

# The Extent of Teachers' Knowledge of Autism Spectrum Disorder for the Required Tasks and Responsibilities Related to Scientific Qualification and Years of Experience Variables

Ihsan Igdifan Al Saree and Wael Muhammad Al Shurman  
Al-al Bayt University  
Mafraq, Jordan

**Abstract.** The study aimed to identify the extent of teachers' knowledge of autism spectrum disorder (ASD) for the tasks and responsibilities required of them. The population sample of the study consisted of 115 male and female teachers who taught at specialized ASD centers in Jordan. The instrument included 21 items to measure the extent of the teacher's knowledge of ASD according to certain tasks and responsibilities. Indications of the validity and reliability of the instrument and items were also determined. The results of this study revealed that the extent of the teachers' knowledge of ASD with the tasks and responsibilities expected of them had a medium a total score of 1.89. The results also showed that there were no statistically significant differences in ( $\alpha = 0.05$ ) and the extent of their knowledge of tasks and responsibilities was attributed to the years of experience variable. Further, there were no statistically significant differences at level ( $\alpha = 0.05$ ) in the responses of the participants on the extent of their knowledge of the tasks and responsibilities attributed to the scientific qualification variable.

**Keywords:** Teachers; autism spectrum disorder; tasks; responsibilities.

## Introduction

The 21<sup>st</sup> century has brought with it, many changes that have helped to address numerous challenges for humanity as a whole. Many of these challenges are the result of several factors that emerged during the second half of the twentieth century. Also, many new changes globally, have resulted in numerous implications and transformations covering all aspects of human life, requiring educational institutions and systems to build and shape the human personality, reviewing policies and programs, tasks, responsibilities, and the assigned roles of people. The significance of these changes has highlighted, for example, the poor knowledge of teachers working with people with disabilities, including

teachers of autism spectrum disorder (ASD), the tasks and responsibilities assigned to them, and the extent to which proper procedures of staff working at private educational institutions are employed.

According to Spencer-Cavaliere, Kingsley, Norris, 2018, innovative approaches have the potential to shift and reimagine how human services workers can better support people with disabilities in living meaningful lives. Here they mentioned that the main objective of special education is to educate, train and rehabilitate children with disabilities so that students with ASD can benefit from a variety of needs. For instance, teachers can learn about the tasks and responsibilities that are established so that, as teachers, they can provide the students with the proper skills according to their abilities under strict plans and specialized programs, instructing them to perform at the best possible level, preparing them for public life and integrating them into society. Importantly, the ASD teacher has a similar role to that of a formal education teacher in teaching necessary study skills but is unique in teaching extra-curricular activities. Therefore, a curriculum that includes a set of compensatory skills must be taught as a result of student disorders. As such, the tasks of teachers of these students with ASDs can be summarised by assessing cases, maintaining student records, documenting their progress, defining educational plans and levels, setting learning goals for each student, developing the individualized learning programs and to identify the specific needs in each case (Khalidi, 2015).

Additionally, teachers need to identify the appropriate materials to use, sources, methods, educational activities, methods of teaching, implementing the teaching process, evaluating student performance before and after teaching, follow-up on the progress of students' progress, and preparing periodic reports on student performance. This also includes the goals achieved as outlined in individual plans, follow-up observations from parents, applying appropriate behavioral modification methods, engaging in the integration of children with mild and severe ASD with non-disabled ones, and participating in the guidance and assistance of teachers working at formal schools where the students learn. Also, participating in the planning of transitional services for children with ASD, encouraging families to participate in the planning process for transition services, participating in periodic meetings with parents and technical staff, participating in family guidance and guidance regarding the academic and student aspects of the student and their problems, participating in meetings, seminars, training courses, and encourage family participation in the training and education of their children (Al-Mousa, 2007).

Given there is a tendency for ASD educational institutions to privatize, their role within the private sector is challenged by the public sector in their ability to provide adequate education and learning services at a qualitative level and remain profitable. As such, attracting and increasing the number of ASD students is important to sustain the level of services offered to children with ASD (Omilil, 1998). Similarly, the teacher to partner with his/her manager needs to ensure the success of the tasks and responsibilities assigned to them in teaching students with ASD (Chu, 2018). Notably, teachers of ASDs encounter many issues which they find difficult to manage unless they are provided with

practical experience that enables them to handle disorders appropriately. Teachers are also challenged by the changing knowledge in the education field, community changes brought about through the introduction of new systems, policies, methods of planning, development, and relationships among their members.

Likewise, children are also influenced by these transformations, which in turn, forces teachers to face further challenges that require upgrading their knowledge or upskilling on defined tasks and responsibilities. Not maintaining knowledge and skills due to these changes will result in teachers' having inadequate knowledge to apply in practice (Alshurman, 2015).

Teachers' are considered the backbone in the education system and also in rehabilitation as actors having a considerable influence and knowledge in achieving student objectives. Once a teacher is well-acquainted with the skills and knowledge of their work, this also acts to reinforce his/her in adapting to the changes in education and in developing abilities as well. Notably, it becomes more significant when teachers manage students with ASD requiring them to develop both administratively and technically, which improves the learning process, reflected by the positive influence on students.

### **Theoretical Framework**

Autism more recently has become a challenging puzzle due to its ambiguity and notable symptoms. First discussed in 1943 by (Kanner), a psychologist at the time, he observed the behavior of eleven children, particularly their extraordinary characteristics, such as avoiding to talk, lack of awareness of people, the use of fantasy games and other attributes (Wing, 1976). Autism can be defined differently, as presented in several cases below:

- Kanner's definition: this refers to all who view autism: through the observation of children's behavior, which includes the inability to build relationships with others, delayed speech acquisition, stereotypical play, repetition, symmetry, and weakness in the analysis (Johnson, and Myers, 2007).
- Crick's definition: several characteristics of children: disability in relation with others, lack of awareness of personal identity, strong resistance to change, loss of speech or failure to develop, deformity in movement, the decline in mental capacity, and abnormal cognitive experiences.
- US Federal law: views that autism is a developmental disorder that has a marked effect on the child's ability to communicate verbally, nonverbally and socially usually before the age of three, and affecting the child's academic performance. Autism coincides with other characteristics, such as engaging in a range of repetitive activities, such as typical movement, resistance to change in the environment or change in daily routines, and unusual responses to sensory inputs. The term autism itself does not apply

in the case when the child's academic performance is severely affected by certain emotional disorders (Raijer, 2013).

## **Causes of Autism Spectrum Disorder**

As a result of the vagueness surrounding ASD, there is limited scientific research regarding autism in identifying the specific cause. One cannot say that there is a scientifically proven cause that is responsible for ASD though some suggest that there are certain factors that cause autism. Many hypotheses and theories help to explain ASD, which can be separated into two categories: old theory and modern theory.

### **First: The Old Theory**

The psychological theory developed by Kanner, 1943, explains that the causes of autism are based on the thought of escaping from the painful reality experienced by the child, resulted by an emotional chill with the relationship between the mother and son which may be founded on the relationship between the mother and father (spouses). While there may be no problems experienced to the child (as a fetus) during the mother's pregnancy, this makes the possibility of the child's autism inevitable. This theory explains the causes of autism, which tempts the child to create painful and dark feelings; though this theory it is not significant.

### **Second: Modern Theories**

There are many modern theories to define ASD. As quoted by Zureiqat, (2004):

**Biochemical Theory:** explains that the associated causes of autism are related to a problem in the chemistry of the brain that negatively affects the child's ability to work. Serotonin, for instance, is one of the most important neurotransmitters in the brain and is responsible for a range of functions related to memory, normal behavior and sleep (Matson, 2007). **Neural Hypothesis:** assumes that autism is of neurogenic origin, in the sense that there is a disturbance in the neurotransmitters of the brain. Some brain imaging tests have revealed differences in the formation of it. There are also differences in the cases of infected and non-infected ones. Also, alcohol in the cerebellum at the time of the atherosclerosis was 13%, especially in Burkeji cells (National Research Council [NRC], 2001).

**Theory of Mind (TOM):** suggests that children with ASD may not have the ability to comprehend the mental and emotional state of others by understanding the feelings, thoughts, and purposes of others, which are different from their own; thus leading towards their inability to understand the nature of their mental and emotional state. To effectively deal with others through different social attitudes, it is essential to understand that individuals have emotional attitudes that vary according to social attitudes and may also vary in a similar situation. Therefore, the individual must recognize those existing emotional attitudes and the change in others by observing signs, facial expressions, and physical signs such as a particular person must employ many words or emotional expressions appropriate to the nature of the social situation

or the nature of the level of dialogue. It is also necessary to use a range of behavioral responses in responding to different emotional expressions that others make during the process of social interaction. This series of mental perceptions seems difficult for autistic individuals, so the mechanisms of expressing their emotional states and responding to the situation of others are often turbulent and difficult (NRC, 2001).

### **Characterize of Autism Spectrum Disorder (ASD)**

Children with autism display many characteristics, with each case having its own specificity. However, there are general characteristics that are in common. First, **Disorders in Social Communication:** children with ASD lack interaction with others and also have less qualitative limitations in social interactions (Jasmin et al., 2009). Also, they do not care about the feelings of others, nor do they feel the need to help others. Simply put, they exhibit significant limitations in the ability to build friendships with others. They are also unable to understand the origins of social interaction, or fail to participate in group games and instead, prefer to play alone (Raijer, 2013).

Second, **Disorders in Language Communication:** children with ASD suffer from qualitative impairment in verbal and non-verbal communication and display an unusual way of communicating in their language (e.g. they do not welcome visitors, adopt eye contact with the person whom they interact with, or smile for the speaker). However, they stare at social attitudes, and show an inability to imitate others, or talk to them. Although a child who has ASD can speak occasionally, s/he continues to talk on a particular subject and may get no response from others. For example, when someone says to an autistic child, "Hello, Khaled," you find that they repeat the phrase "Hello, Khaled". Also, the person may say it improperly in terms of loudness, rhythm or modulation (Edelson, 2003).

Third, **Abnormal Behavior s:** children with ASD experience a limited range of attention and activities. Here, the child exhibits an unreasonable determination to follow the same pattern in activities such as insisting on imitating in a similar way of dressing, eating, carrying a certain item or object, wearing something or touching a certain object frequently. Indeed, they may even get upset once things change their normal way of life. Like if something changes in the room, or tidying the room, the autistic child maintains relative to their surrounding symmetry and resists the change (Hallahan & Kauffman, 2003).

### **Previous Studies**

Using information obtained to analyse ASD, Al-Qadah (2011) assessed the extent to which learning managers in Jordan (teachers, educational supervisors, school principals) were aware of their new roles supposed to be practised in response to emerging variables. The population sample of this study included (383) teachers, supervisors, and (351) principals randomly selected using a stratified approach. The results revealed medium [moderate] levels in the awareness of

these groups regarding both roles and practices, especially for teachers. The results also revealed an impact of the qualified variable for groups with higher qualification in perception and practice. However, the study did not show the impact of the experience variable. The difference between the educational supervisors and the principals also differed in the levels of cognition and practice. The statistical significance was evident for the supervisors in both their perception and practice. Based on these results, the researcher made relevant recommendations.

In another study, Al-Mufti (2000) reported the ability of teachers to identify tasks and roles in light of recent changes. The sample of this study included (498) male and female teachers from different governorates of Jordan. The results showed the need to review the teachers' awareness of their tasks and the tasks of teachers and practice in a manner consistent with the requirements of those variables of advanced performance that enable them to perform their tasks professionally.

Najjar (2008) investigated the roles of teachers and the extent of ownership and patterns of knowledge in the educational system in Jordan. The population sample of the study consisted of (642) teachers. The results of the study revealed that teachers had good knowledge of the academic role, and a moderate level of extant knowledge of the roles, moral and social tasks. The study also highlighted new roles and tasks in previous areas and recommending training teachers on how to deal with them.

Chee et al. (2013) explored teachers' awareness of roles by addressing changes in these roles in the light of information technology (IT) developments in Ohio. The population sample comprised of (12) schools. The results showed that the teachers appropriately performed their roles, and the emergence of new roles required teachers to develop their technical skills in teaching students.

In a separate study, Azad & Mandell (2016) investigated whether parents and teachers agreed about the concerns for their children with autism and when given the opportunity, whether they discussed these concerns. The results of the study showed that parents and teachers generally agreed about their primary and secondary concerns. When provided with the opportunity to communicate their concerns, 49% of parent-teachers discussed problems that were neither reported as primary concerns, and 31% discussed problems that were neither reported as their primary or secondary concerns.

On the other hand, Baqabas (2016) conducted a study to determine 'The Reality of Teachers' Use of Computer Technologies for Developing the Communication Skills of Children with Autism Disorders'. The study discovered that the reality of teachers with autism students in using computer techniques in developing communication skills was moderate. The study also indicated that there were no statistically significant differences in the development of communication skills for children with autism disorders due to sex variables and years of experience.

Najjar (2016) evaluated the competencies of teachers regarding ASD in light of the standards of professional practice adopted by the 'Council of Extraordinary

Children'. The results indicated that the standards of professional practice with regards to the standard of professional and ethical practice came first, followed by the standard of teaching strategies. Here, there were statistically significant differences in possession of professional practice attributed to the benefit of males, scientific qualification and years of teaching experience.

In another study by Thompson & Winsler (2018), they determined the correlations between parent and teacher ratings, which were found to be moderate and significant for social skills but near zero for behavioral concerns. Here, parents classified children as having stronger social skills and fewer behavioral concerns compared to teachers.

Love et al. (2019) explored the relationships between Teacher Self-Efficacy for Teaching Students with ASD and their association with stress, teacher engagement, and student IEP outcomes following COMPASS consultation. The results of the study showed that self-efficacy for teaching students with ASD was significantly and positively correlated with teacher engagement and student outcomes, and negatively correlated with teacher stress. Furthermore, consultation intervention for teachers afforded them with higher levels of self-efficacy for teaching students with ASD. Also, there was a direct association between teacher self-efficacy and student IEP outcomes and the potential positive impact of teacher a consultation intervention on the teacher's intrapersonal factor of self-efficacy.

Lastly, Chotidjah et al. (2019) investigated the effectively of PIM training and workshops on parents' affective functions. The results showed there was a significant difference observed in four aspects: 1) the confidence in performing social intervention on children, 2) the belief in the success of the intervention process, 3) the expectation regarding children's development, and 4) lower stress level when facing the children and the impact of hindrances.

## **Problems and Questions of the Study**

Little is known about the issue of ASD given the scarcity of studies that have examined the extent to which teachers of students with ASD perform the tasks and responsibilities required of them. Likewise, limited awareness and knowledge of the tasks required for the job make the atmosphere unclear at times, creating numerous problems between the pillars of the educational process.

In general, the reasons that motivate and attract researchers to study this problem are heightened by what occurs at educational institutions concerning students with disabilities. Moreover, it is mostly a problem between teachers and their principals. Teachers may likely refuse to perform some tasks assigned to them or perform work that principals have disallowed them from undertaking. In this case, many problems could occur due to the lack of the teacher's knowledge associated with the required tasks and responsibilities given to them. On the other hand, the familiarity of regulations and job

description will make these responsibilities and tasks much clearer, leading to a shift away from potential problems in the education and training of students with ASD.

Therefore, this study aims to identify the extent of teachers, regarding students with ASD, by understanding and knowing the required tasks and responsibilities related to several variables. Several questions have been formulated to achieve this aim:

1. How teachers of ASD recognize the required tasks and responsibilities?
2. Are there statistical differences in the extent of teachers' knowledge of ASD for the required tasks and responsibilities due to the years of experience variable?
3. Are there statistical differences in the extent of teachers' knowledge of ASD of the required tasks and responsibilities due to the scientific qualification variable?

### **Significance of the Study**

The significance of this study is to recognize the attention given by teachers towards the tasks and responsibilities given to students with ASD. Also, the provision of data that is provided and information on the extent to which the teachers of students with ASD know and contribute to decision-making and development of training and guidance programs for teachers of students with disabilities, (including teachers of students with ASD). Furthermore, it is anticipated that the results and recommendations of this study will provide a broader scope for researchers in this field.

### **Limitations of the study**

Several limitations are inherent in this study. The first limitation concerns the limited sample of ASD teachers who taught at specialized ASD centers in Jordan between 2017/2018. The study also applied an instrument to measure the extent of teachers of ASD in recognizing the tasks and responsibilities required in performing their work according to only a few variables. Further, the results of the study are determined by the degree of validity and reliability of the instrument, and therefore it is difficult to generalize to other populations. Lastly, the results of the study reflect the teachers' points of view regarding ASD for the tasks and responsibilities required of teachers.

### **Operational definitions**

- **The extent of knowledge:** expressed by the mean of the estimates of the ASD teachers regarding the extent of their knowledge of the tasks and

responsibilities required of them regarding the items in the study instrument.

- **Teachers of ASD:** both male and female teachers who are employed at ASD institutions in Jordan.
- **Tasks and Responsibilities:** a set of required tasks from ASD teachers regarding the ASD center, and the students and family represented in the sections of the study instrument.
- **Autism Spectrum Disorder (ASD):** refers to the students who studied and trained at ASD centers in Jordan, diagnosed with ASD.

## Methods and Procedures

This section describes the society and sample, the instruments applied to extract the indications of the validity and consistency of the instrument, defining the study variables, procedures and statistical processing by which the study questions are answered.

### The Methodology of the Study

The analytical descriptive method was applied in this study to identify the extent to which the ASD teachers understood about the tasks and responsibilities required of them using several variables, namely, scientific qualification and years of experience.

### The Population and Sample of the Study

The population of this study comprised of ASD teachers in Jordan for the academic year 2017/2018. The sample of this study consisted of (115) male and female teachers who taught at specialized ASD centres in Jordan, as shown in Table 1.

**Table 1: shows the distribution of the participants**

Variable	Category	No	%
Scientific qualification	Diploma	39	34
	Bachelor	51	44
	Postgraduates	25	22
Experience by years	Less than 5	40	35
	5-10	62	54
	More than 10	13	11
Total		115	100

## Study Instrument

The instrument for this study was used to measure the extent to which the teachers of ASD students were aware of the tasks and responsibilities designed by the two researchers of this study. The validity of the study instrument was extracted from eleven specialized professors from a Jordanian university having significant education experience, in order to validate the linguistic formulation and suitability for the purpose of the study. Amendments to the study instrument (80%) recommended by the specialized professors were taken into consideration. The instrument reliability for this study was confirmed using the test-retest method. The instrument was also tested using (15) teachers outside the sample of study as a pilot to test the instrument. After conducting the pilot for 15 days the instrument was updated based on the feedback received from the participants, and the reliability coefficient was determined by applying the Pearson correlation coefficient of (0.89), which meant that the instrument was suitable for this study. The scale used for the (21) items of the instrument had three options for the respondents in answering each question; I do not know it, I know it little, I know it well. As such, the teacher was able to select these options by placing a tick (√) against it as in Table 2.

**Table 2: example of an items answer**

No	Item	I do not know it	I know it little	I know it well
1	Participating in assessing cases and identifying the level of its present performance.	√		
2	Keeping students' private records which documents the way they apply.		√	

The extent of knowledge of the teachers of ASD for the tasks and responsibilities required of them was classified into three levels (low, medium, high) according to the averages of the sample responses for each item, as shown below:

Longitude = (maximum-minimum) ÷ the number of levels:

$$= (3-1)/3 = 0.67$$

Where the limits of the three levels are according to the following classification:

A - Low knowledge extent, the mean is between (1-1.67).

B - Medium knowledge extent, the mean is between (1.68 and 2.33).

C - A high knowledge extent, the mean is between (2.34 and 3).

## Study Procedures

The process in preparation of this study consisted of several stages:

1. The researchers applied for approval from the ASD centers in Jordon to apply the instrument to teachers.
2. The researchers contacted the teachers and scheduled an agreed date to meet.
3. The researchers provided the teachers selected to participate in this study with the study instrument to complete and collect the data necessary in order to meet the objectives of the study.
4. Analyzing the results from the instrument in order to answer the research questions.

## Statistical Analysis

In this study, the researchers analyzed the collected information using the Statistical Package for the Social Sciences (SPSS) software program to determine the mean and standard deviations. ANOVA was also applied to find quantitative data.

## The Results

### Results of the first question: How well do autism spectrum disorder teachers know the tasks and responsibilities required of them?

To determine the extent of teachers' knowledge about ASD and their awareness of the tasks and responsibilities required of them, the means and standard deviations were extracted for all domains of the study, as stated in the instrument, (refer to Table 3).

**Table 3: Means and standard deviations for the study items**

No	Item	M	SD
1	Participating in assessing cases and identifying the level of its present performance.	1.45	.612
2	Keeping students' private records which documents the way they apply.	1.47	.588
3	Participating in determining the specific needs of each case, with emphasis on educational and academic needs.	1.68	.683
4	Determining the educational goals of each student.	1.74	.664
5	Developing the individual education program and the individual education program.	1.71	.627
6	Identifying the educational plan and its levels.	1.76	.766
7	Identifying appropriate materials, resources, methods, and educational activities.	2.26	.708
8	Identifying suitable teaching methods.	2.11	.726
9	Implementing teaching process.	2.15	.789

10	Continuous assessment of student performance before, during, and after teaching, and follow-up student progress.	1.45	.612
11	Preparing the periodic reports on the student's performance of the objectives achieved as stated in the individual plans.	2.12	.595
12	Following up notes given by parents.	2.17	.622
13	Applying methods to modify appropriate behavior.	2.00	.656
14	Participating in the integration of children with autism spectrum disorder with ordinary children.	1.83	.796
15	Participating in the guidance and support of teachers working at regular schools where the student learns.	2.45	.706
16	Participating in planning for transition services for children with autism spectrum disorder.	2.23	.740
17	Encouraging the family to participate in the transition services planning process.	1.56	.704
18	Encouraging family participation in the training and education of children with an autism spectrum disorder.	1.79	.691
19	Participating in the guidance of the family with regard to the academic and student aspects and problems.	1.74	.751
20	Participating in meetings, seminars and training courses.	2.05	.753
21	Participating in periodic meetings with parents and technical staff.	1.89	.767
<b>Total</b>		<b>1.89</b>	<b>.396</b>

Table 3 shows that the means for the items were between 1.45 and 2.45, where the highest mean was for the item "Participating in the guidance and support of teachers working at regular schools where the student learns" and the lowest was for the item "Continuous assessment of student performance before, during, and after teaching, and follow-up student progress." Thus, the total score, as shown in Table 2, was 1.89. This means that the perceptions of the ASD teachers of their tasks, roles and responsibilities performed were at a medium level.

**Results for the second question: Are there statistically significant differences in the extent to which autism spectrum disorder teachers are aware of the tasks and responsibilities required of them due to the years of experience variable?**

To determine if there were statistically significant differences in the extent to which the ASD teachers were aware of the tasks and responsibilities required of them, due to the experience variable, the means and standard deviations were computed to measure the effect of experience on the extent to which ASD teachers knew about the tasks and responsibilities required of them, as shown in Table 3.

**Table 4: Means and standard deviations due to years of experience variable**

Categories	M	SD
Less than 5	2.51	0.281
5-10	2.69	0.215
More than 10	2.63	0.240
<b>Total</b>	<b>2.61</b>	<b>0.368</b>

Table 4 shows that there were apparent differences between the mean due to the years of experience variable among the participants in the extent of the knowledge of the teachers of ASD students with the tasks and responsibilities required of them. ANOVA was used to show the significance of the differences, as shown in Table 4.

**Table 5: ANOVA variance analysis for years of experience variable**

Source	S.S	Df	M.S	F	Sig
Between the groups	0.303	2	0.153	2.432	0.099
Within the groups	2.870	47	0.061		
Total	3.174	49			

\* Statistically significant ( $\alpha = 0.05$ )

Table 5 shows that there are no statistically significant differences at ( $\alpha = 0.05$ ) in the participants' responses concerning their knowledge of the tasks and responsibilities required of them due to the years of experience variable.

**Results of the third question: Are there statistical differences in the extent to which the teachers of autism spectrum disorder are aware of the tasks and responsibilities required of them due to scientific qualification as the variable?**

In order to explain if there were any significant differences in the extent to which the ASD teachers were aware of the tasks and responsibilities required of them due to the scientific qualification variable, means, and standard deviations were computed as well as ANOVA was used to measure the effect of scientific qualification on the extent to which the teachers of ASD students were aware of the tasks and responsibilities required of them.

**Table 6: Means and standard deviations according to the scientific qualification variable**

Categories	M	SD
Mid Diploma	2.59	0.230
Bachelor	2.68	0.234
Postgraduate	2.49	0.239
Total	2.59	0.252

Table 6 shows that there were differences between the mean performance of the sample and the extent of the knowledge of the ASD teachers with the tasks and responsibilities required of them according to the scientific qualification variable. ANOVA was applied to show the significance of the differences, as shown in and Table 6.

**Table 7: ANOVA analysis of scientific qualification variable**

Source	S.S	D.F	M.S	F.	Sig
Between the groups	0.123	2	0.061	0.981	0.382
Within the groups	2.979	47	0.062		
Total	3.102	49			

\* Statistically significant ( $\alpha = 0.05$ ).

Table 7 shows that there were no statistically significant differences at ( $\alpha = 0.05$ ) in the responses of the participants concerning their knowledge of the tasks and responsibilities required of them due to the scientific qualification variable.

## Discussion

### **The first question: To what extent are the teachers of autism spectrum disorder aware of the tasks and responsibilities required of them?**

The means and standard deviations of the scale and total score were used to answer this question. The means for the items ranged between 1.45 and -2.45. The highest mean was for the item "participating in the guidance and help teachers working at regular schools where the student learns." Meanwhile, the lowest related to "participating in the evaluation of cases, and determining the level of current performance and continuous evaluation of student performance before, during and after teaching and follow-up student progress" at 1.89 with the medium degree.

Comparing the results of this study with other studies, the findings are consistent with the results of Al Qadah's study (2011), indicating there are medium levels in the awareness of supervisors, managers and teachers of the roles required of them and to practice them, especially regarding teachers. Furthermore, the results are also consistent with those of Chee et al. (2013), where their results in teachers' knowledge of their roles were appropriate, and the need for new roles centred on teachers, focusing on developing the technical skills of students. Also, these results are consistent with that of Najjar's (2008), which showed that teachers had academically good knowledge and knowledge of roles, moral, and social tasks. There are no results of studies that differed from the results of the present study.

### **The second question: Are there statistical differences in the extent to which the teachers of autism spectrum disorder are aware of the tasks and responsibilities required of them due to the years of experience variable?**

It was anticipated that a decrease in the number of years of experience would have a clear impact on the assessment of the members of this study regarding their knowledge of the tasks and responsibilities required of them. Especially since short-term professionals are more in need of the knowledge of these tasks and responsibilities; given their limited practice and experience in this field. This may be attributed to the fact that the knowledge of the tasks and responsibilities does not require specific experience, but instead, is developed according to the attention given by the center's management and the teachers' enthusiasm to identify the tasks and responsibilities required of them and what is new in the institution's environment.

In addition, why there are no differences is simply due to the similarity of tasks and responsibilities required by ASD teachers regardless of the number of years of experience. Hence, their responses are logically close to each other regardless of the years of experience.

**The results of the third question: Are there statistically significant differences in the extent of knowledge of the teachers of autism spectrum disorder of the tasks and responsibilities required of them attributed to the scientific qualification variable?**

There were no differences in the responses of participants regarding their knowledge of the tasks and responsibilities required of them attributed to the scientific qualification variable. This is because the teachers are exposed to the same awareness and guidance concerning the tasks required of them, which narrows the gap between the different educational qualifications. Moreover, the centers are prepared based on certain criteria for addressing student ASD institutions. Here the emphasis is placed on the need for teachers to identify their job descriptions, and discussing these with the institution's central administration body which has resultantly contributed in reducing the gap between the teachers' educational qualifications concerning the extent to which they identify their tasks and responsibilities.

### **Conclusion**

The results of this study showed that the perceptions of ASD teachers of their tasks, roles, and responsibilities were at a medium level. also show that there were no statistically significant differences at ( $\alpha = 0.05$ ) in the participants' responses concerning their knowledge of the tasks and responsibilities required of them based on the years of experience variable. And also show there were no statistically significant differences at ( $\alpha = 0.05$ ) in the responses of participants regarding their knowledge of the tasks and responsibilities required of them attributed to the scientific qualification variable. Based on that the authors can recommend administration of institutions having students with ASDs should focus on raising the level of awareness among its employees', especially the roles, tasks, and responsibilities of teachers, also Institutions of students with ASD should develop policies and procedures that demonstrate the mechanism in helping teachers recognize and understand their roles and tasks required of them. These procedures should also be written and well-documented.

### **Compliance with Ethical Standards**

- Disclosure of potential conflicts of interest: On behalf of all the authors of this research, the corresponding author states that there is no conflict of interest.
- Research involving human participants and/or animals: This article does not contain any studies with human participants or animals performed by any of the authors.

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