Theses of Doctoral (PhD) Dissertation

ANALYSIS OF RECEPTIVE AND EXPRESSIVE COMMUNICATION OF PREMATURE INFANTS AND TODDLERS – IN HEALTH PSYCHOLOGY ASPECT

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ABSTRACT OF THE THESES

I. Object of dissertation, define of theme

Most at-risk neonates are premature and/or are born with extremely low birth weights. The period of gestation is the time between fertilization and birth, normally 37 to 43 weeks. An infant born before the 37th week and weighing less than 2500 grams is considered premature.

In Hungary the rate varies between 8 and 11 percent, giving us a high level of perinatal morbidity and mortality. Complications resulting from premature birth are the 4th leading cause of infant mortality. There are a wide variety of factors behind premature birth including physical illness or psychosocial hazards affecting the mother, organic anomalies or disorders of the uterus, twin (multiple) pregnancies, mother's age (below 16 or over 35), or multiple prior abortions. Factors on the fetal side may be infections as well as all forms of arrested development including excess amniotic fluid. Development levels among children born prematurely or with low birth weights can differ sharply so it is essential to observe the progress of these infants with a mind to their individual development paces. Researchers have established four separate categories of infants based on the predominant development trends:

- Spontaneous development
- Development gap – predominantly motor development problems
- Minor neurological deficits and/or mild learning problems
- Profound central nervous system dysfunctions (disabilities) serious problems with living skills

A study of that included care of premature infants with birth weights of less than 1000 grams found the following:

- One-fifth of these premature babies had profound central nervous system deficits resulting in intellectual disabilities and serious difficulties with living skills
- There were few cases with mild neurological deficits and/or slight learning impairments
- For about 50 percent, deficits in motor development, particularly in gross motor skills was clearly demonstrable
- Good spontaneous development was observed for half of the children in this group (3,4,8,15)

Do premature birth and low birth weight have a negative impact on children's linguistic development? In over thirty years of investigation researchers have been unable to offer a clear and acceptable answer to this question. Several studies have pointed out that when the linguistic development of these children is compared to that of children born at term and with normal weight, they show a delay. Other researchers have drawn exactly the opposite conclusion, finding that delayed language development was no more common among preemies than among full-term babies, or if there were early differences, they could be made to disappear from the age of 2 or 3 on if diagnosed in a timely manner.
According to empiric Hungarian data, studies of speech perception and speech comprehension, done when examining children to determine their readiness for school, found that very low birth weight babies were worse performers than children born at term and with normal weight. Perception and comprehension were found to be related to intelligence test

outcomes which suggested that speech development was a good predictor of later cognitive performance (4,11,16). *Tanya M. Gallagher* and *Kenneth L. Watkin* published an article in 1998 (6) in which they concluded that numerous language difficulties are not apparent among children born prematurely, for possible impacts on the nervous system are not generally manifest until language development reaches the expression level.
Studying parental empathy and its impacts on the child's communication development, researchers found that the communicative attitudes of mothers and fathers– in combination with their emotional communication abilities (empathy levels) – do influence the socio-cognitive skills of the children including the development of linguistic communication.
Some researchers (20) found that interactions involving the child's activities and desire to communicate, interwoven with the parent's emotional communication, determine "vocal" communication and speech development. Thus, it was possible to demonstrate the defining role of the early social roots to speech development and the role the continuity of speech development plays in socio-cognitive development.
These results call attention to the psychological consequences of the medical intervention needed by premature and low birth weight infants. Neonates born under these conditions often spend a lengthy period of time separated from their mothers. Often their first experience following birth is separation, and by the time the infant has the chance to get to know its mother in an uninterrupted manner it is no longer a neonate. Until that time, the more often the parents visit, and the fewer the specialist interventions on the part of doctors and nurses, the greater the chance for parents and child to bond. We also have to realize that with these parents tension in their relationship can occur, either as an outcome of overprotection or emotional rejection of the child. These factors all influence communication with the child and therefore of the preverbal and language-skills development of the infant.

The object of my research was to compare the preverbal development levels of 6 to 18-month old children who were born preterm but with satisfactory birth weights and born prematurely with very low (including extremely low) birth weights, focusing on both the productive and the receptive sides.

II. Outline of applied methods

My sample consisted of 200 children (107 boys and 93 girls), all native speakers of Hungarian, who were born prematurely and/or with low birth weight, and who lived in the region serviced by the Budapest-based Semmelweis School of Medicine's No. 1 Obstetrics and Gynecology Clinic's Aftercare Center for Pediatric Neurology, Hungary (Table 1).

Figure 1. Choosing our sample groups

	SAMPLE GROUP I		***SAMPLE GROUP II.***	
	I.1.	***I.2.***	***II.1.***	***II.2.***
Number in each sub-group	49	50	51	50
Ages	6–11 months	12–18 months	6–11 months	12–18 months
Time of birth	premature (before 37th week of gestation)		premature (before 37th week of gestation)	
Birth weight	normal (≥ 2500 g)		low (2499 g ≥) *separate* extremely low (<1000 g)	
Gender breakdown	28 boys-21 girls	31 boys-19 girls	27 boys-24 girls	21 boys-29 girls

When examining prematurely born children, we used the method of calculating their performance based on corrected age, up to the age of 2 years, instead of their de facto biological age. I did not preclude children who had suffered various illnesses as neonates since among preemies and low birth weight infants many have to contend with serious disorders (such as sepsis, a lengthy period on a respirator, cardiac disorders, congenital pneumonia and jaundice). However, I did exclude various (medically diagnosed) vision and hearing impairments, serious motor disabilities, mental retardation and multiple deficits.
I endeavored to have both genders equally represented and to include a mixture of Budapest, rural town, and small settlement residents. I also considered the age of the mothers and the parents' education levels. Since the research was comparative in nature, I did not use a control group. Each child was examined once only.

I conducted our examinations using the *Preschool Language Scale-3* (PLS-3, Hungarian adapted version), which is the third, revised version of the scale. The tasks used in the test were compiled by development psychologists Irla Lee Zimmerman, Violette G. Steiner, and Roberta Evan Pond to meet the need for a reliable diagnostic tool to ascertain the preverbal/linguistic development of very young children. The scale can be used for children aged 2 weeks to 7 years. It is quick and easy to administer and the tasks are so playful that even infants enjoy it.(24)
The test is made up of two sub-scales: *auditive comprehension and expressive communication.* In both areas, the areas on which I focused – keeping age-specific considerations in mind – were: attention span, passive vocabulary, sound development,

interactive communication, and active vocabulary. I processed the raw data using SPSS software.

Figure 2. **Areas of PLS-3**

	Auditive comprehension	*Expressive communication*
PREVERBAL AREAS		
- attention span	X	
- sound development		X
- interactive communication		X
SEMANTICS		
- vocabulary	X	X
- abstractions:		
quality	X	X
quantity	X	X
spatialing	X	X
order/sequence	X	X
STRUCTURE		
- morphology	X	X
- syntactic	X	X
INTEGRATIVE THOUGHT	X	X

III. Thesis-like list of results

I sought to answer the question of whether premature birth and low birth weight, as risk factors, influenced the preverbal development ability of infants.

Evaluation:

Summing up the results of our task-by-task evaluation, I concluded that the performances of children of the same age were nearly identical for both the group born with normal birth weight and the very low birth weight group. There was a significant difference in one area only and that was the *sound development* portion of expressive communication. Among 1 to 1.5 year old lower birth weight children, group error was significantly higher than among children of identical age whose birth weights were normal.
Among the two groups of older children, the major shortcoming was in the area of *active vocabulary*. All four groups of children had good balanced performances in interactive communication and attention span tasks.

Language development levels:

I obtained the language development level by computing standard points and age equivalencies. I set the following equivalencies separately for each sub-test and again separately for receptive and for expressive values: *above average (+1 SD<), average (+1 SD – -1 SD), mild deficit (-1,5 SD – -1 SD), medium deficit (-2 SD – -1,5 SD), profound deficit (-2 SD>).*

A detailed statistical evaluation led to the following responses to my hypotheses:

1) I verified that possible deficits in the preverbal abilities of children born prematurely (with normal, quite low, and extremely low birth weights) can be discovered at a very early age, in infancy.
2) I did not verify that low birth weight and shorter gestation period have primary influence on the level of linguistic development among children born prematurely. In other words, the linguistic development levels of children born prematurely with quite low or extremely low birth weights, were not behind those of children born prematurely but of normal weight, regarding both preverbal reception and expression.
3) I did find support for the hypothesis that the precursory abilities needed for comprehension abilities were ahead of expressive communication in the preverbal standard points of both groups investigated.
4) I was able to support the hypothesis that the older children (12 to 18 months) would be farther behind the younger ones in age-appropriate abilities. I found the opposite to be true: that the receptive and expressive abilities of the older children were farther behind age-appropriate levels than those of the younger children.
5) I verified that mothers with higher qualifications have children with higher achievement.
6) I was able to support the hypothesis that achievement of children with extremely low birth weights weren't equalized.

I found no correlations between duration of gestation, birth weight and the development level of preverbal abilities, nor did we find significant gender differences in the children's performances. I found in the order of birth: communication abilities of first children were farther behind abilities of second children.

I have verified that possible deficits in the preverbal abilities of children born prematurely (with normal, quite low, and extremely low birth weights) can be discovered at a very early age, in infancy. I did not verify that low birth weight and the shorter gestation period have primary influences on the level of linguistic development among children born prematurely. I did not find difference between results of speech production and speech comprehension and results of toddlers (aged 12 to 18 months) better than infants aged 6 to 11 months. It appears that qualification of mothers determines preverbal abilities of children. Children with extremely low birth weights achievement aren't equalized.

Conclusions and discussion

In analyzing our conclusions, we would emphasize the importance of examining infants as a means to uncover the development process of their psychological ability patterns in the early weeks and months of life. These tests and scales play a dominant role in studying not only the normal population but also in screening at-risk infants, in prevention and in organizing therapy when needed, since extreme and profound dysfunctions can be discovered and remedied through therapy.

We need to be careful in treating minor deficits in development discovered through the development psychology and neuropsychological screening of premature infants, which are far better treated as delays than as actual and irreversible dysfunctions. At the same time, it is important to conduct frequent monitoring of the development of a premature infant and to teach the mother skills-development exercises. Monitoring and follow-up care should continue until the child is established in school. (16,22)

1) Because of effects of perinatal risk factors the age stressed variable in the researches. „Sleeper effect" means that the dysfunction is manifesting later. According to *Gordon* and *Jens* in 1991, (9,11) the „moving risk" is corrected wording. Are the receptive/expressive communication disorders in continuous moving.
2) The low birth weight and the shorter gestation period are accurate samples in themselves, but they can conceal more important factors. A protective factor can alleviate the negative effect of the risk condition, other factors can attach them. (11,19)
3) Analysis of development of early receptive and expressive communication is meaningful in formation of the later intelligence quotient. In my research the advantage of comprehension abilities didn't manifest itself. Neuropsychological outcomes of preterm have an effect on cerebral processes of comprehension. (21, 23)
4) Findings regarding the preverbal abilities of groups of younger children, with both normal and low birth weights can also be interpreted in two ways. One theoretical model reports that the dominant factor is premature birth itself– that is, the time factor – in influencing verbal abilities at age 1 to 1.5 years, but that preverbal abilities are not truly manifest before that time. The other interpretation is that mothers maintain closer and more intensive relationships with those infants who enter the world too soon, and these enhanced communication interactions lead to more intensive communication on the part of infants who are in their first year of life. This behavior, particularly by the mother, continues in later years of life but it no longer has such an outstanding influence on communication development as during that first year. (Later it may even shift to becoming maternal overprotection, which can actually inhibit the creative communication of the child, as the social reference effect becomes exaggerated.) (16,18)

5) According to oppinion of many researchers the sensitivity of parents advances learning of child in the social interactions and in the communication. This effect depends on the mother's qualification. (7,20)
6) My results, suggesting that the preverbal abilities of premature children with quite low and extremely low birth weights were not significantly different from those of premature children with normal birth weights enables us to move forward with two theoretical approaches. According to one neuropsychological explanation, the development of preverbal abilities is not influenced by low birth weight. Instead, low birth weight as a risk factor tends to be manifest later in childhood, in more concrete verbal tasks. The other development psychology-social psychology assumption is that mothers of low birth-weight children communicate much more with their infants and hold them more frequently, particularly in the first year of life, until the children "catch up" in weight. If we investigate the process in a breakdown of development psychology stations, a coordinated role change between infant and caregiver occurs around the third month of life, in which the sharing of emotions is the primary interaction, which is an early form of communication. It is limited to direct eye to eye interactions and depends on the help of the adult participant. This intersubjectivity with the involved infants increases. Beginning with the seventh month, a new and more complex communication behavior begins. This is the phase of secondary intersubjectivity, in which the infant and caregiver share emotions related to objects and persons other than themselves (= joint attention). One typical example is the social reference phenomenon which becomes dominant when the child has the ability to become mobile. (2,5,14)

These results impact therapy. As a first step following the arrival of the premature or low birth weight infant, a complex team of counselors-facilitators needs to support the mother, the parents, in all aspects of caring for the child. At this time the psychologist plays a very important role in relieving initial fears, anxieties and uncertainties between child and parents, establishing the basis for "healthy communication." Then, if any development delay in any area is found, it can be corrected by sensory-motor and cognitive development methods. We cannot sufficiently underline the significance of early development therapy and monitoring young children with follow-up treatment until they have settled in at school. It is expedient to vary therapeutic interventions between discussions with groups of parents and "tailor-made" development therapy geared to the individual child. (13,17)
Clearly, we know that development and rehabilitation therapy rest on a detailed diagnosis of which the preverbal/linguistic development detailed in this article is just one component. However, since language and communication are one of the most sensitive development indices, we must try to determine needs as fully as possible, and once they are determined, to treat them on the highest possible level, enabling us to become acquainted with the complete personality of the child and to offer complex assistance on that foundation.

The essence of early development therapy is that it can correct developmental delays and deficits triggered by premature birth, birth injuries, and dysfunctions occurring in the early weeks or months of life, as soon as possible. A thorough and accurate diagnosis of the infant, covering multiple areas of development, must precede the initiation of therapy. Teamwork is vital to the diagnostic process which is based on monitoring the infant. The team begins its work with at-risk infants almost from the moment of birth. If need be, it immediately recommends development therapy to the parents. Then, the team either handles

the therapeutic intervention itself of refers the child and parents to other specialists. Members of the team should include a *pediatric neurologist* (possibly a neonatologist) who will monitor physical development from the medical point of view, a *child psychologist* who will prepare a detailed diagnosis covering the child's course of development, a *special education/speech therapist* who will monitor and work to develop the child's intellectual abilities and language and verbal skills, and a *conductor*, who will examine and develop motor skills. (1,15,16)

It is vital to focus on as many aspects of development as possible when children come for follow-up therapy, to be sure that we are fully aware of all developmental features! Clearly, early development therapy can be followed up with other types of therapy, promoting interventions in later phases of childhood, should it be necessary.

We observe the children from the psychological point of view after we have established their histories. First we establish a development quotient and later an intelligence quotient (IQ). In addition, we map out the specific ability/skill levels of the child. The special education/speech therapy examination includes a survey of infantile speech development, an ascertainment of how the young children respond to sound, how they themselves emit sounds, and how they stand with initial speech comprehension. If we suspect any hearing deficit we immediately refer the child to a pediatric audiology specialist.

Our own developmental therapy takes place several times a week and includes active participation on the part of the parent, since the parent is the one who conducts the daily exercises with the infant in the home.

We use motion exercises to spur on the physical, intellectual and emotional development of infants and young children. Movement, thought, and speech are the components of communication. A deficit in one component can affect all of them. For instance, symptoms of speech deficits are often manifest in the emotional and social arenas and often are related to deficits in gross and fine motor skills. Speech deficits inhibit the evolvement of certain functions and skills and lead to difficulty in gaining experience, which in turn becomes an obstacle to cognitive processes. Psychological anxiety and conflict situations can trigger spasms throughout the motor system, creating a motor pathology or amplifying existing symptoms. However, pathological psychomotor development therapy can actually prevent this vicious circle from evolving.

Early development therapy is obviously a very complex process and its significance culminates in the final preschool year, when our goal is to advance the abilities and skills of the child to the level enabling the child to be considered sufficiently mature to begin school with his or her peers. For this we need to choose the appropriate screening tests, to enable us to monitor the development of the children (at-risk children in particular), and to allow us to intervene as facilitators if necessary. We need to keep the brain plasticity of infancy in mind.

IV. REFERENCES OF THE THESES

1. AYLWARD, G. P., 2003, Neonatology, prematurity, NICU, and developmental issues. In: Roberts, M.C. (ed.), 2003, Handbook of ediatric Psychology. Guilford, New York.
2. BOZZETTE, M., A Review of Research on Premature Infant-Mother Interaction, 2007, *Newborn and Infant Nursing Reviews,* 7(1), 49-55.
3. DEUTSCHER, B., FEWELL, R. R., Early Predictors of Attention-Deficit/Hyperactivity Disorder and School Difficulties in Low-Birthweight, Premature Children, 2005, *Topics in Early Childhood Special Education*, 25, 71-79.
4. ESTEFÁN-VARGA, VARGA M., Koraszülött gyermekek longitudinális, pszichodiagnosztikai vizsgálatának és iskolai beválásának eredményei, 2003, [In Hungarian] (Results of psychodiagnostical and longitudinal investigation of premature children) *Alkalmazott Pszichológia* (Applied Psychology)*, 5.* 5-27.
5. FEELEY, N., GOTTLIEB, L.N., ZELKOWITZ, P., 2000, Infant, mother and contextual predictors of the quality of mother-VLBW infant interaction, Poster presented at: International Conferences on Infant Studies, Brighton
6. GALLAGHER, T.M., WATKIN, K.L., Prematurity and language developmental risk: Too young or too small?, 1998, *Topics in Language Disorders*, *18.* 15-25.
7. HÁMORI E., 2005, Koraszülöttség és az anya-gyerek kapcsolat kezdete, PPKE BTK, Piliscsaba
8. JAKOBSON, L.S., FRISK, V., DOWNIE, A.L.S., Motion-defined from processing in extremely premature children, 2006, *Neuropsychologia,* 44(10), 1777-1786.
9. JENS, K.G:, GORDON, B.N., 1991, Understanding risk: Implications for tracking high-risk infants and making early service delivery decisions, International Journal of Disability, Development and Education, 38, 211-224.
10. JUNE, CHO, HEDITCH-DAVIS, D., BELYEA, M., Gender and Racial Differences in the Looking and Talking Behaviors of Mothers and Their 3-Year-Old Prematurely Born Children, 2007, *Journal of Pediatric Nursing,* 22(5), 256-367.
11. KALMÁR M., 2007, Az intelligencia alakulásának előrejelezhetősége és váratlan fordulatai – Rizikómentesen született, valamint koraszülött gyerekek követésének tanulságai, ELTE Eötvös Kiadó
12. LARROQUE, B., ANCEL, P.Y., MARRET, S., MARCHAND, L., ANDRÉ, M. et al., Neurodevelopmental disabilities and special care of 5-year-old children born before 33 weeks of gestation (the EPIPAGE study): a longitudinal cohort study, 2008, *The Lancet,* 371, 813-820.
13. LEE, B.H., STOLL, B.J., MCDONALD, S.A., HIGGINS, R.D., Neurodevelopmental Outcomes of Extremely Low Birth Weight Infants Exposed Prenatally to Dexamethasone Versus Betamethasone, 2008, *Pediatrics,* 121(2), 289-296.
14. MSALL, M.E., PARK, J.J., The Spectrum of Behavioral Outcomes after Extreme Prematurity: Regulatory, Attention, Social, and Adaptive Dimensions, 2008, *Seminars in Perinatology,* 32, 42-50.
15. MÜLLER-RIECKMANN, E., *A koraszülött gyerekek,* 2001, [In Hungarian] (Premature children). Akkord Kiadó, Budapest.

16. NAGY, B., *Pszichoterápia és rehabilitáció a gyermekellátásban a speciális szükségletű gyermekekkel végzett vizsgálatok tükrében,* 2007, [Psychotherapy and rehabilitation in childhood − research results of children with special needs] Didakt, Debrecen.

17. ROBB, L.S., CARPENTER, S.J., A Review of Music-based Intervention Reporting in Pediatrics, 2009, *Journal of Health Psychology, 14.* 490-501.

18. ROSE, S.A., FELDMAN, J.F., JANKOWSKI, J.J., VAN ROSSEM, R., A cognitive cascade in infancy: Pathways from prematurity to later mental development, 2008, *Intelligence,* 36, 367-378.

19. SINGER, L.T., SIEGEL, A.C. et als., 2001, Preschool Language Outcomes of Children with History of Bronchopulmonary Dysplasia and Very Low Birth Weight, Journal of Developmental and Behavioral Pediatrics, 22(1): 19-26.

20. SUGÁRNÉ K.J., 1995, Az életkor és a szociális körülmények hatása az alanyi, illetve állítmányi csoport kidolgozására, óvodások mondataiban, Általános Nyelvészeti Tanulmányok, 18, 231-244.

21. SZANATI D., NAGY B., A korai fejlesztés terápiás lehetőségei koraszülött gyermekeknél – a preverbális képességek mérésének egy új eszköze, 2008, [In Hungarian] (Early development therapy for premature babies – A new tool to measure preverbal abilities) *Pszichoterápia* (Psychotherapy)*, 17.* 385-392.

22. WIDERSTROM, A. H., MOWDER, B. A., *At-risk and handicapped newborns and infants – Development, assessment, intervention,* 1991*,* Baltimore Publ.

23. ZIAJKA, A., *Prelinguistic communication in infancy*, 1981, 2001, New York, Praeger Publ.

24. ZIMMERMANN, I.L.., STEINER, V.G., POND, R.E., *Preschool Language Scale – 3*, 1993, Psychological Corporation, San Antonio.

V. Author's publication list with regard to subject of dissertation

PUBLICATIONS IN HUNGARIAN

- Szanati D., Nagy B., 2006, A koraszülöttség mint a preverbális képességek fejlődését befolyásoló tényező, Gyógypedagógiai Szemle, 34(1), 23-37.o.

- *Szanati D., 2006, A koraszülöttség és az alacsony születési súly hatása a preverbális képességek fejlődésére, Tudomány és Lélek. forthcoming*

- Szanati D., 2007, A koraszülöttség és az alacsony születési súly hatása a preverbális képességek fejlődésére, Tükörkép, ÓTE (Óvó- és Tanítóképzők Egyesülete – Eötvös József Főiskola), Baja, 2007-2008, 118-128.o.

- Szanati D., 2008, Koraszülött gyermekek orvosi-gyógypedagógiai utánvizsgálata, A Kisgyermek, 2008, 2(1), 24-26.o.

- Szanati D., 2008, A korai nyelvfejlődés vizsgálata idő előtt és alacsony súllyal született csecsemőknél és kisgyermekeknél, ISBN 978-963-87569-2-3, DOSz kiadványa, Bp., 142-150.o.

- Szanati D., 2008, Koraszülött csecsemők és kisgyermekek mozgásának és szenzoros integrációjának fejlődése, Komplementer Medicina Orvosi – Az integratív medicina szakmai továbbképző folyóirata, 12(4), 55-58.o.

- Szanati D., Nagy B., 2008, A korai fejlesztés terápiás lehetőségei koraszülött gyermekeknél – a preverbális képességek mérésének egy új eszköze, Pszichoterápia, 2008, 17(6), 385-391.o.

- Szanati D., Nagy B., 2010, Koraszülött kisgyermekek átlagon felüli prenyelvi/nyelvi teljesítménye, In: Mező F. (szerk.) „Tehetségkutatás – határon innen és túl…", KockaKör Tehetséggondozó Kulturális Egyesület, Debrecen 73-78.o.

- Nagy B., Szanati D., 2010, A koraszülöttség egészségpszichológiai vonatkozásai – különös tekintettel a korai kommunikáció fejlődésére, Népegészségügy, 88(3), 241-248.o.

- *Szanati D., 2010, A logopédus-egészségpszichológus szerepe a koraszülött gyermekek utánvizsgálatában, Gyógypedagógiai Szemle – forthcoming*

PUBLICATIONS AND ABSTRACTS IN ENGLISH

- Beke, A., Cziniel, M., F. Szekszárdi, M., Sz. Domjánné, Sz., Szanati, D., 2004, Follow-up Studies of Newborns with Extremely Low Birth-weight, In: Aris Antsaklis (ed.) XIX European Congress of Perinatal Medicine, Athens (Greece), October 14-16, 2004, Medimond S.r.l., pp. 391-395.

- Szanati, D., Nagy, B., 2010, Therapy Possibilities of Early Development at Premature Babies – Preverbal Skills' Measuring, In: Collection of Psychological Studies in 2009,

Constantine the Philosopher University in Nitra – Faculty of Central European Studies, pp. 85-94.

- *Szanati, D., Nagy, B., 2010, Early Development Therapy for Preterm Babies – A Tool to Measure Preverbal Abilities, Maternal and Child Health Journal – forthcoming*

- Szanati,D., Nagy, B., 2010, Preverbal abilities of preterm babies and children – in health psychology aspect, Népegészségügy, 88(3), 202-203.

PRESENTATIONS IN HUNGARIAN CONFERENCES

- Beke A., Szanati D., Az extrém kissúlyúak nyomonkövetése, fejlesztése, 2005. május, Seregélyes, Magyar Perinatológiai Társaság Kongresszusa

- Szanati D., A koraszülött gyermekek nyelvi fejlettsége, 2006. máj. 19., Budapest, ELTE BGGYFK és Kaposvári Egyetem CSVM-PFK Szakmai Konferenciája

- Beke A., D. Szeszák Sz., Szanati D., F. Szekszárdi M., Az 1000 gramm alatti születési súlyú koraszülöttek utánvizsgálatának eredményei az elmúlt 15 évben, 2007. ápr.13., Eger, Magyar Gyermekneurológiai, Idegsebészeti, Gyermek- és Ifjúságpszichiátriai Társaság XXXII. Kongresszusa

- Szanati D., A koraszülöttség pszichés hatásai, 2007. nov. 22., Budapest, „Ez a beszéd" – A Magyar Tudomány Ünnepe, ELTE BGGYFK

- Szanati D., Koraszülött és alacsony súllyal született gyermekek nyelvi fejlődésének vizsgálata – hazai és külföldi kutatások összefoglalása, 2008. ápr. 20., Budapest, XII. Budapesti Pszichológiai Napok

- Szanati D., A korai nyelvfejlődés vizsgálata idő előtt és alacsony súllyal született csecsemőknél és kisgyermekeknél – , 2008. máj. 23., DOSz – Tavaszi Szél Konferencia, Bp. – „Pro Patria et Scientia" díj III. helyezett, Társadalomtudományi Szekció

- Szanati D., Koraszülöttek beszédfejlődése és annak vizsgálata – 2008. dec. 12., Fejezetek az újszülöttkori idegrendszeri kórképekből, Budapest, SE I.sz. Szülészeti és Nőgyógyászati Klinika – továbbképző tanfolyam neonatológus szakorvosjelölteknek és szakorvosoknak

- Nagy B., Szanati D., A koraszülés hatása az anya-gyermek kapcsolatra, 2009. márc. 06., Debrecen, A Magyar Pszichoszomatikus Szülészeti - Nőgyógyászati Társaság VII. Kongresszusa „A női identitás"-ról

- Szanati D., A logopédus-egészségpszichológus szerepe a koraszülött gyermekek utánvizsgálatában, 2009. nov. 27., Budapest, „Az utánvizsgálatok 30 éve" című tudományos ülés, SE I. sz. Szülészeti és Nőgyógyászati Klinika

- Szanati D., Korábban és alacsony súllyal született csecsemők, kisgyermekek kommunikációs fejlődése, 2010. márc. 26., Budapest, SZVT-KRE BTK, I. Országos Alkalmazott Pszichológiai PhD Konferencia – pontozásos díjazott (2. helyezett)

- Szanati D., Koraszülött csecsemők és kisgyermekek preverbális fejlődése, 2010. ápr. 21., Budapest, ELTE BGGYK Tudományos Tanácsa Doktori Konferenciája, ELTE BGGYK

PRESENTATIONS IN INTERNATIONAL CONFERENCES

- Beke, A., Cziniel, M., F. Szekszárdi, M., Sz. Domjánné, Sz., Szanati, D., 2004, Follow-up Studies of Newborns with Extremely Low Birth-weight, XIX European Congress of Perinatal Medicine, Athens (Greece), October 14-16, 2004

- Szanati, D., Development of preverbal capacity in premature infants, 13 October 2006, Budapest, Early Vocalization Developmental Neurology International Conference – National Institute of Pediatric Allergology, Pulmonology and Developmental Neurology

- Szanati D., A koraszülöttség pszichés hatásai, 2008. nov. 06., Kecskemét, AGTEDU – A Magyar Tudomány Ünnepe Nemzetközi Konferencia, Társadalomtudományi Szekció, Kecskeméti Főiskola

- Szanati D., Nagy B., Koraszülött kisgyermekek átlagon felüli prenyelvi/nyelvi teljesítménye, 2010. máj. 7-8., Debrecen, „Tehetség – Határok nélkül" Konferencia, Kocka Kör Tehetséggondozó Kulturális Egyesület – Magyarkanizsa Község Pedagógus Egyesülete, Debreceni Egyetem Pszichológiai Intézete

PUBLICATIONS AND ABSTRACTS IN HUNGARIAN CONFERENCE VOLUME

- Szanati Dóra, 2006, A koraszülöttség mint a preverbális képességek fejlődését befolyásoló tényező I., 2006. máj. 24., MPT XVII. Nagygyűlése, ISBN 963-229-947-7, Magyar Pszichológiai Társaság, 406.o.

- Szanati Dóra, 2008, A koraszülöttség mint a preverbális képességek fejlődését befolyásoló tényező II., 2008. máj. 22-24., MPT XVIII. Nagygyűlése, Nyíregyháza, ISBN 978-963-06-4860-8, Magyar Pszichológiai Társaság, 312.o.

- Szanati Dóra, 2008, Koraszülött és alacsony súllyal született gyermekek nyelvi fejlődésének vizsgálata – hazai és külföldi kutatások összefoglalása, 2008. ápr. 20., Budapest, XII. Budapesti Pszichológiai Napok, ISBN 978-963-87555-3-7, Pszichodiák Alapítvány, 83.o.

- Szanati Dóra, 2008, A koraszülöttség pszichés hatásai, ISSN: 1586-846x, II. kötet, Kecskeméti Főiskola kiadványa a Magyar Tudomány Ünnepére, 249-253.o.

- Szanati Dóra: A koraszülött csecsemők és kisgyermekek preverbális fejlődésének egészségpszichológiai megközelítése – EGYÉNI POSZTER, 2009. jún. 11-13., „Magatartástudományi Napok – Népegészségügy és Magatartástudományok: új diszciplína születőben", Debreceni Egyetem Orvos- és Egészségtudományi Centrum, Debrecen, PROGRAMFÜZET, 16.o.

- Szanati Dóra - Nagy Beáta: A koraszülöttség és a preverbális/verbális fejlődés egészségpszichológiája – EGYÉNI POSZTER, 2009. okt. 29-30., „Kutatás és terápia metszéspontjai várandósságtól a felnőttkorig", Pázmány Péter Katolikus Egyetem BTK, Piliscsaba, PROGRAMFÜZET, 59.o.

- Szanati Dóra, 2010, Korábban és alacsony súllyal született csecsemők, kisgyermekek kommunikációs fejlődése, 2010. márc. 26., I. Országos Alkalmazott Pszichológiai PhD Konferencia - SZVT, Budapest – KRE BTK Pszichológiai Intézet, ISBN 978-963-9263-53-6, Papirusz Book Kiadó, 174.o.-179.o.

- Szanati Dóra – Nagy Beáta: A koraszülöttség és a nyelvi fejlődés összefüggései egészségpszichológiai szempontból, 2010. máj. 27-29., MPT XIX. Nagygyűlése, Pécs, ISBN 978-963-87915-3-5, Magyar Pszichológiai Társaság, 198.o.

- D. Szanati, 2010, Early communication abilities of preterm children, 2010. okt. 14-15., XIV. Apáczai-napok Tudományos Konferencia, Győr, Nyugat-magyarországi Egyetem Apáczai Csere János Kar, 5.o.

POSTERS IN HUNGARIAN

- Szanati D., A koraszülöttség mint a preverbális képességek fejlődését befolyásoló tényező I. – EGYÉNI POSZTER, 2006. máj. 24., MPT XVII. Nagygyűlése, Bp. – Nulladik nap, „A legjobb tudományos poszter versenyének" III. helyezése

- Szanati D., Koraszülött és alacsony súllyal született gyermekek nyelvi fejlődésének vizsgálata – hazai és külföldi kutatások összefoglalása – EGYÉNI POSZTER, 2008. ápr. 20., Budapest, XII. Budapesti Pszichológiai Napok

- Szanati D., A koraszülöttség mint a preverbális képességek fejlődését befolyásoló tényező II. – EGYÉNI POSZTER, 2008. máj. 22., MPT XVIII. Nagygyűlése, Nyíregyháza

- Szanati D., A koraszülöttség mint a preverbális képességek fejlődését befolyásoló tényező – EGYÉNI POSZTER, 2008. nov. 20-21., „A természettudományos gondolkodás megalapozása és megszerettetése" című a Magyar Tudomány Hónapja alkalmából rendezett nemzetközi konferencia, Apor Vilmos Katolikus Főiskola, Vác

- Szanati D., A koraszülött csecsemők és kisgyermekek preverbális fejlődésének egészségpszichológiai megközelítése – EGYÉNI POSZTER, 2009. jún. 11-13., „Magatartástudományi Napok – Népegészségügy és Magatartástudományok: új diszciplína születőben", Debreceni Egyetem Orvos- és Egészségtudományi Centrum, Debrecen

- Szanati D., Nagy B., A koraszülöttség és a preverbális/verbális fejlődés egészségpszichológiája – EGYÉNI POSZTER, 2009. okt. 29-30., „Kutatás és terápia metszéspontjai várandósságtól a felnőttkorig", Pázmány Péter Katolikus Egyetem BTK, Piliscsaba

- Szanati D., Nagy B., A koraszülöttség és a nyelvi fejlődés összefüggései egészségpszichológiai szempontból – EGYÉNI POSZTER, 2010. máj. 27-29., MPT XIX. Nagygyűlése, Pécs

POSTERS IN ENGLISH

- D. Szanati, B. Nagy, 2010, Preverbal Abilities of Preterm Babies and Children – in Health Psychology Respect – EGYÉNI POSZTER, 2010. szept. 2-4., Népegészségügyi Képző- és Kutatóhelyek Országos Egyesületének IV. Konferenciája, Szombathely

- D. Szanati, 2010, Early communication abilities of preterm children – EGYÉNI POSZTER, 2010. okt. 14-15., XIV. Apáczai-napok Tudományos Konferencia, Győr

VI. Author's publication list with regard to other subject

PUBLICATIONS AND ABSTRACTS IN HUNGARIAN CONFERENCE VOLUME

- Tallós Zsuzsa – Lábadi Beatrix – Nagy Anett – Fehérné Szekszárdi Márta – Szanati Dóra – Beke Anna: Izolált corpus callosum agenesiával szövődött esetek fejlődésének követése, 2010. máj. 27-29., MPT XIX. Nagygyűlése, Pécs, ISBN 978-963-87915-3-5, Magyar Pszichológiai Társaság, 177.o.

POSTERS IN HUNGARIAN

- Tallós Zs., Lábadi B., Nagy A., F. Szekszárdi M., Szanati D., Beke A., Izolált corpus callosum agenesiával szövődött esetek fejlődésének követése – TEMATIKUS POSZTER, 2010. máj. 27-29., MPT XIX. Nagygyűlése, Pécs

REVIEW

- Szanati D., 2004, Seminars in Speech and Language, in: Beszédgyógyítás, Folyóiratszemle, 2004, 15(2), 72-73.o.

- Szanati D., 2005, International Journal of Language & Communication Disorders, in: Beszédgyógyítás, Folyóiratszemle, 2005, 16(2), 80-81.o.