

The effect aggressive computer games on the self-concept junior high school boys and girls in Bandar Abbas

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Abstract

Introduction: Adolescence is associated with a change in self-concept made up of social interactions and experiences. Recent researches indicate the possible role of aggressive computer games on adolescents' self-concept. The aim of this study is to evaluate the impact of violent computer games on the self-concept of second grade junior high school students in Bandar Abbas.

Methods: This is a quasi-experimental design study with pretest-posttest and control group. The sampling method is accidental sampling. 40 junior high school girls and boys as the clients of "KLICK" game net IN Bandar Abbas were selected as the control group. Participants responded to CSCS (Ahlo valiya) inventory and the experimental group played the aggressive game of Good and evil. The obtained data were analyzed using SPSS software at the 0.05 significant level with t-test and multivariate analysis of variance with repeated measures and single variate analysis of variance.

Results: Multivariate analysis of variance showed that there is a difference between the boys and girls in the effects of computer games on self-concept ($P < 0.05$). The results of single variate analysis showed that the happiness decreases among girls and fame increases among boys after the computer game, and intellectual and educational behaviors and position increase among boys and girls ($P < 0.05$).

Conclusion: Due to the fact that adolescence is the period of evolution and growth of intellectual processes and given the fact that the intellectual and educational status of adolescents increases after doing the game, it is made clear that doing these games is beneficial for the academic and intellectual achievement of adolescents. In addition, due to the decrease of happiness among girls and increase of fame among boys after these games, it is recommended to give more notifications in line with more acquaintance of adolescents with the effects of these games.

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Introduction:

Many changes are associated with adolescence and adolescents are under physical and mental attributes of maturing. Maturity also has important effects on self-concept, mood and relationship with others (1). Self-concept means the mental representation of a person of his own that is shaped in social interactions (2). Self-concept plays an important role in the success and self-efficacy of individuals. If people have a true picture and understanding of the important abilities and characteristics of themselves, they act more efficiently in face of life challenges (3). Self-concept is a concept related to the age and is created based on the important age cycles. Important adolescence self-concepts are: intellectual and academic adequacy, appearance competence and competence in social relations (4). Adolescents whose self-concept indicates the inadequacy and incompetence may probably face problems of identity and involving in criminal activities (5,6). This reflects the importance of influencing and intervening factors that are involved in the betterment of the adolescents' self-concept.

Nowadays computer games have many attractions for adolescents for diversity in shape, edition and facilities and have opened a gate of different experiences and roles for teenagers. Studies have shown that media and adolescents' self-concept can both influence the formation of attitudes, behaviors and coping strategies of teenagers (7). A review of research in the field of intervening computer games suggests that some of these games have specific training objectives (technical and professional trainings such as driving, military careers, pilots and flight control).

Researchers have studied other therapeutic objectives such as the treatment of learning disorders and motion disorders and the reduction of the aged people problems in the coordination of their moves (Wildenberg, 2012). Other researchers have studied educational and academic objectives. The computer games researchers have also studied constructs such as selective attention, spatial intelligence, eye-hand coordination, working memory (working memory sections such as: central runner and the executive control center) and short-term memory that are cognitively considered as the

basic and exact components of high-level cognitive abilities (8).

Funk and Buchman have studied the relationship between the aggressive computer games and self-concept of adolescents. According to their study, there is a significant gender difference in computer games habits and the self-concept of adolescents. Among girls, there is a relationship between the low levels of self-concepts grades and self-esteem by the allocation of more time for the computer game (7). Dill and Rhin showed that aggressive computer games cause the increase of aggression, hostility and aggressive behaviors and computer games, that have a positive content, have positive effects on the players. For example, computer games that are based on sport and motions can cause the improvement of self-concept and weight loss among teenagers (8). There is a relationship between the tendencies of most teenagers to aggressive games with low levels of self-perception behaviors (9).

Meta-analysis studied done by Johnson and Skalz entitled as "Computer games and psychological well-being" showed that self-esteem, emotions, hopefulness, resiliency, social relations, self-acceptance, competence and performance of adolescents will improve as a result of computer bases (10). Granick, Lobel and Angle also know computer games important in the trend of the formation of hopeful and active motivational style among teenagers (11).

The findings of Baldwin, Box, Milia and Sekya showed that computer games that their content is related to self-concept of personal acceptance can reduce aggressive behavior in teenagers in the face of social disapproval (12). Moreover, the gender of the hero of computer games influences the self-regulation and verbal thinking of adolescents and when the hero of the game is the same as the player, the game will cause the development of self-regulation and verbal thinking of teenagers (13).

Durkin and Barber have stated that proximity to family members, dealing with school assignments, mental health, the lack of substance abuse, self-concept, friendship network and obedience to parents are higher among teenagers who do computer games than teenagers who do not perform these games (14).

In contrast to the mentioned positive research results, some researchers have doubted the positive effects of computer games as an important factor in the growth of "Self" in adolescents. For example, Mahdian, Momeni and Rafiei Poor have stated that using computer games is effective in increasing depression, conduct disorder and physical disorders and loneliness of students (15). There is a significant relationship between the amount of using computer games and criteria for compulsive obsession and anxiety.

Therefore, due to the importance of self-concept in adolescence and paradox researches regarding the effect of these games on the increase of the self-concept in adolescents, the need for such experimental researches are felt more than ever.

The present study was conducted with the aim of studying the effect of computer games on the self-concept of adolescents in Bandar Abbas. Accordingly, we were after answering the question whether computer games can increase the self-concept in adolescents?

Methods:

This is a quasi-experimental design study with pretest-posttest and control group. The statistical population included all boys and girls in second grade junior high school in Bandar Abbas in 2015 who were the clients of game net in Bandar Abbas. In this study, convenience sampling method was used. 10 boys and 10 girls of second grade junior high school among the clients of "KLICK" game net were selected as the experimental group and 10 boys and 10 girls, who had the same age, educational and interest status with the experimental group, were considered as the control group. In the pre-test stage, the experimental and control groups responded to the Ahlo valiya inventory. Then, the experimental group did good and evil aggressive computer games during 6 thirty-minute sessions in three weeks (the control group did not play any games during this time). After the end of three weeks, the experimental and control groups responded to the Ahlo valiya inventory again. The data were analyzed using SPSS software at the 0.05 significant level with t-test and multivariate analysis of variance with repeated measures and single variate analysis of variance.

Children's Self-Concept Scale (Ahlo valiya) CPCS: this scale was developed by Ahlo valiya in 1961 and it was translated by Abolfazl Karami in 1999 in Iran. The test consists of 80 questions the answers of which were either "yes" or "no". This scale consists of fourteen additional questions. This scale is paper-pencil verbal test. It is assumed that a high score on a scale indicates a favorable self-concept that is the same with the "self-respect" term. The maximum score for self-concept scale is 78 and the minimum is zero. The reliability of this scale was obtained as 0.82 using Kuder-Richardson test-retest and it was obtained as 0.78 with a three-month interval. The reliability of the self-concept using Cronbach's alpha coefficient was obtained as 0.83 and it was obtained as 0.72 using split-half. The reliability of the self-concept was obtained through two face validities simultaneously in which the content validities were determined using translation-retranslation method.

The validity of the self-concept scale was taken through the correlation of the test with criterion score and the results showed that the self-concept test is meaningful with the correlation coefficient of $r=0.75$ and the criterion score at $P<0.01$ (16). In the Asgari and Mirmehdi study (16), the reliability of scale was estimated by simultaneous criterion validity (using Isenk self-concept inventory) as 0.72. In addition, the reliability of this scale was obtained as 0.82 using Kuder-Richardson test-retest and it was obtained as 0.78 with a three-month interval.

Good and evil Computer game: This game has considered the role of a wealthy creator for the player, the able creator that owns frequent miracles and magic. As it is evident by the name of the game, there are two completely different paths for the players. He can choose the right path of goodness using the moral teachings and pure thoughts and be after the global peace and away from violence and wars. He can also be affected by the defiled and satanic thoughts and choose the wrong path and express his power in the form of unreasonable wars and unbiased conflicts. After finishing each stage, the player enters to a higher stage. The basis for choosing this game is the article by Barbara Kerahe (2003) that has ranked computer games based on their level violence. Referring to the article, the violence level of this game is 2.51.

Results:

The research hypothesis: there is a difference between girls and boys in the influence of aggressive computer games on the self-concept.

Table 1. Multivariate analysis of variance with repeated measures between girls and boys in the influence of aggressive computer games on the self-concept

| Effect | Index | Value | F | Assumed degree of freedom | Error degree of freedom | Significant | |
|---------------------|----------------------|----------------------|--------|---------------------------|-------------------------|-------------|-------|
| Among participants | Intercepts | Philai effect | 0.972 | 132.958 | 6.000 | 23.000 | 0.001 |
| | | Lambda-Whilks | 0.028 | 132.958 | 6.000 | 23.000 | 0.001 |
| | | Hotelling effect | 34.685 | 132.958 | 6.000 | 23.000 | 0.001 |
| | | The largest roy root | 34.685 | 132.958 | 6.000 | 23.000 | 0.001 |
| | Gender | Philai effect | 0.461 | 3.281 | 6.000 | 23.000 | 0.018 |
| | | Lambda-Whilks | 0.539 | 3.281 | 6.000 | 23.000 | 0.018 |
| | | Hotelling effect | 0.856 | 3.281 | 6.000 | 23.000 | 0.018 |
| | | The largest roy root | 0.856 | 3.281 | 6.000 | 23.000 | 0.018 |
| | Self-concept | Philai effect | 0.110 | 0.476 | 6.000 | 23.000 | 0.819 |
| | | Lambda-Whilks | 0.890 | 0.476 | 6.000 | 23.000 | 0.819 |
| | | Hotelling effect | 0.124 | 0.476 | 6.000 | 23.000 | 0.819 |
| | | The largest roy root | 0.124 | 0.476 | 6.000 | 23.000 | 0.819 |
| In the participants | Philai effect | 0.195 | 0.931 | 6.000 | 23.000 | 0.492 | |
| | Lambda-Whilks | 0.805 | 0.931 | 6.000 | 23.000 | 0.492 | |
| | Hotelling effect | 0.243 | 0.931 | 6.000 | 23.000 | 0.492 | |
| | The largest roy root | 0.243 | 0.931 | 6.000 | 23.000 | 0.492 | |

Table 2. The single variate analysis of the subscales of self-concept

| Size | Sum of squares | Degree of freedom | Mean f squares | f | Level of significant | |
|------------|----------------|-------------------|----------------|----------|----------------------|-------|
| Intercepts | Behavior | 5005.067 | 1 | 5005.067 | 758.857 | 0.001 |
| | Status | 6030.038 | 1 | 6030.038 | 862.920 | 0.001 |
| | Appearance | 2306.400 | 1 | 2306.400 | 342.641 | 0.001 |
| | Anxiety | 1859.267 | 1 | 1859.267 | 426.455 | 0.001 |
| | Fame | 2381.400 | 1 | 2381.400 | 496.587 | 0.001 |
| | Happiness | 936.150 | 1 | 936.150 | 433.081 | 0.001 |
| | Gender | Behavior | 29.400 | 1 | 29.400 | 4.458 |
| Status | | 53.204 | 1 | 53.204 | 7.614 | 0.010 |
| Appearance | | 19.267 | 1 | 19.267 | 2.862 | 0.102 |
| Anxiety | | 0.000 | 1 | 0.000 | 0.000 | 1.000 |
| Fame | | 38.400 | 1 | 38.400 | 8.007 | 0.009 |
| Happiness | | 22.817 | 1 | 22.817 | 10.555 | 0.003 |
| Error | | Behavior | 184.675 | 28 | 6.596 | |
| | Status | 195.663 | 28 | 6.988 | | |
| | Appearance | 188.475 | 28 | 6.731 | | |
| | Anxiety | 122.075 | 28 | 4.360 | | |
| | Fame | 134.275 | 28 | 4.796 | | |
| | Happiness | 60.525 | 28 | 2.162 | | |

Table 1 shows that there is a difference between boys and girls in the influence of aggressive

computer games on self-concept using multivariate analysis of variance with repeated measures at the

0.05 level of significance and the hypothesis is confirmed.

Table 2 shows the single variation analysis of the subcomponents of self-concept. According to this table, at significant level of 0.01 the impact of aggressive games on the sub-components of self-concept: intellectual and academic status ($\text{sig}=0.01$) and fame ($\text{sig}=0.009$) and happiness ($\text{sig}=0.003$) is different. After playing aggressive computer game, happiness decreases among girls and fame increases among boys and intellectual and educational status increase among girls and boys.

Conclusion:

This study examines the effect of aggressive computer games on the increase of the self-concept among adolescent boys and girls.

The findings confirm the research question whether there is a difference between boys and girls in the influence of aggressive computer games on the self-concept.

In the explanation of this finding that doing aggressive computer games causes the increase of intellectual and educational status of girls and boys we can say that doing aggressive computer games requires using cognitive components such problem solving, coping strategies and concentration and attention and doing these games will improve the intellectual and educational status of adolescents. The computer games researchers have also studied constructs such as selective attention, spatial intelligence, eye-hand coordination, working memory (working memory sections such as: central runner and the executive control center) and short-term memory that are cognitively considered as the basic and exact components of high-level cognitive abilities (8). According to the view of information processing view in adolescence, the attention becomes more selective, strategies become more effective, meta-cognition develops and leads to more recent awareness and the speed of thinking and the ability of information processing increases. The findings of information processing confirm that the adolescents' reasoning is the result of sudden change and it is not a stage but rather the result of their daily experiences (16).

In the explanation of this finding that doing aggressive computer games causes the decrease of

happiness among girls, we can assume that the involvement of girls with these games is not favorable for them because they prefer relationships over rules and regulations due to their biological and genetic priorities. The findings are consistent with the findings of Funk and Buchman (7). In their view, there is a meaningful relationship between the habits of computer games and the self-concept of girls. Girls are more sensitive to gender-related behavioral limitations and this limits their business with computer games. There is an inverse relationship among girls in the between the time allocated to the computer games and the perceived educational competence, behavior, social acceptance, athletic competence and self-esteem. Allocating a long time to computer games among girls can be as an alarm and an indication of the low levels of perceived personal competence. Carol Gillian states that considering others and sensitivity to human relations is more important for girls than boys and this difference states more involvement of women in activities that includes considering others and being worried about them (17).

In the explanation of this finding that doing aggressive computer games causes the increase of fame among boys, we can assume that boys are more successful in simulating themselves with the heroes of the games since most of them are males. Moreover, the existence of personal myth in adolescents causes the increase of fame among boys after playing these games. Agina and tenisuneb stated that the gender of the hero of computer games is effective on the self-regulation and verbal thinking of adolescents and when the hero of the game is the same with the game player, the development of self-regulation and verbal thinking increases (13).

This finding is in line with the theory of Piaget (1958). According to Piaget, there are two distorted interpretations of the relationship between the self and the others in adolescence. These cognitive distortions are imaginary viewers and personal myth. These distortions cause adolescents to imagine that they are at the center of attention and they are unique. When personal myth is combined with the emotional personality, it helps the risk taking of adolescents and satisfies them that they are not vulnerable. It was specified in the study of Green et al that adolescent with personal myth and

high scores of thrill-seeking do more gender risky behaviors, consume more drugs and commit more criminal actions in comparison with their peers (18).

One of the limitations of the current study was the lack of access to adolescents who play computer games on their cell phones or personal computers. In this regard, it is recommended to pay more careful attention to this area for further research.

In the practical view, this finding can be beneficial for the parents, authorities of the children and engineers designing computer games and those who are interested in the field of adolescents. It is recommended that the awareness of the authorities and those who are in the position of decision making of the production and manufacturing of these games for the different effects of these games on the boys and girls will be increased to find a view regarding the cognitive and emotional differences and needs of adolescent boys and girls who do computer games in order to find a better way for the production and selection of the appropriate games for the passing of the adolescence challenges.

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