Investigation of Anxiety and Depression in the Parents of Children Receiving Special Education for Speech and Language Therapy during the COVID-19 Pandemic

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Abstract

Objective
To investigate the effects of possible disruptions in education and follow-up on anxiety and depression in parents of children receiving special education support for speech and language therapy.

Materials and Methods
A total of 111 parents whose children required special education due to speech and/or language impairments took part in the study. After obtaining the history of children receiving speech and language therapy that was interrupted due to the pandemic and the demographic information of the parents who filled out the questionnaire, the State-Trait Anxiety Inventory was used to determine the parents' anxiety level and the Depression Anxiety Stress Scale was used to determine their depression level.

Results
Due to COVID-19, 63.1 percent of the participants were unable to access special education for more than two months. While 62.2 percent of parents who completed the questionnaires did not feel hopeless or pessimistic about their children's future, 16.2 percent did. The parents who filled out the forms had high trait anxiety and medium-high state anxiety, according to their State Trait Anxiety scores. There was a positive statistically significant relationship between state anxiety and trait anxiety.

Conclusion
The anxiety levels of the parents were already high due to the situation of their children, and the interruption of education may have added to their anxiety.

Keywords: Parents of Children, COVID-19 Pandemic, Highrisk Infectious.

Introduction
Corona Virus Disease 2019 (COVID-19) is a highrisk infectious disease with a long incubation period (Huang et al., 2020). COVID-19 first appeared in December 2019 in Wuhan, China, and has since spread rapidly to become a pandemic affecting millions of people worldwide (Sohrabi et al., 2020). The virus was declared a Public Health Emergency of International

With the reporting of the first case on March 11, 2020, the virus's presence in Turkey was confirmed. As a result, education was interrupted across the country, including in special education centers. This method has become one of the most widely used "non-pharmacological reduction strategies" in the world for preventing and controlling COVID-19 infection and delaying the outbreak's peak (Viner et al., 2020). However, it is thought that this approach will have various effects on those whose education has been disrupted as well as their families. This closure lasted 3 months for special education centers.

Speech and language disorders are a condition that causes limitations in children in communication with their peers and close environment. Children who are diagnosed and referred for therapy at a young age have a better chance of academic and social success (McLeod & Harrison, 2009). Speech and language therapists (SLTs) are among the healthcare professionals who play a key role in the diagnosis, therapy, and follow-up of these children. During the therapy phase, SLTs maintain a strong relationship with families and supervise parent–child interactions while conducting a full examination to determine an effective treatment strategy. As a result, the majority of speech and language therapy programs are focused on the family (McKean et al., 2012; Miron, 2012). Parents support their child's speech and language performance with home-based activities under the supervision of an SLT, ensuring that the process moves forward more effectively. Parents can help their child's speech and language development at home with activities supervised by a speech-language pathologist, ensuring that the process moves forward more successfully. As a result, the psychological state and motivation of parents during therapy are crucial since they have a direct impact on the therapy's success (Keilmann et al., 2004).

Anxiety is a defense mechanism that assists humans in coping with danger. Özusta describes it as a "basic and adaptive emotion." (Özusta, 1995). Based on the acute and chronic terms of anxiety, Spielberger developed and scaled state and trait anxiety (Spielberg et al., 1970).

State anxiety occurs before and/or during risky situations, is associated with logical reasons, and is frequently influenced by temporary conditions that all individuals may encounter. Trait anxiety, on the other hand, is a sort of anxiety that is not induced by environmental risks, is not directly tied to the outcomes of individual experiences, and is evident to others. (Öner & LeCompte, 1985).

For special education children and their families, staying at home and, in most cases, interrupting education creates a stressful situation (Asbury et al., 2020). Since speech and language therapy is a dynamic process, it is thought that interrupting the education of children may have a negative impact on parent–child–therapist cooperation. As a result, the primary purpose of this study was to investigate the anxiety and depression that parents may experience as a result of the disruption in education and follow-up caused by COVID-19 in children who receive speech and language therapy through special education.

Method

One hundred eleven parents whose children received special educational support for speech and/or language impairment were contacted between 25 May and 10 June 2020. Before the study started, approval was obtained from the Ministry of Health and, in the follow-up, from Gazi University Ethics Commission (document dated 22.05.2020 and numbered 334).

The Inclusion Criteria's

- Seeking therapy because their child has a speech and/or language problem.
- The main problem of the child can be listed under any of the following risk headings: 1) speech sound disorder, 2) fluency disorder, 3) developmental language disorder (those with speech and language disorders due to diagnoses of developmental/mental retardation, autism, etc. were excluded from the study).
- The mother does not have another child with a chronic health problem or communication problem.
- Neither parent has a pre-existing diagnosis of psychogenic origin.

Application of the Questionnaire and Inventories

The questionnaire form prepared for the study was sent to the parents via social media. While the questionnaire was distributed, the recipients were informed that participation was voluntary, they could withdraw from the study whenever they wanted, and, if they agreed to participate, they would not be asked for information about their identity. All participants included in the study were informed about its purpose and a voluntary participation form was obtained from each of them (57 KSB (%51.3), 8 AKB (%7.21), 46 GDB (%41.44)).

The questionnaire, prepared by an expert internal SLT included demographic information questions for the parents who filled out the form,
questions for obtaining the history of their children who received speech and language therapy that was interrupted due to the pandemic, the State-Trait Anxiety Inventory (STAI), and questions about their depression.

The STAI, which was used to measure the anxiety levels of the participants in the present study, was developed by Spielberger. The inventory was adapted to Turkish and its validity and reliability were tested by Öner and LeCompte (Öner & LeCompte, 1985). In both scales, the answer options are four and the values of each option vary from 1 to 4. There are direct and reversed questions in the scales. Direct questions are about negative emotions, reversed questions are about positive emotions. There are ten (1, 2, 5, 8, 10, 11, 15, 16, 19, and 20) reversed statements in the State Anxiety Scale and seven (21, 26, 27, 30, 33, 36, and 39) in the Trait Anxiety Scale. The emotions or behaviors expressed in the State Anxiety Scale items are answered by marking one of the options (1) not at all, (2) somewhat, (3) moderately so, and (4) very much so, according to the severity of such experiences. The emotions or behaviors expressed in the Trait Anxiety Scale are marked as (1) almost never, (2) sometimes, (3) often, and (4) almost always, according to the frequency of feelings. The total score obtained from each scale varies between 20 and 80. A high score indicates a high level of anxiety. The first 20 questions of the inventory make up STAI-1 (state anxiety scale), which determines how the individual feels at a certain time and under certain conditions and thus measures state anxiety level. The next 20 questions make up STAI-2 (trait anxiety scale), which generally determines how the individual feels, and thus measures the level of trait anxiety, regardless of the situation and conditions. There are direct and reverse questions among the 40 questions in the test. While calculating the scores of both scales, firstly, the score obtained from the reverse questions is subtracted from the score obtained from the direct questions. Then fixed scores determined beforehand for each scale are added. A high score indicates a high anxiety level.

The Depression Anxiety Stress Scale (DASS), developed by Lovibond and Lovibond (1995), was used to measure the depression level of the participants. This scale consists of 42 items, 14 of which are about depression (for example, “I couldn't seem to experience any positive feeling at all”), 14 about anxiety (for example, “I was aware of dryness of my mouth”), and 14 about stress (for example, “I found it hard to wind down”). Only the 14-item part measuring depression was used in the present study. The scale uses 4-point Likert-type scoring: 0 did not apply to me at all, 1 applied to me to some degree or some of the time, 2 applied to me to a considerable degree or a good part of the time, and 3 applied to me very much or most of the time. High scores obtained from each of the subscales reveal that the individual has the relevant problem. Total scores of the scale without reverse items vary between 0 and 42 for each subscale. The scale was adapted to Turkish by Akin and Çetin in 2007 (Akin & Çetin, 2007).

The study investigated the relationship between the scores and other variables. The data were analyzed using SPSS 22. Student's t-test and one-way analysis of variance were used in the statistical analysis.

Results

Information regarding the ages of the children of the participants is shown in Table 1. According to the findings, 42.4% of the children were of pre-school age (4-6 years), 32.4% were of primary school age (7-11 years), 12.6% were of early childhood age (0-3 years), and 12.6% were of secondary school age.

Table 1.

<table>
<thead>
<tr>
<th>Ages of the participants' children</th>
<th>Number (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 years</td>
<td>14</td>
<td>12.6</td>
</tr>
<tr>
<td>4-6 years</td>
<td>47</td>
<td>42.4</td>
</tr>
<tr>
<td>7-11 years</td>
<td>36</td>
<td>32.4</td>
</tr>
<tr>
<td>12-18 years</td>
<td>14</td>
<td>12.6</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Regarding the relationship to the child of the participants who filled out the questionnaire, for 82.9% it was the mother, for 13.5% the father, and for 3.6% other caregivers (grandfather, grandmother, or older sister).

When it came to the duration of special education, as shown in Table 2, 64 (57.7%) children had received education for less than 1 year, 20 (18%) for 1-2 years, 11 (9.9%) for 2-years, and 16 (14.4%) for more than 3 years.
Table 2.
Mean, standard deviation, and min.-max. values of depression and state and trait anxiety scores according to the duration of special education received for speech and language therapy

<table>
<thead>
<tr>
<th>Number (n)</th>
<th>Percentage (%)</th>
<th>Depression Score Mean±SD</th>
<th>State Anxiety Score Mean±SD</th>
<th>Trait Anxiety Score Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 year</td>
<td>64</td>
<td>57.7</td>
<td>8.11±7.14</td>
<td>45.19±9.92</td>
</tr>
<tr>
<td>1-2 years</td>
<td>20</td>
<td>18.0</td>
<td>8.75±6.41</td>
<td>43.65±11.78</td>
</tr>
<tr>
<td>2-3 years</td>
<td>11</td>
<td>9.9</td>
<td>8.76±7.76</td>
<td>42.27±10.98</td>
</tr>
<tr>
<td>More than 3 years</td>
<td>16</td>
<td>14.4</td>
<td>11±11</td>
<td>42±11.74</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although there was no statistically significant difference, analysis based on scores showed that the effect of education duration on anxiety was clinically significant. As the duration of education increases, the level of anxiety decreases (table 3).

Table 3.
Difference of depression and anxiety according to education duration

<table>
<thead>
<tr>
<th>Education duration</th>
<th>Depression</th>
<th>State Anxiety Score</th>
<th>Trait Anxiety Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>.880</td>
<td>2.237</td>
<td>1.120</td>
</tr>
<tr>
<td>Df</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sig.</td>
<td>.830</td>
<td>.525</td>
<td>.772</td>
</tr>
</tbody>
</table>

Similarly, no statistically significant difference was observed between the groups of different education duration (table 4) in terms of depression, and a detailed examination of the scores revealed that the highest depression level was in the group who had received 3 years or more of education. This difference was clinically significant.

Table 4.
Difference of depression and anxiety according to the interruption of education

<table>
<thead>
<tr>
<th>Interruption of education</th>
<th>Depression</th>
<th>State Anxiety Score</th>
<th>Trait Anxiety Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>1.485</td>
<td>3.666</td>
<td>2.407</td>
</tr>
<tr>
<td>Df</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Sig.</td>
<td>.686</td>
<td>.300</td>
<td>.492</td>
</tr>
</tbody>
</table>

Regarding the interruption of special education due to COVID, it was observed that 63.1% of the participants had been unable to receive education for more than 2 months. The findings are analyzed in detail in Table 5.

Table 5.
Duration of interruption of education

<table>
<thead>
<tr>
<th>Number (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-7 days</td>
<td>16</td>
</tr>
<tr>
<td>16-30 days</td>
<td>5</td>
</tr>
<tr>
<td>More than 1 month</td>
<td>20</td>
</tr>
<tr>
<td>More than 2 months</td>
<td>70</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
</tr>
</tbody>
</table>
The families’ responses as to whether they felt hopeless or pessimistic about their children's future revealed that 69 families (62.2%) did not feel hopeless, 24 families (21.6%) were undecided, and 18 families (16.2%) felt quite hopeless about their children’s future.

When the state and trait anxiety levels of the families were examined, it was seen that trait anxiety was high and state anxiety was medium-high when the mean values of 36-41 for both state and trait anxiety tests of these parents were taken as reference values (Table 6). A positive statistically significant relationship was observed between state anxiety and trait anxiety. No significant difference was found in state/trait anxiety scores according to the child’s age or duration of education.

In this study, the lowest state anxiety score was 20, the highest state anxiety score was 65, the lowest trait anxiety score was 24, and the highest trait anxiety score was 69. The state anxiety average score of the parents was found to be 44.16, and the standard deviation was 10.57. Individuals who scored below 33.59, which is one standard deviation lower limit of the state anxiety mean score, were considered to have “low” state anxiety level. Individuals who scored above 54.73, which is the upper limit of the state anxiety mean score, were considered to have “high” state anxiety levels. Individuals with a state anxiety score between these lower and upper limits were considered to have “moderate” state anxiety levels. It was found that 21.6% of the participants had low level of anxiety, 66.7% of them had medium and 11.7% of them had high level of anxiety. With the same method, parents' trait anxiety levels were grouped as low, medium, and high. 17.1% of the parents were found to have low, 67.60% moderate and 15.3% high anxiety levels.

**Table 6.**

<table>
<thead>
<tr>
<th>Levels of anxiety</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Anxiety Score</td>
<td>111</td>
<td>20</td>
<td>65</td>
<td>44.16</td>
<td>10.57</td>
<td>0.691</td>
<td>0.001</td>
</tr>
<tr>
<td>Trait Anxiety Score</td>
<td>111</td>
<td>24</td>
<td>69</td>
<td>44.8</td>
<td>9.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion**

Parents’ feedback regarding their children's continuation of speech and language therapy and the quality of the therapy they receive is highly positive, and they often want their children to attend more therapy sessions. They state that their most important concern is about the future of their children if their speech and language problems continue (Reid, 1996). Based on this information, the present study was carried out to determine the level of anxiety in the parents of children who were deprived of speech and language therapy services due to the COVID-19 outbreak.

Regarding the relationship of the child to the person interviewed to fill out the forms, it is seen that 82.9% of them are mothers. Despite changing gender roles, mothers take primary responsibility for the care of their children and therefore take on more of the management of situations (Gray & Holden, 1992). Therefore, it is thought that focusing on mothers will contribute to achieving more accurate results.

In some studies, it has been reported that the parents of children who are followed up due to certain diagnoses such as autism, Down syndrome, and mental retardation have higher levels of stress, anxiety, and/or depression (Abbeduto et al., 2004; Feldman et al., 2000; Uskun & Gundogar, 2010). Since it has been reported in the literature that stress, anxiety, and/or depression; relationships with the instructor(s); severity of the disorder; the presence of behavioral problems, etc. are also influential in these diagnoses (Abbeduto et al., 2004; Baker-Ericzén et al., 2005; Dammeyer et al., 2019; Moh & Magiati, 2012), the parents of children with these diagnoses were excluded from the present study.

Speech and language disorders, due to their nature, are more common in the period from birth to starting school (Law et al., 2000; Yairi & Ambrose, 1992). A similar result was found in our study: 55% of the participants were of early childhood and pre-school age and only 12.6% were of secondary school age. In studies conducted on different speech and language disorders, it has been stated that early diagnosis and early intervention and therapy support appropriate for the disorder diagnosed help to reduce the need for speech and language therapy at advanced ages and to prevent additional problems that may arise in the social, emotional, and academic lives of children (Fuller & Kaiser, 2019; Law et al., 2017). This finding is also thought to indicate that there is an appropriate approach to the principle of providing early intervention and therapy support.

The presence of the only speech and/or language impairment in a child, although it does not require serious care, can be a source of concern for the child’s caregivers. Changes in the
speech and language skills of the child over time are eagerly awaited by most families, and it is stated that delays or differences in this process can result in stress and, anxiety and sometimes guilt (Yılmaz et al., 2018). Rudolph et al. investigated anxiety and depression in the mothers (n = 100) of children diagnosed with a speech disorder not due to cochlear hearing loss, syndromes, or other developmental problems. They found that the depression levels of the experimental group were significantly higher than those of the control group, but there was no significant difference in anxiety (Rudolph et al., 2003). Similar results are reported in studies involving the parents of children with a specific diagnosis in isolation such as a stutter, cleft palate/lip, or developmental language delay (Grässel et al., 2007; Langevin et al., 2010; Lei et al., 2010; Weigl et al., 2005; Zebrowski & Schum, 1993). In our study, in accordance with the literature, the trait anxiety scores of the parents were high and the state anxiety scores were medium-high. This finding indicates that parents are already anxious due to their children's situation, the anxiety (state anxiety) they feel due to the interruption to education does not increase on its own, and the uncertainty of how long the interruption will continue during the pandemic may increase the state anxiety levels of the parents and increase their level of trait anxiety. In the study by Asbury et al. (Asbury et al., 2020), which included the parents of 241 children who needed special education support, the parents were asked to explain the impact of COVID-19 on their mental health and that of their children. Most of the parents stated that COVID-19 had affected their mental health and often led to increased anxiety and fear. While the parents experienced more anxiety (44% vs. 25%) and stress (12% vs. 5%) than their children, a small number also reported increases in distress, low mood, and stress. They obtained similar results for these in parents and children. Similarly, in our study, it was thought that the medium-high state anxiety scores of the parents could be attributed to the fact that their children were deprived of education for 3 months due to the closure of special education centers during the COVID-19 pandemic. In addition, based on the result that there was no significant relationship between the interruption to education and the anxiety and depression scores, it is thought that the parents did not know how long this interruption would last and that they expected it to be a long process from the beginning. In the future, it might be beneficial to examine the potential effects on the parents of children with and without interruptions in their education even if special education is not completely suspended. No significant difference was found between the groups in state/trait anxiety scores or depression levels according to the child's age or duration of education. However, a detailed examination of the depression scores revealed that the highest depression level was in the group whose children had received education for 3 years or more, and this difference is clinically significant. This result suggests that continuing education for the existing problem may result in the emergence of depression in the parents of children who have received 3 years or more education.

The results of the present study indicated that the parents were already anxious due to the condition of their children, and the state and trait anxiety levels of the parents might have increased due to the interruption in education. It was thought that the state anxiety scores could be attributed to their children missing out on education. Based on the findings obtained in the present study, it is thought that investigations of long-term effects and inclusion of the changes that may occur in children to these investigations may be the subject of future studies.

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This research received no funding.

Conflict of Interest

There was no conflict of interest.

References


International Journal of Pediatric Otorhinolaryngology, 120, 140-145.


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