

PERSPECTIVES OF COLLEGE OF EDUCATION STUDENTS IN TURKEY ON AUTISM SPECTRUM DISORDERS

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This study addressed the autism awareness of College of Education students in two universities in Turkey. The main purpose of this research study was to conduct a needs assessment to learn more about Turkey's College of Education students' knowledge and awareness of autism. The Autism Awareness of College of Education Students in Turkey questionnaire was used to collect the data. The survey statements were designed to answer the research questions and provide considerable information on College of Education students' awareness and attitudes about autism. Participants for this study were randomly selected from among the students in the College of Education at two different universities in Turkey: Gazi University, Ankara, and Karadeniz Technical University, Trabzon. The data from the questionnaire were analyzed with descriptive statistics to understand attitudes, beliefs, and thoughts of College of Education students in Turkey. Results generally demonstrated that College of Education students' knowledge of autism was limited; however, they realized they need more classes and preparation in order to effectively work with children with autism.

Introduction

As autism awareness is raised all around the world, educating children with autism and preparing their teachers becomes more important because of the proven effectiveness of early educational intervention for a child with autism spectrum disorders (ASD). There are different programs for educating children with autism, therefore, there should be different teacher training programs to develop highly effective teachers to work with this population.

Around the world in-service and pre-service teachers have concerns about their knowledge and effectiveness of their teaching strategies on their students (Pasco, 2011). This study focuses on College of Education students in Turkey to learn their knowledge, awareness, and concerns about autism to help design evidence-based teacher training programs in Turkey. In Turkey, Colleges of Education do not offer any teacher training programs about autism. Without receiving any special training about autism, what do College of Education students in Turkey know about autism, the educational needs of a child with autism, and how do College of Education students feel about teaching children with autism in their classrooms?

Teachers' attitudes and understanding about autism is an important factor for the child's education. Attitude is defined as *manner, disposition, feeling, position etc. with regard to a person or thing; tendency or orientation, especially of the mind* (<http://dictionary.reference.com>). Attitudes are shaped by observational learning, parent and peer behaviors, and interactions between past experiences and the person's environment (Park, Chitiyo, & Choi, 2010).

Teachers' beliefs and thoughts affect outcomes of students, teachers' instructional skills, and their activity choices for their class. There are studies which show that teachers' knowledge about a specific disorder has a massive influence on the teaching process and the children achieving their goals (Siu & Ho, 2010). Teachers' understanding about the subject they are teaching and their students' strengths, weaknesses, and disabilities influences students' achievement levels (Bishop, Brownell, Klinger, Leko, & Galman, 2010). Teachers who believe in students' achievement are more effective than the teachers who do not support student achievement. If teachers have high expectations, they inspire better

performance (Mehring & Dow, 2001). This emphasizes the importance of the educators' knowledge about autism.

Teachers who work with children with autism should have the content knowledge, general pedagogical knowledge, curriculum knowledge, knowledge about learners and their characteristics, knowledge of educational context, and knowledge of educational purposes and values (Mehring & Dow, 2001). According to the Council for Exceptional Children (as cited in Mehring & Dow, 2011), teachers must know philosophical, historical, and legal foundations of special education, assessments, diagnosis, evaluation, instructional content and practice, planning teaching activities, managing the teaching and learning environment, managing student behavior and social skills, communication and collaboration, and partnership, professionalism, and ethical practices (Mehring & Dow, 2001). Siu and Ho (2010) stated that some teachers do not feel confident enough to teach students with autism. Teachers think they need more training, equipment, knowledge, and skills to work with children with autism.

Park and colleagues (2010) noted that people who know somebody with autism, whether it is a friend or relative, tend to have more positive attitudes towards others with autism. Students who are in inclusive educational settings had more positive behaviors. Teachers' attitudes towards children with autism affect their expectations of the students and play important roles in student's self-image development and academic performance.

Teachers should know about autism in order to effectively help children with autism. There are not many research studies and surveys conducted on teachers' attitudes toward autism and students with autism. Park et al., (2010) found that teachers' attitudes can affect their expectations about students which also affect students' self esteem and academic performance. Additionally, teachers with negative attitudes towards students with autism have significant negative impacts on students. Teachers can develop negative attitudes towards children with autism because of their lack of understanding of autism. Park and colleagues also mentioned the importance of attitudes of pre-service teachers towards children with autism; focusing on pre-service teachers' attitudes may help to develop teacher training programs.

Teachers should consider evidence-based teaching programs such as applied behavior analysis, video modeling, and visual support to be effective teachers. Evidence-based teaching programs depend on subject areas, grade levels, students' developmental levels, cognitive and psychological characteristics, and students' learning outcomes. Teachers should be aware of those key factors to design effective lessons for their students (Mehring & Dow, 2001).

Early childhood educators play important roles in early autism diagnosis and working with any kind of disabilities. Teachers should be able to identify irregular developmental patterns displayed by the children who may need testing to determine a disability. Like diagnosticians, teachers should have special skills and training on how to conduct progress evaluations (McGee & Morrier, 2005). Children with ASD generate a heterogeneous population. Their different levels of skill and intelligence make it more difficult to train autism specialists. Autism specialists have to know how to assess and intervene with this wide range of developmental abilities (McGee & Morrier, 2005).

Teachers, like all other providers who work with children with autism, should have close relationships with the families of the students with autism (McGee & Morrier, 2005). Teachers should be aware of cultural differences of families to effectively help them and their children. Educators and families should work together to know the child's unique strengths and weaknesses (Rodriguez, 2009). This knowledge about informing families and collecting data can be provided by giving the teachers appropriate trainings about disabilities and special education services.

Successful special education teachers have the ability of displaying humor, enthusiasm, fairness, empathy, flexibility, and self-control (Bishop et al., 2010). Besides that, successful special education teachers are the ones who can differentiate their teaching to meet each student's needs, depending on topic, instructional method, and teaching goal (Mehring & Dow, 2001). Teachers should know that students with autism need a special curriculum which promotes independent skills. Goals should focus on helping children develop independent play and work skills, and managing their own behavior. Students with autism have difficulty with organization, sequencing, and generalization, even though they may have obsessions about organization. They can manage organization and generalization problems with the help of interventions which are designed to address the child's strengths (Hume & Odom, 2006).

Autism in Turkey

More attention has been focused on ASD principally because of the increase in numbers of children who are identified and diagnosed with autism. The media has affected the understanding about needs of individuals with autism (Pasco, 2011). Autism in Turkey is also impacted by media. Turkey has attended the United Nations' Autism Awareness Day and Autism Awareness Month activities in April since 2008. Most of the activities are held by Tohum Otizm Vakfi, which is the largest foundation about autism in Turkey. The foundation's mission is raising awareness and helping children who have autism and other developmental disabilities to be a part of society. Tohum Otizm Vakfi was established in 2003 to serve that mission. Tohum Otizm Vakfi uses media to increase autism awareness. They also have a school specifically for children with autism.

Educators in Turkey are following educational trends in the United States. Inclusive education began in Turkey in 1983 with the regulation regarding children with special needs. Even though there are legal requirements about special education services and inclusive education, there are not enough people trained to provide those services and there are not well designed educational environments for inclusive education (Nal & Tuzun, 2011).

According to Tohum Otizm Vakfi's report on Autism Spectrum Disorders and Special Education in Turkey (2010), students with special needs were 0.7% of Turkey's student population. Depending on the information from the Ministry of National Education, during the 2008-2009 school year there were 2,582 students in the public school system with an autism diagnosis. In the 2010-2011 school year, the number of students with autism was 2,932; 339 of those students were in Vocational Training Centers for Autistic Children, and 1,593 of the students were in Training Centers for Autistic Children (www.sgb.meb.gov.tr). Training Centers for Autistic Children serve the students between the ages of three and 15 who are able to benefit from the special education curriculum. Vocational Training Centers for Autistic Children serve the students between the ages of 15 and 21 who are not able to earn a degree or diploma from a traditional educational environment. Vocational training centers are designed to help individuals with autism learn life skills, job skills, and social orientation. In 2009, 10,811 students were diagnosed with autism; however, all of these students did not receive services in the public school setting. When the number of students with autism who are receiving educational services is compared to the number of children being diagnosed, the necessity of a specialist for autism can be seen easily. Turkey's biggest problem in providing special services is not having enough professionals to work in special education fields.

The College of Education students take classes on teaching skills, general culture classes, and content knowledge. Students are able to take some elective classes to improve their teaching skills and content knowledge. All College of Education students take classroom experience and teaching practice classes one day a week after their sixth semester. Classroom experience class includes one hour of theory and four hours in public schools. During those four hours students have to complete some activities which are prepared by the Ministry of National Education and College of Education professionals. Students have to write their weekly reports each week. In the one hour theory class those reports are discussed by the students (Kulekci & Bulut, 2011).

Teaching practice class is also one full school day every week in the public schools for one semester. Student teachers have to spend at least 24 hours teaching to children in class. Student teachers' grades are based on their performance and reports (Kulekci & Bulut, 2011). As mentioned by Bishop et al. (2010) beginning special education teachers learn while they are working with children with disabilities. Teachers' beliefs about instruction, roles in helping students with disabilities, abilities of reflecting their instruction, and confidence while working with children influence teachers' learning. To influence teachers' learning there should be more classes involving teacher-student interaction.

None of the Universities in Turkey have a program which can prepare teachers and specialists for students with ASD, because there are not enough university professionals who can prepare the teachers who will serve students with autism in special education and inclusive settings. Students with autism are provided education by the teachers who get their degrees from special education departments in teaching for children with intellectual disabilities at eleven universities in Turkey. Even though those universities have special education programs, they do not have enough professionals to prepare special education teachers and autism specialists (Tohum Otizm Vakfi, 2010). Turkey needs professionals who work on autism and education to develop college training programs. If College of Education students were offered training, they would be more interested in becoming a professional in the area of autism with the ability

to train more people which would provide additional help for children with autism. Mehring and Dow (2001) stated that teacher training programs should not start and end with training at a university campus for a couple of years. Effective teacher training programs should continue after a college education while the teachers are teaching. According to these authors, professionals who have specialized training or previous work experience with children who have autism should serve students with autism.

Teachers who work with the children with autism need to be educated on both general education and special education because of the trends on educating children with autism in inclusive educational settings (McGee & Morrier, 2005). In 2006, all teacher training programs in Turkey were required to add special education and inclusion classes to their programs. Even though the requirements are in place, universities in Turkey cannot solve the problems about providing special education university professionals to prepare teachers (Tohum Otizm Vakfi, 2010).

Tohum Otizm Vakfi and the National Ministry of Education in Turkey worked together to train 1,250 medical personnel and 2,000 teachers for identifying children with autism who did not get the diagnosis until 2010, since Tohum Otizm Vakfi was established in 2003. According to the Ministry of National Education Formal Education Statistics (2011), 43 Training Centers for Autistic Children and seven Vocational Training Centers for Autistic Children have been serving students who have autism. There is a new program which is a web portal started by Tohum Otizm Vakfi. The portal includes 20 modules to educate people who do not have basic knowledge of ASD and want to help children with autism. The modules include information about how to interact with children with autism, which skills to teach a child with autism, which methods can be used to teach a child with autism, and basics to understand autism spectrum disorders (Tohum Otizm Vakfi, 2011).

The purpose of the study was to learn about what College of Education students in Turkey know about autism, their awareness about autism, and the educational needs of a child with autism, along with their feelings about being prepared to teach children with autism in their classrooms. This study was a survey study which was conducted in Turkey with College of Education students. Participants' responses were analyzed to answer the following research questions: (1) What do College of Education students know about autism? (2) Are College of Education students in Turkey aware of autism and the educational needs of a child with autism? and (3) Do the College of Education students in Turkey feel prepared to teach children with autism in their classrooms? This information will be used to improve the current teacher training programs and design more effective programs in Turkey. The study will also help to plan future classes, lectures, and teaching activities in College of Education classes.

Methods

This is a survey study designed by the first author based on the reviewed literature about autism and teachers' attitudes and the importance of education for a child with autism. Participant responses were based on a 5 point Likert scale. The survey was created by the first author specifically for this study. The Autism Awareness of College of Education Students in Turkey questionnaire was used to collect the data. The survey was available in both Turkish and English.

Participants

Participants for this study were randomly selected from among the students in the College of Education at two different universities in Turkey. Two-hundred-seventeen participants were from Gazi University, Ankara and 334 participants were from Karadeniz Technical University, Trabzon, for a total of 551 participants. The survey was distributed during class hours. Subjects were eligible to participate in the survey if they were currently enrolled in any program in the College of Education at the two specified universities and were at least 19 years old. There were 19 surveys excluded because the participants did not meet the criteria for inclusion the study.

Table 1 Gender of Participants

	<i>N</i>	Percent
Male	134	24.30
Female	417	75.70

As shown in Table 1, approximately 24% of the participants were male, and 76% of the students were female. Female students were over represented in the study because of their high population in College of Education programs.

The minimum age to participate in the study was 19, but there was no upper limit for the older participants. The oldest participant was 32 years old and the average age of participants was 20.50, as shown in Table 2.

Table 2 Age of Participants

Minimum	Maximum	Mean	St. Deviation
19	32	20.55	1.64

Table 3 Class Levels of Participants

Class Level	<i>N</i>	Percent
1	138	25.00
2	140	25.40
3	158	28.70
4	115	20.90

Participants were randomly selected from different class levels and different fields of studies. As shown in Table 3, approximately 28 % of the subjects were in their third year of study, and 21% of the subjects were in their last year of their bachelor degree. Almost 25% of the students were in their freshman year and the last 25% of the students were attending their second year in the College of Education.

Participants were randomly selected from any program in the College of Education. The 551 participants were from ten different programs in the College of Education. Forty-eight percent (48%) of the participants (*N*= 266) were in elementary school teacher training programs. On the other hand, just seven participants were in math teacher training programs. Table 4 provides more detailed information on the fields of study for participants in the study.

Table 4 Field of Study of Participants

Field of Study	<i>N</i>	Percent
Intellectual Disabilities	26	4.7
Computer-Based Technologies	40	7.3
Science	69	12.5
Elementary School Teaching	266	48.3
School Counseling	42	7.6
Deaf and Hard of Hearing	31	5.6
Arts and Crafts Teaching	17	3.1
Math Teaching	7	1.3
Social Sciences Teaching	27	4.9
Early Childhood Education	26	4.7

Survey Instrument

The Autism Awareness of College of Education Students in Turkey questionnaire includes two parts. The first part of the survey was to gather the participants' demographic information. Questions were asked to learn the participants' gender, age, university, field of study, and class level.

The second part of the questionnaire included twenty statements where participants had to rate their opinions for each statement using the five point Likert scale where a response of 1 meant strongly disagree and a response of 5 meant strongly agree. The survey questionnaire was constructed based on a review of the literature. Attitudes and knowledge of autism were found highly essential for teachers to be highly effective. The complete questionnaire is contained in the Appendix section in both languages, Turkish and English. The Turkish version of the questionnaire was used because not all Turkish participants were fluent in English.

The subjects were asked to participate in the survey during their lecture hours and free time. Hard copies of the questionnaire were provided by the first author. The first author went to different classrooms on campus and handed the questionnaires to the participants. All of the subjects were informed and read and signed the consent form before they started. Participants were given 20 minutes to rate the survey statements.

The first author was available to answer the questions about the study while the subjects were rating the statements. She also answered questions about autism after the questionnaires were completed.

Results

Descriptive Statistics

The data from the questionnaire were analyzed with descriptive statistics to determine the mean and standard deviation of the College of Education students' evaluations of the Likert scale rated statements. A five point Likert scale indicated responses from *1-Strongly disagree* to *5-Strongly agree*. The survey statements were designed to answer the research questions and provide considerable information on College of Education students' awareness and attitudes about autism. Descriptive statistics were computed for all statements which are presented in Table 5.

Table 5 Rating Scale for Each Statement

Statements	Mean	Std. Deviation
Autism is a developmental disability	3.97	1.03
Know somebody with autism	1.97	1.47
Take 1 class about autism	2.42	1.67
Able identify and understand autism	3.05	1.19
Experienced teaching during practicum	1.47	1.09
Able to give information to parents	2.85	1.32
Place in inclusion classroom	3.27	1.25
Need communication support	4.41	0.84
Need behavioral support	4.44	0.80
Support to improve social skills	4.50	0.78
Able to plan a lesson for children with autism	2.30	1.12
Education of needs of a child with autism	1.91	1.26
Able to integrate new teaching strategies	2.27	1.17
Deal with classroom management issues	2.48	1.16
Placed in special education classroom	3.85	1.17
Visual support helps	4.28	0.87
Placed in general education classroom	2.77	1.27
Enough education about autism	1.80	1.09
More classes about autism	4.09	1.01
Spending money education and training	1.82	1.35

One of the main purposes of this study was to learn about Turkey's College of Education students' knowledge about autism. Some of the statements were designed to answer the question *What do College of Education students know about autism?* The mean score of the first statement ($M=3.97$, $SD=1.03$) shows that most of the participants know that autism is a developmental disability which can be improved through education. Four-hundred-twenty-four (76.9%) of the College of Education students agreed and 55 (10%) of the students did not agree to the statement. In addition to that, 77 (13.1%) of participants reported they were neutral about this statement. On one hand, 159 (28.8%) disagreed and 196 (35.6%) agreed that they were able to identify and understand the characteristics of autism ($M=3.05$, $SD=1.19$). One-hundred-ninety-six (35.6%) participants were not sure. Participants showed that they were not confident about their understanding of autism (See Table 6 for complete statistics for each statement).

Two-hundred-twenty-three (40.5%) participants admitted they were not able to give information about autism if parents asked ($M=2.85$, $SD=1.32$). One-hundred-ninety-seven (35.8%) students thought that they could provide information when parents asked. One-hundred-thirty-one (23.8%) students were not sure about providing any information to the parents. The results presented for each statement suggested

that College of Education students have the general idea of autism, but they do not have more in depth information to explain it to parents or anyone who needs some information about autism.

Participants who were in the College of Education in Turkey have general knowledge about autism. They knew autism is a developmental disability that can be improved through education. On the other hand, they were not sure they could identify and understand the characteristics of autism or give information to anyone if they were asked. These results suggest College of Education students need to be better informed about autism.

The second research question was *Are College of Education students in Turkey aware of autism and the educational needs of a child with autism?* Statements two and five showed that most of the participants did not have any chance to meet an individual with autism. For the second statement the computed mean score is $M=1.97$ ($SD=1.47$). Four-hundred-twenty (66.2%) students reported they did not know anyone with autism. One-hundred-eight students (19.6%) had a relative, friend, or student with autism. There were 23 participants (4.2%) who were not sure if they knew somebody with autism. Participants also stated that they did not experience teaching a child with autism during their practicum hours. Four-hundred-ninety-three (89.5%) participants chose *strongly disagree* or *disagree* for statement five ($M=1.47$, $SD=1.09$). Only 11 (2%) students reported they were not sure about it and 47 students (8.5%) agreed that they had a chance to experience teaching a child with autism during their practicum hours.

Statements eight, nine, ten, and sixteen asked about the participants' opinions and beliefs about the educational needs of a child with autism. More than 90% of the participants reported that students with autism need communication support ($M=4.41$, $SD=0.84$), behavioral support ($M=4.44$, $SD=0.80$), and social skills support ($M=4.50$, $SD=0.78$). Eighty-six percent (86%) of participants agreed visual supports help students who have autism. Four percent (4%) of the participants disagreed with the need for communication support and behavioral support, and 3% of the participants disagreed with the need for social skills support. Furthermore, 4% of participants reported that visual supports do not help students with autism.

Four-hundred-fourteen (75.1%) participants thought they had not received any education about the needs of a child with autism ($M=1.91$, $SD=1.26$), while 87 students (15.8%) thought they had received education about the needs of a child with autism. Fifty (9.1%) students were not sure about the level of education they had received regarding a child with autism.

In addition to statement 12, statement 18 asked the level of education participants had received about autism. Approximately 75.8% of participants did not think they had received enough education about autism, and 26.7% of the participants thought they had received enough education about autism ($M=1.80$, $SD=1.09$). Fifteen percent (15.1%) of the participants were not sure if they had received enough education.

Statements seven, fifteen, and seventeen were designed to get opinions about the placement of a child with autism in educational settings. Statement seven ($M=3.27$, $SD=1.25$) suggested students with autism should be placed in inclusion classrooms. Two-hundred-forty-one (43.7%) participants agreed, and 131 (23.7%) participants disagreed. One-hundred-seventy-nine (32.5%) participants could not decide whether the students with autism should be placed in inclusion classrooms.

On the other hand, 371 (67.3%) participants agreed that students with autism should be placed in special education classrooms ($M=3.85$, $SD=1.17$). Seventy-four (13.4%) participants did not agree with that statement. Two-hundred-fifteen (39%) participants did not agree that students with autism should be placed in general education classrooms. However, the mean score for statement seventeen is 2.7 ($SD=1.27$); 189 (34.3%) participants were neutral regarding general education placements. Results of those three statements showed that most of the College of Education students who participated in the study thought that students with autism should be placed in special education classrooms.

Participants' responses answered research question two. Even though participants did not receive enough education about autism or knew anybody with autism, they were aware of autism and the educational needs of a child with autism. Most of them thought children with autism should not be placed in general education classrooms; they should be in special education settings or inclusion classrooms.

The third research question was *Do the College of Education students in Turkey feel prepared to teach children with autism in their classrooms?* Thus, the important information to determine this data was learning about the participants' classes about autism. Three-hundred-fifty (63.5%) of the participants reported that they disagreed with the statement three. Eighteen students (3.3%) were neutral about taking any class which covered information about autism and the educational needs of a child with autism. One-hundred-eighty-three (33.2%) out of 551 participants took at least one class related to autism. Four-hundred-thirty-eight (79.5%) participants agreed that the College of Education should have more classes about autism ($M=4.09$, $SD=1.01$). Only 42 (7.6%) students disagreed with statement nineteen which was in support of College of Education students receiving more classes about autism.

Statements eleven, thirteen, and fourteen were about the College of Education students' feelings of their ability to teach a child with autism. Three-hundred-five participants (55.4%) did not think that they were able to plan a lesson which involved appropriate learning activities for a child with autism ($M=2.30$, $SD=1.12$). Also, 294 (53.4%) participants did not think they were able to integrate new teaching strategies in a classroom which contained a child with autism ($M=2.27$, $SD=1.17$) and 266 (48.2%) participants did not know how to deal with classroom management issues for a child who has autism ($M=2.48$, $SD=1.16$).

Answers for the third research question were determined by analyzing the responses of participants. The statements suggest that College of Education students in Turkey did not feel they were ready to teach a child with autism.

As additional information, the last statement was about the government's spending money on educating students with autism and training their teachers. Three-hundred-ninety-five (73.5%) participants thought that the governments' spending money is necessary ($M=1.82$, $SD=1.35$). Fifty-eight (10.5%) participants were neutral about this issue. Eighty-eight (16%) stated that they thought government's spending money on educating students with autism and training their teachers was unnecessary.

Table 6 Frequency and Percentages for Each Choice

Statements	Strongly disagree		Disagree		Neither agree nor disagree		Agree		Strongly agree	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Stmt 1	22	4.00	33	6.00	72	13.10	235	42.60	189	34.30
Stmt 2	333	60.40	87	15.80	23	4.20	27	4.90	81	14.70
Stmt 3	273	49.50	77	14.00	18	3.30	59	10.70	124	22.50
Stmt 4	75	13.60	84	15.20	196	35.60	126	22.90	70	12.70
Stmt 5	433	78.60	60	10.90	11	2.00	10	1.80	37	6.70
Stmt 5	119	21.60	104	18.80	131	23.80	132	24.00	65	11.80
Stmt 7	68	12.30	63	11.40	179	32.50	130	23.60	111	20.10
Stmt 8	12	2.20	10	1.80	27	4.90	188	34.10	314	57.00
Stmt 9	10	1.80	11	2.00	19	3.40	197	35.80	314	57.00
Stmt 10	10	1.80	8	1.50	17	3.10	174	31.60	342	62.10
Stmt 11	173	31.40	132	24.00	173	31.40	52	9.40	21	3.80
Stmt 12	306	55.50	108	19.60	50	9.10	51	9.30	36	6.50
Stmt 13	202	36.70	92	16.70	178	32.30	59	10.70	20	3.60
Stmt 14	149	27.00	117	21.20	178	32.30	83	15.10	24	4.40
Stmt 15	33	6.00	41	7.40	106	19.20	165	29.90	206	37.40
Stmt 16	11	2.00	11	2.00	57	10.30	203	36.80	269	48.80
Stmt 17	120	21.80	95	17.20	189	34.30	81	14.70	66	12.00
Stmt 18	307	55.70	111	20.10	83	15.10	32	5.80	18	3.30
Stmt 19	21	3.80	21	3.80	71	12.90	208	37.70	230	41.70
Stmt 20	376	68.20	29	5.30	58	10.50	40	7.30	48	8.70

Discussion

ASD encompasses a wide range of disabilities. Every child with ASD experiences the disability in different ways depending on his/her skills, abilities, and cognitive level. These differences between the students make it difficult to adequately train and prepare teachers for children with autism. Teachers should be able to serve all of the students with ASD in their classes. The importance of the teachers' knowledge and understanding about autism directs the attention to the teacher training programs. Evidence-based teacher training programs about autism should be planned more carefully to provide the necessary education for children with autism.

The purpose of this study was to learn about Turkey's College of Education students' knowledge about autism and the educational needs of a child with autism. Learning their knowledge about autism is important to justify their feelings about teaching a child with autism. These key components were determined by using the questionnaire prepared for this study by the first author.

According to the questionnaire results, College of Education students in Turkey knew that autism is developmental disability that can be improved through education, but they were not sure they were able to identify and understand the characteristics of autism. College of Education students in Turkey thought that they could not provide any information about autism when they were asked, because they did not take any classes related to autism. Colleges of Education in Turkey do not offer any classes about autism. College of Education students did not have in-depth knowledge of autism, but they also knew children with autism need communication support, behavioral support, and social skills support. The college students in Turkey also stated that visual supports help students with autism. These results showed that College of Education students in Turkey believed they have the basic knowledge about autism. Identifying and understanding the characteristics of autism requires more in-depth knowledge, which emphasizes the lack of appropriate training about autism.

If the College of Education programs have classes about autism, the students would be able to have the knowledge and share it with other people who need help. All College of Education students should have knowledge to help their students with autism. Education of children with autism is not only the responsibility of the special education teachers, it is the responsibility of all teachers because the law requires placing students with ASD in inclusive educational settings as appropriate based on their skills and abilities. All teachers should have in-depth knowledge about autism, because they will have students with ASD in their classes whether they are general education or special education classes.

Most College of Education students did not know any individuals with autism, and they have never experienced teaching a child with autism during their practicum hours. They have the basic knowledge about autism but have never experienced it first-hand. College of Education students stated they knew children with autism needed behavioral, communication, social skills, and visual support help to be successful, which showed they were aware of some of the educational needs of a child with autism.

This study showed College of Education students in Turkey thought students with autism should be placed in special education or inclusion classrooms. Students with autism need special instruction which is designed for them, thus they should not be placed in general education classrooms without any support or training for the receiving teacher. College of Education students knew they needed special classes to acquire knowledge about autism. They did not think they received enough education about autism. College of education students agreed that Colleges of Education should have more classes about autism.

The survey generated enough data to answer the research questions. College of Education students in Turkey were aware of autism and the educational needs of a child with autism. They admitted a child with autism needed specialized instruction to improve their skills, and teachers needed to be more educated about autism to provide that specialized instruction. Besides that, College of Education students knew they did not receive the necessary training to help children with autism.

College of Education students in Turkey did not take any classes which were related to autism and they thought they did not receive enough education about autism, thus they did not think they were able to plan a lesson which involved appropriate learning activities for a child with autism. College of Education students also did not think they were able to integrate new teaching strategies in a classroom which contains a child with autism. The responses of those statements showed College of Education students in Turkey did not feel prepared to teach children with autism in their classes because they did not receive enough education and they did not have the knowledge to teach children with autism.

Limitations

There are some limitations about the study and the data collection procedures. The data for this study was collected from two Universities' College of Education students because of the permission restriction. The first author received permission to conduct research from two universities in Turkey. Between these universities 551 students participated. Their responses cannot be generalize to all of the universities in Turkey, but it still provides a representation of what the College of Education students in Turkey know about autism.

The second limitation of the study is the reflection of gender in the field of education. One-hundred-thirty-four (24.3%) male, and 417 (75.7%) female College of Education students participated in the study. More female students were represented in the study; therefore, the results of the study may change depending on the participants' gender. Based on this sample, patterns of male/female attitudes and knowledge cannot be determined.

Elementary school teaching program's students were also over represented in the study because elementary school teaching programs' classroom populations were higher than the other programs. Elementary school teaching programs are popular among the teacher training programs in Turkey. This popularity affected the population of the students in College of Education and in this study. This may count as a benefit for the study because the results are dependent of the elementary school teaching program's students who are more likely to be the first teachers of the students with autism with or without diagnosis in their classes. It was good to know the ideas and knowledge of the future elementary school teachers.

The last limitation for the study was data collection. The data were collected in 20 minute sessions during the lecture hours. If participants had been able to use more time to think about the statements, they may have given more thoughtful answers. Questionnaires could have been handed out for one day and participants could have been asked to hand them in the next day, but the number of participants would not be the same if the students were asked to return the questionnaires later. Additionally, the first author's time was limited in Turkey to be able extend the time for data collection. All of the data were collected in two days, one day for each university. Even though there are limitations to the study, the collected data was enough to determine the statistical results and provide useful information for teacher training programs.

Educational Implications

Important findings of this study showed the importance of the teacher training programs for educating a child with autism. Previous research (Bishop et al., 2010, Mehring & Dow,2001, Park et al., 2010, Siu & Ho, 2010) has emphasized the importance of teachers' attitudes and knowledge on a child's ability to reach his/her educational goals. Improving teachers' knowledge about any disability is best accomplished while they are in college; however, teachers need to continue learning to keep up on the latest research and teaching techniques. Teachers stated that they learn more about the disabilities while they are working with children (Bishop et al., 2010). Teachers' knowledge and attitudes about autism can be improved while they are in college and while they are taking their classroom experience and teaching practice classes.

Colleges of Educations in Turkey should offer more classes about special education and autism. Those classes should not be just theoretical classes; College of Education students should be taking classroom experience or teaching practice classes in special education or inclusive educational settings. At least during one semester every College of Education teacher should experience teaching in a classroom which contains students with disabilities because it may not be possible for every College of Education student to experience teaching a child with autism. When the College of Education students experience teaching a student with disability, they learn how to plan, differentiate, and manage their teaching activities.

In Turkey, before training College of Education students, the Ministry of National Education and Universities should focus on professionals' training about special education and autism. There are some scholarships and programs for professionals' training, but the study results showed there were not enough professionals who can provide that training at the college level. Even the law requires Colleges of Education to offer classes about special education; however, there are not enough faculty to lecture for those classes.

Future Research

This study can be used as a base to design other studies to compare different universities programs and students' knowledge depending on the responses of questionnaire statements. This study also can be expanded to other universities in Turkey to evaluate improvement of College of Education programs in areas of special education and autism. This study can be replicated to compare students' knowledge and awareness about autism, which show the programs improvement.

In summary, College of Education students in Turkey showed their knowledge and understanding about autism is limited. However, they have the basic knowledge. They need to be better educated to use evidence-base practices while they are teaching to students with autism. College of Education students do not feel prepared to teach a child with autism in their classes. The study showed that teacher training programs in the Colleges of Education in Turkey should modify their programs to give better education about special education and autism. The study results showed students in College of Education in Turkey did not take any classes related to autism, thus they do not have in-depth knowledge about autism. Colleges of Education in Turkey should offer more classes about special education and autism and those classes should be mandatory for every student who enrolled in any program in the College of Education.

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Appendix A**Demographics:**

Gender: Male _____ Female _____

Age: _____

University: _____

Field of Study: _____ Class _____

I would like you to choose one of the numbers from 1- 5 to identify your situation and beliefs about autism.

1: Strongly disagree, 2: Disagree, 3: Neither agree nor disagree, 4: Agree, 5: Strongly Agree

Statements:

1. Autism is a developmental disability that can be improved through education.
1 2 3 4 5
2. I know somebody (relatives, friends, students) who has autism.
1 2 3 4 5
3. I took at least 1 class which covers information about autism and educational needs of a child with autism.
1 2 3 4 5
4. I am able to identify and understand the characteristics of autism.
1 2 3 4 5
5. I have experienced teaching a child with autism during my practicum hours.
1 2 3 4 5
6. I am able to give information about autism when the parents ask.
1 2 3 4 5
7. Students with autism should be placed in inclusion classrooms.
1 2 3 4 5
8. Students with autism need communication support.
1 2 3 4 5
9. Students with autism need behavioral support.
1 2 3 4 5
10. Students with autism need support to improve their social skills.
1 2 3 4 5
11. I am able to plan a lesson which involves appropriate learning activities for a child with autism.
1 2 3 4 5
12. I have received education about the needs of a child with autism.
1 2 3 4 5
13. I am able to integrate new teaching strategies in a classroom which contains a child with autism.
1 2 3 4 5
14. I know how to deal with classroom management issues in a class with students with autism.
1 2 3 4 5
15. Students with autism should be placed in special education classroom.
1 2 3 4 5
16. Visual supports help students who have autism.
1 2 3 4 5

17. Students with autism should be placed in general education classrooms.
1 2 3 4 5
18. I have received enough education about autism.
1 2 3 4 5
19. College of Education should have more classes about autism.
1 2 3 4 5
20. Government's spending money on educating students with autism and training their teachers are unnecessary.
1 2 3 4 5

Appendix B**Bilgiler:**

Cinsiyetiniz: Bay _____ Bayan _____

Yaşınız : _____

Devam etmekte olduğunuz üniversite : _____

Bölüm: _____ Sınıf : _____

Aşağıda belirtilmiş 1'den 5'e kadar derecelendirmiş olan durumlardan size uygun olanını işaretleyiniz.

1: Kesinlikle Katılmıyorum, 2: Katılmıyorum, 3: Kararsızım, 4: Katılıyorum, 5: Kesinlikle Katılıyorum

1. Otizm gelişimsel bir bozukluktur ve eğitim yardımı ile etkileri azaltılabilir.
1 2 3 4 5
2. Otizmlili birini (akraba/arkadaş/ öğrenci) tanıyorum.
1 2 3 4 5
3. Otizm ve otizmlili öğrencilerin ihtiyaçları ile ilgili bilgileri içeren en az 1 ders aldım.
1 2 3 4 5
4. Otizmi ve özelliklerini anlayabilir ve tanımlayabilirim.
1 2 3 4 5
5. Okul deneyimi derslerim sırasında otizmlili bir öğrenci ile çalışma fırsatım oldu.
1 2 3 4 5
6. Öğrencilerin aileleri istekte bulunduğu takdirde onları otizm hakkında bilgilendirebilirim.
1 2 3 4 5
7. Otizmlili öğrencilerin kaynaştırma sınıflarında eğitim almaları gerekir.
1 2 3 4 5
8. Otizmlili öğrencilerin iletişim konusunda destek almaları gerekir.
1 2 3 4 5
9. Otizmlili öğrencilerin davranışları konusunda destek almaları gerekir.
1 2 3 4 5
10. Otizmlili öğrencilerin sosyal ilişkilerini geliştirebilmek için destek almaları gerekir.
1 2 3 4 5
11. Otizmlili öğrenciler için uygun öğrenme aktivitelerini içeren bir ders planı hazırlayabilirim.
1 2 3 4 5
12. Otizmlili öğrencilerin ihtiyaçları konusunda eğitim aldım.
1 2 3 4 5
13. Otizmlili öğrenci bulduran bir sınıfta yeni eğitim öğretim stratejilerini uygulayabilirim.
1 2 3 4 5
14. Otizmlili öğrenci bulduran bir sınıftaki sınıf yönetimi sorunlarını giderebilirim.
1 2 3 4 5
15. Otizmlili öğrencilerin özel eğitim sınıflarında eğitim almaları gerekir.
1 2 3 4 5
16. Görsel destek (resimler, fotoğraflar, görselleştirilmiş takvimler) otizmlili öğrencilere yardımcı olur.
1 2 3 4 5
17. Otizmlili öğrencilerin genel eğitim sınıflarında eğitim almalarını gerekir.
1 2 3 4 5

18. Otizmle ilgili yeterli eğitim aldım.

1 2 3 4 5

19. Eğitim fakültelerinin otizmle ilgili daha fazla ders vermeleri gerekir.

1 2 3 4 5

20. Otizimli öğrencilerin ve bu öğrencilerin öğretmenlerinin eğitimlerine ayrılan devlet bütçesi gereksizdir.

1 2 3 4 5