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*From the Editor,*

With best wishes in 2011, I am happy to be with you in the last issue of 2010. At first, I would like to thank to all contributors of the INT-JECSE by submitting or reviewing manuscripts since the first issue.

In this issue, we will share with you five interesting articles. The first article entitled “Relations between commitment to a treatment orientation and self-efficacy among teachers working with children with Autism” is written by Angela F.Y. Siu and Evita L.S. Ho. They explored the correlation between commitment to specific treatment orientations (Applied Behavior Analysis-ABA and Treatment and Education of Autistic and Communication-related Handicapped Children-TEACCH) and teacher self-efficacy.

Kara D. Sage and Brinda Jegatheesan investigated and reported parents socializing sibling relationships in European American and Asian American families of children with Autism in the United States in the second article. The third article written by Mehmet Yanardağ, İlker Yılmaz and Özgen Aras focuses on approaches to the teaching exercise and sports for the children with Autism. The last article is a review one on an online data management tool called the Assessment Evaluation and Programming System for Infants and Children Interactive (AEPSi).

All my best,

*Ibrahim H. Diken, Ph.D.*  
*Editor-In-Chief, INT-JECSE*

**CONTENTS**

**REGULAR ARTICLES**

- 180-192 *Relations between commitment to a treatment orientation and self-efficacy among teachers working with children with Autism*  
**Angela F.Y. Siu and Evita L.S. Ho**
- 193-213 *Parents socializing sibling relationships in European American and Asian American families of children with Autism in the United States*  
**Kara D. Sage and Brinda Jegatheesan**
- 214-230 *Approaches to the Teaching Exercise and Sports for the Children with Autism*  
**Mehmet Yanardağ, İlker Yılmaz and Özgen Aras**
- 231-253 *İşitme Engelli Çocuğu Olan ve Olmayan Ana-Babaların Stres, Depresyon ve Sürekli Kaygı Belirtileri Yönünden Karşılaştırılması*  
*Comparison of the Parents of Children with and without Hearing Loss in Terms of Stress, Depression, and Trait Anxiety*  
**Murat Doğan**

**REVIEW ARTICLE**

- 254-257 *Interactive online assessment options: A review of the AEPSi*  
**Marisa Macy**

Angela F.Y. Siu<sup>1</sup>  
Evita L.S. Ho<sup>2</sup>

# Relations between Commitment to a Treatment Orientation and Self-efficacy among Teachers Working with Children with Autism

## Abstract

*This study examined the correlation between commitment to specific treatment orientations and teacher self-efficacy. The participants included 115 teachers working with children with autism. Teachers using one of the two different treatment orientations participated in the study; as oriented towards Applied Behavior Analysis (ABA), and those committed to the Treatment and Education of Autistic and Communication-related Handicapped Children (TEACCH) orientation. The two groups were compared to a group of teachers with commitment to neither of these orientations (who served as a comparison group), in terms of personal and general teaching self-efficacy. The results suggested that teachers who identified themselves with the ABA orientation had a significantly higher personal teaching self-efficacy compared to the TEACCH group, as well as the comparison group. No significant difference was found among the three groups in terms of general teaching self-efficacy. The limitations of this study, as well as its implications for research and practices followed in working with children with autism, are discussed.*

*Key words: Teacher self-efficacy, Autism, Treatment Orientation.*

Self-efficacy is defined as “people’s judgments of their capabilities to organize and execute courses of action required to attain designated types of performance” (Bandura 1986, p. 391). It is a belief about what a person can do, instead of judgments about one’s attributes (Zimmerman & Cleary, 2006). Self-efficacy is grounded on the social cognitive theory, which emphasizes the evolution and exercise of human agency – the idea that people can exercise some influence over what they do (Bandura, 2006; Skaalvik & Skaalvik, 2010).

Teacher self-efficacy refers to teachers’ beliefs in their ability to influence the outcomes of students (Bandura, 1997; 2006; Lamorey & Wilcox, 2005; Woolfolk & Hoy 1990). It

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can affect teachers' instructional efforts in areas such as choice of activities, level of effort, and persistence with students (Tschannen-Moran & Hoy, 2001; Skaalvik & Skaalvik, 2010). There are many approaches that can be used for conceptualizing and measuring teacher self-efficacy. One major theoretical basis which research on teacher self-efficacy has been based on, is Bandura's (1997; 2006) concept of self-efficacy. Bandura's ideas lead to the belief that teacher self-efficacy decreases if teachers believe that factors external to teaching (e.g., students' abilities and home environments) are more important to students' learning outcomes than the influence on a teacher's own self-efficacy in teaching may have. Researchers such as Amor et al. (1976) and Gibson and Dembo (1984) identified two major areas of teacher self-efficacy. One aspect is the degree of teachers' general beliefs about limitations to what can be achieved through education, i.e. the belief that factors external to their teaching limit what they (teaching) can accomplish (see Emmer & Hickman, 1991; Ho and Hau, 2004; Soodak & Powell, 1996). This is referred to as general teaching efficacy, GTE. Another aspect refers to teachers' beliefs about whether they, personally, can significantly enhance the learning of their students (Lin & Gorrell, 1998). This is termed as personal teaching efficacy, PTE. If teachers are self-efficacious, they are more likely to plan appropriate activities, persist with students who are having difficulties, and expend considerable effort in finding appropriate teaching materials. They are also more likely to overcome situations that challenge their ability to teach (Gruskey, 1998). They tend to be more optimistic than their peers, and make greater efforts in their jobs, while taking more personal responsibility for their successes and failures. In contrast, teachers who report low self-efficacy are more likely to attribute their successes or failures to outside factors, such as lack of resources.

Previous research on teacher efficacy has largely focused on mainstream classrooms; very few studies have investigated special education settings. Allinder (1994) found that special needs teachers (i.e. teachers teaching students with special needs) with high sense of efficacy tended to exhibit greater organization, fairness, and clarity in instruction. They were also more inclined towards instructional experimentation – that is, “willingness to try a variety of materials and approaches to teaching, desire to find better ways of teaching, and implementation of progressive and innovative techniques” (p. 89). Researchers such as Cherniss (1993), Friedman (1999), and Hoy and Spero (2005) suggested that adequate training, or training in innovative techniques, may enhance one's sense of competence, and one's teaching efficacy.

Autism is a pervasive developmental disorder, and teachers usually work closely with students only after the typical features of autism become most obvious. There is evidence suggesting that specific knowledge of a whole range of different aspects of the disorder, and a correspondingly flexible and facilitative approach to the teaching process, are central to achieving optimal education for children with autism (Jordan & Powell, 1995). Working with children with autism involves many different approaches. Two most common approaches are applied behavior analysis (ABA) and the treatment and education of autistic and related communication handicapped children (TEACCH) approach (Humphrey & Parkinson, 2006). These two approaches are the most widely

used and are implemented in school systems by educators, social service providers as well as parents (Hess, Morrier, Heflin, & Ivey, 2008). According to Cherniss and Krantz (1983), identification with a formal ideology may help increase feelings of competence and teacher self-efficacy. Jennett, Harris and Mesibov (2003) further suggested that being committed to philosophical tenets of either ABA or TEACCH approach, when treating children with autism, can be equated to identifying with a formal ideology because they both provide external frameworks that specify how to achieve certain goals, and why these goals are important. Both approaches seek to achieve independence for individuals with autism, and stress that teaching in a natural environment is important. However, the two approaches do differ in several respects. For example, ABA principles rely on external reinforcement as the primary way to engage children in a task, whereas the TEACCH approach uses visually structured activities based on interests and cognitive profiles of children, which promote an implicit understanding of the task the child is engaged in. Another difference between the two approaches lies in management of the problem behavior. Teachers with ABA training assess environmental characteristics and enduring components of the problem behavior, whereas TEACCH teachers assess how and what difficulties their students experience in understanding the environment, and how they are coping with the sensory stimulation, based on neuropsychological deficits. Despite these differences, both approaches are built on the same core values and encourage commitment to an external frame of reference. Teachers who have a formal ideology are expected to be more competent in working with children with autism, and hence have a higher teacher self-efficacy.

### **Hong Kong situation**

Like the rest of the world, the trend in Hong Kong is also moving towards inclusive education practices (Forlin and Lian, 2008). Currently, integrated education is implemented through a whole school approach in Hong Kong. Mainstream schools are invited to include students with any of the five listed types of disabilities: mild grade intellectual disability, visual impairment, hearing impairment, physical disability and autistic disorder, with average intelligence (Education Bureau, 2007). At present, there are no specific qualifications or experience required of teachers (in mainstream schools) working with special needs children. In general, teachers have to obtain teaching qualifications in one of the designated tertiary institutions. Those who have to work with children with special needs have to take extra training in special education (terms of course work and in-service workshops). Apart from this kind of training for special education, there are no mandatory qualifications stipulated for teachers teaching children suffering autism (regardless of whether they are working in mainstream schools or in special schools); they are not required to complete any formal specialized training for this purpose, i.e. teaching children with autism. However, some teachers have mentioned that they are not confident enough to deal with children with autism, and have urged that they be trained and equipped with knowledge and skills required for dealing with children with autism. Very few studies have explored teachers' abilities in relation to their work with children with autism.

### **The present study**

This study was intended to be a follow-up to Jennett, Harris and Mesibov (2003), who worked on ascertaining a teacher's commitment to his/her teaching approach, as well as a way of exploring the relationship of the commitment to teacher self-efficacy. Given that Cherniss and Krantz (1983) and Jennett et al suggested that identification with a formal ideology may help increase feelings of competence and teacher self-efficacy, it was hypothesized that teachers who are committed to a specific treatment orientation while working with children with autism would have higher teacher self-efficacy (in terms of personal teaching efficacy, and general teaching efficacy), in comparison to those without any treatment orientation (the control group). In relation to this, teachers who identify with ABA would be more committed to the underlying ABA philosophy, and teachers identifying with the TEACCH approach would be more committed to the underlying TEACCH philosophy. The difference between efficacy of ABA and TEACCH teachers was also explored.

## **Method**

### **Participants**

One hundred and fifteen teachers working with children with autism in the special education setting participated in the study. Thirty-eight teachers reported an ABA focus, 37 reported a TEACCH focus, and 40 teachers were in general practice, without commitment to a particular underlying philosophy of teaching. The sample was predominantly female (n=109, 95 percent). In terms of participant age, 18 percent were aged 25 or below, 30 percent were aged 26-30, 14 percent were aged 31-35, 17 percent were aged 36-40, and 12 percent were aged 41-45. The remaining 9 percent were aged 46 and above. In terms of work experience, the majority of participants (32 percent) had worked with children with autism for 4-6 years, 25 percent for 1-3 years, 17 percent for 7-9 years, 16 percent for less than 1 year, and 10 percent for 10 or more years. Most participants (n=102) had received formal (certificate) training in special education, or an undergraduate degree in psychology, education, or some other relevant subjects. Thirteen had postgraduate qualifications. A total of 190 questionnaires were distributed; 115 usable questionnaires were returned. The response rate was 60 percent.

### **Instruments**

The Autism Treatment Philosophy Questionnaire (ATPQ, Jennett, Harris, & Mesibov, 2003) was administered to investigate the teachers' intervention approach in teaching children with autism. This 22-item questionnaire was developed by Jennett et al. on the basis of the literature about each treatment approach. In the process of item development, the items were rated by six clinicians, three with a commitment to the TEACCH approach, and three with a commitment to the ABA approach. Then four leading experts from each approach were asked to rate all items on a 6-point continuum, reflecting the degree to which each statement accurately reflected their philosophy. The items on TEACCH were statements that received a mean rating of at least 5 from the four experts, or an average rating that was at least 2 points lower than the TEACCH mean, from

experts in ABA. The participants were asked to state how well each of the 22 items fit with their personal approach to teaching, on a 6-point continuum (1 = strongly disagree to 6 = strongly agree). Of these 22 statements, 6 targeted the ABA philosophy (e.g., “Making available powerful reinforcers is one of the best ways to engage a child in an activity”) and 6 targeted the TEACCH approach (e.g., “My approach to teaching focuses on both observable behavior and other unobservable variables, such as how my students think, understand the environment, and integrate information”). The remaining 10 statements reflected a shared philosophy (e.g., “Children make the most educational progress when there is a close link between home and school”). The questionnaire yielded three scores for each participant: an ABA score, a TEACCH score, and a Shared score (score on Shared philosophy). Each participant’s commitment score was the score associated with his/her identified teaching orientation. For example, for teachers identifying ABA as their teaching orientation, the ABA score was the commitment score.

To measure teaching efficacy, a modified version of the Teacher Efficacy Scale (TES) for special educators (developed by Coladarci & Breton, 1997) was administered to the participants. The original scale developed by Gibson and Dembo (1984), which is used on regular educators, includes personal, as well as general teaching efficacy, i.e. PTE and GTE. Participants were asked to indicate their level of agreement with 30 items (each item corresponding to one of the two dimensions) on a 6-point scale (from 1 = strongly disagree to 6 = strongly agree). For both dimensions, the higher the score is, the more efficacious it is. Although the validity and reliability of this modified version has not been established, the original version of the scale has demonstrated adequate discriminant and convergent validity, as well as internal consistency reliability, with Cronbach alphas ranging from .75 to .79 (Dembo & Gibson, 1985; Hoy & Spero, 2005). Examples of items for GTE include “If students aren’t disciplined at home, they aren’t likely to accept discipline” and “If parents would do more for their children, I could do more.” Examples for PTE include: “If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson” and “When I really try, I can get through to most difficult students”. Permission was obtained from the authors of the two questionnaires, to translate the items into Chinese. The items were translated by the researcher and five bilingual people independently. The translations were examined and discussed by three translators. The final version of the Chinese form for ATPQ and TES were confirmed after some modifications.

### **Procedure**

Following the approval from the university’s ethics committee for conducting this research, a survey package containing the questionnaire and a letter explaining the purpose of the study, together with the consent form for participation, was sent out to potential participants. These people were invited to join this study on a voluntary basis. The participants who agreed to participate in the study completed the questionnaire according to the instructions given. To ensure anonymity, all completed questionnaires were returned directly to the researcher, without the name of the respondent, using a self-addressed envelope that was supplied along with the questionnaire.

## Results

### Factor structure

The dimensionality of items from TES and ATPQ were analyzed using maximum likelihood factor analysis. The Kaiser criterion and the scree test (Cattell, 1966) were used to determine the appropriate number of factors. To examine item loadings, only items with factor loadings greater than .30 were included. For the 22-item ATPQ, the Kaiser criterion yielded a total of 7 factors, with eigenvalues of more than 1.0. Based on the scree plot, two factors were loaded. Table 1 shows the two interpretable factors. Factor 1 refers to items in TEACCH, and Factor 2 to items in ABA. For each factor, two additional items from the original Shared sub-scale were included: Items 12 and 16 obviously belonged to Factor 1, and Items 3 and 9 to Factor 2 (see Table 1 for details). For the 30-item TES, the Kaiser criterion yielded a total of 7 factors, with eigenvalues of more than 1.0. Based on the scree plot, two factors were rotated, using a varimax rotation procedure. The rotated solution, as shown in Table 2, yielded two interpretable factors. Following Coladarci and Breton (1997), these two factors could be grouped into: i) personal teaching efficacy and ii) general teaching efficacy. Items with loadings of less than .30 were deleted.

An inter-correlation matrix of factor scores was then constructed. For ATQ, there were significant correlations between ABA and Shared ( $r = .47, p = 0.00$ ), as well as between TEACCH and Shared ( $r = .33, p = 0.02$ ). However, non-significant correlation was noted between ABA and TEACCH, which indicated that TEACCH and ABA statements in ATQ represented the uniqueness of each approach. A moderate correlation existed between general teaching efficacy and personal teaching efficacy ( $r = .50, p = .05$ ).

### Estimates of internal consistency

Internal consistency for each factor was estimated across the two scales. Alpha coefficients for factors of each of the two scales were as follows: TEACCH, .57; ABA, .79; Shared, .73; General Teaching Efficacy, .65; and Personal Teaching Efficacy, .78. The results suggest that the levels of internal consistency were within an acceptable range.

### Differences among groups

The three groups were compared according to their ABA, TEACCH, and Shared scores on the ATQ with three separate ANOVAs (see Table 3). Teachers having ABA orientation ( $M = 32.15, SD = 2.27$ ) had a significantly higher ABA score than those with TEACCH orientation ( $M = 27.91, SD = 3.61$ ), or with no orientation [ $M = 26.45, SD = 3.61; F(2, 112) = 32.41, p = 0.00$ ]. In terms of TEACCH as a teaching orientation, there was a significant group difference, with  $F(2, 112) = 11.88, p = 0.00$ . Scheffe post-hoc comparison showed that teachers with a TEACCH orientation ( $M = 26.22, SD = 2.66$ ), and those without an orientation ( $M = 25.75, SD = 2.65$ ), had a significantly higher TEACCH score than teachers with ABA orientation ( $M = 23.42, SD = 2.69$ ). On the Shared dimension, teachers in the ABA group ( $M = 54.08, SD = 2.13$ ) had significantly

higher scores than teachers in the TEACCH group ( $M = 49.76$ ,  $SD = 5.49$ ), as well as the no orientation group [ $M = 48.30$ ,  $SD = 4.29$ ;  $F(2, 112) = 19.77$   $p = 0.00$ ].

Table 1.

*A summary of items and their factor loadings for each factor on ABA and TEACCH of the ATPQ*

Items	Factors	
	TEACCH	ABA
<b>TEACCH items</b>		
1. ....rarely teaching a cognitive skill ....without that child showing interest.....	<b>.35</b>	.14
2. ....focuses on both observable behaviors and other unobservable variables...	<b>.55</b>	.15
15. One of the responsibilities of teacher....understand personal experience.....	<b>.39</b>	.15
18. ...less concerned with finding powerful reinforcers...than making sure activities are meaningful...	<b>.39</b>	.16
19....students learn best when their strengths and interests are emphasized... deficits ..minimized.	<b>.34</b>	.09
20....figure out underlying autism deficit....trigger mechanism.	<b>.72</b>	-.04
12. Children make the most educational progress.....close link between home and school. #	<b>.68</b>	.13
16. To track development of students emerging skills.....evaluate performance early in school year...and later on. #	<b>.73</b>	-.14
<b>ABA items</b>		
7. ....collect systematically graphed data on all students' learning....	.34	<b>.50</b>
8. Making .....powerful reinforcers.....engage a child in an activity	.30	<b>.47</b>
10. Principles of learning.....key aspects to....teaching.	.30	<b>.74</b>
11. ...educational plan.....remediate a student's areas of deficit.	.19	<b>.65</b>
14. ...expect students to respond to instructions in a natural environment	.14	<b>.41</b>
22. ....most powerful tool as a teacher....pair positive consequences with desirable behavior	.19	<b>.53</b>
3. ...structure the environment to stimulate....spontaneous communication. #	.27	<b>.61</b>
9 ...important to plan for generalization and independence of skills #	.26	<b>.63</b>
<b>Shared items</b>		
5. ....make enough progress.....still need some form of support throughout lifespan	.44	.46
6. ...learning characteristics ...necessary to have specialized education services	.38	.37
13. ...introduce novelty to prevent resistance to change	.37	.31
17. ...important ...show respect for all children in my classroom	.26	.31
21. ..try to find communicative intent of a student's misbehavior	.39	.33

# originally scored under the factor on Shared

^ item 4 was deleted because of its factor loading (below .30)

Table 2.

*A summary of items and their factor loadings for each factor on personal teaching efficacy and general teaching efficacy subscales of the TES*

Items	Factors	
	PTE	GTE
<b>Personal Teaching Efficacy (PTE) items</b>		
1 ...student does better than expected...I exerted a little extra effort	<b>.54</b>	-.13
3 parents comment...child behaves better....techniques managing their child's behavior	<b>.42</b>	-.08
6 ...enough training to deal with most learning problems	<b>.68</b>	-.02
7 ...I have obtained necessary skills to be an effective teacher	<b>.68</b>	.11
11 ...student having difficulty with an assignment....adjust it to the student's level	<b>.38</b>	-.13
14 ...students show improvement,.... found better ways of teaching	<b>.32</b>	.26
15 If I try hard,....get through to ...most difficult student	<b>.33</b>	.17
17 If my student ...disruptive,...ask myself what I've done differently	<b>.36</b>	.14
18 ...students improve,....because I found more effective teaching approaches	<b>.60</b>	.42
19 ...change class curriculum, feel confident....necessary skills to implement the change	<b>.71</b>	.12
20 ...students mastered a new concept quickly,....knew necessary steps to teach that concept	<b>.71</b>	.35
24 If student did not remember information.....I know how to increase children's retention...	<b>.53</b>	.32
25 ...students disruptive noisy,....know some techniques to redirect them	<b>.62</b>	.28
26 School policies...hinder my doing the job....	<b>.35</b>	.08
29 ...couldn't do a class assignment,...accurately assess ...assignment ...correct level.....	<b>.78</b>	.28

Table 2. (cond.)

*A summary of items and their factor loadings for each factor on personal teaching efficacy and general teaching efficacy subscales of the TES*

Items	Factors	
	Personal Efficacy	General Efficacy
<b>General Teaching Efficacy (GTE) items</b>		
2 .time spent with students...little influence compared to the influence of their home....	.36	<b>.57</b>
4 If teachers have adequate skills.....reach even the most difficult students	.09	<b>.40</b>
5 ...aren't disciplined at home,...aren't likely to accept any discipline in... program	-.45	<b>.44</b>
8 ...lack of support from community,...frustrated in my attempts to help students	.09	<b>.50</b>
9 ..students need to be placed in ..programs.....not subjected to ...regular class expectations	.13	<b>.40</b>
10 Individual differences among teachers.....account for wide variation in academic achievement ...of students	.28	<b>.42</b>
12 ...amount special education student ...learn...primarily related to family background	.28	<b>.56</b>
13 ...student can't remind on task,..little I can do to increase the student's attention	.41	<b>.72</b>
16 ...teachers not a very powerful influence on.....students achievement.	.40	<b>.66</b>
21 ...teachers can't do much because of a student's motivation.... home environment	.44	<b>.65</b>
23 ...parents do more with their children,...I could do more ...	.19	<b>.32</b>
27 ...student's home experience ...overcome by good teaching	.31	<b>.46</b>
30 ...teacher with good teaching abilities may not reach many student	.28	<b>.78</b>

Note: Item 22 and 28 were deleted because of low factor loading (below .30)

Two separate ANOVAs were conducted to compare the groups according to the sense of teaching efficacy: one for the personal teaching efficacy score, and the other for the general teaching efficacy score. The results for personal teaching efficacy differed significantly between the groups [ $F(2, 112) = 15.34, p = 0.00$ ]. Scheffe post-hoc comparison revealed that the difference between ABA and the other two groups accounted for this overall difference. ABA teachers have significantly higher scores on personal teaching efficacy. No significant difference was observed in the treatment orientations for general teaching efficacy. The means and standard deviations of the dependent variables, by teaching efficacy (personal/general) group, are summarized in Table 3.

Table 3.  
*Mean scores on Treatment Philosophy and Teaching Efficacy for the three groups*

	ABA (n = 38)		TEACCH (n = 37)		Control (n = 40)		(2, 112)
	M	SD	M	SD	M	SD	
<b>Treatment Philosophy</b>							
ABA	32.15	2.27	27.91	3.61	26.45	3.61	32.41**
TEACCH	23.42	2.69	26.22	2.66	23.42	2.69	11.88**
Shared	54.08	2.13	49.76	5.49	48.30	4.29	19.77**
<b>Teaching Efficacy</b>							
Personal	68.97	8.39	60.24	8.28	60.60	6.63	15.34**
General	54.51	3.05	55.84	8.60	55.67	5.88	0.40

Note: ABA = Applied Behavior Analysis; TEACCH = Treatment and Education of Autistic and Related Communication-Handicapped Children.

\*\*  $p < 0.01$

A multiple regression analysis was conducted using the commitment score as the predictor variable of the two dimensions of teaching efficacy. Given that the commitment score was the score associated with the identified teaching orientation, only participants who claimed to have an orientation were included in this part of the analysis. The variable that represented commitment to a philosophy was significantly related to personal teaching efficacy, i.e.  $F(1, 73) = 4.42, p = 0.04$ . The sample multiple correlation coefficient was .24, indicating that approximately 6% of the variance of personal teaching efficacy in this sample could be accounted for by variables representing treatment orientations. As for general teaching efficacy, this predictor variable had a minimum effect - [ $F(1, 73) = 3.39, n.s.$ ].

## Discussion

We hypothesized that treatment philosophies of those working with children with autism would be related to their personal and general teaching efficacy. To test this hypothesis, a control group was used to compare teachers with no commitment to an orientation with those who had an orientation. The results partly supported the hypothesis that having an orientation contributes to a better sense of personal teaching efficacy in working with children with autism.

The current findings, which are similar to those of Jennett, Harris and Mesibov (2003), partly support the hypothesis that commitment to an underlying treatment orientation is an “appropriate tool” for enhancing self-efficacy in teaching. When teachers have an

orientation while working with children with autism, they will have a stronger belief in the ability of their role to make a difference to the children they are working with. This finding may have an implication for training of teachers who work with children having special needs. The earlier one can commit to, or understand, the underlying theoretical orientation of a teaching approach, the greater would be one's sense of professional efficacy, in here, teaching efficacy, and possibly reducing teachers' burnout (Skaalvik & Skaalvik, 2010).

With reference to the two major approaches of working with children with autism, only teachers who identify themselves as having an ABA teaching orientation have a high sense of personal teaching efficacy. There could be many reasons for such a pattern in results. One possible reason could be that there are some underlying factors (such as level of knowledge and skills) that lead to teachers taking up the ABA approach while working with children with autism. The current sample was too small in exploring further relationships between approach taken in relation to age and/or relevant work experience. More work is needed to investigate factors that possibly associate with this stance. Another possible reason could be psychometric properties of the ATPQ in defining the characteristics and uniqueness of each treatment approach. With reference to the non-significant score on general teaching efficacy, the results may suggest that there is an overall belief among teachers (regardless of whether they have a treatment orientation or not) that there are external factors that put limits to what they can accomplish from their work with children with autism.

Notwithstanding these significant findings, the results of this study should be interpreted with caution. First, the sample size was relatively small. A larger sample can be used to validate the current findings. Second, the instruments used in the study need further analysis for psychometric properties, before conclusions can be drawn. Nevertheless, the study has explored "commitment to an approach" as a variable, which has not been investigated before, for investigating self-efficacy of Hong Kong teachers working with children with autism. Future teacher training or continuous education courses should incorporate an element of commitment to a treatment philosophy to facilitate teachers' self-efficacy in working with children with autism. In relation to this, more empirical studies should be conducted to explore different strategies to help teachers identify their teaching orientations, and consequently leading to positive change of one's teaching efficacy.

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# Parents Socializing Sibling Relationships in European American and Asian American Families of Children with Autism in the United States<sup>3</sup>

## Abstract

*This study examined how parents in a European American and an Asian American family socialize sibling relationships. We describe parents' beliefs about autism and how these beliefs influence awareness-building of disability in their typically developing children and the expectations that parents have for sibling relationships. The role of parents in socializing sibling relationships is also described. Analyses were based on in-depth interviews with parents. Findings indicate that the two sets of parents differed in their beliefs, expectations, and practices. Sibling relationship outcomes also differed in the two families. Implications for research are described.*

*Key words: Autism, Sibling relationship, Asian and European American families.*

## Introduction

Sibling relationships are one of the most important bonds in a family. Siblings typically share many common family experiences, including social and emotional intimacy, thus this relationship is significant to the development of a child (Cicirelli, 1994; Kramer & Bank, 2005).

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The experiences of children who have a sibling with a disability are unique and come with their fair share of trials and tribulations (e.g., McHale, Sloan, & Simeonsson, 1986). The experience of disability also varies significantly between children of different cultures, languages, and religions (e.g., Braun, 2008). A substantial number of studies have indicated that having a sibling with a disability is a negative experience for children, leading to low self-concept, behavior problems, depression and loneliness (e.g., Gold, 1993; Verte, Roeyers & Busse, 2003). While it is commonly understood that parents play a significant role in the quality of sibling relationships, research has neglected studying parental influences on sibling dyads (Stoneman, 2005). The present study is a step in that direction.

### **Sibling Relationships in the Context of Autism**

Autism is a complex disorder with impairments in social interaction and communication (DSM-IV, 2000). Children with autism do not always have severe special needs, and there is a continuum of impact for these children. Regardless, autism presents unique challenges for siblings that may or may not exist for siblings of children with other special needs. Research on the lives of siblings of children with autism is an expanding field (Stoneman, 2005), but currently most research focuses on middle-class European American families who have children with autism, despite the fact that immigration is on the rise in the United States (Welterlin & LaRue, 2007).

Previous research suggests that positive and negative effects coexist for siblings of children with autism (see Orsmond & Seltzer, 2007, for a review of literature). On the negative side, siblings can feel neglected and overburdened by responsibility (e.g., Breslau, 1982; McHale, Sloan, & Simeonsson, 1986; Tew & Lawrence, 1973). With severe special needs, siblings might also be exposed to frightening behavior, such as tantrums (Benderix & Sivberg, 2007) and aggression (Ross & Cuskelly, 2006). Positive effects of having a sibling with autism include high family cohesion and less sibling rivalry (Kaminsky & Dewey, 2001; Meyer & Vadasy, 1994; Orsmond & Seltzer, 2000). In some cases, siblings of children with autism do not adequately understand the disability. Children's reasoning may mature with age, but this maturation is delayed for illness and disability norms when they lack specific knowledge. Knowledge of autism between 5 and 17 years of age remains within the boundaries of preoperational thought (Glasberg, 2000). Furthermore, parents often overestimate their children's understanding of the impact of autism.

Research has documented that children with autism want to engage with their siblings. El-Ghoroury and Romanczyk (1999) observed nine families with children with autism in dyadic family interactions on home visits. Results indicated that although mothers and fathers exhibited more play behaviors with children with autism, children tried to initiate more play with their siblings through verbal requests. This study makes the important point that adults can enhance the sibling bond by creating opportunities for their children to play together. Kramer (2010) also suggested that adults should focus on nurturing cooperative relations amongst siblings by promoting social competence and minimizing conflicts between siblings.

### **Parenting and Family Influences in Sibling Relationships of Children with Disabilities**

Despite the fact that parents play an important and influential role in sibling relationships of children with disabilities, there is limited research on this topic. The following is a summary of the available research.

Adult intervention in sibling dyads leads to compliance when one child has a disability (Dallas, Stevenson, & McGurk, 1993). Assistance from mothers led children with disabilities to play a more active role in play, and directions from the mother increased cooperation amongst children. Furthermore, increased negative interactions with mothers lead to more conflicts amongst siblings, suggesting that there is a significant maternal impact on sibling relationships when it comes to conflict (McHale & Gamble, 1989). Maternal negativity was also associated with higher levels of child depression and anxiety, as well as lower self-esteem. In addition, parents can be trained to elicit positive behaviors, such as cooperation, in their children (Strain & Danko, 1995). Mothers and sitters were taught to encourage typically developing siblings to engage in positive behavior and use certain social skills to benefit the child with autism. Their encouragement of positive interactions led to an increase in positive initiations and responses among siblings, and an increase in adult praise of children. This training also led to more spontaneous prompting of children at home. This research makes it clear that parents play a key role in nourishing sibling relationships, and that they can be trained to help sustain these sibling relationships.

Family variables have also been documented to impact sibling relationships. VanRiper (2000) studied the impact of family variables on sibling relationships when one child has special needs. Results showed that families with lower levels of family demands, a higher number of resources, superior coping skills, and higher levels of affirmative problem-solving communication between parent and child experienced greater sibling well-being. Findings illustrate how sibling outcomes are dependent on family variables. Gallagher and Powell (1989) agreed that family variables affect sibling outcomes, pointing to the effects of family size, socioeconomic status, and child characteristics (e.g., temperament or illness severity) on the adjustment of siblings.

### **Studies on Ethnically Diverse Families**

European American parents of children with autism have been documented to attribute their child's autism to a range of possible causes. These included birth related trauma, vaccinations, diet, birth of another child, toxins in the natural surroundings, congenital damage, allergies, and other such medical attributions (Gray, 1995; Goin-Kochel & Myers, 2005; Lingam, Simmons, Andrews, Miller, Stowe, & Taylor, 2003).

While much is known about Western perspectives, scholars in the field have critiqued a general lack of studies with culturally and linguistically diverse families of children with autism (Welterlin & LaRue, 2007; Zionts & Zionts, 2003). Dyches, Wilder, Sudweeks, Obiakor and Algozzine (2004) note the scarcity of knowledge on how multicultural

families appraise autism within a cultural context, the challenges and stressors they face, types of support they receive, and how they adapt to raising their child with autism.

How parents raise and socialize their children is dependent on their cultural and religious beliefs, values, and practices. In many cultures, parents draw upon their cultural beliefs to make sense of their child's disability and the reasons for having a child with a disability. It has been documented that most Latino mothers of children with developmental disabilities perceived their child in a positive way (e.g., blessing, make parents more compassionate), while a small percentage of the mothers (3% of 250 participants) believed that they were being punished for their sins (Skinner, Bailey, Correa & Rodriquez, 1999; Skinner, Correa, Skinner & Bailey, 2001). Jewish Israeli parents in Shaked (2005) also had positive interpretations (e.g., child accorded a high spiritual status) of their child with autism.

In much of the Asian culture, having a child with a developmental disability is taboo and is perceived negatively by the community at large. Cultural attributions concern divine punishment because of sins committed in present or past lives. Parents feel shame, embarrassment and guilt, prompting them to remain private about their child's diagnosis and hesitating to seek assistance (Chan & Lee, 2004; Groce & Zola, 1993; Uba, 1994). The need to 'save face' often prompts parents to keep the child's disability a secret from even the closest relative (e.g., child's siblings, grandparents). In a qualitative study of 23 Asian immigrant mothers of children with developmental disabilities (Jegatheesan, 2009b) many of the mothers had negative cultural beliefs about having a child with a disability and many mothers reported that they experienced community related embarrassment due to such stigma. Similarly, Asian Indian parents in Gabel (2004) also harbored negative beliefs, such as their child's disability was a punishment from God for sins of the parents.

Positive beliefs were found among South Asian Muslim parents with children with moderate to severe autism. These parents perceived their child as a gift from Allah and that they were chosen to take care of His special child (Jegatheesan, 2009a; Jegatheesan, 2005; Jegatheesan, Miller & Fowler, 2009).

The impact of maternal influence in the sibling relationship of a child with autism has been documented by Jegatheesan and Witz (under review) in an ethnographic case study of a South Asian Muslim immigrant mother and her two sons: an 11-year-old typically developing son and a six-year-old son with autism. The mother's positive interpretations of disability (e.g., child is a blessing from God; chosen parents to protect Allah's child) contributed to the mother being proactive in creating an advanced level of awareness in her typically developing son, which she firmly believed would enable him to support his brother with autism at all levels. The mother was also instrumental in teaching her typically developing son to be compassionate through the teachings of Islam. The authors found that the typically developing brother was extremely empathetic and protective of his brother and had a positive interpretation of disability.

Along similar lines, the purpose of the current study is to develop an understanding of how parents socialize sibling relationships in two families with one child with autism and one typically developing child. This study is comprised of in-depth case studies of two families: one European American and one Asian American family in the Pacific Northwest region of the United States. Data are drawn from interviews with the parents. The following research questions guided the study: (1) What are parents' beliefs about having a child with autism? (2) What are parents' expectations for sibling role relationship? (3) What role do parents play in socializing sibling relationships?

### **Method**

This study is part of a larger qualitative study designed to examine the beliefs and experiences of disability in young children who have siblings with autism (Braun, 2008). The larger study used multiple methods such as interviews with the parents and children, observations of family interactions and video recorded observations of sibling interactions during play in the homes of two families. The use of multiple methods helped ensure the trustworthiness of the data and findings. The primary source of data for this paper are interviews conducted with the parents, however child friendly interviews with the children and video recorded observations of the siblings at play also contributed in important ways to understanding the influence of parents on the relationship between the children (we have provided a brief description of child interviews and video recorded observations in the section on procedure). A qualitative methodology was chosen because it was particularly suited for the task of examining parents' views and beliefs about disability, their expectations for their children and their relationships and the role they play in socializing sibling relationships. Consistent with the philosophy of qualitative methodological approach, we sought to use interviews with parents as a forum for their voices to be heard.

### **Participants**

Two (one European American and one Asian American) families from a large city in the United States participated in this study. Each family had a son with autism and an older son who was typically developing. Parents and their children (with autism and typically developing) participated in the study. Table 1 provides a summary of the parents' background and Table 2 provides a summary of the children.

### **Instruments**

A demographic questionnaire was developed in order to collect descriptive information about the parents, such as their age, education level, occupation, number of years in the U.S, and ethnicity as well as information about their children (e.g., age, gender, age at diagnosis, gender).

An interview protocol was developed after a review of the existing literature on parent influence on sibling relationships of children with autism. The interview topics centered around parents' beliefs about having a child with autism, their role, expectations and socialization practices.

Table 1.  
*Family Information*

Family	Ethnicity	Native language	No. of years in the US	Religion	Education (Mother & Father)	Occupation (Mother & Father)	Age (Mother & Father)	Primary caregiver	Number of children	Language spoken at home	SES
Smith	European American	English	Born in US	Catholic	M: Associate's Degree F: Bachelor's Degree	M: Sales F: Operations Management	M: 38 years F: 42 years	Both parents	2	English	Middle
Nguyen	Asian American	Vietnamese	Mother: 9 years Father: 18 years	Catholic	M: Bachelor's Degree F: Bachelor's Degree (both from Vietnam)	M: Unemployed F: Building Maintenance	M: 43 years F: 48 years	Mother	2	Vietnamese (primary language), English	Low

Table 2.  
*Child Information*

Family name	Name, age, & gender of child with autism	Name, age, & gender of typically developing child	Language spoken with children	Related services for child with autism
Smith	Joey 4 years old Male	John 7 years old Male	English	Speech, physical, occupational, and ABA therapy, IEP
Nguyen	Tyler 5 years old Male	Trevor 7 years old Male	Vietnamese (primary language), English	IEP, some therapies at school

Our purpose in this study was not to generalize our findings but to understand, in-depth, parents' beliefs about disability and the ways in which they influence and socialize sibling relationships in two culturally different families. The main criteria for selecting the two families as final cases were based on relevance to the phenomenon, diversity across contexts, and opportunity to learn about complexity and contexts (Stake, 2006). The recruitment process involved posting flyers around the city and personal contacts with families. The final two families were selected as the best matched pair of families, given that they both had two sons of approximately the same age, with the younger son being diagnosed with autism. Inevitably, the families varied on some potentially influential aspects, such as socioeconomic status. We will touch on how these factors could have also affected the sibling relationship and home environment throughout the results and discussion (see Braun, 2008 for a more thorough review).

### **Procedure**

**Interviews with the parents.** Four audio-recorded semi-structured interviews totaling approximately five hours per family were conducted with parents in their homes. Interviews with the Vietnamese family were conducted in Vietnamese with the help of an interpreter of the same ethnicity. Interviews in Vietnamese were transcribed and then translated into English by the interpreter. Interviews with the European American family were conducted in English by a researcher of European American origin. Parents were interviewed about their beliefs in having a child with autism, socialization practices, and their roles and expectations for their children. Questions for subsequent interviews were developed based on our analyses of the previous interviews. In this manner, a deeper understanding of the issues and themes that emerged in the previous interviews was sought in the additional interviews.

In addition, parents were also contacted to provide their interpretations and explanations about some of the comments made by the typically developing children during their interviews (the child's interview is described briefly below). This helped clarify and provide additional insights about the influence of parents on the siblings' relationships and the children's perceptions. The first author maintained a log of conversations with the parents at all times.

**Interviews with the typically developing children.** A semi-structured interview using the 'draw-and-tell technique' (Driessnack, 2005) was conducted with the typically developing children. Children were asked to comment on their views of a disability like autism, perceptions of their siblings with autism, and their relationship with them. For example, the typically developing children were asked to draw what autism meant to them, an activity they enjoyed together as brothers, and drawing how they felt when around their sibling. For more information about interviews with the children, please refer to Braun (2008) and/or Sage and Jegatheesan (2010).

**Video recorded observations of siblings at play.** The two brothers from each family engaged in a 30-minute free play session at their home one week after the draw-and-tell

session. We sought to examine their relationship, communication, and interaction style in a natural activity. Disruptions in the environment were minimized, as children with autism are often challenged by changes to their environment or schedule. Parents and children gave permission to videotape the play session, and parents were invited to be present. Siblings played with standard toys chosen by their mothers, and shown to be liked and familiar in their daily lives. For more information about the play sessions with the children, please refer to Braun (2008) or Sage and Jegatheesan (under review).

### **Ethical Issues**

Formal ethics approval was obtained from the Institutional Review Board at the University of Washington. Both families provided parental consent. Parents were informed of their rights (e.g., withdraw from the study at any time). The Vietnamese family was offered the choice of having the consent letter in their native language. Each participant was assigned a pseudonym to protect his or her identity. A Vietnamese interpreter provided language assistance to the Vietnamese family, lending interpretation and translation services during the interviews and transcribing and translating the interviews after the interviews were complete.

### **Analysis**

Analysis was an ongoing process during the research. The constant comparative method of analysis was used (Glaser & Strauss, 1967). This method is grounded in the data and inductive. A line by line multiple coding of parents' narratives was completed independently by the two authors (Barbour, 2001; Miles & Huberman, 1994). Analysis of the videos included coding of each play episode focusing on the theme of play (free, structured, solitary or mutual play; maternal involvement, intervention, directives, and play expectations; sibling mood, emotion, and positive or negative verbal and physical behavior). The two authors engaged in discussions of the interpretations to reach their final interpretation. In this manner, categories and codes were derived through repeated reviews of the transcripts. Consistent with the concept of grounded theory (Lincoln & Guba, 1985), original themes were altered, eliminated, or merged, which revealed new or different perspectives. The constant comparative analysis required the researchers to continually go back and forth to the data coding (Bogden & Biklen, 1982). During the process of triangulation, the authors collaborated with the parents and two members of the Vietnamese community by providing copies of the transcripts to gain their reflections, interpretations, and clarification of specific issues. The authors met with these individuals to discuss interpretations to ensure accuracy in their conclusions. Interpretations were emailed to the Smith family and discussed with the Nguyen family by the interpreter. They believed our interpretations to be accurate, thus no changes were made to their transcripts.

### **Results**

We begin the next section by providing a general description of the family. We then describe parents' beliefs about having a child with a disability, their expectations for sibling relationships, and the role they play in socializing the relationship between the siblings.

### **The European American Case Study: The Smith Family**

The Smith family had two children, a typically developing son named John (age 7) and a son with autism named Joey (age 4). Joey “scored very low in all his developmental tests” and demonstrated behavior that was related to his disability (e.g., self-stimulatory behavior, preference for sameness). However, he had improved significantly with regular therapies, occurring both at school and in the home on a consistent basis. The Smith parents both reported that this made him a relatively easy child to get along with and reduced child demands and care. According to both parents, John and Joey were very close to each other.

The Smith parents were knowledgeable about autism and learned how to provide support to both their sons by reading books and on-line articles about autism. Therapists and teachers also provided them with adequate information and advice. Although both the parents worked during the day, the Smith parents had a flexible schedule. This allowed them to spend a considerable amount of time with their children. The parents reported that they often participated in their children’s activities and gave suggestions on how to make games inclusive of one another. The family spent a lot of time talking about the children’s achievements and hobbies. The Smith family lived in a spacious two-story home with a large fenced backyard. Age appropriate toys for both their children were in abundance. Children were observed to be involved in free and rough and tumble play.

**Parents’ beliefs about having a child with autism.** The Smith parents believed that a combination of medical factors (e.g., genetics, vaccines) affected Joey when he was 8 to 10 months old. Both parents maintained a very hopeful outlook on Joey’s life, and provided him with a vast amount of therapy. They also treated Joey’s disability with openness and pride. Mrs. Smith said,

*“I look at Joey’s disability as possibility. Anything and everything is within reach for him. Disability is not a barrier to his future, but something that can open doors for him. Joey will be capable of anything as long as he puts his mind to it...It’s important to me to let the whole world know about Joey and how proud we are of him.”*

**Parents’ expectations for sibling role relationship.** The Smith parents hoped that John would be a mentor, teacher, and companion for Joey. They added that they did not force this role relationship because it would put undue strain on their older son. Mrs. Smith said, “My expectations for him in regards to Joey are to be respectful, helpful and tolerant of him. I don’t believe I’ve ever voiced those expectations to John, nor have I had too.” Both parents felt “fortunate” that John had become what they had hoped for. Mrs. Smith stated,

*“We are lucky that John understands how to treat Joey. We have not had to coach John. He has developed his own way of dealing with Joey in a very respectful manner and became a mentor and teacher as he learned more about*

*autism. John has made accommodations in the sense that he understands that Joey may have different needs.”*

Both parents wanted John to be “himself” when he was with his brother. They stressed that it was not John’s responsibility to take care of his brother. Mr. Smith explained,

*“We as parents don't want to make Joey a burden on John. It is not John's job to care for his brother or baby-sit him at any time. We have been very respectful of John's life as well. We don't want him to feel he has to do anything out of the ordinary to care for his brother. On the other hand, we were very hopeful that John would choose to be a support piece in Joey's life.”*

The parents had equal expectations for both brothers when it came to appropriate behavior. Joey was expected to listen to his older brother and obey him. The Smith parents believed that it was important to create a balance of attention and affection between both their sons and not “dominate the landscape with Joey talk.” Both Smith parents made a genuine effort to focus on John’s accomplishments as well.

### **Parents’ role in socializing sibling relationships**

***Building awareness of autism in the typically developing child.*** The Smith parents believed that their role was to educate their typically son about his brother’s disability and to be very open and honest with him concerning his brother’s progress and the kinds of support he might require in the future. The parents informed their son John about his brother’s disability as soon as they received the diagnosis. John was five years old at that time. “Most definitely!” was Mr. Smith’s response when asked whether it was important for John to know about his younger brother’s disability. The parents reported that they gave John honest answers to his questions about his brother. They said,

*“John would ask us questions like ‘What is autism?’ ‘When will it be gone?’ We gave him pretty simple answers. We told him Joey's brain processes information differently, but that he probably understands what we are telling him. Some things such as light and sound may upset him, but that in time he will learn how to deal with these situations. Simply put, I told John he may make a basket in the first try, but Joey will take four shots and then repeat it before he makes it. In the end he made the shot and that's what's important. We told John that Joey will always be autistic.”*

Both parents’ ultimate goal for their two children was to have a seamless relationship (meaning their sons would genuinely have affection for one another, get along well, and engage in little conflict) and as a result felt that it was critical to share as much information as possible with John. They also felt that since John was the most influential person in his brother’s life, providing him with information about his brother’s disability would enable him to help his brother. His parents taught John all that he needed to know about autism (e.g., what it meant for Joey’s future and how it affected Joey’s daily

communication, interactions, etc.) so that he could fully understand his brother and build a relationship with him. They strongly believed that John had “greatly benefited” from knowing that Joey had autism as early as he did. Both parents wanted John to be proud of his brother’s accomplishments. They helped John see his brother as not being too different from other children by making life as normal as possible and by downplaying Joey’s disability in their everyday family conversations. Family conversations about Joey were mostly lighthearted.

The Smith family stated that building an awareness of autism in their typically developing son had a positive impact on the sibling relationship. For example, John found ways to communicate and interact with his brother from the time he learned about the specifics of autism. Mr. Smith said, “...He is so good with Joey you would think we had trained him, but he has learned on his own how to get eye contact and how to speak to Joey, how to work in Joey's world.” During play interactions, we found that John continually accommodated his brother. For example, when Joey lost interest in playing a board game, John immediately reached for a bubble maker, a toy he knew would capture Joey’s attention. He engaged and entertained his brother throughout the activity. Mrs. Smith said that John recognized that some days could be a real struggle for Joey and had become protective of him.

#### **The Asian American Case Study: Nguyen Family**

The Nguyen family had two children, Trevor (age 7) and Tyler (age 5), both of whom were born in the United States. Tyler was diagnosed with moderate to severe autism around his third birthday. Tyler had not received regular speech and behavior therapy, which slowed his progress. Despite Mrs. Nguyen’s request for therapy for her son, the school did not provide the family with speech and behavior therapy services. He had frequent tantrums and a preference for sameness. According to Mrs. Nguyen, Tyler was a “very demanding child to care for on a regular basis.” The brothers were not close to one another and had frequent disagreements.

The Nguyen parents reported that they did not have adequate knowledge about autism. Mrs. Nguyen said that she had little information on how to support her children during play and provided them with ideas on including each other. As a result, the brothers often attended to their own toys and indulged in solitary play. In an observation of the brothers at play, Mrs. Nguyen played primarily with Tyler and made no attempt to engage Trevor in the same activity. The Nguyen parents had a busy schedule which gave them very little time to spend with their children. The only activity Mr. Nguyen at times shared with his children was watching television and eating dinner together. Since Mrs. Nguyen shouldered the care-giving and household responsibilities, she was often unable to supervise her children. Mrs. Nguyen, therefore, had strict play rules and a structured daily schedule to minimize conflicts between the brothers when she was not around. For example, the brothers could watch television for an hour after school and they were allowed to play with each other for an hour before dinnertime. Mrs. Nguyen explained that she was busy with her household chores and childcare and as a result was frequently tired. She added that since her family lived in Vietnam, she could not turn to anyone for

help or advice on parenting. The Nguyen family lived in a small apartment with limited space for play activities (e.g., living room). They were also required to play passively and softly because of prior warnings that the parents received from the apartment management about the noise level in their home.

**Parents' beliefs about having a child with autism.** The Nguyen parents were torn between a medical explanation (e.g., child's brain damaged due to lack of oxygen during delivery), and the Vietnamese cultural beliefs of retribution as a result of evil deeds. However, they state that their cultural beliefs have an important place in their family. Mrs. Nguyen believed that her son was "paying the debt" for the wrongs deeds of her ancestors. Mrs. Nguyen also believed that her "terrified childhood" years during the Vietnam War had connections to her child having autism.

The Nguyen family lived in secrecy and fear from the time they received diagnosis of their son's condition because of the stigma associated with having a child with a disability. With the exception of her husband, Mrs. Nguyen kept her son's disability a secret from the rest of her family and community. She said,

*"When I knew that I had a child with a disability, I kept myself at home and didn't want to talk with others except school staff, because I didn't want other people to know the truth about Tyler. I myself couldn't accept the truth and would not accept his diagnosis. I felt depressed and hopeless when I received my son's diagnosis."*

Mrs. Nguyen reported that, in time, she overcame her depression so that she could provide quality care for her children. She did not believe that her son would recover 100% in the future. She did, however, recently come to believe that he could be educated and become independent.

**Parents' expectations for sibling role relationship.** Mrs. Nguyen reported that she expected her older son Trevor to be a "good role model capable of displaying altruism in a sibling relationship." She also expected him to be "willing to spend time, teach and share whatever he has with his younger brother and protect him." Trevor was also expected to work hard to "receive utmost respect from his younger brother through his thoughtful deeds." Mrs. Nguyen explained further,

*"Trevor should become a role model who sets good examples for Tyler. He should be like the mirror that Tyler sees every day. Whatever he sees in Trevor, the good and the bad will influence Tyler. I expect Trevor to teach Tyler whenever he can (i.e. read to Tyler as much as possible because it'll help both learn together) and expect him to watch out for Tyler's safety. We also want Trevor to be passive when playing with Tyler. For example, when there is a new toy in the house, Tyler can play with it first and when he gets bored then Trevor can play with it. It's usually okay because Tyler loses interest fairly quickly. I also teach him to be a nice, good, and compassionate brother and not react*

*aggressively towards Tyler when he does something wrong or annoying. Tyler has a poor attention span, and this can be frustrating for Trevor. But my husband and I want Trevor to show care for Tyler and wear a smile on his face when he is in his brother's presence despite his inner anger and frustration."*

Mrs. Nguyen did not outwardly voice these expectations to Trevor. Instead she said that she indirectly expressed them through teachable moments that occurred during informal family interactions. She hoped that he would eventually figure out his role as an older brother and his parents' expectation on how he should treat his younger brother. Mrs. Nguyen understood that it was not always fair for Trevor to constantly give up his toys and receive less attention than his brother. Her expectations and goals for sibling relationships were guided by her culture, in that the older sibling had a specific role and responsibility irrespective of his/her age.

Mrs. Nguyen had some expectations for her son with autism but admitted that these expectations were not strictly adhered to. She said,

*"Because Tyler is still so young and has special needs, the entire family has been living in a way that ensures Tyler doesn't feel isolated and often he gets whatever he wants as a result. I am making some changes and would like to teach him to share, cooperate, have fewer tantrums, and be less demanding.... I am also teaching him to respect his older brother and listen to him more."*

### **Parents' role in socializing sibling relationships**

***Building awareness of autism in the typically developing child.*** The Nguyen parents did not inform their older son Trevor about his brother's diagnosis for two years. At the time of diagnosis, Trevor was five years old. The Nguyen parents believed Trevor was too young to understand a difficult concept such as autism. They were also afraid that Trevor would react negatively towards his younger brother and tease him. Eventually, Mrs. Nguyen was forced to talk to her older son about his brother's disability. She explained the reasons, "Trevor overheard a phone conversation between me and Tyler's teacher. The teacher complained profusely about Tyler, his tantrums, preference to be alone..." The telephone conversation was reported as "uncomfortable and unpleasant." Trevor had not heard such a conversation before so Mrs. Nguyen finally told him about his brother's disability.

Since then, Mrs. Nguyen has helped Trevor understand more about autism by encouraging him to read children's books with characters that have autism. She also explained the reasons behind Tyler's tantrums and for his preference to play by himself and began to enlist Trevor's help to watch out for Tyler. Mrs. Nguyen believed that Trevor should understand his responsibility as an older brother and learn on his own how to accommodate his brother now that he was aware of his condition.

Since the time Trevor has learned about his brother's disability (three months prior to data collection), there have been minimal changes in his relationship with his brother. The brothers continue to play separately and pursue different hobbies, and hence their joint interactions remain limited. During an observation of a 26-minute free play session, it was noted that both brothers indulged predominantly in passive and solitary play. They did not communicate with one another and engaged in physical fights over simple things. Trevor demonstrated a lack of interest in playing with his brother. Since Trevor learned about Tyler's autism recently, the full impact of his awareness of his brother's disability remains unknown.

### **Discussion**

Despite the need to increase our understanding of how parents socialize sibling relationships, very few studies have studied parenting and family influences on sibling relationships (e.g., Dallas et al., 1993; Strain & Danko, 1995; McHale & Gamble, 1989; VanRiper, 2000). The study reported contributes to the limited knowledge base.

Results indicate that parents played an important role in determining the overall quality of the sibling relationship. As stated by Strain and Danko (1995), caregivers' encouragement can be extremely influential in encouraging play activities between siblings and building a stronger sibling relationship. Dallas et al. (1993) also suggested that maternal intervention in play activities leads to a higher number of cooperative behaviors among siblings, confirming that parents can elicit positive behaviors between their children.

Findings from the two case studies also indicate that parents' beliefs about having children with autism affected their decision to build awareness of autism in their typically developing children. This in turn had a significant impact on the quality of the relationship between the siblings. The Smith parents believed that their son's disability was caused by a combination of medical factors. This is similar to findings reported by other scholars in their work with European American families (Gray, 1995; Goin-Kochel et al., 2005; Lingam et al., 2003). The Smith parents were open about their son's condition, and viewed disability as possibility. They educated their older son so that he could help his younger brother with autism. This awareness helped the brother define his role in the sibling relationship, nurture his prosocial behavior, and enhance his ability to adapt to his younger brother's needs. This was not the case with the Nguyen parents, who had a negative interpretation of why they had a child with autism. The Nguyen parents reported that they were paying for past sins and felt shameful about having a child with a disability. Negative interpretations of disability through cultural and religious frames have been reported in other studies of Asian families (Chan & Lee, 2004; Gabel, 2004; Jegatheesan, 2009b). As a result of negative feelings, the Nguyen parents did not inform their older son about his brother's disability for two years. The older brother's lack of awareness impacted his ability to develop the skills and compassion he needed to interact and bond with his brother. The brothers had frequent

disagreements, often did not play together, and pursued different activities in their free time. Glasberg (2000) suggested that parents often overestimate their child's understanding of the impact of disability. Children often do not have enough information about a disability or have incorrect information. The older brother in the Nguyen family did not have the same level of awareness as the older brother in the Smith family. Findings from our study as well as Glasberg (2000) highlight the importance of parents conversing about the diagnosis of autism and information about the disability with their typically developing children. The increased awareness and knowledge of their siblings' disability can assist in developing positive sibling relationships.

The two families had different role expectations for their typically developing sons. The European American parents wanted their son to be helpful, and respectful of his brother. They hoped that he would be a mentor. However, they did not force him to take on any specific role. They also believed that it was not the older brother's responsibility to take care of his younger brother with autism. The Vietnamese parents expected their son to be a teacher, a role model and guardian for his brother and wanted him to be passive with his brother during play. The older son had specific responsibilities and duties towards his younger brother that was in accordance with their Asian culture. The Nguyen parents ensured that their older son obeyed them and followed the cultural rules. The Smith parents believed in self-development of their older son, which is consistent with the more individualistic perspective of the American culture (Markus & Kitayama, 1991). The more authoritative style of parenting in instilling familial responsibilities and filial piety as seen in the Nguyen family has been documented in other studies of Asian families (Chao, 1995; 2000). Implications for sibling relationships in each family were unique given such differences in role expectations. The European American older sibling took a more active role as a teacher and mentor in his younger brother's life and genuinely enjoyed the time spent with his brother. The Vietnamese sibling took a more passive role in his brother's life, and was forced to spend time with his brother. He was found to be unhappy during these interactions with his brother with autism.

Parents' knowledge of autism, the time spent with the sibling dyad, the home environment, and the severity of the child's disability also impacted parenting and sibling relationships. The Smith parents were knowledgeable about autism and this increased their ability to enhance the quality of the sibling relationship. Mrs. Nguyen's lack of knowledge about her son's disability negatively impacted her confidence and ability to provide appropriate suggestions to her sons. She also had very limited time to spend with her sons because of her busy schedule, which was not the case with the Smith family. Both families' home environment also played a role in sibling interactions. The Smith children indulged in active and fun games in their spacious home whereas the Nguyen children could only engage in quiet and passive games in their small apartment due to noise level restrictions. Providing care for Tyler was more demanding and time consuming for Mrs. Nguyen. Such family and child characteristics played a role in the ability of parents being able to foster nourishing sibling relationships. These conclusions are in line with VanRiper (2000), who examined family variables that impacted sibling relationships when a child has Down syndrome. The author found that families with lower levels of family demands, a higher number of

resources, superior coping skills, and higher levels of affirmative problem-solving communication experience greater sibling well-being. These findings appear to hold true to these two families of children with autism.

It is important to note that the two families had different cultural, social, and economic situations. The Asian family was an immigrant family of low socioeconomic status while the European parents were born in the United States and were accustomed to spending much time with their children in a spacious home environment. As a result of their low socioeconomic status and presumably other cultural and language barriers, the Nguyen parents were not able to easily access timely services, and information pertaining to their rights, entitlements, and services for their child was less available to them. In the case of the Vietnamese family, the parents encountered problems that are common to immigrants such as a lack of understanding of autism and special education system, inability to advocate for their child, and language barriers (Jegatheesan, 2005, Jegatheesan, Fowler & Miller, 2010; Park & Turnbull, 2001). Stress from lack of financial resources and social support and separation from family also affected the Nguyen parents. These findings mirrored the experiences of Asian parents who had children with autism in Jegatheesan (2005) and Jegatheesan, Miller, and Fowler (2010). (For further information on these differential family components, see the larger study – Braun, 2008).

Disability researchers recognize that current recommended practices on parenting and siblings of children with disabilities are based on a small body of sibling research. The parents in this study demonstrated the role they play in helping siblings cooperate with each other and the factors that create challenges and barriers in building sound sibling relationships. Dallas et al. (1993) suggested that parental intervention helps children play a more active role in their interactions with siblings. Parents shape sibling relationships, and the current study demonstrates that some parents are in need of support and education to help their children form warm relationships.

### **Limitations**

Limitations of this study are related to the small sample size of two families. Generalizing the results of this study to all European American and Asian immigrant families in the United States was not the primary purpose of this study. The case study methodology made it possible to examine sibling relationships in two culturally diverse families. This study provided a window into understanding how parents socialize sibling relationships.

### **Implications for Research**

This study has documented families' experiences in fostering sibling relationships between typically developing children and children with autism. We have found that both European American and Asian immigrant parents' beliefs about autism and their expectations for their children substantially affect the quality of the sibling relationship. Particularly for the Asian family, cultural beliefs played an important role in parents

socializing sibling relationship. Future research should continue this line of research on how families support and nurture sibling relationships and the barriers they face in doing so.

### **Implications for Practice**

**Connecting parents with other parents of children with disabilities.** Professionals should strive to connect parents of children with disabilities with one another because they can be a source of support and resource for each other. Particularly, parents who share a similar culture or language can help fellow parents in a myriad of ways. Parent-to-parent support can be vital for emotional, respite, informational, and interpretation support on an ongoing basis.

**Providing sibling and other related support services.** Professionals can support parents by connecting them with sibling support organizations that teach parents how to nurture and support sibling relationships (e.g., SibShops). Such organizations are valuable avenues of learning for parents. Professionals must also maintain an open line of communication with parents and provide reassurances and help them understand important issues such as rights and entitlements as parents of children with disabilities. All these contribute towards reducing uncertainty and stress in parents.

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# Approaches to the Teaching Exercise and Sports for the Children with Autism

## Abstract

*Autism is a developmental disorder that appears during the first three years of life and is characterized by communication problems, social interaction deficits and repetitive/restricted interests and behaviors. Although a diagnosis criterion of autistic spectrum disorders does not involve incapacitating to cover motor skills, studies indicated that motor deficits and delays in children with autism are possible. Sports and exercise are useful in that they decrease these motor failures and provide social integration. However, although these useful effects, exercise and sports activities are not supplied enough for children with autism, and it is observed that family, teachers and other specialists have some difficulties in adapting physical activity in the daily life activities of children with autism. This article focuses on what type sports activities can be introduced to children of certain ages with autism, the strategies followed and the measures adopted.*

*Key words: Autism, Exercise, Sports, Teaching Strategies.*

Autism or autistic disorder is defined as a developmental failure, one of the categories under the heading of “autistic spectrum disorders” or “pervasive developmental disorders”. Autism that appears during the first 3 years of life is characterized by communication and social interaction problems, and restricted/repetitive behaviors and interests (Doyle & Iland, 2004). Autism is one of the developmental disabilities in the Pervasive Developmental Disorders category, also known as PDD. It is a sub category of

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the autistic spectrum disorders such as asperger's syndrome, rett syndrome, a typical autism, and childhood disintegrative disorder. Below are the common features described as the diagnostic criteria for children with autism (American Psychiatric Association, 2001).

A. Impairment in social interaction, with at least two of the following:

1. Failure in the use of nonverbal behaviors such as eye contact, gesture and mimic, and body posture.
2. Marked impairment in developing peer relationship appropriate to the developmental level.
3. Lack of spontaneous seeking to share enjoyment, interests, or achievements with other people.
4. Failure of social or emotional reciprocity.

B. Impairment in communication as manifested by at least one of the following:

1. Delay in, or total lack of, the development of spoken language; inability to say a word in 2 years of age, and a simple phrase with two words in 3 years of age.
2. Marked impairment in the ability to initiate or sustain a conversation with other individuals with adequate speech.
3. Repetitive use of language or idiosyncratic language.
4. Restriction on social play or symbolic play appropriate to the developmental level.

C. Restricted/ repetitive interests and behaviors, showing at least one of the following:

1. Intensive and abnormal interests
2. Strict adherence to specific, nonfunctional routines or rituals.
3. Stereotyped and repetitive motor behaviors (e.g. hand flapping, twisting whole-body movements and rocking).
4. Persistent preoccupation with parts of objects.

For the diagnosis of autism, a child should retain at least six of the 12 features stated above, including at least two from section A, at least one from section B, and at least one from section C. Additionally, one of the features has to be seen before the first 36 months (American Psychiatric Association, 2001). In addition to these six features, behavioral fluctuations should also be seen in the child who was supposed to have autism. Several disorientations and issues in daily life activities are seen in autism, such as aggression displayed to oneself or environment, nutrition difficulties, sleep disorders, and toilet problems. Moreover, one of the basic incapacitates on children with autism is an intellectual restriction. It is claimed that up to 75 percent of all people with autism may have learning difficulties (Bryson, Bradley, Thompson & Wainwright, 2008; Graziano, 2002).

Owing to the children's features such as peer and social integration difficulties, communication failures, repetitive/restricted interest and activities, children with autism cannot play with peers and participate in physical activities and various sports branches

(Block, Block & Halliday, 2006; Reid, 2005). On the other hand, because of restricted opportunities like social organization, which is necessary for the children with autism, is not enough and correctly provided by the community, it is discussed that physical activity level of the children with autism is lower. In addition to the existing incapacities of children with autism, limitation of support for physical activity opportunities and people's ignorance of physical activities for children with autism are frequently observed issues in the literature (Reid, 2005; Sandt & Frey, 2005; Pan & Frey, 2006). Although there are no criteria related to motor failure and movement disorder, many studies showed that children with autism have lower motor performance than their peers (Baranek, 2002; Dewey, Cantell and Crawford, 2007; Piek & Dyck, 2004; Todd & Reid, 2006).

Participating physical activity and sports have been reported to have various benefits such as an opportunity for social integration (Berkeley, Zittel, Pitney & Nichols, 2001; Pan, 2010), decreasing stereotypic behaviors (Burns & Ault, 2009; Levinson & Reid, 1993; Prupas & Reid, 2001), developing motor performance and physical fitness (Bumin, Uyanik, Yılmaz, Kayıhan & Topçu, 2003; Todd & Reid, 2006; Yılmaz, Yanardağ, Birkan & Bumin, 2004) and enhancing self-determination (Reid & O'Connor, 2003; Pan, 2010). Although many positive effects of the sports and physical activity were reported by the studies, this subject has been an ignored area (Todd & Reid, 2006). There is limited number of research in literature concerning sports and physical activity application on children with autism. A part of these studies aimed to decrease the autistic symptoms such as stereotypic behaviors (Celiberti, Bobo, Kelly, Harris & Handleman, 1997; Levinson & Reid, 1993; Rosenthal-Malek & Mitchell, 1997), other studies focused on improving the motor performance and physical fitness, and gaining skills (Lochbaum & Crews, 2003; Pitetti, Rendoff, Grover & Beets, 2007; Todd & Reid, 2006; Yanardağ, Ergun & Yılmaz 2009; Yılmaz, Yanardağ, Birkan & Bumin, 2004). Since these studies, which attempted to reduce the autistic symptoms of the children with autism by sports and physical activity, lack teaching strategy, research model and systematic applications, none of them were evaluated as evidence-based practices (National Standards Report, 2009). Together with the fact that autistic children need more time and have difficulties to learn the new movement and skills during participation sports, teachers and academic personals working in special education, rehabilitation, and sports are in difficulty in carrying out a curriculum. Furthermore, lack of certified physical therapist and physical educators for education of children with autism might cause this restriction. Thus, there are few studies related to intervention of the sports and exercise of children with autism in the literature.

This article focuses on elimination of the difficulties that specialists and families experience during applications, strategies and precautionary measures through the perspective of special education. Additionally, sample sports branches and activity prescriptions for various age groups of children with autism will be described.

## **Exercise and Sports for Children with Autism**

There are several broad areas of motor skill development essential for participating daily life and several physical activities for most children. These areas include body awareness, motor planning, bilateral motor integration, balance skills, and fine motor control (Kurtz, 2008).

Body awareness is defined as an unconscious sense of body position, movement and force that comes from special sensory receptors located in the joints and muscles. This sense can be developed by several activities such as push-ups, sit-ups, chin-ups, and jumping on a trampoline for children with autism (Kurtz, 2008; Moor, 2008).

Motor-planning is an ability to conceptualize a plan, and perform an unfamiliar motor task or motor sequence. In order to perform motor-plan successfully, the child with autism must be aware of what will happen when s/he performs the target motor task.

This skill can be improved by games and activities such as digging in rice, sand or putty to find small hidden objects; guessing textures or shapes with eyes closed. In addition, dodge ball, tetherball or badminton are other useful activities to help in teaching motor-planning for children with autism (Kurtz, 2008; Moor, 2008).

Bilateral motor integration can be defined as the coordination of the two sides of the body in order to complete a motor task correctly. Jumping and hopping games are beneficial to develop bilateral motor skills. The child should be encouraged to try to hold an object in each hand and practice various bilateral patterns (Kurtz, 2008).

Balance skills are based on inputs from several sensory modalities such as a vestibular and proprioceptive system for gravitational pull, motion, and speed. Swings, slides, rocker toys, trampoline and tightrope walking are examples for the activities to develop balance skills for children with autism (Kurtz, 2008; Moor, 2008).

Fine motor control is essential for the pre-school age and young school age child for coloring, pasting, and using manipulative toys and materials. A child should learn how to hold arm, elbow and wrist in a stable position during isolating finger movements for performing several tasks such as writing and using scissors. General upper extremity strengthening exercises (animal walks), non-writing activities (messy play, using ink stamps), floor time (lie on his/her tummy while playing games) are important activities to develop fine motor control for children with autism (Kurtz, 2008; Moor, 2008).

Although many studies show that children with autism in a pre-school period have motor failure, a motor deficit does not take place in the autism diagnosis criteria. Especially, sensory-perceptual-motor functions, grasping and playing skills should be focused in this period (Auxter, Pyfer & Huettig, 2001; Moor, 2008).

Children with autism can perform some sports in the pre-school period. These sports and activities are walking, running, pool activities and games (Table 1), riding on three-wheeler bicycle, and tracking on game toys in parks (Auxter, Pyfer & Huettig, 2001; Beckerleg, 2009; Martinez, 2006; Moor, 2008).

Table 1  
*An example of aquatic exercises and play skills*

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- Leg kick while sitting on the pool deck
  - Leg kick with a prone body position on the pool deck
  - Forward walking in the pool
  - Snake play as group
  - To pedal in supine position on the water
  - Paired kangaroo jumps
  - Slow jog
  - Free style swimming with standing position in the water
  - Shoulder abduction and adduction in the water (flap playing)
  - Throw ball into life ring
- 

Cardiovascular and muscular endurance should be developed in the children with autism who are aged between 6 and 8. There are various sport activities for these children such as running, riding on bicycle, balance activities (spinning and walking on the line), water games, swimming, walking, riding stationary bike, two or three-wheeler bicycle, tracking, dancing, and using trampoline (Auxter, Pyfer & Huetting, 2001; Lerner-Baron, 2007; Menear & Smith, 2008; Moor; 2008).

### **Fundamental approaches for teaching exercise and sports**

Owing to the characteristics of the children with autism, special education techniques are essential to teach behaviors and skills. For almost fifty years, applied behavior analysis (ABA) has been used for decreasing inappropriate behaviors, increasing appropriate behaviors, teaching new skills, and generalizing and maintaining learned skills (Steege, Mace, Perry & Longenecker, 2007). Special education methods and approaches have to be utilized to teach skills and behaviors owing to characteristics of the children with autism. Various ABA-oriented teaching techniques were developed for effective teaching. Direct teaching, errorless teaching, and discrete trial teaching techniques were developed based on ABA for effective teaching to the children with autism. Especially, errorless teaching strategy is extensively used on individuals with autism (Colozzi, Ward & Crotty, 2008; Dogoe & Banda, 2009; Tekin-İftar, 2008).

The basic elements of the errorless teaching strategies are providing attention clues for the children with autism, delivering task direction or doing environmental arrangements, delivering prompting, providing a response from the child, delivering reinforcement when the child responds appropriately, and frequent assessment performance of the child before, during and after teaching. Task direction (e.g. “throw ball”) with prompt should be given to the child for initiating target skill, since the child could perform target



have difficulties in terms of generalization of learned behaviors or acquired skills in natural environment (Reid, O'Connor & Lloyd, 2003; Steege, Mace, Perry & Longenecker, 2007). Researchers state that learning in natural environment and with student-centered techniques promote generalization of the new acquired skills (Cowan & Allen; 2007; Reid, O'Connor & Lloyd, 2003). Attractive and interesting objects for the child initiate a teaching process by the child himself. During teaching sessions, objects or games are delivered to the child as a natural result of child's reactions (Grisham-Brown, Hemmeter & Pretti-Frontczak, 2006; Noonan & McCormick, 2006). For example, when Ali goes to a sports center, he gets on the trampoline and hops. The activity improves his balance skill, and bottom extremity is used for it. The skill is a suitable activity, and it is initiated by the child. The activity is continued by the child for a certain period, and then Ali's favorite toy car is given to him to play for reinforcement. After playing with the toy car, Ali throws the balls on the floor to various directions. The throwing ball activity is maintained during the session. Instructor recommends Ali as "You should throw the balls to the basketball hoop". If Ali does not want to perform it, reinforcement is not provided to Ali.

There are many studies in related literature on teaching single and chain skills such as teaching relative names (Akmanoglu & Batu, 2005), toilet training (Cicero & Pfadt, 2002), security (Winterling, Gast, Wolery & Farmer, 1992), communication skills (Charlop & Trasowech, 1991), leisure skills (Kurt & Tekin-İftar, 2008), and daily living activities (Batu, Ergenekon, Erbas & Akmanoglu, 2004) to the children with autism to benefit from errorless teaching strategy.

In addition to its practice in developing academic, self-care and language skills, errorless teaching strategies can also be used in teaching exercise skills and sports (Yanardağ, Ergun & Yılmaz, 2009; Yılmaz, Birkan, Konukman & Erkan, 2005; Yılmaz, Konukman, Birkan, Özen, Yanardağ & Çamursoy, 2010). Findings of these studies, which focused play and swimming skills in the pool by errorless teaching strategy on children with autism, showed that the teaching method was effective for providing exercise skills and sport drills (Yanardağ, Ergun & Yılmaz, 2009; Yılmaz, Birkan, Konukman & Erkan, 2005; Yılmaz, Konukman, Birkan, Özen, Yanardağ & Çamursoy, 2010).

Yanardag, Ergun and Yılmaz (2009) investigated the effects of a 12-week water and land-based exercise training on the development of cardiovascular endurance, grip strength, speed and agility, flexibility, and body composition of eight children with autism, who were aged between 5 to 7. Pool group's activities included leg kicking while sitting on the pool deck, walking in the pool, kangaroo play, snake play, pedalling in the water, and throwing a ball into a life ring. Land group's activities included walking in treadmill, hopping/jumping on trampoline, throwing a ball at target, and mounting on a hobbyhorse. Both land and water exercise trainings were performed by using special education intervention called "most to least prompting procedure" by one-to-one teaching format. These training programmes were performed for 1 hour, 3 days per week for 3 months with each group. The results showed that there were significant differences within the groups in scores of cardiovascular endurance, grip strength, speed

and agility, flexibility tests ( $p < .05$ ) in pre- and post-tests results. The comparison of both post-test results between groups, there were no significant differences ( $p > .05$ ).

Yılmaz, Birkan, Konukman and Erkan (2005) examined the effects of constant time delay procedure in aquatic play skills (kangaroo play, snake play, pedalling in the water) of four children with autism, from 7 to 9 years old. A single subject multiple probe model across behaviors was used. Data were collected over a 10-week period using the single opportunity method as an intervention. Results showed that all subjects maintained their successful play skills. Additionally, this trend was protected during the first, second, and fourth week of maintenance phases. Findings of the study revealed that constant time delay procedure was an effective way of teaching and maintaining aquatic skills of children with autism.

Yılmaz, Konukman, Birkan, Özen, Yanardağ and Çamursoy (2010) investigated the effects of constant time delay procedure in swimming rotational skills of three children with autism, from 8 to 9 years old. A single subject multiple baseline model across behaviors was used. Data were collected over a 10-week period using the single opportunity method as intervention. After the study, all of the subjects performed aquatic rotational skills correctly, this success maintained for the first, second, and fourth week of generalization phases. Findings of the study showed that constant time delay procedure in errorless teaching strategies was an effective way of the teaching swimming rotational skills for children with autism.

When the literature was reviewed it was observed that there are various studies which did not utilize errorless teaching strategies while dealing with performing sports and exercises with children with autism (Fragala-Pinkham, Haley & O'Neil, 2008; Pan, 2010). Fragala-Pinkham, Haley and O'Neil (2008) examined the effects of underwater exercise training on cardiovascular endurance of six children with autism and ten children with other developmental disabilities, who were aged between 6-11 ages. The underwater exercise training was performed as a group arrangement in the pool over 14-weeks, and two sessions per week. Cardiovascular endurance, muscle strength, motor skills and heart rate were measured before and after training. The results of this study showed that cardiovascular endurance was developed, but muscle strength and motor skills were not improved significantly. Conclusion of the study was that underwater exercise training enhanced cardiovascular endurance by keeping target-training heart rate for children with special needs.

Pan (2010) investigated effects of ten-week aquatic exercise program on pool skills (HAAR) and social behaviors (SSBS-2) of sixteen children with autism, from 6 to 9 years old. Measurement of social behaviors in Pan's (2010) study covered both social competences (peer relations, self-management/compliance, academic behavior), and anti social behaviors (hostile-irritable, antisocial-aggressive, defiance). In the first 10-week phase (phase I), eight children (group A) received aquatic exercise training while other eight children (group B) did not. A second 10-week phase (phase II) immediately followed, with exercise training reversed. At the end of the study, the aquatic skills were improved in both groups. After phase I, social improvements were seen in group A.

Subsequent to phase II, social improvements were seen in the group B. The improvements in aquatic skills were only maintained in the group A after phase II. Results of this study showed that aquatic exercise program have potential effect on the development of social skills for children with autism.

Beyond errorless teaching strategy, visual activity schedule should be used during teaching and performing sports and physical activity. Visual support is placed to the center of the sports hall for following the next activity (Figure 1). Children with autism can predict the order of activities, and transition independently by the schedule (Fittipaldi-Wert & Mowling, 2009; Reid G. & O'Connor, 2003).

While performing physical activities via visual support, child with autism has difficulties to follow the visual schedule; thus picture exchange should be preferred to avoid these difficulties. When the teacher gives the picture of the next activity to the child, the following activity can be predicted more easily (Groft-Jones & Block, 2006; Housten-Wilson & Lieberman, 2003).

Concerning the teaching of sport activities, children with autism should be provided opportunities to select his own choice. The child could gain self-control if provided with a choice opportunity (Reid, O'Connor & Lloyd, 2003, Reid & O'Connor, 2003). The teacher may provide two options or opportunities to the child during sport. For example, "Ali, which one would you like to throw to your friend? The red ball, or the blue ball in your hand?"

It is known that participating level in physical activity and sports in children with autism is not adequate because of their social restrictions and characteristics. Moreover, another restriction is the lack of opportunities related to engaging sports and physical activity (Reid, 2005; Pan & Frey, 2005). While special education methods must be utilized to get physical activity and sports for children with autism, some additional measures, which are mentioned below, may be adapted in activities.

### **Issues to be considered in Exercise and Sports**

Once the children with autism get into a new physical environment, they need time to orientate there. Therefore they need an adaptation period in the sports hall or play field at first, as well as they need to become familiar with other children and the teacher. In the orientation phase, the children with autism may exhibit inappropriate behaviors, however, exhibiting such behaviors is a temporary occasion, but this is a temporary condition (Reid, O'Connor & Lloyd, 2003).

A routine is maintained during sport activities; each child's daily routine should be taken into account. During the activities performed in the new place, the child's routine and favor should be considered by the specialists (Menear & Smith, 2008; Groft-Jones & Block, 2006). Same routine should be sustained for various activities. When the order of activities on the list is changed, child does not perform the activity that replaced by the

previous one. This leads to an increase in inappropriate behavior and terminates the focus on the lesson (Reid & O'Connor, 2003).

Warm-up exercises are performed with music and the same melody should be played in every training session. In the transition from a melody to a new one, old melody should be completely taught, and then the new melody should be integrated in the routine sports program (Auxter, Pyfer & Huetting, 2001).

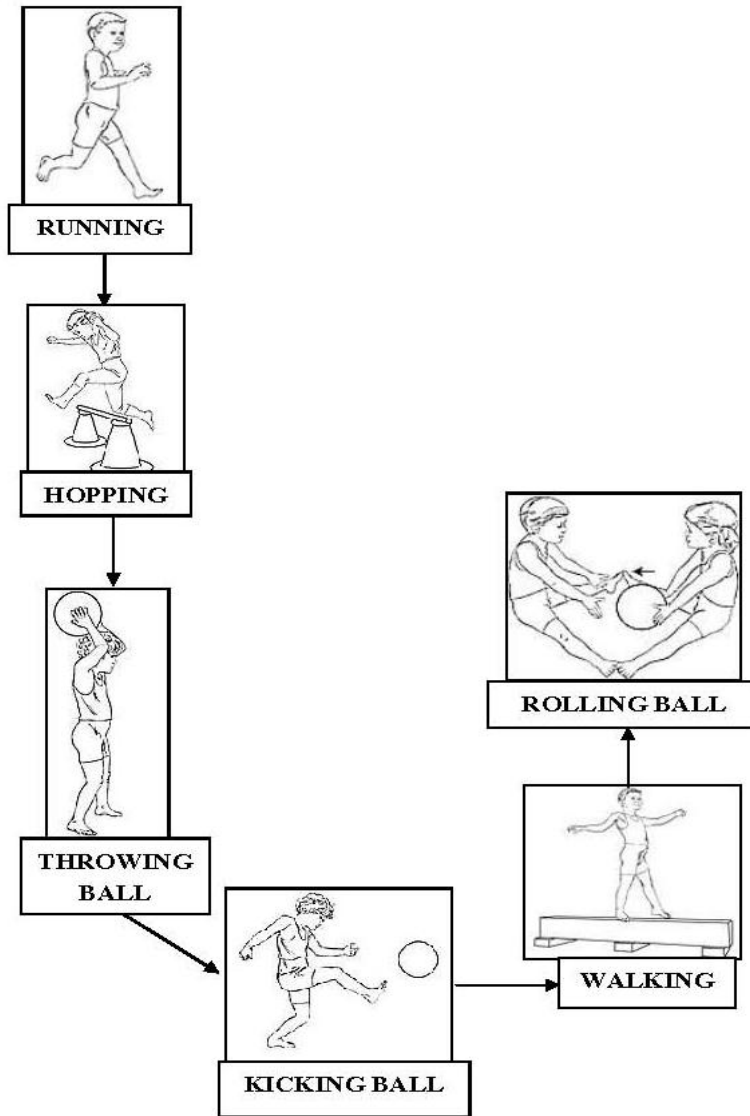


Figure 1. Daily Activity Schedule

Since children with autism show uneven reactions to the environmental sensory stimulus, the level of stimulants such as light, voice and temperature on the sports hall are important. Sports hall or field should not be large, loud, and crowded; if it is large, a part of the sports hall should be divided by a funnel or color marks, and this part of the sport hall should be used as the playground. When the sports hall is too noisy, and child with autism is disturbed by this noise, an earflap might be used to reduce the noise in this setting, so as to make the child to focus on the activity easily. In the meantime, the program can be practiced effectively. The best choice is to make a schedule on the quiet days of the sports hall (Groft-Jones & Block, 2006; Menear & Smith, 2008).

Every physical activity or sports consist of motor skills and movements, and these skills are practiced frequently. While performing these movements, both physical environment and instruments should be identical. If the child with autism is practicing throwing a ball towards the teacher, the same sized and colored ball should be used in each session; because these children would prefer maintaining the same routine (Auxter, Pyfer & Huetting, 2001; Groft-Jones & Block, 2006).

Teachers should use eye contact during sports, because these children have difficulty in keeping eye contact. The poor eye contact influences poor participation in physical activity and sports, and social integration (Reid, 2005). Teacher should keep the level of the child's eye to provide eye contact during sports and playing, and touch cheek or fingers of the child, and then provide a verbal stimulant like "Ali! Look at me". Teacher should give task direction such as "throw the ball" to the child for beginning the activity while maintaining eye contact. Task direction should not be given when the eye contact is lost (Reid, O'Connor & Lloyd, 2003).

Task direction, which is describing the movement, should be simple, and the same words should be used in each time. These children can easily misunderstand the meaning of complex verbal stimuli. If the child is familiar with the phrase "plastic ball" while exercising with family, teacher should not use the phrase "plastic disc" at school (Auxter, Pyfer & Huetting, 2001; Reid, O'Connor & Lloyd, 2003).

Teacher should interact with children with autism during sports. While coming into the sports hall, teacher should welcome them with phrases such as "hello, good morning" as verbal or gesture. This connection between teacher and child promotes children's motor skills (Groft-Jones & Block, 2006; Housten-Wilson & Lieberman, 2003).

The teacher should get the information concerning the subjects the child is interested in; and provide them the opportunity to talk on these subjects before the exercise. The child should be encouraged to attend the activity, and guided throughout the activity. Child's motivation to participate in sport activities should be maintained by the teacher. Some verbal feedback such as "go on" or "good shoot" should be given to child with autism while s/he is participating to the sports or physical activities. Child's inappropriate behaviors should be eliminated. If the child with autism shows aggressive behaviors such as kicking the walls or doors, he/she should be directed to kick sports equipments

like a ball instead of a wall or a door. When the child cries, the teacher should give a break. The child should be taken out the sports hall for a walk until s/he stops crying, and then they should come back to the hall to continue the activity (Menear & Smith, 2008; Groft-Jones & Block, 2006; Housten-Wilson & Lieberman, 2003; Auxter, Pyfer & Huetting, 2001).

Appropriate behaviors of the children with autism should be reinforced, and rewarded for performing activity that is planned Reinforcement, which was defined by the teacher prior to the session, should be practiced systematically. These reinforcements and rewards should be preplanned, such as after every three activities or every five minutes or after all the activities in such a way that addiction to reinforcement is avoided. Comic stickers, coins, foods, free time for playing his/her favorite toys might be appropriate rewards (Groft-Jones & Block, 2006; Housten-Wilson & Lieberman, 2003; Reid, O'Connor & Lloyd, 2003).

A verbal expression or prompt by the teacher may not be as effective as a visual prompt. A child with autism who hops on the trampoline should not be waited on the the trampoline after finishing the exercise, and s/he should be allowed to go away. The teacher should use visual support, such as the picture of a pair of feet stepped on the floor, instead of using verbal prompt such as "wait". Visual prompt could be more effective for placing his/her foot on the picture and waiting on it after hopping on the trampoline.

### **Conclusion and Suggestions**

Children with autism cannot sufficiently benefit from leisure skills such as sports and physical activities owing to social isolation, restricted communication skills, poor eye contact, stereotypic movements and behaviors, inadequate opportunity for activity, and difficulties to maintain activity. Sports and physical activities for children with autism should be developed according to their preferences and requirements in the natural environments. Size and noise in the sports hall, number of people in the setting, material choice, the teaching strategy, behavior control strategies, and maintaining routines are essential topics for performing sports and acquiring benefits. These strategies specified above have been beneficial for solving problems encountered during sports and physical activities, and lead children to be much more willing to participate in daily life activities and active throughout their lives. Physical activities and sports, which are preplanned by people close to children with autism in their environment such as parents, siblings, special education teacher, physical educator or other specialists in the natural environments such as school yard, sports hall, park, play field and swimming pool, will be beneficial in generalization of appropriate behaviors. During the transition from adolescence to adulthood, young people with autism should be provided with exercises designed to engage in community-based activities in addition to sports and physical activities. The motor skills and pre-occupational works for community-based activities should be inserted in their programs. Sports and exercise for children with autism provide not only developing the physical performance but also improving social

integration and communication skills, and reduce the possibility of showing inappropriate behaviors.

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# İşitme Engelli Çocuğu Olan ve Olmayan Ana-Babaların Stres, Depresyon ve Sürekli Kaygı Belirtileri Yönünden Karşılaştırılması<sup>2</sup>

## Özet

*Aileye işitme engelli bireyin katılımının ana-baba üzerindeki uzun erimli psikolojik etkilerine ilişkin araştırmaların tutarlı sonuçlar verdiğini söylemek güçtür. Bu çerçevede araştırmanın amacı, işitme engelli çocuğu olan (n=230) ve olmayan (n=230) ana-babaların stres, depresyon ve sürekli kaygı belirtileri yönünden karşılaştırılmasıdır. Sözü geçen değişkenlerin düzeyinin belirlenebilmesi için katılımcılara Stres Belirti Listesi, Beck Depresyon Envanteri ve Sürekli Kaygı Ölçeği uygulanmıştır. Ölçeklerden elde edilen toplam puanlar üzerinde gerçekleştirilen 2 (grup) x 2 (cinsiyet) Faktörlü Varyans Analizi bulguları, işitme engelli çocuk ana-babalarının –özellikle de annelerin- psikiyatrik/psikolojik belirti geliştirme açısından risk altında olabileceklerini ortaya koymuştur. Bulguların tartışılmasında, yayınlarla tutarlılık göstermeyen sonuçların özellikle vurgulanması, farkın olası nedenlerinin irdelenmesi ve işitme engelli çocuğa sahip olmanın sosyo-kültürel boyutları temel alınmıştır.*

*Anahtar Sözcükler: İşitme engeli, İşitme engelli çocuklar, Ana-baba, Stres, Depresyon, Sürekli kaygı.*

## Giriş

Engelli bireyin katılımının aileyi nasıl etkilediğiyle ilgili çalışmalarda sistem kuramının öne çıktığı görülmektedir. Sistem kuramına göre aile, biyolojik yakınlığın ötesinde, paylaşılan alışkanlıklar ve kurallar çerçevesinde, sürekli etkileşim içinde olan bireylerden oluşmuş bir sistemdir (Feher-Prout, 1996). Sistem kuramının işitme engelli bireylerin ailelerine de uygulanabileceğine inanan ve bu bireylerin aileleri konusunda uzmanlaşmış bir kuramcı ve uygulamacı olan Luterman'a (1987) göre, ailenin her

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<sup>2</sup> Bu çalışma, yazarın Ankara Üniversitesi Sosyal Bilimler Enstitüsü Uygulamalı Psikoloji Anabilim Dalı'nda gerçekleştirdiği yüksek lisans tezinin bir kısmının son yayınlarla desteklenmiş özeti'dir. Yazar araştırmada katılımcı olarak yer almayı kabul eden tüm annelere ve babalara teşekkür eder.

üyesinin kendine özgü özellikleri ve davranışları vardır. Bu özellik ve davranışların toplamı aileyi oluşturmakta, ancak ailenin bütününe ilişkin yeterli bilgi vermemektedir. Çünkü bir bütün olarak aile, üyelerinin toplamından daha büyük olup, kendine özgü bir yapıya, kurallara, işleve ve gelişime sahiptir. Aileye engelli bir bireyin katılması, o ana kadar süregelen sistemi tümüyle yok etmese de köklü değişikliklere uğratmaktadır. Buradaki önemli soru, işitme engelli bireyin aile sistemini hangi düzencele etkilediği ve stres yarattığıdır. Ailenin önemli özelliklerinden biri, değişim ve durağanlık (stability) arasında sürekli bir dengenin olmasıdır. Aileye işitme engelli bireyin katılımı çok keskin bir değişiklik yaratacağından, ailenin “durağanlığı sürdürme” işleviyle çakışacaktır. Dolayısıyla bu durum, sistemdeki dengeli güçlerle değişim güçleri arasında dinamik bir gerilim yaratacak ve üyeler tarafından önemli bir stres kaynağı olarak algılanacaktır (Kurtzer-White ve Luterman, 2003; Luterman, 1979, 1987, 1997).

Değişimin yarattığı stresin aile ve ana-babalar üzerinde yalnızca olumsuz değil, olumlu etkileri de olabileceği bildirilmektedir. Örneğin, Kazak ve Marvin’in (1984) bu alandaki bir çalışması, eşlerin evliliklerinin engelli bir çocuğa sahip olduktan sonra daha da güçlendiğini göstermiştir. Bu yazarlara göre eşler, çocuklarının gelişmesi için sürekli “ortak bir çaba” göstermişler ve bu çaba onları daha da birleştirip, ilişkilerini güçlendirmiştir. Benzer bir şekilde, Guerin ve Fay’e (1988) göre, engelli çocuğun aileye katılması, bir tür anne-baba-çocuk üçgenlemesi (triangulation) oluşturarak, tüm ilgilerini engelli çocuğa yönlendiren eşlerin, sorunlarını daha hafif algılamalarına yol açabilmektedir. Bir anlamda engelli çocuk, “ilişkinin bastonu” görevini yüklenmektedir.

İşitme engelli çocukların ana-babalarını konu alan çalışmalarda da işitme engelli bireyin katılımının aile sistemini her zaman olumsuz etkilemediği yönünde bazı bildirimler bulunmaktadır. Örneğin, Maedow-Orlans’ın (1994) çalışması, işitme engelli çocuğu olan ana-babalarla olmayanlar arasında stres belirti düzeyi açısından bir fark olmadığını ortaya koymuştur. Benzer biçimde, Fışıloğlu ve Fışıloğlu’nun (1996) araştırmalarında, işitme engelli bir çocuğa sahip olma ile işiten bir çocuğa sahip olma arasında ailenin genel işlevleri açısından bir fark saptanamamıştır. İlginç bir bulguyla sonuçlanan çalışmalarında Henggeler, Watson, Whelan ve Malone (1990), işitme engelli çocuğu olan ve olmayan ana-babaları stres ve psikiyatrik belirtiler yönünden karşılaştırmış; işitme engelli çocuğa sahip ana-babalarda stres ve psikiyatrik belirti düzeyini karşılaştırma grubundan daha düşük bulmuşlardır. Yazarlara göre sonuç şaşırtıcı sayılmamalıdır, çünkü işitme engelli çocuğa sahip ana-babalar zaten daha az belirti geliştirdikleri için araştırmaya katılmayı kabul etmiş olabilirler.

Yukarıda değinildiği biçimiyle, işitme engelli bir çocuğa sahip olmanın bazı durumlarda ve bazı açılardan olumlu sonuçlar doğurduğuna ya da en azından olumsuz sonuçlar doğurmadığına ilişkin bazı yayınlar bulunsa da; alanyazında daha yoğun olarak desteklenen düşünce, engelli bir çocuğa sahip olmanın ailenin bir bütün olarak önemli sarsıntılar geçirmesine neden olduğu yönündedir (Canbul, 1995; Hintermair, 2006; Jackson ve Turnbull, 2004; Longo ve Bond, 1984; Küçükler, 2006; Pipp-Siegel, Sedey ve Yoshinaga-Itano, 2002; Quittner, Glueckauf ve Jackson, 1990; Şen, 1991).

Engelli çocuğu olan ana-babaların ilk tepkilerini açıklamada en sık kullanılan model “Aşama Modeli”dir (Akkök, 1997). Modelin özgün hali 1969’da Elizabeth Kübler-Ross tarafından ölümcül hastalığı olan bireyler ve yakınları için geliştirilmiştir. Buna göre, bir yakınlarının –özellikle de kanser hastalarının- ölümünü bekleyen insanlar, ölümcül hastalık tanısının ardından yadsıma, kızgınlık ve öfke, pazarlık, depresyon ve kabullenme gibi bir dizi duygusal tepki aşamasından geçerler. Bu aşamalar, yas sürecinin evreleridir (Kübler-Ross, 1969). Sloman, Springer ve Vachon’a (1993) göre, bu duygular yalnızca fiziksel ölüm ya da kayıpların ardından değil, ana-baba açısından, “mükemmel” bir çocuğa sahip olma rüyasının ölümüyle de ortaya çıkabilir. Dolayısıyla fiziksel ölüm ya da kayıp “obje kaybı”, engelli bir çocuğa sahip olmak ise “proje kaybı” olarak kavramsallaştırılabilir (Doğan, 2009). Schonz’un, Kübler-Ross’a dayanarak işitme engelli çocuk ana-babaları için uyarladığı modelde evreler sırasıyla şöyledir (Gargiulo, 1985; Luterman, 1987): Şok, tanıma/anlamlandırma, yadsıma, kabullenme ve yeniden yapılanma. Bu evrelerin uzunluğu ve yoğunluğu her ana-baba için değişse de süreç evrensel bir sırayı izlemekte, gelişimsel geçiş dönemlerinde yeniden yaşanabilmekte (Kampfe, 1989) ve kriz durumunda yaşanan tepkilerle benzerlik göstermektedir (Luterman, 1979).

Aşama modeli, ailelerin ilk tepkilerini açıklamada sık kullanılmasına karşın, ölüm ve kayıp karşısında yaşanan yas sürecine dayanan bu modeli, işitme engelli çocukların ailelerinde genelgeçer bir açıklama biçimiymiş gibi kabul etmenin önemli sakıncaları olabilir. Çünkü ölüm ya da fiziksel kayıptan sonra, yaşanan yasin nesnesi artık yoktur; dolayısıyla bu yasin başarılı bir şekilde çözümlenme olasılığı daha yüksektir. Ancak işitme engeli süregelen bir engel türüdür ve yasin nesnesi sürekli olarak aileyle yaşamaktadır; dolayısıyla ailenin yaşadığı duygular da çoğu zaman süregelen bir hal alacaktır (Kurtzer-White ve Luterman, 2003). Benzer bir yaklaşımla, Quittner ve arkadaşlarına (1990) göre, işitme engelli çocuğa sahip olmak gibi süregelen bir stresle yaşayan ana-babalarla yapılmış birçok çalışma, stres kaynağının bu niteliğini göz ardı etmektedir. Diğer bir anlatımla, bu konudaki çalışmaların çoğu geçici ve süregelen stres ayırımını yapmakta başarılı olamamıştır. Bu çalışmalarda, işitme engelli çocuğa sahip olma geçici (akut) stres olarak değerlendirilerek, gösterilen tepkiler de krize verilen tepkilere eş tutulmakta, dolayısıyla işitme engeli tanısının ana-babalarda yaratabileceği süregelen stres gibi uzun süreli etkiler gözden kaçırılmaktadır. Öte yandan, bazı araştırmacılar, işitme engelinin aile için süregelen bir stres kaynağı olduğunu kabul etmekte; ancak bu stresin yarattığı gerilimin engele uyum sürecine girilmesini her zaman engellemediğini vurgulamaktadırlar (Adams ve Tidwell, 1989; Morgan-Redshaw, Wilgosh ve Bibby, 1990).

İşitme engelli çocuğa sahip olmanın süregelen ana-baba stresiyle ilgili olduğuna dair görüş son yıllarda daha çok kabul görmeye başlamıştır (Feher-Prout, 1996; Jackson ve Turnbull, 2004; Kurtzer-White ve Luterman, 2003; Mapp ve Hudson, 1997; Morgan-Redshaw ve ark., 1990). Bu alandaki önemli araştırmalardan biri olan Quittner ve arkadaşlarının (1990) işitme engelli çocuk annelerinin ( $n=96$ ) sağlıklı çocuk anneleriyle ( $n=118$ ) karşılaştırılmasına dayanan çalışmalarında, işitme engelinin süregelen bir stres kaynağı olduğu vurgulanmış ve işitme engelli çocuk annelerinin kontrol grubuna oranla

daha yüksek düzeylerde stres, depresyon, kaygı belirtisi geliştirdikleri saptanmıştır. İşitme engelli çocuk annelerinin stres düzeylerinin babalardan daha yüksek olduğu da başka araştırmalarca vurgulanan bulgulardandır (Hagborg, 1989). Çalışmalar, işitme engelli çocuk ana-babalarında süregelen stresin yanında depresyon ve süregelen yas (Kurtzer-White ve Luterman, 2003), sürekli kaygı ve öfke belirtileri (Quittner ve ark., 1990), yaşam kalitesinde bozulma (Jackson ve Turnbull, 2004), düşük benlik saygısı (Konstantareas ve Lampropoulou, 1995), alkolizm ve intihar problemleri (Şen, 1991) gibi psikolojik sorunların da yoğun olarak görüldüğüne işaret etmektedir. Ana-babaların stres düzeyi ile ilişkili etmenlerin ise çocuğun yaşı, ana-babanın yaşı, işitme kaybı derecesi, dili kullanma düzeyi, çocukta ek engelin varlığı, aile içi çatışmalar, düşük gelir düzeyi, yetersiz sosyal destek ağı ve başa çıkma düzeneklerinin etkili kullanılmaması olduğu bildirilmektedir (Hintermair, 2006; Pipp-Siegel ve ark., 2002). Ayrıca, psikopatoloji ve stres ilişkilerine odaklanan araştırmalarda, stresle en yakın ilişkiyi birinci sırada depresyon, ikinci sırada ise kaygının gösterdiği belirtilmektedir (Coyne ve Downey, 1991). Bu bulgulardan yola çıkılarak, işitme engelli çocuk anababalarının psikiyatrik belirti geliştirme açısından normal popülasyona oranla daha fazla risk altında oldukları söylenebilir (Henggeler ve ark., 1990).

Özetle, az sayıda araştırma tersini söylemesine karşın, işitme engelli çocuğu olan ana-babaların stres ve stresle yakın ilişki gösteren kaygı ve depresyon belirtilerini daha yoğun yaşadıkları yönündeki yayınların oranı daha yüksektir. Araştırma sonuçlarının tam bir tutarlık göstermemesi, araştırmalarda yer alan örneklem özelliklerinin birbirinden önemli derecede farklılaşması, katılımcı sayılarının yüksek olmaması (Pipp-Siegel ve ark., 2002), babalara annelere oranla daha az yer verilmesi araştırmaların genel sınırlılıkları olarak öne çıkmaktadır. Ayrıca konu ile ilgili çalışmaların sayısı ülkemizde görece olarak azdır. Sözü geçen sınırlılıkları çalışmanın gerekçelerinden biri olarak kabul eden, sınırlılıkların en azından bir kısmından olanaklar ölçüsünde kaçınmaya çalışan ve işitme engelli çocuk ana-babasının yaşadığı stresin süregelen olduğu düşüncesine dayanan bu araştırmanın amacı; işitme engelli çocuğu olan ve olmayan ana-babaların stres, depresyon ve sürekli kaygı belirtileri yönünden karşılaştırılmasıdır.

## **Yöntem**

### **Desen**

İşitme engelli çocuğu olan ve olmayan ana-babaların stres, depresyon ve sürekli kaygı belirtileri yönünden karşılaştırıldığı bu çalışmada nedensel-karşılaştırmalı araştırma deseni kullanılmıştır. Nedensel-karşılaştırmalı araştırmalarda iki ya da daha fazla grup (burada işitme engelli çocuğu olan ve olmayan ana-baba grupları) bazı özellikler yönünden eşleştirilerek, bir ya da daha fazla değişken (burada stres, depresyon ve kaygı belirtileri) yönünden karşılaştırılır (Gay, Mills ve Airasian, 2006, s.224).

### **Katılımcılar**

Araştırmada, çocuklarının yaşları 4-18 arasında değişen anne ve babalar ( $N=460$ ) yer almıştır. Katılımcılar, iki temel gruba ayrılmıştır: 1. grupta, işitme engelli çocukları Anadolu Üniversitesi İşitme Engelli Çocuklar Eğitim Araştırma Uygulama Merkezi'ne

[İÇEM] devam eden anne ve babalar ( $n=230$ ); 2. grupta ise, işiten çocukları Eskişehir ilindeki çeşitli ilk ve ortaöğretim kurumlarında öğrenim gören anne ve babalar ( $n=230$ ) yer almıştır. Her iki grupta annelerin ( $n=115$ ) ve babaların ( $n=115$ ) sayısı birbirine eşittir.

1. grubun yaş ortalaması anneler için 35,84 ( $S=6,55$ ), babalar için 40.85 ( $S=6,80$ ), çocuklar için 10,57 ( $S=4,17$ ); 2. grubun ise anneler için 36,00 ( $S=5,13$ ), babalar için 40.50 ( $S=6,90$ ) ve çocuklar için 10,04 ( $S=3,23$ )'tür. İÇEM dosyalarından edinilen bilgilere göre, 1. grupta yer alan ebeveynlerin işitme engelli çocuklarının hepsinde çok ileri derecede (96 dBHL<sup>1</sup> ve üstü) işitme kaybı vardır ve öğrenimlerini doğal-ışitsel-sözel yöntemle gerçekleştirmektedirler.

**Grupların Eşleştirilmesi.** Araştırmada yer alan iki grup stres, depresyon ve kaygı düzeyi üzerinde etkili olabilecek bazı değişkenler yönünden eşleştirilmiştir:

1. *Psikiyatrik tedavi almama:* Her iki gruptaki ana-babalar, herhangi bir psikolojik/psikiyatrik tedavi almadıklarını belirtmişlerdir.

2. *Çocuklarda ek sorun bulunmaması:* Her iki gruptaki ana-babalar, ailelerinde engelli ya da sağlık sorunu olan (1. grup için işitme engeli dışında) çocuğun olmadığını bildirmişlerdir.

3. *Ana-baba yaşı:* 1. grup ve 2. grupta yer alan ana-babaların yaş ortalamaları arasında anlamlı bir fark yoktur,  $t_{(2,458)} = .175, p > .05$ .

4. *Çocuk yaşı:* 1. grup ve 2. grupta yer alan çocukların yaş ortalamaları arasında anlamlı bir fark yoktur,  $t_{(2,458)} = 1.49, p > .05$ .

Yukarıda bildirilen değişkenlere ek olarak, ana-babaların stres, depresyon ve kaygı düzeyi üzerinde etkili olabileceği düşünülen çocuğun cinsiyeti, herhangi bir işte çalışıp çalışmama durumu ve ailenin gelir düzeyi gibi kategorik değişkenlerin dağılımı iki grupta birbirine yakındır. Ne var ki, 2. gruptaki ana-babaların (örneğin, üniversite ve üstü eğitim almış olanların sayısı 76 ) eğitim düzeyinin 1. gruptaki ana-babalardan (örneğin, üniversite ve üstü eğitim almış olanların sayısı 57) kısmen daha yüksek olduğu gözlenmiştir. Ayrıca, 1. gruptaki ana-babaların 45'i son üç ay içinde travmatik bir olay yaşadıklarını bildirmişken, bu sayı ikinci grup için 28'dir. 1. Gruptaki ana-babaların %14.8'inin birden çok işitme engelli çocuğu vardır.

### **Veri Toplama Araçları**

**Bilgi Toplama Formu (BTF).** Araştırmacı tarafından geliştirilen iki farklı Bilgi Toplama Formu (BTF) kullanılmıştır. Ana-babanın cinsiyeti, yaşı, eğitim düzeyi, çalışma durumu, ailenin gelir düzeyi, ailedeki çocuk sayısı, çocuğun yaşı, cinsiyeti, ana-babanın gün içinde çocukla geçirdiği zaman, son üç ay içinde travmatik bir olayın yaşanıp yaşanmadığı, ailede engelli ya da sağlık sorunlu çocuğun olup olmadığı, psikiyatrik/psikolojik tedavi alıp almama gibi özellikleri sorgulayan soruların yer aldığı

<sup>1</sup> dBHL: dB=decibel (desibel; sesin gücünü ifade etmek üzere benimsenen ölçek), HL=hearing level (işitme düzeyi). İşitme kaybı farklı derecelerde görülebilir. İngiliz derecelendirme sistemine göre bu düzeyler; hafif derecede işitme kaybı (25-40 dBHL), orta derecede işitme kaybı (41-70 dBHL), ileri derecede işitme kaybı (71-95 dBHL) ve çok ileri derecede işitme kaybı (96 dBHL ve üstü)'dir (Girgin, 2003).

BTF-I işitme engelli çocuğu olmayan 2. grup ebeveynlere verilmiştir. BTF-II ise, işitme engelli çocuğa sahip ebeveynlere (2. grup) yöneliktir ve yukarıdaki özelliklere ek olarak, çocuğun işitme engeli tanısı aldığı yaş ve ailede başka işitme engelli çocuğun bulunup bulunmadığına ilişkin soruları içermektedir.

**Stres Belirti Listesi (SBL).** DasGupta tarafından 1992’de stres durumundaki belirtileri saptamak amacıyla geliştirilen ve 38 maddeden oluşan ölçeğin Türkçe formu Hovardaoğlu (1997) tarafından oluşturulmuştur. Ölçekten elde edilebilecek en yüksek puan 152, en düşük puan 38’dir. Yüksek puanlar belirti sıklığında artışa işaret etmektedir. Türkçe form üzerinde yapılan faktör analizinde üç faktör saptanmıştır: (1) bilişsel-duyuşsal, (2) fizyolojik, (3) ağrı-yakınma faktörleridir. Hovardaoğlu’na göre, bu faktörlere verilen adlar tartışmalı olsa da, stres durumunda ortaya çıkan tepkileri tek boyutlu düşünmek olanaklı değildir. Ölçeğin, araştırmalarda alt-faktör puanlarına dayanılarak kullanılabilmesi gibi, toplam puan olarak da kullanılabilmesi bildirilmiştir. İki yarım test güvenilirliği bütün faktörler için .62-.73 arasında değişmektedir.

**Beck Depresyon Envanteri (BDE).** İlk formu 1961’de, düzeltilmiş hali de 1978’de Beck Depression Inventory (BDI) adıyla yayınlanan ölçek, A. T. Beck ve arkadaşları tarafından geliştirilmiştir. BDI, depresyonda görülen somatik, duygusal, bilişsel ve güdüsel belirtileri ölçmek için kullanılan 21 maddelik bir kendini değerlendirme türü ölçektir. BDI’nın 1961 formu ile 1978 formu arasındaki korelasyon katsayısı .87-.94 arasında; iç tutarlılık katsayısı ise .73-.95 arasında değişmektedir. Ayrıca, psikiyatrik ve psikiyatrik olmayan hastalardan elde edilen test-tekrar test ölçümlerine yönelik verilere göre, bu tutarlığın normal örnekleme .68-.83, psikiyatrik hastalarda .48-.86 olduğu saptanmıştır. Ölçeğin, en yüksek ölçüt-bağıntılı geçerliğinin klinisyen gözlemleriyle (.96), en düşük geçerliğinin ise DSM-III ölçütleriyle (.33) olduğu görülmüştür (Savaşır ve Şahin, 1997).

**Durumluk/Sürekli Kaygı Envanteri-Sürekli Kaygı Alt-ölçeği (SKÖ).** SKÖ, Spielberger, Goorsuch ve Lushene tarafından 1970’te geliştirilen Durumluk/Sürekli Kaygı Envanteri’nin 20 maddelik Sürekli Kaygı alt-ölçeğidir. Ölçeğin Türkçe’ye uyarlaması Öner ve Le Compte (1985) tarafından gerçekleştirilmiştir. Bu uyarlama çalışmasında Kuder-Richardson 20 formülüne dayanan alfa korelasyonları ile hesaplanan güvenilirlik katsayıları .83-.87, madde güvenilirliği katsayıları .34-.72, test-tekrar-test güvenilirlik katsayıları ise .71-.86 arasında bulunmuştur. SKÖ’nün yapı geçerliği, İki Faktörlü Kaygı Kuramı çerçevesinde, normal ve hasta Türk örnekleme (N=226) üzerinde sınanmış ve tatmin edici olduğu öne sürülmüştür. Psikiyatri hastalarının normal örneklemeden, sürekli kaygı puanı olarak ortalama 16.97 puan yüksek almasına dayanılarak ölçeğin ölçüt-bağıntılı geçerliliğinin de desteklendiği gösterilmiştir (Öner ve Le Compte, 1985).

Yukarıda özellikleri ayrıntılarıyla açıklanan ölçeklerin bu çalışmada kullanılmasının temel nedenleri şöyle özetlenebilir: Ölçeklerin (a) psikometrik özelliklerinin doyurucu olması, (b) Türkiye kültürü için güvenilirlik ve geçerlik çalışmalarının yapılmış olması,

(c) alanda gerçekleştirilen araştırmalarda sıkça kullanılıyor olması ve (d) bu araştırma kapsamında ele alınan değişkenleri belirlemeye dönük olması.

### **İşlem/Uygulama**

İşitme engelli çocuğu olan 1. gruptaki ana-babalar, araştırmacı tarafından gönderilen ve araştırmanın amacını içeren bir mektupla belirtilen tarihte, araştırmaya katılmak üzere, İÇEM'e davet edilmişlerdir. 15-20 kişilik gruplar halinde yapılan uygulamalarda, ölçek takımının başında bulunan genel açıklama sözel olarak yinelenmiştir. Her ölçeğe ilişkin yönergeler ise, ölçeğin bulunduğu sayfanın başında yazılı olarak verilmiştir. Geniş bir alanda gerçekleştirilen uygulamalarda eşlerin ölçekleri birbirlerinden ayrı olarak doldurmaları sağlanmıştır. Eşlerden birinin, uygulama tarihlerinde, herhangi bir nedenle İÇEM'e gelemediği durumlarda ölçekler, diğer eşle kapalı bir zarf içinde evlerine gönderilmiş ve yine kapalı olarak çocukla merkeze iletilmesi istenmiştir. Bu gruba yapılan uygulamalar yaklaşık üç haftada tamamlanmıştır. Bütün uygulamalarda, ölçek formlarının dağıtılması ve toplanması aşamasında araştırmacıya yardımcı olmak üzere bir başka akademisyen de bulunmuştur.

Çocukları işitme engelli olmayan 2. grup ana-babalara ise bir açıklama yazısı eklenen ölçek takımı kapalı bir zarf içinde ve okulun rehber öğretmeni aracılığıyla gönderilerek, doldurulmuş ölçekleri çocuklarıyla yine okulun rehber öğretmenine ulaştırmaları istenmiştir. Ölçeklerin toplanması rehber öğretmen kontrolünde gerçekleştiği için geri dönüş oranı oldukça yüksek olmuştur (%95). Bu grupta ölçeklerin aynı kişi tarafından doldurulma olasılığı göz önüne alınarak, zarfla gelen ölçekler tek tek kontrol edilmiş ve aynı zarf içindeki iki ölçek takımına verilen yanıtların aynı olması durumunda, bu ölçekler geçersiz sayılmıştır. Sonuç olarak gönderilen toplam 130 ölçek takımından 6'sı geri dönmemiş, geri dönenlerden 2'si anne ve baba aynı yanıtları verdiği için geçersiz sayılmıştır.

### **Bulgular**

Anımsanacağı üzere araştırmanın amacı, işitme engelli çocuğu olan ve olmayan ana-babaların stres, depresyon ve sürekli kaygı belirtileri yönünden karşılaştırılmasıdır. Amaç çerçevesinde, araştırmanın bu bölümünde; (1) her grup ve her ölçek için temel istatistiksel çözümlenmelerde gerekli ortalama ve standart sapma değerleri belirlenmiş, (2) işitme engelli [İE] çocuğa sahip olan ve olmayan ana-babalar arasında, incelenen değişkenler yönünden grup ve cinsiyete göre fark olup olmadığını saptamak üzere, karşılaştırma gruplarının ilgili ölçeklerden aldıkları toplam puanlara, her ölçek için "2 (Grup: işitme engelli çocuğu olan ve olmayan ebeveyn grupları) x 2 (Cinsiyet: anneler ve babalar) Faktörlü Varyans Analizi" uygulanmıştır. Grup x Cinsiyet ortak etkisinin anlamlı bulunduğu durumlar için farkın kaynağını belirlemek üzere Tukey-HSD Testi yapılmıştır. Çözümlenmeler için gerekli ortalama ve standart sapmalar Tablo 1'de yer almaktadır.

Tablo 1

İşitme Engelli Çocukları Olan ve Olmayan Anne ve Babaların Ölçeklerden Aldıkları Puanların Ortalama ve Standart Sapmaları

	1. Grup Ana-Babalar						2. Grup Ana-Babalar					
	Anneler		Babalar		Toplam		Anneler		Babalar		Toplam	
	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S
SBL	65.96	11.10	56.88	10.43	61.42	11.67	59.24	12.03	54.75	9.66	57.00	11.11
BDE	13.11	7.67	9.26	6.18	11.19	7.22	8.04	6.77	7.53	6.80	7.78	6.77
SKÖ	46.41	7.53	42.02	7.09	44.22	7.63	43.07	8.09	40.59	7.26	41.83	7.77

SBL: Stres Belirti Listesi; BDE: Beck Depresyon Envanteri; SKÖ: Sürekli Kaygı Ölçeği

İzleyen kısımda stres belirtileri, depresyon belirtileri ve kaygı belirtileri yönünden gruplar arasında anlamlı bir fark olup olmadığı Varyans Analizi ile araştırılmıştır. Tüm ölçek puanlarına uygulanan Tek Yönlü Varyans Analizi sonuçlarına ilişkin  $F$  ve Hata Ortalama Kare değerleri Tablo 2’de verilmiştir.

Tablo 2

Ölçeklere Uygulanan Varyans Analizi Sonuçlarına İlişkin  $F$  ve Hata Ortalama Kare (H.O.K) Değerleri

	Grup temel etkisi ( $F$ değeri)	Cinsiyet temel etkisi ( $F$ değeri)	Ortak etki ( $F$ değeri)	H.O.K
SBL	19.12*	45.07*	5.16*	117.47
BDE	28.11*	11.56*	6.86*	47.31
SKÖ	11.64*	24.13*	1.85	25.35

SBL: Stres Belirti Listesi; BDE: Beck Depresyon Envanteri; SKÖ: Sürekli Kaygı Ölçeği

Not: Bütün  $F$  değerleri için  $sd=4,456$

\* $p<.05$ .

Tablo 1’deki ortalama ve standart sapmalar ile Tablo 2’deki varyans analizi sonuçları göz önünde bulundurularak, değişkenler açısından bulgular sırasıyla aşağıdaki biçimdedir.

### **Stres Belirtileri Yönünden Farklar**

SBL ile ölçülen stres belirtileri değişkeni için grup ve cinsiyet temel etkileri anlamlıdır (sırasıyla  $F_{(4,456)}=19.12$  ve  $F_{(4,456)}=45.07$ ,  $p<.05$ ). Buna göre, İE çocuğu olan ana-babaların SBL toplam puan ortalamaları olmayanlardan, her iki gruptaki annelerin toplam puan ortalamaları ise babalarınkinden daha yüksektir. SBL puanları için ortak etki de anlamlıdır,  $F_{(4,456)}=5.16$ ,  $p<.05$ . Tukey-HSD testi sonuçları üç karşılaştırma için ortalamalar arası farkın anlamlı olduğunu göstermektedir,  $q_{(4,456)}=2.77$ ,  $p<.05$ . Buna göre, İE çocuk annelerinin toplam puan ortalamaları İE çocuğu olmayan annelerin ( $q_{(2,112)}=6.65$ ,  $p<.05$ ) ve İE çocuğu olan babaların puanlarından ( $q_{(2,112)}=8.98$ ,  $p<.05$ ); İE çocuğu olmayan annelerin toplam puan ortalamaları ise İE çocuğu olmayan babaların toplam puan ortalamalarından anlamlı düzeyde yüksek bulunmuştur,  $q_{(2,112)}=4.44$ ,  $p<.05$ ). (Bkz. Tablo 1).

### **Depresyon Belirtileri Yönünden Farklar**

BDE ile belirlenen depresyon belirtileri için grup ve cinsiyet temel etkileri anlamlıdır (sırasıyla  $F_{(4,456)}=28.11$  ve  $F_{(4,456)}=11.56$ ,  $p<.05$ ). Buna göre, İE çocuğu olan ana-babaların BDE toplam puan ortalamaları olmayanlardan, her iki gruptaki annelerin toplam puan ortalamaları ise babalarınkinden daha yüksektir. BDE puanları için ortak etki de anlamlıdır ( $F_{(4,456)}=6.86$ ,  $p<.05$ ). Tukey-HSD testi sonuçlarına göre üç karşılaştırma için ortalamalar arası fark anlamlıdır ( $q_{(4,456)}=2.77$ ,  $p<.05$ ). Bu bulgu, İE çocuk annelerinin BDE toplam puan ortalamalarının İE çocuğu olmayan annelerin ( $q_{(2,112)}=7.90$ ,  $p<.05$ ) ve İE çocuğu olan babaların puanlarından ( $q_{(2,112)}=5.73$ ,  $p<.05$ ); İE çocuğu olan babaların toplam puan ortalamalarının ise İE çocuğu olmayan babaların toplam puan ortalamalarından anlamlı düzeyde yüksek olduğunu göstermektedir, ( $q_{(2,112)}=3.23$ ,  $p<.05$ ). (Bkz. Tablo 1).

### **Sürekli Kaygı Belirtileri Yönünden Farklar**

SKÖ ile ölçülen sürekli kaygı belirtileri değişkeni için grup ve cinsiyet temel etkileri anlamlı bulunmuştur (sırasıyla  $F_{(4,456)}=11.64$  ve  $F_{(4,456)}=24.13$ ,  $p<.05$ ). Buna göre, İE çocuğu olan ana-babaların SKÖ toplam puan ortalamaları olmayanlardan ve her iki gruptaki annelerin toplam puan ortalamaları ise babalarınkinden anlamlı olarak daha yüksektir. (Bkz. Tablo 1). SBL toplam puanları için ortak etki anlamlı değildir,  $F_{(4,456)}=1.85$ ,  $p>.05$ . Diğer bir anlatımla, gruplarda yer alan annelerin ve babaların SKÖ puan ortalamaları birbirlerine göre ya da diğer gruptaki anneler ve babaların puan ortalamalarına göre anlamlı fark göstermemiştir.

Bulguları özetlemek gerekirse, İE çocuk ana-babalarının SBL, BDE ve SKÖ toplam puanlarının İE çocuğu olmayan ana-babaların toplam puanından; her iki gruptaki annelerin toplam puanının ise babaların puanından anlamlı düzeyde yüksek olduğu saptanmıştır. Alt gruplar açısından bakıldığında ise, İE çocuğu olan annelerin SBL ve BDE toplam puanları, hem aynı gruptaki babalardan hem de İE çocuğu olmayan gruptaki annelerden anlamlı düzeyde daha yüksektir. İE çocuğu olmayan annelerin SBL

puanı aynı gruptaki babalardan, İE çocuğu olan babaların BDE puanı ise İE çocuğu olmayan gruptaki babalardan daha yüksek bulunmuştur.

### **Tartışma**

Araştırmada işitme engelli çocuğu olan ve olmayan ana-babaların stres, depresyon ve sürekli kaygı belirtileri açısından farklılaşıp farklılaşmadıkları incelenmiştir. Bu çerçeveye uygun analiz sonuçlarına bakıldığında, grup düzeyinde, İE çocuğu olan ana-babaların stres, depresyon ve kaygı düzeylerinin olmayanlarından; cinsiyet düzeyinde ise, her iki gruptaki annelerin stres, depresyon ve kaygı düzeylerinin babalarından daha yüksek olduğu ortaya konmuştur. Bu sonuç, birçok araştırma bulgusuyla tutarlıken (örn. Adams ve Tidwell, 1989; Konstantareas ve Lampropoulou, 1995; Quittner ve ark., 1990), üç araştırma sonucuyla örtüşmemektedir (Henggeler ve ark., 1990; Maedow-Orlans, 1994; Mapp ve Hudson, 1997). Bulgular açısından tutarsızlık gözlenen çalışmaların birinde Mapp ve Hudson (1997), Amerika'da yaşayan Afrika kökenli Amerikalı işitme engelli çocuk ana-babalarıyla İspanya kökenli Amerikalı ana-babaları stres belirtileri ve stresle baş etme süreçleri açısından karşılaştırmışlar ( $n=138$ ) ve gruplar arasında ilgili değişkenler açısından anlamlı fark olduğunu saptamışlardır. Ancak asıl ilginç bulgu, her iki gruptaki ana-babaların da önceki yayınlarda belirtilenlerden daha düşük stres düzeyine sahip olmalarıdır. Bu sonucu çocuk yaşıyla açıklamaya çalışan yazarlar, ebeveynin işitme engeline uyum sağlayabilmesi için tanıdan sonra yaklaşık on iki ay geçmesi gerektiğini, ancak kendi örneklemelerindeki çocuk yaşının 3-14 yaş arasında değiştiğini, dolayısıyla ebeveynlerin engele uyum sağlamak için gerekli süreyi fazlasıyla yaşadıkları için stres düzeylerinin de düşük olabileceğini öne sürmüşlerdir. Ancak burada gözden kaçırılan önemli nokta, ana-babanın işitme engeline uyum sağlamasının, çoğu zaman, böylesine süregelen bir durum karşısında yaşayacağı stres düzeyinin düşük olması anlamına gelmediğidir (Kurtzer-White ve Luteran, 2003; Quittner ve ark., 1990).

Bir diğer çalışmada, Maedow-Orleans (1994) işitme engelli bebeğe sahip ana-babalar ile çocuklarında bir engel olmayan ana-babaları karşılaştırmış ve iki grup arasında stres düzeyi açısından bir fark olmadığını bildirmiştir. Ne var ki, çalışmaya bakıldığında işitme engelli çocuğu olan katılımcı sayısının düşük olduğu ( $n=20$ ) görülmektedir. Maedow-Orleans, kendi çalışmasında yer alan katılımcıların iyi bir aile eğitiminden geçtiklerini, çocuklarının çok erken dönemde tanıldığını ve herhangi bir ek sorunlarının olmadığını bildirmiştir. Dolayısıyla, iki grup arasında bir fark çıkmaması şaşırtıcı sayılmamalıdır. Bu özelliklerinden dolayı sözü geçen çalışmanın işitme engelli çocukların ve ana-babalarının genel özelliklerini iyi örneklemeyebileceği uyarısı da yapılmıştır.

Mevcut çalışmayla tutarlı sonuç vermeyen diğer araştırmada (Henggeler ve ark., 1990), işitme engelli çocuğu olan ana-babalarla ( $n=107$ ) olmayan ana-babalar ( $n=94$ ) stres ve psikiyatrik belirtiler yönünden karşılaştırılmış; işitme engelli çocuk ana-babalarında stres ve psikiyatrik belirti düzeyi karşılaştırma grubundan daha düşük bulunmuştur. Yazarlara göre sonuç şaşırtıcı sayılmamalıdır, çünkü işitme engelli çocuğa sahip ana-

babalar zaten daha az belirti geliştirdikleri için araştırmaya katılmayı kabul etmiş olabilirler. Ancak burada açıklanması gereken soru, bu olasılığın neden işitme engelli çocuğu olan grup için geçerliken kontrol grubu için geçerli olmadığıdır. Kendi bulgularına dayanarak Henggeler ve arkadaşları, işitme engelli çocuğa sahip ana-babaların yüksek düzeylerde stres ve psikiyatrik belirti geliştirdiklerine dair inancın yalnızca bir mit olabileceğini ileri sürmüşlerdir: (1) Bu alanda çalışan uzmanlar daha çok sorunlu ailelerle çalışmaktadırlar [örnekleme yanlılığı], (2) Uygulamacılar, aldıkları eğitim ve gerçekleştirdikleri uygulamalardan dolayı 'normal'i değil 'psikopatolojiyi' tanımlama eğilimindedirler [uygulamacı yanlılığı]. Yazarların bu açıklamasının uygulama açısından doğru yönleri olabilir. Ancak gönüllü katılım esasına dayalı olan ve çoğu zaman ölçeklerin kullanımı ile gerçekleştirilen bu tarz araştırmalarda uygulamacı yanlılığı etkisinin görece olarak düşük olması beklenebilir.

Anılan üç araştırma dışındaki genel eğilim, işitme engelli çocuk ana-babalarının süregelen stres ve ilişkili sorunları daha yoğun yaşadıkları yönündedir. Bu ana-babaların daha yüksek düzeylerde belirti geliştirmesinin nedenleri şöyle sıralanabilir: Ana-baba olmanın başlı başına bir stres kaynağı olması (Adams ve Tidwell, 1989), bu stresin işitme engelinin varlığında katmerlenmesi (Kampfe, 1989), işitme engelli bireyin katılımıyla aile dengesinin bozulması (Luterman, 1997), çocuğun geleceğiyle ilgili yoğun kaygıların varlığı (Fışiloğlu ve Fışiloğlu, 1997), işitme cihazıyla ilgili sorunlar, eğitim sorunları, iletişim sorunları, toplumsallaşma sorunları, gelişimsel geçiş dönemlerinin kontrolünde zorlanma, uzman yetersizliği (Nolan ve Tucker, 1983), çocukta ek engelin varlığı, aile içi çatışmalar, düşük gelir düzeyi (Hintermair, 2006), işitme engelli çocuk ana-babasının farklı baş etme stratejileri kullanması, bazı kültürel özelliklerin baş etmede olumsuz rol oynaması (Mapp ve Hudson, 1997) ve etkili sosyal destek ağlarının yetersiz olması (Quittner ve ark., 1990).

Yukarıda anılan nedenlere ek olarak, bu çalışmada yer alan işitme engelli çocuk ana-babalarının stres, depresyon ve kaygı düzeyleri üzerinde etkili olabileceği düşünülen özgül etmenler de vardır: (1) Bazı araştırmacılara göre, ana-babanın yaşadığı sıkıntının düzeyi, engelin derecesinden etkilenebilmektedir (Gargiulo, 1985). Yayınlarla bakıldığında, araştırmaların önemli bir kısmının ya hafif-orta derecede işitme kaybı olan ana-babalarla ya da karışık gruplarla yapıldığı görülmektedir. Bu çalışmada yer alan çocukların ise hepsinde çok ileri derecede işitme kaybı vardır. (2) Bir araştırmada düşük gelir ve eğitim düzeyinin ana-babanın yaşadığı yüksek stres düzeyiyle ilgili olduğu bildirilmiştir (Mapp ve Hudson, 1997). Etkisi incelenmemesine karşın, mevcut çalışmadaki işitme engelli çocuk ana-babalarının –özellikle de annelerin- eğitim düzeyi karşılaştırma grubundan daha düşüktür. (3) Hintermair (2000), ilginç bir araştırmayla, ek bir engeli bulunan işitme engelli çocukların annelerindeki stres düzeyinin daha yüksek olduğunu saptamıştır. Çalışmada yer alan işitme engelli çocukların ek bir engeli yoktur, ancak annelerin %14.8'inin birden çok işitme engelli çocuğu vardır. (4) İşitme engelli çocuk ana-babalarının %20'si kaza, tıbbi girişim gibi travmatik bir olay tanımlamaktayken, karşılaştırma grubu için bu oran %12'dir.

Annelerin stres, depresyon ve kaygı düzeyinin babalarından daha yüksek bulunması beklendik bir sonuçtur ve pek çok araştırma bulgusuyla tutarlıdır. Ayrıca yukarıda değinilen etmenlerin yanında; Türkiye'nin sosyo-kültürel yapısı gereği kadınlara biçilen rol, kadınların ekonomik özgürlüklerinin yeterli olmaması (Fişek ve Scherler, 1996) ve kadınlarla erkeklerin farklı baş etme düzeneklerine başvurmaları böyle bir sonuçta etkili olabilir (Uçman, 1990). Konstantareas ve Lampropoulou (1995), Yunan ana-babalarla yaptıkları çalışmada bu sonucu denetim odağı kavramıyla açıklamışlardır. Yazarlara göre, babalar iç denetim odağını kullandıkları için işitme engelli bir çocuğa sahip olmanın sorumluluğunu içsel nedenlere yüklemekte ve bunun sonucunda problemin çözümüne dönük etkin baş etme stratejilerine yönelmektedirler. Ancak bu yorumun kültürümüz için geçerli olduğu tartışmaya açık görünmektedir; çünkü özellikle geleneksel aile örüntülerindeki genel izlenim babaların, işitme engelli çocuğa sahip olmaktan dolayı anneleri suçladığı, dolayısıyla dışsal yüklemeler yaptığı şeklindedir.

Yalın bir anlatımla, grup düzeyinde işitme engelli çocuk ana-babaları, cinsiyet düzeyinde ise anneler daha yoğun stres, depresyon ve kaygı belirtileri göstermektedir. Bu sonuçların, mevcut araştırma sınırları içinde, iki temel eğilime işaret ettiği düşünülmektedir: (1) İşitme engelli çocuğa sahip olmak süregelen bir stres kaynağıdır ve beraberinde başka sorunlara da yol açabilir. (2) İşitme engelli çocuk ana-babaları – özellikle de anneler- psikiyatrik/psikolojik belirtiler geliştirme açısından risk altındadırlar.

Bu araştırma da diğer birçok araştırma gibi bünyesinde önemli sınırlılıkları barındırmaktadır. Çalışmanın ilk sınırlılığı örneklemle ilgilidir. Özellikle, işitme engelli çocuk ana-babaları örneklemine, yalnızca çocukları İÇEM'e devam eden öğrencilerin ana-babalarından oluşması dış geçerliliğe bir tehdit oluşturmaktadır. Ayrıca, katılımcıların çocuklarının yaş aralığı geniştir (4-18) ve yeterli katılımcı sayısının oluşması halinde çocuk yaş aralığının daha dar tutulması yararlı olabilir. Son olarak, "yöntem" bölümünün "uygulama" alt başlığında da belirtildiği üzere ölçeklerin gruplara uygulanması iki farklı biçimde gerçekleştirilmiştir. Bu durumun geçerliği olumsuz etkileme olasılığı vardır. Bu çerçevede, izleyen çalışmalarda anılan sınırlılıkların dikkate alınması önerilebilir. Stres, depresyon ve kaygı sosyal destek ile yakın bir ilişki göstermektedir. Sonraki çalışmalarda bu belirtilerin sosyal destek algısıyla ilişkisi ele alınabilir. Yurtdışı yayınlarda belirtilen öfke, benlik saygısı, denetim odağı gibi psikolojik değişkenlerin de incelenmesi; stres, depresyon, kaygı, öfke, benlik saygısı gibi değişkenlere yönelik bireysel ve grup müdahaleleriyle ilgili etkililik araştırmalarının yapılması, konunun kuramsal boyutunu güçlendirebileceği gibi, uygulama açısından da önemli katkılar sağlayacaktır. Örneğin, Küçüker'in (2006) gelişimsel yetersizliği olan çocukların ana-babalarına uyguladığı erken eğitim programının stres ve depresyon düzeyini düşürdüğü saptanmıştır. Benzer uygulamaları ve bunun doğal sonucu olarak araştırmaları işitme engelli çocuk ana-babası ile yürütmek olanaklıdır.

Ayrıca işitme engelli çocuk ana-babasında görülen stres, depresyon ve kaygı belirtilerinin işiten çocuğu olan ana-babalara oranla daha yüksek olduğunu ve bu belirtilerin uzun süreli devam ettiğini bilen uzmanların konuya yaklaşımı

farklılaşabilecektir. Örneğın, uzmanların bu belirtilere Ařama Modeli'nde öngöröldüğü üzere tipik birer yas/keder belirtisi olarak deęil, daha uzun erimli etkileri olan psikolojik süreçler olarak yaklaşma olasılıkları artacaktır. Bu da bu gruptaki ana-babaların daha doğru biçimde anlaşılmasına hizmet edebilecektir.

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Murat Doğan<sup>1</sup>

# Comparison of the Parents of Children with and without Hearing Loss in Terms of Stress, Depression, and Trait Anxiety<sup>2</sup>

## Abstract

*It is hard to claim that the research about long term psychological effects on the parents of children with hearing loss have consistent results. In this sense, the purpose of the study was to compare the parents of children with (n=230) and without (n=230) hearing loss in terms of stress, depression, and trait anxiety symptoms. Assessment tools were Stress Self-Assessment Checklist for stress symptoms, Beck Depression Inventory for depressive symptomatology, and Trait Anxiety Inventory for the symptoms of trait anxiety. The findings of 2 (group) x 2 (sex) Analysis of Variance were in accordance with the assumption documented in the literature: Parents of children with hearing loss, especially the mothers, are at risk for developing psychiatric/psychological symptoms. The results of the research were discussed with a special emphasis on the contradictory findings in the literature and with respect to the social-cultural aspects of having a child with hearing loss. Possible causes of the difference between groups were also taken into account during discussion.*

*Key words: Hearing-impairment, Turkish children with hearing loss, Parents, Stress, Depression, Trait anxiety.*

## Introduction

There is an extensive body of literature analyzing the impact of a child with hearing loss on the parents and the family (Fışıloğlu & Fışıloğlu, 1996; Jackson & Turnbull, 2004; Luterman, 1979, 1987, 1997; Quittner, Glueckauf, & Jackson, 1990). It is suggested that the family systems theory should be used to achieve a greater understanding of the impact of hearing loss on parents (Jackson & Turnbull, 2004). In systems theory, family can be conceptualized as a continuing system of interacting personalities bound together by shared rituals and rules even more than biological ties (Feher-Prout, 1996). The

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diagnosis of hearing loss and the presence of a child with hearing loss put extremely significant pressures on the family with hearing parents, and can be a continuous source of potential stress (Kurtzer-White & Luterman, 2003). The vital question is “How does the inclusion of a child with hearing loss affect the family system?” From a homeostatic point of view, noted by Luterman (1987), all the families have a consistent balance between change and stability, which is one of the most important characteristics of the family. When a child with hearing loss joins to the family system as a new member, this unexpected situation will become a significant threat for the dynamics of balance process; thus, will be perceived as highly stressful by the other members of the family.

Early attempts to understand the initial responses of parents to the diagnosis of hearing loss in the child, mostly show similarities with the reactions in the grief theory of Kübler-Ross (1969), which was originally developed to explain the emotional reactions of the patients who had malignant disease and of the relatives of patients. The theory suggests some emotional stages in the presence of death or loss, such as denial, ~~rage and~~ anger, bargaining, depression, and acknowledgement. By the time, grief theory was adapted for the families of the children with hearing loss. The main theme in the original theory is death or loss of an intimate person, but the primary theme for the adapted model is death or loss of the dreams of having a perfect child (Sloman, Springer, & Vachon, 1993). Thus, as to the author claimed, the death or loss of a loved one could be conceptualized as *loss of object*, and having a child with disability as *loss of project*. Shock, recognition, denial, acknowledgement/acceptance, and constructive action/adaptation are the emotional stages of parental reactions in the adapted model (Luterman, 1987).

Although the models of grief based on death and loss are commonly used to understand the initial responses of the parents of children with hearing loss, it is important to remember that the model does not explain the life-long emotions of the people who live with an individual with disability. For those whose loss results from a death, there is an expectation that grief will be resolved and the loss will be accepted. Since the child with hearing loss is a continuing member of the family, the successive resolution of grief process related to the diagnosis of hearing loss can be more difficult than grief after death or loss (Kurtzer-White & Luterman, 2003).

Quittner et al. (1990) claimed that many studies continue to assess stressful life events rather than situationally defined stressors, and fail to differentiate acute and chronic stress processes. Living with a child with hearing loss is a source of chronic stress. In the study by Quittner et al., chronic stress was assessed in 96 mothers of children with hearing loss and 118 matched controls. The results indicated that clinical group showed higher levels of stress, depression, and anxiety associated with lowered perceptions of emotional support. Greater symptoms of depression and unresolved grief (Kurtzer-White & Luterman, 2003), anxiety and anger (Quittner et al., 1990), deprived quality of life (Jackson & Turnbull, 2004), decreased perceptions of self-esteem (Konstantareas & Lampropoulou, 1995), alcoholism and suicidal attempts (Şen, 1991) were the other psychological problems documented by the literature associated with the parents of

children with hearing loss. On the basis of the previous literature, it can be concluded that the parents of children with hearing loss are at risk for developing psychiatric/psychological symptoms.

Depending on the assumption that having a child with hearing loss is a source of chronic stress and related problems in the family, in the current study; parents of Turkish children with and without hearing loss were examined in terms of stress, depression, and trait anxiety symptoms.

## **Method**

### **Design**

A causal-comparative research design, described by Gay, Mills, & Airasian (2006), was conducted in order to compare (stress, depression, and trait anxiety symptoms of) two groups of parents.

### **Participants**

The sample consisted of 460 parents of children with ( $n=230$ ) and without ( $n=230$ ) hearing loss (ages 4 to 18) living in Eskişehir, Turkey. Participants in the first group included hearing parents of the children with hearing loss from Education and Research Center for Hearing-Impaired Children; and the second group were the parents of hearing children enrolling in various residential schools. The mean age of the participants were 35.84 ( $SD=6.55$ ) for mothers, 40.85 ( $SD=6.80$ ) for fathers, 10.57 ( $SD=4.17$ ) for the children of the first group; and 36.00 ( $SD=5.13$ ) for mothers, 40.50 ( $SD=6.90$ ) for fathers, 10.04 ( $SD=3.23$ ) for the children of the second group. All the children in the first group had profound hearing loss. Groups were matched for parent age,  $t_{(2,458)} = .175$ ,  $p>.05$  and child age,  $t_{(2,458)} = 1.49$ ,  $p>.05$ . Variables such as child's sex, psychiatric treatment condition (for parents), and having an additional disability (for the children with hearing loss) -which were considered to have potential effects on the stress, depression, and anxiety symptoms of the parents- distributed similarly for both groups.

### **Measures**

The adapted forms of Stress Self-Assessment Checklist (SSC) for stress symptoms (Hovardaoğlu, 1997), Beck Depression Inventory (BDI) for depressive symptomatology (Hisli, 1989, cited in Savaşır & Şahin, 1997), and Trait Anxiety Inventory (TAI) for the symptoms of trait anxiety (Öner & Le Compte, 1985) were used to measure each variable; and Demographic Information Form (DIF) developed by the author was used for basic socio-demographic variables.

### **Procedure**

The data of this study were collected in two ways. First, the parents of the children with hearing loss were invited to Education Research Center for Hearing-Impaired Children and the scale battery was administered in group sessions that consisted of 15-20 participants on average. Second, the parents of the hearing children were sent the

assessment battery, and asked to complete the scales. Both groups were informed that the data will only be used for research purposes rather than individual use.

### Results

The data were analyzed in two steps. First, the means and standard deviations of the total scores of scales for each group of parents were calculated. Second, 2 (group)  $\times$  2 (sex) Analysis of Variance was conducted for between-groups comparison. Table 1 presents the means and standard deviation scores of both groups of parents from each scale.

Table 1  
Means and standard deviations of the scores for both groups of parents

	Parents of children with hearing loss						Parents of children without hearing loss					
	Mothers		Fathers		Total		Mothers		Fathers		Total	
	$\bar{X}$	<i>S</i>	$\bar{X}$	<i>S</i>	$\bar{X}$	<i>S</i>	$\bar{X}$	<i>S</i>	$\bar{X}$	<i>S</i>	$\bar{X}$	<i>S</i>
SSC	65.96	11.10	56.88	10.43	61.42	11.67	59.24	12.03	54.75	9.66	57.00	11.11
BDI	13.11	7.67	9.26	6.18	11.19	7.22	8.04	6.77	7.53	6.80	7.78	6.77
TAI	46.41	7.53	42.02	7.09	44.22	7.63	43.07	8.09	40.59	7.26	41.83	7.77

SSC: Stress Self-Assessment Checklist; BDI: Beck Depression Inventory; TAI: Trait Anxiety Inventory

The findings of the Analysis of Variance indicated that there were statistically significant main effects of group and sex on the mean scores of the SSC, BDI, and TAI. The findings of the *group main effect* showed that the parents of children with hearing loss had higher mean scores than the parents of hearing children for each of the three scales ( $F_{(4,456)}=19.12, p<.05$  for SCC;  $F_{(4,456)}=28.11, p<.05$  for BDI;  $F_{(4,456)}=11.64, p<.05$  for TAI, respectively) (See Table 1).

According to the findings of *sex main effect*, there were also statistically significant differences between the mean scores of the three scales of parents in both groups: Mothers showed greater levels of stress ( $F_{(4,456)}=45.07, p<.05$  for SSC), depression ( $F_{(4,456)}=11.56, p<.05$  for BDI), and anxiety ( $F_{(4,456)}=24.13, p<.05$  for TAI) (See Table 1).

Finally, the results of the *interaction effect* indicated that the mothers of children with hearing loss had significantly higher mean scores of stress ( $F_{(4,456)}=5.16, p<.05$  for SSC), depression ( $F_{(4,456)}=6.86, p<.05$  for BDI) than the mothers of the comparison group (See Table 1).

## **Discussion**

One of the estimated findings of this study was that parents of children with hearing loss and the mothers of both groups had greater levels of stress, depression, and trait anxiety than did the parents of hearing children and the fathers of both groups. This result is consistent with the studies in literature (e.g. Adams & Tidwell, 1989; Konstantareas & Lampropoulou, 1995; Kurtzer-White & Luterman, 2003; Quittner et al., 1990) with two exceptions (Henggeler et al., 1990; Mapp & Hudson, 1997). In their study with a sample of African American and Hispanic parents ( $N=98$ ) of children with hearing loss, Mapp and Hudson (1997) investigated the relationships among the parents' stress levels and their reported coping strategies. They reported significant differences between African American and Hispanic parents in terms of stress and use of coping strategies, but emphasized that both groups of parents expressed lower levels of stress than the levels documented by previous literature. Depending on this finding, Mapp and Hudson concluded that racial and ethnic group membership was significantly related to the degree of use of several coping strategies which is strictly associated with stress process. In the second study ( $N=131$ ) which reported inconsistent findings with the current study, Henggeler et al. (1990) found that the parents of youths with hearing loss expressed less psychiatric symptomatology than did the parents of hearing youths on Symptom Checklist-90-Revised (SCL-90-R; a checklist for screening psychiatric symptoms). Inconsistency between these two studies and present study could be partially explained by cultural differences of the samples and the methodology including different measures and sample size.

In summary, with respect to the limited sample of this study, it can be concluded that the findings of the study tend to indicate two generalizations: (1) A child with hearing loss is a chronic source of stress and stress-related problems. (2) Parents of children with hearing loss, especially the mothers, seem to be at risk for developing psychiatric symptomatology.

Finally, depending on the limitations of this study, further research is needed to focus on psychological variables including perceived social support (with an emphasis on professional support), coping processes, anger, self-esteem, and locus of control. In addition, studies on effectiveness of different psychological interventions can lead to a complete understanding of the parents of individuals with hearing loss.

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A review by  
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# Interactive Online Assessment Options: A Review of the AEPSi

## Abstract

*This article is a review of an online data management tool called the Assessment Evaluation and Programming System for Infants and Children Interactive (AEPSi). Professionals working with young children are in need of efficient assessment options to meet the ever increasing demands of their work. The AEPSi is a curriculum-based assessment for infants, toddlers, and preschoolers designed to assess a young child's development and learning, as well as provide intervention content via the curriculum. The review covers information about how the AEPSi can assist professionals in their work with young children and families.*

*Key words: Curriculum-Based Assessment, Early childhood, Infant/toddler/preschooler.*

Professionals working with young children are in need of efficient assessment options to meet the ever increasing demands of their work. The Assessment Evaluation and Programming System for Infants and Children (AEPS) is a curriculum-based assessment for infants, toddlers, and preschoolers. The system is designed to *assess* a young child's development and learning, as well as to provide *intervention* content via the curriculum. The AEPS allows staff to write appropriate goals, plan individualized intervention, and monitor children's progress over time. Validity, reliability, and utility studies have been conducted using the AEPS and there is evidence to suggest that it has strong psychometric properties.

An online companion to the AEPS is now available, which allows users to measure developmental and educational outcomes via a web-based data management system called the *AEPS Interactive* (AEPSi). The AEPSi can be accessed on the web around the

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clock. Webinars, webcasts, and face-to-face training options are available to professionals. Professionals can use the AEPSi with children and families.

### **AEPSi and Child**

The AEPS has six developmental areas: adaptive, cognitive, fine motor, gross motor, social, and social-communication. The AEPSi protocol with automatic scoring is used by professionals to gather information about children's skills. It is called the Child Observation Data Recording Form (CODRF). Over 200 items from the AEPS are arranged in developmental sequence to consist of goals and objectives. The hierarchical arrangement of goals progress from easy to difficult (i.e., goals become difficult as a child progresses through the test). A goal is a composite of objectives. In order to score a goal, all of the objectives within the goal must be scored. The arrangement of objectives flow from difficult to easy (i.e., objectives become more difficult leading to the goal).

The AEPS is scored using a three point rating scale: 2 = mastery, 1 = emerging skill, and 0 = not yet. It is used to identify skills and areas needed for intervention. The AEPS can be administered using multiple methods which may include: (a) observation in naturalistic settings, (b) direct test, and (c) parent or familiar caregiver report. Qualifying notes can be used with the scoring system in order to supplement the numerical data collection. The following abbreviations qualify, or provide additional information, about children's skills:

- A = Assistance (*help is given to the child to perform the task*)
- B = Behavior (*performance is influenced by the child's behavioral repertoire*)
- R = Report (*parent or someone familiar with the child provides input*)
- M = Modification/Adaptation (*the task was altered to meet the child's needs*)
- D = Direct Test (*directly prompting the child to perform the skill*)
- Q = Quality (*appearance of the skill*)

The AEPS can be modified to accommodate children with disabilities and to ensure assessment practices are culturally and linguistically relevant. Adaptations can be used to change the criterion or directions. Criterion adaptations include changes to the rate and manner of performance. Professionals are able to produce information for one child at a time, or the entire class/group of children. Some of the AEPSi resources for an *individual child* or *group of children* include: child journal, progress reports (i.e., IEP/IFSP, eligibility, Office of Special Education Programs), and assessment activities for individual or group assessment. Two unique features of the AEPSi are the addition of cut off scores for eligibility determination, as well as the ability of the interactive system to report outcome data for accountability purposes.

Cut off scores aid users in making decisions about a child's eligibility for special educational services. The latest feature of the AEPS includes cut off scores for each of the developmental areas. The cut off scores are obtained by adding up all of the AEPS goals for all six developmental areas. The score totals for each area is then compared to a table of age intervals which provides cut scores for each area (e.g., social, adaptive,

etc). If a child's performance is at or below the cut off score, then he/she may be eligible for special services. Alternatively, if a child's score is at or above the cut off score for his/her chronological age, then the child may not be eligible for special services.

Professionals are required to report child outcome data to the Office of Special Education Programs (OSEP) for the young children they are serving who receive IDEA services. Professionals are able to use the AEPSi to report child outcome data for state and federal accountability systems. Once a professional has entered data into the AEPSi, the program has a function for calculating children's scores to produce reports.

### **AEPSi and Family**

To facilitate communication, the AEPSi includes a team calendar, tutorials and a discussion board. The AEPSi contains a Family Report tool used to gather information from parents/caregivers. The AEPSi Family Report is divided into multiple sections. In the *activities* section, parents respond to open-ended items about: (a) *daily activities* (i.e., eating, sleeping, dressing, bathing/showering, toileting, playing and interacting, and communicating with others), (b) *family activities*, and (c) *community activities*.

In the *developmental areas* section of the AEPSi Family Report, a series of questions are presented to parents across the six developmental areas (e.g., social, adaptive) whereby they indicate if their child is performing the skill, performing the skill sometimes, or not yet performing the skill. The scoring format corresponds to the 2 (*mastery*), 1 (*emerging*), or 0 (*not yet*) rating scale used for the CODRF. Items are written as questions; provide the reader with more explanation; sometimes accompanied by an illustration of the skill; and uses family-friendly language compared to the more technical wording of the CODRF. There is a section for parents to indicate *intervention priorities* so that parents can introduce additional information about skills they would like their child to learn.

The AEPSi yields relevant information that can be used to formulate developmentally appropriate programs for young children and their families. Assessment and curricular components are linked to offer a seamless system. The AEPSi is an authentic assessment which measures children's functional skills and can also be used with the families of young children.

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AEPS Interactive Website: <https://www.aepsi.com/aepsi/>