The Impact of Online Learning among Adolescents during the COVID-19 Pandemic: A Qualitative Study of Mothers’ Perspectives

Abstract
Background: The COVID-19 pandemic changed the educational system from conventional learning in schools to online learning. The use of the internet as a learning medium can have positive and negative impacts on adolescents and cause concern for mothers. In this study, mothers' perspectives were explored with the phenomenological approach to assess their experience of the effect on line learning during the COVID-19 pandemic among adolescents. Materials and Methods: The qualitative study design: phenomenology was conducted on mothers with children at senior high school education levels. The data were collected using in-depth interviews from June to November 2020 in West Java, Indonesia. A total of 13 mothers were recruited using the purposive sampling technique. Data analysis was performed using the Colaizzi method and NVIVO software for managing the coding process. Results: We obtained four themes, namely (1) formation of adolescent behavior with the internet, (2) prevention of internet addiction, (3) disturbance of cognitive development, and (4) negative effect of online learning. Conclusions: The usage of the internet cannot be avoided. By guiding adolescents, the negative effects of the internet could be prevented. Developing learning programs, media, and online learning strategies according to students' needs should be promoted. Keywords: Adolescent, COVID-19, distance, education, internet use, online learning

Introduction

The COVID-19 pandemic is a public health problem and has impacted many aspects of life, including education and learning methods. The increasing number of COVID-19 cases and the death rate have forced governments in various countries, including the Indonesian government, to respond quickly to control the spread of the disease. Currently, the Indonesian government has made numerous efforts to reduce cases of COVID-19, one of which is implementing social restrictions. The social restriction policy requires people to perform most activities at home. In the current situation, the internet is the main channel for engaging in community activities while at home, such as socialization activities, work, sports, and learning activities at school. Indonesia ranked fifth worldwide in the longest internet usage time in 2019. During the COVID-19 pandemic, internet users increased by 52%, and the number of people suffering from internet addiction reached 14.4%. Internet addiction causes disturbances in psychological and social functions and leads to maladaptive behavior. A study conducted in Iran found that members of internet addiction groups tended to show symptoms of psychological disorders. This pandemic is likely to increase the risk of internet addiction, especially among adolescents.

Online learning is one of the educational policies that have been implemented to reduce the spread of COVID-19 cases. All educational institutions have been required to quickly adapt to carry out practical educational activities. The adaptations in online learning include changing the learning system from offline to online, ensuring the readiness of human resources – both teachers and students – and conforming to online learning support media, including using the internet. However, this can be a threat because it can cause people to be addicted to the internet. Adolescents who are not familiar with online learning are less focused during their studies, so they cannot understand the teachers’ materials. In

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addition, online learning also has an impact on the family economy due to the need to buy online learning equipment and internet quotas.\[^9\]

Previous research has shown that during the COVID-19 pandemic, internet use and online learning have increased. On the one hand, this learning method can have positive impacts, such as efficiency, accessibility of time and place, affordability, and improved students’ attendance, and it suits a variety of learning styles. On the other hand, it also has adverse effects, such as the inability to focus on screens, technology issues, a sense of isolation, lack of teacher training, and difficulty managing screen time.\[^{10,11}\] The internet can be a beneficial path, especially for adolescents, but it can also have a negative influence on them.\[^{12}\] Therefore, parents play an essential role in decreasing the internet’s negative impacts and maximizing online learning.\[^{13,14}\] In this study, mothers’ perspectives were explored to assess their experience of the effect online learning during the COVID-19 pandemic among adolescents.

**Materials and Methods**

The present study was conducted from June to November 2020 and used qualitative research that took the descriptive phenomenological approach to describe the experience related online learning effects. The interview process in this study was carried out directly by the researchers. The research team composed of male and female researchers with experience in nursing, qualitative research, and publications. There were no relationships between the researchers and participants, and they met one another only during the research process. The total sample in this study was 13 participants who were selected through the purposive sampling technique. The sampling was conducted in senior high schools that were part of the Internet Addiction Prevention Program developed by the Faculty of Nursing, Universitas Padjadjaran. The participants’ inclusion criteria were mothers with adolescent children who attended senior high school with an online learning system during the COVID-19 pandemic. To obtain the potential participants, we acquired information from the previous participants who were interviewed. Primarily, the previous participants knew about the conditions of the next participants. Culturally, mothers in Indonesia are fully responsible for their adolescent children’s daily care rather than the fathers, and they are familiar with online learning processes. In this study, none of the participants withdrew. Participants provided informed consent to indicate their willingness to participate in the study. Furthermore, participants’ identities were coded, and only the researchers had knowledge of them.

The research focused on three different cities in West Java, Indonesia. West Java province has the highest number of internet users in Indonesia, and it can be said that adolescents in West Java are more at risk of being affected by the internet than other regions. During the COVID-19 pandemic, schools in West Java, especially senior high schools, applied online learning methods. Data collection was achieved through in-depth interviews. Researchers carried out face-to-face and telephone interviews. COVID-19 health protocols were the researchers’ main concern in face-to-face interviews. The questions, such as “Can you explain your opinion about the impact of online learning on your children?” and “What do you think about the impact of the internet on your children during online learning?”, gathered information about mothers’ experiences of adolescents’ internet use for study and other activities during the COVID-19 pandemic. To ensure the confidentiality of the interview process, the interviews were conducted only between a researcher and a participant. The researcher continually explored and repeated the questions with the participant until it was certain that the questions were answered. The researcher used the methodological and researcher triangulation approaches. Methodological triangulation was applied using several research methods. This method uses more than one data collection technique to obtain the same data from interviews with an audio recorder and observation with field notes, while researcher triangulation provides more information based on other points of view. The interview process was carried out two to three times to obtain complete information. Follow-up interviews were conducted in case of incomplete information from the participant. The researcher asked the questions related to incomplete information with different types of open questions. During the research process, the researcher used audio recording to collect data and field notes to record any changes in the participant’s expressions, voice intonations, or actions. The interview was conducted for 30–60 min. The verbatim process and data collection were carried out simultaneously. When data was saturated and there was no new information from the participant, the researcher stopped interviewing and collecting data. Next, the researcher returned the transcript to the participant for confirmation and correction of the data.\[^{15}\]

The NVIVO 12 software (QRS International) was used to assist data organization. Data analysis was performed using the Colaizzi method.\[^{16}\] The method consists of seven stages, namely (1) reading and rereading the transcript, (2) extracting significant statements that pertain to the phenomenon, (3) formulating meanings from meaningful words, (4) aggregating formulated meaningful words into theme clusters and themes, (5) developing an exhaustive description of the phenomenon’s essential structure or essence, (6) a report of the fundamental form of the phenomenon is subsequently generated, and (7) validation of the findings of the study through participant feedback to complete the analysis. Trustworthiness was supported in this study by using the guidelines developed by Lincoln and Guba\[^{17}\] relating to credibility, dependability,
confirmability, and transferability. Credibility refers to demonstrating internal consistency, ensuring the rigor of the research process, and communicating the actions taken. Credibility was supported by reviewing the data collection twice, including the perceptions between the researchers and enumerators. Each interviewer wrote notes during the interview process to ensure that every aspect was appropriate according to the interview guidelines and conducted a briefing before data were collected. Dependability involves evidence of and reasoning for the accuracy, relevance, or meaning of the data. Dependability was ensured by congruence between two or more independent people. It confirmed that the findings of the qualitative inquiry would be repeatable if the inquiry were to be conducted again within the same cohort of participants, with the same coders, and within the same context. Furthermore, dependability was ensured by defining clear study stages, keeping research diaries, coordinating regularly on a weekly basis, and ensuring accurate data coding. Confirmability refers to establishing and communicating links between the data, analytic processes, and findings so that the reader can confirm the adequacy of the findings. Confirmability was ensured by evaluating the research process during meetings and the reading and analysis of the data together as a team. Transferability provides reasoning and evidence that findings can be generalized or transferred to other empirical settings or points of time. Strategies to support transferability included purposeful sampling according to the study criteria and objectives to obtain a range of experiences and by providing a description of the context of the nurses’ experiences.

**Ethical considerations**

This research received ethical approval with number 465/UN6.KEP/EC/2020 on May 7, 2020. The ethical principles were adopted based on the World Medical Association’s Declaration of Helsinki. The researchers considered all the ethical issues of the qualitative studies. Before data collection through in-depth interviews, the researchers explained the study purpose and confidentiality of the information and asked for informed consent. In this study, the participants had the right to withdraw from the study at any time.

**Results**

The characteristics of the participants showed that they came from three different districts in West Java Provinces, Indonesia. Two of the participants were mothers from Cirebon, West Java, Indonesia, seven participants were mothers from Bandung, West Java, Indonesia, and four were mothers from Purwakarta, West Java, Indonesia. The data were collected in each region. The age range of the participants was 40–52. Four themes emerged from the mothers’ perspectives about the impact of the internet and online learning during the COVID-19 pandemic among adolescents [Table 1].

| Subthemes                                      | Themes                                      |
|-----------------------------------------------|---------------------------------------------|
| Positive behavior                             | The formation of adolescent behavior with the internet |
| Negative behavior                             | Prevention of internet addiction            |
| Limiting gadgets and internet access          | Disturbance of cognitive development        |
| Providing activities                          |                                             |
| Asking for help from the teacher, friends, and the religious leader  |                                             |
| Limited access                                |                                             |
| Lack of understanding of online learning materials |                                             |
| Monotonous learning situation                 | The negative effect of online learning      |
| In adequate bonding between teacher and student |                                             |
| Loss of friendships                           |                                             |

**Theme 1: The formation of adolescent behavior with the internet**

The mothers said their children were at risk of internet addiction because of using the internet continuously. The use of the internet for online learning and other purposes has led to both positive and negative impacts. This theme composed of two subthemes, which are positive behavior and negative behavior.

**Positive behavior**

The positive behaviors identified from the interviews included adolescents using the internet to engage in online businesses, such as trading cosmetics or clothes. The internet was also used to help the parents’ businesses; the children promoted their parents’ merchandise online. In addition, the students could share learning information easily. “actually, the internet also has a positive impact on children. Internet makes children more widely informed. Besides that, my child can also get information about learning materials from friends outside the city of Bandung (place). Not only that, my child and I can also online shop...” (P5).

Another positive behavior that was reported by a mother was related to her child’s social care: “We live in a rural and poor village; my kids think about how will poor children study online? Then my kids share free internet access at home with the poor children in the school from 7 pm to 12 pm. One of my kids keeps an eye on the children’s school activities when they use the free internet” (P2).

**Negative behavior**

One mother reported that her child could not manage time for activities, delayed routine religious worship, did not care about the environment, and did not have creativity and life skills. She said that the internet causes gaps in parent–child relationships and drove adolescents’ lack of respect for parents. “When he was studying through a Zoom meeting with his teacher, he did not turn on the...”
camera of the laptop, and he actually sang through his phone. When I asked him to pay attention to the teacher, he said that he could not study without music. In my opinion, it would be difficult for him when his teacher explained physics or mathematics subjects while he listened to the music and sang. Commonly, his focus was not the online class material but the cellphone. He did text chatting with friends in the middle of study” (P6).

Participants also shared information about their children’s behavior that could lead to internet addiction, such as the children becoming manipulative and temperamental and no longer paying attention to personal hygiene (P3).

A mother (P10) reported the effect of social media on her daughter’s psychological condition: “My daughter was bullied by her friends via Instagram. The impact was she did not want to go to school, dropped her study achievement, and finally she withdrew from the school, and I helped her to move to another high school” (P10).

The findings identified various adolescents’ behaviors when using the internet. The internet may have influenced positive behavior; however, more participants reported adverse effects and even maladaptive behaviors that could threaten children’s physical and mental health.

**Theme 2: Prevention of internet addiction**

The participants revealed various actions and efforts they made to prevent the adolescents’ addiction to the internet. Both parents – fathers and mothers – took preventive action. This theme comprised of three subthemes, namely (1) limiting gadgets and internet access, (2) providing activities, and (3) asking for help from others.

**Limiting gadgets and internet access**

Mothers reported that when children only studied at home, they were more likely to use gadgets such as handphones and laptops, and the internet all the time, even when there were no online learning schedules. Parents performed actions to protect their children: “When my kid plays games or social media with gadgets, they often lose track of time. Although they have finished online school, they continue to play online games. I asked him, what are you doing? He answered that he was working on his school homework, I knew he was not. So, when he finished his online learning schedule, I kept the handphone. I give it back to him for study matters” (P1).

**Providing other activities**

Online learning caused children to sit in front of a handphone or laptop and reduced their physical activities. Parents encouraged their children to perform physical activities: “I asked him to do morning exercises … or when he finishes online learning, I ask him to meet with his friends … at least he does physical activity… not only in front of the laptop and studying. I am afraid that my child will be sick and stressed.” (P9).

During online learning, adolescents spend more time in front of the laptop to study and play online games. Several participants (P3, P9) reported their efforts to remind their children (especially Muslim) about their daily activities: “I always remind him to pray on time … sometimes he forgets the time when he's in front of the laptop. As a religious person, he must maintain his closeness to God …” (P6).

**Asking for help from others**

Mothers expressed emotional responses because of their children’s internet addiction problems. It broke their hearts, made them upset, caused worry for the child’s future, and made them very sad. They asked for help from others, including psychological counselors from the children’s schools and religious advisers (Ustadz). “I told Ustadz (male) about my son’s condition, he said I should make more Doa (pray) for my son. He advised me to keep closer to Allah Almighty. I also shared my son’s problem with his class teacher. The teacher referred me to the school counselor. The counselor visited my house and talked with my son; he said my son has no problems with his studies. I don’t know what will happen” (P3).

The participants were aware of the negative impacts of using the internet for prolonged periods, so they instinctively took steps to prevent addiction. Participants who believed that their children were addicted to the internet asked for help from others to solve problems, and assist their children.

**Theme 3: Disturbance of cognitive development**

The COVID-19 pandemic has changed various aspects of life, including education. Schools in Indonesia have shifted to online methods at all levels, including senior high schools. However, limitations in the processes and management of online learning reduced the quality of education and the students’ ability to comprehend lessons. This theme is supported by two subthemes: limited access and school programs, and lack of understanding of online learning materials.

**Limited access and school programs**

Limitations in accessing online learning were the main problems. For adolescents living in rural areas with limited signal coverage, the online learning process was not optimal. Unequal internet access hampered the delivery of materials during school sessions. Moreover, parents had to spend more money on internet quota purchases. “I live in a village. I feel sorry for my child … if there is online learning, my child has to go to my relative's house … because at home I don’t have internet access. Telephone signal is also difficult …” (P2).

Most of the mothers explained that online programs from school were also still limited. The participants said that
school sessions only lasted 3 h, from 8:00 am to 11:00 am, after which children had no other activities. Adolescents became bored, so they used the internet more often to play online games (P8, P11).

Lack of understanding of online learning concepts

Changes in educational methods, such as online learning, were challenging for the students. They were accustomed to direct (face-to-face) education with interactions between teachers and students. However, during COVID-19, educational methods were carried out online and were not suitable for all students. In addition, the lack of active interaction made students less aware of the materials presented by the teacher or caused difficulties in easily stressed. “My child is always at home and only in front of the laptop ... now she rarely plays with her friends ... the teacher gives a lot of assignments. My child sometimes looks stressed ... I feel sorry for it ... usually when she go to school, she can play with her friends. But not now ...” (P6).

Theme 4: The negative effect of online learning

The online learning process during the COVID-19 pandemic presents new challenges and requires adaptations to new learning systems. Mothers perceive that conventional learning in class is still more effective than online learning. This theme is supported by three subthemes: (1) monotonous learning situation, (2) inadequate bonding between teacher and student, and (3) loss of friendships.

Monotonous learning situation

Online learning provides a different situation from classroom learning. Mothers reported that during online learning, their children seemed discouraged, tired and bored easily. They stated that online learning can be applied but not for a long time. “I saw that my child while taking online learning looked less enthusiastic, easily tired, and bored. In addition, it also makes you less focused on receiving learning. I think this is due to the monotonous learning situation. Children are only in front of the laptop continuously ... it's different in class ... the atmosphere must be more fun. Hopefully, this online learning will not last long ...” (P12).

Inadequate bonding between teacher and student

The bonding between teacher and student during online learning is less than before. During the learning process in class, teachers can become closer to their students and pay more attention to their development. However, during the COVID-19 pandemic, this cannot be done directly. “As a parent, I see that online learning is good... but it seems like something is missing... so the closeness between the teacher and the students is lacking... and in my opinion, the learning process seems to be less than optimal” (P13).

Loss of friendships

Social relationships, such as friendships that usually occur alongside the learning process, are reduced. The children’s closeness to their friends has decreased. This can have an impact on a child’s psychology; for example, they are more easily stressed. “My child is always at home and only in front of the laptop ... now she rarely plays with her friends ... the teacher gives a lot of assignments. My child sometimes looks stressed ... I feel sorry for it ... usually when she go to school, she can play with her friends. But not now ...” (P6).

The change in the learning method from offline to online teaching during the COVID-19 pandemic has led to several risky situations for adolescents that may influence their educational achievements.

Discussion

The data analysis results show that all participants perceive that the internet has an impact on their adolescent children’s behavior. This finding is confirmed both in Indonesia and abroad in research with qualitative and quantitative approaches.[18–20] A study that applied the focus group method showed that the internet exerts an important influence on the user’s mindset. The various types of applications affect the information obtained both positively and negatively, but the internet increases adolescent understanding in responding to reports received, choosing what is right, and is not mainly for adolescents with good personalities.[20]

A previous study explored how the internet affects adolescent behavior.[21] This research explores adolescents’ behaviors related to the internet from the parents’ perspective, particularly the mothers. A mother is an essential aspect in an adolescent’s development. This research provides new insights into a mother’s view of an adolescent using the internet. The results show that the mothers feel that their children have gained positive and negative attitudes as a result of using the internet for prolonged periods of >6 h per day. Similar to Halim’s research (2015), this study shows that mothers believe that adolescents can use the internet in beneficial ways, such as engaging in business and helping others.[22] It can also have negative impacts, such as not being able to manage time, neglecting their religious duties, and not maintaining personal hygiene. Furthermore, the effects of bullying can also be seen. Negative behavior due to internet use is a problem faced by many adolescents. On the one hand, the results of this study provide information to adolescents and parents so that they are aware of the threats of this problem. On the other hand, they can also learn about the opportunities and positive impacts of the internet if used wisely.

The data analysis found a theme related to the parents’ activeness in preventing and overcoming their adolescent
children’s internet addictions. Parents can observe the various changes in their children, so they use multiple efforts to protect the adolescents from the negative impacts of internet use, such as limiting the use of gadgets and inviting them to various activities. Parents who believe their children suffer from internet addiction seek help to overcome problems and create a support system for the family.

These parenting activities are confirmed to be able to control and prevent the problem of internet addiction. The parent’s role is essential so that internet addiction does not become overwhelming. A study conducted in Portugal showed that adolescents who were included in the internet addiction category tended to have less control than their parents in using the internet.[22] Although parental control was not significant in statistical analysis, the results showed that adolescents whose internet usage was controlled by their parents were more likely not to have an internet addiction.[21,23] Therefore, parents play a crucial role in preventing internet addiction in adolescents.

Based on the results of an analysis of the online teaching and learning process during the COVID-19 pandemic, majority of the mothers revealed that there were more negative than positive impacts and wanted their children to return to school as soon as possible. COVID-19 is a global health problem that affects various aspects of life, including education. The sudden change is not easy for schools, teachers, students, and parents. There have been many challenges, such as schools not preparing online learning programs beforehand. The teachers in Indonesia in very broad and diverse areas had to prepare materials and facilities online, which many schools had limited capacity to provide. Students have also been required to adapt, as well as parents in charge of preparing all the facilities.[24] Data analysis shows that all parents want schools to return to the way they were before the COVID-19 pandemic.

The study results are similar to the research in China, which showed parents’ lack of trust and attitudes toward online learning. The results of this study indicated three reasons why parents preferred direct or traditional learning methods: (1) online learning does not meet the standards of existing learning programs, (2) the difficulty of parents when guiding their adolescent children, and (3) the limited range of the parents’ knowledge.[23] The school’s explanation of online learning to the parents, a collaboration between teachers and parents to guide online learning, and adequate learning media facilities are alternative approaches to bridging the gap between parents’ disagreements about online learning methods and school programs during the COVID-19 pandemic.

This study has limitations; for example, the retrieval of data from regimes undergoing online learning can be considered to obtain more varied data. In addition, this study only looks at the perspectives of the mothers. The perspectives of the fathers can also be considered. However, this study provides significant information from the mothers’ perspectives on the impact of the internet and online learning in adolescents during the COVID-19 pandemic. For future research, evaluations related to online learning methods need to be carried out by the government nationally.

Conclusion

This study identified positive and negative behaviors of adolescents expressed by their mothers after interactions with the internet, including online learning during the COVID-19 pandemic. Parents made various active efforts to prevent and overcome adolescent addiction to the internet. Parents expected schools to return to offline study and adolescents to resume various school activities. The themes found in this study were partly similar to and strengthened the evidence of previous research. Several new pieces of information emerged, specifically related to the use of the internet by adolescents from their mothers’ perspectives. Exploring the expectations of mothers regarding high school learning during the COVID-19 pandemic in a developing country like Indonesia is still limited. This study’s results can serve as a reminder for adolescents to use the internet wisely in terms of time and content. Parents must play an active role in preventing internet addiction. Supporting mothers with positive knowledge about internet technology will assist them in approaching and directing adolescents regarding internet usage. The introduction of the internet’s positive benefits for adolescents is important because this technology cannot be avoided, especially in school learning during the COVID-19 pandemic. Further research on the development of learning programs, media, and online learning strategies according to student needs is expected to strengthen the internet’s positive benefits for adolescents of this age group.

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Conflicts of interest

Nothing to declare.

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