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Research Article

**THE IMPACT OF ELECTRONIC DEVICES ON CHILDREN IN
THE AGE GROUP 2-12 YEARS IN ALAHSА, KINGDOM OF
SAUDI ARABIA****¹Dalal Mohammed AlSadoon, ²Naimah Ahmed Al-Naim, ³Aeshah Saleh Aljumaiah,
⁴Fatimah Abdulhadi Alshakhs, ⁵Dalia Shaheen**^{1,2,3,4,5}Collage of medicine, King Faisal university, AlAhsа Saudi Arabia**Abstract:**

Background: Previously, electronic devices were used mostly by adults. Nowadays, children and adolescents use the electronic devices on a daily basis for different purposes.

Aim of study: In this study, we are focusing on the impact of using electronic devices on children aged between 2-12 in Al-Ahsа.

Material & Methods: We collected our samples from 400 children (228 are males and 172 of them are female) by using questionnaires consists of 13 questions focusing on the impact of using electronic devices on hobbies, school performance, concentration, social isolation, vision problems, hearing problems, child's appetite, sleep problems and the behavior after preventing children from using electronic devices.

Results: Our result shows that electronic devices play a significant role in influencing the aspects of children's life mentioned earlier negatively. However, there is no significant relationship between the duration of using electronic devices and hearing problems. The intensity of the impact of electronic devices relied on the duration of using electronic devices.

Conclusion: We recommend that children shouldn't use the electronic devices more than 1-3 hours per day. Also, we recommend the parents to monitor their children, try to keep them away from the electronic devices and they should Provide nutritious, well-balanced meals for their children to protect them from being over or under weights.

Key words: Electronic Devices, Children, Negative Effect, School Performance, Hearing Problems.

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INTRODUCTION:

Previously, electronic devices were used mostly by adults. Nowadays, children and adolescents use the electronic devices on a daily basis for different purposes[1]. Electronic devices use is widely spread among children and adolescents who use electronic devices for studying, communicating, playing, searching for information [2]. In the 90's television was controlling the media world, nowadays computers, cell phones , e-mails and video games take the control over televisions[3]. Research findings have demonstrated the positive effects of computer use on cognitive skills, intelligence and school performance [2]. On the other hand, researches found that there is a negative effect on the physical and psychological well being of children and adolescents by the excessive using of computer [4]. there is an increased concern in the society about the children's life and how it could be affected by home computers especially with it's important role nowadays [5]. Therefore, this research is designed to find the impact of electronic devices on children who are in the age group from 2 – 12 years in the population of Al- Ahsa, Kingdom of Saudi Arabia.

MATERIAL & METHOD:

1- Design:

Analytic study (cross-sectional)

2- Population:

The study selected randomly from children in the population of Al-Ahsa, equally boys and girls.

Procedure:

3- Sample:

400 questionnaires of children consist of 228 boys and 172 girls aged between 2-12 years old. Those are accepted to participate in the study for the purpose of the research.

4- criteria for sample selection:

The study focused on the children of Al-Ahsa, boys and girls Aged between 2-12 years old who uses Electronic devices. The division of the sample is based on the time consumed of using the electronic device.

Instrument: Questionnaires were used to obtain the data.

The questionnaire translated into Arabic for people to understand and it consisted of two parts:

First: the biographical data about children. Also, it included the types of technology that children use. For example, smartphone, video games, computer, etc.

Second: It contained 13 questions both quantitative and qualitative data, included the effect of using electronic devices on children, such as sleep problems, child behavior, hearing problems and others which related to child's health and child's behavior. Also, it included the purpose and duration of using electronic devices.

5- statistical analysis: The collected data were categorized and analyzed by using appropriate statistical tests using SPSS IBM statistics version 21. Descriptive analysis included calculation of Frequencies, crosstabulation, Chi-Square test were used to find correlations and interpreted the collected data as well as figures and graphs were used for data presentation.

RESULT:

Of the total 400 of the child population in Al-Ahsa aged between 2-12 years old, 228 of them are male and 172 of them are female. 22 of them (12 male and 10 female) aged 2 years. 39 of them (21 male and 18 female) aged 3 years. 42 of them (23 male and 19 female) aged 4 years. 30 of them (18 male and 12 female) aged 5 years. 57 of them (35 male and 22 female) aged 6 years. 37 of them (17 male and 20 female) aged 7 years. 40 of them (19 male and 21 female) aged 8 years. 25 of them (18 male and 7 female) aged 9 years. 27 of them (17 male and 10 female) aged 10 years. 28 of them (18 male and 10 female) aged 11 years. 53 of them (30 male and 23 female) aged 12 years old. Based on the type of devices that the children are using, we found out that 4 male and 3 female use computer device, 7 male and 3 female use video games, 22 male and 22 female use smartphones, 79 male and 87 female use iPad, 116 male and 57 female use more than one device. Based on the purpose of using electronic devices, we found out that: 6 male and 13 female use Electronic devices for studying, 162 male and 107 female use Electronic devices for playing, 0 male and 2 female use Electronic devices for communication, 60 male and 50 female use Electronic devices for more than one purpose.

Table (1): in variables: there is a significant relationship between the duration of using Electronic devices and their effect on hobbies, school performance, concentration, social isolation, vision problems, child appetite and sleeping problems. In variable 6: there is no significant relationship between duration of using and hearing problems.

Variable	Chi-square	Df	P- value	Is there a relationship?
1- effect on hobbies	23.927	2	0.0001	Yes
2- effect on school performance	26.049	2	0.0001	Yes
3- effect on concentration	23.596	4	0.0001	Yes
4- effect on social isolation	45.753	6	0.0001	Yes
5- effect on vision problems	32.449	2	0.0001	Yes
6- effect on hearing problems	7.386	4	0.117	No
7- effect on child appetite	9.898	4	0.042	Yes
8- effect on sleeping problems	24.588	6	0.0001	Yes

problems.

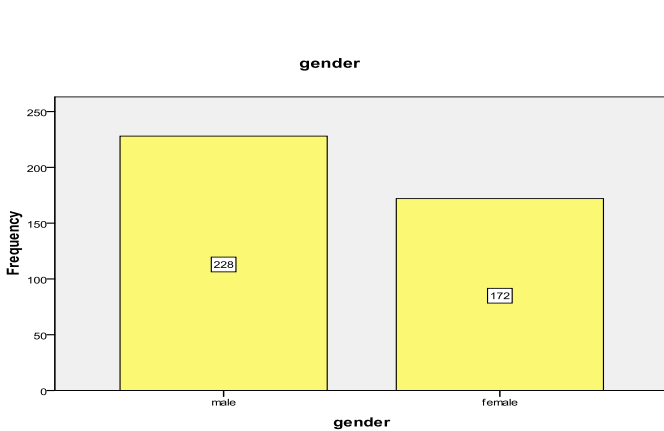


Fig 1: the distribution of electronic devices users according to the gender

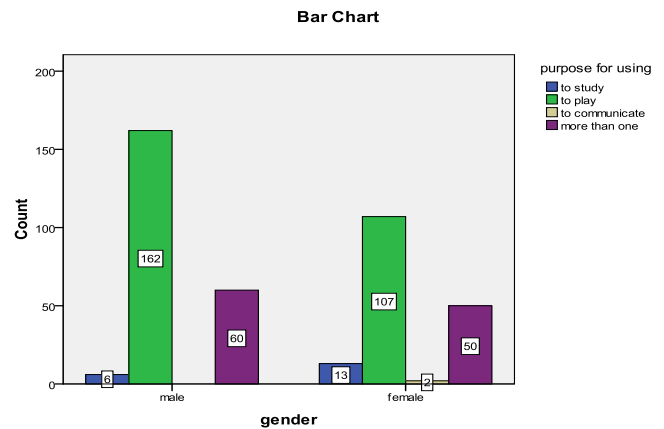


Fig 2: the distribution of electronic devices users according to the purpose of using by gender

BEHAVIOR AFTER PREVENTION:

Of the total 400, there are: 50 children showed physical violence, 115 children showed verbal violence, 35 starve themselves, 129 showed other types of violence and 71 showed more than one type of violence.

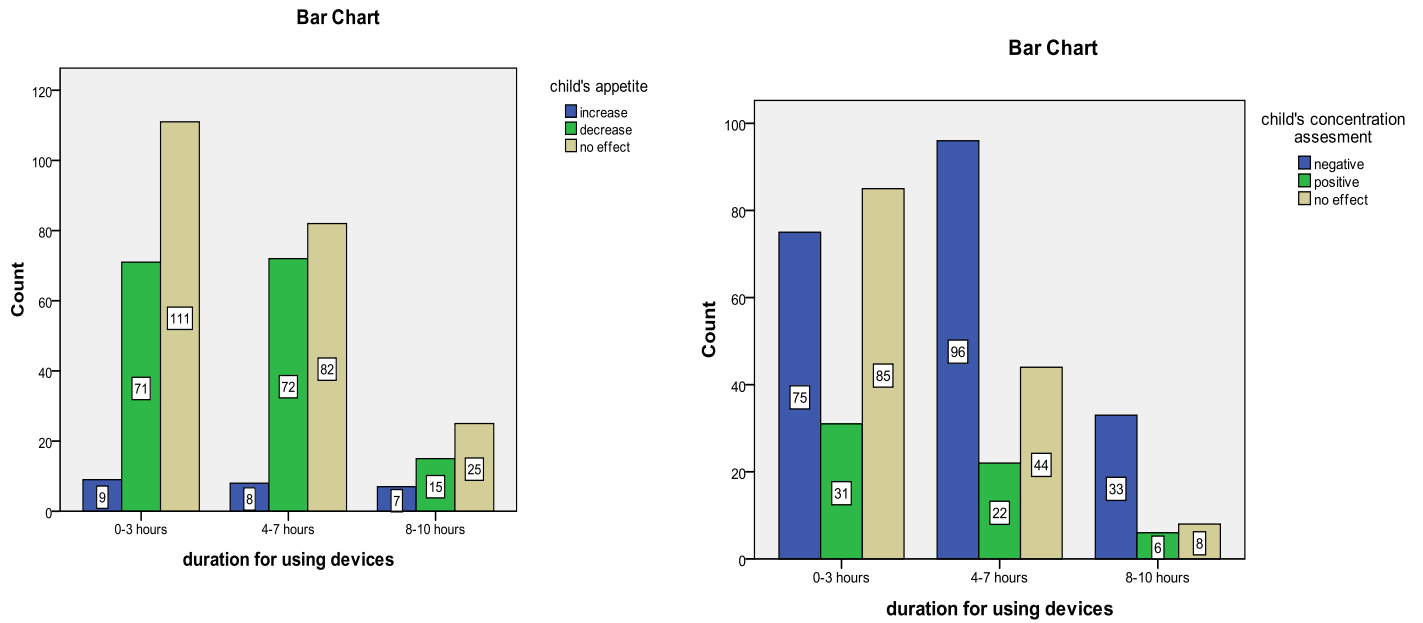


Fig 3,4: the impact of the duration of using devices on child's concentration and appetite .

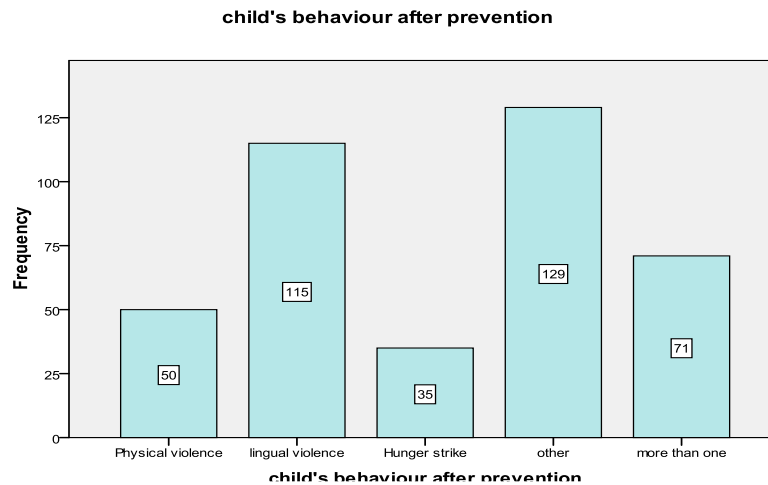


Fig 6: the distribution of electronic devices users based on their behavior after

DISCUSSION:

This study is to demonstrate the Impact of using electronic devices on children's hobbies, school performance, concentration, vision, appetite and sleeping for children who are in the age group from 2 – 12 years in the population of Al- Ahsa, Kingdom of Saudi Arabia. Based on our results its show the negative influence of the excessive using of electronic devices for a long period on children's sleep, health and performance. Our findings show a

significant relationship between the duration of using electronic devices and children's sleep patterns. This is in agreement with Wang and Perry. (2006) and Cain and Gradisar (2010) who demonstrated that the consumption of electronic devices affects the central nervous system and Frequent use of the computer or electronic games have been associated with shorter total sleep time or less time in bed[6-7]. On the other hand, Van den Bulck (2004) and Owens (1999), Showed that there is no relationship between using of

electronic devices and sleeping disorders, and showed that sleeping is mainly affected more by television-viewing habit not by using electronic devices[8-9]. In this study, we proved that there is a significant relationship between the duration of using electronic devices and social isolation, and children's hobbies. Wiegman and van Schie (1998), Proved that the more children play or use electronic devices the more they become isolated and violent especially when they play violent games"[10]. According to our result, it appears that the duration of using electronic devices has a significant relationship with children's concentration and school performance, this is in disagreement with Chuang and Chen (2009). Who showed that electronic devices or playing can clearly facilitate student's learning performance also it makes them have more understanding so they develop some skills which enable them to find multiple solutions for one problem.[11] Based on our finding it shows a significant relationship between the duration of using Electronic devices and vision problem, this is in agreement with Abdelaziz M, et al (2009) who stated that "Most of the subjects with visual defects due to the use of computers complain of burning dry eyes, eyes becoming sore while at the computer, difficulty in color perception and physical symptoms like neck and shoulder pain and overall body". Also in the present study, our result reported that there is a significant relationship between the duration of using Electronic devices and their effect on child appetite. [12] This is in agreement with Chaput, et al. (2008). who displayed that "computer-related activities have also been reported to promote overconsumption of food without increased sensations of hunger and appetite"[13]. Another aspect in the children is hearing problems. We found that there is no relationship between the duration of using electronic devices and hearing problems. Levey, et al (2012) study had shown that " noise-induced hearing loss (NIHL) has been ascribed to listening to sounds or music too loud over a lengthy period of time when using personal listening devices (PLDs) such as iPods and other devices. There are also unexpected sources of NIHL, such as children's toys." [14] According to our result we found that most of the children show aggressive behaviors when their parents prevent them from using the Electronic devices, Dworak, et al agree with us by stating that " Excessive media consumption was associated with an elevated risk for psychiatric and social problems such as aggressive behavior, attention problems, hyperactivity, and scholastic problems."[15].

LIMITATION OF THE STUDY:

This study had several limitations, including there was limited access to articles which we used in the

our discussion. In addition, our study population was relatively small for the population of Al-Ahsa, because our data were collected manually to overcome samples outside the population of Al-Ahsa

CONCLUSION:

From our study, we concluded that electronic devices play a significant role in influencing the aspects of children's life, it could affect their health, sleeping, social life, hobbies, school performance and their behavior negatively. The intensity of the impact of electronic devices relied on the duration of using electronic devices. So, children who use electronic devices for a longer time, they will be affected more than the others. So we recommend that children shouldn't use the electronic devices more than 1-3 hours per day. Also, we recommend the parents to monitor their children, try to keep them away from the electronic devices by talking to them and playing physical games with them, also they should Provide nutritious, well-balanced meals for their children to protect them from being over or underweights.

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