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Interactions of fathers and their children with autism ¹

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Abstract

The aim of the present study was to compare the activity of fathers and their children with autism with those of children with Down syndrome, and normally developing children during the father-child interaction.

Participants were 14 children with autism and their fathers, 15 children with Down syndrome and their fathers, and 16 normally developing children and their fathers. The age of subjects was between 3.0 and 6.0 years old. The study consisted of one 15-minute free-play session in the father-child dyad, taking place in the experiment room.

Differences between the groups of fathers were found in terms of three variables under analysis: frequency of looking at the child, physical contact with the child and suggesting play. Children with autism brought objects to their fathers or pointed out objects and directed their fathers' attention by vocalising less frequently than children with Down syndrome and normally developing children. Moreover, children with autism exhibited the fewest vocalisations combined with looking at the father and exhibited many more behaviours involving running and moving about the room than normally developing children. Self-stimulating behaviours were the most frequent in children with autism, with no differences in that respect found between children with Down syndrome and normally developing children.

The analysis of fathers' behaviour demonstrates that fathers of children with developmental disorders focus on observing their children and attempt to keep close contact with them to a larger extent than fathers of normally developing children. The pattern of differences in the activity of fathers of children with autism and children with Down syndrome does not paint a clear picture. In general, fathers from both groups actively sought to maintain contact with their children. Differences in the activity during play between children with autism and the other subjects in the study are consistent with the clinical features of autism.

Key words: autism, Down syndrome, father-child interaction, play

Introduction

Quantitative and qualitative social skills disorders are among the main characteristics of people with autism (APA, 1994). They consist in poor understanding of social situations and limited ability to initiate and maintain social interaction (Njardvik, Matson i Cherry, 1999).

Recently, there's been a surge of interest in fathers' role in the development of a child (eg. Paquette, 2004) and the pattern of father-child interactions (e.g. Lovas, 2005; Pelchat et al., 2003). Research shows that fathers of normally developing children tend to spend much more time on play rather than on caregiving activities (Bailey, 1994). They are often their children's main playmates. Interestingly, paternal involvement is different from that of mothers, as fathers tend to demonstrate much more physical activity. Mothers, on the other hand, spend more time talking to their children and initiate playing activities which are clearly educational in nature. However, as noted by Roggman et al. (2004), father-child interactions are more than just a source of joy and pleasure. They can also play an important role in supporting the child's development. This is true of cognitive, emotional, and social development, since father-child interactions provide excellent opportunities for learning social skills and emotional regulation (Roberts, 1998).

Paternal interactions with children with developmental disabilities have rarely been studied (eg. Elder, Valcante, Won, and Zylis, 2003), even though fathers may play an important role in their child's development. The majority of data collected so far compare the activity of mothers and fathers. They show that mothers exhibit more statements in their interactions than fathers (El-Ghoroury & Romanczyk, 1999). However, the differences in the number of directives exhibited by mothers and fathers are yet to be fully clarified. Wolchik and Harris (1982) found that mothers use more directives than fathers, while Konstantareas, Mandel and Homatidis (1988a) claimed the opposite. Elder and Goodman (1996), who analysed the behaviour of parents and children during unstructured play sessions, demonstrated that fathers were not only more directive, but also responded less consistently to the child's initiations and engaged in more parallel play than mothers.

There is a relationship between the parent's behaviour during the interaction with the child and the child's developmental disorders and behaviour problems (Konstantareas et. al, 1988b). It was found that fathers of normally developing children are less affectionate,

responsive and effective if their children are perceived as temperamentally difficult (Volling & Belsky, 1991). The more profound the child's linguistic and emotional development disorders, the less intense is the fathers' involvement in caregiving (Bristol et al., 1988). However, more profound developmental disorders also make parents more active in their interactions with their child. That pattern was demonstrated, among others, by El Ghoroury and Romanczyk (1999), who noted that parents of children with autism who show more profound developmental retardation exhibit more play behaviours than parents of children with less profound retardation. This suggests that it is in line with the parents' tendency to provide the amount of support proportional to their child's skills.

So far we have limited knowledge as to whether paternal behaviour in interactions with children with autism differs from that of fathers whose children have other disorders. There are at least two reasons to expect that such differences exist. Firstly, children with autism demonstrate a number of deficits in terms of initiating and maintaining interaction, which might affect paternal activity. Secondly, fathers of children with that disorder exhibit a high level of stress. Some 35% of them were found to have a significantly increased stress level directly associated with providing care for their child (Baker-Ericzen, Brookman-Fraze & Stahmer, 2005). Fathers of children with autism experience more stress than fathers of normally developing children (e.g. Baker-Ericzen et al., 2005), and fathers of children with other disorders, e.g. Down syndrome (Fisman & Wolf, 1991; Wolf, Noh, Fisman & Speechley, 1989). We can assume that this fact may affect the quality of their interactions with their children, since it was found that parental stress is related to the course of interactions with children and the rate and quality of the child's development (Magill-Evans & Harrison, 2001).

The aim of the present study was to compare the interactions of fathers and children with autism with those of fathers with children with Down syndrome, and fathers with normally developing children. Free-play session was analysed.

Method

Subjects

The study involved 14 children with autism and their fathers, 15 children with Down syndrome and their fathers, and 16 normally developing children and their fathers. The age of subjects was between 3.0 and 6.0 years old.

All children with autism have been diagnosed by psychiatrists according to DSM-IV diagnostic criteria (APA, 1994) or ICD-10 (WHO, 1992). Before the start of the study, children were additionally assessed by a clinical psychologist in order to verify the validity of the diagnosis. Only those subjects who met the DSM-IV diagnostic criteria for autism (APA, 1994) were enrolled to the study. All children in the group demonstrated significant problems with taking part in social interactions and limited verbal communication skills. Seven children did not talk at all, others used individual words only. None of the children in the study used active speech beyond the knowledge of a dozen or so words. There were 11 boys and 3 girls in the group. Mean age was 4.7 years. All children used the services of early intervention centres, with the majority attending other therapeutic institutions as well.

Children with Down syndrome presented the level of verbal development similar to those with autism. Three children did not speak at all, others had the active use of a couple or a dozen or so words. The group consisted of 3 girls and 12 boys. Only children with no concomitant disorders were enrolled in the study. Mean age was 4.6 years. All children were receiving support from early intervention centres or attended kindergartens (integrated, special or regular).

There were 4 girls and 11 boys in the normally developing group. All children attended kindergartens. They showed no developmental or health disorders. Mean age was 4.6 years.

Table 1 shows demographics of fathers, children and families in the study.

Table 1 about here

All children in the study were raised in two-parent families. Siblings of children with autism and children with Down syndrome had no developmental disorders. Members of the immediate family also demonstrated no disorders of this kind.

Description of the study

Subjects were contacted through therapeutic centres or therapist, or in the case of normally developing children – through psychologists working in kindergartens. Fathers who expressed initial willingness to participate in the study received its description in writing. Next, they were contacted by phone and asked for consent to take part in the study. A date of the test was set up with those who agreed. Neither the children nor the fathers were familiar with the room where the study was conducted.

The study consisted of one 15-minute free-play session in the father-child dyad, taking place in the experiment room. The room's dimensions were 6 m x 5 m. It was equipped with two low cabinets with a set of 20 toys (Table 2).

Table 2 about here

The floor of the room was divided with a thin black tape into four evenly-sized areas. The plan of the room is shown in figure 1.

Figure 1 about here

The course of the study was as follows: (1) the experimenter led the father and child into the experimental room and gave the following instruction: “There are toys in this room. You are invited to play with them any way you want”; (2) the experimenter left the room after switching on the set of two video cameras placed in opposite corners of the room; (3) after 15 minutes the experimenter returned, thanked the participants and stopped the recording.

Coding behaviours

The behaviour of fathers and children was recorded for 15 minutes. The analysis was performed on 14-minute samples. It was decided not to take into account the first and last 30 second segments of each session due to variation resulting from the children's behaviour

directly after the experimenter left (beginning of the study) and entered (end of recording session).

Fathers' behaviours were scored using a 15-second interval occurrence system. If a given behaviour occurred during a given interval, the observer marked it in the observation sheet. Each behaviour could only be counted once per interval. During coding, the counters observed the behaviours of only one member of the diad: father or child. The independent observers were three Ph.D. students of the Department of Psychology at the Warsaw University and one MA seminar student. They were blinded as to the aim of the study and did not know to which group the subjects belonged. Coders were trained in marking behaviours.

The analysis included 18 behaviours of fathers (table 3)

Table 3 about here

The analysis also included nine types of statements of fathers (table 4).

Table 4 about here

The analysis also included 20 behaviours of children (table 5).

Table 5 about here

Results

In order to compare the activity of fathers and children from different study groups, the total number of behaviours of a specific type demonstrated during a session was compared. Due to irregular distributions of individual variables, non-parametric analyses of variance were used.

Activity of fathers

Differences between the groups were found in terms of three variables under analysis: frequency of looking at the child, physical contact with the child and suggesting play.

Fathers of children with Down syndrome looked at their children more frequently than other subjects, while fathers of children with autism – more frequently than fathers of normally developing children ($H(2, n=45)=10,68, p=0,0048$).

In addition, fathers of children with autism engaged in more physical contact with their children than other subjects, while fathers of children with Down syndrome – more frequently than fathers of normally developing children ($H(2, n=45)=12,63, p=0,0018$).

Differences were also found with respect to the frequency of suggesting play to the child (verbal initiation of interaction). Fathers of children with autism and fathers of children with Down syndrome exhibited this activity more frequently than fathers of normally developing children ($H(2, n=45)=11,77, p=0,0028$).

Activity of children

Children with autism brought objects to their fathers or pointed out objects the least frequently, while children with Down syndrome did that less frequently than normally developing children ($H(2, n=45) = 7,08, p=0,029$).

In addition, children with autism directed their fathers' attention by vocalising the least frequently, while children with Down syndrome did that less frequently than normally developing children ($H(2, n=45) = 8,99, p=0,01$).

Differences were also found with respect to interaction expanding behaviours (i.e. picking up the theme suggested by the partner). Children with autism showed the fewest such behaviours, while children with Down syndrome – fewer than normally developing children ($H(2, n=45)=6,20, p=0,045$). Moreover, children with autism exhibited the fewest vocalisations combined with looking at the father ($H(2, n=45) = 13,65, p=0,001$).

On the other hand, crying and screaming occurred in children with autism more often than in the other groups ($H(2, n=45) = 6,30, p=0,042$). Children with autism and children with Down syndrome exhibited many more behaviours involving running and moving about the room than normally developing children ($H(2, n=45) = 6,35, p=0,042$).

Self-stimulating behaviours were the most frequent in children with autism, with no differences in that respect found between children with Down syndrome and normally developing children ($H(2, n=45)=9,474, p=0,008$).

Discussion

The analysis of fathers' behaviour during free-play sessions with their children demonstrates that fathers of children with developmental disorders focus on observing their children and attempt to keep close contact with them to a larger extent than fathers of normally developing children. This conclusion is supported by differences between groups found in three variables: looking at the child, physical contact with the child and suggesting play. In all cases those indices were higher in the groups of children with autism and Down syndrome than among fathers of children within the developmental norm.

The fact that fathers of children with developmental disorders are more active in terms of attempting to involve the child in play is symptomatic of their being more directive versus fathers of children developing normally. Directiveness may be the fathers' strategy for coping with the children's passivity (Tannock, 1988), which is related to poorly developed playing skills. Hence it may be related to generally lower activity of children or their failure to focus on playing. As noted by El-Ghoroury and Romanczyk (1999), the more profound the child's developmental delays, the more child-directed play behaviours fathers tend to display. Such behaviours may testify to the fathers' willingness to support their children's activity. However, El-Ghoroury and Romanczyk (1999) point out that intense parental activity may limit the child's behaviours aimed at initiating interaction. They noted this phenomenon predominantly among mothers. The results of this study demonstrate that fathers of children with developmental disabilities are more active towards them during interaction and initiate contact more frequently by proposing play than fathers of children developing normally.

The pattern of differences in the activity of fathers of children with autism and children with Down syndrome does not paint a clear picture. In general, fathers from both groups actively sought to maintain contact with their children. Fathers of children with Down syndrome achieved this by looking at their children more often and monitoring their attention, while fathers of children with autism initiated more physical contact with their children,

thereby increasing the chances for common activity. It can be assumed that these differences were closely related to the behavioural characteristics of children from either group.

Differences in the activity during play between children with autism and the other subjects in the study are consistent with the clinical features of autism. They included less frequency in showing or bringing an object, as well as using vocalisations to attract the father's attention. Differences were also present in terms of more complex forms of behaviour, i.e. combining vocalisation with looking at the father and expanding interaction (continuing a play activity initiated by the partner). In addition, children with autism interacting with their fathers exhibited negative emotions, i.e. crying and screaming, more frequently than other subjects. Therefore, not only did they initiate interactions and take up themes suggested by their fathers less frequently, but also actively rejected their suggestions. Moreover, similarly to children with Down syndrome, they were significantly less involved in play than normally developing children and spent more time running and moving about the room. They also exhibited more self-stimulating behaviours (e.g. smelling objects, touching surfaces with the back of their hand or lips).

The results of the present study are consistent with those obtained by Ruble (2001). She demonstrated that children with autism, as compared to peers with Down syndrome during social interactions in natural conditions are less likely to initiate interactions and attempt to attract their partner's attention. In general, they showed fewer socially intended behaviours, especially those meant to initiate interaction, and exhibited fewer complex behaviours altogether. Children with Down syndrome in this study were doing better at self-initiated social situations.

We also know that children with autism exhibit fewer signs of positive feelings during interactions than normally developing children and children with intellectual disabilities (Yirmiya, Kasari, Sigman & Mund, 1989), and are less likely to smile in response to their mothers' smiling (Dawson et al., 1990). Their interactions are shorter than those of children with intellectual disabilities, and they are less likely to respond positively to their partner's initiative or they fail to respond to it altogether and less frequently become involved in maintaining play (Jackson et al, 2003). Such behaviour of their children places special demands on the fathers. If they want to involve their child in the play, they not only have to watch him/her closely, but also actively initiate contact.

The minor differences that occurred in the study between fathers of children with autism and fathers of children with Down syndrome also lend themselves to analysis in the context of data regarding parental stress experienced by fathers from these two groups. Rodrigue, Morgan and Geffken (1992) found that fathers of children with autism and fathers of children with Down syndrome experience significantly more adjustment problems than the fathers of normally developing children. Those fathers perceived the negative impact of their child's developmental disability on family plans and increased financial strain resulting from childcare. However, that study did not demonstrate that perceived financial burdens and impeded planning possibilities negatively affect the interactions of fathers with children with autism and children with Down syndrome. Similarly, no differences in adjustment and the amount of stress were found between fathers of children with autism and fathers of children with Down syndrome.

Results of other studies suggest that there are similarities in psychological adjustment of fathers to provide care for a child with autism and with Down syndrome. Pisula (1995) demonstrated that fathers from both groups exhibited a higher stress level than fathers of normally developing children in terms of three of 15 areas of stress under analysis: negative attitudes toward index case, overcommitment/martyrdom, and limits on family opportunity. Only in the last of the three areas fathers of children with autism obtained better results than fathers of children with Down syndrome. This result is consistent with the data obtained by Baker-Ericzen et al. (2005), who found that fathers of children with autism perceive a negative impact of the child on family plans and increasing financial strain related to caregiving. By way of comparison, it is worth mentioning that the differences in stress profiles between mothers of children with autism and mothers of children with Down syndrome are much more profound and occur in seven areas: overprotection/dependency, lack of social support, limits on family opportunity, physical incapacitation, lack of activities for index case social obtrusiveness and difficult personality characteristics (Pisula, 2006).

Any interpretation of the present results must take into account the small number of subjects in different groups. In addition, the behaviour of individual fathers was quite varied, as was the behaviour of their children. However, the relationships found in this study may be an interesting starting point for further research.

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Tab. 1. Demographics of fathers, children and families in the study

Variable	Group		
	Autism	Down syndrome	Normally developing
Fathers' education			
Primary or vocational	2	2	2
Secondary	5	3	5
Higher	7	10	9
Fathers' employment			
Number of employed fathers	14	15	16
Family's place of residence			
Large/medium city	11	8	11
Small town	3	6	4
Country	0	1	1
Number of children in the family			
One	4	2	4
Two	8	6	9
Three or more	2	7	3
Financial situation			
Poor/rather poor	2	2	3
Good/rather good	12	13	13

Tab. 2. List of toys in the experiment room

No.	Type of toy	Number
1.	Car	2
2.	Carriage	1
3.	Plush kangaroo with a small kangaroo in its pouch	1
4.	Plush dog	1
5.	Plush camel	1
6.	Plush monkey	1
7.	Plush bee	1
8.	Ball	1
9.	Large teddy bear	1
10.	Set of large plastic building blocks	1
11.	Doll	2
12.	Toy bed with covers	1
13.	Drum with drumsticks	1
14.	Set of plates	1
15.	20-piece puzzle	1
16.	Lottery	1
17.	Spinning top	1

Table 3. Activities of fathers – behaviours measured and their description

No.	Behaviour measured	Description
1.	Looking at the child	Every instance of looking at the child
2.	Looking at the object manipulated by the child	Looking at the object the child is playing with or showing
3.	Smile	Smiling at the child
4.	Positive physical contact	Touching, patting, hugging, kissing the child, etc.
5.	Breaking physical contact	Moving away from the child, taking him/her off one's knees, moving the child away
6.	Approaching the child	Getting closer, shortening physical distance
7.	Turning away	Turning away or sideways from the child
8.	Becoming involved in one's own activity	Focusing on one's own activity without paying attention to what the child is doing or participating in shared activities
9.	Imitation	Imitating the child's behaviours
10.	Drawing the child's attention verbally	Calling the child by his/her name, drawing his/her attention by using other words, e.g. "look"
11.	Drawing the child's attention by gesturing	Pointing, knocking, etc.
12.	Physical assistance	Assisting the child, e.g. by picking up off the floor, supporting or holding up, providing support while moving or manipulating objects
13.	Suggesting play	Suggesting that the child does a particular activity
14.	Cooperative play	Offering or exchanging an object with the child or using the same object together
15.	Positive response to the child's initiative	Accepting the child's proposition of play, continuing the activity initiated by the child
16.	Expanding interaction	Introducing new elements to the play initiated by the child, involving the same object or theme
17.	Ending play	Clearly ending play combined with interrupting it, e.g. "Let's put the blocks away and try..."
18.	Ignoring the child's behaviours	Not paying attention to what the child is doing when he/she is directing his/her behaviour towards the father

Tab. 4. Types of fathers' utterances analysed

No.	Type of statement	Examples
1.	Statements, comments	"it's a tank", "you've built a tower";
2.	Announcing one's actions, describing what one is doing	"I don't know how to do this" "Now I'm going to construct a road";
3.	Non-directive questions	"What would you like to do?" "How do you like it?"
4.	Ordering, forbidding, giving commands, asking directive questions	"Do this", "Let's play ball", "Stop", "You are the driver", "Could you do this?";
5.	Instructing, demonstrating	"Look, these blocks can be joined together like this"
6.	Praises, reinforcements	"Great, what a brave boy you are"
7.	Negative judgements, criticism	"I don't like it", "wrong", "you didn't do that right"
8.	References to people who are not present in the room, e.g. talking about mother, siblings	"Mommy would really like this train"; "I wonder what Jake is doing"
9.	Explaining what is going on to the child, soothing him/her	"Don't worry, it's all right" "We'll play here a little and go back home"

Tab. 5. Activities of children – behaviours measured and their description

No.	Behaviour measured	Description
1.	Looking at the father	Looking at the father
2.	Looking towards the object manipulated by the father	Looking towards the object the father is playing with or showing
3.	Smile	Smiling at the father
4.	Drawing the father's attention by gesturing	Showing, bringing, pointing to an object
5.	Directing attention through vocalisation or verbalisation	Seeking to direct the father's attention to the object by vocalising or using words
6.	Initiating physical contact	Hugging, kissing, touching the father, taking him by the hand
7.	Hitting or throwing objects	Throwing, scattering toys
8.	Playing with an object without letting the father take part	E.g. the child is spinning the top and does not react to what his/her father is doing
9.	Imitation	Imitating the father's behaviours
10.	Responding to the father's suggestions	Accepting playing suggestions, engaging in common activities
11.	Expanding interaction	Introducing new elements to the play initiated by the father, involving the same object or theme
12.	Withdrawing, breaking contact	The child walks or turns away
13.	Vocalisation directed at the father	Each non-verbal utterance combined with looking at the father
14.	Crying or screaming	Crying or screaming as a protest to the father's suggestion
15.	Laughter	Laughter
16.	Running, moving about the room	Walking or running about the room
17.	Demands	Demanding something from the father, e.g. demanding to leave the room or that he passes a toy
18.	Protesting	Protesting against the father's suggestion
19.	Aggression directed at the father	Hitting, shoving the father
20.	Self-stimulation	Behaviours aimed clearly at providing oneself with specific sensations, e.g. touching an object with lips, touching hand to lips

Figure 1. Plan of the experiment room

(1 - shelf; 2 - camera; 3 – door; 5 – child; 6 – father ; 7 – black tape on the floor)

