultural Children, Program Development, School-Life Adjustment

## 1. Introduction

Korean society has faced the trend of multiculturalism as well as the information era in a very short period of time. As a consequence, the number of multicultural children has rapidly increased<sup>1</sup>. According to the data from Ministry of Education, as of 2014, the figure marked 67,806, which is a 21% increase from the previous year.

Due to lack of basic learning experience and financial difficulty, they often go through a variety of problems. A unique feature of multiculturalism along with the developmental characteristic of childhood lead them to possess discriminative features different from other children and to undergo various cultural conflicts and much stress due to insufficient preparation for education<sup>2</sup>.

Such stress and difficulties of these multicultural children may cause them to suffer from problems in mental

health, social adjustment and personal relationships. Thus, they could be led to get on-line and spend much time; they may want to play games or make friends on the internet. This might put them in a danger of playing problematic games<sup>1,3</sup>. As mentioned above, their unique combination of multiculturalism and developmental features of childhood may drive game addiction into a more serious problem.

Internet games have become one of the major leisure activities for children and adolescents. They might be helpful in some respects: for example, pleasure, stress reduction, socialization, and physical and cognitive development, but excessive use of on-line games might lead to game addiction<sup>4</sup>. Many cases of social maladjustment and psychological trouble have recently reported, even for elementary students. It seems clear that the age of game addicts has been dropping. In particular, it was reported

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that younger game addicts may suffer from more problem<sup>5</sup>. Children at a developmental stage are very likely to experience more trouble in emotional, physical development and identity formation than adults<sup>6</sup>.

Many researchers have been reported in the literature on internet addiction and appropriate prevention programs. However, very few have targeted multicultural children. As a consequence, no prevention program has been proposed for this particular group of children. Thus, the current research aims to develop a program that may help prevent multicultural children from being addicted to internet games and to identify how the proposed program affects their addiction, ego-resilience and school life adjustments.

## 2. Methods

### 2.1 Research Subjects

The participants were collected from the Multicultural Children Support Center located in S-city. They were all in the upper grades of 4 to 6 in elementary school. After explaining the research purpose, those who consented to participate in the research were selected for prospective research subjects. Then, a self-diagnosis test developed by Korea Information Culture Support Center<sup>7</sup> was given to the subjects. Those whose measured scores range from 36 to 45 were considered belonging to a potential risk group. Out of this group, those who wanted to participate in the present program were finally selected for the subjects. 8 of the selected children were assigned to the experimental group and the rest to the control group.

### 2.2 Measurement Tools

Internet game addiction was measured by using Korean Information Culture Support Center<sup>7</sup> version. The scale consisted of 20 items: 6 items for game-oriented life, 7 for lack of tolerance and control, and another 7 for withdrawal symptoms and emotion. It is a four-point likert scale, and a higher score signifies a higher risk of addiction. They were categorized into three groups according to their scores: high-risk group with 46 or higher, potential risk group with 36 – 45 and ordinary group with 35 or lower. The Cronbach's  $\alpha$  value was obtained at .852 in a pretest and .863 in a posttest.

### 2.3 Measurement of Ego-Resilience

Ego-resilience was measured by using the scale of<sup>8</sup>, which is a slightly modified version of<sup>9</sup>. The scale consisted of

20 items for four categories, each with 5 items: personal relationship, vitality, emotion control and optimism.

It is a four-point likert scale, and a higher score signifies a higher risk of addiction. The Cronbach's  $\alpha$  value was obtained at .731 in a pretest and .831 in a posttest.

### 2.4 Measurement of School Life Adjustment

The current analysis adopted<sup>9</sup> to measure school life adjustment. The scale contained 20 measurement items: 5 items for relationship with teachers, 5 for peer relationship, 5 for classes, and 5 for school regulations. A higher score means a higher level of adjustment to school life. The Cronbach's  $\alpha$  value was obtained at .911 in a pretest and .926 in a posttest.

### 2.5 Research Design

The current research was conducted with Pretest Posttest Control Group Design. The experimental group was given a pretest, then a posttest after applying a proposed internet game addiction prevention program. The control group was given a pretest and a posttest without applying the prevention program.

### 2.6 Proposed Program

In order to help express their emotions and feelings, reduce stress, and enhance intimacy with other subjects, an emotion roll book and game plays were involved in the program. A focus was given to their unique feature of multiculturalism in designing and operating the prevention program. The proposed program can be summarized as understanding of internet games, checking internet game habits, self positivity, self reinforcement, future goal, stress coping, alternative activities, cognitive reconstruction/resolve conflicts, closing.

### 2.7 Operation of the Prevention Program

A set of 8 sessions of prevention program were administered to the experimental group from July 14 to September 1, 2015. Each session ran for 70 minutes, which consisted of three steps of introduction, development and closing stages.

### 2.8 Data Analysis

A couple of nonparametric statistical methods were utilized in order to identify the effect of the proposed prevention program: Mann-Whitney U analysis and Wilcoxon signed rank Test. Collected data were analyzed by using SPSS 20.0 version.

### 3. Results

#### 3.1 Homogeneity Test

Mann-Whitney U test found that there was no statistically significant difference between the experimental group and the control group in the areas of internet game addiction, ego-resilience and school life adjustment, which clearly indicates that the two groups showed homogeneity in Table 1.

#### 3.2 Effect of the Prevention Program on Multicultural Children's Addiction to Internet Game Addiction

In terms of each of the sub factors of internet game addiction – game-oriented life, lack of tolerance and control, and withdrawal symptoms and emotion – a significant difference in change amount was found between the two groups. The experimental group showed a significant

change between a pretest and a posttest ( $Z = -2.52$ ,  $p < .05$ ), whereas the control group did not ( $Z = -.57$ ,  $p > .05$ ). Also, a significant difference was obtained in the posttest between the two groups ( $Z = -3.12$ ,  $p < .01$ ) (Table 2.).

#### 3.3 Effect of the Prevention Program on Multicultural Children's Ego-Resilience

The analysis of the effect of the prevention program on the multicultural children's ego-resilience found the results illustrated in Table 3. It was found that there was a significant difference in change amount between the two groups in the areas of personal relationship and emotion control. Also, as for the total score, the experimental group showed a significant difference between the pretest and posttest ( $Z = -2.53$ ,  $p < .05$ ), while the control group did not ( $Z = -.96$ ,  $p > .05$ ). As expected, in turn, a significant difference was obtained in the posttest between the two groups ( $Z = -3.16$ ,  $p < .01$ ).

**Table 1.** Between-group homogeneity in internet game addiction, ego-resilience and school life adjustment.

	Group	n	Average Rank	Rank Sum	Mann-Whitney U	z	p
Game Addiction	Experiment	8	7.81	62.50	21.500	-.329	.742
	Control	6	7.08	42.50			
Ego-Resilience	Experiment	8	8.19	65.50	18.500	-.722	.470
	Control	6	6.58	39.50			
School Life Adjustment	Experiment	8	8.75	70.00	14.000	-1.292	.196
	Control	6	5.83	35.00			

**Table 2.** Between-group difference in variation in internet game addiction.

		Experiment Group (n=8)	Control Group (n=6)	Mann-Whitney U	z	p
Game-oriented life	Average rank	4.50	11.50	.000	-3.13**	.001
	Rank sum	36.00	69.00			
	z	-2.53*	-.81			
	p	0.11	.414			
Lack of tolerance and control	Average rank	4.56	11.42	.500	-3.05**	.001
	Rank sum	36.50	68.50			
	z	-2.53*	-.37			
	p	.011	.705			
Withdrawal & emotion	Average rank	4.88	11.00	3.000	-2.79**	.005
	Rank sum	36.50	66.00			
	z	-2.39*	.00			
	p	.017	1.000			
Total	Average rank	4.50	11.50	.000	-3.12**	.001
	Rank sum	36.00	69.00			
	z	-2.52*	-.57			
	p	.012	.564			

\* $p < .05$  \*\*  $p < .01$

**Table 3.** Between-group difference in variation in ego-resilience.

		Experimental Group (n=8)	Control Group (n=6)	Mann-Whitney U	z	p
Personal relationship	Average rank	10.13	4.00	3.000	-2.76**	.006
	Rank sum	81.00	24.00			
	z	-2.38*	-.57			
	p	.017	.564			
Vitality	Average rank	8.19	6.58	18.500	-.74	.458
	Rank sum	65.50	39.50			
	z	-1.21	.00			
	p	.223	1.000			
Emotion control	Average rank	9.88	4.33	5.000	-2.47*	.013
	Rank sum	79.00	26.00			
	z	-2.38*	.00			
	p	.017	1.00			
Optimism	Average rank	9.25	5.17	10.000	-1.84	.065
	Rank sum	74.00	31.00			
	z	-2.41*	-1.13			
	p	.016	.257			
Total	Average rank	10.50	3.50	.000	-3.16**	.002
	Rank sum	84.00	21.00			
	z	-2.53*	-.96			
	p	.011	.334			

\*p<.05 \*\* p<.01

**Table 4.** Between-group difference in variation in school life adjustment.

		Experimental Group (n=8)	Control Group (n=6)	Mann-Whitney U	z	p
Relationship with teachers	Average rank	9.88	4.33	5.000	-2.48*	.013
	Rank sum	79.00	26.00			
	z	-2.26*	-1.13			
	p	.024	.257			
Relationship with peers	Average rank	9.75	4.50	6.000	-2.36*	.018
	Rank sum	78.00	27.00			
	z	-2.53*	-.73			
	p	.011	.461			
School classes	Average rank	8.56	6.08	15.500	-1.11	.263
	Rank sum	68.50	36.50			
	z	-1.55	-.37			
	p	.119	.705			
School regulations	Average rank	8.13	6.67	19.000	-.65	.511
	Rank sum	65.00	40.00			
	z	-.14	-1.13			
	p	.887	.257			
Total	Average rank	10.50	3.50	.000	-3.11**	.002
	Rank sum	84.00	21.00			
	z	-2.52*	-1.18			
	p	.012	.236			

\*p<.05 \*\* p<.01

### 3.4 Effect of the Prevention Program on Multicultural Children's School Life Adjustment

In terms of change in the areas of relationship with teachers and peer relationship, a significant difference was found between the two groups (Table 4). In total scoring, the experimental group exhibited a significant difference ( $Z = -2.52, p < .05$ ), while the control group did not ( $Z = -1.18, p > .05$ ). Also, the two groups showed a significant difference in the posttest. ( $Z = -3.11, p < .01$ ).

## 4. Conclusions

First, it was found that the prevention program helped reduce multicultural children's addiction to internet games. A significant difference was identified between the experimental group and the control group in terms of change in tendency for internet game addiction. The difference in change amount was found in all the sub-factors of game addiction: game-oriented life, lack of tolerance and control, and withdrawal symptoms and emotional experience.

A proper understanding of game use and checking of their habit and reason for game use would help control their game use, which would eventually prevent high risk of addiction or at least reduce addiction. It might be concluded that a prevention program had a positive effect in reducing their addiction to internet games.

Second, it was found that the prevention program helped enhance the ego-resilience of the multicultural children. In particular, the program had a significant effect on the sub-areas of personal relationship and emotion control, but not on vitality and optimism.

The positive change in emotion control might be attributable to the emotion roll book and role plays: the former helped learn to express their feelings and emotions and the latter helped amend cognitive distortions and identify solutions to conflicts.

Also, experienced self-reinforcement and self-accept improved their personal relationship by identifying their personal strength. In contrast, vitality and optimism did not show a significant improvement, which is perhaps because the program was operated for a relatively short period of time for the children with a combination of developmental, features and multiculturalism. It might be necessary for an ideal prevention program to include activities that would improve these elements

of vitality and optimism. Still, improvement in overall ego-resilience would support the positive effect of the proposed program.

Third, it was found that the proposed program also helped enhance their school life adjustment. As for the subareas of school life adjustment, a significant change was found in relationship with teachers and peers, but not in classes and school regulations. It can be concluded that the prevention program helped them experience friendly relations with teachers and friends and enhance problem-solving abilities for conflict situations.

However, their school life as to classes and regulations did not show a significant improvement. This may also be attributable to the fact that the prevention program lasted for a short period of time with only 8 sessions of counseling, which might fall short of changing life habits that have been established for a long period of time. However, their overall school life adjustment showed a significant improvement, which clearly indicates the positive effect of the prevention program.

In sum, the current research identified positive effect of the prevention program for internet game addiction, ego-resilience and school life adjustment of multicultural children. It was found that the program helped the subjects reduce addiction, and enhance ego-resilience and school life adjustment.

## 5. Acknowledgments

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## 6. References

1. Kim JH. A theoretical Approach to the use of Problematic Games of Multicultural Children, Master's Thesis, Daejonuniversity, 2013.
2. Lee HJ. Group Fine Arts Therapy Program to Enhance Ego-Resilience of Multicultural Children. Master's Thesis, Daejonuniversity, 2012.
3. Oh SY. Causes of Multicultural Children's Internet Game Addiction and Effective Countermeasures, Journal of Korean Autonomy Administration, 2013; 27(3):165–89.
4. Fisher S, Pulos S. Adolescent's Attitude toward Computer and Video Game, Lawrence Hall of Science. 1983; 37:2307–17.
5. Brenner V. Update on the Internet Usage Survey, Paper Presented at the 105th Annual Convention of the America Psychological Association, Chicago, Illinois, 1997.

6. Han SH. The Controlling Effect of Ego-resilience in the Relationship between Children's Routine Stress and Risk of Internet Game Addiction of Children, Master's Thesis, Sookmyung Women's University, 2010.
7. Korean Information Culture Support Center. Development of a Prevention Program for Internet Game Addiction of Upper Class of Elementary School, Seoul, 2006.
8. Oh YS. Social Role Plays for Group Consulting to Enhance Ego-Resilience of Upper Class of Elementary School. Master's Thesis, Korea Teachers' University, 2010.
9. Lee SY. The Effect of Ego-Resilience Enhance Program on the Ego-Resilience, School Life Adjustment and Subjective Happiness of Elementary School Students. Master's Thesis, Chonbuk University, 2008.