



A study to assess the effectiveness of structured education intervention on knowledge regarding risk of using mobile phone among school going children in selected schools of Moradabad". (U.P)

Ankita Chauhan

Child Health Nursing, Teerthanker Parshvath College of Nursing Amroha, Uttar Pradesh, India

Corresponding Author: Ankita Chauhan

Abstract

Objectives of The Study Were

- To assess the knowledge of school going children regarding risk of using mobile phone.
- To assess the effectiveness of structure education intervention on knowledge regarding risk of using mobile phone among school going children.
- To find out the knowledge score of school going children with selected demographic variables.

Methodology

The research seeks to assess the impact of a structured educational program on children's awareness of the risks associated with mobile phone usage. The conceptual framework is grounded in Imogene King's goal attainment theory. The methodology employed was an evaluative approach, with a quasi-experimental one-group pre-test post-test design serving as the research design. Participants were selected using a convenient sampling technique. Samples were chosen from the schools in Moradabad that were selected. A group of 60 children from selected schools met the investigator's criteria. A well-organized questionnaire was crafted to evaluate the knowledge of school-aged children concerning the risks associated with mobile phone usage. The tool comprised two components: the first section contained demographic data pertaining to school-age children, including inquiries about their background information, while the second section was a structured questionnaire and an educational intervention aimed at reducing the risk of mobile phone usage among schoolchildren. The validity of the content was assessed by the experts. The tools' reliability was assessed using the split half method and yielded a score of 0.40.

Results: A paired t-test was employed to assess the impact of a structured education program on children's awareness of mobile phone risks, specifically targeting school-aged youth. Based on the analysis presented, SD equals 1.71. The value of t has been determined to be 46. The number 8 exceeds the value tabulated as t equals 2. Zero zero is located at zero point. The threshold level is noteworthy. The score on the post-test demonstrated a substantial rise in knowledge. The study indicated a 5% level of statistical significance. The data presented above substantiates a substantial rise in the awareness of school-aged children regarding the risks associated with mobile phone usage, as evidenced by a marked increase in their knowledge post-test compared to their knowledge at the pre-test stage. Thus, the research hypotheses have been accepted. The study examined the relationship between knowledge and demographic variables through the chi-square test. Given that the p-values associated with all demographic variables are notably high (greater than 0.05), Level 05. Therefore, it was discovered that none of the demographic factors showed a notable correlation with the children's understanding of the risks associated with mobile phone usage at the selected schools in Moradabad. Thus, the post-test knowledge scores of the samples demonstrated statistical significance. Following an educational intervention focused on the risk of mobile phone usage, the scores of the samples significantly improved post-intervention compared to pre-intervention, thus validating the research hypothesis.

Conclusion: The analysis revealed that the post-test scores indicated a rise in the awareness of mobile phone risks among school children. Therefore, it was determined that educational programs tailored to children in Moradabad enhanced their understanding.

Keywords: Effectiveness, structured education intervention, knowledge, mobile phone, school going children, risk

Introduction

Youngsters today vary from older youngsters in a few ways. As they grow up, youngsters today are exposed to mobile phones, which causes them to worry about their use. Young children are beginning to use cell phones. Because of the competition among network providers, mobile phones are getting cheaper and cheaper, which encourages more people—not just adults—to use them.

The majority of the research currently available regarding the negative health impacts of mobile phone use points to the fact that children and teenagers are still developing, raising concerns about whether or not they are more susceptible to electromagnetic fields than adults.

The current generation of children is being raised in a technological environment that predates human history. Mobile phones and masts release harmful radiation, which may harm children. Others mention potential health risks, academics, inappropriate conduct, exam malpractice, isolation from family, discrepancies with parental expectations, and unsuitable internet content access. The allure lies in the array of vibrant lights and the captivating voice of the mobile, which entralls the child. They desire to handle and observe it, and subsequently, it will have a detrimental impact on their psyche. Due to radiation, the brain reaction time will be sluggish, leading to various sleep disorders and consequently impacting their study efficiency. A disruption in cognitive development can negatively

impact children who use mobile devices. Due to this, it impedes both the child's mental growth and diminishes their interest in other activities. He will experience loneliness due to his behavioral and social tendencies. Thus, the child has not matured at their appropriate developmental stage for their age. Instead of this, children are experiencing headaches due to prolonged mobile phone usage, which will interfere with their studies and may harm their eyesight. Additionally, mobile phone radiation can affect the child's nervous system.

Material and Methods

Methodology: A quantitative (evaluation) methodology was employed to ascertain the knowledge of school-aged children concerning the risks associated with mobile phone usage. The aim of this research was to evaluate the awareness of primary school students about the dangers of mobile phone usage.

Research Design

The research design includes several key methodological choices that the researcher makes during the study. The research methodology employed in this investigation is the pre-experimental design, which involves a single group pretest followed by a posttest.

Table1 O1 (pre-test) X (intervention) O2 (post-test) - Assessment of demographic data using a baseline proforma - Evaluation of knowledge about the risk of using mobile phones through a structured knowledge questionnaire. Introducing a prepared structured education intervention on the risk of using mobile phones.

Variables

The elements under examination in this research are the independent and dependent variables. The independent variable influences the outcome of the dependent variable. Independent variable: The independent variable in this study pertains to the structured education intervention aimed at reducing the risk of mobile phone usage. Dependent variable: The variable measuring the awareness of school-aged children about the dangers of mobile phone usage is knowledge. Demographic variable: This research examines demographic factors such as age, gender, family type, family income, and living location.

Setting of The Study: The current research was carried out in designated schools in Moradabad. Children enrolled in schools were chosen for this research.

Population: The sample population will consist of students enrolled in schools designated in Moradabad.

Target Population: The current study's focus group consists of school-aged children in designated schools of Moradabad.

Sample and Sampling Technique

Sample

Sixty school-aged children (between 10 and 16 years old) enrolled in specific schools in Moradabad form the sample of this study.

Sample Size: The data utilized in this research comprised 60 school-aged children from chosen schools in Moradabad.

Sampling technique: A non-probability convenient sampling technique was employed in this current research.

Criteria for Selection of the Sample

Inclusion criteria

Students who are

1. Willing to participate in the study.
2. The ability to comprehend and interpret the linguistic medium being studied.
3. Who are present at the time of study.

Exclusion Criteria

Students who are

1. Not available at the time of data collection.
2. Have recent knowledge on mobile phone risk.

Selection and Development of Tool

Phase-1

Demographic Variable

These are the statistical traits or features of the human population that are analyzed. This research examines demographic factors such as age, gender, family type, family income, and living location.

Phase-2

Development of Structure Knowledge Questionnaire

A questionnaire was crafted to evaluate the educational knowledge of school-aged children in selected schools of Moradabad.

Scoring

A template for scoring will be created, with each correct answer receiving a score of 1 and each incorrect answer being marked as 0.

Reliability

The reliability of the tool was assessed through the split-half method. The computed 'r' coefficient was 0. Thus, the instrument was determined to be dependable.

Validity

The reliability of the structured education intervention, assessment tool, and auxiliary aids was confirmed through content validity. PILOT STUDY A pilot study was carried out at Sri Sai Kanya Inter College, Moradabad, U. P. The school was chosen using a non-probability convenient sampling method. The instrument was given to 10 school-aged children, who provided their samples for the procedure.

Procedure For Data Collection

The data was gathered at Sri Sai Kanya Inter College, Moradabad, U. P., detailing the nature and confidentiality of their responses to elicit honest feedback. Data was gathered through administering the tool to 10 school-aged children for the pilot study and to 60 school-aged children for the final study.

Plan For Data Analysis

The following plan analysis is developed

1. Distribution of demographic characteristics among school-aged children by frequency and percentage.
2. To determine the disparity in knowledge between the pre-test and post-test scores, one can calculate the mean, median, mode, and standard deviation.
3. To assess the success of the structured education program, the 't' value is utilized.

4. The chi-square test illustrates the connection between a child's knowledge of school and specific demographic characteristics.

Results

The results are structured based on the study's objectives and are outlined in the subsequent subsections.

Section1: Description of demographic variables of selected samples.

Chapter 2: Evaluation of awareness among school-age children regarding the risk of using mobile phones in selected schools in Moradabad.

Section 3: Administration of structured education intervention.

Chapter 4: Examine the correlation between knowledge scores related to cervical cancer prevention, taking into account factors such as age, gender, family type, family income, and living location.

The mean difference and standard deviation of pretest and post-test knowledge scores were calculated and are detailed in the table.

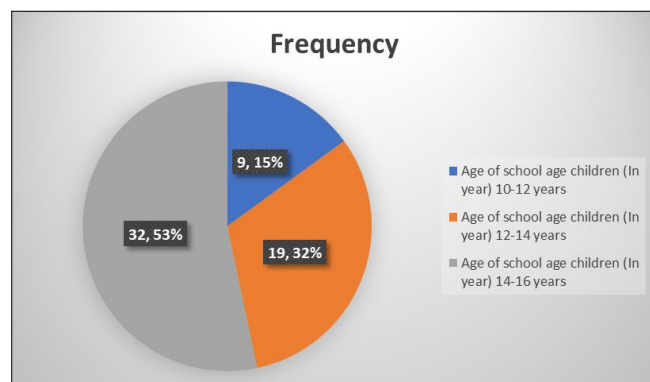
Table 3: s.no. Knowledge score mean median standard deviation 1 Pretest 6. 33 7 2. 47 2 Post-test 16. 68 17 1. 62 Maximum score=20 Table 3 illustrates that the average post-test knowledge score was 16. The percentage of school-aged children exceeding the mean pre-test score was higher than the overall average. The study indicated that children attending school acquire knowledge. The result indicated that the post-test knowledge score surpassed the pre-test knowledge score.

Word Count: 173

Frequency and percentage distribution of school going children according to their age.

Table 4: N=60

Demographic variable	Frequency	Percentage
Age of school age children (In year)	10-12 years	9
	12-14 years	19
	14-16 years	32



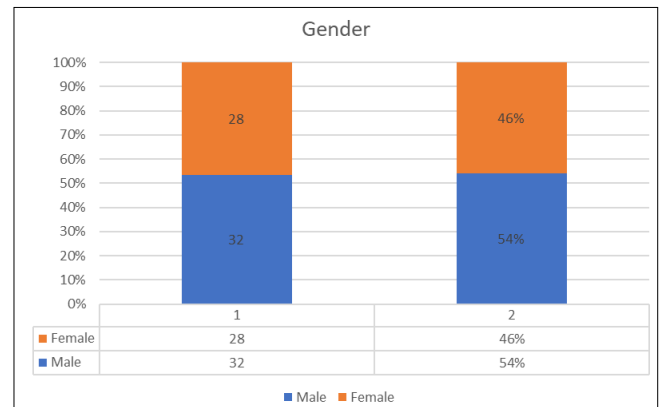
Pie diagram representing percentage distribution of school going children according to their age.

As shown in above Pie graph, according to their age, majority ie 53% were from the age group 10-12years 32% were from the age group 08-10years 15% were from the age group 06-08years.

Frequency and percentage distribution of school going children according to their gender.

Table 5: N=60

Demographic variable	Frequency	Percentage
Gender of school age children (In year)	Male	32
	Female	28



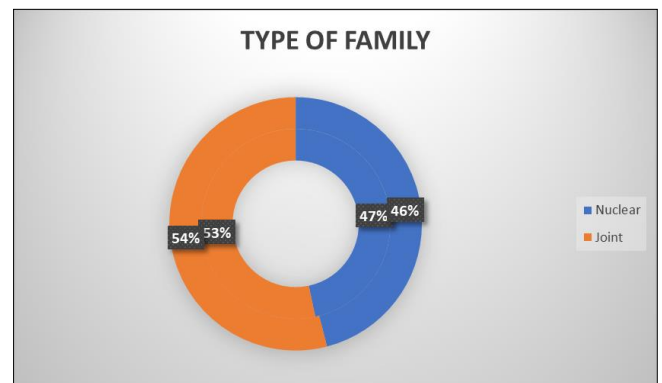
Bar diagram representing percentage distribution of school going children according to their Sex.

As shown in above Bar graph, according to their sex, majority ie 54% were from the gender male 46% were from the gender female.

Frequency and percentage distribution of school going children according to their type of family.

Table 6: N=60

Demographic variable	Frequency	Percentage
Type of family of school going children	Nuclear	28
	Joint	32



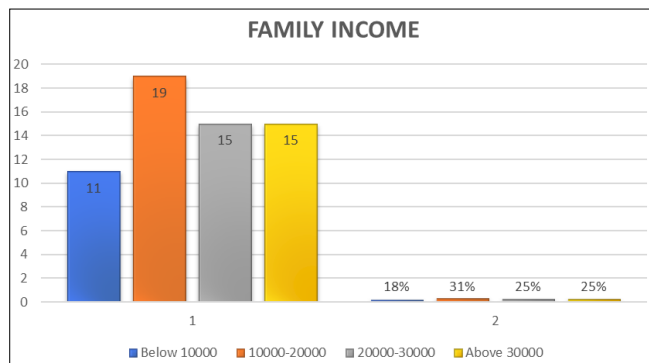
Doughnut diagram representing percentage distribution of school going children according to their Type of family.

As shown in above Doughnut diagram, according to their sex, majority ie 54% were from the joint type of family 46% were from the nuclear type of family.

Frequency and percentage distribution of rural women according to their family income.

Table 7: N=60

Demographic variable	Frequency	Percentage
Family income per month	Below 10000	11
	10000-20000	19
	20000-30000	15
	Above 30000	15



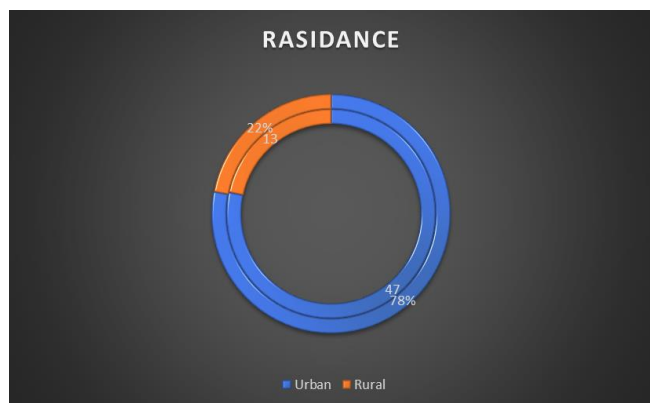
Bar diagram representing percentage distribution of school going children according to their family income.

As shown in above Bar diagram that 31% of school going children were from 10000-20000, 25% of school going children were from 20000-30000 and above 30000, 18% of school age children were from below 10000.

Frequency and percentage distribution of rural women according to their residence.

Table 8: N=60

Demographic variable	Frequency	Percentage
Residence of school going children		
Urban	47	78%
Rural	13	22%



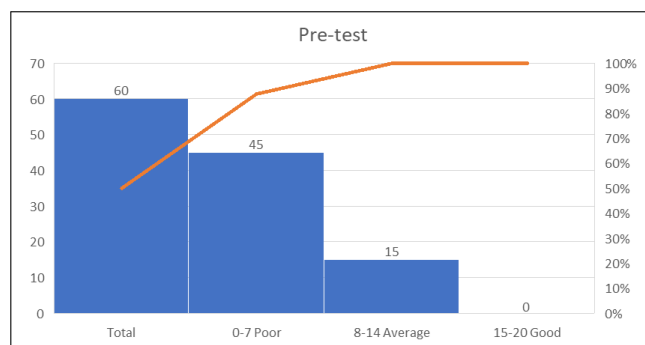
Doughnut diagram representing percentage distribution of school going children according to their Residence.

As shown in above Doughnut diagram, according to their residence, majority ie 78% were from the urban 22% were from the rural.

Frequency and percentage distribution of school going children according to their knowledge score in pretest

Table 9: N=60

Knowledge Score	Frequency	Percentage
0-7 Poor	45	75%
8-14 Average	15	25%
15-20 Good	00	00
Total	60	100%



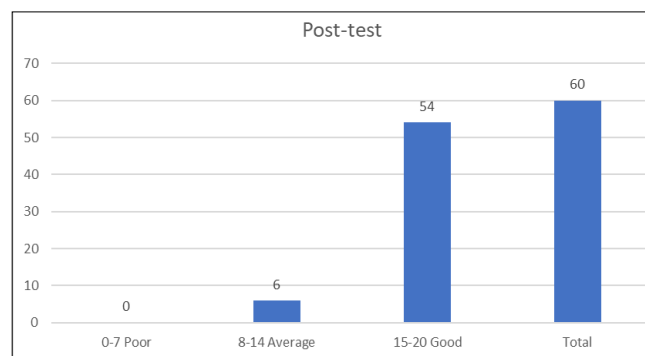
The diagram representing percentage distribution of school going children according to their knowledge score of pre-test.

As shown in above Bar diagram that 75% of school going children had poor knowledge in pre-test & 25% school going children had average knowledge score in pre-test.

Frequency and percentage distribution of school going children according to their knowledge score in post-test

Table 10: N=60

Knowledge Score	Frequency	Percentage
0-7 Poor	00	00
8-14 Average	6	10%
15-20 Good	54	90%
Total	60	100%



The Bar diagram representing percentage distribution of school going children according to their knowledge score of post-test.

As shown in above Bar diagram that 90% of school going children had good knowledge in post-test & 10% school going children had average knowledge score in post-test.

Mean, Mean deviation, standard deviation of difference, standard errors of mean difference, t value of pre-test and post-test knowledge scores;

Table 11:

S. No.	Knowledge Score	Mean	Mean Deviation	Standard Deviation Of Difference	Standard errors of mean difference	T value
1.	Pre-test	6.33	2.47	1.71	0.22	46.8
2.	Post-test	16.68	1.62			

Paired t-test was applied to compare the knowledge score of school going children before and after structured education intervention. Conclusion from the above analysis, SD=1. 71, Calculated t = 46. 8 is greater than the tabulated t = 1. 671 is

at 0. 05 significant level it is clear that there is difference in knowledge before and after structured education intervention to school going children. Thus null hypotheses was rejected and alternate hypotheses was accepted.

Therefore it is established that the structured education intervention regarding brisk of using mobile phone was effective in enhancing the knowledge of school going children in selected schools of Moradabad.

Association of knowledge score with socio demographic variables.

Demographic variables	Df	P value	Significant
Age of school going children	4	0.42	Non-significant
Gender of school going children	2	0	Non-significant
Type of family	2	0	Non-significant
Family income	6	6.15	Non-significant
Place of residence	2	2.87	Non-significant

There is not significant association between the socio demographic variables.

P value corresponding to all demographic variables are large (>0.05 level)

Discussion

This study aimed to evaluate the impact of a well-designed educational program on children's awareness of the dangers associated with mobile phone usage. The results showed a substantial increase in participants' knowledge about mobile phone health risks after the educational intervention, suggesting that well-designed teaching methods are effective in raising awareness about these issues.

Prior to the intervention, many children exhibited minimal comprehension of the harmful consequences linked to excessive mobile phone usage. This concurs with earlier research indicating that adolescents lack adequate understanding of radiation exposure, eye strain, sleep disturbances, and addiction risks associated with mobile phone use (Kaur & Singh, 2021; Thomas *et al.*). In 2020. The post-test outcomes indicated a significant rise in knowledge scores, implying that well-organized education is vital in closing this awareness gap.

The success of the intervention can be linked to the utilization of interactive and age-appropriate teaching techniques, including visual aids, discussions, and demonstrations. These tactics probably aided in enhanced understanding and memory of the material. Observations paralleled in a study conducted by Sharma *et al.* In 2022, a study revealed that students demonstrated notable enhancements in their comprehension following the introduction of a health education program focused on safe mobile phone usage.

Furthermore, the research validates the theoretical model of health promotion, highlighting that awareness and education are crucial factors in fostering health-promoting behaviors. Enhancing children's understanding may lead to changes in their views and behaviors concerning mobile phone usage, including reducing screen time, maintaining correct body position, and avoiding phone use at night. Nevertheless, the research does possess some constraints. The study's sample size was restricted to a single school, potentially impacting the findings' generalizability. Moreover, the research concentrated solely on immediate knowledge acquisition, neglecting long-term memory consolidation and behavioral modifications. Future studies might encompass a broader and more varied group, extended observation periods, and the incorporation of behavioral assessment tools to gauge

the lasting effects of these interventions. Although these constraints exist, the findings offer significant educational, parental, and healthcare-related insights. They underscore the significance of incorporating structured health education into school curricula to foster safe and responsible technology use among children. With increasing mobile phone usage among younger demographics, ongoing educational programs are crucial in mitigating the physical, emotional, and social hazards linked to improper use.

References

1. Nesimović S. The Effects Of Mobile Phone / Tablet Use On Preschool Children. Available online at <http://www.scienceijsar.com>,2021:02(04):1290-1294. April.
2. Wang JC, Hsieh CY, Kung SH. The impact of smartphone use on learning effectiveness: A case study of primary school students. *Educ Inf Technol*,2023;28:6287-6320. <https://doi.org/10.1007/s10639-022-11430-9>
3. Kopecký K, Fernández-Martín FD, Sztokowski R, Gómez-García G, Mikulcová K. Behaviour of Children and Adolescents and the Use of Mobile Phones in Primary Schools in the Czech Republic. *Int J Environ Res Public Health*,2021;18(16):8352. Published online 2021 Aug 6. doi: 10.3390/ijerph18168352
4. Chiu CT, Chang YH, Chen CC, Ko MC, Li CY. Mobile phone use and health symptoms in children. *Journal of the Formosan Medical Association*,2015;114(7):598-604. July.
5. Pratap S. A study to assess the impact of cell phone among school children in Bhubaneswar Khorda, Odisha. *International Journal of Trend in Scientific Research and Development (IJTSRD)*, 2021, 5(4). May-June. Available online:www.ijtsrd.com e-ISSN: 2456-647
6. Siddiqui N. The Prevalence of Mobile Phone Use in The School Going Children in North Al Batinah Region of Oman: A Cross Sectional Study. *Biomedical & Pharmacology Journal*,2020;13(4):1993-2002. December. DOI:10.13005/bpj/2078
7. Chóliz M. Mobile-phone addiction in adolescence: The Test of Mobile Phone Dependence (TMD). *Prog Health Sci*, 2012, 2(1). Test Mobile Phone Addiction
8. Rajakumari AG, Sunitha M, Soli TK. A study to assess the information of communication on Knowledge regarding hazards of mobile Phone uses and prevention among Adolescents al /. *Int. J. of Allied Med. Sci. and Clin. Research*,2013;1(2):73-77.
9. Mohan LA. Impact Factor: 8.4 IJAR www.allresearchjournal.com Received: 08-02-2022 Accepted: 12-05-2022 Assistant Professor, M Sc. Nursing, T John College of Nursing, Bannerghatta road, Bengaluru, Karnataka, India,2022;8(6):412-418.
10. Gautam S. study on Knowledge regarding harmful effects on cell phone use among higher secondary school students Bharatpur Chitwan, Nepal. *Journal of Chitwan Medical College*,2017;6(4):47. February. DOI:10.3126/jcmc.v6i4.16715
11. Joshi P, Kaur H. A Descriptive Study to assess the knowledge regarding ill effects of excessive usage of computers and mobile phones on the health of adolescents studying in Sacred Light Senior Secondary School Fatehpur, Rajputan, Amritsar, Punjab. *Asian J.*

- Nursing Education and Research,2019;9(4):477-482.
doi: 10.5958/2349-2996.2019.00100.9
12. Pendse N, Zagade T. Knowledge and Attitude Regarding Health Hazards of Mobile Phone Users among g the Junior College Students. International Journal of Science and Research (IJSR), 2012. ISSN (Online): 2319-7064 Impact Factor: 3.358
 13. Shettigar D, Mathew A, Monis EP, Vineesh KV. Assessment of knowledge on Ill Effects of Cellphones usage among Adolescents with a View to Develop Information Booklet: An urban Community Based Study. Asian J. Nur. Edu. and Research,2013;3(3):167-170. July-Sept.
 14. Arpith P. Effectiveness of Structured Teaching Programme on Knowledge Regarding the Health Hazards of Mobile Phone Usage,2021;11(3):97-101. DOI:10.26715/rjns.11_3_7
 15. Views: 1569, Downloads: 74
 16. Khoshgoftar M, Mazaheri MA, Tarahi MJ. The Effect of Educational Intervention Based on Health Belief Model to Decrease and Prevent Mobile Phone Addiction among Female High School Students in Iran. Int J Pediatr,2019;7(10):10175-187. DOI: 10.22038/ijp.2019.40785.3438
 17. <https://innohealthmagazine.com/2019/well-being/effects-mobile-phones/#:~:text=According%20to%20a%20recent%20research%20conducted%20by%20the%20International%20Agency,glued%20to%20their%20cell%20phones.>
 18. Hardell L. Effects of Mobile Phones on Children's and Adolescents' Health: A Commentary. Child Development, 2017, 89(3-4). May. DOI:10.1111/cdev.12831
 19. Ubale PV. a study on the impact of the cell phone usage on school going children, 2013, 2(2). Feb. ISSN No.2277-8160
 20. Parasuraman S, Sam AT, Yee SW, Chuon BL, Ren LY. Smartphone usage and increased risk of mobile phone addiction: A concurrent study. Int J Pharma Investig,2017;7:125-31.
 21. Rather MK, Rather SA. "Impact of Smartphones on Young Generation". Library Philosophy and Practice (e-journal), 2019, 2384.
 22. Frimpong KO. The Effects of Mobile Phone Usage on the Academic Performance of Ghanaian Students, a Case of Presbyterian University College Asante - Akyem Campus. International Journal of Innovative Research and Advanced Studies (IJIRAS), 2016, 3(11). October. ISSN: 2394-4404
 23. Acharya JP, Acharya I, Waghrey D. A Study on Some of the Common Health Effects of Cell-Phones amongst College Students Article in. Journal of Community Health, 2013. January. DOI: 10.4172/2161-0711.1000214
 24. Sharma R. Essentials of Pediatric Nursing: For B.Sc, Post Basic Nursing Students. Jaypee Brothers Medical Publishers (P) Limited, 2013.
 25. Sharma S. Nursing research and statistics- E-book. 4th ed. New Delhi, India: Elsevier.