




Diagnostic Processes for the 0–4 Age Group in the System of Pedagogical Services

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Abstract:

This 0–4 age period is the most intensive stage of neurocognitive and socio-emotional maturation; early identification and targeted intervention can substantially affect developmental trajectories. Since 2013, the Hungarian pedagogical service system has provided more unified frameworks for this, yet in practice, inequalities in timing, tools, and capacities can still be identified. The aim of the study is to explore the diagnostic processes for the 0–4 age group within the system of pedagogical services. Special attention is given to the timing of screening, the quality of assessment, parental involvement, multidisciplinary teamwork, and the synthesis of disability-specific diagnostics underlying special educational needs (SEN). We conducted a mixed-methods study. A 50-item questionnaire was administered to parents, professionals, and institution leaders across five dimensions (screening, assessment, involvement, communication, teamwork). The reliability of the test sample was high (Cronbach's $\alpha = 0.82$), with a total of $n = 247$ participants (parents: 142; professionals: 78; institution leaders: 27). Furthermore, four focus group interviews ($n = 30$) were conducted to examine segments of the assessment process, based on a semi-structured thematic framework. According to the findings, 82% of parents considered the assessment to be thorough, while 55% reported long waiting times. A delay in screening was identified by 64% of parents, whereas 72% of professionals highlighted the lack of a unified protocol. Parental involvement was generally positive, though 38% noted the excessive use of professional terminology in feedback. Team consultations were reported as being mostly regular (68%), though often ad hoc due to capacity constraints (44%). Overall, the process was evaluated favourably (77%), but only 49% regarded it as fully transparent. The synthesis of disability-specific diagnostics (GDD/intellectual, hearing and visual impairment, ASD, motor impairment/CP, multiple disabilities) highlights the need for a unified, age-banded diagnostic procedure. The professional quality of diagnostic services within the pedagogical system is high, yet at a systemic level, critical issues remain concerning the timing of early screening, the absence of unified protocols, accessible

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communication, and capacity. It is recommended to establish a national set of protocols (SEN-specific, 0–4 years), an integrated signaling system with digital pre-screening, family-centered feedback standards, structured teamwork, and targeted professional workforce development.

Keywords:

early childhood, diagnostics, pedagogical services, special educational needs, early screening, multidisciplinary team, parental involvement

Introduction

Early childhood is the most dynamic and sensitive period of human life, laying the foundations for later physical, cognitive, emotional, and social development (Danis, 2024). The diagnostic processes of the 0–4 age group are of particular importance. The early recognition of developmental differences makes it possible to initiate appropriate interventions in a timely manner, thereby significantly improving children's quality of life and social integration (Mile & Kiss, 2020).

The system of pedagogical services in Hungary plays a key role in carrying out diagnostic and intervention tasks. The restructuring of the institutional framework in 2013 aimed to ensure efficiency, equal access, and consistent professional quality (Mile & Kiss, 2020). Early diagnostics within the pedagogical services are based on the collaboration of multiple fields (psychology, special education, medicine), requiring a multidisciplinary approach (Danis, 2022).

At the international level, the issue of early diagnostics and intervention is becoming increasingly prominent. The DSM-5 (American Psychiatric Association, 2013), ICD-11 (World Health Organization, 2022), and DC:0–5 framework (Zero to Three, 2019) all provide classification and diagnostic systems that enable more accurate identification of disorders in infancy and early childhood. International practices highlight that the earlier developmental differences are detected – including neurodevelopmental disorders, speech and communication delays, and socio-emotional difficulties – the more significantly later school performance and social adjustment can be influenced (Danis, 2020; Mares & Woodgate, 2017).

In Hungarian practice, the diagnostic process is closely linked to the legislative framework and the protocols of pedagogical services (Csepregi, 2019). For professionals working within these services, it is both a challenge and an opportunity to organize diagnostic work along the principles of a family-centered approach, multidisciplinary collaboration, and the use of modern assessment tools.

The aim of the present study is to present the specific characteristics of diagnostic processes for the 0–4 age group within the system of pedagogical services. In this context, we review developmental characteristics, the professional and legislative foundations of diagnostic steps, as well as national and

international practices. Furthermore, through an empirical study involving 247 professionals and parents, we examine the strengths and shortcomings of the diagnostic process, with particular attention to parental involvement, the diversity of assessment procedures, and the experiences of professionals.

The central research question is to what extent the Hungarian diagnostic system ensures early detection, what tools and methods are applied by professionals in pedagogical services, and how the diagnostic process could be made more effective in light of international practices.

The System and Legal Framework of Pedagogical Services

The system of pedagogical services in Hungary plays a key role in supporting children's development, particularly in the diagnostic and intervention processes of the 0–4 age group. The structure and development of these services have evolved over many years and underwent a major transformation with the amendment of the Public Education Act in 2013. The aim of this change was to ensure equal access for children to developmental and diagnostic services and to achieve greater consistency in the quality of care at the national level (Mile & Kiss, 2020).

The Organizational Framework of Pedagogical Services

Pedagogical services are institutions within the public education system that provide specialized tasks, offering diagnostic, developmental, and counseling services for children and students. Their responsibilities include early intervention, special education counseling, speech therapy, educational counseling, conductive education, therapeutic physical education, as well as kindergarten and school psychology services (Kiss, 2019).

One of the core principles of pedagogical services is complexity: care is provided through a multidisciplinary approach in which psychologists, special education teachers, developmental educators, speech therapists, and medical professionals work together. This is particularly important in the case of the 0–4 age group, where developmental differences often appear across multiple domains and are interwoven (Danis, 2024).

Legal Background and Regulatory Framework

The operation of pedagogical services is regulated by Act CXC of 2011 on National Public Education and its implementing decrees. Decree No. 15/2013 (II. 26.) of the Ministry of Human Resources (EMMI) defines the tasks, organizational structure, and access to services of pedagogical service institutions. The decree clearly emphasizes that every child has the right to the diagnostic and developmental services they need, regardless of their place of residence or social situation (EMMI, 2013).

One of the main aims of the reform of the pedagogical service system was to reduce regional inequalities. Previously, the quality and availability of diagnostic services varied considerably across different parts of the country. Within the new structure, county-level pedagogical services apply unified professional protocols and procedures, with the aim of making the diagnostic process more transparent and consistent (Mile & Kiss, 2020).

The Role of Pedagogical Services in Diagnostics for the 0–4 Age Group

In the early years of life, a key task of pedagogical services is the early identification of developmental differences. This includes conducting screening examinations, consulting with parents, and the work of the multidisciplinary diagnostic team. During the diagnostic process, pedagogical services often use internationally validated assessment tools (e.g., Bayley-III, DP-3, Vineland Adaptive Behavior Scales), which allow for a comprehensive examination of the child's development (Danis, 2024; Csepregi, 2019).

Kiss (2019) emphasizes that the diagnostic process is not limited to mapping the child's condition but also involves establishing close cooperation with parents. Parental involvement is essential, as they provide the most information about the child's everyday functioning and are key actors in the success of interventions.

Challenges and Development Directions of the System

Despite the significant progress achieved in recent years, several challenges remain within the pedagogical service system. Mile and Kiss (2020) point out that a shortage of professionals, excessive administrative burdens, and the lack of standardized tools often slow down the diagnostic process. In addition, parental involvement is not always realized to a sufficient degree, which may reduce the effectiveness of interventions.

Future development directions include the introduction of unified diagnostic protocols, the application of digital assessment tools, and the further strengthening of family-centered and interdisciplinary approaches. According to international recommendations (WHO, 2022; Zero to Three, 2019), the emphasis is increasingly shifting toward process diagnostics and the consideration of environmental factors, a perspective that is gradually being integrated into Hungarian practice as well (Danis, 2024).

Developmental Characteristics of the 0–4 Age Group and Diagnostic Challenge

One of the key insights of developmental psychology is that in the early years, developmental outcomes are shaped by the dynamic interactions between biological predispositions and the environment (Sameroff, 2009).

Although the pace of neurological maturation is genetically programmed, environmental factors – particularly the quality of the parent–child relationship – play a decisive role in influencing developmental trajectories (Bronfenbrenner & Morris, 2006).

The Complexity of Early Childhood Development

Infancy and early childhood (0–4 years) represent the most intensive period of human development, characterized by neural plasticity, the rapid maturation of neurocognitive functions, and the critical embedding of social and relational experiences (Danis, 2024; Shonkoff & Phillips, 2000). Development is multidimensional: motor, cognitive, language, and socio-emotional domains interact with one another, and stagnation in any one area can trigger a chain reaction that affects the others (Mares & Woodgate, 2017).

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Detailed Overview of Developmental Domains

Motor and psychomotor development: the development of gross motor skills (rolling, sitting, walking) and fine motor skills (grasping, manipulation) is a prerequisite for cognitive exploration and active engagement with the environment. Delays in motor development often predict global developmental differences (Csepregi, 2019). Cognitive development: Starting from sensorimotor experiences, the child gradually becomes capable of symbolic thinking, problem-solving, and recognizing simple cause-and-effect relationships. Standardized assessment tools, such as the Bayley-III or DP-3, provide an objective framework for measuring development (Danis, 2024). Language and communication development: Language acquisition occurs during a critical period. The appearance of first words, followed by sentences, represents not only cognitive but also socio-emotional milestones, as the development of communication skills determines the formation of social relationships (Tomasello, 2009). Social and emotional development: The quality of attachment, the emergence of emotion regulation, and the shaping of social behaviour form the basis of the child's later mental health. The absence of secure attachment is a significant risk factor in psychosocial development (Mikulincer & Shaver, 2016).

Challenges of the Diagnostic Process

One of the greatest difficulties of early childhood diagnostics is that children at this age have limited verbal and metacognitive abilities, and therefore cannot provide direct information about their own condition (Danis, 2024). For this reason, the diagnostic process relies heavily on parental reports and behavioural observations, which may carry subjective biases (Carter et al., 2009).

The Main Challenges

- *Temporal dynamics:* Development can change radically within a short period of time, thus process diagnostics with repeated follow-up assessments are necessary (Stein et al., 2019).
- *Multidimensional problems:* Developmental differences often appear comorbidly (e.g., motor delay + language delay), therefore diagnosis requires a differentiated approach.
- *Environmental embeddedness:* Family, cultural, and social contexts fundamentally shape developmental outcomes. Diagnostics must be culturally sensitive, especially in multicultural environments (WHO, 2022).

The role of parental perceptions: Parents often notice behavioural and emotional problems first, while cognitive or language delays are less apparent to them (Danis, 2024). This influences the timing of referrals for diagnostics.

The necessity of multidisciplinary collaboration: Effective diagnosis can only be achieved through the joint work of psychologists, special educators, speech therapists, and medical professionals.

Theoretical and Conceptual Frameworks of Diagnostics

The modern diagnostic approach is based on several theoretical frameworks:

- *Biopsychosocial model:* developmental differences are shaped by the interactions of biological, psychological, and social factors (Engel, 1977; Danis & Kalmár, 2020).
- *Transactional model:* highlights the significance of dynamic interactions between the child and their environment, emphasizing that developmental outcomes are the result of continuous negotiations (Sameroff, 2009).
- *Human ecological model:* examines development within the interrelation of multiple environmental levels, integrating microsystem (parent–child interactions), mesosystem (institutional environment), and macrosystem (cultural values, social policy) factors (Bronfenbrenner & Morris, 2006).
- *Relational perspective:* the quality of the caregiver–child relationship is a central determinant of emotional and cognitive development, therefore the examination of parent–child interactions is fundamental in diagnostics (Mares & Woodgate, 2017).

Without the integration of these conceptual frameworks, the diagnostic process would become reductionist. In diagnostics for the 0–4 age group, a holistic, interdisciplinary approach is therefore essential, one that takes into account the child's individual characteristics, the family and social context, as well as developmental specificities.

Special Educational Needs and Disability-Specific Diagnostics in the 0–4 Age Group

The early identification of developmental disorders and disabilities underlying special educational needs (SEN) is crucial, as the neural plasticity present in the early years creates opportunities to significantly influence developmental pathways (Csepregi, 2019; Danis, 2024). However, diagnostics at this age are marked by specific challenges: children's communication abilities are limited, which means that assessments rely heavily on parental reports, observation, and a combination of standardized assessment tools (Csákvári & Mészáros, 2012).

The diagnosis of global developmental delay in the 0–4 age group is particularly complex, as the measurability of cognitive abilities is limited at this early stage. Diagnosis is based on monitoring developmental milestones, applying standardized tests such as the Bayley-III or the Griffiths Scales, and mapping adaptive behaviour through parental questionnaires (Vineland) (Danis, 2024). The diagnostic manual (Csákvári & Mészáros, 2012) emphasizes that the concept of global developmental delay can be used under the age of 5 and may predict the later identification of intellectual disability.

Among sensory impairments, the early screening and diagnosis of hearing loss is of particular importance, as language development takes place during a critical period. Mandatory newborn hearing screening (otoacoustic emission, BERA) enables early intervention, with the initiation of hearing aid provision and rehabilitation as soon as possible to ensure the development of communication (Csepregi, 2019; World Health Organization [WHO], 2022). In the diagnosis of visual impairment, the observation of visual behaviour, ophthalmological examinations, and the use of developmental tests are also essential. Early recognition makes it possible to introduce compensatory strategies (tactile, auditory channels) at an early stage (Csepregi, 2019).

The early signs of autism spectrum disorder (ASD) can be identified as early as 18–24 months of age, particularly based on patterns of social communication and repetitive behaviours (Zwaigenbaum et al., 2015). According to the *Recommendations* (2019), the diagnostic process is based on observational assessments (ADOS Toddler Module), parental questionnaires (M-CHAT-R), and the evaluation of adaptive behaviour (Vineland). In Hungarian practice, diagnosis is carried out by a multidisciplinary team involving the collaboration of psychologists, special educators, and medical experts.

In the diagnostics of motor impairments and cerebral palsy, neurological examinations are complemented by motor development scales (e.g., Alberta Infant Motor Scale – AIMS), which help to identify risks (Csepregi, 2019). The aim of early motor diagnostics is not only to detect differences but also to initiate developmental interventions (physiotherapy, conductive education) as soon as possible.

The diagnosis of multiple disabilities poses the greatest challenge, as the involvement of several functional domains complicates accurate assessment. In such cases, multidisciplinary teamwork, a dynamic diagnostic approach – meaning repeated assessments and monitoring of developmental changes – and parental involvement play a particularly important role, as parents provide an authentic picture of the child's everyday functioning (Csákvári & Mészáros, 2012).

The Diagnostic Process Steps in Pedagogical Services

The diagnostic care of the 0–4 age group within pedagogical services is a multidisciplinary process that addresses every dimension of the child's development and seeks, within an integrated framework, to accurately map the condition, identify intervention needs, and involve the family. The steps of the diagnostic process do not proceed linearly but often cyclically, allowing for continuous monitoring of the condition and adaptation to developmental changes (Danis, 2024; Csepregi, 2019).

Main Phases of the Diagnostic Process

Referral and Screening

The first step of the diagnostic process is referral to the pedagogical service system, which may originate from parents, a paediatrician, a health visitor, or a nursery or kindergarten teacher. Referral is followed by screening, which uses quick, standardized methods (e.g., developmental questionnaires, milestone checklists, observational screenings) to identify potential developmental risks (Mile & Kiss, 2020). The aim of screening is not to establish a diagnosis, but to determine the necessity of further assessment (Carter et al., 2009).

First Interview and Anamnesis

The central element of the first interview is parental involvement. During the collection of family anamnesis, professionals map the biological, psychological, and social factors influencing the child's development (Danis & Kalmár, 2020). The anamnesis is multidimensional: it includes perinatal history, experiences related to developmental milestones, family dynamics, as well as parents' perceptions and concerns.

Assessment and Examinations

The central element of the diagnostic process is the comprehensive assessment of the child's development. Within pedagogical services, this integrates several methods

Observation: in Both Structured and Free Play Situations

- *Standardized assessment tools:* Bayley-III, DP-3, Vineland, Griffiths Development Scales, communication questionnaires (Danis, 2024)
- *Questionnaire-based assessments:* parent-report tools such as the Ages and Stages Questionnaire (ASQ) or the Child Behavior Checklist (CBCL)

Clinical examination and psychological testing: in specific areas (e.g., attachment assessments, language tests) When selecting assessment tools, essential considerations include cultural adaptation, the availability of national norms, and ensuring parental involvement (Csepregi, 2019).

Multidisciplinary Teamwork

In the diagnostic process, psychologists, special education teachers, speech therapists, physiotherapists, and, when necessary, paediatricians, neurologists, or psychiatrists are involved. Teamwork makes it possible to integrate different professional perspectives and reduces the risk of establishing a one-sided diagnosis (Mile & Kiss, 2020).

Diagnosis and Feedback to the Family

The final step of the diagnostic process is the integration of professional findings and the formulation of the diagnosis and recommendations. Feedback provided to the family is of central importance: the way the diagnosis is communicated determines the parents' cooperation in the subsequent intervention process (Mares & Woodgate, 2017). Feedback must be empathetic, understandable, and supportive.

The Main Difficulties of the Process

Heterogeneous use of tools: there are significant differences in the assessment tools applied across pedagogical services, which makes it difficult to establish a unified national diagnostic protocol (Csepregi, 2019)

Shortage of professionals: the lack of psychologists, speech therapists, and special education teachers often slows down the process and extends waiting times (Mile & Kiss, 2020).

Deficiencies in parental involvement: the extent of family cooperation greatly influences the success of the diagnostic process. Parents' overload, lack of information, or uncertainty may hinder effective participation.

Lack of cultural sensitivity: diagnostic procedures often fail to adequately consider the socio-cultural context, even though it plays a decisive role in shaping child development (WHO, 2022).

Empirical Research on the Diagnostic Processes of the 0–4 Age Group

Research Aim

The aim of the research was to explore how the diagnostic processes of the 0–4 age group are implemented within the system of pedagogical services, with particular attention to the aspects of screening, assessment, parental involvement, and multidisciplinary teamwork. The study sought to answer how the process is evaluated by the professionals and parents involved, and what strengths and shortcomings they perceive in practice.

Participants of the Study

The sample consisted of 247 participants, divided into three subgroups:

- *Parents* ($n = 142$): families raising children aged 0–4 who had been in contact with pedagogical services within the past two years
- *Professionals* ($n = 78$): psychologists, special education teachers, speech therapists, and physiotherapists working in pedagogical services.
- *Institution leaders* ($n = 27$): heads of branch institutions and coordinators.

Gender and age distribution of the sample: among parents, 87% were women and 13% men; among professionals, 92% were women and 8% men. The mean age was 33.7 years ($SD = 4.5$) for parents and 41.2 years ($SD = 6.8$) for professionals.

Methods

We conducted a mixed-methods study combining quantitative survey data with qualitative focus group interviews to obtain a comprehensive understanding of the diagnostic processes for the 0–4 age group within the system of pedagogical services.

Questionnaire Survey

The questionnaire contained 42 closed and 8 open-ended questions across five key dimensions:

- Experiences of screening (e.g., timing, tool usage)
- Quality of assessment and examinations
- Parental involvement and cooperation
- Multidisciplinary teamwork
- Satisfaction and recommendations

Closed questions were rated on a five-point Likert scale (1 = not at all characteristic, 5 = fully characteristic). The instrument aimed to capture both procedural aspects and subjective experiences of those involved in the diagnostic process. Responses were analyzed descriptively, with mean values and percentage distributions calculated for each dimension.

Focus Group Interviews

To complement the quantitative data, four focus group interviews were organized: two with parents (8 participants each) and two with professionals (7 participants each). The discussions were conducted using a semi-structured guide, focusing on key areas such as screening, assessment, communication, and recommendations for intervention. Each session lasted approximately 60–75 minutes and was audio-recorded and transcribed verbatim.

Thematic analysis followed the six-step framework outlined by Braun and Clarke (2006), including data familiarization, initial coding, theme identification, review, and refinement. This systematic procedure ensured a rigorous and transparent interpretation of recurring patterns and shared experiences across the parent and professional narratives. Themes were organized around the most salient aspects of diagnostic experiences – uncertainty before diagnosis, communication and feedback, and the dynamics of multidisciplinary collaboration.

Representative quotations were included to illustrate the main themes and to enhance the credibility and interpretive depth of the analysis:

- “We felt relief once the process finally started, but until then, we were left in uncertainty for months,” – *Parent, Focus Group 1*
- “The teamwork is essential, but in reality, we often meet only when there’s a crisis or deadline,” – *Professional, Focus Group 3*

Results

The presentation of results follows the methodology of the questionnaires and focus group interviews. Quantitative and qualitative findings are integrated to provide a comprehensive picture of the diagnostic processes for children aged 0–4 within the pedagogical service system.

Questionnaire Results (Table 1)

Screening: 64% of parents indicated that screening was delayed (mean = 2.7), and 72% of professionals reported the lack of a unified protocol. These findings highlight systemic inconsistencies and regional disparities in the early detection process.

Assessment: 82% of parents expressed satisfaction with the thoroughness of the examinations (mean = 4.2), yet 55% reported that the waiting time was excessively long. This reflects strong professional quality but limited procedural efficiency.

Parental involvement: 71% of parents felt that their opinions were considered during the diagnostic process, but 38% found the feedback overly jargon-heavy. This indicates the need for clearer, family-centered communication practices.

Teamwork: 68% of professionals considered team consultations to be regular, though 44% stated that, due to capacity limitations, they were often organized on an ad hoc basis. This suggests that while interdisciplinary work is valued, it remains inconsistently implemented.

General satisfaction: 77% of parents evaluated the process positively overall, yet only 49% regarded it as fully transparent, suggesting a gap between perceived professional competence and systemic clarity.

Table 1

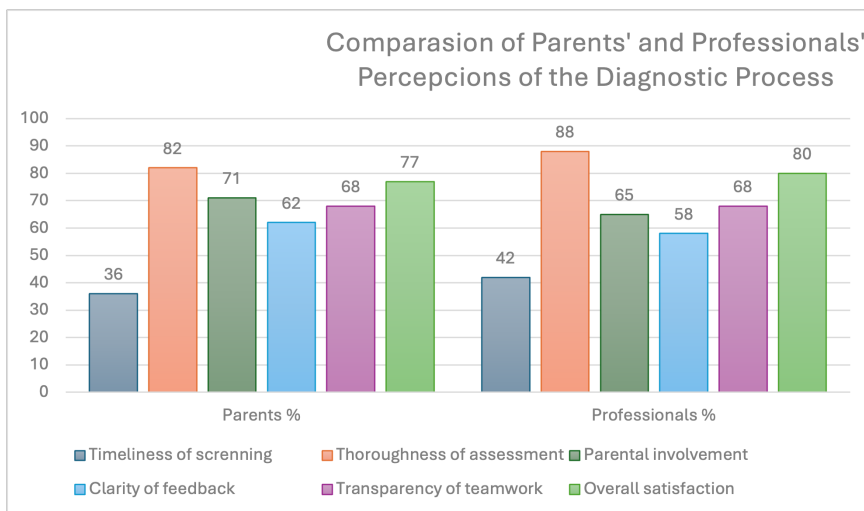
Parental satisfaction with the main dimensions of the diagnostic process (n = 142)

Dimension	Mean (1–5)	SD	Satisfaction %
Timeliness of screening	2.7	1.1	36%
Thoroughness of assessment	4.2	0.9	82%
Parental involvement	3.9	1.0	71%
Clarity of feedback	3.2	1.3	62%
Transparency of teamwork	3.5	1.2	68%
General satisfaction	4.0	0.8	77%

As shown in Table 1, the highest satisfaction scores were observed in the area of assessment quality, whereas screening timeliness and communication clarity received the lowest ratings.

To further illustrate the convergence and divergence between parental and professional perspectives, a comparative overview is provided in Figure 1.

Figure 1
Comparison of Parents' and Professionals' Perceptions of the Diagnostic Process



The results indicate substantial agreement between parents and professionals in their overall evaluation of the diagnostic process. Both groups rated assessment quality and teamwork positively, while recognizing persistent systemic weaknesses in timing, communication, and coordination.

Focus Group Interview Results

In the parent focus groups, three main themes emerged:

- *Uncertainty before diagnosis* – Parents often waited extended periods for referral and assessment, describing the process as emotionally taxing and marked by uncertainty. “We felt relief once the process finally started, but until then, we were left in uncertainty for months.” – *Parent, Focus Group 1*
- *Positive experiences in the assessment process* – Parents emphasized the empathy and professionalism of the specialists, valuing the thoroughness of the observations and the supportive atmosphere during the examinations. “The professionals were kind and attentive. We finally felt that someone was really looking at our child.” – *Parent, Focus Group*
- *Communication difficulties* – Several parents noted that the communication of results was overly technical and difficult to interpret, especially for families with limited prior knowledge of developmental terminology. “The explanations were detailed but full of terms I didn’t understand.” – *Parent, Focus Group 2*

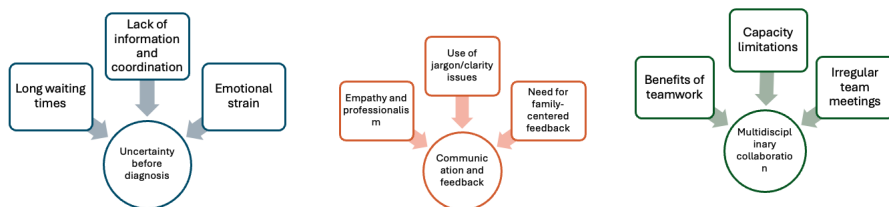
In the professional focus groups, three main themes stood out:

- *Staff shortages and workload* – Participants emphasized that the shortage of qualified professionals leads to long waiting lists and limits opportunities for follow-up consultations. “We simply don’t have enough time to meet as a team for every case.” – *Professional, Focus Group 3*
- *Heterogeneity of assessment tools* – Professionals reported that the use of different instruments and procedures across districts undermines comparability and continuity of care. “Every team uses slightly different methods, which makes it hard to ensure consistency.” – *Professional, Focus Group 3*
- *Value of interdisciplinary teamwork* – Despite challenges, participants unanimously emphasized that collaboration across disciplines enhances diagnostic accuracy and professional learning. However, they noted that teamwork often occurs only in response to crises or deadlines. “The teamwork is essential, but in reality, we often meet only when there’s a crisis or deadline.” – *Professional, Focus Group 4*

The thematic relationships among these findings are summarized in Figure 2.

Figure 2.

Thematic Map of Qualitative Findings from Focus Group Interviews



The map illustrates three central and interrelated domains of experience:

- *Uncertainty before diagnosis* – linked to emotional strain and procedural delays.
- *Communication and feedback* – encompassing empathy, clarity issues, and the need for accessible language.
- *Multidisciplinary collaboration* – reflecting both the perceived benefits and systemic constraints.

The integration of quantitative and qualitative data reveals a consistent pattern: the diagnostic process is characterized by strong professional competence and empathy, but also by systemic limitations that affect efficiency and transparency.

The findings converge around three interrelated systemic challenges:

- *Timeliness* – Delays in screening and assessment are primarily due to staff shortages and regional disparities.
- *Communication* – Professional feedback is often overly complex, limiting parents’ understanding and engagement.

- *Coordination* – Multidisciplinary collaboration, though valued, remains irregular and dependent on individual initiative.

These results point to key areas for policy and practice development, including the establishment of national diagnostic protocols, digitalized screening systems, regular interdisciplinary case meetings, and communication-focused professional training.

Together, these findings provide a solid empirical basis for improving the quality, accessibility, and coherence of early diagnostic services within the Hungarian pedagogical support system.

These data demonstrate that both groups view the assessment phase as the most consistent and professionally solid component of the process. Yet systemic issues – particularly related to timeliness, unified diagnostic protocols, and communication practices – remain pressing areas for improvement.

Discussion

The results of the empirical research confirm the dilemmas previously identified in both national and international literature (Danis, 2024; Mile & Kiss, 2020).

While parents expressed high satisfaction with the professional competence and empathy of specialists, persistent systemic shortcomings were observed – chiefly in the timeliness of screening, the absence of unified protocols, and the clarity of communication.

These findings indicate that the diagnostic process functions on a strong professional foundation but is weakened by organizational and procedural fragmentation.

International frameworks – such as the U.S. IDEA system and the UK's Sure Start program—highlight the critical role of early screening, family-centered cooperation, and standardized documentation protocols (Shonkoff & Phillips, 2000).

The Hungarian *Recommendations* manual (Csepregi, 2019) reflects these same principles, outlining procedural steps that promote early detection and multidisciplinary collaboration.

However, the inconsistent application of these protocols – due to staff shortages, workload differences, and regional inequalities – continues to limit efficiency and accessibility.

The findings align closely with transactional and human ecological models (Sameroff, 2009; Bronfenbrenner & Morris, 2006), emphasizing the dynamic interaction between the child, family, and professional environment.

Within this framework, delays or breakdowns in communication can negatively affect the relational system that supports early intervention. Hence, the key to improving diagnostic efficiency lies not only in technical protocols but also in strengthening systemic responsiveness and interprofessional collaboration.

Conclusion and Development Proposals

The research aimed to explore the diagnostic processes for the 0–4 age group within the Hungarian pedagogical service system, focusing on screening timeliness, assessment thoroughness, communication, parental involvement, and teamwork.

The quantitative and qualitative results together depict a system characterized by high professional quality and strong interpersonal commitment, but constrained by organizational inconsistencies and capacity limits.

The most significant finding was that 82% of parents were satisfied with the professional thoroughness of assessments, confirming that expertise and empathy are central to building trust and cooperation between professionals and families.

However, 64% of parents reported delayed screening, and 72% of professionals emphasized the lack of unified protocols – indicating that procedural fragmentation remains a barrier to effective early intervention. Such delays may have lasting consequences for developmental outcomes, as supported by international research linking timely diagnosis with improved intervention efficacy (Zwaigenbaum et al., 2015).

Qualitative insights reinforced these patterns: parents described uncertainty and stress before diagnosis and reported difficulties understanding feedback written in professional terminology.

These experiences underline the importance of accessible communication and family-centered feedback as determinants of satisfaction and cooperation. Professionals, in turn, highlighted the value – but also the inconsistency – of multidisciplinary teamwork, which is often conducted in an ad hoc manner rather than within a structured framework.

The Position of the Hungarian System within International Trends

Hungarian diagnostic practice is fundamentally aligned with international recommendations. The use of standardized assessment tools – such as the Bayley-III, DP-3, and Vineland – the presence of multidisciplinary teams, and the comprehensive approach to developmental assessment meet the expectations emphasized in international literature and guidelines (DSM-5; ICD-11; DC:0–5; American Psychiatric Association, 2013; WHO, 2022; Zero to Three, 2016/2019). At the same time, the specificity of the Hungarian system lies in the fact that regional disparities, socio-economic realities, and sustainability factors significantly influence the consistent application of protocols. This suggests that Hungary seeks to adapt flexibly to global trends in accordance with the available resources, which represents both an opportunity and a limitation (Danis, 2024; Csepregi, 2019).

The Role of a Family-Centered, Partnership Approach

The findings of the study also confirm that the success of the diagnostic process largely depends on establishing a partnership with parents. A family-centered approach is not merely a pedagogical or psychological principle, but a practical factor that fundamentally influences the acceptance of the diagnosis and the effectiveness of interventions. Parental involvement and clear, empathetic communication reduce informational asymmetries and support parents in actively participating in their child's developmental pathway (Mile & Kiss, 2020; Danis, 2024). At the same time, this approach increases families' sense of security and satisfaction, which is indispensable for long-term effectiveness.

The Significance and Novelty of the Study

The novelty of the present research lies in the fact that it does not merely provide a theoretical synthesis but is also grounded in a large-scale empirical study involving 247 participants, including parents, professionals, and institutional leaders. This made it possible to evaluate diagnostic processes from multiple perspectives and thus present a complex, nuanced picture of how the system functions. The study simultaneously highlighted systemic challenges (lack of protocols, shortage of professionals, communication difficulties) and the strengths of everyday practice (professional thoroughness, empathy, teamwork).

Development Proposal

Based on the results, the following development directions can be outlined:

Establishing unified diagnostic protocols. Standardizing the screening and developmental assessment of the 0–4 age group is essential, particularly in cases of differences underlying special educational needs (SEN). The condition-specific protocols presented in the *Recommendations* (Csepregi, 2019) and the *Diagnostic Manual* (Csákvári & Mészáros, 2012) could, if adapted at the national level, create a more coordinated practice.

Strengthening early screening. Conducting screenings in a timely manner is crucial, as the effectiveness of early intervention is closely linked to the timing of diagnosis. To this end, stronger collaboration between the health visitor network, paediatricians, and pedagogical services is needed (Zwainbaum et al., 2015).

Improving parental involvement and communication. Actively involving parents in the diagnostic process and ensuring clear feedback are indispensable. The consistent application of a family-centered approach increases parental satisfaction, supports acceptance of the diagnosis, and enhances the effectiveness of intervention (Danis, 2024).

Structuring multidisciplinary teamwork. Regularizing and documenting team consultations increases the transparency and reliability of the process. The effectiveness of collaboration among professionals can be further strengthened through joint training sessions and forums for interprofessional dialogue (Braun & Clarke, 2006).

Professional workforce development and training. The shortage of professionals is one of the most critical problems of the system. The development of special education and psychology training programs, as well as the continuous professional development of staff within pedagogical services, is indispensable to ensure that the quality of diagnostic processes remains sustainable in the long term (Mile & Kiss, 2020).

Closing Thoughts

Overall, the study has highlighted that the diagnostic processes of pedagogical services are built on solid professional foundations while simultaneously facing systemic challenges. Alignment with international trends is becoming increasingly important, but without greater consistency in sustainability, standardization, and the application of a family-centered approach, the system cannot fully realize its potential in the long term. Implementing the proposed developments –from the establishment of national protocols to strengthening partnership-based cooperation with families – could ensure that diagnostic processes for the 0–4 age group are carried out more effectively, transparently, and in a way that is more supportive for families. This would not only have a positive impact on children’s developmental trajectories but also secure the long-term sustainability of the Hungarian pedagogical service system.

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