Bölüm 1

Digital Transformation in Parent Support Programmes: Telehealth Applications 🔓

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Abstract

Telehealth is a broad digital model of service that encompasses diagnosis, assessment, monitoring, and education services, which became widespread during the COVID-19 pandemic. Parent education programs are one area in which the telehealth model is preferred. They are offered through synchronous models with professionals, asynchronous models with prerecorded content, or hybrid models. These models promote the parents' active involvement in the process. Telehealth interventions enable children to be monitored by their caregivers in their home environment and evaluated by specialists, creating a vital resource for ongoing monitoring of children. Telehealth applications for parents are supported through tele-coaching, video feedback, AI-based chatbots, and gamification methods. Parents generally report high levels of satisfaction with telehealth-based programs because of their accessibility, low cost, and the time they save. In addition, challenges include inequalities in accessing the technological tools and concerns about privacy. In conclusion, while telehealth has many advantages for parenting support, responsible use is essential.

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Introduction

Digital technology today has permeated the lives of individuals in today's world. The integration of digital technology in the healthcare system has created a revolution in terms of accessibility and continuity (Harrison et al., 2025; Topol, 2019). This revolution, brought about by the advancements in information and communication technology, has made the geographical constraints null and void (Bashshur et al., 2020). Telehealth initiatives, at the forefront of this revolution, focus on making healthcare services accessible and quickly attainable (Mietchen et al., 2025; World Health Organization, 2010). Telehealth initiatives, in the midst of the COVID-19 pandemic, quickly gained popularity and one of the most demanded service deliverance patterns (Katakis et al., 2025; World Health Organization, 2022). Telehealth initiatives, particularly in the midst of the COVID-19 pandemic, due to social distancing and the usage of online platforms, have resulted in the requirement of telehealth initiatives, not just a substitute but a need (Smith et al., 2020). The popularity of telehealth initiatives, particularly in the midst of the COVID-19 pandemic, has given a new dimension and focus on the reliability and efficiency of telehealth initiatives, leading to a plethora of research in the area (Bashshur et al., 2020).

Telehealth refers to a wide range of applications that involve no only health-related applications in the area of diagnosis and treatment, but also other applications including assessment, evaluation, counseling, and education (WHO, 2010). Telehealth programs in this regard are part of the applications that are widely used in the area of psychosocial applications (Camden & Silva, 2021). The convenience it offers in the area of children's developmental stages is immense through the use of telehealth programs (Arshad et al., 2025; Sutherland et al., 2018). It has been reported that there is restricted access to developmental assessment and early intervention programs, particularly in the rural part of Türkiye (Ozturk Ertem et al., 2019). The program may allow parents in the rural part of the country to access programs and enable the early identification of developmental vulnerability (Tomris & Çelik, 2021). In this section, telehealth would be considered in terms of theory and different applications/advantages and disadvantages of telehealth would be explored through the literature. Moreover, the roles of telehealth in developmental assessment processes, involvement of parents, and applications for high-risk infant surveillance would also be explored.

1. The Concept of Telehealth

1.1. Definition and scope of telehealth

Telehealth refers to the healthcare system that makes it possible to provide healthcare from a distance through the use of information and communication technology (WHO, 2010). As mentioned, and as part of being a broader healthcare system, telehealth refers to the healthcare model that involves many facets of healthcare, some of which include diagnosis, treatment, rehabilitation, assessment, monitoring, and counseling (Macwilliam et al., 2021; WHO, 2010). Indeed, some of the factors that led to the development of many telehealth programs, especially due to the restrictions associated with accessing healthcare services physically, include limitations to accessing healthcare services physically that were brought about by the COVID-19 pandemic (Bashshur et al., 2020; Smith et al., 2020). Moreover, the development of new technologies has made it possible for there to be greater accessibility and prevalence of telehealth programs (Topol, 2019). The definition of telehealth is more extensive than the existing definition of telemedicine in that telehealth involves various psychosocial interventions like developmental assessment, early intervention, and mental health care (Bashshur et al., 2020; Camden & Silva, 2021). Developmental assessment in telehealth interventions is made possible by parental report, video observational assessment, and remote monitoring (Sutherland et al., 2018). The apps provide good ecological validity in terms of children's ecological environment assessment and communication with primary caregivers (Camden et al., 2020).

1.2. Types of telehealth applications

Telehealth interventions serve as a starting point to identify the framework of service delivery and methods of evaluation to use because telehealth interventions are provided in a synchronous, Asynchronous, or Hybrid manner (Bashshur et al., 2020; Camden & Silva, 2021).

- Synchronous telehealth programs include those that relate to personal interactions between individuals and medical officers using internet platforms in conducting their consultations directly on the internet platforms (Macwilliam et al., 2021). This interactive consultation on the internet platforms has emerged as one of the most popular programs during the general and developmental counseling phases (Camden et al., 2020; Sutherland et al., 2018).

- Asynchronous telehealth implementations enable the exchange of information as experts share the information with the parents without the need to have direct engagement (Bashshur et al., 2020). The parents are able to access the information recorded in a virtual platform and are able to gain knowledge through listening, viewing, and reading, and implement actions following the feedback from the experts by completing scales at home (de Nocker & Toolan, 2023). This method allows parents with young children to have flexibility (Camden & Silva, 2021).

- Hybrid models are approaches that incorporate the combination of both the synchronous and the asynchronous approach (Camden & Silva, 2021). The literature highlights that the hybrid approach enhances the validity of the assessment as it provides multiple dimension assessments within the developmental assessment (Sutherland et al., 2018). The mentioned approaches are recognized as amongst the sustainable approaches for developing nations, differing in technology infrastructure (WHO, 2022).

1.3. Advantages and disadvantages of telehealth applications

There are many advantages of telehealth. One of these advantages includes the ability to gain easier access to healthcare as well as its convenience for families in rural areas seeking specialists (Bashshur et al., 2020; Ozturk Ertem et al., 2019). Relating to the assessment of development, there is an ability to assess child-family interactions as well as child daily routine, which isn't possible in a clinic (Camden et al., 2020). This, therefore, plays an additional role in the complete child assessment (Sutherland et al., 2018). However, some pros of telehealth can also be identified. Telehealth poses some cons, especially in areas where the technology infrastructure is not suitable, thereby hampering the achievement of the desired benefits (WHO, 2022). Moreover, issues may arise regarding the remote implementation of some common tools used for developmental assessment, along with the related moral concerns regarding the accuracy of the data and the privacy process (Kodjebacheva, Culinski, et al., 2023; Macwilliam et al., 2021).

2. Telehealth in Developmental Assessment

Below, topics concerning digital assessment tools, reporting to parents, video-based assessment, observation via technology, and analysis in the natural environment will be explored in the context of the usage of telehealth apps.

2.1. Digital assessment tools

Telehealth services, which have been on the increase in the development assessment process, have also seen the rise of digital development assessments side by side (La Valle et al., 2022). By developing digital copies of development assessment tools, filling them electronically, and conducting development assessments electronically, it is possible to quickly determine development risks (Kodjebacheva, Culinski, et al., 2023). According to a study conducted by Esther et al. (2022) when it comes to telehealth sessions, it was seen that the parent appreciated the hybrid approach to service delivery implemented due to the pandemic, which allowed the assessment process to be started before a physical meeting.

It is also reported that there are acceptable levels of validity and reliability when these screening inventories are done online by parents It is also mentioned that, alongside the feasibility of these instruments in large-scale screening programs, culture-fair versions should also be available, alongside norm studies (Camden & Silva, 2021; Ozturk Ertem et al., 2019).

2.2. Parent reporting and video-based assessment

Parent reports are believed to be one of the significant sources of the assessment and monitoring process of development (Glascoe, 2005). Parent reports in telehealth programs are measured through digital platforms using scales and forms (Camden et al., 2020). Studies have shown that parent reports prove to be reliable and an efficient way of adding to child development (Kodjebacheva, Culinski, et al., 2023). Video-based assessments would allow for the analysis of a child's behavior in a home setting (Sutherland et al., 2018). Video analysis by professionals would allow for flexibility in terms of analyzing children's social-communication skills, play skills, as well as the level of parent-child interaction (de Nocker & Toolan, 2023). Ke et al. (2024) conducted an investigation on the administration of the DAYC-2 in high-risk infant groups using telehealth versus the face-to-face administration of the BSID-IV. There was no discrepancy between the patients in the telehealth group, DAYC-2, and the face-to-face group, BSID-IV, in terms of starting early interventions, as it resulted in the same clinical outcome.

2.3. Remote observation and natural environment analysis

The observation of children's natural settings in the developmental assessment is grounded in ecological systems theory (Bronfenbrenner, 1979). It is claimed that assessments of children's natural settings will provide more

realistic and valid outcomes regarding the child (Camden & Silva, 2021). It is claimed that telehealth programs fulfill the aspects as highlighted in the ecological framework in regard to allowing children's home settings to be assessed (Sutherland et al., 2018). Telemedicine applications facilitate developmental assessment of children in remote settings (de Nocker & Toolan, 2023). It has been found in research that remote observations and assessments are similar to those conducted in face-to-face sessions, which confirms its validity as a mode (Kodjebacheva, Culinski, et al., 2023). Telehealth presents distinct opportunities for observing children in their natural home settings. Chan et al. (2020) pointed out that healthcare practitioners can observe children in their natural settings, which may be more representative of children's developmental abilities and behavioral issues.

2.4. Telehealth in developmental delay and high-risk infant monitoring

It is essential to monitor and evaluate the developmental stages to be effective in early intervention (Guralnick, 2011). The importance of the resource that telehealth programs serve to children from birth to enable continuous monitoring and feedback (Camden & Silva, 2021) cannot be overemphasized. Studies show that telehealth-based developmental assessment and monitoring tools improve parental satisfaction and ensure continuation (Sutherland et al., 2018). As such, the role of telehealth-based programs has been emphasized as critical for the detection of developmental delay and early intervention (WHO, 2022). Among other observations, through their research, Schmidt et al. (2024) reported that parents experience ambivalence and helplessness before the diagnosis and also experience the need for education and information during this stage. On the other hand, through their research, Shin et al. (2025) observed that the intervention provided through telehealth for infants and young children aged 0 – 3 with developmental disabilities or high risk was similarly or more effective than traditional interventions.

3. Telehealth in Parent Support Programs

In the developmental assessment process, it is important for the child's primary caregivers to play an active role in the process for it to progress in a healthy and correct manner (Guralnick, 2011). Family-centered approaches indicate that parental involvement in the assessment process has a positive impact on outcomes (Dunst & Espe-Sherwindt, 2016). Telehealth applications encourage parents to actively participate in the assessment

process and ensure that the process is conducted in a more dynamic manner (Camden et al., 2020). Thanks to telehealth, parents can share information about their children's daily routines and provide direct support in terms of data provision (de Nocker & Toolan, 2023). This allows parents to gain more information about their children's development while controlling the progress of the process in a more conscious manner (Akhbari Ziegler & Hadders-Algra, 2020; Dunst & Espe-Sherwindt, 2016). Maitre et al. (2021) reported that parent satisfaction in telehealth applications was over 90%, while Esther et al. (2022) found that 92% of parents/caregivers were satisfied with the services their children received and 64% believed their children felt comfortable during their telehealth appointments. The use of telehealth not only in the assessment process but also within the scope of intervention enables caregivers to play an active role in children's development. Studies have also indicated that parents' self-efficacy is an important determinant of the success of early intervention (Dunst & Espe-Sherwindt, 2016). In this context, various intervention programs have been developed to support parents.

3.1. Tele-coaching programs

Coaching is an adult learning approach that supports the mentee's ability to think about their actions, determine the impact of an action or procedure, and create an action plan to improve and apply that action in current and future situations. When coaching parents, the role of the coach is to help them identify their priorities for child development and what they currently know and do regarding their child's progress, share new insights and ideas, and then work collaboratively to support the child's engagement and expression of interest in daily settings. Coaching is also useful in helping parents identify, access, and evaluate the resources they need for their children and families. Coaching parents helps strengthen their confidence and competence in promoting their children's development and learning within the context of daily routines and activities (Rush et al., 2020). Thus, coaching, when used in family-centered interventions implemented by parents, increases the capacity of the family to participate as an equal and active partner in the process of intervention and develops their ability to make informed decisions. The core elements of coaching that uses a relationship-focused, family-centered intervention approach are being reflective and collaborative rather than directive; respecting parents' priorities; and building the intervention on what parents already know and do (Akhbari Ziegler & Hadders-Algra, 2020). During the COVID-19 pandemic, virtual health services were rapidly adopted globally, and the benefits of virtually delivered interventions were

observed (Hippman et al., 2025). Increased accessibility of technology and the shift to remote services in 2020 due to the pandemic increased the use of virtual coaching via resources such as video conferencing or telephone. Tele-coaching for parents can be delivered through a two-way communication system that is either video or audio only; through instructional audio or video; or through a hybrid approach combining these two methods (Alatar et al., 2025). Telehealth services are becoming increasingly widespread, removing access barriers for many families and professionals and providing more and more economical service delivery in the coming years (Rogers et al., 2021).

Coaching has five application features that enable the achievement of intended outcomes: joint planning, observation, action/implementation, reflection, and feedback. Joint planning involves the coach and mentee agreeing on the steps or application opportunities they will take between coaching sessions. Observation is the examining of another person's practices or actions that a mentee can use to gain new skills, strategies, or insights. Action/implementation refers to spontaneous or pre-planned events that happen in real-life contexts and that provide the mentee with an opportunity to apply, develop, or examine a new or current skill. Reflection is the analyzing of current skills that a mentee can use to identify whether strategies are in line with the evidence-based practices and whether these strategies need to be applied without any changes or modifications to achieve the aimed outcomes. Feedback is provided by the coach based on their direct observations of the mentee, actions reported by the mentee, or shared information, and serves to expand the mentee's current level of understanding regarding a specific evidence-based practice or to validate the mentee's thoughts or actions related to the intended outcomes (Rush et al., 2020). Feedback can be provided verbally, in writing, or via video while interacting with the caregiver or afterward. Coaching is traditionally conducted in natural settings such as the home or classroom to help apply the skills learned. With tele-coaching, parents who learn strategies and acquire new skills become the implementers of the intervention process in the home environment. In the Parents in the Early Start Denver Model (P-ESDM) parent coaching program, parents were taught developmental and relationship-based principles using video conference sessions and website learning tools, and an increase in children's social communication skills was observed (Vismara et al., 2018). ImPACT Online is a parent-mediated telehealth intervention program that uses developmental-behavioral intervention methods to target the development of social communication skills. Improvements were observed in the self-efficacy, stress levels, and positive perceptions of their children among

parents participating in the program, as well as in the social and language skills of the children (Ingersoll et al., 2016). The program has the potential to increase access to parent-mediated intervention for families of children with autism spectrum disorder (Ingersoll & Berger, 2015).

3.2. Video feedback-based programs

Video feedback-based interventions may differ in terms of their primary therapeutic goal (e.g., parental perceptions, parent-child behavior, or quality of communication) and theoretical foundations for psychological change (e.g., parental sensitivity or reflective functioning, reinforcement of positive experiences, or recognition of negative patterns). Attachment theory-based intervention programs have been developed to increase parents' sensitivity toward their children using video feedback (Rusconi-Serpa et al., 2009). Attachment-based interventions using virtually administered video feedback have been found to be more effective overall than interventions without video feedback. Family interventions that use video feedback as a therapeutic tool have been shown to have a positive effect on parenting behavior and parental attitudes, as well as positive effects on children's development. One of the most evidence-based attachment-based interventions is the Video Feedback Intervention to Promote Positive Parenting (VIPP). This intervention has been adapted into VIPP-SD ("Video Feedback Intervention to Promote Positive Parenting and Sensitive Discipline"), VIPP-AUTI ("Video Feedback Intervention to Promote Autism-Adapted Positive Parenting"), and VIPP-Co ("Video Feedback Intervention for Co-Parents of Infants at Risk for Externalizing Behavior Problems"). Another video feedback intervention with evidence from randomized controlled trials is AVI ("Attachment-Based Video Feedback Intervention") (Hippman et al., 2025). In weekly AVI sessions, video recordings of parent-child interactions during free or semi-structured play or caregiving situations are made, and feedback is provided to the parent. AVI aims to reduce inappropriate behaviors in children as well as develop responsive parenting behaviors. Therefore, video feedback-based interventions can be incorporated into child protection systems as they may increase protective factors for children (Eguren et al., 2023).

3.3. Mobile app-based parenting programs

Online parenting support programs may include services delivered via telehealth, as well as parents' self-directed or coach-supported participation in parenting education program content via computer or mobile device. The widespread implementation of online parenting interventions increases access to high-quality parenting support at a lower cost for both users and

providers (Hails et al., 2025). Telehealth services in the form of mobile applications provide guidance to parents by giving them access to clinical expertise. The simultaneous and asynchronous communication options in the mobile app make its functions easily accessible, making parents feel secure. Through video conferencing sessions, parents feel appreciated for their parenting skills and observations about their children (Garne Holm et al., 2019). Mobile parenting apps can be used for developmental tracking, vaccination/nutrition reminders, developmental activity suggestions, video training modules, and microlearning (short texts/videos). Programs designed to be interactive and accessible are particularly important for parents who are active internet users. The use of technology in parenting programs also allows for tracking how, when, and how much parents use the application (Breitenstein et al., 2016). Examples of applications that support infant care include Newborn Baby Care Support, Me & My Baby, mDad, DadTime, and BabyMind. There are also applications such as WIC Nutrition Education, the Pregnancy and Infant Encyclopedia, and the Growing Healthy, which aim to support parents in providing healthy and nutritious foods for their babies (Virani et al., 2021)Mind in the Making (MITM) and Vroom are programs that aim to develop learning and executive function skills in caregivers and children using developmental research information (Galinsky et al., 2017). Some early childhood development tracking apps with high user ratings in major app stores include babyTRACKS, Child GrowthTracker, The Wonder Weeks, BabySparks, Kinedu, BabyConnect, Glow Baby App, Baby Daybook, Baby Tracker, Growth, Huckleberry, Thrive by Five, and Bebbo Parenting App (Tripathi & Abdullaevna, 2024).

3.4. Game-based digital interaction programs

In addition to virtual and mobile applications, it is also possible to gamify parent education. Gamification is defined as the application of game design elements and principles such as scoring, feedback, levels, leaderboards, challenges, badges, avatars, competition, and collaboration in non-game contexts to increase user participation, learning, and behavior. For example, there could be a reward system earned by using strategies to encourage the application of parenting skills (Love et al., 2016). Some parents may find it easier to learn by playing than by reading information, while others may find it complicated. When users use the program together, talking and discussing topics can help them understand different perspectives. Gamification elements can encourage collaborative thinking while making parent education enjoyable (Kokkinen et al., 2024). The Milk Man app, which aims to support the role of partners during breastfeeding, uses

gamification elements such as leaderboards, badges, and points to encourage both social interaction among users and the use of the digital library. Users can earn points by participating in forums and reading articles, allowing them to view the leaderboard rankings (White et al., 2016). Triple P Online, which focuses on positive parenting, is an interactive, web-based program. It encourages the implementation of positive parenting strategies through a reward badge system and reduces stigma by allowing participants to create a virtual identity that promotes peer support while maintaining anonymity. Such gamification elements have been shown to increase motivation (Love et al., 2016). Gamification methods, such as earning badges for completing content in online programs, support program participation and retention (Turner & Sanders, 2025).

3.5. Artificial Intelligence (AI)-based parenting programs

Smart software tools, chatbots, and tele-coaches can be integrated with various health platforms and applications. Virtual chatbots are AI-based tools that communicate with users by mimicking human interactions and possess personalized natural language processing capabilities. Chatbots are typically accessed through virtual assistants, messaging applications, or organizations' applications and websites. Chatbots can provide the support parents need by answering basic questions 24/7 and reinforcing motivational communication. They can meet the immediate needs of users who require constant support, such as parents of children with special needs, but there is a risk that artificial intelligence may mislead them with hallucinatory information. It is important to have expert oversight, as parents may have to deal with complex and overwhelming health information (Bui et al., 2022; Ivanovic & Semnic, 2018).

Artificial intelligence can provide emotional and practical support, accessible and affordable solutions by enabling users to access community resources. NurtureBot is a well-being support assistant developed for new parents. The chatbot is designed to provide parenting information by focusing on active listening and providing emotional support, avoiding judgment and giving any advice (Viswanathan et al., 2025). Another parenting chatbot intervention, based on the Incredible Years parenting program's introductory module, has a knowledge engine trained by researchers and psychologists to teach parents how to use positive attention and praise to encourage positive behaviors in their children. It analyzes the content of conversations using artificial intelligence to respond to users' questions and reported emotions. Users have been found to engage meaningfully with chatbots. The use of

artificial intelligence programs is a unique and innovative way to increase accessibility to parenting education (Entenberg et al., 2023).

3.6. Digital group-based parent support programs

Synchronous digital health technologies refer to the use of audio, video, and health information interfaces to facilitate the remote and real-time delivery of healthcare services. Synchronous digital health technologies have also been found to improve caregivers' quality of life, psychological health, satisfaction with care, and social support (Bird et al., 2019). Digital intervention programs can include tips/videos on how parents incorporate what they learn into their daily routines and busy lives, tips and resources on how children can use what they learn in play with siblings and peers, success stories from parents to encourage other parents, inspiring information, game ideas, and experience sharing such as a forum where parents can exchange ideas and discuss how to motivate each other can facilitate peer learning and reduce parents' feelings of isolation (Wainer et al., 2021). Internet-based peer groups and interventions are used to support the transition to parenthood or to cope with stressful events in parenting. Despite geographical distance or time zone differences, both mothers and fathers receive up-to-date information support from their peers and are satisfied with being part of a group with other parents in similar situations (Niela-Vilén et al., 2014).

Parents who participated in the eight-session Group Triple P Positive Parenting Program delivered via video conferencing reported improvements in their children's behavior and a reduction in parental stress. Parenting programs delivered via video conferencing technology may be an effective way to provide evidence-based services to families with special needs (Reese et al., 2012). Group Lifestyle Triple P is an evidence-based parenting intervention that aims to encourage parents of overweight and obese children aged 5-10 to promote a healthier lifestyle in their families. In sessions conducted via the digital platform Zoom, parents reported positive changes in their own abilities and in their children's abilities to manage nutrition and physical activity (Canário et al., 2025). The online application of Helping Our Toddlers, Developing Our Children's Skills (HOT DOCS), a behavioral parenting education program for challenging behaviors seen in children aged 0-5, has been found to be equally effective compared to face-to-face implementation (Agazzi et al., 2021). Participants in the six-session HOT DOCS telehealth adaptation stated that connecting directly to online training without wasting time was more convenient and easier, and more accessible than being physically present anywhere (Agazzi et al., 2023).

3.7. Use of Telehealth Applications by Clinical Setting

Telehealth is defined as the clinical support of remote healthcare services (WHO, 2022). It supports family-centered early intervention services through remote consultation and can thus mitigate the impact of service provider shortages in underserved areas. Telehealth services are not designed to replace face-to-face services but offer a valid alternative when face-to-face services are not possible. With telehealth, therapeutic techniques that support the child's development by identifying learning opportunities in their natural environment can be integrated into their daily routines, and specialists and families can work together (Cason, 2011).

3.7.1. Telehealth applications in developmental delay and high-risk infant monitoring

Neurodevelopmental monitoring is critically important for high-risk infants discharged from neonatal intensive care and is traditionally conducted face-to-face between nurses, healthcare providers, therapists, patients, and parents. Disruptions to regular monitoring due to the COVID-19 pandemic have necessitated the development of telehealth models to provide effective and standardized care (Maitre et al., 2021). Telehealth services have the potential to increase access to treatment, reduce diagnostic waiting times, and assist in the monitoring of neurodevelopmental disorders. Therefore, the use of telehealth services for follow-up should be considered as a clinical approach for assessment, treatment, and monitoring (Valentine et al., 2021). Neonatal home care for preterm infants is a method of supporting families and monitoring infant development in the home environment. Telehealth can be used to provide remote specialist neonatal care using online communication methods. Neonatal tele-home care further strengthens the parent-infant relationship by supporting the parent's role as the primary caregiver. Parents feel that their independent decision-making processes increase during neonatal tele-home care. Planning the baby's feeding in collaboration with neonatal tele-home care nurses facilitates the provision of family-centered care for families with clinically stable premature infants. These effects suggest that neonatal tele-home care can be a supportive practice for parents during the transition of premature infants from the neonatal intensive care unit to home (Garne Holm et al., 2019). Assessing the baby in their own home, in their natural environment with their own toys, offers advantages over the clinic and reduces family anxiety during the transition from hospital to home. Remote monitoring, such as video-based feeding analysis and sleep pattern recordings, saves time for early intervention.

3.7.2. Telehealth applications in neurodevelopmental disorders (ASD, ADHD, language and motor delays)

Telehealth technologies are increasingly being used for the treatment and follow-up of neurodevelopmental disorders. Autism Spectrum Disorder (ASD) and Attention Deficit Hyperactivity Disorder (ADHD), the most common neurodevelopmental disorders, are the focus of telehealth in the neurodevelopmental field (Valentine et al., 2021). Tele-rehabilitation programs enable the delivery of a wide variety of neuropsychological, motor, speech, and communication interventions. In parent-mediated interventions, the specialist trains the parent, not the child, and the parent takes on the role of therapist. In cases of language delays, speech and language therapists can also teach parents strategies for providing language input (such as modeling and expansion). For motor delays, physical therapy-based tele-rehabilitation can also be applied. In this way, new technologies save significant time and costs by shortening hospital stays and offer the rehabilitation process at home, in a more ecological environment, thereby strengthening the generalization of the skills acquired (Del Lucchese et al., 2024). Providing training services to caregivers via telehealth has certain advantages over face-to-face services, as it increases parents' access to qualified autism specialists, reduces the need for parents or practitioners to attend appointments, and allows caregivers to access important services at a lower cost (Alatar et al., 2025). Findings from studies conducted with parents of children with autism suggest that adding an interactive remote coaching component could be a desirable and, for some, critical element of successful telehealth parent education programs for families in need of this service. Some parents have indicated that receiving immediate feedback or coaching from a specialist clinician would be a beneficial addition to the program. A hybrid telehealth service delivery model combining internet-based education with remote coaching has been found to be acceptable, usable, and effective (Wainer et al., 2021).

3.7.3. Telehealth applications for behavioral-emotional problems

Telemedicine technologies enable behavior analysts living anywhere in the world to provide services to families living in different regions through remote coaching. For example, if families affected by natural disasters and forced to relocate have access to the internet and smartphones, access to these services can truly improve the process (Tsami et al., 2019). Various studies support the feasibility and effectiveness of parent coaching interventions delivered in a virtual environment in improving disruptive behaviors, anxiety, and parent-child relationships in children. Online behavioral family intervention programs have a positive effect on children's disruptive behavior problems

and parents' parenting, anger, and stress regulation skills (Flannery et al., 2021; McAloon & Armstrong, 2024). However, there is a significant gap in the literature regarding the implementation of attachment-based parenting coaching interventions in virtual settings. Attachment-focused interventions have been shown to increase attachment security in young children, enhance parental sensitivity, and improve emotional regulation skills. Virtual parenting coaching can also be an effective approach, particularly for children under six years of age experiencing behavioral difficulties (Hippman et al., 2025). Providing support to parents of adolescents at risk of developing behavioral problems through internet-based interventions has also been found to be beneficial (Wetterborg et al., 2019). Providing advice and support to parents through online support programs reduces children's behavioral and emotional problems and improves parents' mental health (Palmer et al., 2023; Thongseiratch et al., 2020). It has been found that online programs adopting a learning theory perspective are more likely to have the strongest effect on behavioral problems in children, while online programs adopting parental self-care and parent-therapist approaches are more likely to have the strongest effect on emotional problems in children (Canário et al., 2025).

3.7.4. Telehealth applications for children with chronic illnesses

Parents of children with chronic illnesses must manage daily routines and cope with various stress factors related to their children's health, such as emotional difficulties. Interventions are needed to support parents experiencing such difficulties. However, some parents often face difficulties participating in interventions due to barriers such as travel time, distance and costs, arranging childcare, and taking time off work. Online support interventions are vital for these families. Focusing on parents rather than children in an online psychosocial group intervention and allowing parents of children with rare diseases to participate has been shown to increase the effectiveness of the intervention, reducing parents' anxiety and depression levels and improving their coping skills after the intervention (Douma et al., 2020). Parents of children with chronic conditions and developmental disabilities experience high rates of burnout syndrome and psychological distress. Interventions delivered via the internet and video conferencing technology can be offered as a viable alternative for psychological support and self-care for parents of children with chronic conditions. Such psychosocial support can prevent parents from experiencing caregiver burnout by helping them acquire stress management skills (Lappalainen et al., 2021).

Telehealth integrates traditional hospital care with modern healthcare services using digital devices, particularly for children with chronic

conditions such as asthma, diabetes, and cancer. Telehealth platforms provide families with easy access to virtual counseling sessions, support groups, and educational resources, while also offering children valuable peer support groups that connect them with other children sharing similar experiences. This opportunity is crucial for children who need a safe space to communicate with others who understand their struggles and offer mutual support. Thus, managing chronic illness for the family can become less stressful and more enjoyable by providing access to resources and support from home (Shamsi, 2024).

4. Effectiveness of Telehealth-Based Programs

With the rapid advancement of technology, changes in technical infrastructure and health policies, digital-based applications are becoming increasingly preferred in all areas, including healthcare. This concept, which has entered our literature as telehealth in the healthcare field, is seen to be included within the scope of parent support programmes. The personalised, easily accessible and flexible nature of telehealth programmes has made them a focus of increasing interest in recent years. When considering the effectiveness of telehealth-based programmes, telehealth research, parental perceptions, programme cost and accessibility, and programme limitations are taken into account.

4.1. Research on telehealth programs

It is known that parent support programmes within the scope of telehealth have been the subject of numerous studies in recent years and are used to support parents (Ezeamii et al., 2025). Telehealth is an application that provides easy access to medical facilities for everyone living in rural or urban areas, helps to take precautions without having to go to an institution/ organisation in case of any problem, and continues to monitor and evaluate on an individual basis. In addition, it can be considered as a service package that reduces costs and provides time efficiency (Catalyst, 2018; Cruise, 2025; Ezeamii et al., 2025; Sharma et al., 2022).

Telemedicine-based parental intervention programmes are used as an important tool in supporting parenting skills. The use of parental intervention programmes via telemedicine positively supports parents' psychological health. The GenerationPMTO (GenPMTO) telehealth programme developed for this purpose has been recognised as effective for parents in the US state of Michigan (Holtrop et al., 2025). Telehealth programmes can be used for children with behavioural problems as well as children with special needs. The telehealth programme called "ATHENA" is used with

parents of children diagnosed with autism spectrum disorder. Through this programme, parents are supported in taking a more active role in daily routines with their children and strengthening their parenting behaviours (Gentile et al., 2022). Unlike telehealth studies aimed at supporting parents, systematic reviews and meta-analyses indicate that these interventions have a moderate effect on emotional and behavioural problems in children, with positive outcomes being identified (Canário et al., 2025; Pan et al., 2023).

4.2. Parental views on telehealth applications

Parents' views on telehealth programmes are explained through a wide range of topics, including the ease of use of the programme, perceived quality of care, and satisfaction. Research findings indicate that telehealth programmes designed to support parents are generally well-liked, accepted, and highly satisfactory (Gudipudi et al., 2024; Smith et al., 2023). The ease of access, reduced cost, and time savings for parents are among the most frequently cited reasons for satisfaction (Galvin et al., 2024). The flexible nature of telehealth, allowing for practice in the home environment, is seen as an advantage. It is also preferred more because it supports family routines and parent-child interaction/relationship (Smith et al., 2023).

Alongside satisfaction with telehealth, parents also have concerns. Some of these concerns include the perception that online consultations and interventions result in lower quality outcomes compared to face-to-face interactions (Kodjebacheva, Tang, et al., 2023). Parents also state that there may be misunderstandings during online consultations in cases involving high-risk children or more complex cases (Bourke et al., 2023). In addition, the most common parental problems encountered in telehealth programmes are explained as infrastructure problems and the inability to fully provide technical capabilities (Smith et al., 2022). It is recommended that initial consultations be conducted face-to-face to build parental trust, followed by telehealth-based interventions depending on the parent's circumstances (Cheung et al., 2023).

4.3. Cost and accessibility of telehealth programmes

The most powerful feature of telehealth programmes is said to be their accessibility. They are seen as a valuable programme for modern medical/health services in the technological age, offering significant benefits in terms of accessibility, particularly during the Covid-19 pandemic (Quayson et al., 2024). Issues such as access to services in rural areas and time constraints are made easier with telehealth programmes (Goldwater & Harris, 2025). The lower cost compared to face-to-face programmes is one of the criteria

for parents' preference. While the cost is not considered low in the short and medium term, it is stated that preventive support programmes are more cost-effective in the long term. However, studies evaluating the cost from different perspectives, such as health, family, community, and transportation, are limited (Gentili et al., 2022). It is also important that telehealth programmes can be measured and evaluated more quickly and at a lower cost (Goldwater & Harris, 2025).). However, the cost aspect must be considered in a multidimensional manner, taking into account costs such as the programme development cost and parental training (de Oliveira et al., 2023; Gentili et al., 2022).

4.4. Limitations of telehealth programs

Despite their many positive aspects in healthcare, telehealth programmes also have limitations. While telehealth programmes promote technological infrastructure and technology dependency, they can also cause many problems due to inequalities in access to technological infrastructure (Bouabida et al., 2022). Variations in parents' knowledge and awareness regarding technology access and literacy in families with low socio-economic status limit the effective use of telehealth programmes (Curfman et al., 2022; Samuels-Kalow et al., 2024).The quality of internet connection, lack of devices, and technical issues affect parents' ability to receive support from telehealth programmes, leading to decreased satisfaction and negative perceptions (McQueen et al., 2022). Parents experience privacy and confidentiality concerns regarding the process they undergo in telehealth programmes. In this context, face-to-face interaction highlights the difference in participation, honesty, and sincerity compared to interaction with telehealth programmes (McQueen et al., 2022). Although telehealth programmes have proven effective in the field in which they were developed, face-to-face interaction is more important in more complex and urgent critical situations. At this point, telehealth programmes are not appropriate in all cases and processes (Holtrop et al., 2025).

5. Ethical and Legal Processes of Telehealth Programs

In parent support programmes, the ethical and legal processes of telehealth are also addressed in a multifaceted manner, including the professional-parent relationship, confidentiality, privacy, data security, child protection, and parental responsibilities.

5.1. Data security and privacy

In telehealth programmes, attention must be paid to data security to ensure that personal data contains confidential information relating to the parent-child relationship. In mobile telehealth programmes, data security and privacy issues arise due to insufficient compliance with security guidelines and legal restrictions regarding encryption and authentication mechanisms (Papageorgiou et al., 2018). Personal data is protected under the GDPR in Europe and the KVKK in Turkey, and appropriate legal grounds and information/consent processes are mandatory for data processing (Information Commissioner's Office, 2025; T.C. Cumhurbaşkanlığı Resmi Gazete, 2016). Today, different models and encryption types are being developed for data security and privacy using current methods (Wenhua et al., 2024). In addition, self-assessment forms have been developed for the privacy and security of telehealth programmes, thereby identifying security vulnerabilities and taking measures to address them (Feal et al., 2020).

5.2. Privacy

Consultations in telehealth programmes usually take place in the parent's environment, i.e. at home. There is also a risk to privacy in consultations that take place at home. Specialists in telehealth programmes must first explain the criteria established for confidentiality and privacy during the initial consultation and obtain consent. In consultations with children, the legal guardian must give permission for the necessary video and audio recording and for the confidentiality of the topics discussed (Pasternak et al., 2023).

5.3. Child protection principles

In telehealth programmes aimed at supporting parents, the principles are similar to those applied face-to-face by specialists. Due to their technological infrastructure, telehealth programmes require greater sensitivity. In particular, in cases of child neglect and abuse, face-to-face consultations outside of telehealth programmes are essential. Attention should be paid to recognising the signs of behavioural problems in child protection (Raz et al., 2024). However, in telehealth programmes, the expert should focus on the words and behaviour of the child and parent during the consultation and initiate the child protection process when deemed necessary (WHO, 2021).

5.4. Responsibilities of telehealth specialists

The specialist must choose secure platforms for telehealth programmes, explain telehealth and the programme clearly and comprehensively, provide

accurate guidance, arrange face-to-face consultations when necessary, pay attention to data reliability and confidentiality principles when recording data, and be aware of the laws and legal processes related to telehealth (Curfman et al., 2022). The specialist is expected to establish a positive relationship with the parent in order to turn the disadvantages of virtual consultation into advantages. This helps the parent to trust and behave more openly and comfortably. With these approaches, the specialist acts in accordance with legal and ethical processes, fulfils their ethical responsibilities, and reduces legal risks (Traynor et al., 2024). The specialist should collaborate with the parent and plan the programme process together with them. Interdisciplinary collaboration should also be ensured by seeking support from specialists in other fields (Lee et al., 2024; Pozniak et al., 2024).

6. Conclusion

In today's world, digital technology has gained significant prominence, and during the COVID-19 pandemic, telehealth programmes have rapidly expanded to become one of the most sought-after service models. Telehealth encompasses a broad framework that includes not only diagnostic and treatment services but also assessment, monitoring, counselling, and education services. Telehealth programmes can be delivered in synchronous models, where healthcare professionals meet with individuals in real time; asynchronous models, where pre-prepared content is delivered; and hybrid models, which combine both methods. These applications offer sustainable options depending on technological infrastructure differences and encourage active parental participation in the assessment process. As telehealth programmes increase, digital developmental assessments are also on the rise; the validity and reliability of developmental screening inventories completed by parents in a digital environment are acceptable. Video-based assessments allow for the analysis of children's behaviour in the home environment, offering specialists flexibility in determining social communication, play skills, and parent-child interaction levels.

Telehealth offers unique opportunities to observe children in their natural home environments, addressing key points emphasised by ecological theory and serving as an important resource for continuous monitoring from birth onwards. Parent support programmes can be delivered through tele-coaching, two-way video or audio communication, instructional videos, or a combination of these methods. Among these supports, programmes based on attachment theory and using video feedback, as well as interventions aimed at increasing parental sensitivity, are being developed. In addition, artificial intelligence-based tools such as virtual chatbots and gamification

methods involving scoring, levels or leaderboards are also being used to increase user participation and learning. Parents' views on telehealth programmes are generally positive; the programme's ease of use, perceived quality of care, and high satisfaction are noted. Ease of access, reduced costs, and time savings are prioritised reasons for parents reporting satisfaction. It is noted that preventive support programmes implemented over the long term are more cost-effective. However, in telehealth, issues may arise due to inequalities in access to technological infrastructure, privacy concerns, and urgent/critical cases. Particular attention must be paid to data security, encryption, and identity verification mechanisms due to the existence of confidential information regarding parent-child relationships. It is imperative that specialists choose secure platforms, clearly explain the telehealth programme, comply with data reliability and privacy principles, provide face-to-face consultations when necessary, and be aware of legal processes. Consequently, although telehealth is an application with many advantages for supporting parents, it is important to exercise caution when using the programmes.

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