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A MOTHER'S PERCEPTION OF TRIPLET SIBLINGS. A CASE STUDY

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SUMMARY

Background:

The prevalence of triplet pregnancies is estimated to be at about 0.7% of all pregnancies, however, their number is constantly increasing. Deficits of psychomotor development pertain both to premature children from singleton pregnancies and to those from twin and triple pregnancies. Consequently, these three risk groups deserve special attention. The aim of the research was to show the specificity and dynamics of a mother's perception of triplet siblings born prematurely in 2009 in one of the hospitals in Gdansk, aged 24, 29 and 38 months.

Case study:

The studied cases comprised siblings from a triple pregnancy (T1, T2, T3), including two girls and one boy. This longitudinal study consisted of three stages: stage I – children aged 25 months, stage II – children aged 29 months, and stage III – children aged 38 months. At each stage, psychomotor development of the children was evaluated subjectively by their mother using the Socila-emotional and Adaptive Behaviors Questionnaire. Additionally, medical and nursing documentation was analyzed at stage I, and an interview was obtained.

Results:

A qualitative analysis of the results has revealed that the mother perceives the development of each child differently. Her perception was affected first of all by the health condition due to the children differentiation process and the intensification of the differences among them. It is observed that in case of triplet siblings the differentiation has been present since the first years of life and it has always been a dynamic process, one conditioned by many factors. The children's state of health in early childhood was conditioned by the multi-fetal pregnancy, as well as the premature termination of the pregnancy.

Conclusions:

The mother perceives the development of each sibling triplet differently. The child's state of medical health affects the mother's perception. Having triplet siblings with different states of medical health as well as three children of the same age affects the process of differentiating children.

Key words: multi-fetal pregnancy, triplets, prematurity, early childhood

INTRODUCTION

Preterm birth is a major public health problem worldwide. The high global average preterm birth rate (11.1%) indicates that 1 in 10 of the world's newborn are born prematurely corresponding to about 14.9 million preemies each year (Blencowe et al., 2013; Blencowe et al., 2012). Premature birth is defined as birth before 37 completed weeks of gestation and is the most common complication in the course of a pregnancy. Women with a multiple pregnancy are one of the highest risk groups for preterm birth, and the risk of terminating a triplet pregnancy before the due date is 10 times higher, than in case of monofetal pregnancies (Nowakowska & Wilczynski, 2003). The etiology of preterm birth is not completely understood, however some risk factors are known. Currently preterm birth is referred to as preterm partition syndrome, because of the various ranges of the determinants. In recent years the importance of assisted reproductive therapies (ART) has been underlined in the etiology of multiple pregnancies. Sutcliff and Ludwig (2007) have shown that in developed countries at least 1% of births are born from ART (Sutcliff & Ludwig, 2007). The prevalence of twins and triples has been increasing each year and therefore we can observe the epidemic of multi-fetal pregnancies (e.g.: Bidzan, Preis, Senkbeil, Świątkowska-Freud, & Pankrac, 2010; Kornas-Biela, 2010; Malinowski & Bręborowicz, 2010; Szymankiewicz, 2010). It is estimated that triplet pregnancies account for 0.7% of all pregnancies and the rate has been increasing all the time. Since 1980 the percentage of triplet pregnancies has increased by 454% (Kornacka & Sonczyk, 2008). In Poland in 1990 153 children were born from triplet pregnancies, in 2006 – 225, in 2007 – 321, in 2009 – 305, and in 2010 – 307 (Central Statistical Office). Children born prematurely are in the risk group of perinatal mortality, morbidity, hospitalization during the childhood period. Additionally, prematurity contributes to psychomotor disabilities, global developmental delay, neurological disorders, specific physical effects, learning difficulties etc. Prematurity is associated with lifespan sequelae and is linked with domestic, economic and social effects (Pachalska & Kaczmarek 2012; Blencowe et al., 2013). The perception of children born from multi-fetal pregnancies arises interest among both medical scientists and psychologists, who emphasize the long-term effects on these children's development. Specialists underline the importance of the mothers' emotional availability to each of the siblings, their prenatal and perinatal emotional bond, attachment and their perception of the siblings. The aim of the research was to show the specificity and dynamics of the mother's perception of triplet siblings in the period of early childhood.

MATERIAL AND METHODS

The follow-up research project was composited by three time points: 1st the children's age was 25 months, 2nd – 29 months, 3rd – 38 months. The mother was asked to describe subjectively the children's functioning using the Social-Emotional and Adaptive Behavior Questionnaire (Bayley, 2006) at every time

points. The study also included an analysis of the medical and nursing documentation and an interview with the parent.

The Adaptive Behaviors Questionnaire is composed by four domains: Adaptive Behavioral domain (GAC), Conceptual domain (CON), Social domain (SO), Practical domain (PR) and ten subdomains: communication (Com), community use (CU), functional pre-academic (FA), home living (HL), health and safety (HS), leisure (LS), self-direction (SD), self-care (SC), social (Soc) and motor (MO). The GAC is composed by the sum of the scaled score of the 10 area skills and next composite score conversions. CON: Com, Fa, SD; SO – LS, SC, PR – CU, HL, HS, SC.

The study consisted of triplet siblings (T1, T2, T3, in accordance with the order of birth), including two girls and one boy, who were born on 15 January 2009 in Gdansk. The woman's pregnancy was planned and was categorized to be of high perinatal risk. The mother was hospitalized during her pregnancy because of bleeding after the 28th week of pregnancy, oligohydramnios and the intrauterine growth restriction of one of the fetuses (T1). The pregnancy was terminated in the 29th week by Caesarean section. During birth T1 was oriented head to bottom, T2 – transversely and T3 – buttocks to bottom. The zygosity is the following: T1 and T3 come from a monozygotic (MZ) pregnancy, and T2 – a dizygotic (DZ) pregnancy. The analysis of the medical and the nursing documentation indicates that T1 was born with an extremely low birth weight (980 g), T2 – with a very low birth weight (1240 g) and T3 – an incredibly low birth weight (720 g). All other anthropometric parameters were below average, including the birth length: 38, 43, 46 cm; head circumference: 29, 29, 25 cm. The children were given 7 points in the final Apgar Scale measurement. The siblings were born with the symptoms of hypoxia; hence the administration of oxygen, artificial respiration and intubation was necessary. All of the three siblings were diagnosed with Respiratory Distress Syndrome (RDS), infection, Retinopathy of Prematurity (ROP) (T3 – laser therapy of both eyes when 3 months old), ischaemia, hyperbilirubinemia, hyperglycemia, in T2 additional leucomalacia lesions, in T1 – patent ductus arteriosus (ductus Botalli closure operation when 3 weeks old), in T1 and T3 – intraventricular bleeding; in T3 – chronic lung disease (in addition the child had the ventricular peritoneal shunt implanted when 12 months old). In early childhood they used to suffer from hyperopia. In addition T1 had a mild strabismus, moreover T1 – light strabismus, state after the 2nd degree ROP, T2 – inclination to squint, T3 – exotropia, state after the 3rd degree ROP and further laser therapy. All children have to wear glasses. During the research project all children had hypotonia, in addition T2 was diagnosed with bilateral hypoacusis (40-50 Db), hence the child had to wear a hearing aid and was also diagnosed with left-sided cerebral palsy, and T3 – with psychomotor retardation.

OUTCOMES

The qualitative analysis of the Social-Emotional scale indicates that the mother assesses the socio-emotional development differently in the case of each triplet. She also notices differences in the skills mastered by her children between the time points. In her opinion the children advanced their skills in accordance with age (Fig. 1).

T1 was assessed by the parent following: 25 months – average level (100 points); 29 months (130 points) and 38 months (140 points), at a very high level. The skills of T2 aged 25 and 29 months were assessed as average (90 points) and very high (140 points) at the age of 38 months. According to the mother, T3 enhanced its socio-emotional skills follow-up, and was assessed after 24 months – at the borderline level (70 points); 29 months – at the low average level (85 points) and 38 months – at the average level (90 points).

The analysis of the Adaptive Behaviour Questionnaire has revealed the differences in the perception of triple siblings, as well as the dynamics of perception in follow-up assessments (Fig. 2).

According to the mother each child enhanced its skills in the area of Adaptive Behaviors skills between the 1st and 2nd time point. Nevertheless, there are no differences between the mother's perceptions in the period between the 2nd and

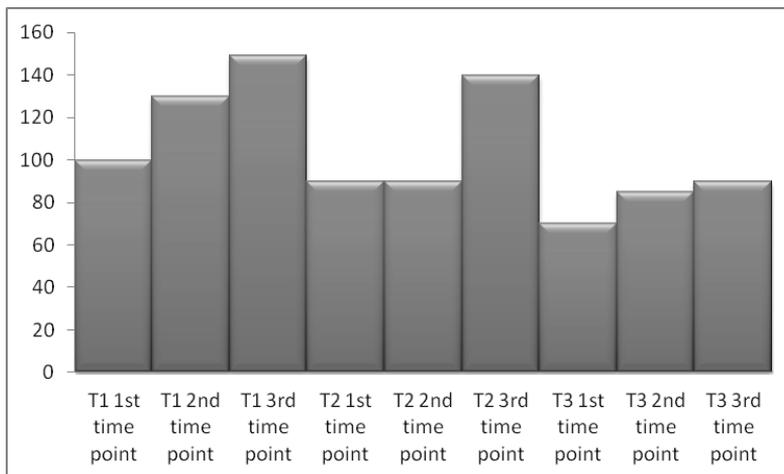


Fig. 1. Triplet follow-up outcomes (T1, T2, T3) in Social Emotional Scale (source: own work)

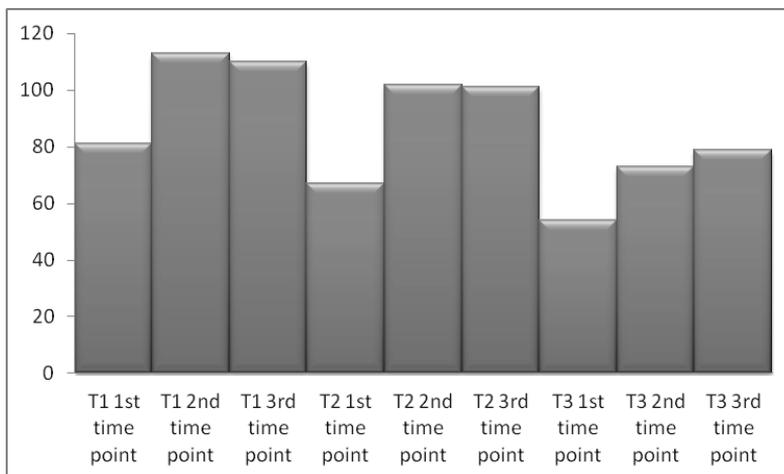


Fig. 2. Triplet follow-up outcomes (T1, T2, T3) in Adaptive Behavior Domain (source: own work)

3rd measurement. The result of the indicator of T1's adaptive behaviors skills at the age of 24 months was assessed as a low average (81 points) and at the age of 29 and 38 months as a high average (113 and 110 points respectively). According to the mother, T2 at the age of 24 months operated at an extremely low level (67 points), and at an average level at the age of 29 and 38 months (102 and 101 points respectively). T3's functioning at the age of 24 months was assessed as extremely low (54 points), and at the borderline level at the age of 29 and 38 months (73 and 79 points respectively).

The analysis of the Conceptual domain has indicated the differences in the mother's perception of the triplet siblings and the dynamics of the changes in follow-up assessments (Fig. 3).

T1 was assessed as a low average at the age of 24 months (88 points), and a high average at the age of 29 and 38 months (117; 113 points respectively). According to the mother, T2 developed conceptual skills at a below average level at the age of 24 months (86 points), and at an average at the age of 29 and 38 months (107 and 105 points respectively). Finally, T3 functioned at an extremely low level at the age of 24 months (65 points), at an average level at the age of 29 months (93 points) and a low average at the age of 38 months (86 points).

The results of the analysis of the Social Skills domains for the siblings has shown that the mother assessed T1 as a low average at the age of 24 months (83 points), an average when 29 months old (108 points) and a high average at the age of 38 months (116 points). According to the mother, T2 developed social skills at a low average level at the age of 24 months (80 points), average at the age of 29 months (102 points), and a high average when 38 months old (116 points). T3's social skills were assessed as extremely low when 24 months old (59 points), as a low average at the age of 29 months (83 points), and as at a borderline level at the age of 38 months (77 points). Fig. 4 illustrates the results of the triplet siblings in the Social Skills domain.

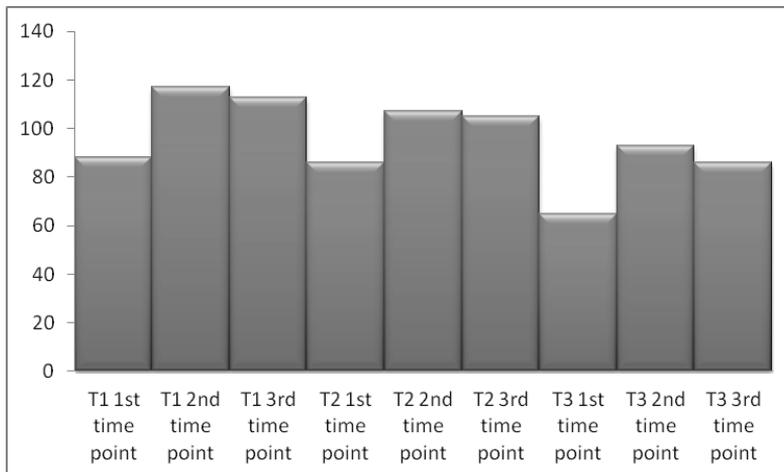


Fig. 3. Triplet follow-up outcomes (T1, T2, T3) in Conceptual Domain (source: own work)

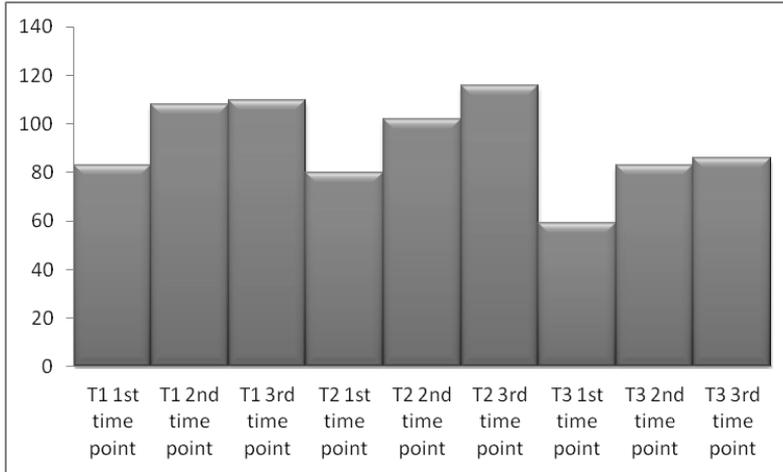


Fig. 4. Triplet follow-up outcomes (T1, T2, T3) in Social Domain (source: own work)

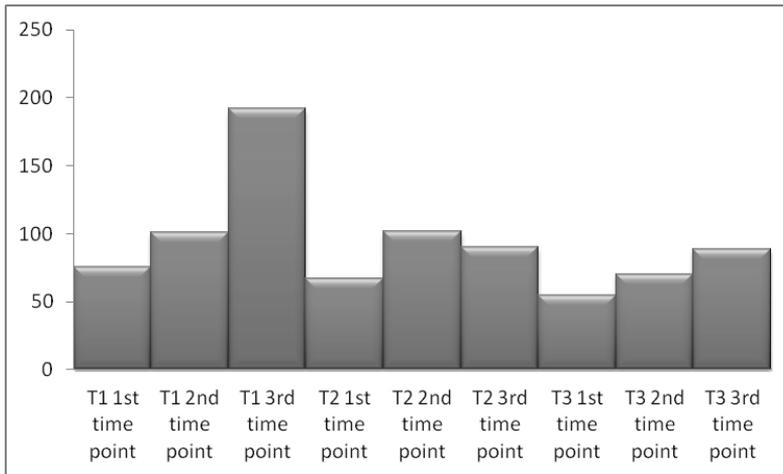


Fig. 5. Triplet follow-up outcomes (T1, T2, T3) in Practical Domain (source: own work)

The analysis of the Practical Skills domains (Fig. 5) of the siblings has demonstrated that the mother assessed T1's functioning at the borderline level at the age of 24 months (76 points), and at the average level when he was at the age of 29 and 38 months (101 and 102 points respectively). T2 was assessed as being at an extremely low level at the age of 24 months (67 points), and at an average level at the age of 29 and 38 months (102 and 90 points respectively). T3's skills in this area at the age of 24 months were assessed as extremely low (55 points), and to be at the borderline level at the age of 29 and 38 months (70 and 77 points respectively).

The analysis of the mother's perception of the siblings was based on the Adaptive Behaviors Questionnaire in the following skills areas: communication (Com), community use (CU), functional pre-academic (FA), home living (HL),

health and safety (HS), leisure (LS), self-direction (SD), self-care (SC), social (Soc) and motor (MO). The outcome has shown an improvement in the children's adaptive behaviors skills during the three time points, as well as the differences in the mother's perception of each triplet sibling (Tab. 1). The results of the general adaptive composite domain of examined siblings were illustrated separately for each child in Figure 6,7, 8.

Tab. 1. The results of the Adaptive Behaviors Questionnaire (STen scores) for the triplet siblings at three time points

Area	T1			T2			T2		
	1 st time point	2 nd time point	3 rd time point	1 st time point	2 nd time point	3 rd time point	1 st time point	2 nd time point	3 rd time point
Com	7	16	15	7	15	14	4	7	8
CU	5	11	12	4	11	11	3	3	6
FA	8	11	10	8	11	10	4	8	8
HL	8	12	12	6	13	9	3	6	9
HS	9	10	12	6	11	8	5	7	7
LS	8	12	14	8	11	12	4	8	7
SC	4	8	6	4	7	4	1	6	5
SD	10	12	12	9	8	9	7	12	8
Soc	7	11	12	6	10	14	3	7	6
MO	9	9	12	3	6	14	1	3	9

* STen scores tell about child's achievement in the test's areas. STen scores go from 1 to 19

** Com – Communication; CU – Community Use; FA – Functional Pre-Academics; HL – Home Living; HS –Health and Safety; LS – Leisure; SC –Self-Care; SD – Self-Direction; Soc –Social; Mo – Motor.
Source: own work.

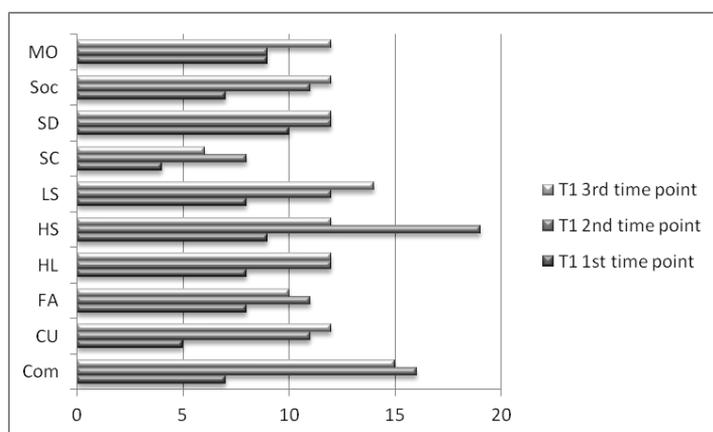


Fig. 6. General Adaptive Composite Domain for T1

*Com – Communication; CU – Community Use; FA – Functional Pre-Academics; HL – Home Living; HS –Health and Safety; LS – Leisure; SC –Self-Care; SD – Self-Direction; Soc –Social; Mo – Motor.
(source: own work)

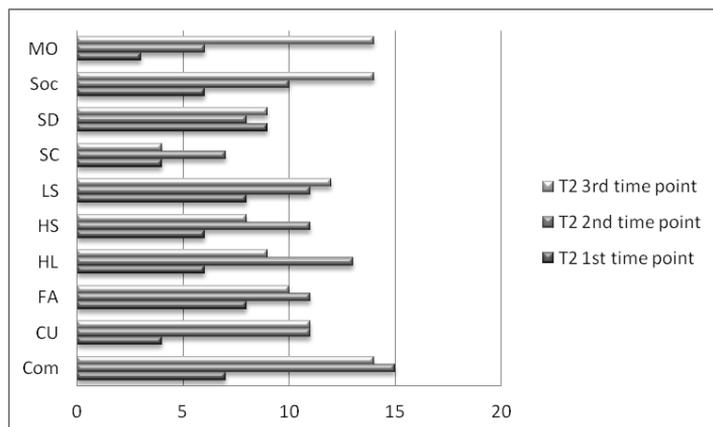


Fig. 7. General Adaptive Composite Domain for T2
 *Com – Communication; CU – Community Use; FA – Functional Pre-Academics; HL – Home Living; HS –Health and Safety; LS – Leisure; SC –Self-Care; SD – Self-Direction; Soc –Social; Mo – Motor (source: own work)

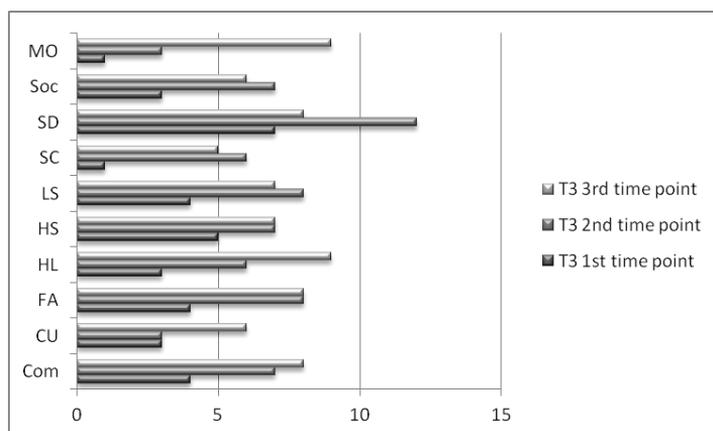


Fig. 8. General Adaptive Composite Domain for T3
 *Com – Communication; CU – Community Use; FA – Functional Pre-Academics; HL – Home Living; HS –Health and Safety; LS – Leisure; SC –Self-Care; SD – Self-Direction; Soc –Social; Mo – Motor (source: own work)

DISCUSSION

Children of the same age are perceived similarly by individuals from their environment, especially in the case of them being identical twins. However, despite common genetic features and a shared environment, which intensify the children's similarity, the non-shared environment plays a significant role too. The effect of diverse psychophysical conditions on infants after birth is present already in the prenatal period (Rostowska & Pastwa-Wojciechowska, 2010). The triplet siblings presented in this research project are characterised by different anthropometric parameters for birth weight (T1 was born with an extremely low birth weight, T2 – with a very low birth weight and T3 – with an incredibly low birth

weight), birth length (38 cm, 43 cm and 36 cm respectively), and head circumference (29 cm, 29 cm, 25 cm respectively). The different medical health status had an effect on the sequelae of preterm birth as well as the necessity for treatment. All of the triplet siblings were diagnosed with RDS, ROP, infection, ischaemia, hyperbilirubinemia, hyperglycemia. Additional differences in the clinical state of the triplets were also observed (T2 – leucomalacia lesions, T1 – PDA, T1 and T3 – intraventricular bleeding; T3 – PBD). Premature birth also affects the psychophysical condition of a child (Gomółka-Walaszek, 2008; Gomółka-Walaszek & Walaszek, 2008). Differences in the parents' perception of children from multifetal pregnancies are observed from infancy and can be expressed by a tendency to prefer one of the children (Chrzan-Dętkoś, Bogdanowicz, Baraniecka, & Karasiewicz, 2008; Holditch-Davis, Roberts, & M., 1999; Leonard & Denton, 2006; Minde, Corter, Goldberg, & Jeffers, 1990; Rostowski, 2010). Mothers may tend to prefer the child with fewer complications (Minde et al., 1999, after: (Holditch-Davis et al., 1999) or smaller children (Field et al., 1982, after: (Holditch-Davis et al., 1999). Only 10% of mothers having children from multifetal pregnancies do not bond with them to the same extent (Yokoyama & Shimizu, 2001), especially if one of the siblings is handicapped (Yokoyama, Shimizu, & Hayakawa, 1995). Different parental attitudes towards siblings influence the development of the individual differences between them (Deater-Deckard et al., 2001). The process of parents' perception of children and their differentiation is also influenced by the zygosity of the children (Robin, le Maner-Idrissi, & Corroyer, 1998) as well as their gender (van den Oord, Verhulst, & Boomsma, 1996). Parents often perceive MZ siblings through the prism of the 'assimilation effect', which makes them maximize the similarities in their children's personalities. Meanwhile the parents of DZ twins can be more prone to experience the 'contrast effect', which enhances the differences in the children's personalities (Robin et al., 1998). It is important to remember that T1 and T3 are monozygotic twins and T2 is a dizygotic triplet and this fact can influence the mother's perception.

The results of this research have indicated that the mother perceives the development of each triplet sibling differently. Her perception is affected by the children's state of health. T3, who suffers from psychomotor retardation, was assessed the lowest by the parent during the three time points in the following criteria: social-emotional, adaptive behaviours, conceptual, and social skills. In addition T2, who was diagnosed with bilateral hypoacusis and left-sided cerebral palsy, was ascribed lower rankings by the mother in all the verified indicators and scales, compared to T1. T1, who was born first and with the best parameters, was assessed by the mother as functioning on a higher level from amongst all of the siblings. Moreover, it should be noted that the mother's assessments of children's skills differ depending on the time points. Generally the mother tends to evaluate the children's development as improving as they grow up. The mother's perception of the siblings can be also determined by her being a university graduate (the mother stayed on post-maternity leave, and later took up a part-time job done from home), and her close contact with therapists working with their children (e.g. the pedagogue, speech therapist, physiotherapist, psychologist). The

specialists provided her continuously with information about the developmental advances and difficulties of her offspring. The individual differences of triplets' developmental level pertained both to the particular developmental spheres and to the timing of development. Based on the Bayley Scale on Infant and Toddler Development III edition, significant inter-sibling differences were observed at all time points with regards to cognitive development, motor and language skills (Bieleninik, Bidzan, Koszewska, in press). Their psychomotor development was determined by gender and postnatal clinical parameters (birth weight, head circumference, postnatal morbidity), as well as prematurity-related conditions (Bieleninik, Bidzan, Koszewska, in press). The current diagnosis of the children's psychomotor development, the information about their developmental progress, the guidelines for individual work at home provided by the therapists individually for each child make the mother's perception of her children more individual. The mother has emphasized the individual features of the triplets by dressing them in a different way, and highlighting their individual preferences (by e.g. letting the child choose glasses). It is generally known that the possibility to ascribe different features to each child (in behaviour and appearance) ensures that each of the children is perceived as a separate individual. The difference in the mother's perception of the children also manifested itself during conversations about the siblings, where she pinpointed their differences and compared them with each other (e.g. 'T1 is the best-behaved and at the same time the worst-behaved of all the three kids'). This discussion can be concluded with the words of Harwas-Napierała: differentiation 'is an attitude characterized by an individual approach to each child, by noticing, accepting and supporting the development of its individual features, skills and talents' (Harwas-Napierała, 2010) (p. 125).

CONCLUSIONS

1. The mother perceives the development of each sibling triplet differently.
2. The child's state of medical health affects the mother's perception. Having triplet siblings with different states of medical health affects the process of differentiating children.
3. The differentiation of the mother's perception was observed from early childhood. The mother's perception is a dynamic process conditioned by many factors.
4. Having three children of the same age intensifies the differences between them.

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