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Factors Affecting Teachers' Attitudes Towards Inclusion of Students with Autism Spectrum Disorder

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Abstract

Teachers' attitudes towards education of children with autism spectrum disorder (ASD) play a significant part in successfulness of the inclusive education. The goal of the present study was to examine the attitudes of teachers from Bosnia and Herzegovina (BIH) towards inclusion of students with ASD in general education classes. The sample for this study comprised 105 elementary school teachers (75 females, 30 males) from different parts of BIH. We examined the attitudes in relation to teachers' age, gender, education level, experience in work with children with ASD, self-efficacy, and additional training on ASD. The findings of this study indicate mainly positive attitudes of teachers towards inclusion of students with ASD. However, at the same time, results reveal a sense of non-competence of teachers in providing educational and behavioral support to students with ASD. Teachers who had ASD trainings and who felt competent to work with children with ASD had significantly more favorable attitudes than teachers without such trainings and without a sense of teaching competence. Gender, age, and education level had no significant effect on the teachers' attitudes. Results of this study clearly indicate the need for additional teacher training regarding the education of children with ASD.

Key words: inclusive education, autism spectrum disorder, general education teachers, Bosnia and Herzegovina

Introduction

One of the main challenges and major driving force in educational reforms around the world has been the issue of inclusive education (Azorín and Ainscow 2020). However, the conceptualization of inclusive education is not a simple matter. Depending on the context, it can be seen as an idea, a word, a pedagogical concept, that can have a variety of meanings (Kiuppis 2016). There is no single, universally accepted, definition of inclusive education. From a broader perspective it can be regarded as a matter of social justice applied to education advocating for equal access to all educational opportunities for all students regardless of their ability level, gender, race, cultural and ethnical background (Loreman et al. 2007). In its narrower sense, inclusive education is defined as a provision of appropriate, high quality education to students with special education needs in regular schools (Meijer, Pijl, and Hegarty 1997).

How to make inclusive practices available to everybody, everywhere and all the time has become one of the leading questions of educational policy (Ferguson 2008). The dominant question is how to create inclusive schools that will be willing and able to provide the best possible support to all students regardless of their support needs. Majority of schools are not organized in such a way to meet the wide range of individual needs of their students (Evans and Lunt 2002). Researchers have presented different models for achieving inclusion, from transforming general and special education into inclusive education (Hansen et al. 2020) to co-teaching models (Friend et al. 2010; Solis et al. 2012). To date, there is no country in the world that has created a school system that lives up to the ideals and intentions of inclusion (Haug 2017).

These questions and dilemmas surrounding implementation of inclusive education are present in both, developed and developing countries (Bourke and Carrington 2007; Waitoller and Thorius 2015; Mullick, Deppeler, and Sharma 2012; Kalyanpur 2008), and the answers are still pending. There is a plethora of research regarding the obstacles to inclusive education (Evans and Lunt 2002; Pivik, McComas, and Laflamme 2002; Biscevic et al. 2017; Westwood and Graham 2003). Biscevic et al. (2017) found that a lack of professionals trained to work with children with special needs was the greatest obstacle to successful inclusion in Bosnia and Herzegovina (BIH). On the other hand, Pivik et al. (2012) identified four categories of obstacles to inclusive education in Canada: a) physical environment, b) intentional attitudinal barriers (bullying), c) unintentional attitudinal barriers (lack of knowledge) and d) physical limitations (difficulty with manual dexterity). Another set of identified barriers to inclusive education in Australia includes a lack of teacher's time, class size, a lack of adequate teaching resources, behavior problems manifested in some students, and a lack of adequate training in inclusive methods (Westwood and Graham 2003). In developing countries, some of the obstacles to inclusion involve a lack of programs for professional staff development, a lack of financial support to inclusion, and a lack of supportive legislature (Eleweke and Rodda 2002). A lack of clear financial support necessary for services and supports to inclusive education has been identified as an obstacle in Serbia (Brojčin and Glumbić 2017) and in Albania (Poni 2017). Researchers in Cyprus have found that infrastructural insufficiency, a lack of specific knowledge and prejudices represent significant barriers to inclusive education (Koutrouba, Vamvakari, and Steliou 2006). It is obvious from this short overview that there are many and various obstacles to inclusion.

Most of the studies on inclusive education have identified teachers' attitudes to be one of the main factors affecting successfulness of the inclusion process (Damianidou and Phtiaka 2018). Positive teachers' attitudes will have a positive impact on the inclusion of students with special needs in the community and will facilitate the inclusive education, while the negative attitudes will create unsupportive environment for the students (Avramidis, Bayliss, and Burden 2000a). Thus, there are numerous studies that examined the attitudes of teachers towards inclusive education (de Boer, Pijl, and Minnaert 2011; Parasuram 2006; Vizer-Karni and Reiter 2014; Memisevic and Hodzic 2011; Ahmmed, Sharma, and Deppeler 2012; Saloviita 2020; Galović, Brojčin, and Glumbić 2014). In a review study by de Boer et al. (2011), the authors found that in 26 studies reviewed, majority of teachers had neutral or negative attitudes towards the inclusion of students with special educational needs in regular classes. On the other hand, there are studies revealing mostly positive teachers' attitudes towards inclusive education (Savolainen et al. 2012; Avramidis and Kalyva 2007; Dizdarevic, Mujezinovic, and Memisevic 2017). Teachers' attitudes on inclusive education depend on various factors such as teachers' experience (Avramidis and Kalyva 2007), age, gender, teachers' self-efficacy and training (Vaz et al. 2015). Teachers' attitudes also depend on nature and severity of the disability presented to them, that is attitudes depend on child-related variables as well (Avramidis and Norwich 2002; Čagran and Schmidt 2011). Research has revealed that teachers are more likely to have positive attitudes towards including students with physical disabilities and gifted children than children with behavioral difficulties (Monsen, Ewing, and Kwoka 2014). It has also been found that teachers generally have more positive attitudes when they feel confident they can adequately support students with disabilities in their

classrooms (Delgado 2013). The sense of confidence in teaching students with disability depends, in a large part, on the type and severity of a child's disability.

Inclusion of students with Autism Spectrum Disorder

Inclusion of students with Autism Spectrum Disorder (ASD) represents a particular challenge for regular school teachers (Harding 2009), although studies reveal positive teachers' attitudes towards inclusion of students with ASD (Segall and Campbell 2012). ASD is a neurodevelopmental disorder characterized by significant social and communication deficits and with a restricted, repetitive patterns of behaviors, interests and activities (Masi et al. 2017). *ASD is a lifelong condition that is very common in general childhood population (Matson, Mahan, and Matson 2009). Current estimates suggest that the prevalence of ASD is 18.5 in 1000 or 1 in 54, and the condition is around 4 times more prevalent among boys than among girls (Maenner et al. 2020). Parallel to the rise in prevalence, children with ASD are increasingly attending general education schools (Watkins et al. 2019). However, there are still debates among researchers and parents' organizations on what is the best place for education of children with ASD. These debates are related to questions such as whether the disability-specific instructions needed for children with ASD can effectively be implemented in general education classrooms due to limited financial resources (Lynch and Irvine 2009). On the other hand, there are questions related to whether children with ASD feel socially rejected in general education classrooms (Majoko 2016). Research has shown numerous benefits of inclusive education for children with ASD. Children with ASD attending inclusive schools tend to have greater involvement in community activities which, in turn, is related to better developmental outcomes,*

improved physical and mental health (Fang, Weinberg, and Patten 2020). In order to have successful inclusion of students with ASD in regular classrooms, teachers need to be better prepared. Teachers believe that in order to provide appropriate behavioral and educational support for children with ASD in regular schools they need to have a higher level of expertise and specialized training (Lindsay et al. 2013). This finding is not surprising given that educating children with ASD presents teachers with the most significant instructional challenges (Ruble, Usher, and McGrew 2011; Emam and Farrell 2009) and many teachers do not feel competent to implement instructional methods with children with ASD (Talib and Paulson 2015). It is important to note some of the disability-specific instructions for children with ASD. Some of the methods are well-established and scientifically-proven such as Applied Behavior Analysis (ABA) (Axelrod, McElrath, and Wine 2012; Hastings 2003), while for some methods, such as the Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH), only small to medium positive effects are noted (Virues-Ortega, Julio, and Pastor-Barriuso 2013). Teachers' trainings in these specialized methods are very important as they increase the readiness and competences of teachers to work in inclusive settings with students with ASD (Kisbu-Sakarya and Doenyas 2021). However, the question of whether teachers' competencies and knowledge affect attitudes towards inclusion is a contested issue. For example, some studies have shown that knowledge and competencies have a limited impact or no impact at all in changing the teachers' attitudes towards inclusive education of students with ASD (Kisbu-Sakarya and Doenyas 2021; Leonard and Smyth 2020). On the other hand, there are studies showing that teachers' knowledge of ASD is strongly correlated with their attitudes towards inclusion of children with ASD (Lu et al. 2020).

International studies on the teachers' attitudes towards inclusion of students with ASD

As already noted, teachers' attitudes play a significant role in influencing the inclusion of children with ASD in general education schools (Jury et al. 2021). We present here the results of some international studies on the attitudes of teachers towards inclusion of students with ASD that employed similar methodology and used the same measurement instrument, namely the *Autism Attitude Scale for Teachers* (AAST) (Olley et al. 1981). In a study by Park and Chitiyo (2011), teachers in the Midwestern state of USA had mostly positive attitudes towards inclusion of children with ASD in public school programs. The authors also found the statistically significant effects of age and gender on the attitudes. More specifically, younger teachers and female teachers tended to have more favorable attitudes towards inclusion of students with ASD. In addition, the authors have also found the positive effect of workshop attendance on teachers' attitudes- the more workshops teachers attended on the topic of autism, the more positive were the attitudes. A similar study was conducted in Australia (Garrad, Rayner, and Pedersen 2019). In line with the authors' expectations, teachers in Australia had positive attitudes towards inclusion of children with ASD. However, contrary to the findings of Park and Chitiyo (2011) they found that specialist training level and years of ASD teaching experience were not related to teachers' attitudes. In a study conducted in China by Lu et al. (2020), the authors found Chinese teachers to have moderately positive attitudes towards inclusion of students with ASD, although the average scores were lower than in teachers from Australia and the USA (Garrad, Rayner, and Pedersen 2019; Park and Chitiyo 2011). Lastly, teachers in Saudi Arabia tend to have negative attitudes towards inclusion of students with ASD (Alamri and Tyler-Wood 2016) and the authors explained this finding through the

teachers' fear of possible problem behavior and inadequate awareness of the ASD. It is evident that teachers around the world differ in their attitudes towards inclusion of children with ASD and understanding of the factors that are related to these attitudes might help in creating more favorable attitudes towards inclusion of this group of students.

This study

BIH has signed and ratified the UN Convention on the rights of persons with disabilities (United Nations, 2006). The article 24. of the Convention is related to the education and requires countries to create conditions and implement inclusive education. In line with this Convention, BIH authorities on all government levels (State, Entity, and Canton) have created positive legislature that declaratively supports inclusive education. Although educational legislature in BIH is aligned with international conventions, there are still many obstacles in implementing inclusion. For example, the positive legislature does not obligate governments to allocate resources for implementation of inclusive education; only limited allocation is made for teaching assistants; spatial and material conditions in schools are poorly organized and inaccessible; and there are still architectural barriers in schools (Somun Krupalija 2017).

It is important to note that there is still a dual system of education in BIH: special education and general (regular) education. In most cases, regular education teachers are educated at separate faculties from special education teachers. There is only one exception to this, at the University of Sarajevo, where special education department is embedded within Faculty of Educational Sciences that educates general education teachers and special education teachers at two different departments. Curricula for General education teachers

do not have in-depth training in special education classes such as Applied Behavior Analysis, Specific learning disabilities, Developmental disabilities, Sign language, Behavior modification, Braille's alphabet etc. Pre-service regular education teachers have only one course in Special education (SPED) in one or maximally two semesters. In that SPED course they usually cover content related to the overview of various developmental disabilities but without emerging into the methods and techniques of working with children with special needs. Given that increasing number of children with disabilities, including children with ASD are attending regular schools, we wanted to examine the attitudes of regular education teachers in Bosnia and Herzegovina (BIH) towards inclusion of students with ASD. Existing research on attitudes on BIH teachers was directed towards other disability groups, mainly students with intellectual disability (Memisevic and Hodzic 2011) but not specifically on children with ASD. **Unfortunately, there are no population-based studies on the prevalence of ASD in BIH but there is an evident increase in the number of children with ASD attending general education schools in BIH (Mujkanovic et al. 2016). Despite this increase of children with ASD attending regular schools, there are no studies that examined teachers attitudes towards their inclusion in regular schools.** Knowing the factors that affect teachers' attitudes will help in creating more positive attitudes and thus improve the inclusive education process. **In addition, this is the first study to use the AAST instrument in BIH, which will help in cross-cultural comparison of the teachers' attitudes.** This study will help expand our knowledge regarding teachers' attitudes and the role that gender, age, educational level, and experience play in these attitudes. In this study we set to answer following questions:

1. Do teachers in BIH have positive attitudes towards inclusion of students with ASD in regular classes?
2. Do gender and level of formal education affect attitudes towards inclusion of students with ASD in regular classes?
3. Do factors such as having a child with ASD in the class, sense of self-efficacy in teaching students with ASD, and having informal ASD trainings affect attitudes towards inclusion of students with ASD?
4. Is age of the teacher related to the attitudes towards inclusion of children with ASD?

Methods

Participants

The sample for this study comprised 105 elementary school teachers (75 females and 30 males) from 11 schools located in urban and suburban areas in BIH. The mean age of teachers was 38.2 years old (SD- 9.5 years) and experience ranged from 1 year to 39 years. In relation to education level, there were 69 teachers with bachelor's degree in education and 36 with master's degree level. Demographic data on the teachers are presented in Table 1.

TABLE 1. AROUND HERE

Procedure and Instrument

After obtaining permission from the school principals, we distributed 150 questionnaires to teachers in 11 schools in different parts of BIH. Our targeted sample was lower elementary school teachers educating children grades 1-5. We collected 105

completed questionnaires. In this study we used a slightly modified The Autism Attitude Scale for Teachers (AAST) (Olley et al. 1981). Modification was performed for some wordings in items so that they are more aligned with current norms in language. For example, instead of “normal” children, that was used originally in the scale, we used the word “typical”. The AAST is a brief, reliable and valid instrument for assessing teacher attitudes towards the inclusion of students with ASD in regular schools. The AAST consists of two seven-item alternate forms which correlate highly with each other. The original AAST Cronbach alpha coefficient for 14 items combined in a single form is .91. It is recommended that when attitudes are to be measured on one occasion only then the combined version is the most appropriate. Thus, we used a combined, 14 items scale for the purposes of this study. Items are measured on a 5-point Likert scale from 1- strongly disagree to 5- strongly agree. Some items have been reverse-scored and a total score is computed as a sum of individual item scores. For the total AAST score, higher scores reflect more positive attitudes. In addition to this, we collected following demographic information: teachers’ gender, age, education level, and experience as conceptualized with following questions: 1. do they have a student with ASD in their class, 2. self-efficacy: do they feel confident in working with students with ASD, and 3. whether they received any additional training/education regarding ASD. These last three variables are dichotomous, and teachers were asked to answer yes or no to these questions.

Statistical analysis

We provided descriptive data (frequencies and percentages of the responses) for all 14 items on the scale. As for the total score, we calculated mean differences in the AAST

scale in relation to the teachers' gender, education level, age, presence of a child with ASD in own classroom, self-efficacy, and whether they had any additional training/education on children with ASD. Independent t-tests were used to examine differences in mean scale scores. An alpha level of .05 was used for all the tests. Computer program SPSS v.27 for Windows was used for all statistical analysis (IBM 2020).

Results

We first present distribution of answers for each of the 14 items on AAST scale. These results are presented in Table 2.

TABLE 2. AROUND HERE

As can be seen from Table 2. teachers in BIH generally have positive attitudes towards inclusion of students with ASD in inclusive schools. They also believe that inclusive schools represent good environment that offers benefits to all students. Another interesting point is that teachers believe that good teachers can successfully teach students with ASD. However, they also believe that teachers with special training should teach children with ASD. That is the only point of slight controversy that we will try to explain in the Discussion section of the paper.

Next, we calculated total mean score differences in attitudes in relation to teacher's gender and several other variables. These results are shown in Table 3.

TABLE 3. AROUND HERE

As can be seen from Table 3, statistically significant differences on AATS scores were found only in relation whether the teachers feel competent to teach children with ASD (teachers who regarded themselves as more competent had a more favorable attitude towards inclusion of children with ASD) and whether the teachers attended training/education on ASD (teachers who had some kind of ASD training had more favorable attitudes). Given that only these two factors were related to the differences in mean scores, we next cross-tabulated these two groups. As expected, almost all teachers who regarded themselves as competent to teach children with ASD attended some form of ASD training (9 out of 10 teachers). This cross-tabulation is shown in Figure 1.

FIGURE 1. AROUND HERE

Out of 10 teachers who felt competent to teach children with ASD, 9 of them had some kind of ASD training. On the other hand, of teachers who felt not competent to teach children with ASD in their classes, only 20% of them had ASD training. This is showing us a strong link between the sense of teachers' self-efficacy and ASD training, although of caution here is the small number of teachers who reported being competent to teach children with ASD in regular schools. According to the χ^2 test, this relationship is highly statistically significant ($\chi^2 = 25.2$; $p < .001$; Fisher's exact test: $p < .001$).

Lastly we performed a relationship between teacher's age and AAST scores. Scatterplot of this relationship is shown in Figure 2.

FIGURE 2. AROUND HERE

Pearson correlation coefficient between teachers' age and AAST score is $r=.071$, $p=.47$, indicating no significant correlation between teachers age and attitudes towards inclusion.

Discussion

The goal of the present study was to examine the attitudes of teachers in BIH towards inclusion of students with ASD in regular classes. In addition to this, we examined the effects of several demographic factors on the attitudes. The results of this study showed that teachers held mainly positive attitudes regarding the inclusion of students with ASD. This is best reflected by the item: *Inclusive schools enhance the learning experience of typical students* for which 67 teachers (around 63.8%) strongly agreed and agreed, and only 8 (7.6%) strongly disagreed and disagreed. Of course, we need to keep in mind that many teachers (30 teachers or 28.6%) were uncertain of the one way or another and we do not know whether they are closer to agree or disagree option. Nevertheless, information on 63.8% of teachers in favor of this statement is very informative and optimistic. Also, the item: *Inclusive schools enhance the learning experience of students with ASD* illustrates this point as well; 79 teachers strongly agreed and agreed with this statement, 20 teachers were uncertain and only 6 teachers strongly disagreed and disagreed. Evidently, regular school teachers believe that students with ASD and typically developing children profit from inclusive education. Similar finding on teachers' beliefs that all students benefit from inclusive education has been found in other studies as well (Finke et al. 2009). However, the biggest controversy remains on the question of who will teach children with ASD in regular schools. This is best illustrated by the first AAST item: *Only teachers with extensive special education training can help a child with ASD*. Majority of teachers in our study (57 teachers or 54.3%) strongly agreed and agreed with this statement, 14 (13.4%) were

uncertain and 34 teachers (32.3%) strongly disagreed and disagreed. Regular education teachers in developed countries such as the USA also have only minimal training in evidence-based practices for educating children with ASD (Loiacono and Valenti 2010). In a similar vein, teachers' from Canada recommendation for successful inclusion of children with ASD was a) advocating for resources and essential training and b) use of tailored teaching methods (Lindsay et al. 2014). It is evident that regular education teachers around the world need extra training in supporting children with ASD in regular schools. The issues regarding the training of teachers have been raised earlier and there is a clear need for modification of teacher-training curriculum (Slee 2001). Some authors have proposed merging of general education and special education teacher programs to create an inclusive program for diverse learners (Sobel, Iceman-Sands, and Basile 2007).

Curricula for faculties that educate future teachers in BIH only have one or two general subjects regarding developmental disabilities in one or maximally two semesters. This is evidently not sufficient for teachers to feel confident at supporting students with ASD. One of the important tasks of teacher education institutions is to prepare teachers for more diverse student populations that they will teach in inclusive education (Forlin et al. 2009; Hopkins, Round, and Barley 2018). Given the increase in numbers of children with ASD in regular schools (Gavaldá and Qinyi 2012; Stichter, Riley-Tillman, and Jimerson 2016), we believe it is of utmost importance to modify curricula at teacher-training institutions to include evidence-based strategies in working with children with ASD. These strategies can be divided into three groups (Leach and Duffy 2009): preventive (social stories, picture exchange communication system, visual schedules), corrective (applied behavior analysis) and supportive (setting clear behavioral and social expectations for all

classroom routines and lessons to enable students to participate appropriately, using graphic organizers and providing guided notes).

These evidence-based strategies would definitely improve the sense of teachers' competences in general and teachers' competencies in teaching children with ASD specifically. It is also important to note that teachers who work with children with ASD and implement these evidence-based methods need to have adequate resources and strong social support, without which the risk of burn-out is high (Harrower and Dunlap 2001).

Next, we examined several other factors affecting teachers' attitudes. In our study there were no effects of gender, age, and education level on the teacher's attitudes. Literature on the effect of these factors on attitudes is ambiguous. There are studies that revealed that female teachers held more favorable attitudes towards inclusion than males (Alghazo and Naggar Gaad 2004; Park and Chitiyo 2011), but also studies where no differences in attitudes were found (Chhabra, Srivastava, and Srivastava 2009; Orakci et al. 2016). Studies regarding attitudes in relation to teachers' age have also produced inconclusive results. Many authors have found that younger age of teachers was related to more positive attitudes (Park and Chitiyo 2011; Cornoldi et al. 1998). However, there are also studies revealing no effect of teachers' age on attitudes (Chhabra, Srivastava, and Srivastava 2009; Kalyva, Gojkovic, and Tsakiris 2007). Our study has not found any age effect on teachers' attitudes. It is probably the case that other factors, besides age, play a role in attitudes and might affect the association between age and attitudes. It would be beneficial to conduct a meta-analysis that would be focused on examining published studies regarding relationship of teachers' age and attitudes towards inclusion.

As for the third factor, education level, literature again is not equivocal. In some studies more education was found to be related with more positive attitudes (Avramidis, Bayliss, and Burden 2000b). However, in their study, Park and Chitiyo (2011) found that lower educational level was related to more favorable attitudes. It is obvious that the relationship between educational level and attitudes is a complex one. Although, it might seem that more education would mean more positive attitudes, that is often not the case, as shown in our study as well. It is more likely that topic-specific education is related to more positive attitudes and not the level of education in general.

As for the experience, we conceptualized it through three dichotomous variables: 1. Do teachers have a child with ASD in their class?; 2. Do teachers have competence to teach a child with ASD? and 3. Have they received any informal education/training on ASD? The fact they have a child with ASD in their classroom did not affect teachers' attitudes on inclusion. However, the last two questions had a considerable effect on their attitudes. A sense of competence and additional trainings have proven to be strong predictors of more positive attitudes towards inclusion of students with ASD. Earlier studies have shown that experience plays a significant role in the sense of competence in teaching children with ASD (McGillicuddy and O'Donnell 2014). Similar findings regarding the positive effects of workshops/trainings/education on teachers' attitudes were found in other studies as well (Park and Chitiyo 2011).

There are several limitations in this study that need to be noted. The first one is the relatively small sample that might not be representative of all teachers in BIH. Second, we used an instrument that has a neutral statement, and thus we do not know whether this

substantial portion of the neutral answers was closer to more positive or more negative views of inclusion. Further, it can also be the case that some teachers were giving socially acceptable answers favoring inclusion although this possibility was unlikely as the questionnaire forms were anonymous.

Conclusions

Teachers in BIH held mainly positive views on inclusion of students with ASD in regular classes. However, not many of them felt competent enough to provide educational support to students with ASD. Gender, age, and educational level did not have a significant effect on teachers' attitudes. In the same line, having a child with ASD in their own classroom did not affect teachers' attitudes. Self-efficacy and additional ASD training had a significant effect on teachers' attitudes. Teachers who felt confident they can support students with ASD and those who had some additional training regarding ASD held more favorable attitudes in comparison with other teachers. Thus, it is of utmost importance that teacher training institutions modify their curricula in order to increase competencies of teachers to support all students in their classrooms.

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Declaration of interest.

Authors report no conflict of interest.

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