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The Connection Between Screen Time And Emotional Trauma: A Case Study Of Bruneian 3-Year-Old Children

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ABSTRACT

The study aims to explore if there is an association between screen time and emotional overload among the 3-year-old children in Brunei. It is vital to find out the association of screen time with emotional development at this stage of child development. Children at this age naturally experience emotional outbursts that peak around this time, allowing them to learn to exert emotional regulation. This study involved 12 daycares in Brunei that volunteered to participate in the research with a sample of 165 parents with 3-year-old children. The duration of screen time as well as the levels of emotional overload among the children in this study are analyzed using descriptive statistics. The data was further analyzed with the Pearson Correlation Test to determine the association between screen time and emotional overload. The result of the study shows that most of the children in this study spent more than the recommended amount of screen time recommended by the World Health Organization (WHO). The study's most crucial conclusion is that there is a mildly significant positive association between screen time and emotional overload, with a value of 0.33* (p 0.01), indicating that the more screen time a child spends, the more likely a child is to experience emotional overload in this study. This study recommends that parents, guardians, and educators moderate and oversee their children's use of digital gadgets based on these findings.

Keywords: Screen Time, Emotional Overload, Brunei, 3-Year-Old Children.

INTRODUCTION

Electronic technologies have advanced rapidly in many aspects of human existence as their importance in offering ever-increasing conveniences has grown. Electronics are used for a variety of purposes, including entertainment, communication, academics, and many others. Smartphones, tablets, computers, laptops, and televisions, or, to put it another way, any device that reflects virtual reality on screen, are examples of these technologies. Furthermore, the Brunei Government's Smart Nation through Digital Transformation initiative, which aims to increase broadband usage from 86 percent for households to a targeted coverage of 99 percent in the country, will have an impact on householders' use of electronic technologies.

Electronics have unquestionably taken over our lives, and they play a significant role in our daily life. Everywhere we go, we can see it. People on the train to work look at their phones, either checking the weather forecast for the day or communicating with loved ones about their whereabouts. During mealtime, we've even seen children watching cartoons on their parents' phones. When we see it in this ever-modernizing society, it is no longer shocking. Whatever reason we utilize digital tools, we cannot deny their importance in our daily lives. Children are

not exempt from using electronic devices. They are growing up in a digital world since they were born in the modern period. Electronics are getting increasingly affordable. According to a survey of children from low-income and minority communities, 96.6 percent of the children in the research have used mobile devices, and nearly three-quarters of the 350 children have their own mobile device (Kabali et.al, 2015). According to figures published by the American Academy of Pediatrics, youngsters spend about 7 hours using devices. Meanwhile, the suggested amount of time spent on devices for children aged 3 to 5 years old is only one hour, implying that children spent more time than that. The increasing prevalence of electronic gadgets also poses concerns on to what length do screen time hinder children's emotional development. At this point, we know that longer screen time can contribute to behavioral misconduct among children of age 3 to 6 years old (Hosokawa & Katsura, 2018, Xie et al., 2020). However, little is still known of its relationship with emotional overload among young children, particularly of age 3 years old, where emotional outburst would peak (Fetsch & Jacobson, 2013). It is unknown if the length of screen time can heighten or lower children's level of emotional overload. The over usage of electronics may hinder emotional development as children focus more on the virtual screen, which may lead to the withdrawal from the social life around them such as from their own parents (Lilard, Li & Boguszewski, 2015). Kardaras (2016) explained that when children are exposed to this digital dopamine stimulants, they are more likely to want more and become addicted to gadgets. When children are overly stimulated by gadgets, their pituitary gland is also aroused through the hypothalamus leading to the switch in the 'fight or flight' mode. Hence, if children are engaging in screen time excessively, they are at risk of constant adrenal stress causing health and behavioral issues.

Electronics, on the other hand, cannot simply be removed from children's lives; as previously stated, they are available from everywhere, and the functions they serve are becoming increasingly important in our lives. As devices become increasingly common, educators may feel compelled to include more digital learning into their classrooms. The abundance of electronics at home can make it difficult for parents to strike a balance for their children between the virtual and real worlds. Parents and teachers will need to make accommodations for devices where they are needed, as well as adjust the amount of time children spend on gadgets and the type of material they consume.

BACKGROUND

In relation to gadget usage at an early age, there are worries and concerns over the impact of overconsuming media on children such as their physical, language and social and emotional development. When playing with electronics, it requires children to be at sedentary to focus on the screen, which would mean that they will not be actively moving, compared to when they play physically. Lack of movements can seem innocent on the surface, but children at this age should be using their body to develop their muscles, as well as playing as a foundation to learning. It can also be a contributing factor to obesity among young children. (Suglia et.al, 2013). A study on 2-year-olds found that Body Mass Index (BMI) increased for every hour per week of media usage (Wen et.al, 2014). Pons & Harris (2000) investigated the relationship between screen time and emotion understanding. The findings of the research concluded that children with higher screen time, viewing tv or game console at the age of 4 and 6 years, have difficulties in emotion understanding two years later. In addition to this, the effect of watching TV at the age of 4 years are found on girls while effects of gaming are observed on boys' mentalistic understanding.

Impact of Gadgets on Children's Emotions

Problems with emotion regulation may be connected to poor emotional development. When children struggle to regulate their emotions, their sentiments are repressed, and they are unable to make sense of their emotions or express them, which can lead to emotional overload. Marinelli (2017) found that parents deemed that electronics do not help their children to be physically active which suggests a negative perception of electronics on children's socio-emotional development. Liu et. al. (2021a), found that preschoolers aged 3 to 6 years who spent more than 60 minutes of screen time showed more behavioral problems compared to children with screen time of less than 60 minutes. Dauw (2016) explained that even though screen activities can provide children with a source of entertainment when parents are occupied with work, they believe the challenges outweigh the benefits as parents found it difficult to take away gadgets when they are ready to interact with their children. This is in line with the conclusion whereby parents-triggered transition causing more emotional resistance when screen time session is over. Children often resolve their issues by having an emotional outburst, also known as a tantrum, when their emotions are at their pinnacle. The severity of their tantrum may be determined by how irritated they are or how long they have suppressed their strong emotions. Hiniker et. al. (2016) found that that parents-triggered transition caused more resistance from children compared to technology-triggered transition. Allen & Vella (2015) in a longitudinal study found that screen time was positively associated with hyperactivity, peer problems and conduct problems in both samples. Another finding forms the same study pointed that high screen time is linked with emotional symptoms in young children, and to the development of hyperactivity and conduct problems in older children, two years later. Setiawati et. al. (2019) discovered that most children used smartphone for more than 60 minutes per day and the use of smartphone is negatively correlated with social emotional development. Al Sagr & Abdullah (2020) indicated that there are links between excessive screen time and mental and physical health disorders.

To lay the groundwork for a strong emotional domain, children's first few years should be spent developing good and meaningful experiences. Children that have this strength will be able to better regulate and comprehend their emotions as they grow older. They may find it simple to keep their cool in moments of confrontation since they have a strong sense of self and emotions.

LITERATURE REVIEW

Setiawati, Solihatulmillah & Cahyono (2019), examined the relationship between the use of gadgets for children's social emotional development in kindergarten children in Indonesia. A questionnaire is distributed which recruited a total of 33 samples which are parents. The findings indicated that most children used gadgets for more than 60 minutes per day and the dominant type of device they use is smartphones. The main highlight of the study is however, 20 children in this study have a good social emotional development as they utilize the gadgets to educational uses. As a result from Chi-Square correlation test between the two variables, the p-value was found to be 0.011 ($p<0.05$), which suggests that there is a relationship between screen time and social emotional development. Perhaps, with a larger sample, this study could have a different result.

Allen & Vella (2015), examined the cross-sectional and longitudinal relationships between screen time and psychosocial well-being in early and late childhood. Two groups of samples were recruited among young children of aged 6 and older children of aged 10 years old. After

analyzing their data, the researchers found that screen time was negatively associated with prosocial behavior but is positively associated with hyperactivity, peer problems and conduct problems in both samples. Another finding of the study pointed by the researchers is that high screen time is linked with emotional symptoms in young children, and to the development of hyperactivity and conduct problems in older children, two years later.

Laili (2017), explore the effect of using gadgets on personal social during early childhood. It adopts an analytical method with cross-sectional prospective design. The variables defined in this study are education, economic status and social personal. The result from this research is such that the researchers found a correlation between exposure of gadgets with personal social with the significance value of $0.001 < a$, while there is no association found for personal social with economic status. This study is useful in highlighting that the over usage of gadgets may affect children's personal social. Walker & Weidenbenner (2019), studied the association between empathy development and social and emotional learning when using real versus digital world. It used a qualitative interpretive methodology to support the use of electronics with human mediation to teach Social and Emotional Learning skills. The author concluded that technology is an essential instrument to evaluate and teach socio-emotional skills, but it is not restricted as the only means as the author suggested that the trait that makes a human being, particularly empathy development can only be taught within a social context in a real environment.

Keumala, Yoestara & Putri (2018) explored the effects of Information Communication and Technology (ICT) on children's character building. The research designed to described qualitatively where they gathered their data from library research and interviews. The findings of the study suggest that giving children permission to use gadgets and internet in early childhood has positive and negative impacts. The authors outlined children may have better motor skills, improved thinking, and critical skills. On the other hand, the authors also suggested that children using gadgets have the potential to face serious problems such as speech delay, attention deficit, learning problems and mental disorders which all may affect children's characters. Al Sagr & Abdullah Al Sagr (2020) synthesized the effects of digital devices on the growth and development of young children. This study found that there are both positive and negative impacts of gadgets for young children. However, the authors suggested that there are more negative effects of gadgets for children than the benefits based on their literature analysis. According to the authors, although gadgets usage is not the primary factor to health problems, there are links between excessive screen time and mental and physical health disorders. Gadgets can be positive when it is mediated by adults for content and duration supervision.

METHODOLOGY

This cross-sectional study was conducted by collecting quantitative data from 165 parents of 3-year-old children from 12 daycares in the Brunei-Muara district over the course of two weeks. Parents at participating daycares were given a set of questionnaires consisting of 21 questions divided into Sections A and B, the first of which recorded the amount of screen time spent by their children as well as items related to their children's screen activities. Section B, on the other hand, was meant to obtain parents' responses to their children's screen time experiences and behaviors. There were 12 questions to which parents had to respond using a 5-Likert Scale ranging from 1 to 5: 1 denotes strong disagreement, 2 denotes disagreement, 3 denotes neutrality, 4 denotes agreement, and 5 denotes strong agreement. To assist parents who do not speak English, a Malay translation has

been included to the present questionnaire. The questionnaire was also piloted, and the Cronbach Alpha was found to be 0.71, indicating that the instrument was reliable.

RESULTS

Table 1 shows the frequency of children spending on screen time. A question about children's screen time was asked in the first part. According to the data collected under this question, only 27.3 percent of the children in this study, or 45 children, spent 1 hour watching a screen, which is in accordance with the WHO's recommended screen time for children aged 3 years old. In this study, 72.7 percent of participants spent significantly more time on screens than was suggested by WHO, 2017. The majority of the children, 62 out of 165, spent two hours every day on screens for various electronic gadgets. Around 18.2 percent of children, or 30 children, spend more than 4 hours each day in front of a screen.

Table 1: Screen Time Duration among 3 Years Old Children

Screen Time (Hr)	Frequency (N)	Percent (%)	Cumulative Percentage (%)
1 hour	45	27.3	27.3
2 hours	62	37.6	64.8
3 hours	20	12.1	77
4 hours	8	4.8	81.8
More than 4 hours	30	18.2	100
Total	165	100	

For each item in the Table 2, respondents rated the item on a Likert Scale, with 1 being strongly disagree and 5 being strongly agree. The selections are all coded from 1 to 5 and tested using the mean. The key insight from this research is that children who are withdrawn when using electronics and children who throw tantrums when the item is taken away have relatively high mean scores of 2.95 and 2.67, respectively. Meanwhile, there is no substantial difference in tantrum duration, frequency, or intensity.

Table 2: Emotional Overload Among 3 Years Old Children

Items of Emotional Overload	Minimum	Maximum	Mean
Tantrum Duration	1.00	2.00	1.16
Tantrum Frequency	1.00	4.00	1.56
Tantrum Intensity	1.00	4.00	1.43
Difficulty to take away Gadgets	1.00	5.00	2.27
Child throws tantrum when gadget is taken away	1.00	5.00	2.67
Child’s tantrum is uncontrollable	1.00	5.00	2.00
Child is withdrawn when using gadgets	1.00	5.00	2.95
Child easily gets irritated after screen time	1.00	5.00	2.42

The value of the Screen Time children spends on a daily basis and the total Emotional Behaviors scores extracted from summing up values from 8 items under the Children's Emotional Behavior

section of the questionnaires, which can be found in Table 3, were used to check the correlation between the two variables. After the values have been added up, a Spearman's rho correlation test was used to compare them to the value of screen time. Screen Time and Emotional Overload have a slight positive significant association in this study, with a r value of 0.33** and a p value < 0.01. This indicates that the more time children spend in front of a screen, the more likely they are to experience emotional overload.

Table 3: Correlation Between Screen Time and Emotional Overload

	Screen Time	
	r	**p**
Emotional Overload	**0.33****	**0.000**

P < 0.01

DISCUSSION

The goal of this study is to see if there is a link between screen usage and emotional overload in 3-year-olds. This study emphasized the growing prevalence of gadget use among young children, finding that 72.7 percent of children in this study spent more than the World Health Organization's (2017) suggested period of 1 hour for screen activities for children. Despite the known effects of screen time on children's development, it is acknowledged that children's use of gadgets is still not limited to the recommended guidelines for sedentary activity, raising the question of whether parents are truly aware of the effects of excessive screen time and how to manage their children's screen time.

Anger tantrums in children can be caused by a variety of factors, and the severity of the tantrum relies on the severity of the child's temper. When a child's needs aren't addressed, he or she is prone to emotional outbursts. Furthermore, children at this age are increasingly attempting to establish control and move power away from their parents. Tantrums are another way for children to vent their dissatisfaction and release bottled-up emotions. This study's findings on the duration, intensity, and frequency of emotional outbursts show no notable examples that raise red flags.

In this study, we also look at the levels of emotional overload that children show. When children's electronics are taken away from them, they exhibit a distinct pattern of tantrums. This conclusion supports with Hiniker et al. (2016)'s findings, which revealed that transitioning from gadgets triggered by technology upsets children more than transitioning from gadgets triggered by parents. When most parents take away their child's gadgets or devices, it demonstrates that they are met by an upset child. Marinelli (2017) reported that Parents report that it is difficult to take devices away from their children, and that they interact less with others while using them. Children learn by interacting with their surroundings. They expand their understanding of the world by investigating their surroundings and interacting with others. According to this survey, many parents of 3-year-olds have discovered that when they spend time on gadgets, their child withdraws from their surroundings. This could be a severe problem since youngsters who are isolated from the rest of the world may struggle to adjust to social circumstances and regulate their emotions (Rubin et. al, 2013). Furthermore, studies have indicated that being cut off from the outside world increases the likelihood of acquiring attention deficit hyperactivity disorder (ADHD) (Hill et al., 2020; M, 2017; Niiranen et al., 2021).

Parents should play a substantial role in regulating their children's use of technology and media consumption because of this understanding.

Another interesting finding from this study's analysis of children's emotional behavior around devices is that children become easily angry after screen usage. It's probable that this is due to children's ongoing dissatisfaction with the transition of their enjoyment from playing devices to engaging in real-life activities, which can lead to boredom. More research, however, is required to go deeper into this subject.

The primary goal of this research is to see if there is an association between screen usage and emotional overload in 3-year-old toddlers. The analysis discovers a slightly significant positive association between the two variables. Even if the effects are minor, there is still a risk that screen usage will contribute to emotional excess. This conclusion suggests that parents should limit their children's use of gadgets and monitor the content they acquire. If playing gadgets is a part of a child's daily routine, he or she will look forward to playing gadgets the next day. What is more troubling is the effect of screen time on a child's development, which will often show warning signs at a later stage. It may be too late to reverse the consequences by this point.

LIMITATIONS AND SUGGESTIONS

The first point to bring up about the limitation of this study is that it uses closed-ended questions which limits the options for parents. Why this can be an issue is that respondents may feel forced to pick an answer from the available options although it may not be applicable to their situation. As an example, for the question pertaining children's screen time, 'How long do your child spend on gadgets daily?', and the options available to parents to answer are '1 hour', '2 hours', '3 hours', '4 hours' and 'More than 4 hours' and it did not give a choice for parents to answer 'No screen time' as from the pool of participants, there may be some parents who did not allow their child to have a screen time.

Generalizability can also be one of the issues this study has. Questionnaires are only distributed to daycares around 3 out of 4 districts in Brunei Darussalam which compromise of Brunei-Muara, Tutong, and Kuala Belait district. However, all the 12 daycares that agreed to participate in the study are from Brunei-Muara district, which can further decrease the generalizability of this study. In addition to that, this study did not take parents who did not send their child to a daycare into participation. Perhaps, a different result could be obtained if these factors are taken into consideration, and it could present the population better.

As the correlation between screen time and emotional overload is mild, a different setting or research methodology could probably give a better and valid result. This study uses questionnaires to collect data regarding the topic from parents' responses, which may be subjected to biasness as participants could intentionally give a different answer. Their mood could also affect in the way they answer the questionnaire. As an example, the scenario could possibly be that participants are tired when they answer the questions and chose any choices for the sake of submitting a response.

A different research design could be done to improve the validity and findings of this study. One suggestion is to convert this study into a longitudinal study which compares the effects of excessive screen time on children's emotional overload between children of ages 3, 4 and 5 years old, in an experimental setting. Typically, at the age of 3, children's emotional outburst usually peak and it fades away as children enters the age of 4. With a further study, it will aim to investigate whether or not children's emotional overload still shows at the age of 5 years old as a result of excessive screen time.

CONCLUSION

Despite the limitations, this study suggests that there is an association between the duration of screen time children spend and emotional overload. Excessive screen time may contribute to the increase of emotional overload which are shown through their emotional behaviors. This study also finds that most children are spending more time than they should playing with gadgets. Further research can be done in order to understand the nature of this association and the comparation of emotional overload in older children with screen time as a contributing factor. This research also hopes to remind parents to reduce their children's screen time and pay attention to their emotional development.

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