

The Educational Evaluation of Autism Spectrum Disorders

Hafeez Mushtaq, Suneeta, Neeta Maheshwary

Ziauddin Hospital Clifton Karachi, Pakistan. Sindh institute of physical medicine and rehabilitation center, Karachi, Pakistan. Helix Pharma Karachi, Pakistan.

Abstract-

Background: Autism spectrum disorders (ASD) are becoming the fastest growing developmental disabilities with 1 out of every 150 births being diagnosed as having one of these disorders. Autism is a developmental disorder which affects a growing number of children worldwide. Limited research exists on what preservice teachers know and believe about children with ASD and their inclusion in general education classrooms, especially in early childhood education. The objective of this study was to assess the pre-service special educator's knowledge towards children with Autism Spectrum Disorders.

Methodology: In this study, knowledge of 20 preservice teachers at a large public sector university of Karachi was surveyed using a questionnaire about knowledge of ASD. It was also investigated the extent to which preservice teacher variables (e.g. age, degree, experience) influence their knowledge towards ASD. Collected data were analyzed using Statistical Package for Social Sciences (SPSS-21) program.

Results: Results indicated that the pre-service teachers' knowledge was found to be influenced by their age, academic year and plan to teach autistic children in future. Out of 20 respondents majority (60%) have plan to teach after completing degree. About 60% respondents agree regarding behavior therapy is an intervention most likely to be effective for children with ASDs. Approximately 65% respondents agree that the cause of ASDs is unknown and it mainly occurs in childhood. The core deficits in ASDs are impaired social understanding, language abnormalities, and impaired sensory functioning agreed by 60 % of respondents. While 70% agreed that ASD is developmental disorder, 20 % neurological disorder & 10% Genetics Disorder.

Conclusion: This study has also shown a relationship between demographic variables and knowledge towards ASDs. These factors combined help to provide direction for teacher education

Key words: Autism spectrum disorders, Pre-service teacher, Autism, Special Education Student

I. INTRODUCTION

The federal law governing special education, the Individuals with Disabilities Education Act (IDEA), defines "autism" as

a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.¹

The word 'autism' and 'autistic' are derived from the Greek word 'autos,' which means self, and was coined in 1911 by a psychiatrist, Eugen Bleuler.² Autism Spectrum Disorders (ASDs): A group of five related developmental disorders that share common core deficits or difficulties in social relationships, communication, and ritualistic behaviors; differentiated from one another primarily by the age of onset and severity of various systems; includes autistic disorder, Asperger syndrome, Rett syndrome, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified.^{3,4}

The prevalence of ASD is reported to be increasing worldwide and is currently estimated to affect 1/100 individuals. However, the rate varies depending on the study and the country where studies are carried out.^{5,6}

It is important to account for pre-service teachers' attitudes and beliefs in order to rectify any ill conceived notions about inclusion of children with ASDs. By identifying attitudes towards inclusion of students with ASDs, the inclusion process can be improved. By identifying factors that lead to negative attitudes towards inclusion and dispelling any myths associated with inclusion of students with ASDs, these students may be better served within the general education classroom. In addition, the attitudes towards inclusion may pinpoint weaknesses within teacher preparation programs.^{7,8}

By identifying weaknesses, teacher education programs may be able to change or revise classes and curriculum to better meet the needs of future educators. Due to the increase in students identified with ASDs, laws mandating students be taught in the LRE, more general education teachers will

have to make accommodations for students with ASDs within their classrooms. By identifying teacher attitudes towards inclusion of students with ASDs, teacher curriculum can be changed and in-services can be added to programming to improve teacher attitudes towards inclusion.^{9,10}

The objective of this study was to assess the pre-service special educator's knowledge towards children with autism

II. METHODOLOGY

The cross sectional survey was done within four months of duration from May 2022 to August 2022. The site of the study was department of special education, University of Karachi. Simple convenient sampling method was used to target study population together necessary information. Sampling tool was a structured self-administered questionnaire. A comparable study on medical students conducted in Mumbai, India, was used to determine the sample size. Less than 50% of the tested population recognized the signs of ASD, which was the basis for the sample size calculation in this study.¹¹ Our minimal sample size was computed as 97 people using a confidence interval of 95%, an approximation of the percentage of medical students who are aware of autism as being 50%, and an assumption of a precision of 10%. After adding the 20% non-response, the required sample size was 120. A verbal consent was taken from the all participants after explaining the purpose of the study. All information of the participants was kept confidential. Data was entered and analyzed by using Statistical Packages for Social Sciences (SPSS) software version 21. Frequency/ percentage were used for qualitative variables and cross tabulation analysis was done with Chi Square .P-value <0.05 was considered as significant.

III. RESULTS

It was found after data analysis that out of 120 respondents 10% of males responded questionnaire and 90% were females among which 75% were 18-24 years of age, 20% were between age of 25-30, and 5% were age of 30 years. Data also showed that 40% of preschool teacher were in 3rd year and 60% were in 4th year students of special education program. Majority 60% had planned to teach after completing degree. While 10% said that ASD is developmental disorder 70 % said that neurological disorder & 20 % answered it's a genetic disorder.

Out of 120 respondents regarding knowledge, "the word autism comes from the Greek word 'auto' meaning isolated" 45% answered yes 25% answered no and 30% answered don't know. Regarding opinion of "genetic factors play an

spectrum disorders. Background factors will be explored in relation to both attitudes towards inclusion and self-efficacy beliefs. By identifying factors that lead to negative attitudes towards inclusion, such as teacher efficacy beliefs and dispelling any myths associated with inclusion of students with ASDs, these students may be better served within the general education classroom.

important role in the causes of ASDs" 45% answered yes, 45% answered no and 10% answered no. Regarding awareness of "Autism affects both males and females equally" 75% answered yes and 25% answered no.

Out of 120 respondents about "autism occurs in all countries and within all socio-economic classes" 90 % answered yes & 10% answered no. About knowledge of "medication can alleviate the core symptoms of ASDs" 35% answered yes, 45 % answered no and 20% answered don't know. Regarding awareness of "most children with ASDs have cognitive abilities in the intellectually disabled range" 75 % answered yes, 10 % answered no and 15% answered don't know.

When they were asked about the "autism is caused by abusive parenting/neglect in infancy" 30% answered yes 65%, answered no and 5% answered don't know. "In many cases, the cause of ASDs is unknown and it mainly occurs in childhood", 65% answered yes, 10% answered no and 25% answered don't know. Regarding "Do autistic children have proper eye contact", 100% answered yes. The core deficits in ASDs are impaired social understanding, language abnormalities, and impaired sensory functioning 60% answered yes, 20 % answered no & 20% answered don't know. Regarding "traumatic experience very early in life can cause an ASD with proper intervention ASD will eventually "outgrow" the disorder" 20% answered yes, 45% answered no 35% answered don't know.

Regarding opinion about "children with autism are not motivated to engage in social interaction", 20% strongly disagree, 20% disagree, 5% neutral, 30% agree and 25% strongly agree. The difference between Asperger's syndrome and high functioning autism is that people with Asperger's don't have language delays 5% strongly disagree, 5% disagree, 40% neutral, 45% agree, and 5% strongly agree. People with autism also have a learning disability, 25% strongly disagree 30%, disagree 5%, neutral 30 %, agree 10% and strongly agree. Further, opinion regarding most children with ASDs have special talents or abilities, 15% strongly disagree, 10% disagree, 10% neutral,

50% agree, and 15% strongly agree. If an intervention works for one child with ASDs, it will definitely work for another child with an ASDs, 10% strongly disagree, 15% disagree, 15% neutral, 55% agree, and 5% strongly agree. Behavior therapy is an intervention most likely to be effective for children with ASDs, 5% strongly disagree, 5% disagree, 20% neutral, 60% agree, and 10% strongly agree.

IV. DISCUSSION

Since many of them might serve as knowledge disseminators for societal change in favour of an inclusive school, teachers' understanding of ASD is essential.¹² This makes sustainable education, providing inclusive and equitable education, and encouraging opportunities for lifelong learning for everyone critical components of high-quality education for kids with exceptional needs. As the prevalence of students with autism spectrum disorder (ASD) in traditional classrooms rises, educators must be able to recognize these students' needs, adjust their teaching methods, and facilitate their inclusion.¹³

It is argued that having experience and prior contact with individuals diagnosed with ASD has favourable consequences for instructors' understanding in addition to imparting basic knowledge of ASD.¹⁴ Because of this, in-service teachers typically have a greater understanding of ASD than pre-service ones. Pre-service training programmes for special education teachers in South Korea require them to complete a traineeship in order to lessen that inequalities.¹⁵

The results of this study have shown some similarities and also some significant differences between countries in pre-service teacher attitudes towards ASDs. In this study, pre-service teachers appear to have fairly good understanding of ASD. There were some misconceptions concerning ASD and the traits of children with the illness, despite the fact that the majority of teachers who took part correctly answered numerous questions to gauge their general knowledge of ASD, boosting scores above 60%. Additionally, the majority of participants were able to name key ASD characteristics linked to difficulties in social communication as well as unusual play and behavioural patterns. We found no significant differences of ASD knowledge between third and fourth year students of special education. Participants

discussed their inability to attend training sessions that would have advanced their professional growth and increased their understanding of ASD.

We discovered a general lack of understanding in the majority of the previously published articles. According to previous research, the majority of the articles' participants had low¹⁶⁻²¹ or medium²²⁻²⁵ levels of understanding regarding ASD, which is consistent with other studies findings. In fact, the majority of research revealed gaps in understanding, misunderstandings, or ignorance.

V. CONCLUSION

The general level of Pre -Service Special Educator's knowledge in ASD was fairly good. The stage in which pre-service teachers operate, past experience, and potential prior encounter with students with ASD appear to be determinants of knowledge level. Studies that included both pre-service teachers and experts (such as special education teachers or counselors) had better levels of knowledge than studies that solely included mainstream instructors. We may draw the conclusion that in order to fulfil inclusive education and sustainability goals, there is a need for training in pre-service at every single educational stage.

LIMITATIONS OF THE STUDY:

Because multiple tools were used in previous studies to analyse the same topic, it was difficult to compare the findings between them. This varying approach to the instruments has a noticeable impact on how the results are interpreted, making it impossible to compare the conclusions drawn from various investigations. The studies examined in this study evaluate understanding of ASD using a largely quantitative methodology that hasn't been complemented or enhanced by a qualitative analysis.

Correspondence Author – Neeta Maheshwary Head of Medical Affairs Helix Pharma
drneeta@hakimsonsgroup.com 923208247773

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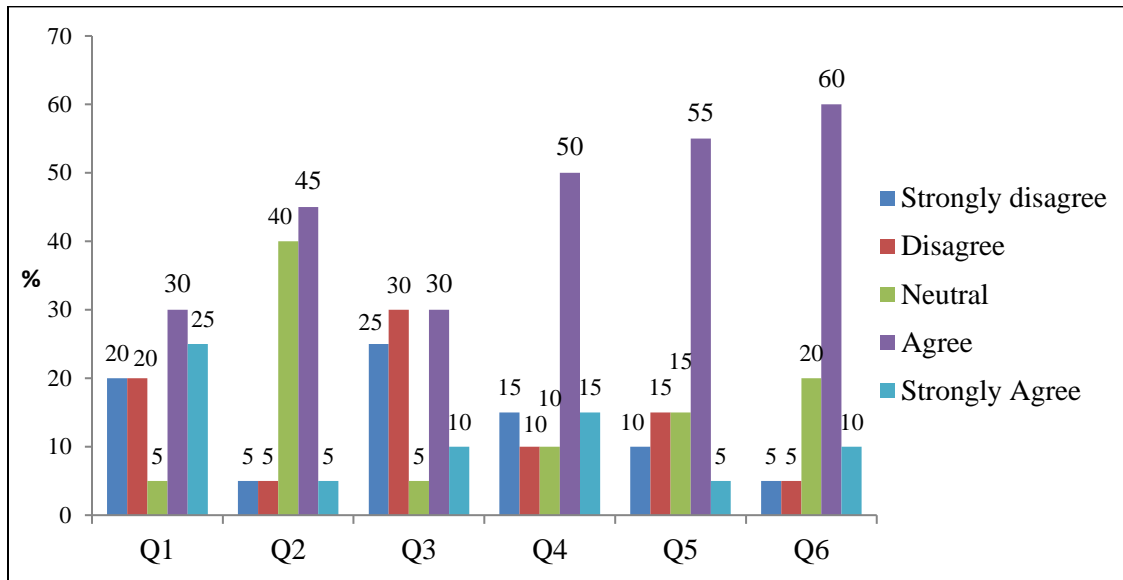
Demographics of the Study Participants (n=120)

Gender	
Male	12(10%)
Female	108(90%)
Age	
18-24 years	90(75%)
25-30 years	24(20%)
>30 years	6(5%)
Year of Study	
3 rd year	48(40%)
4 th year	72(60%)
Teaching as Profession	
Yes	72(60%)
No	48(40%)

Table 2: Knowledge about Autism Spectrum Disorders among Study Participants (n=120)

Type of Disorder	
ASD is a developmental disorder	12(10%)
Neurological disorder	84(70%)
Genetic disorder	24(20%)
Word autism comes from the Greek word 'auto' meaning isolated	
Yes	54(45%)
No	30(25%)

Don't Know	36(30%)
Genetic factors play an important role in the causes of ASDs	
Yes	54(45%)
No	54(45%)
Don't Know	12(10%)
Autism affects both males and females equally	
Yes	90(75%)
No	30(25%)
Autism occurs in all countries and within all socio-economic classes	
Yes	108(90%)
No	12(10%)
Medication can alleviate the core symptoms of ASDs	
Yes	42(35%)
No	54(45%)
Don't Know	24(20%)
Most children with ASDs have cognitive abilities in the intellectually disabled range	
Yes	90(75%)
No	12(10%)
Don't Know	18(15%)
Autism is caused by abusive parenting/neglect in infancy	
Yes	36(30%)
No	78(65%)
Don't Know	6(5%)
In many cases, the cause of ASDs is unknown and it mainly occurs in childhood	
Yes	78(65%)
No	12(10%)
Don't Know	30(25%)
Do autistic children have proper eye contact?	
Yes	120(100%)
The core deficits in ASDs are impaired social understanding, language abnormalities, and impaired sensory functioning	
Yes	72(60%)
No	24(20%)
Don't Know	24(20%)



Q1	Children with autism are not motivated to engage in social interaction
Q2	The difference between Asperger's syndrome and high functioning autism is that people with Asperger's don't have language delays
Q3	People with autism also have a learning disability
Q4	Most children with ASDs have special talents or abilities
Q5	If an intervention works for one child with ASDs, it will definitely work for another child with an ASDs
Q6	Behavior therapy is an intervention most likely to be effective for children with ASDs

Figure 1: Knowledge about Autism Spectrum Disorders among Study Participants (n=120)