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## Prevalence of the Impact of Smartphones on Physical Health Among Children from Selected Anganwadi's: A Quantitative-Descriptive Study

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**Abstract:** Few research has documented in many studies that more than eighty percent of children's screen time has increased as a result of excessive smartphone use, and they have been exposed to its hazardous radiation from prenatal life till under-five children.

A quantitative study approach with a descriptive design was used, to discover the prevalence of the impact of smartphones on physical health among Anganwadi 384 under-five children from a selected Anganwadi.

**Results:** According to the study findings on the prevalence of the impact of smartphones on excessive watering of the eyes, 96(25%) in the right eyes, 123(32.03%) in the left eyes, 50(13%) in both eyes, and 103(26.82%) had observed inflammation of the lachrymal area, but 384(100%) of children followed a finger with their eyes without moving their head to assess extraocular movements. Furthermore, a hearing test revealed that 100% of the youngsters responded to clapping, whereas 9 (2.23%) were unable to respond to tickling or the sound of a watch tic-tac. 17(4.42%), and 4(1.04%) children were unable to turn their heads to the side towards the sound and were unable to respond to their names. The assessment of the neck revealed that 34(8.85%) of the children were unable to move right, 29(7.55%) and left, 18(4.68%) were unable to move up, 17(4.42%) were unable to move down, 10(2.6%%) children were unable to rotate their neck, and 8(2.08%%) had swelling to the neck. Furthermore, the study stated that youngsters should be aware of the potential risk to their other body organs, which might impede their growth and development and endanger their lives.

**Key Terms-** Prevalence, Impact of Smartphones, Physical Health, Children Anganwadi's.

## **INTRODUCTION-**

Smartphones offer a more comfortable and adaptable approach to learning, allowing students to fit education into their hectic lives. Furthermore, mobile learning can boost engagement and motivation by offering a more dynamic and personalized learning experience.<sup>1</sup>

Mobile phone reliance offers both benefits and drawbacks. It can help us stay connected, have access to information and entertainment, and feel more secure. However, it may also be a source of diversion and isolation, leading to addiction and health issues.<sup>2</sup>

According to research, excessive screen usage might decrease attention, memory, and cognitive flexibility. It can also impede the development of social skills like empathy and communication. In terms of social development, smartphones can have both beneficial and negative consequences.<sup>3</sup>

Excessive smartphone use has already begun to impact some of the youngest users.

According to a Pew Research Centre survey, slightly more than half of U.S. teenagers say they spend too much time on their phones. For better or worse, this habit has already started to spread to younger children.<sup>4</sup>

According to a Common-Sense Media study covered by NPR, more than half of children under the age of 11 now own a smartphone. As a result, parents and experts have begun to investigate the beneficial and bad effects of smartphones on child development.<sup>5</sup>

According to the World Health Organisation Smartphones' effects on kids under 10 go beyond the eyes as they will be known to be detrimental to the eyes.

The current analysis was undertaken using a standardized physical examination and assessment form to address concerns about the effects of smartphone use on children's physical health, particularly in the eyes, ears, neck, fingers, and postural abnormalities.

### **Research Questions**

1. How do cell phones affect the physical health of children under 5?
2. Which areas are most affected by smartphone screen time?

### **Research Objectives-**

1. Determine the influence of smartphone use on physical health in Anganwadi children.

## **OPERATIONAL DEFINITIONS-**

### **ASSESS: -**

This study refers to the measurement of the prevalence of the impact of the smartphone through physical examination and assessment.

### **2. IMPACT: -**

In the present study, impact refers to the extent to which the effect of smartphones physical health such as the head, eyes, ears neck, hands, and fingers of those under-five children.

### **3. SMARTPHONE-**

In the present study, a smartphone refers to a device that performs various functions such as gaming, and videos that attract the under-five children.

### **4. PHYSICAL HEALTH:**

In the present study, physical health refers to the identification of abnormal deviation from the normal functions of the head, eyes, ears, neck, hand, finger, and postural defects due to the use of smartphones.

### **Methods-**

The researcher employed a quantitative research strategy with a descriptive research design rather than an experimental one. The researcher evaluated the findings from the 384 youngsters

at the designated Anganwadi. The study's purpose was conveyed to the mothers of those who agreed to participate, and children aged 1 to 5 years old were used as inclusion criteria. The children were chosen using a convenient sample procedure, with available youngsters assessed and inspected on the day of data collection.

## DATA COLLECTION TOOL:

### Section- A -Description of proforma for personal variables:

This section included baseline information about the age of the children, gender, occupation of the mothers, and children spent time on a smartphone.

**Section B:** Description of Structured checklist for evaluating physical abnormalities with the eyes, ears, fingers, and postural defects. The topic prompted the selection of 21 specialists from various professions. To construct the final result, ten different nursing instructors and one statistician collaborated with experts from the hospital's ENT, Eye, and Ortho departments. The tool's dependability was assessed using the inter-rater technique, yielding  $r = 0.7924632$ , which is greater than 0.70. The pilot study let the researcher determine whether the strategy could be repeated for a larger population. No changes were made following the pilot study.

### Section-wise Distribution of Analysis of Data-

Analysis and discussion of study results were organized under the following headings:

**Section I:** Frequency and percentage distribution of characteristics of children based on demographic information.

**Section II** analyses the physical health problems domain-wise.

**Section- III** Analysis of the Association

## RESULTS AND DISCUSSIONS-

The demographic variables of the participants were analysed and the findings were presented as follows-

**TABLE NO.1:** Frequency and percentage distribution of demographic variables of children

(n=384)			
	Characteristics	Freq ( <i>f</i> )	Per. (%)
1	Age in years-		
1.1	3-4	206	53.64
1.2	5-6	178	46.35
2	Gender-		
2.1	Boys	224	58.33
2.2	Girls	160	41.66
3	Occupation of the mothers-		
3.1	Working	170	57.22
3.2	Non-working	214	42.78
4	Time spent on smartphone		
4.1	3-5 hrs.	210	54.68
4.2	More than 5 hours	174	45.31

**Table 1** shows that the majority 206 (53.64%) of the Anganwadi children were between the ages of 3 and 4 years old, the male 224 (58.33%), the majority of the children's mothers were non-working 214 (55.74%), and the majority 210 (54.88%) of the children spent 3-5 hours on their mobile phones.

**TABLE NO-2**

**Analysis of the assessment of the eyes among Anganwadi children in terms of frequency and percentage- n=384**

Physical examination	Freq (f)	Per. (%)
Excessive watering of the eye	Present	
Right Eye	96	25
Left Eye	123	32.03
Both Eye	50	13
Eye Discharge	106	27.6
Inflammation of the lachrymal area	103	26.82
Extraocular movements following finger with their eyes without moving their head	384	100

**Table 2** shows the results of the eye assessment, which revealed that the majority of the children, 123(32.03%), had excessive watering of the eyes in the left eye, 96(25%), in the right eye, and 50(13%) in both eyes. There were 106 (27.6%) children with eye discharge, 103 (26.82%) with lachrymal irritation, and all of the children could follow the fingers with their eyes without moving their heads.

**TABLE NO-3. Analysis of the assessment of the ears among Anganwadi children in terms of frequency and percentage.**

**n=384**

Physical Examination- (Hearing test)	Frequency (F)	Percentage (%)
Responds to clapping	384	100
Not able to Respond to tickling	9	2.23
Not able to Respond to watch sound tik-tik	9	2.23
Not able to turn head to the side where sound made	17	4.42
Not able to respond to own name	4	1.04

**Table 3** illustrates the results of the ear examination through a hearing test, which revealed that 100% of the children responded to clapping, 9 (2.23%) were unable to respond to tickling, and 9 (2.33%) were unable to respond to the watch sound tic-tac. 17 (4.42%) of the children were unable to move their heads to the side where the sound was made, while 4 (1.04%) were unable to reply to their name.

**TABLE NO-4. Analysis of the assessment of the neck among Anganwadi children in terms of frequency and percentage**

**n=384**

Physical Examination	Frequency	Percentage (%)
Not Able to move right	34	8.85
Not Able to move left	29	7.55

Not Able to move up	18	4.68
Not Able to move down	17	4.42
Not Able to rotate around	10	2.6
Swelling to neck	8	2.08

**Table 4** displays the results of the neck assessment, which revealed that 34(8.85%) of the children were unable to move right, 29(7.55%) were unable to move left, 18(4.68%) were unable to move up, 17(4.42%) were unable to move down, 10(2.6%) children were unable to rotate their neck, and 8(2.08%) had neck swelling.

**TABLE NO-5 Analysis of the assessment of the Back among Anganwadi children in terms of frequency and percentage**  
n=384

Physical Examination	Frequency	Percentage (%)
Flexion (bend Forward)	9	2.23
Extension (Bend backward)	10	2.6
Right bending	13	3.38
Left bending	12	3.12
Right rotation	13	3.38
Left rotation	8	2.08

**Table no. 5** shows the findings related to the back assessment that 9(2.23%) of the children were not able to bend forward, 10(2.6%) of the children were not able to bend backward, 13(3.38%) were not able to right bending, and 12(3.32%) were not able to left bending. There were 13(3.38%) children who were not able to rotate the right side and 8(2.08%) children who were not able to rotate the left side.

**TABLE NO-6**

**Analysis of the assessment of the Fingers among Anganwadi children in terms of frequency and percentage**

n=384

Physical Examination	frequency	Percentage (%)
Flexion	1	0.26
Extension	1	0.26
Abduction	0	0
Adduction	0	0

**Table no.6.** Shows the findings related to the assessment of the fingers that only 1(0.26%) of the children were not able to perform the flexion and extension of the fingers and there were no children having abduction and adduction problems.

## DISCUSSION-

Children's use of smart gadgets is a serious concern due to its portability and availability. Smart devices can efficiently distract young children, and they are increasingly being utilized to keep them occupied and under control. Existing rigorous assessments of screen time have primarily focused on traditional fixed-screen devices such as televisions. There has been little research on the use and impact of smart devices.<sup>7</sup>

Across, half of the parents who reported their children's use of smart gadgets in this age group used them for more than 4 hours each day. In addition, one-third of these parents used their smart gadgets around their children all the time, while two-thirds used them occasionally. Heavy parental usage of mobile devices is connected with less communication between parents and children, as well as increased parent-child conflict.<sup>8</sup>

Though there is no evidence to suggest that staring at screens for extended periods might cause lasting eye damage, it is well-recognized to induce discomfort. While both adults and children experience discomfort from excessive smartphone use, children are more likely to develop symptoms depending on how they use their devices. The term "digital eye strain" refers to symptoms such as pain, impaired vision, headaches, dry eyes, and weariness induced by prolonged smartphone use.<sup>9</sup>

While these issues may be transient, experts recommend that smartphone usage be limited to a set period each day or that 30-minute intervals be taken as a visual break now and again. It is also critical to encourage children to hold their phones further away from their eyes and to keep the brightness on their devices to a minimum.

### **CONCLUSION-**

The above table findings concluded that there were effects of smartphones on the eyes, ears, neck, and back but there were impacts of smartphones on fingers. Children at the age of 3-6 years are more prone to have effects on eyes, ears, neck, and back than fingers.

### **CONTRIBUTION-**

Students from nursing institutes helped collect the data.

### **IMPLICATION-**

Based on the prevalence statistics, the nurse educator can create an educational pamphlet outlining preventive actions for reducing smartphone use among Anganwadi children. The student nurse should be certified to check Anganwadi children's health indicators. Student nurses can undertake physical examinations that will benefit them.

### **NURSING PRACTICE**

- The Impact of smartphones can be a certain extent the primary prevention of smartphone use consists of measures like education to the public and journal awareness about smartphone use and also providing all kinds of preventive services.
- Nurses working in the community have the ultimate responsibility of providing a flexible environment and coordinating care for children to prevent harmful effects on health due to smartphone use.

### **NURSING ADMINISTRATION**

- As a nurse administrator can plan the in-service education sessions for the nurses working pediatric unit.

### **NURSING RESEARCH –**

- The findings of the present study can be utilized for further reference in research studies.

### **RECOMMENDATIONS-**

- The study can be conducted on the impact of the smartphone on psycho-social behavior among Anganwadi children.
- A comparative study can be conducted on the impact of smartphone on physical, mental, and psycho-social behaviour among children of working parents.

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