



ISSN: 2395-7476
IJHS 2019; 5(2): 01-05
© 2019 IJHS
www.homesciencejournal.com
Received: 01-03-2019
Accepted: 04-04-2019

Sowmya ASL
PhD Scholar, Department of
HDFS, SPMVV, Tirupati,
Andhra Pradesh, India

Manjuvani E
Professor, Department of HDFS,
SPMVV, Tirupati, Andhra
Pradesh, India

Usage of electronic gadgets among preschool children

Sowmya ASL and Manjuvani E

Abstract

In recent years, electronic gadgets are playing a vital role in the lives of children. This research paper presents the availability and ownership of electronic gadgets among preschool children and their usage during working days and holidays. The sample of this study comprised of 200 preschool children (3 to 6 years) randomly selected from twin cities of Hyderabad, Telangana district. An interview schedule was used to obtain the data. The findings revealed that nearly one fourth (23.5%) of preschool children are having their own tablet/IPads and 10% are owned game consoles. Results have shown that usage of electronic gadgets is high in 20% of preschool children during working day whereas it is almost doubled (39%) during holiday. Boys are spending more time with gadgets as compared to girls. The findings also revealed that three fourth (75%) of parents set time whereas one fourth (25%) of the parents do not regulate timings of children spending time with electronic gadgets.

Keywords: Preschool children, electronic gadgets, technology, availability, ownership, usage

1. Introduction

Early Childhood is a critical period for growth and development. Although many factors influence children growth and development, technology plays a significant role in the modern era. Preschool children are exploring different varieties of electronic gadgets like television, smart phone, computer, laptop, tablet, iPad, Game console etc and they are operating touch screens with ease. Numerous studies have documented that children screen time has been considerably increased in the past 5 to 10 years. Ofcom report (2013)^[8] found that among the families with children below 8 years, 72% of children had used a mobile device to play games, watch movies or use apps. It also found that 29% of 3-4 year olds had used a computer or laptop at home, 12% used a tablet to go online, and 58% had online to access games.

Another study conducted by Gentile *et al.* (2014)^[4] revealed that children spend an average of 40 hours per week engaged in television, movies, video games etc which is more than they spend in any other activity besides sleep.

Young children usage of technology has a positive impact on their learning however it sometimes can impede their development. In one study, screen media was found to be beneficial if two key factors – content and context were taken into consideration. They testified that learning from screen media takes place if the content is interactive and provides contingent responses to a child's actions. Another key factor is to ensure screen time is a positively shared experience where parents or caregivers need to help children to apply digital learning in their real life experiences (Lerner and Barr, 2014). Contradicting to this study, Young and Abreu (2011)^[11] mentioned in their research that too much time on the internet can destructively influence numerous aspects of young children's lives possibly leading to non prioritization of important task, psychological problems like anxiety, lower self-esteem and physical health concerns due to lack of physical activities.

The findings of above studies show that children's usage of technology has both positive and negative impact on their development. Winpenny *et al.* (2014)^[10] suggested that as the strong associations between violent media content and child aggressive behaviour have been clearly documented, parents should continue to monitor the content of their children's media. Experts recommended screen time for preschoolers should be restricted to one hour per day. There is need for parents to be aware of these recommendations and set time regulations for children. The present research article presents the availability and ownership of electronic gadgets among preschool children and their usage during working days and holidays.

Correspondence
Sowmya ASL
PhD Scholar, Department of
HDFS, SPMVV, Tirupati,
Andhra Pradesh, India

2. Methodology

2.1 Sample

The sample of this study comprised of 200 preschool children (3 to 6 years) randomly selected from 11 private preschools situated in Hyderabad, Telangana state. Table 1 shows the general profile of preschool children distributed as per their gender and age.

Table 1: Distribution of Sample as per their Gender and Age (N=200)

Age	Boys	Girls
3-4 years	50	35
4-5 years	22	17
5-6 years	47	29
Total	119	81

The above table shows that there are total 119 boys and 81 girls in the sample. Fifty boys and thirty five girls belong to 3-4 year age group. Twenty two boys and seventeen girls are in

Table 2: Household Ownership of Electronic Gadgets (N=200)

Electronic Gadgets	Availability				Internet / satellite connection		Whether child owned the gadget	
	One Set	> One Set	Total	Not available	Yes N (%)	No N (%)	Yes N (%)	No N (%)
Television	170 (85.0)	28 (15.0)	198 (99.0)	2 (1.0)	177 (88.5)	23 (11.5)	1 (0.5)	199 (99.5)
Smartphone	26 (13.0)	173 (86.5)	199 (99.5)	1 (0.5)	190 (95.0)	10 (5.0)	3 (2.5)	197 (98.5)
Computer	104 (52.0)	5 (2.5)	109 (54.5)	91 (45.5)	93 (46.5)	107 (53.5)	5 (2.5)	195 (97.5)
Laptop	113 (56.5)	41 (20.5)	154 (77.0)	46 (23.0)	141 (70.5)	59 (29.5)	2 (1.0)	198 (99.0)
Tablet/ iPad	81 (40.5)	21 (10.5)	102 (51.0)	98 (49.0)	97 (48.5)	103 (51.5)	47(23.5)	153 (76.5)
Game Console	34 (17.0)	0 (0)	34 (17.0)	166 (83.0)	34 (17.0)	166 (83.0)	20 (10.0)	180 (90.0)

Digital screens have become an inseparable part of our lives. Almost all families (99%) are having television set with satellite connection (88.5%) at home. Fifteen percent of them are having more than one television set. In the same way, all families (99.5%) are having smartphones except one who is using basic model mobile. Majority (86.5%) of them are having more than one smart phone at home with internet facility (95%). More than half (54.5%) of the families have computers with internet connection (46.5%) and only 2.5% families have more than one computer set at home. Seventy seven percent of the families are having laptops with internet facility (70.5%) and 20.5% of them are having more than one laptop. Nearly half (51%) of the families have tablets with internet connection (48.5%). Among them, 10.5% of the families are having more than one tablet/iPad. Seventeen percent of the families are having one set of game console with internet connection.

Similar results were observed in the Ofcom (2017) ^[9] report, that showed more preschool children are online than in 2016, with increase of more than ten percent and more than half (53%) of 3 to 4 years and 79% of 5 to 7 years are online.

Studies have shown that parents are purchasing electronic gadgets for children in the preschool age itself. In the present study it is evident that 23.5% of preschool children are having their own tablet / iPad and 10% are owned game consoles. Some parents have expressed that they are gifting the gadgets to their kids on the occasions like their birthdays, festivals etc. These results are in line with the Ofcom (2017) ^[9] survey which revealed that, 21% of 3 to 4 year children and 35% of 5 to 7 year old children have their own tablet. One percent of 3 to 4 year children and 5% of 5 to 7 year old children owned smart phone.

To study the usage of different electronic gadgets – television, smart phone, computer, laptop, tablet, iPad and game console by children and parents, an attempt was made to classify the

the age group of 4-5 years. Forty seven boys and twenty nine girls belong to 5-6 years age group.

2.2 Tool

A questionnaire on “availability and usage of electronic gadgets” was designed and used to obtain the data. The primary respondents were mothers of preschool children. The questionnaire consists of 20 items designed to elicit information about –Household ownership of electronic gadgets, Children usage of gadgets, Child’s usage of features and programs, Parent’s time set. The test re-test reliability of the tool is 0.82.

3. Results and discussion

Usage of Electronic Gadgets

The data collected on various aspects like availability of the gadgets, number of gadgets available, ownership of the gadget by the child and internet connection are presented in table 2.

subject scores into three categories as low, average and high based on the mean and SD value of obtained raw scores. The higher score indicates the higher usage of gadgets. The below table represents the association between child’s usage of electronic gadgets on working day and holiday.

Table 3: Association between Child’s Usage of Electronic Gadgets on a Typical Working Day and Holiday (N=200)

Score	Working Day N (%)	Holiday N (%)	X ² test
Low (Below 9)	95 (47.5)	58 (29.0)	21.19***
Average (10 to 11)	65 (32.5)	64 (32.0)	
High (Above 12)	40 (20.0)	78 (39.0)	

The results reveal from the above table that usage of electronic gadgets is high in 20% of preschool children during working day whereas it is almost doubled (39%) during holiday. Usage is low in 47.5% of children on a working day while it is low in 29% of children during holiday.

The obtained chi-square value of usage of electronic gadgets by the child on working day and holiday is 21.19 which is more than the table value at 0.01 level. Hence it is found that preschool children are spending more time with gadgets on holidays than working days.

The results are similar with findings of Ofcom report (2017) ^[9] which showed that young children are spending online for 1 hour, playing video games for 48 minutes and watching television for 2 hours on a typical working day. Whereas they are spending more time during holidays – online 1 hour 24 minutes, video games 1 hour 12 minutes and watching television for 2 hours 36 minutes.

Gender is found to be one of the factors which influence usage time and studies have shown gender variations in usage of electronic gadgets. Daheia *et al.* (2011) ^[2] found that boys’ screen time was half an hour more than the girls’ screen time

in a day. The below table shows the association between gender and usage of gadgets on a working day and holiday.

Table 4: Association between Gender and Usage of Electronic Gadgets on a Typical Working Day and Holiday (Boys N=119 and Girls N=81)

Usage time	Gender	Low	Average	High	X ² test
Working Day	Boys	54 (45)	39 (33)	26 (22)	0.50 @
	Girls	41 (50)	24 (30)	16 (20)	
Holiday	Boys	34 (29)	31 (26)	54 (45)	6.37*
	Girls	24 (30)	33 (40)	24 (30)	

The findings from table 4 reveal that usage of electronic gadgets is high in 22% boys and 20% of girls on a typical working day. Whereas usage is high in 45% of boys and 30% of girls on a holiday. However chi square value 0.50 showed that there is no association between gender and usage of electronic gadgets on a typical working day. The obtained chi-square value of boys and girls usage of electronic gadgets on a holiday is 6.37 which is more than

table value at 0.05 level. Thus it is revealed that boys are spending more time with gadgets on a holiday as compared to girls. Some parents have opined that it is easy to control girls than boys when they set timings and also expressed that boys throw tantrums.

These results were consistent with the findings of Downey *et al.* (2005) [3] research which revealed that internet usage is slightly higher in boys compared with girls. More than half (51%) of boys and 48% of girls were using internet in their sample. Boys were more likely (nearly 21%) to use the internet than girls (over 18%) and boys seem to be more proactive, or interested, in using the Internet. Their data also revealed that boys report greater levels of access to games consoles compared with girls.

There are many factors which influences children’s usage of electronic devices. Different factors regression analysis is carried out treating child’s usage of electronic gadgets as dependent variable and mother’s education, occupation, father’s age, education and occupation as independent variables. The results are presented in the below table.

Table 5: Child’s Usage of Electronic Gadgets on a Typical Working Day and Influence of Parental Variables (Mother’s age, Education, Occupation, Father’s age, Education, Occupation)

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t value	Sig.
	B	Std. Error	Beta		
Mother’s age	.028	.308	.009	0.09	@
Mother’s education	.344	.176	.161	1.96	*
Mother’s occupation	.085	.162	.038	0.53	@
Father’s age	.376	.266	.134	1.41	@
Father’s education	.175	.129	.105	1.36	@
Father’s occupation	.368	.320	.090	1.15	@

With regard to the influence of parent variables on child’s electronic gadget usage, the above table indicates that mother’s education has significant impact on child’s usage of electronic gadgets at 0.05 level of significance. Other variables like mother’s age, occupation, father’s age, education and occupation do not significantly affect the child’s usage of electronic devices. Thus it is evident that mother’s education creates an impact on child’s usage of gadgets as mothers spend most of the time with preschool

children and educated mothers can monitor the content and regulate timings.

Apart from parental factors, to know the influence of family variables, regression analysis is carried out treating child’s usage of electronic gadgets as dependent variable and number of children, number of family members, type of family, type of house, play area as independent variables and the findings are presented below.

Table 6: Child’s Usage of Electronic Gadgets on a Typical Working Day and Influence of Family Variables (No. of children, No. of family members, Type of family, Type of house, Play area)

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
No. of children	.403	.337	.096	1.19	@
No. of family members	.124	.171	.080	0.72	@
Type of family	.025	.276	.009	0.09	@
Type of house	.028	.353	.006	0.08	@
Play area	.837	.425	.140	1.97	*

With regard to the influence of family variables on child’s electronic gadget usage, the above table indicates that play area at home has significant impact on child’s usage of electronic gadgets at 0.51 level of significance. Other variables like number of children, family members, type of family, type of house do not significantly affect the child’s usage of electronic devices. When children have sufficient

play area at home, they get opportunity in playing games instead of spending time with gadgets.

In order to know operating features and programs used by children in the electronic gadgets, the data was analyzed in ranking order based on the obtained total scores. The least possible score is 200 and highest possible score is 600 for each option and the results presented below table.

Table 7: Features and Programs Used by the Child (N=200)

	Total Score	Rank Order
Features		
Games	424	1
Video	404	2
Internet	394	3
Camera	384	4
Music	370	5
Programmes		
Cartoons	518	1
Educational programmes	425	2
Videos	400	3
Games	383	4
Music	354	5

It is noticed from the above table that majority of children are operating game apps in the gadgets, followed by videos, internet, camera and music features. Some parents have mentioned that children are using the popular apps like *bubble shoot, temple run, talking tom, candy crush, Pokémon go etc.* The findings also indicate that a greater part of children are watching cartoons in the gadgets followed by educational programs, videos, games and music. Parents reported that their children are watching nursery rhymes and stories in the *YouTube videos*, watching cartoon channels like Doraemon, Tom and Jerry, Sesame Street, Chota Bheem, Motu Patlu, Roll No.21, Sponge Bob, Pokémon, Oggy and Cockroaches etc.

Thus it is evident that the present generation children have access to various gadgets at home and also are adapt at using touch screens with ease. Parental monitoring and time regulation on children usage of gadgets are two important aspects to be considered. Table 8 shows time limits set by the

parents.

Table 8: Time Limits Set on Electronic Gadgets by Parents (N=200)

Item	Number	Percentage
No time sets	50	25
30 min / day	35	17
1 hour / day	63	32
2 hours / day	38	19
3-4 hours / day	14	7

Findings from the above table indicate that one fourth (25%) of the parents do not regulate timings of children spending time with electronic gadgets. Whereas 32% of parents regulate the time for 1 hour per day, 19% of parents set 2 hours per day, 17% mothers restrict for half an hour and 7% set time for 3 to 4 hours per day.

Thus the data shows that one fourth (25%) of parents are not regulating their children screen time and 7% are allowing them to use gadgets for more than 3 hours on a typical working day. New recommendations in the American Association of Pediatrics Media and Young Minds Brief (2016) suggest that one hour of technology use is appropriate per day, inclusive of time spent at home and in early learning settings and across devices.

In the present study, the data revealed that around three fourth (73.5%) of families are nuclear and nearly one fourth (26.5%) are extended families. When children stay in the extended families, they can be engaged with more family members. Now a days most of the families being nuclear, it happens that when parents are busy with their regular and important tasks, they engage children with gadgets. To know the specific occasions when a parent allows child to use gadgets at home, the finding are presented below.

Table 9: Occasion When a Parent Allows the Child to Use Electronic Gadgets (N=200)

Occasion	Total Score	Rank Order
To make him/her complete meal faster	446	1
When busy with household activities	408	2
When busy with guests, to engage the child	299	3
While doing office work at home	288	4
While parent is watching favourite programmes in TV / computer etc	285	5
When going out, to engage the child	277	6

The above data was analyzed in the ranking order based on the obtained total raw scores. The findings reveal that majority of parents are allowing children to use gadgets during meal time and this occasion obtained first rank. Second rank shows that parents allow when they are busy with household works, followed by when they are busy with guests obtained third rank, fourth rank shows that parents engage children with gadgets while doing their office work at home. Fifth rank obtained on the occasion when parents watch their favorite programmes and sixth rank shows that when they go out, to engage their children parents provide gadgets.

Similar research conducted by McCloskey *et al.* (2018) ^[6] revealed that 38% of parents occasionally and 12% of them daily engage children with electronic gadgets while doing their household tasks. Forty percent of them allow children to use gadgets while they are in the car and 20% allow when they are in the restaurants. Six percent of parents engage children with gadgets during meal time. Thus it is clearly evident that due to increased nuclear families, parents are engaging children with gadgets when they are busy with their day today activities.

The National Association for the Education of Young

Children (NAEYC) and the Fred Rogers Center (2009) ^[7] state that “appropriate experiences with technology and media allow children to control the medium and the outcome of the experience, to explore the functionality of these tools, and pretend how they might be used in real life”.

4. Conclusion

- Almost all families (99%) are having television and smart phones with internet connection at home. Majority (86.5%) of them are having more than one smart phone at home with internet facility. More than half (54.5%) of the families have computers and 77% of the families are having laptops. Nearly half (51%) of the families have tablets and 17% are having one set of game console at home.
- Around one fourth (23.5%) of preschool children are having their own tablet / iPad and 10% are owned game consoles.
- Usage of gadgets is high in 20% of preschool children during working day whereas it is almost doubled (39%) during holiday.
- Results revealed that boys are spending more time with

- gadgets on a holiday as compared to girls.
- Findings have shown that mother's education and availability of play area have significant impact on child's usage of gadgets.
- Majority of children are operating game apps in the gadgets, followed by videos, internet, camera and music features. More number of children are watching cartoons in the gadgets followed by educational programs, videos, games and music.
- One fourth (25%) of the parents do not regulate timings of children spending time with electronic gadgets. Whereas 32% of parents regulate the time for 1 hour per day, 19% of parents set 2 hours per day, 17% mothers restrict for half an hour and 7% set time for 3 to 4 hours per day.

10. Winpenny EM, Marteau TM, Nolte E. Exposure of children and adolescents to alcohol marketing on social media websites. *Alcohol Alcohol*. 2014; 49(2):154-159.
11. Young, Abreu CN. *Internet addiction: A handbook and guide to evaluation and treatment*. John Wiley & Sons, 2011.

References

1. American Association of Pediatrics. AAP News and Journals Gateway. *Pediatrics*, 2016, 138(5). 5th. doi: 10.1542/peds.2016-2591. <https://pediatrics.aappublications.org/content/138/5/e20162591.info>
2. Daheia J, Barr-Anderson, Fulkerson AJ, Mary S, Himes JH, Hannan PJ *et al*. Associations of American Indian Children's Screen-Time Behavior with parental Television behavior. *Public health research, practice and policy*. 2011; 8:5.
3. Downey S, Hayes N, O'Neill B. A Study of ICTs In Play Activities Of Irish Children (4-8 and 8-12)', Centre for Social and Educational Research, Dublin Institute of Technology. *Childhoods*, University of Oslo. 2005. Retrieved from <https://arrow.dit.ie/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1015&context=aschmedcon>
4. Gentile DA, Reimer RA, Nathanson AI, Walsh DA, Eisenmann JC. Protective effects of parental monitoring of children's media use: a prospective study. *JAMA Pediatrics*, 2014; 168(5):479-484.
5. Lerner C. and Barr R. Screen sense: Setting the record straight. Research-based guidelines for screen use for children under 3 Years old. Zero to Three. Department of psychology, Georgetown University. 2014. Retrieved from https://nyspep.org/application/files/4015/0005/1044/Screen_Sense_-_White_Paper.pdf
6. McCloskey M, Susan Johnson L, Benz C, Darcy A. Thompson, Chamberlin B, Clark L, Laura L. Bellows. Parent Perceptions of Mobile Device Use among Preschool-Aged Children in Rural Head Start Centers, *Journal of Nutrition Education and Behavior*. 2018, 50(1).
7. NAEYC. Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age 8. Position statement. Washington, DC. 2009. Retrieved from www.naeyc.org/files/naeyc/file/positions/position%20statement%20Web.pdf
8. Ofcom. Children and parents: Media use and attitudes report, 2013. Retrieved from <http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/october-2013/research07Oct2013.pdf>
9. Ofcom Report. Children and Parents: Media Use and Attitudes Report. 29 November 2017. Retrieved from https://www.ofcom.org.uk/__data/assets/pdf_file/0020/108182/children-parents-media-use-attitudes-2017.pdf