

# EDUCATORS' ATTITUDES TOWARDS THE INCLUSION OF STUDENTS WITH AUTISM SPECTRUM DISORDER (ASD) IN JORDANIAN PUBLIC SCHOOLS<sup>1</sup>

## ATTITUDES DOS EDUCADORES EM RELAÇÃO À INCLUSÃO DE ESTUDANTES COM TRANSTORNO DO ESPECTRO AUTISTA (TEA) NAS ESCOLAS PÚBLICAS JORDANIANAS

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**ABSTRACT:** The present study aimed to examine the attitudes of teachers and school professionals towards the inclusion of students with Autism Spectrum Disorder (ASD) in Jordanian schools. Specifically, the study investigates whether the variables of knowledge and training in ASD, educational role, experience in ASD, academic qualification, gender, age, and school level are associated with educators' attitudes towards the inclusion of students with ASD. The descriptive survey method was conducted to examine educators' attitudes and their correlations with the study variables. An electronic survey was completed by 430 participants who were educators at public and private schools in Jordan (including general and special education teachers), school principals, and counselors. The results of the study evidence that Jordanian educators hold neutral attitudes towards the inclusion of students with ASD in Jordanian schools. Further, the study shows that these attitudes are correlated with training and knowledge in ASD. In contrast, educational role, experience, academic qualification, age, gender, or school level are not associated with educators' attitudes. The implications and limitations of the study are discussed.

**KEYWORDS:** Inclusive education. Autism Spectrum Disorder. Public schools. Educators' attitudes.

**RESUMO:** O presente estudo teve como objetivo examinar as atitudes dos professores e dos profissionais das escolas em relação à inclusão de estudantes com Transtorno do Espectro Autista (TEA) nas escolas jordanianas. Especificamente, o estudo investiga se as variáveis de conhecimento e formação em TEA, papel educacional, experiência em TEA, qualificação acadêmica, gênero, idade e nível de escolaridade estão associados às atitudes dos educadores em relação à inclusão de estudantes com TEA. O método de pesquisa descritiva foi conduzido para examinar as atitudes dos educadores e suas correlações com as variáveis do estudo. Um questionário *online* foi respondido por 430 participantes que eram educadores em escolas públicas e privadas na Jordânia (incluindo professores de educação regular e especial), diretores de escolas e conselheiros escolares. Os resultados do estudo evidenciam que os educadores jordanianos têm atitudes neutras em relação à inclusão de alunos com TEA nas escolas jordanianas. Além disso, o estudo mostra que essas atitudes estão correlacionadas com a formação e o conhecimento em TEA. Em contraste, o papel educacional, a experiência, a qualificação acadêmica, a idade, o gênero ou o nível de escolaridade não estão associados às atitudes dos educadores. As implicações e as limitações do estudo são discutidas.

**PALAVRAS-CHAVE:** Educação inclusiva. Transtorno do Espectro Autista. Escolas públicas. Atitudes dos educadores.

## 1 INTRODUCTION

Autism Spectrum Disorder (ASD) is a developmental disorder characterized by two main symptoms: lack of social communication skills and behavioral problems. However, indi-

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viduals with ASD might demonstrate language and cognitive impairment, which are not required for ASD diagnosis (American Psychiatric Association, 2021). Many individuals with ASD manifest difficulties in initiating and maintaining a conversation, sharing interest, eye contact, language, and joint attention (Bellini et al., 2007; Mundy & Crowson, 1997). Besides, repetitive, stereotyped, and aggressive behaviors may occur (Hill et al., 2014). Such difficulties can influence the social inclusion and academic achievement of these individuals (Yeo & Teng, 2015).

The prevalence of ASD has increased rapidly, and was estimated at 11 sites in the United States (USA) to be 1 in 54 children at the age of eight (Centers for Disease Control and Prevention, 2020). The prevalence rates of ASD in Jordan and other Arab countries are still ambiguous, owing to paucity of the research in ASD in turn, associated with cultural and economic factors and a lack of experts (Taha & Hussein, 2014). However, according to a national study conducted in 93 schools in Qatar, the prevalence rate of ASD was estimated at 1.14% among school children 6-11 years old, and 187,000 individuals with ASD under 20 years of age in the Gulf countries overall (Alshaban et al., 2019). A clinical-based study at Jordan University Hospital reported a prevalence rate of ASD in Jordan of 5.2% (12 out of 229 children) showing Global Developmental Delay (GDD) (Masri et al., 2011). Given the high number of individuals with ASD, many were assigned to inclusive classroom settings (Majoko, 2016).

The Salamanca Statement (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1994) claims the right of all individuals with Special Needs (SN) to be educated in mainstream schools, regardless of their physical or health conditions, calling for a restructuring of the educational environment and adaptation of educational policy to support inclusive education for all individuals with SN. Likewise, Jordan issued a regulation –

Law no. 20, in 2017 – aligned with the Salamanca Statement to support inclusive education for all persons with SN (Act no. 31): “measures, programs, plans, and policies aimed at achieving the full participation of disabled people in life without any form of discrimination” (UNESCO, 1994). This legislation states the right of persons with SN to fully participate in all life aspects, which means the stakeholders must adapt environs, programs, and plans to fit the needs and strengths of all individuals. Despite this assertion, the actual situation unfortunately needs further effort, as individuals with SN still encounter numerous challenges that deprive them of full inclusion in educational and social life (Alodat et al., 2014). Mahmoud et al. (2015) underline the many challenges faced by inclusive education in Jordan, including inadequate funds, environmental restrictions, and the absence of specific teacher training.

Article 17 of the Jordanian Law no. 20, 2017, regarding “the Rights of Persons with Disabilities”, states that “It is prohibited to exclude a person from any educational institution based on disability. Also, a student with a disability cannot be deprived or failed or promoted in any academic subject because of the disability” (Higher Council for the rights of persons with Disabilities, 2017, p. 15). However, section (B) of Article 17 holds the Ministry of Education responsible for finding suitable alternatives when a person with a disability is unable to enroll in an educational institution due to a lack of arrangements, or a reasonable accommodation, or accessibility. Like the prior law, this one was not efficient, because it does not define the details on the inclusion of students with disabilities (Benson, 2020), and it restricts the decision

regarding individuals with disabilities to the Ministry of Education, which can deprive many persons with disabilities of an education in the mainstream setting.

### **1.1 TEACHERS' ATTITUDES AND INCLUSIVE EDUCATION**

The challenges involved in teaching students with ASD in inclusive settings may stem from behavioral and social issues, a lack of support and training for teachers, and a lack of acceptance within the school community (Lindsay et al., 2013, 2014; Moores-Abdool, 2010). Yet many students with ASD in inclusive classrooms show social and academic gains, harvesting more support than their peers in segregational settings (Eldar et al., 2010; Harrower & Dunlap, 2001).

Teachers' attitudes are crucial for successful inclusive practices (Leatherman & Niemeyer, 2005; Niemeyer & Proctor, 2002; Oliver & Barnes, 2010), and the behaviors of typically developed students are often influenced by educators' perspectives (Horrocks et al., 2008; Morton & Campbell, 2008). Research results indicate that teachers' attitudes are influenced by the type of disability and the nature of associated issues, for instance the complexity of needs to be met in the inclusive classroom (Avramidis et al., 2000; Evans & Lunt, 2002; Humphrey & Symes, 2013). Likewise, Hastings and Oakford (2003) found that teachers' attitudes were more negative towards students with behavioral and emotional problems than towards students with intellectual disabilities (Hastings & Oakford, 2003). Therefore, educators may demonstrate more positive attitudes toward the inclusion of individuals having mild or moderate disabilities (Avramidis & Kalyva, 2007; De Boer et al., 2011; Varcoe & Boyle, 2014). At the same time, some teachers claim that the requirements for successful inclusion of students with emotional and behavioral problems are not met (Gidlund, 2018). Teachers' level of knowledge, training, and experience play an essential role in determining their attitudes towards inclusive education (Amr, 2011; Dapudong, 2014; Leatherman & Niemeyer, 2005).

Teachers' levels of knowledge and training in ASD not only influence their perspectives on the inclusion of these students in schools, but also affects their abilities to meet the needs of such students in inclusive settings. Alamri and Tyler-Wood (2016) found that teachers' low expectations of these students impacted their learning outcomes. In addition, a study by Roberts and Simpson (2016) indicated that in inclusive classrooms, where teachers do not have adequate training, students with ASD do not receive efficient instruction. Similarly, Sparapani et al. (2016) reported that teachers felt inadequate when teaching students with ASD due to their lack of knowledge and training. Zagona et al. (2017) suggested that successful inclusive education requires that teachers be provided with educational programs to support them in acquiring the knowledge and skills necessary to meet the needs of this population. Able et al. (2015) suggested that teachers need more professional training, more resources to enable them to adapt to the needs of students with ASD, and an understanding of how to appropriately support such students in their classrooms.

Studies show that pre-service teachers held positive attitudes towards the inclusion of students with SN and had a perception of high self-efficacy, which was associated with a better knowledge of disability regulation (Gigante & Gilmore, 2018; Sharma et al., 2015). Furthermore, Saloviita (2020) found that primary school teachers with higher self-efficacy

perception demonstrated more positive attitudes towards the inclusion of students with SN. In contrast, Yada and Savolainen (2017) indicate that primary and secondary school teachers showed neutral attitudes towards the inclusion of students with SN and had low self-efficacy, whereas teachers with longer experience showed more negative attitudes.

Several studies report that in-service teachers held positive attitudes towards the inclusion of students with ASD, associated with teachers' level of knowledge and years of experience (Alexandri et al., 2017; Segall & Campbell, 2012; Su et al., 2020). Similarly, Abu-hamour and Muhaidat (2013) suggest that special education teachers in Jordan held positive attitudes towards the inclusion of students with ASD, which were associated with teachers' younger age, more experience, and a higher level of education. Societal attitudes were found to be stronger than knowledge and experience in defining teachers' attitudes towards the inclusion of students with ASD (Garrad et al., 2019; Low et al., 2020). Low et al. (2018) found pre-service teachers in Special Education, English, and Science held positive attitudes towards the inclusion of students with ASD that were uncorrelated to the year of the study. However, according to the results of their study, special education teachers had negative attitudes towards the performance of the regular classroom teachers in teaching students with ASD.

These studies were conducted to examine teachers' attitudes towards the inclusion of students with ASD (Abu-hamour & Muhaidat, 2013; Alexandri et al., 2017; Garrad et al., 2019; Low et al., 2018, 2020; Segall & Campbell, 2012), and the parents' (Su et al., 2020) or teachers' attitudes towards students with SN and their self-efficacy perception (Gigante & Gilmore, 2018; Saloviita, 2020; Sharma et al., 2015; Yada & Savolainen, 2017). Still, these studies were limited to pre-service teachers (Gigante & Gilmore, 2018; Low et al., 2018; Sharma et al., 2015), primary special education teachers (Abu-hamour & Muhaidat, 2013; Low et al., 2020), professionals in middle and high schools (Segall & Campbell, 2012), or teachers in primary school (Garrad et al., 2019; Saloviita, 2020), kindergarten (Alexandri et al., 2017), and special education schools and private agencies (Su et al., 2020), or primary and secondary school (Yada & Savolainen, 2017). Some studies were conducted on a small sample size (Abu-hamour & Muhaidat, 2013; Alexandri et al., 2017; Garrad et al., 2019; Low et al., 2020), unequal sample sizes hampering comparison (Abu-hamour & Muhaidat, 2013; Segall & Campbell, 2012; Sharma et al., 2015; Su et al., 2020), or samples representing a limited context (Gigante & Gilmore, 2018; Low et al., 2018).

As few studies have focused on teachers' perspectives on ASD in Jordanian educational environments, the present study attempted to examine the attitudes of teachers and other school professionals toward the inclusion of students with ASD in Jordanian public schools. It also aimed to explore the correlation, if any, between teachers' attitudes and their level of knowledge of and training in ASD; their educational roles and experience; and their age, gender, academic qualifications, and school teaching level. To overcome the limitations of previous research, this study employed a large sample, which included all educators and professionals in public and private schools at all school levels. The research questions were as follows:

1. What are the attitudes of educators toward the inclusion of students with ASD in public schools?
2. Are there any significant differences in attitudes between regular education teachers, special education teachers, principals, and counselors?
3. Are educators' attitudes related to their knowledge of and training in ASD; their educational roles and experience; and their age, gender, academic qualifications, and school teaching level?

The findings of the current study might provide stakeholders at the Jordanian Ministry of Education with guidelines concerning inclusive education, highlighting which services are needed to achieve successful inclusion. Our results could serve as an instrument to evaluate changes in educators' attitudes, particularly in Jordan and even for other Arab countries that may lack updated research data and valid assessment tools in the area of inclusive education for ASD.

## **2 METHOD**

### **2.1 PARTICIPANTS**

The descriptive survey method was used to determine educators' attitudes and their correlation with the study variables (Jason & Glenwick, 2016, p. 257). The recruitment of participants was carried out by posting the survey on the Jordanian Teachers' Syndicate Facebook page, which has over 37,000 educators—including teachers, counselors, and school principals—as members. The number of participants who completed the survey was 430, consisting of 273 females (63.5%) and 157 males (36.5%). The sample included 111 special education teachers; 190 general education teachers; 67 school principals; and 62 school counselors in primary, middle, and high school grades. The Jordanian Ministry of Education's Statistical Educational Report indicated that the total number of Jordanian teachers employed for the year 2019/2020 was 140,248 teachers, consisting of 63% females and 37% males. Most Jordanian teachers belong to the same ethnic, religious, and socio-economic group (Ministry of Education, 2020). The study was conducted in five governates of the northern and central parts of Jordan, including Amman, Irbid, Jarash, Al-Zarqa, Al-Mafraq, and Ajloun. These cities, with over 90% of Jordan's total population, contain most of the schools in Jordan. The southern part of the country was not included because of its relative lack of services, which would have impacted the results of the study.

### **2.2 MEASURE**

The electronic questionnaire used included three sections: 1) demographic information, 2) knowledge of ASD, and 3) attitudes of teachers towards the inclusion of ASD. The first section collected demographic information from participants on governate, gender, age, academic qualification, educational role, school level, teaching experience, and training in ASD, as shown in Table 1.

**Table 1**  
*Demographic information*

Variables	N	(%)
<b>Governate</b>		
Amman	100	23.3
Irbid	64	14.9
Jarash	37	8.6
Al-Zarqa	84	19.5
Al-Mafraq	97	22.6
Ajloun	48	11.2
<b>Gender</b>		
Male	157	36.5
Female	273	63.5
<b>Age</b>		
30-22	91	21.2
31-40	164	38.1
41-50	138	32.1
Over 50	37	8.6
<b>Academic qualification</b>		
Bachelor	262	60.9
Postgraduate	168	39.1
<b>Educational role</b>		
General Education teacher	190	44.2
Special Education teacher	111	25.8
Counselor/Psychologist	62	14.4
School Principal	67	15.6
<b>School-level</b>		
Primary (6 – 12 years)	172	40.0
Middle (12 – 16 years)	135	31.4
High (16 – 18 years)	123	28.6
<b>Years of teaching experience</b>		
Less than one year	31	7.2
1-5 years	97	22.6
6-10 years	95	22.1
≤ 10 years	207	48.1
<b>Years of experience in ASD</b>		
Less than one year	249	57.9
1-5 years	93	21.6
6-10 years	53	12.3
≤ 10 years	35	8.1
<b>Training in ASD</b>		
Had pre-training in ASD	115	26.7
Interested, but no pre-training in ASD	215	50.0
Not interested, and no pre-training in ASD	100	23.3

The second section, adapted from Segall (2008), explored participants' knowledge in ASD under three areas: Etiology, Diagnosis, and Intervention. This section contained 15 True/False questions. The participants were advised to select the right answer, it being impossible to add "I don't know" so as to avoid guessing, given the difficulty of collecting data from the electronic survey.

The third section was adapted from the Autism Attitude Scale for Teachers (AAST) developed by Olley et al. (1981) to measure the attitudes of educators towards the inclusion of students with ASD. The AAST contains 14 items to be rated on a 5-Likert scale: ranging from



strongly disagree (1), to disagree (2), neutral (3), agree (4), or strongly agree (5). All negative items were reversed to positive values, to derive final scores where a higher score reflects more positive attitudes. Olly et al. (1981) attributed high internal consistency to the AAST ( $\alpha = 0.91$ ), a finding supported by Low et al. (2020) ( $\alpha = 0.70$ ), and Park and Chitiy (2011) ( $\alpha = 0.87$ ). Our study moreover showed that the AAST had high reliability according to Cronbach's alpha value ( $\alpha = 0.819$ ); and the split-half reliability value obtained by the Spearman-Brown formula was 0.776.

## 2.3 PROCEDURES

The current study was approved by the Jordanian Ministry of Education. All participants were asked to complete an electronic survey that was posted on the Jordanian teachers' syndicate Facebook page, over approximately a month. The survey was divided into three sections: demographic information, knowledge in ASD, and the ASST (used in Jordan for the first time). The adapted version of the survey was first validated by two professors from the Department of Education and Psychology at the University of Aveiro. Secondly, the survey was translated into the Arabic language by the first researcher and reviewed by a language expert. Finally, the translated version was proofed by two professors in Educational Psychology and Assessment and Diagnosis of individuals with ASD, then transferred to an electronic survey using Google form.

A statement at the beginning of the electronic questionnaire clarified the ethical guidelines adopted for educational research developed by the British Educational Research Association (2018). Hence the participants were informed of the purpose and nature of the study, the confidentiality of data, and the fact that participation was voluntary.

A one-way ANOVA was used to determine the degree of correlation between educators' attitudes and their knowledge of and training in ASD; their educational roles and experience; and their age, gender, academic qualifications, and school teaching level. A t-test was employed to examine the correlation between teachers' attitudes and their gender and academic qualifications. Finally, an exploratory factor analysis (EFA) was conducted using principal components analysis (PC) to examine the construct validity of the Autism Attitude Scale for Teachers (AAST).

## 3 RESULTS

### 3.1 VALIDITY AND RELIABILITY OF THE AAST

The data were analyzed by means of SPSS<sup>5</sup> version 25<sup>5</sup>. Exploratory Factor Analysis (EFA) was conducted using Principal Components Analysis (PC) to examine the Construct Validity of the study tool (the AAST). EFA results indicated that the Eigenvalue of each factor was greater than one.

Table 2 shows that all Eigenvalues were greater than (1), the KMO value was greater than 0.50, and Bartlett's Test of Sphericity was at the level of significance ( $p = 0.05$ ). Because all values for each factor were greater than 0.40, the results of Exploratory Factor Analysis gave that the AAST had a high level of Construct Validity.

<sup>5</sup> SPSS is a registered trademark of International Business Machines Corporation and is used under license by IBM Canada Ltd.

**Table 2**  
*Results from Exploratory Factor Analysis of the AAST*

AAST item	Factor
Teachers with and without extensive special education training can help a child with ASD.	0.412
Mealtime behaviors of children with ASD are not disruptive and do not negatively influence the behavior of children around them.	0.431
Schools with both typically developing children and children with ASD enhance the learning experiences of typically developing children.	0.481
Typically developing children and children with ASD should not be taught in separate schools.	0.367
Children with ASD can learn from a good teacher.	0.570
Regular schools are not too advanced for children with ASD.	0.421
I do not mind that other children share class with their peers with ASD.	0.707
Teachers not specifically trained in special education can be expected to deal with a child with ASD.	0.460
Students with ASD are not too impaired to benefit from the activities of a regular school.	0.595
Schools with both typically developing children and children with ASD enhance the learning experiences of students with ASD.	0.651
If I had the choice, I would not mind teaching in a school in which there were children with ASD.	0.746
A good teacher can do a lot to help a child with ASD.	0.661
Children with ASD can socialize well enough to benefit from contact with typically developing children.	0.615
It is fair to ask teachers to accept children with ASD in their schools.	0.689

\*Eigenvalue= 3.627; Kaiser Meyer Olkin (KMO) test= 0.864; Bartlett’s test of Sphericity= 1485.132; Sig.= 0.00

As Table 3 indicates, all reliability coefficients were high. The total value of Cronbach’s alpha reliability coefficient was 0.819, and the Split-half reliability value by the Spearman-Brown formula was 0.776; therefore, both values surpassed the accepted limit (0.70), meaning the study tool was highly reliable and appropriate for our study purposes.

**Table 3**  
*Results of Cronbach’s alpha and Split-half reliability*

AAST	Item Number	Cronbach’s alpha	Split-half reliability
	14	.819	.776

### 3.2 EDUCATORS’ ATTITUDES TOWARDS THE INCLUSION OF STUDENTS WITH ASD

Table 4 shows that the value of means was between 3.87- 2.51, with Standard Deviations of 1.35 - 1.06, most items being close to the average. The total mean was 3.22, Standard Deviation of 0.66, which means that educators held neutral attitudes towards the inclusion of students with ASD in Jordanian schools. Notwithstanding, the educators showed more favorable attitudes towards “the ability of students with ASD to learn from a good teacher” (item B5), and “a good teacher can do a lot to help individuals with ASD” (item B12).



**Table 4**  
*Means, Standard Deviations, and ranks of the AAST*

AAST items	N	Min	Max	M	SD	Rank	Relative importance (RI)	Estimate
B1	430	1.00	5.00	2.667	1.295	12	0.53	Average
B2	430	1.00	5.00	2.574	1.267	13	0.51	Average
B3	430	1.00	5.00	2.967	1.208	11	0.59	Average
B4	430	1.00	5.00	3.088	1.349	10	0.62	Average
B5	430	1.00	5.00	3.707	1.162	2	0.74	High
B6	430	1.00	5.00	3.116	1.191	9	0.62	Average
B7	430	1.00	5.00	3.198	1.259	8	0.64	Average
B8	430	1.00	5.00	2.514	1.245	14	0.50	Average
B9	430	1.00	5.00	3.426	1.063	4	0.69	Average
B10	430	1.00	5.00	3.293	1.150	7	0.66	Average
B11	430	1.00	5.00	3.533	1.275	3	0.71	Average
B12	430	1.00	5.00	3.870	1.127	1	0.77	High
B13	430	1.00	5.00	3.423	1.068	5	0.68	Average
B14	430	1.00	5.00	3.384	1.172	6	0.68	Average
B	430	1.14	5.00	3.197	.658	-	-	Average

### 3.3 EDUCATORS' ATTITUDES AND TRAINING IN ASD

As seen in Table 5, there was a statistically significant difference in the mean scores for attitudes according to one's training in ASD. The results gave total mean scores of  $M = 3.197$ ,  $SD = 0.658$ . In turn, the values of (F) and (Sig) for training in ASD were  $F = 5.532$ ,  $Sig = .004$ ; therefore, we arrived at a correlation between educators' attitudes and training in ASD.

**Table 5**  
*Means, Standard Deviations, and one-way ANOVA for training in ASD*

Descriptive statistics					
Training in ASD	N	M	SD	F	Sig.
Had pre-training in ASD	100	3.036	.675	5.532	.004
Interested, but no pre-training	215	3.200	.648		
Not interested, and no pre-training	115	3.332	.635		
<b>Total</b>	<b>430</b>	<b>3.197</b>	<b>.658</b>		

Furthermore, the results of the Least Significant Difference (LSD) show that the means were higher in the favor of respondents who chose "Pre-training in ASD" and "Interested, but no pre-training", over "Not interested". There was no difference in the means between "Pre-training in ASD" and "Interested, but no pre-training".

### 3.4 EDUCATORS' ATTITUDES AND KNOWLEDGE IN ASD

Table 6 shows that there are statistically significant differences between participants' attitudes concerning the level of knowledge in ASD. Given that Chi-square test values were 0.00, we can affirm that the educators' attitudes are associated with knowledge of ASD.

**Table 6**  
*Results of Chi-square test for the level of knowledge in ASD*

Knowledge in ASD Items	% of correct response	Chi-sq test	Sig
Most children with ASD are non-verbal.	60.0	17.200	0.00
ASD is a developmental disorder.	73.7	96.781	0.00
ASD occurs only in childhood.	45.6	3.400	0.00
The core symptoms of ASD are not similar.	31.6	58.056	0.00
Most children with ASD demonstrate cognitive impairment.	34.9	39.302	0.00
Some children with ASD have high intellectual abilities.	72.6	87.526	0.00
Lack of social communication skills and behavioral problems are the main symptoms of individuals with ASD.	86.7	232.223	0.00
Some ASD symptoms appear at a later age.	35.8	34.614	0.00
The most effective intervention approach for ASD is behavior therapy.	81.9	174.595	0.00
Children with ASD can significantly improve with early intervention programs	89.5	268.837	0.00
A similar intervention approach can work certainly with all children with ASD	79.8	152.409	0.00
Medical therapy is the most common intervention for ASD.	68.8	61.033	0.00
ASD can be cured by using an appropriate intervention.	76.0	116.688	0.00
ASD is a genetic disorder.	65.3	40.521	0.00
No specific cause for ASD.	12.8	238.140	0.00

*Note.* 15 True/False questions adapted from Segall (2008) questionnaire to explore the knowledge of participants in ASD under three areas: Etiology, Diagnosis, and Intervention.

### 3.5 EDUCATORS' ATTITUDES AND EDUCATIONAL ROLE, EXPERIENCE, AGE, AND SCHOOL LEVEL

Table 7 indicates that there were no statistically significant differences among the mean scores for attitudes according to the educational role, experience, age, or school level of participants. The total mean scores were the same for all these variables ( $M = 3.197$ ,  $SD = 0.658$ ). Comparatively steady values were obtained for educational role ( $F = 0.733$ ,  $Sig = 0.533$ ), years of experience ( $F = 0.831$ ,  $Sig = 0.478$ ), age ( $F = 2.354$ ,  $Sig = 0.071$ ), and school level ( $F = 0.325$ ,  $Sig = 0.723$ ). Hence there was no correlation between educators' attitudes and their educational role, experience, age, or school level.

**Table 7***One-way ANOVA of educational role, experience, age, and school level*

Variables	Descriptive statistics					
		N	M	SD	F	Sig.
Educational role	General Education teachers	190	3.155	.676	.733	.533
	Special Education teachers	111	3.268	.546		
	Principals	62	3.219	.663		
	Counselors	67	3.179	.764		
Years of experience	Less than a year	249	3.176	.642	.831	.478
	1-5 years	93	3.249	.621		
	6-10 years	53	3.131	.696		
	< 10 years	35	3.314	.798		
Age	22- 30 years	91	3.349	.529	2.354	.071
	31- 40 years	164	3.181	.687		
	41- 50 years	138	3.118	.669		
	< 50 years	37	3.191	.730		
School-level	Primary	172	3.196	.633	.325	.723
	Middle	135	3.166	.684		
	High	123	3.232	.665		
<b>Total</b>		<b>430</b>	<b>3.197</b>	<b>.658</b>		

### 3.6 EDUCATORS' ATTITUDES AND GENDER AND ACADEMIC QUALIFICATIONS

Table 8 reflects an absence of statistically significant differences in mean scores for attitudes according to the gender and academic background of participants. The results likewise indicate no statistically significant difference in mean attitudinal scores for males ( $M=3.205$ ,  $SD = 0.708$ ) with respect to females ( $M=3.193$ ,  $SD = 0.628$ ;  $t(430) = 0.180$ ,  $Sig= 0.857$ ). Similarly, there were no significant difference in the mean attitudinal scores for participants holding Bachelor ( $M = 3.208$ ,  $SD = 0.667$ ) versus postgraduate degrees ( $M = 3.181$ ,  $SD = 0.644$ ;  $t(430) = 0.416$ ,  $Sig = 0.678$ ). Therefore, no correlation appears between educators' attitudes and their age and/or academic qualification.

**Table 8***Means, Standard Deviations, and t-test for academic qualification and gender*

		N	M	SD	<i>t</i> (430)	<i>df</i>	<i>Sig</i>
<b>Qualification</b>	Bachelor	262	3.208	.667	.416	428	.678
	Postgraduate	168	3.181	.644			
<b>Gender</b>	Male	157	3.205	.708	.180	428	.857
	Female	273	3.193	.628			

## 4 DISCUSSION

The current study aimed to examine the attitudes of educators including regular classroom teachers and special education teachers, school principals, and counselors towards the inclusion of students with ASD in public schools in the middle and northern parts of Jordan. The AAST was applied for the first time in Jordan to identify educators' attitudes and their cor-

relation with training and knowledge in ASD, experience, academic qualification, gender, age, and school level. The high reliability of the AAST is attested to by Cronbach's score ( $\alpha = 0.819$ ) as well as previous research findings (Low et al., 2020; Park & Chitiyo, 2011). The results in terms of EFA further demonstrated that the AAST had a high level of construct validity.

According to our findings, educators harbor neutral attitudes towards the inclusion of students with ASD in Jordan's general educational setting. These results are consistent with prior findings (Engstrand & Roll-Pettersson, 2014; Yada & Savolainen, 2017); yet the educators surveyed here showed more favorable attitudes towards 'the ability of students with ASD to learn from a good teacher' (item B5), and that 'a good teacher can do a lot to help individuals with ASD' (item B12). Results also show that there are no statistically significant differences between the attitudes of general versus special education teachers, school principals, or counselors, where the value of F reached 0.733, with the level of significance 0.533. Therefore, educators' attitudes towards the inclusion of students with ASD are not different, regardless of their educational role.

Moreover, our study showed that educators' attitudes were correlated with knowledge in ASD, since participants demonstrated statistically significant differences in their attitudes depending on their level of knowledge about ASD. This finding is in line with those of Gigante and Gilmore (2018), and Segall and Campbell (2012). Similarly, the educators' attitudes were associated with training in ASD, educators showing statistically significant differences, likewise evidenced by Sharma et al. (2015), who claim that training and knowledge in ASD can influence teachers' attitudes regarding the inclusion of individuals with SN. The results of Least Significant Difference (LSD) of training in ASD furthermore gave means that were higher in favor of respondents who chose "I had pre-training in ASD", and "Interested, but no pre-training in ASD", over those who chose "Not interested, and no pre-training in ASD". Meanwhile, there was no difference in the means between "Pre-training in ASD" as opposed to "Interested, no pre-training".

The current study would evidence that educators' attitudes are not associated with participants' age or level of education, as concluded by previous authors (Alexandri et al., 2017), or with gender (Galaterou & Antoniou, 2017). Neither was a correlation evident between educators' attitudes and their years of experience with ASD, which is the result reported by Gaines and Barnes (2017), Garrad et al. (2019), and Sutton (2013), but is contrary to the findings of Abu-hamour and Muhaidat (2013). Moreover, our results indicated that educators' attitudes were not associated with school level, which contrasts with the literature review by Scruggs and Mastropieri (1996) and a study by Leyser et al. (2006), who found that teachers' attitudes were influenced by school level, with teachers in senior grades having more favorable attitudes toward the inclusion of students with ASD than those in elementary grades. Although prior research is divided on the correlation between teachers' attitudes and age, gender, and school level, in this study, we found no correlation between these variables. We attribute differences in teachers' attitudes to differences in the development of educational programs for preparing pre-service teachers, their knowledge of and training in ASD, or their awareness of the rights of individuals with special needs, rather than to their age, educational experience, gender, or school level.

## 5 IMPLICATIONS

In view of the results of the current study, we may highlight a number of implications. First, the attitudes of educators can be associated with the level of their training and knowledge in ASD. In Jordan, there is a lack of training and preparation for teachers in meeting the needs of students with SN in inclusive settings (Mahmoud et al., 2015). It is therefore important to provide teachers and other professionals, in regular educational environs, with knowledge and training in ASD, because it is an essential predictor in determining educators' perspectives towards the inclusion of students with ASD, as suggested by Amr (2011), and Leatherman and Niemeyer (2005). Second, educators' perspectives towards inclusion can be influenced by knowledge about the legal rights of individuals with SN (Gigante & Gilmore, 2018). Hence, creating awareness and enhancing knowledge as to the right of individuals with ASD among Jordan's teachers and other professionals could gradually shift the attitudes of educators, making them more favorable towards the inclusion of individuals with ASD in regular settings (Alexandri et al., 2017).

It is moreover worth stressing that Jordanian school environments and services need to be adapted to be appropriate not only for individuals with ASD but also for other individuals with SN (Abu-Hamour & Al-Hmouz, 2014). Quite clearly, Jordan's schools suffer a lack of classroom space to meet the needs of all students, not only the ones with SN. The Syrian crisis and the support lent by Jordan created a very challenging situation, leading the government to adhere to double-shift schooling to accommodate Syrian students (Durrat Almanal, 2017). At the same time, there is a need to adopt an international policy, benefiting from successful experiences in inclusive education in western countries e.g., the USA and EU by viewing these models as a benchmark to guarantee the success of inclusive education. Cooperation and coordination between the governmental and private educational sectors in Jordan are crucial for ensuring the best possible services for all individuals with SN. Finally, we suggest that future research efforts be dedicated to studying the correlation between educators' job satisfaction and their attitudes. Jordan in particular witnessed a long strike by teachers protesting against the government due to their financial situation, which led to a crisis between the Jordanian government and the teachers' syndicate (Human Rights Watch, 2020).

## 6 LIMITATIONS

We can discuss the results of the current study in the light of some limitations. First, the study's participants came only from the northern and middle regions of Jordan, so the data cannot be generalized to apply to all teachers and other educational professionals in Jordan. Furthermore, although the survey was posted for approximately a month on the Facebook page of the Jordanian Teachers' Syndicate, which has over 37,000 educators, only 430 participants completed the survey voluntarily. We, therefore, recommend conducting a nationwide study that includes all teachers and professionals in public and private educational institutions in Jordan so as to obtain more robust results. Second, the fact that responses in the ASD section were limited to "True" or "False" might have encouraged respondents to guess the answers; however, the addition of an "I do not know" option to mitigate guessing would have complicated the data analysis. Given the current pandemic, it would have been impossible to conduct

the study using hardcopy questionnaires. Third, although the composition of the sample was appropriate in terms of categories, the number of principals and counselors was low compared with the number of general and special education teachers. This was expected, as the number of teachers is higher than that of other professionals

Finally, the AAST was developed over four decades ago and may be outdated. Since this time, the development of diagnostic criteria and changes in the definitions of ASD have enhanced our understanding and the diagnosis of autism. Therefore, the use of the AAST, if outdated, might have impacted the results of the study. However, because the AAST was developed to assess teachers' attitudes over time (Olley et al., 1981) and not to examine their attitudes toward various levels of ASD, it is a reliable tool for identifying teachers' attitudes.

## 7 CONCLUSION

Overall, the current study shows that Jordan's educators harbor neutral attitudes towards the inclusion of students with ASD in Jordanian schools. The study indicates that these attitudes are associated with training and knowledge in ASD, whereas educational role, experience, academic qualification, age, gender, or school level are not correlated to educators' attitudes. We therefore suggest providing teachers with training and knowledge specifically in ASD to achieve the prerequisites for successful inclusion of these students. It is noteworthy that educators expressed more favorable attitudes towards 'the ability of students with ASD to learn from a good teacher' (item B5), and that 'a good teacher can do a lot to help individuals with ASD' (item B12). Our study can moreover be seen as a valid instrument for assessing changes in teachers' attitudes over time, in the wake of necessary services and training. Finally, we recommend that the details of section (B) of Law no. 20 ("the Rights of Persons with Disabilities") be more clearly defined by the Ministry of Education to avoid the bureaucracy that determines the eligibility of persons with disabilities to participate in inclusive settings.

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## DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within the article.

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