A Study on the Influence of Support of Surrounding Environmental Factors on the Dangerous Behaviors of Adolescents - Moderating Effect Analysis of Responsibility and Self-Esteem -

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Abstract
The purpose of this study is to analyze the moderating effect of responsibility and self-esteem concerning the influence of support of surrounding environmental factors on the dangerous behaviors of adolescents. For this study a survey was conducted on 280 male and female adolescents of the city of 'K', Gyeongsangnam-do, from March 2 to March 23, 2015. For the method of analysis the SPSS Win 18 program and the AMOS 18.9 program was used to conduct a frequency analysis, factorial analysis, reliability analysis, and a multiple regression analysis. The research results showed, first, that the support of the environmental factors of adolescents had a positive(+) influence on the game addiction of adolescents. Second, game addiction had an influence on violent behavior and suicidal thinking. Third, responsibility and self-esteem moderated the relation between the support of surrounding environmental factors and the game addiction of adolescents. Consequently, the violent behavior of adolescents acted as a mediator variable that significantly influences suicidal thinking, and responsibility and self-esteem showed to moderate the relation between the support of surrounding environmental factors and game addiction. The implications of this study are expected to become fundamental data for policy alternatives as well as the development of programs to prevent the dangerous behaviors of adolescents.

Keywords: Support of Surrounding Environmental Factors, Violent Behavior, Dangerous Behaviors of Adolescents, Responsibility, Self-Esteem

1 Introduction
1.1 Research Necessity
With our country's adolescent suicide rate being revealed as the highest among the OECD countries at number 1, suicide is emerging not just as an issue only pertaining to individuals or affected families, but as a serious social issue that needs to be taken on by the society together[1]. According to data from the National Statistical Office, the highest cause of death between adolescents aged 9-24 in 2013 was intentional self-harm(suicide), followed by transport accidents then malignant neoplasms(cancer). The death rate of self-harm(suicide) was reported to have increased somewhat from 7.4 to 7.8 out of 100,000 people, and a decrease to 4.4 from 10 years ago(9.6) for transport accidents. This shows that school and peer relationships, grades, school transfer issues, and family discord is the primary cause of suicidal impulses rather than physical or mental illnesses[2]. The influence factors of the suicide of adolescents were studied using the classification of demographical characteristics, personal environment, family environment, social environment, school environment, psychological factors, etc. Of these, the factor with the highest relation to suicidal impulse was life stress and depression, and the moderating factors of family support, friend support, and teacher support showed to have a lessening effect on depression and suicidal impulse. In particular, family support carries the biggest moderating effect in decreasing the suicidal impulse and depression of adolescents, and a greater family cohesion, positive receptivity, and coping method with crisis further displays a greater moderating effect. Furthermore, as for school environment factors, grades and study stress, friend support, school violence, and teacher support showed to have an effect[3,4].

As a phenomenon that occurs due to the stress faced in an environment of continuous and daily mental disorder or family relationships, in adolescent suicide, school stress acts as a factor that induces depression. Suicide incidents rise as a result, or otherwise has a direct influence. A study shows that, therefore, from a state of insufficient ability to cope with stress in the growth process, adolescents have a tendency to commit suicidal acts with the worsening of conflict with peer groups or within the family due to family discord[5,6]. And in this study as well it states that adolescent suicidal impulse occurs as a result of a various and complex interplay of personal psychological state and school life, relationship with parents, friend relationships, academic grades, etc.

However, though previous studies concerning the various factors of continuous mental disorder, depression, stress, family, school life, peer relationships, and other such factors of adolescent suicide[7,8,9], with the extreme lack in research concerning the factors that moderate dangerous behaviors, an effective prevention method regarding adolescent suicidal thinking is unable to be presented. Thus, by drawing up a causality model on what kind of influence that surrounding environmental factors have on the dangerous behaviors of

adolescents and what kind of moderating effect that the support of surrounding adults, teacher support, friend support, and family support have with the moderating variables of responsibility and self-esteem, this study hopes to deduce implications for the mitigation of dangerous behavior and suicidal thinking in adolescents and for effective intervention strategies to prevent suicide.

1.2 Research Hypotheses

A research model as show n in Image 1 was made in order to achieve the above stated research purpose, and the hypotheses established based on this research model are as follows.

H1. The support of the surrounding environmental factors of adolescents will have a significant influence on game addiction.

H2. Game addiction will have a significant influence on violent behavior and suicidal thinking.

H3. Responsibility and self-esteem will moderate the relation between the support of the surrounding environment factors of adolescents and game addiction.

2 Research Method

2.1 Research Subjects and Structure

The subjects of this study were the 250 surveys collected (with the exception of 30 that were either not collected or had partially omitted answers) after distributing a survey to 280 male and female adolescents of the city of 'K', Gyeongsangnam-do, from March 2 to March 23, 2015. A significance level of 5%, a statistical power of 95%, and a medium index of 0.30 for the effect size was established using the statistical power analysis program, G*Power 3.1, according to Cohen's sample extraction equation for the 134 research subjects. With a minimum sampling number of 134 people was calculated from the analysis results, this study had 250 people as the research subjects.

2.2 Research Method

Before conducting the survey on the research subjects, sufficient explanation of the survey's purpose and the questionnaire completion method was given before being conducted in a self-reporting manner.

2.3 Research Tool

With 8 questions on socio-demographic factors, 15 on personal environment factors, 23 on surrounding environment factors, and 20 on dangerous behavior factors, the research tool consisted of a total of 66 questions. The socio-demographic factors used a revision and supplementation of Joo-Young Im's[10] 8 questions. The scale regarding the personal environment cited the School Life Scale(SLS) used by Hyun-Ok Yoo[11]. With 5 questions on responsibility, 10 on self-esteem, etc., a total of 15 questions were used with a 5-point scale of "never", "seldom", "sometimes", "usually," and "always." The scale regarding the surrounding environment also cited the School Life Scale(SLS) used by Hyun-Ok Yoo[11]. With 8 questions on the support of surrounding adults, 5 on teacher support, and 5 on the support of friends, it used a 5-point scale of "never", "seldom", "sometimes", "usually", and "always". A higher average

signifies good adaptation to surrounding environments, optimism, and openness. Of the dangerous behavior factor scale, 'violence' used a revision and supplementation of Eun-Joo Kang's[12] 10 questions concerning school violence from a behavioral survey related to adolescents, and 10 question from an endangered adolescent evaluation criteria used be Hyung-Yong- Kwon[13] for 'suicide', with a 5-point scale of "never", "seldom", "sometimes", "usually", and "always". A higher average signifies good adaptation to surrounding environments, optimism, and openness.

2.4 Reliability

With the result of the analysis of reliability showing a Cronbach's α coefficient score of over 0.8 for each factor regarding personal environment, surrounding environment, and dangerous behavior, the reliability(internal consistency) of the factors can be evaluated as high. The detailed research results are as shown in [Table 1]

[Table 1] Factor Analysis and Reliability Analysis Results

Factor Name		Eigen Value	Cumulative Explanation Power	Cronbach's α
Personal Environment	**Self-Esteem**	6.708	41.923	0.899
	Responsibility	1.728	61.471	0.834
KMO Value (0.919), Bartlett's Test (Chi-Squared Value: 3077.706, Degree of Freedom:213, P Value:0.000)				
Support of the Surrounding Environment	Support of Surrounding Adults	9.784	42.541	0.906
	Support of Teachers	2.778	54.619	0.873
	Support of Teachers	2.292	64.586	0.908
	Support of Family	1.706	72.003	0.910
KMO Value(0.931), Bartlett's Test (Chi-Squared Value: 7408.892, Degree of Freedom:253, P Value:0.000)				
Dangerous Behavior Factors	Violence	5.705	38.035	0.873
	Suicide	2.862	57.115	0.887
	Game Addiction	1.726	68.623	0.886
KMO Value (0.865), Bartlett's Test (Chi-Squared Value: 3648.107, Degree of Freedom:105, P Value:0.000)				

2.5 Data Processing and Analysis Method

In this study, using the variables deduced from literature research and situation analysis through theoretical speculation, the collected data was analyzed using the SPSS(Version 18.0) and the AMOS(Version 18.0). The analysis method used to analyze the data is as follows. First, a frequency analysis was conducted in order to find out the general data of the

respondents including their socio-demographic characteristics. Second, a factorial analysis and reliability analysis was conducted in order to find out the validity and reliability of the measurement items according to the hypothesis verifications. An Average Variance Extraction(AVE) value and Concept Reliability(CR) were presented for the focused validity and discriminant validity of the research model. Third, the hypotheses were verified using a Structural Equation Model(SEM) and the goodness-of-fit of the entire model was tested for the causal relationship analysis.

3 Research Method
3.1 The Influence of the Support of the Surrounding Environment on Game Addiction
The result of analyzing the influence of the surrounding environmental factors on game addiction revealed that the support of the surrounding environment had a partially significant influence on the game addiction of adolescents. Therefore, it was reported that adolescents who spend a lot of time at home and receive the support of friends and family showed a decrease in the dangerous behavior of game addiction. Furthermore, the existence of friends or parents that encourage, love, and understand the adolescents showed a decrease in the risk of falling into game addiction.

3.2 The Influence of Game Addiction on Violent Behavior and Suicidal Thinking
The analysis result showed that game addiction had a significant influence on violent behavior and suicidal thinking, and that the mere existence of friends or parents that understand, encourage, and love the adolescents could decrease violent behavior and suicidal thinking. This kind of result reveals that they will not fall into game addiction if they have friends or parents who understand, encourage, and love them. Furthermore, it was reported that adolescents who were not exposed to the danger of game addiction also had a low possibility of exposure to the danger of violent behavior and suicidal thinking.

3.3 Moderating Effect Analysis of Responsibility and Self-Esteem
The analysis result of the moderating effects of responsibility and self-esteem showed that responsibility and self-esteem moderated the relation between the support of the surrounding environment and game addiction of adolescents. This kind of result reveals that even if the adolescent lacks the support of the surrounding environment, that is, the support of surrounding adults, family support, the support of teachers, or the support of friends, adolescents with high levels of responsibility and self-esteem have a low risk of falling into game addiction and subsequently also have a low risk of exhibiting violent behavior and suicidal thinking.

4 Discussion and Conclusion
This study has examined the moderating effects of responsibility and self-esteem in the relation between the support of the surrounding environment of adolescents and the

dangerous behaviors of adolescents. A discussion based on the research results is as follows.

First, the surrounding support of the environment of adolescents showed to have a partially significant influence on game addiction. In other words, of the support of the surrounding environment the support of friends and the support of family had a significant influence, and the support of surrounding adults and the support of teachers were factors that did not have a significant influence. This result revealed the primary factors in influencing suicidal thinking in adolescents to be friends and peers[14], and coincided with the fact that negative and aggressive verbal expression within the family as well as exposure to situations of conflict had an influence on dangerous behaviors[15]. As a result, we can see that adolescents who spend a lot of time at home and receive support from friends or parents show a decrease in the dangerous behavior of game addiction. This signifies that adolescents with friends or parents who encourage, love, and understand them have a decreased risk of falling into game addiction.

Second, game addiction showed to have a significant influence on violent behavior and suicidal thinking. In other words, students who have fallen into game addiction exhibited high levels of violent behavior and suicidal thinking. Therefore, this signifies that if their friends or parents understand, encourage, and love them, they will not fall into game addiction. Furthermore, students who were not exposed to the danger of game addiction revealed to also have a low risk of exposure to violent behavior and suicidal thinking. This kind of result coincided with the fact that the use of passive coping methods in dealing with game addiction raised levels of suicidal thinking[16].

Third, responsibility and self-esteem showed to moderate the relation between the support of the surrounding environment of adolescents and game addiction. This kind of result signifies that even if the adolescent lacks the support of the surrounding environment, that is, the support of surrounding adults, family support, the support of teachers, or the support of friends, adolescents with high levels of responsibility and self-esteem have a low risk of falling into game addiction and subsequently also have a low risk of exhibiting violent behavior and suicidal thinking.

Based on the above research results, the following is proposed. First, because the surrounding environment of adolescents has an influence on game addiction, when they feel that they have friends and parents who support them they show a low risk of falling into game addiction. Therefore, there is a need to seek out various methods for them to befriend friends who love, encourage, and understand them, as well as more effort to spend time at home and receive support from their family.

Second, because game addiction has a significant influence on violent behavior and suicidal thinking, the existence of friends or parents who understand, encourage, and love them decreases the exhibition of violent behavior and suicidal thinking. In other words, students who have fallen into game addiction have a high possibility of exhibiting violent behavior and suicidal thinking. Therefore, there is a need for the development of systematic programs and educational counsel for the release of stress as well as a continuous education and wholesome cultural life to decrease the game

addiction, violent behavior, and suicidal thinking of adolescents.

Third, because responsibility and self-esteem are factors that moderate the relation between the support of the surrounding environment of adolescents and game addiction, the surrounding environment is important. In other words, even if they lack the support of surrounding adults, family support, the support of teachers, or the support of friends, adolescents with high levels of responsibility and self-esteem have a low risk of falling into game addiction and subsequently also have a low risk of exhibiting violent behavior and suicidal thinking. Therefore, there is a need for education and programs in order to decrease the game addiction, violent behavior, and suicidal thinking of adolescents and for them to have a healthy self-esteem, and there is a need for continuous training in order for them to have responsibility at school and within the home. This result is expected to become data utilized for an improvement plan to enhance the responsibility and self-esteem of adolescents.

Hereafter, more detailed future studies concerning the influence of the support of the surrounding environment of adolescents on dangerous behavior depending on their personal behavioral characteristics is needed.

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