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Distance Education for d/Deaf and Hard of Hearing Students during the COVID-19 Pandemic in Saudi Arabia: Challenges and Support

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A B S T R A C T

Background: On March 11, 2020, the World Health Organization declared COVID-19 to be a global pandemic. This prompted many countries, including Saudi Arabia, to suspend students' attendance at schools and to start distance education. This sudden shift in the educational system has affected students' learning, particularly for d/Deaf and hard-of-hearing (d/Dhh) students, who have unique language and communication needs.

Aim: This study explores the challenges and support methods for d/Dhh students during their distance education in Saudi Arabia.

Methods: A qualitative research study using semistructured interviews was conducted with 37 parents of d/Dhh students to answer the research questions.

Results: Three themes emerged from the parents' responses: (1) the challenges faced by d/Dhh students in distance education; (2) the specific needs of d/Dhh students in distance education; and (3) the supports provided to d/Dhh students in distance education.

Conclusions: Distance education is a strategic choice, and parents must be informed about how to use the Madrasati e-learning platform effectively by providing solutions and supports. Additionally, d/Dhh students require various forms of ongoing support from both their families and schools to ensure that they succeed and benefit from their experiences.

What this paper adds?

The present study explores the challenges and support methods in distance education for d/Deaf and hard-of-hearing (d/Dhh) elementary school students during the COVID-19 pandemic in Saudi Arabia. The findings show the varied responses of parents of d/Dhh children to their challenges, needs, and supports required during distance education. These data contribute to informing teachers and policymakers, and can help them to comprehend d/Dhh children’s challenges, needs, and supports when using the e-learning approach to ensure that they are successful and benefit from this new learning experience.

1. Introduction

The COVID-19 pandemic has had a profound impact on the global educational system, and students with disabilities have been the...
most affected (Pattisapu et al., 2020). Approximately 1.57 billion children have been homeschooled during the COVID-19 pandemic (UNESCO, 2020). According to the World Health Organization (WHO, 2021), COVID-19 is an infectious disease caused by a newly discovered coronavirus, and can be transmitted from one person to another. The rapid spread of the virus and its impact on human health and health systems around the world has forced many countries to modify their education (at least temporarily) and suspend students from going to school. Saudi Arabia is one of the countries that decided to start distance education for all students in the current academic year (Alsadoon & Turkestani, 2020). On August 15, 2020, the Saudi Ministry of Education launched the Madrasati e-learning platform, which was designed so that students could log in and attend their lessons digitally from home (Oraif & Elyas, 2021). The total number of male and female students reached on the Madrasati platform was 5,020,088, along with 420,000 assigned teachers and 21,000 school directors. Distance education has resulted in social distancing and a lack of physical gestures, making the learning environment difficult for the majority of d/Dhh students (Alsadoon & Turkestani, 2020; Pattisapu et al., 2020).

The educational system was not ready for such a social disaster, as most of the learning and teaching techniques were designed for students to be physically present (Kritzer & Smith, 2020). Special education teachers, including those for d/Dhh students, had no plans for an alternative educational design in such a crisis. More than 90% of students have been impacted by the COVID-19 pandemic in Saudi Arabia and have shifted their learning online (Kritzer & Smith, 2020). The closure of schools has had significant economic and social impacts; one of the most affected groups is students with disabilities. The transformation of classrooms into distance education at home poses a threat to the quality of education for d/Dhh students. For example, many hearing families with d/Dhh children usually have limited knowledge of sign language, which negatively affects the quality of teaching for math, science, and literacy skills (Paul, 2009).

Distance education is not new for most learning systems across the globe. However, the situation is different for developing countries that lack special infrastructure and professional competencies (Ferri et al., 2020). The accessibility of learning materials for d/Dhh students has always been questionable (Kritzer & Smith, 2020). The experience of distance education for d/Dhh students is not always the same as that of hearing students, since they cannot listen properly. Lessons with subtitles are not enough. Many d/Dhh students have severely poor reading skills and do not receive an adequate benefit from subtitles (Algraini & Paul, 2020).

Pacheco et al. (2020) examined the challenges of instructional accommodations for students with disabilities during the COVID-19 pandemic in schools. Many d/Dhh students have been unable to maintain the instructional attention required during online classes at home (Ayas et al., 2020). Because d/Dhh students are part of heterogeneous groups, it is difficult to rely on a single instructional method for all of them through online learning. Additionally, it is difficult to provide technological aid to this group of students at home. The physical attention given to each student at school cannot be replicated at home, and accessibility issues are common. Online teaching for d/Dhh students is a new way of teaching for most Saudi teachers. The lack of proper training for teachers is a critical issue that hinders progress in the online educational system. Teachers can only assess the conditions of d/Dhh students in the classroom; it is hard to evaluate each student during distance education (Pacheco et al., 2020). More importantly, some d/Dhh students have additional disabilities and other critical health issues that make distance education a challenge for teachers. Individual attention in distance education is also an obstacle, as students learn in a group format. The communication gap is a major hindrance for teachers and students, because physical gestures that are critical for d/Dhh students can never be managed appropriately.

In addition to the challenges facing d/Dhh children, their families deal with significant problems, including the availability of a learning environment, technological support, and coping with their children’s health. COVID-19 has made everyone socially isolated, and d/Dhh children have been the most impacted. Krishnan et al. (2020) elaborated upon the mental stress faced by children with disabilities at home, which has posed a challenge to their curriculum during the period of COVID-19 isolation. Approximately 80% of children with disabilities are unable to continue their studies under such conditions (Krishnan et al., 2020). The lack of a learning environment at home and the poor availability of specialized equipment are major issues faced by many families of d/Dhh children. Parents need to take extra time to provide specialized attention to their children during online learning (Stenhoff et al., 2020). As d/Dhh students are unable to sort out issues related to distance education, parents must communicate with teachers about the conditions of their students (Alsadoon & Turkestani, 2020). Teachers with poor knowledge of children’s interests and understanding during distance education are major problems. The quality of education has been marginal during the COVID-19 pandemic since teachers are unable to understand the individual development of each student (Alsadoon & Turkestani, 2020). Children’s lack of comprehension during distance education further diminishes their interest in online learning programs and has turned the whole learning program into a disaster.

Remote learning for d/Dhh children is not accessible to everyone, and most children face issues dealing with class activities. The communication barrier is hard to overcome in distance education, and parent involvement in such sessions makes it hard for a routine learning process to continue (Chodosh et al., 2020). The present study explores the challenges and support methods in the distance education of d/Dhh elementary school students during the COVID-19 pandemic in Saudi Arabia. A qualitative research methodology using semistructured interviews was conducted to answer three questions: (1) What are the challenges that d/Dhh students in elementary school face during distance education? (2) Does distance education during the COVID-19 pandemic meet the needs of d/Dhh students? (3) What supports do d/Dhh students need from the Ministry of Education in distance education?

2. Methods

To achieve the current study’s objectives, the researchers used a qualitative design and gathered data using semistructured interviews, which had some explicit structure in terms of style, but were not fully structured (Neuman, 2011). The interview questions were developed based on previous literature and direct communication with expert teachers and parents of d/Dhh students. Additionally, the researchers conducted two observations of d/Dhh students during their distance education at home, during which many
notes were taken about the challenges facing d/Dhh students during distance education; further, the researchers identified their needs and the supports they required to facilitate their learning.

After developing the interview questions, the researchers sent the interview structure to two faculty members in the Special Education Department and two parents of d/Dhh students to review its content and provide feedback. Accordingly, the structure of the interview was revised to refine, clarify, and review the sequence of the questions. The interviews included two sections. The first section requested demographic information about the d/Dhh students, including their age, grade, degree of hearing loss, whether they have an additional disability, the use of hearing aids, and the presence of d/Dhh family members. The second section included 10 open-ended questions about distance education divided into three groups: (1) challenges, (2) students’ needs, and (3) supports.

The researchers conducted 37 semistructured interviews with an open framework focused on conversational communication with the participants (Gubrium & Holstein, 2001). These interviews were tape-recorded and then transcribed for analysis.

2.1. Trustworthiness of the Findings

Previous research has suggested various methods to establish the reliability of the interpretation and the representation of qualitative findings. According to Lincoln and Guba (1985), the trustworthiness rubric includes four criteria: (1) credibility, namely, the truth of the findings; (2) transferability, which demonstrates the applicability of the findings in other contexts; (3) dependability, or the findings’ consistency; and (4) confirmability, meaning that the findings are not based on a researcher’s bias or interest and depend only upon the respondents.

In the present study, the analyst triangulation strategy was used to establish the credibility of the data. Specifically, the researchers employed multiple analyses to review the findings (Anney, 2014). First, the original researchers scrutinized the data separately and then compared their interpretations to understand different ways of construing the data. Then, two other researchers were asked to examine the data to compare their interpretations with those of the two original researchers. After reviewing their interpretations, an extensive discussion took place between the original researchers and the other two researchers to find the most suitable interpretation that represented the data appropriately.

2.2. Participants and Sampling Procedure

Thirty-seven parents of d/Dhh students participated in the study. All parents have d/Dhh children in elementary school who have been learning online due to the precautionary measures taken by the Saudi government in the face of the COVID-19 pandemic. Parents were selected randomly from different regions in Saudi Arabia.

The ages of the d/Dhh children range from 7 to 15 years. Their degree of hearing loss ranges from slight to profound, and 10 have additional disabilities. Two children have cochlear implants; 21 wear hearing aids, and 14 do not use hearing aids. There are also two students whose parents are d/Dhh. Table 1 provides an overview of the demographic information of the d/Dhh students.

2.3. Data Collection

The two original researchers gathered the data. First, they sent emails to 20 directors of elementary schools that had self-contained classrooms for d/Dhh students in different regions of Saudi Arabia, and asked them to facilitate the data collection procedures with parents. Then, the school directors contacted the parents of d/Dhh students to explain the study’s purpose and to obtain their permission to participate; 37 parents gave their consent to participate and to share their contact information with the researchers. Before conducting the semistructured interviews, an interview guide was developed to direct the conversation toward related topics and issues; it included six demographic information questions and 10 open-ended questions in three categories. All interviews were conducted via phone, and each interview lasted between 15 and 20 minutes. Table 2 provides the interview guide.

| Table 1 | Demographic Information of the d/Dhh Students. |
|-----------------|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| **Demographic Information** | **Age** | **Grade** | **Gender** | **Degree of hearing loss** | **Hearing aids** | **Does the student have (an) additional disability/disabilities?** |
| | | First grade | Second grade | Third grade | Fourth grade | Fifth grade | Sixth grade |
| | | 4 | 6 | 12 | 7 | 5 | 3 |
| | | Male | | | Female | | |
| | | 22 | | | 15 | | |
| | Slight | | | Moderate | | | |
| | | 5 | | 8 | Hearing aids | | |
| | | Cochlear implant | | 21 | | | |
| | | 2 | | | Without hearing aids | | |
| | No | | | | 27 | | |

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Table 2
Interview Guide.

| Topics and Issues                     | Questions                                                                 |
|---------------------------------------|---------------------------------------------------------------------------|
| Challenges of distance education      | - How has your child’s experience been in distance education?             |
|                                       | - What factors may limit the success of d/Dhh students in distance education? |
|                                       | - Can your child enter the e-learning platform on his/her own and independently communicate with his/her teachers? |
| Students’ needs in distance education | - Do you think your child is accepting and adapting to distance education? |
|                                       | - Do you think the current e-learning platform meets your child’s learning needs? Why? |
|                                       | - What are the needs of d/Dhh children during distance education?          |
|                                       | - What is your perception of the teacher’s role in meeting your child’s educational needs through the e-learning platform? |
| Support used during distance education | - Has the school contacted you to discuss your child’s distance education? |
|                                       | - What kinds of supports does a d/Dhh child and his/her family need from the school for distance education to succeed? |
|                                       | - Do you think that the school is able to provide the supports that a d/Dhh student requires during distance education? |

2.4. Data Analysis

This study followed three levels of analysis. First, three themes were initially identified based on the literature review, as well as the researchers’ experiences and prior knowledge. Second, the researchers reviewed the transcripts separately several times to familiarize themselves with the parents’ responses. Each researcher wrote in the margins to identify the themes summed up a piece of text (Creswell, 2014). The names of the themes were written down on separate pieces of paper and arranged into sections, with a brief definition of each theme. This step was important so that the researchers were familiar with the themes and where the topics in the text should go. Third, the researchers divided the data into appropriate themes and noted the relevant information, including the page, line, and transcript numbers. This process was carefully followed through the data analysis stages until the researchers summarized the entire text and arranged all related points (Creswell, 2014; Heath & Street, 2008). This method was useful in excluding and reducing data that were unrelated to the main themes, as well as for facilitating data interpretation (Heath & Street, 2008).

This process showed that the parents’ responses were consistent. Specifically, three major themes were identified: (1) the challenges faced by d/Dhh students in distance education; (2) the specific needs of d/Dhh students in distance education; and (3) the supports provided to d/Dhh students in distance education.

3. Results

The results are based on a qualitative analysis using interviews. The three themes are shortlisted from each interview and from the supporting literature.

3.1. Challenges Faced by d/Dhh Students in Distance Education

The first theme that emerged from the parents’ responses concerned the challenges faced by the d/Dhh students during distance education. Before asking parents about the challenges posed by distance education, they were asked about the extent of their children’s acceptance of distance education. Approximately 54% (n = 20) of parents reported that their children accepted distance education, whereas 46% answered “no.” Although 60% (n = 22) of the responses indicated that their children’s distance education experience was good or excellent, 40% (n = 15) said their children were having a difficult experience. Specifically, they indicated that several factors limit the success of d/Dhh students during distance education, in addition to communication difficulties between students and teachers. Parents were asked if their child was communicating independently with teachers, and 25% answered “no.” Additionally, 10% of parents reported that their children did not focus on their teachers and preferred to play games online during the lessons. Another challenge reported by parents (27%) was that many teachers did not use sign language fluently, despite there being no subtitles on the videos. Finally, 24% of parents emphasized the importance of encouraging and motivating d/Dhh students during distance education.

3.2. Specific Needs of d/Dhh Students in Distance Education

The researchers asked the families about whether the Madrasati e-learning platform, which was developed by the Saudi Ministry, met their children’s learning needs. Approximately 36% (n = 13) reported that the platform was easy to access and had great features that catered to students’ needs, while 64% reported the opposite. The majority of parents stressed that teaching d/Dhh students in a real classroom is much better than distance education because they can interact and communicate more effectively with teachers. More importantly, teachers in real classrooms pay more attention to students’ individual differences, which is difficult to do in distance education.
Parents were also asked about their perceptions of the teacher’s role in meeting their children’s educational needs in distance education. The majority (54%, n = 20) indicated that teachers should provide effective communication to their students using various teaching strategies and materials to deliver information.

3.3. Supports Provided to d/Dhh Students in Distance Education

The third theme is the supports that d/Dhh students require during distance education. The majority (73%, n = 27) indicated that communication between the school and families is important for identifying students’ needs and thereby providing the appropriate supports. Some parents (31%) mentioned that schools were providing enough supports to their children, whereas 69% reported the opposite. When parents were asked about the kinds of supports that d/Dhh students need from schools to succeed during distance education, the majority (56%) stated that teachers should constantly motivate students and follow up with parents to understand the students’ needs.

Additionally, 16% (n = 6) of the parents indicated that d/Dhh students always need a quiet space and a sense of calm at home. Some (24%) reported that schools should allow d/Dhh students to attend certain classes at school, particularly reading and math classes. From their perspective, distance education is exhausting for d/Dhh students when working on literacy skills and math, and schools should provide tutoring to d/Dhh students in these content areas. The majority of parents emphasized the importance of employing more visualization tools, and using sign language and subtitles with all videos.

4. Discussion

The results reveal the varied responses of parents of d/Dhh children to the challenges, needs, and supports required during distance education.

In the first theme, 54% of parents stated that their d/Dhh children accepted distance education; 60% had a positive experience, and 40% parents reported the opposite. This outcome suggests that the majority of parents believe their children do not face challenges with distance education. This could be attributed to the parents’ and children’s prior knowledge of using technology before the COVID-19 pandemic (Alsadoon & Turkestani, 2020; Dong et al., 2020). The results also show that some d/Dhh students face challenges in distance education, perhaps due to a lack of appropriate electronic devices or their knowledge of dealing with them. All d/Dhh children were using the Madrasati e-learning platform for the first time. Aguilar et al. (2021) explained a set of challenges that families might encounter during distance education, including the high cost of purchasing electronic devices, as well as communication difficulties between teachers and students.

The findings also imply that some d/Dhh children are distracted and lack focus during lessons on the platform. This result is consistent with Brazendale et al. (2017), who highlighted that children who do not attend school are often less physically active and have poor attention due to spending too much time in front of the television and other devices. Another major challenge that d/Dhh students face is the lack of provision for sign language and subtitles in videos provided by teachers on the Madrasati platform. Several studies have confirmed the importance of using sign language and subtitles during distance education with d/Dhh students to help them easily access content (Allen et al., 2014; Alqraini & Paul, 2020).

The results also underscore d/Dhh students’ needs during distance education: 36% of parents reported that the Madrasati e-learning platform is user friendly, while 64% said the platform does not meet their children’s needs due to the lack of sign language and subtitles in online videos. These results verify the significance of considering the characteristics of children with disabilities in general, and d/Dhh children in particular, when preparing and developing electronic platforms, as well as the need to adhere to the standards for access to content (Alsadoon & Turkestani, 2020; Greer et al., 2014; Vasquez et al., 2015).

Another critical outcome of this study is the consensus of most parents on the importance of their children attending some classes at school, such as reading and math, during distance education. From their point of view, it is difficult for their children to assimilate and acquire skills in these subjects through online education. Moreover, there are some uneducated parents who cannot teach their children at home. Hearing parents may face challenges in teaching their children due to language and communication difficulties. It is vital for schools to hold frequent meetings with parents to determine the most prominent academic problems facing d/Dhh students and to discuss the best possible solutions, such as offering them individual tutoring or allowing some students, particularly those with low achievement, to attend certain classes at the school.

The results demonstrate supports that might improve distance education for d/Dhh students and their parents. The first type of support comes from a child’s home by providing the necessary devices and preparing a quiet space for studying. d/Dhh students cannot learn and benefit from the platform if their home environment is not set up to meet their needs. The second most important form of support comes from the schools through providing effective communication to students and parents and continuously following up on students’ academic progress. Currie-Rubin and Smith (2014) found that schools play a vital role in making learning effective for all students by providing supports and building trust with families. The major supports families require during distance learning are encouragement, support, and motivation for continuous learning.

5. Recommendations

The recommendations can be summarized as follows:
Distance education is a strategic choice, and parents must be informed of how to use Madrasati effectively by providing solutions and supports.

Offer sign language and subtitles for all videos provided by teachers on the platform.

Give financial support to low-income families to buy electronic devices for their children.

Create a quiet environment for students at home.

Offer individual tutoring to students with low achievement levels.

6. Conclusion

To improve distance education for d/Dhh students, schools and parents must work together to overcome all home- and school-related challenges facing these children. Schools are also required to cater to students’ needs, and to communicate continuously with parents to monitor students’ academic progress. Finally, during distance education, d/Dhh students require various forms of ongoing support from both their families and schools to ensure that they succeed and benefit from this experience.

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