THE LONG-STANDING RELATIONSHIP WITH GADGETS PER DAY ON THE LEVEL OF INTERNET ADDICTION IN CHILDREN WITH SPECIAL NEEDS

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Abstract

Indonesia is the fourth largest smartphone user country in the world after China, India and the United States. Currently, smartphone users are not only normal children and adolescents but also children and adolescents with disabilities who also use the internet as a medium of learning, entertainment or to fill spare time. This study aims to link duration of gadget use in children with special needs to the level of internet addiction.

Methods: This research is a descriptive analysis with a *cross sectional* design . The research data was taken through the Internet Addiction Test (IAT) questionnaire which was distributed through a form which was divided into normal, mild, moderate, and severe addiction levels. Data were analyzed using Gamma correlation test analysis.

Results: This study found 18 respondents with special needs. Percentage of old gadgets less than 2 hours per day (38.9%), more than 2 hours per day (50%) and unlimited (11.1%) where the level of addiction is normal (27.8%), mild (33 .3%), moderate (27.8%), and severe (11.1%). There was no significant relationship between the length of time with gadgets and the IAT level (p 0.551).

Conclusion: There is no relationship between the length of time with gadgets per day with the level of addiction in children with special needs.

Keywords: age group , age with gadgets, level of addiction, children with special needs

The internet is one of the technological products that is a global human need and lifestyle, including in Indonesia. Internet usage penetration is increasing significantly in Indonesia, around 73.7% of the total population, which is the result of a survey conducted by APJII (Association of Indonesian Internet Service Providers) for the 2019-2020 period. Indonesia has been named the fourth largest smartphone user country in the world after China, India, the United States, where users include children and teenagers (Zaini and Soenarto, 2019; Gunawan *et al.* , 2021). Internet users currently include all walks of life, both adults, teenagers and children are able to recognize the use of the internet, even children with special needs are also able to use the internet either as a medium of entertainment or learning media introduced by their companions or parents. However, excessive internet use will cause an internet addiction disorder (Istiqoma and Effendi, 2019; Parwatha and Ardjana, 2019; Gunawan *et al.* , 2021).

The condition of a person who uses the internet intensively and is unable to control it, causing negative tendencies is generally called internet addiction. Research on internet addiction was first introduced by Dr. Kimberly Young in 1996 provided a definition of internet addiction and issued the *Internet Addiction Test* (IAT) assessment instrument as a revision of the YDQI, *Chens Internet Addiction Scale* (CIAS) and the *Internet addiction scale* (IAS). The pathophysiological concept of internet addiction is the same as addiction by drugs or substances in the form of a circuit of impulsivity or compulsion with symptoms where the brain is difficult to say no (Parwatha *et al.* , 2019; Gunawan *et al.* , 2021). diagnosis of internet addiction in the *diagnostic and statistical manual of mental disorder* (DSM)-5, namely (1) excessive internet use, (2) *withdrawal*, (3) tolerance and (4)

adverse consequences, including refusal, lying, achievement in poor schooling, fatigue (*fatigue)* and social isolation (Parwatha *et al.* , 2019).

Children with special needs have become a phenomenon that has attracted attention in the last two decades in almost all countries in the world. The number of children with special needs in Indonesia from year to year continues to increase. The United Nations estimates that at least 10 percent of school-age children have special needs. Several terms are often used and interpreted to refer to children with special needs, for example: disabled, children with developmental disabilities, disorders/abnormalities, psychopathology, disability, to a new term which was later agreed to give a non-discriminatory and positive impression is an acronym for Different Abled People (Kristiana, Ika Febrian; Widayanti, 2016). According to the classification and type of disorder, children with needs are grouped into physical disorders, mental disorders, and emotional and behavioral disorders. Physical abnormalities include blind, deaf, speech impaired, cerebral palsy and limb abnormalities due to imperfect growth. Children with mental disorders are children who have deviations in the ability to think critically, logically in responding to the world around them. Mental disorders or intellectual disorders include mental retardation, slow learner, specific learning disorder, autism and indigo. Behavioral and emotional disorders include tuning disorders, communication disorders and hyperactivity (Abdullah, 2013; Desiningrum, 2016).

Research on the effect of internet use on children with special needs is very limited. This research is a preliminary study that aims to determine the effect of using gadgets per day on the level of internet addiction in children with special needs.

Method

This research is an *analytical descriptive study* where the inclusion criteria in this study include children with special needs which are included in neurodevelopmental disorders, including: ADHD (Attention Deficit Hyperactive Disorder), Intellectual Disorders, Communication Disorders, Specific Learning Disorder, and ASD (Autism Spectrum Disorder).), aged 7 to 17 years and familiar with the use of gadget media. Exclusion criteria were ABK with physical abnormalities, aged less than 7 years or more than 17 years and not familiar with gadgets. The research was conducted through a survey through social media using Google Forms with the link https://forms.gle/8DpaYwQhcRz5XyyR9 which was distributed on social media for special schools and children with special needs in Malang City in August 2021. Data were obtained from filling out the gform by parents who have special needs children according to the criteria. research inclusion. In this study, 28 respondents met the inclusion criteria of 18 respondents.

Fingdings and Discussion

This study obtained 18 respondents with the characteristics as in table 1.

Table1. Characteristics of respondent data

Characteristics of respondents	Amount (n)	Percentage
Gender		
Man	14	77.8%
Woman	4	22.2%
crew age		
Children (7-11 years)	11	61.1%
Early Adolescence (12-17 years)	7	38.9%
Type of crew		
Intellectual disability	8	44.4%
Communication Disorder	7	38.9%
ADHD	1	5.6%
ASD	1	5.6%

Specific Learning Disorder	1	5.6%
Age of knowing gadgets Toddler (0-5 years) Children (5-11 years) Early Adolescence (12-16 years)	 4 13 1	 22.2% 72.2% 5.6%
Old with gadgets K2J L2J TT	 7 9 2	 38.9% 50.0% 11.1%

Table 1 above shows that the children with special needs in this study were dominated by 77.8% males compared to females, with the majority being 61.1% of the age of childhood and 72.2% of the age when they were familiar with gadgets. This is according to a report by Zaini (2019) that in 2014 there were around 47 million active *smartphone* users throughout Indonesia, of which 79.5% came from the age category of children and adolescents. But in this study of 18 respondents 22.2% of respondents knew gadgets from the age of toddlers. In another study said the optimal age to introduce *gadgets* is above 2-3 years, this aims to develop physical activity and social interaction. Today's children are called Generation Z, who thrive around the world of computers, cell phones, and other online-connected devices. (Istiqoma and Effendi, 2019; Zaini and Soenarto, 2019).

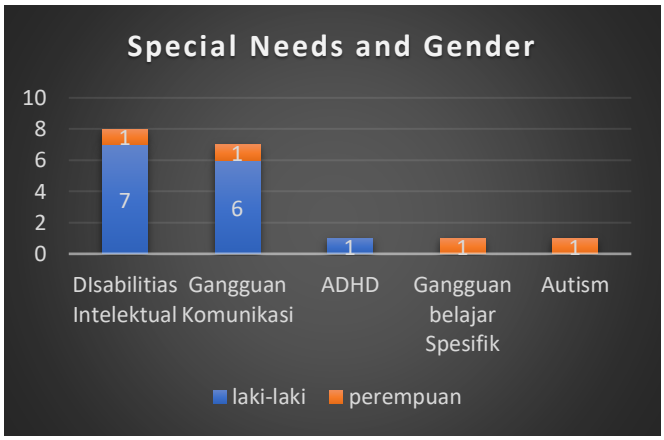

Figure 1. Diagram of Children with Special Needs and Gender

In this study, it can be seen in table 1 and Figure 1 shows that 44.4% of the respondents are children with intellectual disabilities who use gadgets, especially the majority of men. Based on WHO data, it is reported that 15% of the world's population are children with special needs, where they have the same rights as other normal children, such as obtaining education, employment, inclusive social facilities and also obtaining the right to access inclusive technology. Indonesia has provided 225 telecommunications regulations to serve the needs of disabled groups so that a lot of information and communication is easily accessible for children with disabilities through inclusive technology. The world of the internet can have a positive and negative influence on its users. Children are vulnerable to the negative effects of the internet, such as the BPS report (2014) reporting that many Indonesian children use the internet inappropriately, including around 80 million children accessing online pornography (Istiqoma and Effendi, 2019). In this study, it was found that children with special needs were familiar with gadgets since toddlers and found the level of internet addiction. Figure 2 shows that children with special needs experience more than 33% of mild internet addiction while the level of severe addiction is 11%. Internet addiction is a pathological condition due to overuse of the internet (Parwatha *et al.* , 2019).

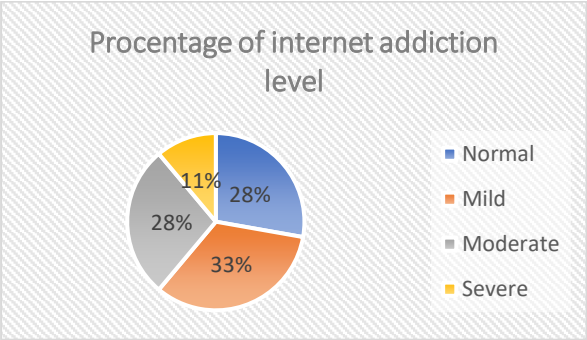

Figure 2. Percentage of Internet addiction level

Figure 2 shows the level of mild addiction to many children with intellectual disabilities, moderate addiction to communication disorders and severe addiction to ADHD. Several studies have reported that internet addiction causes disturbances in the *frontal* regions of the brain, particularly *the dorsolateral prefrontal cortex (DLPFC)*, an area responsible for cognitive function, motivation, and *impulse* control . Volume *depletion was* also found in the *gray matter in the* left *anterior cingulate*, left *posterior cingulate*, *left insula*, left *lingual gingrus*, and *dorsolateral prefrontal cortex*. *The prefrontal cortex* (PFC) is concerned with the craving process in Internet addiction. In addition, PFC is also responsible for decision making. The PFC is divided into the *orbitofrontal cortex* (OFC), *dorsolateral prefrontal cortex* (DLPFC), and *rostral prefrontal cortex* (RPFC). Disorganization of the DLPFC and RPFC areas can lead to cognitive dysfunction, incorrect decision making, and inflexible concrete thinking. The PFC area in adolescents is immature, so it is addictive. The internet that occurs in this age group will affect the process of transformation and maturation of the brain structure. A person with internet addiction may also exhibit emotional and memory impairments. Internet-addicted adolescents show activation of *the parahippocampal gyrus* (PHG), *posterior cingulate cortex* (PCC), *precuneus*, and *amygdala.* The greater one. This brain area is associated with desire processes that involve emotional functions (fear, sadness, and anxiety), memory, motivation, attention, and empathy (Hakam, Levani and Utama, 2020).

In figure 3 severe internet addiction occurs in ADHD and communication disorders. Several studies have reported a relationship between internet addiction symptoms and ADHD, depressive disorder, social anxiety disorder, substance used disorder, and aggressive behavior where internet addiction as a comorbid contributes to the underlying mechanism (Lundin, 2019).

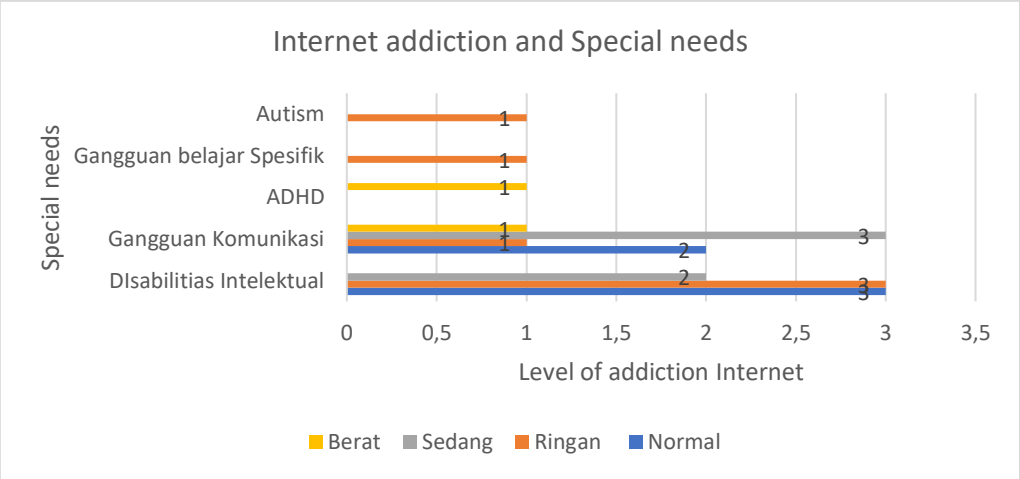

Figure 3. Diagram of the level of internet addiction in children with special needs

Table 2. Correlation of time with gadgets per day on the level of internet addiction

		IAT level				P Value
		Normal	Light	Currently	Heavy	
Old with gadgets per day	K2J	3	1	2	1	0.551
	L2J	2	4	3	0	
	ST	0	1	0	1	

Some of the risk factors for children with special needs experiencing internet addiction include the environment around the child, the pattern of children's education, and including the rules for using gadgets for children. Table 2 shows that the duration of the gadget is more than 2 hours (K2J) and in the unrestricted group (TT) the level of severe addiction is found, but the relationship is not significant. This can happen due to the small number of respondents. The existence of internet addiction in children with special needs in this study needs to be a concern for parents in order to limit the time in internet use and the need for supervision in the use of gadgets. The results of other studies show the optimal time for children aged 3-7 years to play gadgets for a maximum of one hour every day (M, 2017; Zaini and Soenarto, 2019). Parents and educators need to know about handling and prevention as early as possible for children with special needs who are addicted to the internet so as not to aggravate the level of addiction and to improve neurodevelopment in children with special needs to develop optimally.

Conclusion and Suggestion

The rate of severe internet addiction occurred in children with ADHD and communication disorders, and moderate and mild addiction were seen in children with mild disabilities. There is a relationship between the length of daily use of gadgets on the level of internet addiction which is not significant in children with special needs.

Further research is needed regarding risk factors and other comorbidities in children with special needs related to the use of gadgets so that early treatment and prevention can be carried out on neurodevelopment in children with needs due to internet addiction.

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