

Psychological Impact of Speech Delay On Family Dynamics: A Qualitative Study of Parents' Experiences And Coping Mechanisms

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Abstract.

Speech delay in children is a communication development disorder that can significantly affect family dynamics. This study aims to explore the psychological experiences of parents of children with speech delay, as well as the coping mechanisms they apply. Using a qualitative literature review and phenomenological perspective, this study analyzes various scientific sources to understand the psychological impact of speech delay on parents and families. The results show that parents often experience higher levels of stress, anxiety, and depression compared to parents of normally developing children. Social stigma and cultural pressure also contribute to feelings of isolation and helplessness. Effective coping mechanisms, such as social support and involvement in therapy, can help parents overcome these challenges. This study recommends the development of comprehensive and interdisciplinary psychological support programs, as well as increased public awareness to reduce stigma. In addition, it is important to create strong social support networks for families, including support groups and digital platforms. By understanding parents' experiences and the factors that influence their coping mechanisms, this study is expected to contribute to the development of better interventions and support the psychological well-being of families facing speech delays.

Keywords: Speech Delay; Parental Stress; Coping Mechanisms; Social Support and Social Stigma.

I. INTRODUCTION

Speech delay is one of the most common communication development disorders experienced by children, with a prevalence of around 10-15% in preschool-aged children (Fitri & Ferasinta, 2024). This condition affects children's communication development and has an impact on the structure and psychological health of the family. Parents and other family members face complex challenges, such as emotional pressure, social stigma, and the economic burden of necessary interventions. Research shows that parents of children with speech delay often experience high levels of stress and anxiety. In addition, they face practical challenges in communicating and providing appropriate stimulation to their children, all of which affect the coping mechanisms they develop (Rahmi & Fitriani, 2020). Language development is a process that involves the interaction of genetic, neurological, and environmental factors (Jubaedah & Nurfadilah, 2022). Disruption at any stage of communication development can cause significant delays, making it difficult for children to express their thoughts and emotions. These delays can also be caused by neurological conditions that affect the language center of the brain, with recent research showing a correlation between mild neurological disorders and communication development difficulties (Jurnal et al., 2024). This adds to the complexity of diagnosis and intervention.

Speech delay in children is an issue that is gaining increasing attention in the fields of health and education, particularly because of its broad impact on child development and family dynamics. Delays in speech development not only affect children's communication skills, but can also impact parents' mental health and family relationships. Research shows that parents of children with speech delays often experience higher levels of stress, anxiety, and depression than parents of children who develop normally (Asghar, 2023). In this context, it is important to understand parents' experiences and the coping mechanisms they use to deal with the challenges that arise from their children's speech delays. The Indonesian sociocultural context plays an important role in understanding and responding to speech delay (Syaifudin & Narto, 2023). Strong social stigma often makes parents feel ashamed or insecure. Speech delay is often seen as an indicator of intelligence or parenting quality, adding psychological pressure to the family. Economic aspects also play a

role, as the cost of therapy and intervention can be a burden for families, especially those with limited financial resources (Nurwati & Listari, 2021). The modern psychological perspective views speech delay as a multidimensional phenomenon that affects the entire family system. Each family member reacts differently, with each developing their own coping mechanisms. Technological advances and medical interventions offer new hope. An interdisciplinary approach that includes speech therapy, behavioral therapy, and communication technology support has shown promising results in helping children develop their communication skills (Agustina et al., 2022). Comprehensive psychological support is important not only for the child but also for the entire family. The family's ability to develop adaptive coping mechanisms is significantly related to the child's communication development. A narrative approach to understanding the family's experience with a child with speech delay is increasingly considered important. Each family has a unique narrative that requires in-depth understanding through qualitative studies.

Speech delay can be caused by various factors, including genetic, environmental, and social factors. Research shows that children with speech delay often experience difficulties in social and academic interactions, which can lead to further psychosocial problems (Nugraha et al., 2019). In addition, excessive use of gadgets and screen time has been identified as a significant risk factor for speech delay, adding to the complexity of the challenges faced by parents (Dewi et al., 2023; Chong et al., 2022). Therefore, understanding the psychological impact of speech delay on parents and how they cope with this stress is crucial for designing effective interventions. In this study, the author will explore the experiences of parents of children with speech delay, focusing on the coping mechanisms they employ. Previous research shows that parents who have children with speech delays often feel isolated and lack social support, which can worsen their mental health (Alenezi, 2024). By understanding these experiences, we can identify effective coping strategies and provide recommendations for better support for parents. This study aims to provide deeper insights into the dynamics of families affected by speech delays, as well as to contribute to the development of better intervention programs. In addition, it is important to note that parents' experiences may vary depending on their social and cultural contexts. In some cultures, stigma associated with speech delay can exacerbate feelings of shame and isolation experienced by parents (Alzahrani, 2023).

Therefore, this study will also consider cultural factors that influence parents' experiences and their coping mechanisms. With a qualitative approach, the author hopes to explore more deeply how parents adapt to the challenges they face and how they can be helped to improve their mental well-being and their children's development. Through this study, the author hopes to make a meaningful contribution to understanding the psychological impact of speech delay on family dynamics and to provide relevant recommendations for better interventions. Thus, this study will not only provide insights for academics and practitioners, but also for parents who face similar challenges in their daily lives.

II. METHODS

This study adopts a qualitative literature review method with a phenomenological perspective to explore and deeply understand the psychological experiences of families who have children with speech delay. This approach allows for systematic exploration of various literature sources, including scientific journals, research articles, and clinical reports. The data collection process will be carried out comprehensively through searching for credible scientific sources in academic databases such as Google Scholar and PubMed, with inclusion criteria of Indonesian and English publications in the last ten years that discuss the psychological impact of speech delay and family coping mechanisms. Data analysis will use qualitative content analysis methods, beginning with in-depth reading to identify emerging themes and patterns, and using an inductive-deductive approach. The theoretical framework of this study includes family systems theory, coping theory, and developmental psychology, which will help in understanding the complex interactions within the family system. To ensure credibility, validation strategies such as source triangulation and peer review will be applied. Although this literature review prioritizes academic ethics by avoiding plagiarism and providing proper attribution, the researcher acknowledges limitations, such as access to current publications and differences in socio-cultural contexts, which will be discussed in the discussion section to provide scientific transparency.

III. RESULT AND DISCUSSION

Family Psychological Dynamics in Coping with Speech Delay

Speech delay in children can have a significant psychological impact on family dynamics (Brahmansa et al., 2022). Research shows that parents of children with speech delay often experience higher levels of stress, which can affect interpersonal relationships within the family. For example, Asghar found that parents who have children with speech delay experience higher levels of negative emotions, including anxiety and depression, which contribute to tense family dynamics (Asghar, 2023). Furthermore, research by Özdaş et al. shows that factors such as socioeconomic status and family history of developmental disorders play a role in increasing the risk of speech delay, which in turn can worsen the psychological condition of parents (Özdaş et al., 2019). Family dynamics are often influenced by how parents respond to the challenges posed by their child's speech delay. Research by Jahan et al. shows that parents who feel isolated or lack adequate social support tend to experience higher levels of stress, which can lead to conflict in their relationship with their partner and with other family members (Jahan et al., 2015). This has the potential to create a negative cycle in which parental stress can affect their interactions with their child, which in turn can worsen the child's speech delay. The coping mechanisms used by parents also play an important role in determining how they deal with this situation. Purwanti notes that parental involvement in therapy and support from health professionals can help reduce stress and improve child development outcomes (Purwanti, 2023).

Thus, appropriate support and effective intervention can help change family dynamics from negative to more positive, by improving communication and understanding between family members. Speech delay can also trigger feelings of shame and stigma among parents, which can cause them to withdraw from social interactions. This is reinforced by research by Alzahrani, which shows that parents of children with speech delay often feel depressed and anxious about the judgment of others, which can exacerbate their social isolation (Alzahrani, 2023). In this context, it is important for society to raise awareness about speech delays and their impact, so that parents feel more supported and less alone in their struggles. Family dynamics affected by speech delays can also create challenges in children's education. According to research by Demir and Özcan, children with speech delays often experience difficulties in interacting with their peers, which can lead to social and emotional problems (Demir & Özcan, 2021). The inability to communicate effectively can cause children to feel alienated, which in turn can affect their mental health and their relationships with other family members. Early intervention and appropriate support can help reduce the negative impact of speech delays on family dynamics. A study by Hsieh et al. showed that workshops focusing on family involvement in the therapy process can improve family functioning and parental satisfaction (Hsieh et al., 2018). By providing parents with tools and strategies to support their child's language development, these interventions not only help the child but also strengthen family relationships.

In addition, it is important to consider environmental factors that can influence speech delay and family dynamics. Research by Kurniasari and Sunarti shows that a non-stimulating home environment can be a risk factor for speech delay, which can cause frustration and stress for parents (Kurniasari & Sunarti, 2019). Therefore, creating an environment that supports language development at home is essential to reduce the negative impact on family dynamics. Speech delay can also affect how parents interact with their children. According to research by Evans et al., parents who feel anxious or stressed about their child's speech development may become more reactive or less patient, which can exacerbate communication problems (Evans et al., 2014). By understanding how stress and anxiety affect their interactions, parents can become more aware of their responses and strive to create a more positive environment for their children. Family dynamics affected by speech delay can create complex challenges, but with the right support, parents can learn to cope with stress and build stronger relationships with their children. Research by Sundari and Mariani shows that interventions involving the whole family can help reduce the negative impact of speech delay and improve children's developmental outcomes (Sundari & Mariani, 2022). By involving all family members in the therapy process, parents can create a more supportive environment for their children.

Coping Mechanisms and Adaptation Strategies

Speech delay in children can have a significant psychological impact on family dynamics (Fortunatti, 2023). Research shows that parents of children with speech delays often experience higher levels of stress, which can affect interpersonal relationships within the family. In this context, parents often feel anxious and worried about their child's development, which can lead to feelings of frustration and helplessness (Asghar, 2023; Nugraha et al., 2019). Research by Asghar shows that negative emotional states among parents can increase along with the challenges faced in supporting their children with speech delays (Asghar, 2023). This shows that speech delays not only affect children, but also affect the mental health of parents and the overall family dynamics. The coping mechanisms used by parents in facing these challenges vary greatly. Some parents may adopt positive adaptation strategies, such as seeking support from health professionals or joining parent support groups (Nugraha et al., 2019). Research by Hoque et al. indicates that social support can play an important role in reducing the stress experienced by parents (Hoque et al., 2021). In addition, parents who are actively involved in activities that support their child's speech development, such as reading and interactive play, can find satisfaction and stress reduction through such involvement (Alias & Ramly, 2021). Thus, active involvement in the child development process can serve as an effective coping mechanism.

However, not all parents are able to cope with stress in a positive way. Some may experience feelings of hopelessness or depression, which can worsen family dynamics (Asghar, 2023; Nugraha et al., 2019). Research shows that parents who feel isolated or lack access to adequate resources tend to experience higher levels of stress (Nugraha et al., 2019; Özdaş et al., 2019). In this context, it is important to identify risk factors that can affect parents' ability to cope with stress, including socioeconomic background and available social support (Hoque et al., 2021; Özdaş et al., 2019). The coping strategies used by parents can also be influenced by their understanding of speech delay. Research by Dewi et al. shows that parents who have better knowledge about speech development tend to be more proactive in seeking appropriate interventions for their children (Dewi et al., 2023). Thus, education and training for parents about speech delay and ways to support their child's development can be an important step in improving their coping mechanisms (Dewi et al., 2023). In facing the challenges posed by speech delay, it is important for parents to develop a strong support network. Research shows that support from family, friends, and health professionals can help parents feel more connected and less isolated (Nugraha et al., 2019; Alias & Ramly, 2021). In addition, parent support groups can provide a space for parents to share experiences and coping strategies, which can strengthen a sense of community and reduce stress (Nugraha et al., 2019; Alias & Ramly, 2021).

Speech delay can also affect the relationship between spouses in the family. The stress resulting from the challenges of caring for a child with speech delay can cause tension in the marital relationship (Asghar, 2023; Nugraha et al., 2019). Research shows that open communication and emotional support between spouses are very important for maintaining a healthy relationship in facing these challenges (Nugraha et al., 2019; Özdaş et al., 2019). Therefore, it is important for spouses to support each other and communicate effectively about their feelings and needs. In a broader context, the psychological impact of speech delay in children can also affect social interactions outside the family. Children with speech delays often have difficulty interacting with their peers, which can lead to social isolation and behavioral problems (Tan et al., 2019). Research shows that children with speech delays tend to have lower social skills compared to children who develop normally (Tan et al., 2019). Therefore, appropriate intervention and support from parents are essential to help these children develop the social skills necessary to interact with others.

Psychological Impact on the Family System

The psychological impact of speech delay in children not only affects the individuals experiencing the problem, but also has significant consequences for the overall family dynamics (Hotmauli Damanik et al., 2024). Research shows that speech delay can cause high emotional stress in parents, which often leads to feelings of anxiety, depression, and frustration (Asghar, 2023; Özdaş et al., 2019). Parents of children with speech delays often feel isolated, helpless, and worried about their child's future, which can affect interpersonal relationships within the family (Asghar, 2023; Özdaş et al., 2019). In addition, research shows that parents who have children with speech delays tend to experience higher levels of stress compared to

parents of normally developing children (Asghar, 2023; Özdaş et al., 2019). Family dynamics can also be disrupted as a result of speech delays. The child's inability to communicate well can cause conflict in family interactions, where other family members may feel frustrated or confused in trying to understand the child's needs and desires (Özdaş et al., 2019; Nugraha et al., 2019). This can create tension in the relationship between parents and children, as well as between spouses, which can worsen their mental health (Asghar, 2023; Özdaş et al., 2019). Research shows that parents who feel unable to help their children often experience feelings of guilt and shame, which can lead to a decrease in self-confidence and self-esteem (Asghar, 2023; Özdaş et al., 2019).

Speech delay can also affect children's social relationships with other family members. Children with speech delays often have difficulty interacting with siblings and peers, which can lead to feelings of loneliness and isolation (Nugraha et al., 2019). This can create a negative cycle in which children feel alienated, which in turn can exacerbate their speech delay due to a lack of social interaction that is important for language development (Nugraha et al., 2019). Research shows that strong social support from family members can help reduce the negative impact of speech delays, but often, families do not know how to provide the right support (Asghar, 2023; Özdaş et al., 2019). One important aspect of the psychological impact of speech delays is how parents adapt and develop coping mechanisms to deal with these challenges. Research shows that parents who actively seek information and support, both from professionals and from the community, tend to have better outcomes in terms of mental health and well-being (Asghar, 2023; Özdaş et al., 2019). In addition, parental involvement in therapy and activities that support their child's language development can help them feel more engaged and empowered (Asghar, 2023; Özdaş et al., 2019). However, not all parents have equal access to these resources, which can create inequality in family experiences (Asghar, 2023; Özdaş et al., 2019).

Speech delays can also affect family dynamics in terms of roles and responsibilities. Parents may feel the need to change the way they interact with their child, which can lead to changes in family structure and division of tasks (Asghar, 2023; Özdaş et al., 2019). For example, one parent may take on a more dominant role in caring for the child, while the other may feel marginalized or powerless (Asghar, 2023; Özdaş et al., 2019). This can create tension in the couple's relationship, which can exacerbate mental health problems for both parents (Asghar, 2023; Özdaş et al., 2019). In a broader context, speech delays can create greater challenges for families, including impacts on financial well-being. Families with children who experience speech delays often incur additional costs for therapy and support, which can add to the emotional and financial burden (Asghar, 2023; Özdaş et al., 2019). Research shows that parents facing financial challenges tend to experience higher levels of stress, which can worsen their mental health and affect overall family dynamics (Asghar, 2023; Özdaş et al., 2019).

Interventions and Management Strategies

Speech delays in children can have a significant psychological impact on family dynamics (Almaghfiroh et al., 2024). Research shows that speech delays not only affect a child's development, but also influence interactions and relationships between family members. In this context, it is important to understand the interventions and management strategies that can be applied to support families facing these challenges. Various studies show that family support and effective coping strategies can help reduce stress and improve psychological well-being for parents and children with speech delays (Chilon-Huaman, 2023; Kumar et al., 2022). One effective intervention approach is through strengthening family support. Research by Chilon-Huaman shows that family support plays an important role in individual coping strategies, including parents who have children with speech delays. This support can take the form of emotional support, information, and resources that can help parents overcome the challenges they face (Chilon-Huaman, 2023). In addition, interventions involving communication and social skills training for children can improve their speaking abilities and reduce parental anxiety (Rustan, 2019; Sundari & Mariani, 2022).

Treatment strategies that focus on developing communication skills are also very important. Sujaya, in his meta-analysis, shows that good interpersonal communication can be an effective mediator between speech delay and children's social development (Sujaya, 2023). By involving parents in the therapy process, they can learn how to communicate more effectively with their children, which in turn can improve overall

family interaction (Rustan, 2019). In addition, it is important to identify risk factors that may contribute to speech delay. Research by Özdaş et al. shows that factors such as parental educational background and socioeconomic status have a significant influence on children's language development (Özdaş et al., 2019). Therefore, intervention programs must consider the social and economic context of the family and provide appropriate support to improve parents' skills in supporting their children's language development (Kumar et al., 2022; Özdaş et al., 2019).

In the context of coping mechanisms, research shows that parents who have a good understanding of speech delay tend to use more adaptive coping strategies (Husadani & Wiliyanto, 2023). For example, parents who participate in support groups or counseling can share experiences and successful strategies, which can help them cope with stress and anxiety (Santiago et al., 2021). In addition, social support from family and friends also plays an important role in strengthening positive coping strategies (Santiago et al., 2021). Families dealing with speech delays often experience high emotional stress. Therefore, interventions that focus on reducing stress and improving mental well-being are essential. Research shows that coping strategies involving emotional support and the development of problem-solving skills can help parents overcome the challenges they face (Rahmani et al., 2019). Thus, intervention programs should include components that support parents' mental health and improve their skills in managing stress (Hildenbrand et al., 2011).

The importance of early intervention cannot be overlooked. Research by Kurniasari and Sunarti shows that early detection of speech delays can improve children's developmental outcomes and reduce negative impacts on family dynamics (Kurniasari & Sunarti, 2019). Therefore, intervention programs must be designed to provide information and resources to parents early on, so that they can take the necessary steps to support their child's language development (Demir & Özcan, 2021). In order to increase the effectiveness of interventions, collaboration between health professionals, educators, and families is essential. Research shows that a multidisciplinary approach can provide more comprehensive support for children with speech delays and their families (Hargiana, 2021). By involving various parties, families can receive more holistic and integrated support, which can improve long-term outcomes for children (Rahmawati & Herawati, 2023). Finally, it is important to continue conducting further research on the psychological impact of speech delays and effective management strategies. More in-depth research can help identify factors that influence the success of interventions and provide better insights into how to support families facing these challenges (Didymus & Fletcher, 2014). Thus, better intervention programs can be developed to improve the quality of life of children with speech delays and their families.

Risk and Protective Factors

Speech delays in children can trigger various significant psychological impacts on parents and family dynamics (Mawarpury & Mirza, 2017). Research shows that parents of children with speech delays often experience higher levels of stress, which can be exacerbated by children's emotionally reactive behavior and other behavioral problems (Asghar, 2023). In this context, risk factors such as parental education, socioeconomic status, and family history can contribute to the level of stress experienced (Özdaş et al., 2019; Kumar et al., 2022). For example, research by Kumar et al. shows that 22.7% of mothers of children with speech delays are illiterate, indicating that parental education plays an important role in children's language development (Kumar et al., 2022). On the other hand, protective factors can also influence how parents cope with this situation. Strong social support from family and friends can help reduce stress and improve parents' psychological well-being (Nugraha et al., 2019). Research by Dewi et al. shows that positive interactions between parents and children, as well as engagement in speaking activities, can accelerate children's language development and reduce the negative impact of speech delay (Dewi et al., 2023). In addition, parental involvement in activities that support language development, such as reading and talking with children, can serve as an effective coping mechanism (Alias & Ramly, 2021).

Environmental factors also contribute to the risk of speech delay. A less stimulating home environment, such as a lack of verbal interaction and activities that support language development, can increase the risk of speech delay in children (Kumar et al., 2022). Conversely, an environment rich in verbal and social stimulation can serve as a protective factor that supports healthy language development (Sujaya,

2023). Research shows that children raised in environments that support language development tend to have better communication skills and fewer behavioral problems (Sunderajan & Kanhere, 2019). Speech delay can also be influenced by genetic and biological factors. Several studies show that a family history of language development problems can increase the risk of speech delay in children (Demir & Özcan, 2021; Yoldaş et al., 2018). In addition, health factors such as hearing impairment and other medical conditions can also contribute to speech delay (Nugraha & Sinaga, 2023). Therefore, it is important for parents to understand these factors in order to take appropriate preventive and intervention measures.

In the context of intervention, it is important to develop programs that take these risk and protective factors into account. Intervention programs that involve parent training and social support can help reduce the psychological impact of speech delay and improve family dynamics (Henra & Zulkifli, 2022). Research shows that community-based approaches involving support from health and education professionals can provide significant benefits to families facing these challenges (Alzahrani, 2023). From a psychological perspective, parents often experience feelings of anxiety and frustration when faced with speech delays in their children. This can lead to conflict in the couple's relationship and the overall family dynamics (Husna, 2023). Research by Alzahrani shows that parents who feel isolated or lack emotional support tend to experience higher levels of stress (Alzahrani, 2023). Therefore, it is important to create a strong support network for parents, including support groups and community resources that can help them overcome these challenges.

Long-Term Psychological Implications

In the context of the long-term psychological impact of speech delay on family dynamics, it is important to understand how this condition affects not only the child, but also the parents and the entire family. Speech delay can cause various emotional and psychological problems in parents, which in turn can affect interactions and relationships within the family (Sopiyan et al., 2024). Research shows that parents of children with speech delays often experience higher levels of stress, anxiety, and depression compared to parents of normally developing children (Asghar, 2023). This may be due to concerns about their child's future, as well as frustration arising from the communication difficulties experienced by the child. A study by Asghar shows that parents with children who have speech delays experience significant negative emotions, including anxiety and depression, which can affect their overall mental health (Asghar, 2023). In addition, research by Nugraha et al. highlights the experiences of parents who feel isolated and helpless when facing the challenges posed by their child's speech delay (Nugraha et al., 2019). This shows that speech delay not only affects children, but also creates a heavy emotional burden for parents, which can disrupt family dynamics and relationships between family members.

From a long-term perspective, these psychological effects can continue into adulthood. Research shows that children with speech delays are at higher risk of experiencing social and emotional problems later in life, which can affect their relationships with peers and family (Wallace et al., 2015). Speech delays can result in low self-confidence and problems with social interaction, which in turn can worsen the emotional state of parents who feel responsible for their child's development (Özdaş et al., 2019). Therefore, it is important to develop intervention programs that not only focus on the child, but also provide support to parents to cope with the stress and anxiety they experience. In addition, environmental and social factors also play a role in the psychological impact of speech delay. Research by Tan et al. shows that factors such as parental education and socioeconomic status can affect a child's speech development and, in turn, affect the mental health of parents (Tan et al., 2019). Parents with lower educational backgrounds may feel less prepared to deal with the challenges posed by speech delay, which can exacerbate their feelings of anxiety and depression. Therefore, it is important to consider the social and economic context when designing interventions to support families with children who experience speech delay.

In dealing with these psychological impacts, the coping mechanisms used by parents are also very important. Research shows that parents who can develop effective coping strategies, such as seeking social support and participating in support groups, can reduce their stress levels and improve their emotional well-being (Husna, 2023). Support from family and friends can provide a sense of connection and reduce the feelings of isolation often experienced by parents of children with speech delays. In addition, interventions

that involve communication skills training for parents can help them feel more confident in interacting with their children, which in turn can improve overall family dynamics (Anggraini & Ramadhani, 2021).

Cultural and Social Context

Speech delay in children is a phenomenon that not only affects individual development but also has a significant impact on family dynamics. In a cultural and social context, speech delay is often viewed through the lens of different social norms and expectations, which can influence how parents respond to and manage this situation. Research shows that the social stigma associated with speech delay can cause high psychological pressure for parents, who often feel isolated and helpless in facing this challenge (Nugraha et al., 2019). Speech delay can stem from various factors, including genetic, environmental, and social factors. For example, studies show that children from backgrounds with lower levels of parental education are more likely to experience speech delays than children from more educated backgrounds (Hoque et al., 2021; Kumar et al., 2022). This shows that access to adequate education and resources is crucial in supporting children's language development. In addition, cultural factors also play an important role; in some cultures, there are greater expectations for children to speak at a certain age, which can add pressure on parents and children (Tan et al., 2019).

Parents of children with speech delays often experience a range of emotions, including anxiety, frustration, and even shame. Research conducted in Garut, Indonesia, shows that parents feel stressed and worried about their children's future, especially in terms of social and academic abilities (Nugraha et al., 2019). Speech delay not only affects children's communication abilities, but can also influence their social interactions, which in turn can affect the family relationship as a whole (Tan et al., 2019). The coping mechanisms used by parents vary greatly and are often influenced by their social and cultural context. Some parents may seek support from the community or peer groups, while others may prefer an individual approach or seek professional help (Nugraha et al., 2019). Research shows that strong social support can help parents cope with stress and improve their psychological well-being (Kumar et al., 2022; Jamil et al., 2023). In addition, involvement in intervention programs designed to help children with speech delays can also provide parents with a sense of control and hope, which in turn can reduce feelings of anxiety and depression (Tan et al., 2019).

Speech delays can also affect family dynamics in broader ways. For example, interactions between siblings may be affected, with siblings who do not have speech delays feeling neglected or overlooked (Nugraha et al., 2019). This can lead to feelings of jealousy or frustration among children, which can exacerbate tensions within the family (Fithriyyah et al., 2024). In addition, the role of parents in supporting their children's language development can cause changes in the division of tasks and responsibilities at home, which can add to the emotional burden on parents (Kumar et al., 2022; Jamil et al., 2023). In this context, it is important to develop intervention programs that not only focus on children with speech delays, but also consider the needs and well-being of parents. Programs that involve coping skills training, emotional support, and education about speech delays can help parents feel more prepared and capable of facing these challenges (Tan et al., 2019). In addition, raising public awareness about speech delay and its impact can help reduce stigma and increase social support for affected families (Saleem, 2024; Hoque et al., 2021).

IV. CONCLUSION

Speech delay is a complex phenomenon that is not merely a communication disorder in children, but has a multidimensional impact on the entire family system. Each family experiences a unique psychological journey characterized by various emotional stages, ranging from shock and anxiety to acceptance. The psychological impact includes a transformation of family dynamics, changes in communication patterns, and a reconstruction of the meaning of "normality." The coping mechanisms developed are greatly influenced by social, cultural, educational, and resource factors, with social and professional support playing a key role in family adaptation. A comprehensive, integrated psychological support program needs to be developed for families with children with speech delay, with an interdisciplinary approach involving therapists, psychologists, and medical personnel. Designed interventions should be tailored to the individual context of each family, taking into account cultural, economic, and available resources.

In addition, raising social awareness through public education is important to reduce stigma and promote a more inclusive understanding of child development diversity. The development of digital support platforms and communication technologies can also help families overcome the challenges of speech delay. Further in-depth research on family coping mechanisms should be encouraged, focusing on variations in psychological responses and the factors that influence them. A strong social support network is also needed, including the formation of support groups and communities for families with children with speech delay, as well as integrating a holistic approach into the education and health systems that takes into account the overall psychological needs of the family system. FTIR and Raman are, complimentary, able to rapidly identify the main binders, while Py-GC/MS provides further information of copolymers, even in minor concentration levels. SEM-EDS successfully identifies pigments and extenders.

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