Impact of Smartphones Addiction upon Primary School Pupil's Achievements at Al-Rusafa Educational Directorate in Baghdad City

أثر أدمان الهواتف الذكية على إنجازات تلاميذ المدارس الأبتدائية في مديرية تربية الرصافة في مدينة بغداد

Marwa Jalil Jassim, MScN*
Wissam Jabbar Qassim, PhD**

***Academic Nurse Specialist, Ministry of Health, Al-Rusafa / Baghdad Health Directorate, e-mail: marwajalil90@gmail.com**

****Assist. Professor, Community Health Nursing Department, College of Nursing, University of Baghdad, e-mail: drwissamjk@yahoo.com**

المستخلص:

الهدف: تحديد تأثير استخدام الهاتف الذكي على الإنجاز المدرسي للتلاميذ في مدارس مديرية تربية الرصافة الاولى في مدينة بغداد.

المنهجية:عينة عشوائية بسيطة (احتمالية) تكونت من (240) تلميذاً في المدارس الابتدائية في مدارس مديرية تربية الرصافة الأولى في مدينة بغداد. تم إنشاء الاستبيان وتقنية المقابلة من قبل الباحثين لتحقيق الدراسة الحالية اعتماداً على مراجعة الأدبيات السابقة ذات الصلة. تم تحديد صلاحية المحتوى للأداة من خلال 15 من الخبراء الذين لديهم أكثر من 10 سنوات في مجال عملهم من أجل تحديد صدق الاستبيان حول تقييم ادمان الهواتف الذكية وتأثيرها في الإنجازات المدرسية. تم تنفيذ دراسة استطلاعية للطلاب في مدرسة قتيبة بن مسلم الباهلي في مدينة بغداد واستبعدت هذه العينة من الدراسة. تم جمع البيانات للمدة من الأول من تشرين الأول 2019 ولغاية الثلاثين من نيسان 2020 من خلال الاستفادة من المحادثة وجهاً لوجه كوسيلة لجمع البيانات من التلاميذ من المراحل الرابعة والخامسة والسادسة. يستغرق ملء الاستبيان حوالي 10 إلى 15 دقيقة.

النتائج: بينت نتائج الدراسة أن الآثار السلبية لاستخدام الهواتف الذكية كانت شديدة لأكثر من خُمس الطلاب، وكان هناك فرق معنوي إحصائياً في الآثار السلبية لاستخدام الهواتف الذكية والجوانب الصحية والسلوكية بين مجموعات الدراسة.استنتج من هذه الدراسة أنه كلما طالت مدة استخدام الهاتف الذكي، ازدادت الجوانب الصحية والسلوكية سوءً كما يراها الأبوين وكلما زاد متوسط الاستخدام اليومي للهواتف الذكية، كان الإنجاز المدرسي ضعيفاً، وكلما زاد متوسط الاستخدام اليومي لبرامج التواصل الاجتماعي كان له تأثيراً سلبياً.

التوصيات: يوصي الباحثان أنّ هنالك حاجة لممرضي وممرضات صحة المجتمع لإيجاد أنشطة التثقيف الصحي التي تهدف إلى زيادة وعي الجمهور بالآثار الضارة لاستخدام الأطفال للهواتف الذكية. هنالك حاجة إلى تكريس المزيد من الجهود لزيادة وعي الوالدين؛ لا سيما أولئك الصغار وذوي المستويات التعليمية المتدنية حول الآثار السلبية لاستخدام الأطفال للهواتف الذكية وعدم السماح لأطفالهم بامتلاك هواتفهم الذكية.

الكلمات المفتاحية: تقييم إدمان الهواتف الذكية، الإنجاز المدرسي

Abstract

Objectives: To determine Smartphone addiction among primary school students and its impacts. The samples of the study were240primary school students in derived from stratified random sampling. The questionnaire was used to collect the data. The data were then an- analyzed using correlation statistics. It also caused a negative impact on demic performance of the primary school students.

Methodology: A cross- sectional study in assessment approach in applied in order to achieve the earlier stated objectives. The study was initiated from October 1st, 2019 to April 30th, 2020. Simple random sampling (probability) sample of (240) Pupils study In primary school at Al-Rusafa first directorate schools in Baghdad City.

Results: The study results show that the longer the duration of using smartphone, the worse the health and behavioral aspects as perceived by. The longer the average of daily smartphone use, the poorer the school achievement. The longer the average of daily use of social media texts and each of adverse effects of smartphone use, the better the health and behavioral aspects as perceived by parents.

Recommendations: The study recommends that there is a need for community health nurses to initiate health education activities that aim to increase public's awareness about the adverse effects of using smartphone by children. There is a need to devote more efforts to increase parents' awareness; particularly those who are young and with low educational levels, about the adverse effects of using smartphone by children and never allowing their children to own their smartphone.
Keywords: Assessment Smartphone addiction, disorders.

Introduction:

The Internet is straightforward profitable for a trade mark of tenor, such as on tap electronic obligation, ramp distribution of advice, continue almost all round substitute cultures, emotional support, and entertainment[1,2,3].

A smartphone combines the advantage of the Internet and a mobile. Smartphones donate qualitatively substitute marines in associate to the income Range the Internet offers. Teenaged household upon videos, known person, read alongside presence, and exam for intimation compliantly by smartphones, thoroughly experienced kinfolk esteem their smartphone for having video calls all round their children living far away and for fulfilment frivolity. The portability and accessibility of a smartphone feel sorry it be open to and thus it anywhere, for unrefined duration. Vast, smartphones were used by 1.85 horde Blood in 2014. This develop into is put on to be 2.32 many in 2017 and 2.87 tons in 2020 [4].

In 2015, a middle of 54 percent across21 emerging and creating nations, for example, Malaysia, Brazil, and China announced utilizing the Internet at any rate once in a while or possessing a smartphone.In examination, a middle of 87 percent announced the equivalent across 11 propelled economies,including the United States and Canada, significant Western European countries, created Pacific countries (Australia, Japan, and South Korea), and Israel [5].

Smartphone has been developed since the emerging of the first variablecall close to dating anent to 1983. root for to 1993-2003, digital technology was useful to Smartphone technology creating unheard-of features. When the Smartphone could meet to the internet it could provide various features such as camera, games, and a lot of applications. Best im-portantly, the suffuse of the Smartphone has been de-clining dramatically. These teach to the stardom of the Smartphone in former date [6].

Individuals story Smartphone to convey online all-round company thus they tushie trounce submit to their lives nearby helpfully trademark only just for correspondence, however including for their works, and individual amusement [7].

Smartphone addiction is an indisposition round urgent overload of the Changeable chattels, without exception sedate as the mid of generation users' admittance their accessories and/or the downright batch of stage they are online over a specified period. Compulsive smartphone incompliances just. Three type of technology malediction. At any rate, variant technologies given to overwork, like cavort media. gaming, are many times accessed through protean shit. Smartphones approach man to slave away prevalent respect to a view, novel a desktop or laptop, they buttock be

easily carried anywhere the user goes. As a circumspection, the things are increasingly the user's artful computing appliance. Statistics adaptation and near-ubiquitous[8]. justify connectivity possible stranger almost anywhere [9].

Although phone addiction is not yet classified as a psychological disorder,experts have identified problematic patterns and behaviors.

Mobile phone addiction/abuse/misuse is one of the forms of compulsive use of "a mobile phone" by adolescents across the world. A new kind of health disorder in this category among adolescents, "smartphone's addiction/abuse/misuse" is now challenging health policy makers globally to think on this rapidly emerging issue. Indian adolescents are also affected by this high smartphone engagement, and the current paper will use meta-analysis to discuss their addictive behaviors.

While a smartphone, tablet, or computer can be a hugely productive tool, compulsive use of these devices can interfere with work, school, and relationships. When you spend more time on social media or playing games than you do interacting with real people, or you can't stop yourself from repeatedly checking texts, emails, or apps—even when it has negative consequences in life—it may be time to reassess your technology use.

Smartphones have become an inviolate loyalty of our lives; addiction to smartphones has also become a serious problem [10].

Additionally to, it has been found that 89% of smartphone users in Singapore hand-me-down their smartphones before the superb boyfriend; 92% of Smartphone users second-hand it to pitch text messages to other phones and 84% of used them for browsing the Internet [11].

Methodology:

Design of the study: A cross-sectional study using assessment approach ,is carried throughout the present study to assessment and objectives. The study was initiated from October 1st, 2019 to April 30th, 2020.

Setting and sample of the Study: The study was conducted at the first al-rusafa educational directorate primary schools. Simple random sampling (probability) sample of (240) Pupils study In primary school at al-Rusafa first directorate schools in Baghdad City.

Table (1): Distribution of Pupils in Classes

List	School name	Classes			Total No
		4th	5th	6th	
1	Qutaiba bin Muslim primary school	5	5	5	15
2	PorSaid primary school	3	3	4	10
3	Hatem Al-Tai	5	4	4	13
4	Al- Astqlal primary school	3	3	4	10
5	Jordan primary school	10	7	3	20
6	Al Mishraq primary school	6	3	4	14
7	Al Furat primary school	10	8	7	25
8	Dr. Anad Ghazwan primary school	8	8	7	22
9	Hammurabi primary school	9	7	6	23

10	Kamel Shabib primary school	6	5	5	17
11	Al-astiqama primary school	8	7	6	21
12	Ghranada primary school	10	10	7	27
13	Natiq Jawad primary school	8	10	5	23

Criteria for Including the Sample:

1. 4^{th} 5^{th} 6^{th} Grade in primary school students

2-Male and female students were included.

3. The student continues to study without interruption.

Instrument of the Study:

Questionnaire and interview techniques (Appendix B) was constructed by researcher to investigate for the present study depending on review of available literature, the related previous studies scale.

Pilot Study:

A pilot study was carried out for students At Qutipa Ben Muslim Albahily School in Baghdad City and excluded the ability of assessment to study by large samples .

Data Collection :

Pupil's data collection: The data have been collected through the utilization of the face-to-face conversation as a mean of data collection from pupils. face-to-face conversation use for all pupils from second stage was cooperation with the researchers. Filling the questionnaire takes approximately 10- 15 minutes.

Parent's data collection: The data have been collected through self-report

Statistical Analysis

The researcher used the convenient statistical methods in the data analysis which involved the following:

Descriptive Data Analysis:

This approach was performed through the determination of

a. Frequencies (F)

b. Percentage (%) % = Frequencies\ sample size× 100 n

C. Mean

$\sum$ =the summation of

X = each individual raw score

N = the number of cases

Inferential Data Analysis :

This approach was performed through the determination of stander deviation and mean of score.

Ethical Considerations

The Institutional Review Board (IRB) at the University of Baghdad, College of Nursing approved the study to be conducted. The study protocol meets both the global & the Committee on Publication Ethics(COPE) standards of respecting humans subjects' rights.

Results

Table (2): Students and Parents' Sociodemographic Characteristics (N = 240)

Variables	Frequency	Percent
Students' Gender		
Male	140	58.3
Female	100	41.7
Grade		
Fourth	72	30.0
Fifth	94	39.2
Sixth	74	30.8
Father's age		
23-32	56	23.3
33-42	130	54.2
43-52	46	19.2
≥ 53	8	3.3
Mother's age		
23-32	116	48.3
33-42	108	45.0
43-52	10	4.2
≥ 53	6	2.5
Father's level of education		
Unable to read and write	10	4.2
Elementary school	26	10.8
Middle school	42	17.5
High school	62	25.8
Bachelor's degree and above	100	41.7
Mother's level of education		
Unable to read and write	8	3.4
Elementary school	26	10.8
Middle school	42	17.5
High school	90	37.5
Bachelor's degree and above	74	30.8
Variable	**Frequency**	**Percent**
Father's occupation		
Governmental employee	108	45.0
Retired	12	5.0
Freelancer	108	45.0
	12	5.0
Mother's occupation		
Housewives	144	60.0
Governmental employee	60	25.0
Retired	8	3.3
Freelancer	28	11.7
Family's monthly income (Iraqi Dinar)		
< 300.000	28	11.7
301.000-600.000	80	33.3
601.000-900.000	100	41.7
≥ 901.000	32	13.3
Number of children in the family		
1	8	3.3
2	68	28.3
3	104	43.4
> 3	60	25.0
Residency		
Urban	186	77.5
Suburban	34	14.2
County	20	8.3

More than a half of the students are males (n = 140; 58.3%) compared to females (n=100;41.7%). Less than two-third are fifth graders (n = 94; 39.2%), followed by sixth graders (n = 74; 30.8%), and those who are fourth graders (n = 72; 30.0%).

Concerning father's age, more than a half age 33-42-years (n = 130; 54.2%), followed by those who age 23-32-years (n = 56; 23.3%), those who age 43-52-years (n = 46; 19.2%), and those who age 53-years or older (n = 8; 3.3%). Regarding mother's age, less than a half age 23-32-years (n = 116; 48.3%), followed by those who age 33-42-years (n = 108; 45.0%), those who age 43-52-years (n = 10; 4.2%), and those who age 53-years or older (n = 6; 2.5%).

With respect to father's level of education, more than two-fifth hold a bachelor's degree and above (n = 100; 41.7%), followed by those who are high school graduates (n = 62; 25.8%), those who are middle school graduates (n = 42; 17.5%), those who are elementary school graduates (n = 26; 10.8%), and those who are unable to read and write (n = 10; 4.2%). For mothers, less than two-fifth are high school graduates (n = 90; 37.5%), followed by those who hold a bachelor's degree and above (n = 74; 30.8%), those who are middle school graduates (n = 42; 17.5%), those who are elementary school graduates (n = 26; 10.8%), and those who are unable to read and write (n = 8; 3.3%).

Concerning the father's occupation, less than a half are both governmental employees and freelancers (n = 108; 45.0%) for each of them, followed by those who are both retired and not working (n = 12; 5.0%) or each of them. For mothers, most are housewives (n = 144; 60.0%), followed by those who are governmental employees (n = 60; 25.0%), those who are freelancers (n = 28; 11.7%), and those who are retired (n = 8; 3.3%).

Regarding the family's monthly income, more than two-fifth reported that their monthly income ranges between 601.000-900.000 I.D. (n = 100; 41.7%), followed by those whose monthly income ranges between 301.000-600.000 I.D. (n = 80; 33.3%), those whose monthly income is 901.000 I.D. or more (n = 32; 13.3%), and those whose monthly income is less than 300.000 I.D. (n = 28; 11.7%).

With respect to the number of children in the family, more than two-fifth reported that they have three children (n = 104; 43.4%), followed by those who have two children (n = 68; 28.3%), those who have more than three children (n = 60; 25.0%), and those who have one child only (n = 8; 3.3%).

Lastly, most reported that they live in urban areas (n = 186; 77.5%), followed by those who live suburban areas (n = 34; 14.2%), and those who live in county (n = 20; 8.3%).

Table (3): Information Related to Smartphone Use (N = 240)

	Frequency	Percent
The property of the smart phone that the child uses		
His/her own	86	35.8
The parent's own	154	64.2
For how long you have been using smartphone? (Hours)		
< 1	28	11.6
1-3	112	46.7
> 3	100	41.7
What is the average of your smartphone daily use either for calling or other uses? (Hours)		
1-3	166	69.2
3-6	54	22.5
> 6	20	8.3
What is the average time of daily calling hours using Viber, WhatsApp, Facebook, regular call?		
1	142	59.2
2	32	13.3
3	26	10.8
> 3	40	16.7
What is the average of your daily use of social media texts?		
1	56	23.4
2	32	13.3
3	20	8.3
According to need	132	55.0

Concerning the property of the smartphone that the child uses, most reported that the smartphone is the parents' own (n = 154; 64.2%) compared to smartphone owned by the children themselves (n = 86; 35.8%). Regarding the duration of using smartphone by the children, less than a half reported that their children use the smartphone for 1-3-hours (n=112; 46.7%), followed by those who use it for more than three hours (n = 100;41.7%), and those who use it for less than an hour (n = 28; 11.6%).

With respect to the average of smartphone daily use; either calling or other uses, most reported that they such an average is 1-3-hours (n = 166; 69.2%), followed by an average of 3-6-hours (n = 54; 22.5%), and an average of more than six hours (n = 20; 8.3%).

Concerning the average time of daily calling hours using Viber, WhatsApp, Facebook, or regular calls, more than a half reported that such an average is one hour (n=142;59.2%), followed by an average of more than three hours (n = 40; 16.7%), two-hours (n = 32; 13.3%), and three hours (n = 26; 10.8%).

Lastly, more than a half reported that the average of children's daily use of social media texts is according too need (n = 132; 55.0%), followed by one time (n =56;23.4%), two times (n = 32; 13.3%), and three times (n = 20; 8.3%).

Table (4): Descriptive Statistics of Adverse Effects of Smartphone Use (N = 240)

Item	Always f (%)	Sometimes f (%)	Never f (%)	Mean (SD)
1. Your Smartphone profuse use leads to neglect your schoolwork and house chores	62 (25.8%)	114 (47.5%)	64 (26.7%)	2.00 ± 0.72
2. Your incessant smartphone use leads to indolence	86 (35.9%)	110 (45.8%)	44 (18.3%)	1.82 ± 0.71
3. Smartphone use sometimes negatively influences your lessons comprehension	54 (22.5%)	138 (57.5%)	48 (20.0%)	1.97 ± 0.65
4. Profuse smartphone use causes health problems and mental disorders	80 (33.3%)	90 (37.5%)	70 (29.2%)	1.95 ± 0.79
5. Keeping your smartphone close to you during sleeping	120 (50.0%)	66 (27.5%)	54 (22.5%)	1.72 ± 0.80
6. Paging your smartphone when it is charging	100 (41.7%)	110 (45.8%)	30 (12.5%)	1.70 ± 0.67

* The percentage is not exactly 100.0%.

The highest scores for the adverse effects of smartphone use are for the items 1, 3, 4 (Mean [SD] = 2.00 ± 0.72; 1.97 ± 0.65; 1.95 ± 0.79) respectively.

Table (5): Levels of School Achievement (N = 240)

Item	Poor f (%)	Fair f (%)	Average f (%)	Good f (%)	Very Good f (%)	Excellent f (%)	Mean (SD)
1. Student's achievement during the first semester	0 (0.0%)	6 (2.5%)	94 (39.2%)	72 (30.0%)	42 (17.5%)	26 (10.8%)	3.95 ± 1.04
2. Student's commitment to school attendance during the first semester	0 (0.0%)	8 (3.3%)	70 (29.2%)	94 (39.2%)	44 (18.3%)	24 (10.0%)	4.02 ± 1.00
3. Student's commitment to do his/her schoolwork during the first semester	0 (0.0%)	8 (3.3%)	86 (35.8%)	70 (29.2%)	46 (19.2%)	30 (12.5%)	4.01 ± 1.08
4. Student's relationship with his/her teacher	4 (1.7%)	12 (5.0%)	68 (28.3%)	82 (34.2%)	60 (25.0%)	14 (5.8%)	3.93 ± 1.05
5. Student's relationship with his/her colleagues	0 (0.0%)	16 (6.7%)	80 (33.3%)	78 (32.5%)	46 (19.2%)	20 (8.3%)	3.89 ± 1.05

Approximately, two-fifth of students demonstrated an average degree of school achievement during the first semester (n = 94; 39.2%), the same proportion have a good commitment to school attendance during the first semester (n = 94; 39.2%), more than a third demonstrate an average degree of commitment to their schoolwork during the first semester (n = 86; 35.8%), more than a third have good relationships with their teachers (n= 82; 34.2%), and a third have an average degree of relationship with their colleagues (n= 80; 33.3%).

Table (6) Differences in Smartphone Addiction, Adverse Effects of Smartphone Use, School Achievement, and Health and Behavioral Aspects among the Groups of Smartphone Duration of Use

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Smartphone Addiction	Between Groups	751.036	2	375.518	6.904	.001
	Within Groups	12890.147	237	54.389		
	Total	13641.183	239			
Adverse Effects of Smartphone Use	Between Groups	634.361	2	317.181	45.283	.000
	Within Groups	1660.039	237	7.004		
	Total	2294.400	239			
School Achievement	Between Groups	135.065	2	67.532	3.591	.029
	Within Groups	4456.869	237	18.805		
	Total	4591.933	239			
Health and Behavioral Aspects	Between Groups	183.954	2	91.977	7.715	.001
	Within Groups	2825.646	237	11.923		
	Total	3009.600	239			

There are statistically significant differences in smartphone addiction, adverse effects of smartphone use, school achievement, and health and behavioral aspects among the groups of smartphone duration of use (p-value = .001, .000, .029, .001) respectively.

Discussion:

Part I: Discussion of the demographic characteristics

This descriptive correlational study aimed to determine the severity of smartphone addiction among primary school students. Less than a half of students experience a severe level of smartphone addiction, followed by those who experience a moderate level of smartphone addiction, and those who experience a mild level of smartphone addiction. These results are inconsistent with study which revealed that the prevalence was 24.6% among then study subjects[12,13]. Consistently, the study results are in consistent with another study, which revealed that 20% of students were in tolerance status for smartphone[14].

Part II: Discussion of the smartphone addiction.

The adverse effects smartphone use were severe for more than two-fifth of students (n = 100; 41.7%), followed by moderate effects (n = 98; 40.8%), and mild effects (n = 42; 17.5%).

There was a statistically positive correlation between the duration of using smartphone and health and behavioral aspects as perceived by. There was an inverse statistically significant correlation between the average of daily smartphone use and school achievement. There were statistically positive correlations between the average of daily use of social media texts and each of adverse effects of smartphone use, health and behavioral aspects as perceived by parents, and smartphone addiction. However, there was an inverse statistically significant correlation between the average of daily smartphone use and school achievement.

There was a statistically significant correlation between father's age and

health and behavioral aspects as perceived by parents. Consistently, there was a statistically significant correlation between mother's age and health and behavioral aspects as perceived by parents. There are statistically inverse correlations between the number of the children in the family and each of adverse effects of smartphone use, health and behavioral aspects, and smartphone addiction.

Part III: Discussion of the levels of school achievement

There was no statistically significant difference in smartphone addiction, adverse effects of smartphone use, school achievement, and health and behavioral aspects between the groups of students' gender. This finding goes in line with the finding of Chiang and others who reported that both male and female children have a high prevalence of smartphone addiction[14]. However, a number of studies which have stated the effect of gender on smartphone use. That is, females; in general, use smartphones more than males[15,16].Also, this finding in inconsistent with that obtained by Jian and others who reported that the tendency of being addicted to smartphone is greater among females than males[13].

Part IV: Discussion of the health behaviors

There was a statistically significant difference in adverse effects of smartphone use and health and behavioral aspects among the groups of grade. The post hoc analysis reveals that fourth graders have greater smartphone addiction than sixth graders and fifth graders. This could be explained as that parents treat the younger siblings more freely compared to older ones. Furthermore, the amount of schoolwork for fourth graders is lesser than that of higher grades which make fourth graders have more leisure time that they could spend in smartphone use.

Concerning the health behaviors perceived by parents, there was a statistically significant difference in such behaviors among the groups of grade. The post hoc analysis displayed that the higher the grade, the worse the health behaviors perceived by parents. This finding could be explained as that the higher the grade, the more the life experiences that trigger such behaviors. Furthermore, the higher the grade, the more the affected by peer influence. Regarding the difference in smartphone addiction, adverse effects of smartphone use, school achievement, and health and behavioral aspects among the groups of smartphone duration of use, there were statistically significant differences in smartphone addiction, adverse effects of smartphone use, school achievement, and health and behavioral aspects among the groups of smartphone duration of use. The post hoc analysis demonstrated that the longer the duration of smartphone use, the worse the health behaviors perceived by parents.

There was a statistically significant difference in school achievement among the groups of smartphone use average. The post hoc analysis revealed that the longer the use average, the worse the school achievement. This finding could be explained as that spending time with smartphone use occupy restrains students from accomplishing their schoolwork which is negatively reflected on their school achievement. There are statistically significant differences in smartphone addiction and health and behavioral aspects among the groups of the groups of social media use average. The post hoc analysis

displayed that the lesser the social media use average, the lesser the smartphone addiction and better health behaviors as perceived by parents.

Part V: Differences in smartphone addiction, adverse effects of smartphone use, school achievement, and health and behavioral aspects between the groups of student's demographic characteristics

There were statistically significant differences in smartphone addiction, adverse effects of smartphone use, and health and behavioral aspects among the groups of father's levels of education. The post hoc analysis exhibited that the lower the level of father's education, the worse the smartphone addiction, school achievement, and health behaviors. This finding could be explained as that fathers whose level of education is low; particularly those who are unable to read and write have no health awareness by which they can instruct their siblings to the healthy behaviors. This finding is almost consistent with that of Chang and others who reported that parents who had sound perception can restrict their children's use of the Internet and mobile devices[12].

There were statistically significant differences in school achievement and health and behavioral aspects among the groups of mother's levels of education. The post hoc analysis exhibited that the lower the level of mother's education, the worse the school achievement and health behaviors. This finding could be explained as that mothers whose level of education is low; particularly those who are unable to read and write cannot help their children in schoolwork and have no health awareness by which they can instruct their siblings to the healthy behaviors. There were statistically significant differences in the adverse effects of smartphone use and health and behavioral aspects among the groups of father's occupation. The post hoc analysis exhibited that the adverse effects of smartphone use were worse among students whose fathers are not working compared to students whose fathers are retired, governmental employees, and freelancers respectively. This indicates the better the economic stats the student's family enjoys, the lesser the adverse effects of smartphone use displayed by students.

There were statistically significant differences in smartphone addiction, school achievement, and health behaviors as perceived by parents among the groups of mother's occupation. The post hoc analysis displayed the severity of smartphone addiction is greater among students whose mothers are retired compared to housewives, freelancers, and governmental employees. This finding could be explained as that being retired can negatively affect mothers' psychological stats who could not be able enough to watch for their children in terms of smartphone use.

There were statistically significant differences in smartphone addiction, adverse effects of smartphone use, and health and behavioral aspects among the groups of family's monthly income. The post hoc analysis displayed that the severity of smartphone addiction was greater among students of families whose monthly income is lesser than 300.000 I.D., followed by those whose monthly income is 301.000-600.000 I.D., those whose monthly income is 601.000-900.000 I.D., and those whose monthly income is 901.000 I.D. or more. This finding indicates that the poor the family income, the greater the

severity of smartphone addiction their children experience.

There was a statistically significant difference in smartphone addiction between the groups the property of the smartphone that the child uses. Further groups statistics demonstrated that the smartphone addiction severity was greater among children who use their parents' phone compared to children who own their smartphone. This finding could be explained as that children who use their parents' smartphone could have greater craving for smartphone use compared to children who have their own smartphones. There were statistically significant differences in smartphone addiction and the adverse effects of smartphone use among the groups of family's residency. The post hoc analysis revealed that the severity of smartphone addiction was greater among students who live in suburban areas, followed by those who live in county areas, and those who live in urban area.

Recommendations:

There is a need for community health nurses to initiate health education activities that aim to increase public's awareness about the adverse effects of using smartphone by children. There is a need to devote more efforts to increase parents' awareness; particularly those who are young and with low educational levels, about the adverse effects of using smartphone by children and never allowing their children to own their smartphone. Schools' administration and faculty need to educate students; particularly those in lower grades, about the adverse effects of using smartphone.

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