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The effect of snakes and ladders game on the level of gadget addiction in school-age children

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ABSTRACT

Introduction: The development of technology is marked by the widespread use of gadgets not only by adults, but children also have the same interest. Excessive intensity of gadget use can indicate addiction to gadget use. Children's dependence on gadgets is due to the convenience and sophistication features contained in them, however, the games on gadgets make children less active, have less emotional expression, have minimal self-awareness, and have minimal social interaction with peers because they make children only fixated on their gadget screens. Previous research has revealed that actively play with peers can have a positive influence on children's gadget addiction, playing with peers can also be used as an effort to stimulate aspects of child development. **Objectives**: This research aims to determine the effect of the snakes and ladders game on the level of gadget addiction in school-age children at SDN Sendangmulyo 02 Semarang. **Methods**: This is quasi-experimental research with one-group pretest-posttest design. Purposive sampling was used as the sampling technique with 18 school-age children as respondents. This research used the Shapiro-Wilk Normality Test and the Wilcoxon Signed Ranks Test was used as the hypothesis test. **Results**: The results of the study analyzed using the Wilcoxon Signed Ranks Test showed a p-value <0.05, which is 0.000. **Conclusion**: Based on analysis results can be concluded that the snakes and ladders game influences the level of gadget addiction in school-age children.

KEYWORD: snakes and ladders game; gadget addiction level; school-aged children

INTRODUCTION

Many changes and developments that have occurred in the 21st century have had not only positive impacts, but also negative impacts. Likewise with the development of technology which is marked by the widespread use of gadgets. The use of gadgets is not only by adults, but children also have the same interests. The results of a study in Malaysia stated that 15% of parents gave gadgets to their children before the age of 12. The use of these gadgets is predicted to continue to increase every day in terms of the number and intensity of use in a day (Fadzil et al., 2016).

Excessive intensity of gadget use can indicate gadget addiction. Children's dependence on gadgets is due to the convenience and sophistication features contained in them. In addition, high curiosity makes children continue to play with gadgets for a long time (Suhana, 2018).

Basically, children should learn more by playing and interacting face to face rather than with a gadget screen. Playing is an important phase in the growth and development of children. In addition to providing benefits for child development, playing is also intended for children to learn about the world around them (Hurlock, 2018).

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Children become less active, have less emotional expression, have minimal self-awareness, and have minimal social interaction with peers (Nursalam et al., 2023). The impact of children playing with gadgets continuously is the lack of opportunities for children to engage in social interaction. It can even cause antisocial disorders in children (Epstein, 2015; Karapetsas et al., 2014).

One solution to reduce and prevent gadget addiction in children is through recreation programs. When recreating, children will encounter various new activities so that they can grow their curiosity, so that children will try to find out by playing and exploring new things so that they will forget about their gadgets (Ramanda, 2018).

Based on the background above, the author is interested in conducting research with the title "The Effect of Snakes and Ladders Game on the Level of Gadget Addiction in School-Age Children at SDN Sendangmulyo 02 Semarang".

METHODS

Design

This research is a quasi-experimental with one-group pretest-posttest design. The population in this research were all the 3rd graders at SDN Sendangmulyo 02 Semarang with total 84 students. This research used the shapiro-wilk normality test and the wilcoxon signed ranks test was used as the hypothesis test. The questionnaire in this research used the Digital Addiction Scale for Children (DASC) which examines 9 aspects of gadget addiction, and consists of 25 statement points.

Research Questions

How does the snakes and ladders game affect the level of gadget addiction in school-age children at SDN Sendangmulyo 02 Semarang?

Sample and Settings

Purposive sampling was used as the sampling technique with a total of 18 school-age children respondents. The inclusion criteria were the 3rd grader elementary school student; cooperative; and children with a duration of gadget use more than 1 hour/day. As well as with exclusion criteria were the body feels unwell; and children with disabilities in the lower limbs.

Variables

The independent variable in this research was snakes and ladders game and the dependent variable was the level of gadget addiction.

Instruments

The instrument used was the Digital Addiction Scale for Children (DASC) adapted from Hawi et al (2019).

Data Collections

Primary data in this study were obtained from a questionnaire containing statements about the level of gadget addiction given to elementary school children. Secondary data in this study were obtained from school records in the form of student data, study groups, an overview of the research location, as well as an overview obtained from the parents of students.

Study Procedure

The pre-test was conducted on the day before the intervention. Respondents were divided into 4 small groups consisting of 4-5 people in each group. The human

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size snakes and ladders game intervention was conducted 4 times a week, where each meeting was divided into 4 sessions (1 session = 60 minutes). Each session was conducted on one small group of respondents. The post-test was conducted after the last intervention on the last day of treatment. The data obtained were collected and analyzed using the SPSS program.

Data Analysis

Univariate analysis in this research used central tendency. The data analyzed included mean (average), standard deviation, minimum and maximum values. The Wilcoxon Signed Ranks Test was used to determine the level of gadget addiction.

Ethical Consideration

Researchers maintain the confidentiality of respondents by not including names but only with the respondent code and provide informed consent to ensure that respondents are fully informed and can make decisions voluntarily.

RESULTS

Table 1. Pre and Post Intervention Levels of Gadget Addiction

Gadget Addiction Level	Mean	Min	Max	SD	P-Value
Pre-Test	50.72	45	63	3.577	0.000
Post-Test	46.48	42	57	3.776	

Based on Table 1, before the snakes and ladders game intervention, the respondents' level of gadget addiction had a mean value of 50.72, with the lowest score of 45, and the highest score of 63 with a standard deviation of 3.577. While the mean value of the level of gadget addiction after the snakes and ladders game intervention is 46.48, with the lowest score of 42, and the highest score of 57 with a standard deviation of 3.776. Using the Wilcoxon Signed Ranks Test on the variable level of gadget addiction shows differences in the results of pre-test and post-test data with a p value <0.05, more precisely 0.000, so it can be concluded that there is a significant difference in the level of gadget addiction in the results of pre-test and post-test data on respondents.

Table 2. Category Based on Aspects of Gadget Addiction Before and After Intervention

No.	Pre Test Score	Addiction Level	Post Test Score	Addiction Level	Δ
Preoccupation					
1	51	Medium	47	Low	4
11	51	Medium	42	Low	9
14	51	Medium	42	Low	9
Tolerance					
2	55	Medium	53	Medium	2
7	54	Medium	52	Medium	2
Withdrawal					
3	52	Medium	44	Low	8
8	48	Low	48	Low	0
12	47	Low	43	Low	4

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No.	Pre Test Score	Addiction Level	Post Test Score	Addiction Level	Δ
21	53	Medium	46	Low	7
Problems					
10	50	Low	47	Low	3
13	63	Medium	57	Medium	6
23	50	Low	48	Low	2
25	51	Medium	49	Low	2
Conflict					
9	53	Medium	49	Low	4
22	47	Low	46	Low	1
Deception					
4	50	Low	44	Low	6
16	47	Low	46	Low	1
Displacement					
6	51	Medium	45	Low	6
18	45	Low	43	Low	2
20	50	Low	45	Low	5
Relapse					
17	51	Medium	49	Low	2
19	52	Medium	49	Low	3
Mood Modification					
5	52	Medium	44	Low	8
15	47	Low	42	Low	5
24	47	Low	42	Low	5

Based on Table 2, the highest decrease in the level of gadget addiction is in the preoccupation aspect with a total score decrease of 22; the next highest decrease in the level of gadget addiction is in the withdrawal aspect with a total score decrease of 19; then next in the mood modification aspect with a total score decrease of 18; problems and displacement aspect with a total score decrease of 13; deception aspect with a total score decrease of 7; conflict and relapse aspect with a total score decrease of 5; and tolerance aspect with a total score decrease of 4.

DISCUSSION

The results of this research showed that the level of respondents' gadget addiction decreased with the results of the Wilcoxon Signed Ranks Test p value = 0.000. The results of this study are in line with research conducted by Wahyuningsih and Nawangsari which explains that game interventions in children can reduce excessive use of gadgets (Nawangsari, 2016; Wahyuningsih, 2018). Previous research states that gadget addiction can occur due to several factors, namely (1) internal factors such as low self-control, (2) external factors such as media exposure about gadgets, (3) situational factors such as boredom, anxiety, and not having activities, (4) and social factors such as family as the main reference in children's behavior (Agusta, 2016). Children with moderate to high levels of gadget addiction have been given snakes and ladders game interventions to reduce their level of gadget addiction. Snakes and ladders game can reduce the level of gadget addiction because in its implementation it involves children to actively move and interact with their peers so that it can reduce aspects of children's gadget addiction such as preoccupation, tolerance, withdrawal,

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problems, conflict, deception, displacement, relapse, mood modification (Iswanti et al., 2021).

The results of this study showed a decrease in the level of gadget addiction in the mood modification aspect with a total score reduction of 18. The children who were respondents in this study had been given the intervention of the human size snakes and ladders game to modify mood. The thing that is influenced by the snakes and ladders game in the aspect of mood modification is that playing the snakes and ladders game is something interesting and fun so that it can be a place for children to express emotions, and encourage children to interact socially with their peers. This is in line with previous research which states that playing can stimulate the senses of the child's body, explore the surrounding world, and the ability to socially interact with others will also develop (Ramanda, 2018).

The results of this study showed a decrease in the level of gadget addiction in the preoccupation aspect with a total decrease in score of 22; and a decrease in the level of gadget addiction in the relapse aspect with a total decrease in score of 5. The thing that is influenced by snakes and ladders games in the aspects of preoccupation and relapse is that playing snakes and ladders games can increase social interaction, especially with peers so that it can be a means of recreation in overcoming boredom and making children's attention and focus diverted to exciting activities that can make children forget about their gadgets. This is based on previous research which states that recreation programs and social interaction can be a solution to reduce and prevent gadget addiction in children (Ramanda, 2018).

The results of this study showed a decrease in the level of gadget addiction in the displacement aspect with a total decrease in score of 13; and the withdrawal aspect with a total decrease in score of 19. What is influenced by the snakes and ladders game in the aspects of displacement and withdrawal is that when playing the snakes and ladders game, children play it with their peers, thus providing opportunities for children to engage in social interactions that can stimulate social-emotional development when interacting with peers by forming positive characters in children such as teaching moral values in managing children's emotions, and can reduce the impact of playing gadgets continuously, and avoid antisocial disorders in children. This is in line with previous research which states that children have the potential to be affected by antisocial disorders due to continuous usage of gadget (Epstein, 2015; Karapetsas et al., 2014).

The results of this study show a decrease in the level of gadget addiction in the deception aspect with a total decrease in score of 7; and tolerance aspect with a total decrease in score of 4. What is influenced by the snakes and ladders game in the aspects of deception and tolerance is that it can help control the use of gadget by keeping children busy by restoring the importance of the real play phase in children involving physical activity; can stimulate children's cognition to be able to focus; stimulate children's motor and social-emotional aspects by forming positive characters in children such as teaching moral values in managing children's emotions, which aims to keep children away from their gadgets. This is based on previous research which states that one solution to reduce and prevent addiction is to control the use of gadgets in children (Ramanda, 2018).

The results of this study showed a decrease in the level of gadget addiction in the problems aspect with a total score decrease of 13; and the conflict aspect with a total score decrease of 5. What is influenced by the snakes and ladders game in the aspects of problems and conflict is that it can stimulate the actual abilities and potential abilities of children towards the development of higher mental functions, such as cognitive development of children by practicing focus when it is their turn to roll the

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dice and advance the pawns several plots to match the number of dice roll results; social-emotional development when interacting with peers by forming positive characters in children such as teaching the value of togetherness, a graceful attitude (if you lose), increasing the spirit of sportsmanship, honesty, and obeying the rules; motoric development by walking or jumping when running the pawns; and language/communication development. This is in line with previous research which states that the process of playing can create a ZPD (zone of proximal developmental), which is an area that connects the child's actual abilities and potential abilities (Musfiroh, 2008).

The results of the Wilcoxon Signed Ranks Test as a comparison between before and after the intervention showed that at the time of the post-test after the snakes and ladders game intervention produced a p-value = 0.000. This explains that there is an effect of providing snakes and ladders game intervention on reducing the level of gadget addiction in school-age children. The snakes and ladders game was chosen as an alternative play therapy to reduce the level of gadget addiction in school-age children in order to achieve optimal development. Children become active in physical activities, stimulate children's cognition to be able to focus, be able to express emotions, increase self-awareness, and interact socially with peers who can form positive characters in children such as teaching moral values in managing children's emotions.

Strengths and Limitations

This study was conducted without a control group, so there was no comparison of results between the intervention and non-intervention groups. This study was conducted 4 times a week, and the pre-test assessment was only conducted on the day before the intervention, and the post-test was only conducted on the last day after the last intervention. Pre-test and post-test assessments were not conducted every day during the snakes and ladders game intervention. There is a possibility of respondents' lack of ability to understand the statements on the questionnaire and also the possibility of respondents' dishonesty in filling out the questionnaire.

Implications for Practice

The results of this study can be an innovation in an effort to provide important knowledge to optimize child development by reducing the time of using gadgets in school-age children and conducting snakes and ladders game activities as an alternative play therapy to reduce the level of addiction to gadgets in school-age children. This research can be one of the references used for further research related to reducing the level of gadget addiction in school-age children and further exploring the stimulation that will be given to developmental aspects in future studies.

CONCLUSIONS

The results of the study analyzed using the Wilcoxon Signed Ranks Test showed a p value <0.05, which is 0.000, so it can be concluded that the Snakes and Ladders Game has an influence on the level of gadget addiction in school-age children at SDN Sendangmulyo 02 Semarang.

Conflict of Interest Statement

None.

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