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Inclusive Preschool Teachers: Their Attitudes and Knowledge about Inclusion*

Abstract

The purpose of the current study was to investigate the knowledge and attitudes of preschool teachers regarding inclusive practices and to determine the relationship between knowledge and attitudes of the teacher about inclusion. Two instruments were used for data collection: The Inclusion Knowledge Test developed by the researchers and the Turkish form of Opinions Relative to Integration of Students with Disabilities. 30 preschool teachers who have children with disabilities in their classrooms participated in the study. The results of analysis provided the specific information about what the teachers know and do not know about inclusive practices. In addition, it was found that teacher attitudes towards inclusion were neither positive nor negative and there is no significant relationship between the level of knowledge and attitudes of the teachers. All findings were discussed in terms of preschool teacher training programs and several suggestions were made to train teachers who are able to work with young children with disabilities in regular classrooms.

Key Words: Preschool teacher, inclusion, knowledge, attitudes, young children with disabilities.

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Introduction

Inclusion can be generally defined as a system that children with and without disabilities are placed in the same setting, mostly, in classrooms (Odom & Diamond, 1998). It has four dimensions: active participation of all children, services providing support for children, professionals from different fields, and evaluation of children progress (Odom, Peck, Hanson, Beckman, Kaiser et al., 2004). The outcomes of successful inclusion are well defined in the literature for children with and without disabilities (Odom, Buysse, & Soukakou, 2011; Wolery & Wilbers, 1994). Young children with disabilities benefit from inclusive settings and belonging, participating and social relationship are accepted as meaningful and realistic outcomes of inclusion for them. In addition, by inclusive system, they are protected from segregation and negative attitudes of others such as their peers and teachers. On the other hand, the typically developing children develop sensitivity and positive attitudes toward others who are different from them and when the children with and without disabilities are given opportunities to work together, more positive interactions between two group of children are observed in inclusive settings.

In Turkey, inclusive practices were started in 1983 with the Children with Special Needs Law which mandated that children with disabilities be educated alongside their peers in regular classrooms and inclusion has been accepted as a service model for these children (Eğitim Reformu Girişimi-ERG, 2011). According to the related legislations, principals, teachers, and school counselors who work in all levels of educational system are responsible to take the necessary measures to ensure that the needs of the children with disabilities are effectively met. Since 1983, the number of children with disabilities that have been placed in regular classrooms has increased each year. The 2011 statistics (Milli Eğitim İstatistikleri: Örgün Eğitim 2010-2011) indicated that a total of approximately 125,000 children with disabilities are being served in inclusive classrooms, with 100,000 of these being in elementary and junior high schools whereas the other 25,000 are being educated in general preschool classrooms.

According to the existent studies focusing on inclusive practices, inclusion has been one of the challenging issues facing the parents, principals, policymakers, and most importantly, the teachers. The roles and responsibilities of teachers have changed with the inclusive practices and the teachers have been expected to understand the characteristics of the children with disabilities, adapt the curriculum according to their developmental level, and interact in the classroom with all children, including those with disabilities (Bruns & Mogharreban, 2009; Lieber, Beckman, Hanson, Janko, Marquart, Horn, et al. 1997). In addition to their traditional roles and responsibilities, teachers are also responsible for the development and improvement of all children in their classrooms by creating an appropriate learning environment, involving all of the students in learning activities, and using evidence-based strategies. Moreover, they are required to have knowledge regarding the methods for development and implementation of individualized education programs (IEPs) and possess the skills for collaborating with the families in order to offer them the support they need. Furthermore, they are expected to have knowledge and skills in using behavioral interventions and effective classroom

management that can facilitate teaching children with diverse abilities (Bruns & Mogharreban, 2009; Coombs-Richardson & Mead, 2001; Crane-Mitchell & Hegde, 2007; Martinez, 2003).

To fulfill these responsibilities, teachers should know all of their children, recognize their characteristics, encourage social behaviors, and support the children to have creative experiences in preschools while also being able to adapt their instruction to the developmental level of each child and use strategies that facilitate teaching in the regular classroom (Honig, 1997; Odom, 2002; Pavri, 2004). However, previous literature has frequently emphasized that preschool and elementary school teachers are not adequately prepared to teach children with disabilities (Bruns & Mogharreban, 2009; Fuchs, 2009-2010; Hamre, 2004; Martinez, 2003) and they do not have sufficient knowledge and skills to teaching in inclusive classrooms (Batu, 2010; Crane-Mitchel & Hedge, 2007; Gök & Erbaş, 2011; Kargın, Acarlar, & Sucuoğlu, 2006). In addition, since pre-service training offers little to teachers to prepare them for this kind of work (Dew-Hughes & Brayton, 1997; Gargiulo, Sluder, & Streitenberger, 1997; Jennings, 2007), there is concern about inadequacy of teacher preparation in terms of meeting the educational needs of children with disabilities (Fuchs, 2009-2010). Moreover, the teachers' insufficient skills and experiences with these children lead to a reluctance to accommodate children with disabilities in their classrooms (Avramidis, Bayliss, & Burden, 2000; Gemmel-Crosby & Hanzlik, 1994; Huang & Diamond, 2009). Teachers frequently report that they need more information and skills in areas such as developing IEPs, assessing the children's progress, adapting and modifying the curriculum, encouraging all children to participate in academic activities, and dealing with behavioral problems in the classroom (Avramidis et al., 2000; Buell, Hallam, Gamel-McCormick, & Scher, 1999; Kamens, Loprete, & Slostad, 2003). They also have stated that they need to learn special methods and strategies to facilitate learning in children with disabilities. They also lack confidence in their ability to differentiate instruction and make the necessary individual adaptations for these children; thus, working in inclusive classrooms has been a negative experience (Crane-Mitchel & Hedge, 2007; ERG, 2011; Gök & Erbaş, 2011; Kargın et al., 2006). Moreover, most teachers face difficulties in working with families as they seek to encourage them to be involved in their children's education and be a part of inclusive practices (Bruns & Mogharreban, 2009).

Teachers play a key role in the quality and success of inclusion (Burke & Shuterland, 2004; Odom, 2000; Wolery & Wilbers, 1994). Their lack of information is accepted as a crucial barrier toward effective inclusive practices (Fuchs, 2009-2010; Pivic, McComas, & Laflamme, 2002; Soodak, Erwin, Winton, Brotherson, Turnbull, & Hanson, 2002). Sadler (2005) stated that teachers' lack of knowledge about inclusion and the characteristics of children with disabilities are two the significant factors that influence their efforts to meet the needs of these children. Having the support of school principals, receiving consultancy from specialists, having access to appropriate resources, and planning their work hours are also important variables involved in working in inclusive classrooms, but research indicates that the most basic need for teachers in inclusive classrooms is sufficient training in working with children with disabilities (Odom, 2000;

Werts, Wolery, & Snyder, 1996). Therefore, whether or not the teachers have the appropriate knowledge regarding inclusive practices is accepted as an indicator of the quality of inclusion (Bredenkamp & Copple, 1997; Howes, 1997).

With regard to previous literature concerning the preschool teachers' lack of knowledge regarding inclusive classrooms, several recent studies are available that have examined this subject. For example, in a study by Bruns and Mogharberran (2009), it was reported that preschool teachers need to know proper strategies and intervention techniques in order to improve interaction between the children in inclusive classrooms, develop and evaluate IEPs, work with families to develop behavioral strategies for teaching positive behavior, and have effective classroom management. The researchers also stated that teachers should be sufficiently informed about positive behavioral support and functional assessment that can facilitate inclusive practices.

In another study by Crane-Mitchel and Hedge (2007), it was emphasized that preschool teachers do not understand the characteristics of young children with disabilities and do not have knowledge related to meeting these students' needs. Moreover, the teachers need more training on inclusive practices, not only focusing their knowledge, but also their skills and experiences and most of them emphasized the necessity of the hands-on training opportunities for working with young children with disabilities. Furthermore, the researchers suggested additional research investigating the quality teacher training programs and licensure requirements. In the third study, Sadler (2005) examined the beliefs, attitudes, and knowledge of teachers on inclusion and reported that many mainstreamed preschool teachers had acquired the knowledge about children with speech and language disorders through hands-on experiences and books but implied that they do know how to employ this knowledge in the inclusive classroom.

On the other hand, simply providing information to teachers is not sufficient for them to work with children with diverse abilities. Hundert (2007) drew attention to the type of the teacher training program about inclusive practices and emphasized that the method used to teach new skills and knowledge should be considered and easy-to use intervention strategies that can be incorporated into daily instruction and routines that do not require much effort should be provided in teacher training programs.

Related studies have shown that besides a teacher's knowledge, one of the most important factors that influence the success of inclusion is teacher's attitude (Antonak & Larrivee, 1995; Avramidis et al., 2000; Buysse, Skinner, & Grant, 2001; Crane-Mitchel & Hedge, 2007; Hastings & Oakford, 2003; Martinez, 2003). Frequently, the observed attitudes reflect the wrong information, prejudices, labeling, and the fear of the unknown, and these can lead to a misunderstanding of children with disabilities and their rights (Odom, 2000). Teacher's attitudes toward inclusion are generally ambivalent and some teachers are more favorable about inclusive practices whereas the others seem to have negative attitudes toward teaching students with disabilities in regular classrooms (Huang & Diamond, 2009; Martinez, 2003). It is believed that the teachers who have positive attitudes to inclusive practices can naturally use instructional strategies that are

effective in regular classrooms and they see themselves as being more competent in matters such as adapting curriculum and materials to meet the needs of the children in inclusive classrooms (Campbell, Gilmore, & Cuskelly, 2003). Conversely, negative attitudes can create lower expectations for achievement and social status as well as support inappropriate behavior in students with disabilities (Larrivee, 1985; Larrivee & Horne, 1991). In other words, negative attitudes lead to reduced expectations and fewer learning opportunities for the children (Idol, 2006; Shade & Stewart, 2001).

The teachers' attitudes are influenced by several factors such as student variables (type and level of disability), teacher variables (direct contact, previous experience with children with disabilities and number of years teaching), and mostly, teacher knowledge about inclusion (Lamorey & Bricker, 1993; Praisner, 2003; Wisniewski & Alper, 1994). Burke and Sutherland (2004) explained that the attitudes and expectancies of the instructors are related to their experiences and knowledge regarding how to teach in inclusive classrooms and limited knowledge with children with disabilities can cause negative attitudes. Teachers who have more education and experience feel more confident about working in inclusive classrooms because of their background knowledge (Huang & Diamond, 2009). In addition, increases in teachers' knowledge about inclusive practices leads to more positive attitudes (Crane-Mitchell & Hedge, 2007). Additionally, more training in special education is accepted more optimistic about encouraging positive attitudes toward inclusive practices (Leyser & Tappendorf, 2001). Therefore, it seems that, to increase the quality of inclusive practices, it is very important to promote teachers' positive attitudes towards the children with disabilities by providing them effective training programs that include sufficient knowledge, skills and experiences.

The results of the studies that have investigated the inclusion practices in Turkey are in line with the international literature. For example, both the preschool and elementary school teachers generally had positive opinions toward inclusion and believed that the children with disabilities should be educated in regular classrooms (Bozarslan-Malkoç, 2010; Varlier & Vuran, 2006). However, some teachers express their hesitations about this service model and thought that children with disabilities should be educated in their home because they disturb the learning environment and might hurt other students (Temel, 2000). Moreover, researchers (Sargin & Sünbül, 2002) indicated that teachers' attitudes change according to the type of disability. According to the preschool teachers, the main problems related to inclusion were the behaviors of the children with disabilities, their rejection by peers, the difficulties related to finding extra time for planning their work, and a lack of enthusiasm of the families pertinent to their children education (Atay, 1995; Batu, 2000; Gök & Erbaş, 2011). They frequently emphasized that the courses that they were offered during pre-service education were not sufficient to show them how to work with children with different ability levels and solve the problems faced in inclusive classrooms. Furthermore, they said that they needed more experience and skills related to these issues and that they were not provided sufficient support from principals and other professionals who work with children of varied ability levels (Küçüker, Acarlar, & Kapci, 2006). Other research indicated that if the preschool

teachers (Secer, 2010), the elementary school teachers (Şahbaz, 1997; Türkoğlu, 2007) and pre-service teachers (Yıkılmış, Şahbaz, & Peker, 1998) were provided short-term training which focused on children with disabilities and inclusive practices, their attitudes towards inclusion would change in a positive way.

A perusal of the related literature leads to the conclusion that unless the stage is set beforehand, it is almost impossible to implement inclusive practices effectively in preschool and elementary schools. In addition, without providing the appropriate information and opportunities to gain experience working with children with disabilities for teachers, any efforts to improve the quality of inclusive practices will prove to be useless. Therefore, all teachers should be prepared for teaching in inclusive classrooms before they have children with disabilities in their classes. However, in order to develop effective teacher training programs that meet their needs, it seems vital to know the teachers' level of knowledge related to inclusive practices as well as their attitudes toward this issue. Therefore, in this study, we aimed to determine a) the knowledge level of preschool teachers regarding inclusive practices, b) their attitudes toward inclusion, and c) relationship between the knowledge level and the attitudes of the teachers. It is our hope that the findings of this study can lead professionals, researchers, and policymakers to focus on preparing pre-service and in-service programs that will benefit teachers in inclusive preschool settings so that they can promote adequate development in all children.

Method

Study Group

In this study, data was obtained from 30 preschool teachers who were participants of the project supported by The Scientific and Technological Research Council of Turkey. All of the teachers worked in public preschools in a middle class suburban district of Ankara. Each teacher has one to three children with disabilities in her classroom. The age of the teachers ranged from 24 to 41 years ($X=31.76$ years; $SD=4.03$), and their teaching experience varied from 1 to 17 years ($X=7.7$ years; $SD=3.38$). All participating teachers had a Bachelor's degree, and 70% had young children with disabilities in their classes in previous years. Twenty seven teachers (90%) had just one introductory special education course during their college education, and only seven (23%) had participated in seminars or conferences related to inclusive education before this study. Their classroom sizes ranged between 15 and 25 children, with an average enrollment of 19 children per class. The young children with disabilities who were placed in the participants' classrooms full-time were divided into two groups. The first group (1 child in each classroom) had been officially diagnosed, indicating that they were developmentally delayed because of autism, Down's syndrome, emotional and/or behavioral disorders, and learning difficulties under Turkish regulations. The second group (1-2 children in each classroom) had no official diagnosis, but according to the teachers, they had behavior problems and their academic skills were significantly less than their peers. The age of the children both with and without special needs ranged from 36 to 72 months. Some of the children with disabilities ($n=20$) were provided with

special education services from special education schools or rehabilitation centers, but others did not receive this type of support.

Instruments

In this study, data related to the attitudes of preschool teachers toward inclusion of young children with disabilities was gathered using the *Opinions Relative to Integration of Students with Disabilities* (ORI) developed by Antonak and Larivee (1995) and translated and adapted into Turkish by Kırcaali-İftar (1996). The original ORI is a Likert Scale based upon ratings that range from 1-6; however, Kırcaali-İftar changed the rating system of the Turkish version since inclusion was not widely practiced across Turkey in the nineties and some of the teachers had no opinions regarding some of the items related to teaching inclusive classrooms on the ORI. The Turkish version uses a five-point rating system ranging from strongly agree (1) to strongly disagree (5) and it also provides opportunities to rate these items as undecided (3). The 10 items on the Turkish ORI are scored in a reverse manner, with a lowest possible score of 20 and a maximum of 100. High scores indicate the intensity of the negative attitudes toward inclusion.

The psychometric characteristics of the Turkish form of the ORI were examined by Kırcaali-İftar, and the results of the factor analysis conducted to assess the construct validity of the instrument indicated that the ORI consisted of 20 items related to five factors: classroom control and opinions against inclusion (eight items), competency of the teachers (three items), the necessity and effect of inclusion (five items), academic development of the students with special needs (two items), and community characteristics (two items). Since five items of the original instrument did not load in any particular factor, these items were eliminated. The five factors on the Turkish version of the ORI explained 51.1% of the total variance. Reliability was determined by calculating Cronbach's alpha, and the internal consistency of the 20-item scale was found to be .80.

The Inclusion Knowledge Test (IKT) was used by researchers in order to assess the knowledge of preschool teachers on inclusive practices. Considering the fact that in pre-service education, preschool teachers have only one course entitled "Introduction to Special Education" or no course at all, participants' knowledge on special education was assessed by using vignettes instead of direct questions. Vignettes are short stories or scenarios that can be used to stimulate thought and discussion about specific or sensitive situations and researchers from the fields of health science, sociology, psychology, education, and behavioral sciences commonly collect data in this way (Simon & Tierney, 2011). Vignettes have been traditionally used in educational studies to determine the level of understanding of people, explain the results with examples and be a model for best practices (Jeffries & Maeder, 2004). Therefore, researchers developed this test consisting short stories related to the aspects of the inclusion practices and carried out validity and reliability studies (Sucuoğlu, Bakkaloğlu, Akalın, Demir, & İşcen Karasu, 2013). According to the results of the principal component analysis and Scree Test, IKT is a one factor instrument consisting of 24 short-stories. The factor loads of all items were higher than .40 and one factor explains 34.85 of the total variance. The

item-total score correlation coefficient values for all of the items were found to be more than .89. In addition, the item analysis indicated that the score of the each item significantly discriminated against the 27% of the participants who had maximum and minimum scores from the IKT ($p=.000$). The internal consistency of the 24-item scale calculated using Cronbach's alpha is .91.

The minimum and maximum score of each item on the IKT varied between 2 and 8. In order to conduct the analysis, all scores obtained from the test items were converted to the decimal system. That is, for example, for questions which the correct answers consist of two items, each item was given 5 points, whereas for questions which have correct answer including four items, each item was given 2.5 points. Thus, the scores to be taken from each questions varied 0-10 and the total scores of the test varied from 0 to 240. Higher scores indicate that the teachers knew more about how to teach in inclusive classrooms.

Although the IKT is a one-factor instrument, it consists of test questions grouped into six separate subject categories; 1) characteristics of children with disabilities and inclusion, 2) assessment and adaptations, 3) naturalistic teaching strategies, 4) supporting language and communication, 5) classroom and behavior management, and 6) working with families. When the researchers examined the relationship between the scores obtained from each category and the total score, they found that there was a high number of positive relationships between each category score and the total score (range of r values= .714-.902, $p= .000$) of the instrument.

Results

Teachers' Knowledge about Inclusion

To determine what the participants knew about teaching in inclusive classrooms, descriptive statistics of the scores obtained from the IKT were calculated. Both the total scores and the scores gained from the subject categories included in the IKT are given in Table 1.

According to Table 1, the preschool teachers' knowledge about inclusion was insufficient based on the IKT questions. For example, the maximum score to be gained from the entire test was 240; however, the IKT scores of the participants of the study ranged from 56.00-125.25, and the mean score of the total group was 93.01. When we looked at the percentage of the total scores from the instrument and each question category, we found that the teachers knew approximately 30% of the information related to inclusive practices. Regarding assessment and adaptations, supporting language and speech, and natural teaching techniques, the participants only knew approximately 25% of the information that we expected them to know.

Table 1.
The IKT total and subject category scores of the preschool teachers

Scores/Subject Category	Maximum Scores	Range	X (Mean)	SD (Standart deviation)	%
IKT total score	240	56.00-125.25	93.01	14.94	38.7
Characteristics of the children with disabilities and the principles of inclusion	50	9.80-38.70	25.70	6.21	51.4
Assessments and adaptations	60	13.20-40.20	14.70	7.03	24.5
Natural teaching strategies	50	6.60-23.20	16.15	3.97	32.3
Supporting language and communication	30	0.00-18.60	8.12	5.00	27.1
Classroom and behavior management	30	3.75-13.75	9.12	2.56	30.4
Working with families	30	3.30-13.20	9.46	2.56	31.5

When we look at the scores of all items independently (Table 2), we found out that one question (Question 8) on the IKT was not answered by any of the teachers. This question addressed natural teaching strategies that could be effectively and easily applied for teaching some concepts to the children in a given inclusive classroom condition. In addition, for six questions of the IKT, the mean of the each item scores are lower than 3.00 and two questions out of six are related to the category of supporting language and speech while two questions are related to communicating with parents. Lastly, one question (assessment and adaptations category) is related writing the IEP for children with disabilities and one question is related to inclusive classroom management. Conversely, the mean scores of the three questions of the test were higher than 7.00; while the mean scores of the other questions ranged from 3.1 to 5.00. These findings show that, although the teacher have some level of knowledge about the aspects of the inclusion, they still need to learn more information especially on the matters of using naturalistic strategies in the classrooms, working with families of children with special needs, supporting language and speech and inclusive classroom management.

Table 2.
*The results of the descriptive statistics of the IKT items**

Questions**	Categories	Min	Max	X	SD
Question 1	Naturalistic teaching strategies	00	10.00	9.00	3.05
Question 2	Characteristics of children with disabilities and inclusion	2.00	8.00	4.73	1.61
Question 3	Characteristics of children with disabilities and inclusion	00	6.60	4.40	2.34

Question 4	Assessment and adaptations	3.30	6.60	3.18	1.38
Question 5	Naturalistic teaching strategies	3.30	6.60	3.63	1.00
Question 6	Characteristics of children with disabilities and inclusion	3.30	10.00	8.43	2.88
Question 7	Assessment and adaptations	3.30	6.60	4.84	1.67
Question 8	Naturalistic teaching strategies	00	00	00	00
Question 9	Classroom and behavior management	00	5.00	3.91	1.42
Question 10	Characteristics of children with disabilities and inclusion	00	10.00	3.96	2.66
Question 11	Assessment and adaptations	00	10.00	7.44	4.08
Question 12	Classroom and behavior management	00	7.50	3.33	1.77
Question 13	Characteristics of children with disabilities and inclusion	00	7.50	3.83	1.94
Question 14	Assessment and adaptations	00	6.60	3.19	2.02
Question 15	Classroom and behavior management	1.25	3.75	1.87	0.85
Question 16	Working with families	00	6.60	3.63	1.58
Question 17	Working with families	00	6.60	2.86	1.43
Question 18	Assessment and adaptations	00	10.00	5.00	2.93
Question 19	Supporting language and communication	00	6.60	3.19	2.37
Question 20	Working with families	00	6.60	2.97	1.80
Question 21	Supporting language and communication	00	10.00	2.66	4.49
Question 22	Assessment and adaptations	00	6.00	1.13	1.63
Question 23	Naturalistic teaching strategies	00	6.60	3.52	1.92
Question 24	Supporting language and communication	00	4.00	2.33	1.18

*The scores to be gained from each question vary from 0 to 10.

The means are lower than 3.00 for the **bold written questions

Teachers' Attitudes toward Inclusion

The data collected via the ORI revealed that the range of the total scores of the teachers regarding their attitudes toward inclusion varied between 44 and 73, with a mean total score of 59.23 (SD= 6.87). Given the fact that 100 was the highest score, it can be said that the attitudes of the teachers toward inclusion were neutral. When asked if they had sufficient knowledge and skills related to the education of children with disabilities, 26 teachers (86.8%) responded with either “disagree” or “totally disagree”. In addition, when asked whether or not general education teachers have the ability to work with children with special needs, 22 out of 30 teachers (75%) responded with the same negative answers as “disagree or totally disagree”. Interestingly, 93.3% (n=28) reported that inclusive classroom teachers do not need extensive training in order to work in inclusive classrooms, and almost 73.3% (n=22) believed that teaching students with disabilities in regular classroom does not require significant changes in teaching procedures. Some of the teachers (26%) stated their ambivalent feelings about whether inclusion affects the development of children with and without disabilities. In addition, 24 teachers (80%) answered either “disagree” or “strongly disagree” when asked whether inclusion contributed to the independence of children with disabilities. However, 20 teachers (66.7%) reported that inclusion facilitates understanding and acceptance of the individual differences among children. On the other hand, one-third of the participants said that teaching students with disabilities should be done by special education teachers rather than general education teachers, but almost the same percentage (30%, n=9) disagreed with this idea. Moreover, half of the teachers believed that they need extensive training to work in inclusive classrooms, showing that they want to improve. Similarly, 56.6 % of the teachers (n=17) disagreed when asked whether controlling inclusive classroom is harder than in classrooms without children with disabilities, and three-fourths believed that general education teachers are capable of working with children with disabilities. However, the majority of our teachers (n=24) believed that children with disabilities should not be isolated from their peers without disabilities, and 76.6% (n=23) stated that children with disabilities should be provided opportunities to participate in classroom activities.

The Relationship between the IKT and ORI Test Scores

To reach to the last purpose of the study, the relationship between the total scores obtained from the IKT and the ORI test were examined, and it was found that there was a negative relationship ($r=-.336$) between the level of knowledge and attitudes toward inclusion; however, this relationship was not significant. Pallant (2005) suggested that statistical significance should be reported but that the data could be ignored if it was collected from a small sample size (i.e., n=30) and stated that the focus should be directed at the amount of shared variance. When we calculated the coefficient of determination in our study, we found that two variables shared 11.28% of variance; that is, the variation in the IKT scores of the teachers explained 11.28% of the variation in their attitudes.

Discussion

This study examined the level of knowledge and the attitudes of in-service preschool teachers regarding inclusion. In an attempt to achieve our purpose, we used a knowledge test developed for our preschool inclusion project and an attitude scale employed to assess teachers' attitudes toward inclusion.

According to the first finding of the study, the preschool teachers' lack of knowledge regarding teaching in preschool classrooms, including their level of knowledge concerning children with disabilities seemed insufficient, especially regarding assessment and adaptations, supporting language and speech, inclusive classroom management, and issues concerning naturalistic teaching techniques. This seems to support previous findings indicating that preschool teachers lack the necessary knowledge for teaching in inclusive classrooms (Bruns & Mogharreban, 2009; Crane-Mitchel & Hedge, 2007; DeSimone & Parmar, 2006; Gök & Erbaş, 2011; Hammond & Ingalls, 2003). This finding was not surprising owing to the fact that in Turkey, preschool teachers are offered only one required special education course during pre-service training. In addition, most of them have limited or no opportunities at all to pursue further professional development programs that focus on inclusive practices because of their workload and number of teaching hours. Buell et al. (1999) stated that offering additional special education courses during pre-service education would be a valuable resource to prepare the teachers for inclusion. It is true that most introductory courses for general education teachers include basic information about children with disabilities (Praisner, 2003); however, offering a few more courses might prove to be more beneficial (Leyser & Toppendorf, 2001) for addressing specific information about inclusive practices. In this study, it was evident that the one special education course offered in pre-service training did not properly provide the teachers with enough information related to the topic of inclusion. By offering them more courses, they might have more knowledge and they would be more confident in inclusive classrooms.

Our analysis revealed that although the IKT scores were quite low, the preschool teachers' performance was somewhat encouraging with regard to some of the questions that focused on the characteristics of children with disabilities and the general measures to be taken in inclusive classrooms. However, they had difficulties answering the questions related to supporting language and speech, assessing children's performance, and adapting the preschool curriculum to the developmental level of children with disabilities. The researchers came to the conclusion that the teachers seemed to know approximately only one-third of the knowledge related to categories of behavior and classroom management and working with families. This was consistent with the results of previous literature which emphasized that preschool teachers need more information and skills, especially related to developing IEPs, differentiating preschool curriculum for children with disabilities, and coming up with instructional strategies that facilitate teaching in general education classrooms (Buell et al, 1999; Fuchs, 2009-2010; Gök & Erbaş, 2011; Odom et al., 2011). Taking into consideration all of our findings, we believe that it is currently not possible for preschool teachers to be fully prepared for the

inclusion of children with special needs in general education classroom. They should be offered courses and/or workshops on this topic along with opportunities to discuss real-life scenarios during pre-service and in-service training so as to improve the quality of inclusive practices.

We believe that this study was unique since, to date, there was no test to help professionals understand the level of knowledge of preschool teachers regarding inclusive practices. The IKT, that is the first test developed specifically to assess the knowledge of preschool teachers, helped us determine what they know about inclusion as well as identify the aspects of inclusion in which they have limited knowledge. Our findings are generally parallel to the existing literature which shows that assessing children's performance, adapting the preschool curriculum for children with special needs, and managing inclusive classrooms are the major issues with which teachers struggle. However, the answers to some of the questions revealed that teacher training programs should focus on some specific issues. For example, an analysis of the items indicated that the teachers in our study did not have experience with or knowledge related to naturalistic teaching strategies, such as incorporating teaching into daily routines or transition times in the class. Since these strategies can provide effective instruction for children with and without disabilities in inclusive preschool settings and since they enhance skill generalization, they are accepted as being advantageous relative to discrete-trial teaching in structured environments (Losardo & Bricker, 1994; McDonnell, 1998). However, in this study, almost none of the preschool teachers could answer the question about real-life situations related to natural teaching strategies. In addition, our study indicated that writing IEPs for children with disabilities is one of the major limitations of our participants. That can be probably be explained by the fact that they have difficulty selecting and determining instructional goals for children who have different ability levels. Moreover, only a small group of teachers was able to answer the question concerning knowledge related to the topic of supporting language and speech of children with disabilities. For example, one question stated, *"Five-year-old Çiğdem has expressed her needs by using only one-word sentences such as "Give.", "Take.", "Ball.", and "Water". The teacher wants her to use two-word sentences to express what she wants. Please write an example showing how the teacher can attain to this goal."* According to our findings, only one-fourth of the teachers in our study presented an example indicating the correct answer. Sadler (2005) cited that initial teacher training programs cover limited or no information pertinent to how children typically acquire language (Dockrell & Lindsay, 2001; Miller, 1991). Additionally, the preschool teachers reported that their college education did not prepare them for the diversity and dimension of special needs children in mainstream schools (Dew-Hughes & Brayton, 1997). We believe that the answers of the teachers clearly showed their limited knowledge regarding inclusive practices and preschool teacher training programs. Both pre-service and in-service programs should focus on providing them with specific strategies that can facilitate supporting the development of children both with and without disabilities in the same learning environment.

Regarding the attitudes toward inclusion, since a high score of 100 indicates attitudes that are more negative and lower scores show more positive attitudes of the teachers, it seems that the preschool teachers had slightly negative attitudes toward inclusion. This finding can be interpreted by taking into account the fact that all of the teachers in our study had the same educational background in which they completed four years of undergraduate education in the field of child development and preschool teaching. In addition, nearly all of them (93%) had only one special education course that explicitly focused on the characteristics of children with disabilities in their pre-service training, and only seven had attended in-service training that focused on inclusive practices. Consequently, knowing that the support services for preschool teachers and children with disabilities who are involved in inclusive practices are insufficient (ERG, 2011) and that most of the preschool teachers obtain their knowledge and skills through classroom experience after children with disabilities join their classrooms (Gök & Erbaş, 2011; Secer, 2010; Uysal, 1995; Varlier & Vuran, 2006), it is no wonder that the participants were not favorable to inclusion. We believe that the lack of knowledge and experience in working with children with disabilities has led to negative or ambivalent attitudes concerning inclusive practices. Therefore, we hypothesize that by providing functional and needs-based training programs, teachers' level of knowledge about inclusion will improve along with their attitudes toward inclusive preschool practices.

It is clear that accepting inclusion is a necessary first step for early childhood professionals to accommodate children with disabilities in their classrooms (Bruns & Mogharreban, 2009). In addition, teachers' attitudes toward inclusion can go a long way toward determining the success or failure of inclusive placements (Coombs-Richardson & Mead, 2001). Moreover, adequate training would most likely have an influence on the attitudes toward inclusion (Crane-Mitchel & Hedge, 2007). Therefore, we believe that we should especially focus on creating more positive teacher attitudes for inclusion to facilitate inclusive practices for young children with disabilities. This would require the development of effective and functional pre-service and in-service programs to prepare teachers for working with all young children and increase their self-confidence regarding inclusion.

The literature reflects a significant relationship between a teacher's knowledge and attitudes; hence, increased knowledge can lead to more positive attitudes. For example, it has been reported that teachers who had more courses on special education or in-service training had more positive attitude toward inclusion (Buell et al., 1999; Clough & Nutbrown, 2004; Mastropieri & Scruggs, 2000; Secer, 2010; Seery, Davis, & Johnson, 2000). Conversely, negative attitudes can result from a lack of knowledge (Crane-Mitchell & Hedge, 2007). In the current study, we found that there was a negative relationship ($r = -.336$) between the teachers' level of knowledge and their attitudes toward inclusion; however, this relationship was not significant. Pallant (2005) emphasized that with smaller sample sizes, there could be a moderate correlation that does not reach statistical significance at the traditional value of $p < .05$. Therefore, in future research, this study should be replicated, and any correlation between the knowledge of preschool teachers and their attitudes toward inclusion should be

examined using data gathered from a larger sample size in order to obtain more accurate and valid results.

Limitations

Two limitations should be noted when interpreting the findings of our study. First, there were only 30 teachers as participants in the study, and they all worked in public preschools in one area of the city of Ankara. Therefore, not only should future research on this topic involve larger sample sizes, but it also should include teachers from other cities and other type of preschools or kindergartens. By replicating this study with a wider and more varied population, it could be determined whether our findings could be generalized to the greater preschool teacher community. Another limitation involved the data collection methods. Besides using tests and a Likert-type attitude scale, conducting observations in preschool classrooms and interviewing teachers, administrators, and parents of children with disabilities might provide a different profile of the preschool teachers in inclusive environments.

Conclusion

Inclusion has a 30-year history in Turkey, and all children with disabilities have the right to be placed in regular classrooms according to the most recent legal amendments. That means children who need special education services are placed in regular classrooms and provided with the necessary services and support in general preschool classes. In spite of all the problems and difficulties faced during the implementation of these practices, both parents and professionals in Turkey agree that inclusion is still the preferred placement for children with disabilities. Therefore, teachers who are to work in preschools in the future should have the appropriate knowledge and skills to meet the needs of all young children regardless their characteristics or level of abilities. As Pavri and Luftig (2000) suggested, both in-service and pre-service teachers should be provided with courses and training that focus on the acceptance of children with disabilities and should be given specific strategies to support them as they teach in inclusive classrooms. Another suggestion is that preschool teacher programs should be reformulated to offer unified programs that focus on preparing them to serve all children (Gargulio et al., 1997). Similarly, it has been suggested that more blended programs are needed that would include special education strategies and practices that are developmentally appropriate (Crane-Mitchel & Hedge, 2007). We believe that after 30 years of implementation of inclusive practices in Turkey, it is time to think about revising and reformulating teacher training programs to equip teachers with the necessary knowledge, skills, and experience they need to work with children of different ability levels. Furthermore, new special education courses along with intensive field-based practices should be incorporated into early childhood programs to facilitate inclusion. Only by improving pre-service and in-service education in these ways can we adequately meet the needs of preschool teachers and encourage more positive attitudes toward the inclusion of children with disabilities.

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