

Nurse-Led Intervention To Enhance Mothers' Knowledge Of Parental Mediation Strategies For Managing Digital Device Use Among Early Adolescents

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Abstract

The pervasive use of digital devices among children and adolescents has raised global concerns, linking excessive use to health and developmental issues, such as poor sleep, reduced physical activity, and exposure to inappropriate content. Parents play a crucial role in regulating their children's device use, yet many lack sufficient knowledge and skills to implement effective parental mediation strategies. This study aimed to evaluate the effectiveness of a nurse-led intervention in improving mothers' knowledge of parental mediation strategies for early adolescent digital device use. A true experimental design with pre- and post-tests was employed, involving 400 mothers of children aged 10–14 years, selected through simple random sampling. Participants were divided into experimental and control groups (200 each). The study group participants received a Self-Instructional Module (SIM) and attended an online training session. Post-tests were conducted on the seventh day, and the control group received the SIM after the study as an ethical measure. Data were analysed using SPSS 20.0. Results showed a statistically significant improvement in knowledge among the experimental group compared to the control group ($p=0.001$), demonstrating the intervention's effectiveness. This study underscores the critical role of nurses in empowering parents with evidence-based strategies to manage their children's digital device use. The findings support the integration of nursing-led interventions into policies and guidelines to enhance parental involvement and create a healthier digital environment for children and adolescents.

KEYWORDS: Nurse led Intervention, Parental mediation strategies, Early adolescent, digital device. etc.

INTRODUCTION

We live in a swiftly changing digital world. Technology is altering the childhood of millions of children worldwide and it has a role in the lives of children more than ever before. The world has changed dramatically over the first three months of 2020, with the COVID -19 pandemic impacting every aspect of our lives. These changes have been clear in the world's digital behaviours too, especially as billions of the people turn to connected devices to help them cope with life and work under lockdown.

The influence of media on adolescents has grown significantly in recent years. Even children as young as six months are drawn to their parents' smartphones and quickly learn how to use these devices. It means that even the smallest members of our society are sparked by innovation. To address these issues, the American Academy of Paediatrics issued a policy statement in 2020, recommending parents to keep children under the age of two, away from televisions screens. Parents are concerned with how, where and to what degree they can use digital devices for their children because it surrounds them. These concerns have existed since the introduction of television into all homes. As a result, research on parental mediation strategies have arisen to analyse different approaches parents take to deal with their children's digital device use.

IMPACT OF DIGITAL DEVICE USE AMONG EARLY ADOLESCENTS

Adolescents are described as those aged 10 to 19 years old by WHO and UNICEF on a global scale. Although the Government of India's Ministry of Health and Family Welfare has followed the WHO definition, other government bodies continue to use different definitions and age classes. It is a unique stage of human development and an important time for laying the foundations of good health. Early adolescence might be

broadly considered to stretch between the ages of ten and fourteen. Indian Academy of Paediatrics considered the age of early adolescents from ten to thirteen. There is a pressing need to understand the transition from early adolescence to young adolescents because they begin to assert more independence as they move through the stages of adolescents. This means they may rebellious especially when parents strengthen or reinforce instructions and set limits. In this age group children need more privacy and want more freedom and less supervision.

IMPORTANCE OF PARENTAL MEDIATION

Several studies indicate that parenting plays a significant role in shaping children's internet use. As most parents now own digital devices, children are exposed to them early on and quickly develop an interest in them through regular parental use. Consequently, parents employ a variety of strategies to help their children benefit from new technology while minimizing risks and avoiding negative outcomes. The constant presence of media leaves many parents anxious about how, when, and to what extent they should allow media use for their children.

OFCOM's 2019 report highlighted growing parental concerns about screen time, with more parents worried about their children's TV watching habits compared to previous years. Additional concerns have emerged around exposure to self-harm-related content, in-game spending, and harassment during online gaming. Although parents take pride in their children's digital skills and proficiency with devices, many feel unsure about how to adequately protect their adolescents online. Reports show that parents of older children find it increasingly difficult to monitor their media usage, especially when kids take their mobile phones or tablets to bed.

IMPORTANCE OF NURSING INTERVENTION ON PARENTAL MEDIATION STRATEGIES

The World Health Organization has gathered and reviewed significant data from recent research to help parents understand their role in preventing adolescents from engaging in high-risk health habits. Creating a safe and supportive environment, providing accurate information, building skills, providing counsel, and improving health care are all major themes of the intervention. As a result, WHO programs aimed at improving adolescent health care focused on the family, which includes family members, especially parents.

Nurses can help parents manage their children's digital device use by providing information on the risks and benefits, assessing parents' knowledge and beliefs, offering guidance and support, promoting positive parenting strategies, and referring parents to other resources for additional support. They can provide education through one-on-one discussions, handouts, or online resources, and can help parents set limits on device use, monitor online activities, and promote alternative activities that promote physical activity and socialization. By promoting positive parenting strategies, nurses can help parents build strong, supportive relationships with their children, which can lead to healthy device use habits.

Nurse-led interventions on parental mediation will assist healthcare providers, parents, and families in meeting the current issue of unhealthy digital devices use by the children. Parents can connect families with support, promote open discussions, and develop a stronger awareness of their child's health by evaluating their screen time. Empowering adolescents to safely use digital technology will reduce the stress of parents and minimize harmful consequences as children progress into adulthood.

Paediatric Nurses play an important part in delivering education as educators. Parents cannot monitor their children's use of various digital devices or unnecessary screen time until they are aware of the situation. Parents cannot prohibit their children from using mobile devices because it would negatively affect their academic success. However, many mothers are stressed and unaware of how to solve this problem and reduce the children's time on screen. Hence, parents must have sufficient knowledge about the importance of

parental mediation and methods for monitoring their adolescent's digital device use. Education of mothers regarding parental mediation can help the mothers to prevent or deal with the excessive use of digital devices using by the children. Our goal as researchers, is to provide valuable, outstanding, and scientifically sound evidence that increases the health, well-being, and quality of life of the people we serve. Nurses oversee providing services that increase health care protection and quality of life for parents and their families. The more we know about what keeps parents feel confident in their parenting roles, the better it can be for their child's health and development, as well as the family's overall well-being.

Objective: This study aimed to assess the effectiveness of a nurse-led intervention in improving mothers' knowledge of parental mediation strategies for early adolescent digital device use in selected schools in Kerala.

Scope of the Study

Parents have an important role in their children's education and development by assisting them in maximizing the benefit of digital media while also controlling and guiding them through the risk and harms of being exposed to inappropriate content. The roles of parents are to be the protectors, and the decision-makers, and act as facilitators when their children reach adolescence. Basic concepts in family-centred care are enabling and empowerment which recognizes the family as the constant in a child's life. Parents, as the primary caregivers, have a fundamental effect on the digital lives of their children. Nurses can support families in their natural caregiving and decision-making roles by providing adequate knowledge in caring for their children within and outside the hospital setting. The paediatric nurse is responsible for promoting the health and wellbeing of the child and family. As an advocate, the nurse should ensure that families are aware of all health problems and strategies involved in childcare and encouraged to change or support existing health care practices.

It has been noted by researchers that most children aged 3 to 18 spend a considerable amount of time both indoors and outdoors engaged in activities such as watching television, playing video games, browsing the internet, and utilizing other forms of digital media and devices. During the ages of 10 to 14, adolescents undergo significant changes in their physical bodies, hormones, cognitive abilities, and other aspects of development. They still have high expectations when it comes to using digital devices. As a result, parents of adolescents face a variety of challenges in limiting their children's prolonged screen time.

Some parents are unaware of the harmful effects of unsafe media content on the lives of their children. Harmful media contents are now easy to reach due to technological advancements, and they are widely distributed through internet services. Furthermore, parents lack sufficient skills to keep up with the digital era and the use of various digital devices to protect their children from inappropriate digital media. It seems that no rules or regulations governing the analysis of media content exist to support adolescent media users and their parents in evaluating which media contents are appropriate for their needs. Studies showed that more than half of children's use of digital devices occurs at home, which gives several opportunities for parents to involve themselves in monitoring their children's media use.

Several scholars have suggested that the use of parental controls as an approach towards maximizing healthy influences and minimizing the risk associated with the use of digital media. However, there is a lack of research on parental knowledge about parental mediation strategies. Thus, it is essential for nurses and other health care providers to talk with parents of children and adolescents about the frequency, content and nature of the digital and social media use and various approaches parents can use to control, supervise, or interpret the media content. Parental education for awareness is one of the preventive and interventional solutions for keeping children safe from the hazards of digital media and helping them in creating coping strategies. Understanding mothers' knowledge in parental mediation or evolving their parenting practices in a media-rich setting certainly challenges me and inspires me to do more research on this subject. As a paediatrics

specialist nurse, the researcher felt nurses can give instructions to parents about mediation strategies and personalized plans for safe and healthy technology use for digital children in this digital world. Besides this, during the literature review, the investigator found that studies in this area are rare especially in India which shows the increasing need for this study

METHODOLOGY:

The research design adopted for the present study was True experimental design with experimental and control group pre & post-test research design. This design was adopted to assess the knowledge of mothers on parental mediation strategies on digital device use of early adolescents following the administration of self-instructional module. The sample chosen for the present study consisted of four hundred mothers who had early adolescent children between the age group of 10 -14 years residing in selected villages of Kottayam District, Kerala. Power analysis was used to calculate sample size based on the results of the pilot study. Simple random sampling (lottery method) was used to identify and select 400 mothers of early adolescent children from various schools who satisfied the inclusive criteria for the study (200 in the experimental group and 200 in the control group). The tools and Self-instructional module were tested for its reliability and content validity was obtained from various experts from nursing, clinical psychologists, statistician, and educationalist. A pilot study was conducted to assess the feasibility and practicability of the study and to determine the major flaws in the design. The intervention was given to the subjects of experimental groups for about 40-45 minutes. The subjects for pilot study possessed the same characters as those of the samples for final study and these samples were excluded from the main study.

An online questionnaire was administered to collect data, ensuring adherence to ethical principles throughout the study. The participants in the study group were provided with a Self-Instructional Module (SIM) and participated in an online training session lasting approximately 40-45 minutes. The training session aimed to address any questions or concerns participants had regarding the study topic. On the seventh day of the intervention, a post-test was conducted to assess the knowledge of parental mediation among mothers in both the study and control groups. Following the post-test, as part of the ethical responsibility of the researcher, SIM was also provided to the control group. Ethical considerations were maintained throughout the study, ensuring participant confidentiality and informed consent. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0.

RESULTS

The result of the present study revealed that there was a high statistically significant difference found in knowledge of mothers on parental mediation between experimental and control group at $p=0.001$ level. The nurse-led intervention had great impact on the knowledge of mothers of experimental group. The present study concluded that Nurse led intervention on parental mediation was an effective intervention in improving the knowledge of mothers of early adolescent children.

Comparison of the post-intervention knowledge of mothers regarding parental mediation strategies of early adolescent's digital device use between the study and control group showed that at pre intervention level the study group's mean and SD knowledge scores were 12 and 5.69, respectively, whereas the control groups were 15 and 5.57. However, the study group's post-intervention means, and SD scores were 19 and 3.01, respectively, whereas the control groups were 15 and 5.33. The total mean difference score was 2.97 (22.85%) in the pre-test and 4.77 (17.88%) in the post-test. The t value of 5.284, with a p value of 0.0001, in the pre-intervention period, and the t value of 10.320, with a p value of 0.0001, is very significant in the post-intervention period.

Knowledge Domains	Test	Mean	S. D	Mean %	Mean Difference Score %	Paired 't' Test Value
Importance of PM & Mother's role	Pre-test	5.39	2.97	44.92%	3.0 (25%)	t=13.975 p=0.0001 S***
	Post Test	8.39	1.94	69.92%		
Methods of Parental mediation	Pre-test	5.77	3.24	44.38%	3.98 (30.62%)	t=16.749 p=0.0001 S***
	Post Test	9.75	1.84	75.00%		
Overall	Pre-test	11.16	5.69	44.64%	6.98 (27.92%)	t=17.196 p=0.0001 S***
	Post Test	18.14	3.01	72.56%		

The analysis of the association between post-intervention knowledge levels of mothers in the control group regarding parental mediation strategies for early adolescents' digital device use and demographic variables revealed that, except for the employment status of the mother, all chi-square values were below the critical value at the 0.05 level of significance. Therefore, it can be concluded that there was no significant association between mothers' knowledge and demographic variables such as age, family income, type of family, gender and number of pre-adolescent children, time spent by children on digital devices, and the mother's experience in handling digital devices.

DISCUSSION

The study found that at the pre-intervention level, 73% mothers of early adolescent children had average or poor knowledge of the importance of parental mediation and the role of the mother in parental mediation, while 55% mothers in the comparison group had poor or average knowledge. This is consistent with a study conducted by Deb (2017) which surveyed 400 mothers of early adolescents and found that a significant percentage of mothers had fair or poor knowledge of parental mediation strategies. Additionally, a study by Livingstone et al. (2015) revealed that 10% of the 677 parents surveyed were unaware of their children's online activity, and 18% lacked the knowledge to assist their children with internet safety. Effectiveness of nurse led intervention on knowledge of mothers regarding parental mediation strategies of early adolescent's digital device use in the study group indicated by the Mean and SD score of 12 and 5.69, respectively, in the pre-intervention phase, which increased to a Mean and SD score of 19 and 3.01, respectively, in the post-intervention phase. Similar study conducted by Ozturk and Kahraman (2021) aimed to determine the effect of a nursing intervention program on reducing screen time in preschool children among mothers of preschool children who were randomly divided into intervention and control groups. The observation of the present findings is consistent with the study by Umi Hani (2020) utilized a quantitative methodology and a quasi-study technique to examine the influence of a digital media literacy program on mothers' self-efficacy in parental mediation, including a pre- and post-test with a control group

LIMITATIONS AND RESEARCH GAPS

The study had several limitations. It focused exclusively on mothers of early adolescent children, excluding fathers from participation. The scope was limited to assessing mothers' knowledge of parental mediation strategies, without exploring their attitudes or practices in this area. Data collection relied solely on online responses, which may have impacted the generalizability of the findings. Furthermore, the study addressed excessive digital device use but did not delve into issues of addiction. Conducting the study across multiple settings could have provided more comprehensive and clearer insights

CONCLUSION: In conclusion, the nurse-led intervention in this study was found to be effective in improving mothers' knowledge of parental mediation strategies for early adolescent digital device use. The study's findings suggest that nurses can play a vital role in educating and supporting parents in managing their children's digital device use. The results of this study highlight the importance of parental involvement in managing their children's digital device use and the need for nursing interventions aimed at improving parents' knowledge and skills regarding parental mediation strategies. Nurses can use the findings of this study to develop evidence-based interventions that promote healthy habits and reduce potential risks associated with excessive digital device use.

Overall, this study emphasizes the role of nurses in promoting health and well-being among children and adolescents by empowering parents with the necessary knowledge and skills to manage their children's digital device use. The study's findings can contribute to the development of nursing policies and guidelines aimed at improving parental involvement in managing children's digital device use, ultimately promoting a healthier and safer digital environment for children and adolescents.

REFERENCES

1. Growing concern for well-being of children and young people amid soaring screen time – UNICEF. (n.d.). [Www.unicef.org. https://www.unicef.org/lac/en/press-releases/growing-concern-for-well-being-of-children-and-young-people-amid-soaring-screen-time](https://www.unicef.org/lac/en/press-releases/growing-concern-for-well-being-of-children-and-young-people-amid-soaring-screen-time)
2. Kemp, S. (2021, January 27). Digital 2021: Global Overview Report. DataReportal. <https://datareportal.com/reports/digital-2021-global-overview-report>
3. Valkenburg PM, Piotrowski JT. Plugged In How Media Attract and Affect Youth. 2017 Apr 25 Available from: <https://click.endnote.com/viewer?doi=10>.
4. 2021 AAP Virtual National Conference & Exhibition. (2021, August 18). American Academy of Pediatrics. <https://publications.aap.org/aapnews/news/17387/2021-AAP-Virtual-National-Conference-Exhibition?autologincheck=redirected>
5. Brown, A. (2011). Media use by children younger than 2 years. *PEDIATRICS*, 128(5), 1040–1045. <https://doi.org/10.1542/peds.2011-1753>
6. Children and parents: media use and attitudes report 2020/21 Annex: Background and methodology Contents. (n.d.). <https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/media-literacy-research/children/childrens-media-literacy-2021/children-and-parents-media-use-and-attitudes-annex-2020-21.pdf?v=326328>
7. Statista. (2022). The statistics portal for market data, market research and market studies. Statista.com; Statista. <https://www.statista.com/>
8. Maheshwari, R. (2020, March 13). 1 In 10 Indian Adolescents Faces Cyberbullying, Half Don't Report: Study. IndiaSpend; Indiaspend. <https://www.indiaspend.com/1-in-10-indian-adolescents-faces-cyberbullying-half-dont-report-study>
9. Krishnan, V. B. (2019, November 7). Where does Kerala's Internet access stand compared to other States? The Hindu. <https://www.thehindu.com/news/national/where-does-kerala-internet-access-stand-compared-to-other-states/article61622340.ece>
10. Lin, M.-H., Vijayalakshmi, A., & Laczniak, R. (2019). Toward an Understanding of Parental Views and Actions on Social Media Influencers Targeted at Adolescents: The Roles of Parents' Social Media Use and Empowerment. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.02664>
11. Chaudron, S., Navarette, V., (2018) Rules of engagement: Family rules on young children's access to and use of technologies https://eprints.lse.ac.uk/119873/3/Chaudron_et_al_Rules_of_engagement_accepted.pdf
12. Lauricella, A. R., Wartella, E., & Rideout, V. J. (2015). Young children's screen time: The complex role of parent and child factors. *Journal of Applied Developmental Psychology*, 36(36), 11–17. <https://doi.org/10.1016/j.appdev.2014.12.001>
13. Ling, C., & Kai Yee, H. (2021). Parental mediation: Its impact on contexts of emotional behavioral adjustment among children in Kota Kinabalu district. *Cogent Social Sciences*, 7(1), 1870070. <https://doi.org/10.1080/23311886.2020.1870070>

14. Brito, R., Francisco, R., Dias, P., & Chaudron, S. (2017). Family Dynamics in Digital Homes: The Role Played by Parental Mediation in Young Children's Digital Practices Around 14 European Countries. *Contemporary Family Therapy*, 39(4), 271–280. <https://doi.org/10.1007/s10591-017-9431-0>
15. van Kruistum, C., & van Steensel, R. (2017). The tacit dimension of parental mediation. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(3). <https://doi.org/10.5817/cp2017-3-3>
16. Smahelova, M., Juhová, D., Cermak, I., & Smahel, D. (2017). Mediation of young children's digital technology use: The parents' perspective. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(3), Article 4. <https://doi.org/10.5817/CP2017-3-4>
17. Connell, S. L., Lauricella, A. R., & Wartella, E. (2015). Parental Co-Use of Media Technology with their Young Children in the USA. *Journal of Children and Media*, 9(1), 5–21. <https://doi.org/10.1080/17482798.2015.997440>
18. Nikken, P., & de Haan, J. (2015). Guiding young children's internet use at home: Problems that parents experience in their parental mediation and the need for parenting support. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 9(1). <https://doi.org/10.5817/cp2015-1-3>
19. Kale, N., Maheshwari, A. R., Kaley, V., & Rath, N. (2021). Screen-Time in Indian Children – An Online Survey Study. *Indian Journal of Pediatrics*, 88(4), 384–385. <https://doi.org/10.1007/s12098-020-03613-4>
20. Mathew, P., Krishnan, R., & Bhaskar, A. (2020). Effectiveness of a Nurse-Led Intervention for Adolescents With Problematic Internet Use. *Journal of Psychosocial Nursing and Mental Health Services*. <https://doi.org/10.3928/02793695-20200506-03>
21. Ishtiaq, A., Ashraf, H., Iftikhar, S., & Baig-Ansari, N. (2021). Parental perception on screen time and psychological distress among young children. *Journal of Family Medicine and Primary Care*, 10(2), 765. https://doi.org/10.4103/jfmpc.jfmpc_1720_20
22. Hani, U., Sonhaji, S., & Anggraini, C. N. (2020). Media Digital Literacy Program in Improving Parental Mediation Efficacy with Community Nursing Approach. *STRADA Jurnal Ilmiah Kesehatan*, 9(2), 1779–1787. <https://doi.org/10.30994/sjik.v9i2.522>
23. Smith, S., & Bevan, A. (2020). Role of school nurses in identifying and supporting children and young people with mental health issues. *Nursing Children and Young People*, 32(2), 23–28. <https://doi.org/10.7748/ncyp.2020.e1253>
24. Shirley, S. A., & Kumar, S. S. (2019). Awareness and attitude among parents of primary school students towards screen time in children. *International Journal of Contemporary Pediatrics*, 7(1), 107. <https://doi.org/10.18203/2349-3291.ijcp20195736>
25. Shin, W., & Li, B. (2016). Parental mediation of children's digital technology use in Singapore. *Journal of Children and Media*, 11(1), 1–19. <https://doi.org/10.1080/17482798.2016.1203807>
26. Livingstone, C. (2015). Misunderstanding the meaning of resilience. *BMJ*, 350(mar18 7), h1423–h1423. <https://doi.org/10.1136/bmj.h1423>
27. Kushlev, K., & Dunn, E. W. (2018). Smartphones distract parents from cultivating feelings of connection when spending time with their children. *Journal of Social and Personal Relationships*, 36(6), 1619–1639. <https://doi.org/10.1177/0265407518769387>
28. Konca, A. S. (2021). Digital Technology Usage of Young Children: Screen Time and Families. *Early Childhood Education Journal*, 50(7). <https://doi.org/10.1007/s10643-021-01245-7>
29. Matthes, J., Thomas, M., Stevic, A., & Schmuck, D. (2020). Fighting Over Smartphones? Parents' Excessive Smartphone Use, Lack of Control Over Children's Use, and Conflict. *Computers in Human Behavior*, 116(106618), 106618. <https://doi.org/10.1016/j.chb.2020.106618>
30. Alkan Rü, Aslan A, Turgut Ye, Kurşun E.(2021). Factors Affecting Parental Mediation Strategies in Children's Technology Use: A Systematic Review. *Journal of Computer and Education Research*. <https://doi.org/10.18009/jcer.925859>