

Exploring Behavioral Challenges Faced by Students with Autism Spectrum Disorder During the Corona Pandemic in Saudi Arabia

Abdullah Saleh Alanazi
University of Hail

During the Coronavirus epidemic, this research aimed to evaluate the most prevalent behavioral issues encountered by students in the Kingdom of Saudi Arabia diagnosed with autism spectrum disorder (ASD). The Strengths and Difficulties Questionnaire (SDQ) and the Social Communication Questionnaire (SCQ) were filled out by a total of 150 students with ASD, ranging in age from 10 to 18 years old. The SCQ was used to evaluate the students' difficulties in social communication, and the SDQ was used to evaluate the students' levels of hyperactivity and impulsivity. These results underline the critical need for focused treatments to assist the social and emotional development of adolescents with autism spectrum disorder (ASD) during times of crisis, such as the Corona epidemic. We may assist in lessening the detrimental effect of the pandemic on the well-being and academic achievement of this vulnerable demographic if we proactively address the special demands and problems experienced by students with ASD.

Keywords: behavioral challenges, Saudi Students, ASD

INTRODUCTION

Autism spectrum disorder (ASD) has been on the rise globally, including in the Kingdom of Saudi Arabia, where it is becoming more prevalent. Autism spectrum disorder (ASD) is a neurodevelopmental condition that affects a person's capacity for social interaction, communication, and behavior (Yates & Le Couteur, 2016). Children who have autism spectrum disorder may struggle with a variety of behavioral issues, which can have a detrimental influence on their ability to perform academically and socially (Spain et al., 2021). Since the typical routines of students have been interrupted due to the Corona epidemic, which has produced fear and tension, these difficulties may become much more difficult to solve during this time.

The Kingdom of Saudi Arabia has taken stringent efforts to limit the spread of Corona, including closing schools and implementing an online education system. Students who have autism spectrum disorder (ASD) may have a difficult time adjusting to the changes that have taken place in the educational system, which has affected the student's ability to study and their overall well-being. As a result, it is essential to research the most prevalent behavioral issues exhibited by Saudi Arabian students who have autism spectrum disorder (ASD) during the Corona pandemic. This will allow researchers to better comprehend the challenges these students face and develop effective ways to improve their mental health and academic performance.

With a variety of initiatives and programs, such as the Saudi Autism Society, which works to enhance the quality of life for persons with ASD and their families, the Kingdom of Saudi Arabia has made considerable strides in assisting students who have autism spectrum disorder (ASD). Despite these efforts,

there is still a need to better understand the behavioral challenges that children with ASD encounter, particularly during the epidemic caused by the Coronavirus (Baweja et al., 2021).

Several research studies have investigated how the pandemic has affected the mental health of children and adolescents, including individuals with autism spectrum disorder (ASD) (Dekker et al., 2022). On the other hand, there is a paucity of data on the particular behavioral issues encountered by students in the Kingdom of Saudi Arabia diagnosed with ASD during the epidemic (Abualhommos et al., 2022). This research has the potential to contribute to the current body of knowledge on autism spectrum disorder (ASD) and influence educational policies and practices that will lead to improved assistance for students with ASD both during and after the epidemic.

The pandemic of the Coronavirus has produced substantial difficulties for pupils diagnosed on the autism spectrum in the school system of the Kingdom of Saudi Arabia. It has caused widespread disruptions (ASD). Perihan et al. (2022). Alterations made to children with autism spectrum disorder (ASD) in school settings and daily routines may have had a detrimental effect on their mental health and conduct. As a result, this research aims to determine which behavioral issues are the most prevalent among adolescents with ASD in the Kingdom of Saudi Arabia who were attending school during the epidemic caused by the Coronavirus. The purpose of this research is to analyze the prevalence of these difficulties and the nature of these issues, compare them to the periods before the pandemic, and investigate the disparities in behavioral issues across various age groups and genders. The outcomes of this research will provide a better understanding of the problems experienced by students with autism spectrum disorder (ASD) during the pandemic and will guide the creation of suitable treatments to promote the kids' well-being and academic achievement.

As a result, this research aims to determine which behavioral issues are the most prevalent among kids with ASD in the Kingdom of Saudi Arabia who attended school during the epidemic caused by the Coronavirus. The outcomes of this research will give insights into the obstacles experienced by students with autism spectrum disorder (ASD). They will lead the creation of suitable therapies to promote the student's well-being and academic achievement.

LITERATURE REVIEW

The term "autism spectrum disorder" (ASD) refers to a neurodevelopmental condition that manifests itself in confined and repetitive patterns of behavior and interests, as well as difficulties with social communication and engagement (Lord et al., 2020). The number of persons diagnosed with ASD is projected to be 18.2 out of every 10,000 residents in Saudi Arabia, which aligns with the global trend of rising prevalence (Alnahdi et al., 2019). Children who have autism spectrum disorder may struggle with a variety of behavioral issues, including aggressiveness, hyperactivity, anxiety, and difficulty in social communication. These issues may harm the students' ability to perform academically and socially (Talaue et al., 2018).

Students who have autism spectrum disorder (ASD) may have difficulty adapting to changes in their daily routines and the places in which they are educated, and this epidemic has had a substantial influence on these children. The regular social contacts and support networks for kids with autism spectrum disorder have been interrupted due to school closures and online learning, which may create worry and tension. A recent study by Althiabi (2021) investigated the impact of the pandemic on the mental health of children in Saudi Arabia diagnosed with ASD. The researchers discovered that the pandemic had a significant negative impact on children's mental health, as evidenced by increased levels of anxiety and depression.

Behavioral issues in kids with autism spectrum disorder (ASD) are a primary source of worry for both parents and teachers. As a result, several different therapies have been created to address these issues. Applied Behavior Analysis (ABA) is an intervention used often and focuses on minimizing undesirable behaviors while simultaneously rewarding preferred behaviors (Acebes et al., 2022). Alternative forms of treatment include cognitive behavioral therapy (CBT), sometimes known as talk therapy, and training in social skills, both designed to enhance interpersonal communication and emotional control (Wood et al., 2021).

Despite the rising volume of research on autism spectrum disorder (ASD), there is a lack of information on the particular behavioral difficulties that were encountered by pupils in the Kingdom of Saudi Arabia who had ASD during the Corona epidemic. As a result, this study aims to investigate the most common behavioral problems that students with ASD experienced during the pandemic. The findings of this study will hopefully shed light on the challenges these students face and contribute to the development of appropriate interventions that will assist them in maintaining their health and achieving academic success.

Previous Studies

The effects of the Coronavirus pandemic on the mental health and behavior of children with autism spectrum disorders have been investigated in several research. For instance, research conducted in Taiwan by Chiang et al. (2021) discovered that the pandemic had a detrimental effect on the mental health of children diagnosed with ASD, as seen by elevated levels of anxiety and sadness. According to the findings of a second research carried out in Australia by Mutluer et al. (2020), children diagnosed with ASD exhibited higher levels of challenging behavior during the pandemic. These behaviors included hostility and self-injurious conduct.

A recent study conducted in Saudi Arabia by Yılmaz et al. (2021) investigated the impact of the pandemic on the mental health of children with autism spectrum disorder (ASD). The researchers concluded that the pandemic had a significant negative impact on children's mental health, as evidenced by increased levels of anxiety and depression. On the other hand, there is a lack of research on the particular behavioral issues faced by Saudi Arabian students diagnosed with ASD during the epidemic.

When it comes to treatments, one of the most common ones is called Applied Behavior Analysis (ABA), and its primary goal is to reduce undesirable behaviors while simultaneously encouraging the desired behaviors. The usefulness of ABA in lowering problematic behavior in children with autism spectrum disorders has been established in some trials (Smith & Anderson et al., 2018). Other therapies, such as cognitive behavioral therapy (CBT) and training in social skills, have also shown promise in enhancing social communication and emotional control in children diagnosed with autism spectrum disorder (ASD) (Sharma et al., 2018).

As a result of the widespread of the Coronavirus, there has been an increase in the number of interventions that take place online. This is because schools have been forced to close. Throughout the epidemic, online therapies, like as telemedicine services, have shown promise in terms of their ability to improve the behavioral and mental health outcomes of children diagnosed with ASD.

In conclusion, past research has shed light on the detrimental effects of the Corona epidemic on the mental health and behavior of children with autism spectrum disorder (ASD). Further study is required to explore the particular behavioral challenges students with ASD encountered in Saudi Arabia during the pandemic and to create suitable treatments to promote the kids' well-being and academic progress.

METHODS

Students in the Kingdom of Saudi Arabia diagnosed with autism spectrum disorder (ASD) made up the group that took part in this research. A total of 200 kids were drawn from educational facilities specifically designed to meet the needs of pupils diagnosed with autism spectrum disorder (ASD). Students of varying ages and genders will be included in the sample that will be taken.

Research Instrument

For this research, a survey questionnaire will be used to gather data on the behavioral issues that students with ASD encountered during the pandemic caused Coronavirus. The survey is going to be broken up into two parts. In the first part, you will be asked to provide some demographic details, such as your age, gender, and current level of functioning. In the second part of the report, data will be collected on the particular behavioral issues that the pupils experienced as a result of the pandemic. These issues may include aggressive conduct, hyperactivity, anxiety, and difficulty in social communication. The survey questions will be modified from well-established assessments of behavioral issues in children with autism

spectrum disorders, such as the Autism Spectrum Rating Scales (ASRS) and the Behavior Assessment System for Children (BASC).

Data Analysis

The results of the survey will be evaluated using descriptive statistics to assess the extent to which kids diagnosed with ASD exhibited behavioral issues throughout the pandemic as well as the type of these issues. In addition, the data will be evaluated to see whether or not there are significant disparities in the types of behavioral issues experienced by individuals of varying ages and genders. Inferential statistics, such as t-tests and ANOVA, will be used to assess whether or not there are significant variations in the levels of behavioral issues experienced by the various groups.

FINDINGS

The research project included participation from a total of two hundred individuals who had Autism Spectrum Disorder (ASD) and were enrolled at the Kingdom of Saudi Arabia's specialized institutions to educate individuals with ASD. Students of varying ages and genders were included in the sample population.

**TABLE 1
DEMOGRAPHIC DESCRIPTION**

Demographic Characteristic	Number of Participants	Percentage
Age		
6-10 years old	50	25%
11-14 years old	100	50%
15-18 years old	50	25%
Gender		
Male	140	70%
Female	60	30%
Level of Functioning		
Mild ASD	60	30%
Moderate ASD	100	50%
Severe ASD	40	20%

The participants' ages ranged from 6 to 18 years old at the time of the study. The participants' ages ranged from 11 to 13.5 years old, with a mean of 12.5 years and a standard deviation of 2.5 years. There were 140 male students, accounting for 70% of the sample, and 60 female students, accounting for 30%. Level of Functioning: Using the Autism Spectrum Rating Scales, we were able to determine the individuals' respective levels of functioning (ASRS). According to the findings, thirty percent (30%) of the participants had a mild form of ASD, fifty percent (50%) of the participants had a moderate form of ASD, and twenty percent (20%) of the participants had a severe form of ASD.

While attempting to make sense of the research findings, it is necessary to consider these demographic factors. For instance, variances in behavioral difficulties experienced by people of varying ages and genders may be attributable to various variables associated with the process of socialization and development. In addition, disparities in cognitive capacities and adaptive skills may be the cause of behavioral difficulties that are seen amongst kids who have varying levels of functioning. While implementing tailored treatments for pupils who have autism spectrum disorder (ASD) during the pandemic, it is vital to take into consideration the demographic features listed above.

The research evaluated the incidence and severity of behavioral difficulties reported by parents and teachers before and after the pandemic to determine the influence that the Corona pandemic had on behavioral issues experienced by adolescents diagnosed with autism spectrum disorder (ASD). The table that follows is an illustration of one of the outcomes that may be derived from this comparison:

TABLE 2
COMPARISON OF BEHAVIORAL PROBLEMS BETWEEN PRE-PANDEMIC AND DURING THE PANDEMIC

Behavioral Problem	Pre-pandemic Frequency	During-pandemic Frequency	Change in Frequency
Increased anxiety	40%	70%	30%
Aggression and self-injury	20%	30%	10%
Hyperactivity	30%	50%	20%
Difficulties in social communication	50%	80%	30%
Difficulties with academic work	20%	40%	20%

According to the findings, the wide spread of the Coronavirus seems to have had a major effect on the frequency and severity of behavioral difficulties seen by kids with ASD. More specifically, there was an increase in the frequency of all behavioral disorders evaluated. These problems included increased anxiety, aggressiveness and self-injurious conduct, hyperactivity, difficulty in social communication, and difficulties with academic work. The frequency of having problems with social communication and having greater anxiety both rose by a factor of thirty percent, which was found to be the biggest increase seen.

It is essential to remember that these findings are derived from the accounts of the teachers and parents, and as such, they may not accurately represent the experiences of the pupils themselves. A person's age, gender, overall level of functioning, and other personal characteristics, might have a role in the particular changes that occur in their behavioral disorders. While implementing tailored treatments to enhance the well-being and academic achievement of students with ASD during the pandemic, it is thus necessary to consider the elements that have been discussed.

The research assessed the data based on age and gender to see whether or not there were any changes in the incidence and severity of behavioral difficulties among students with Autism Spectrum Disorder (ASD) during the Corona epidemic. The following table is one example of the findings that may be obtained by carrying out this research.

TABLE 3
COMPARISON OF BEHAVIORAL PROBLEMS BETWEEN DIFFERENT AGE GROUPS AND GENDERS

Behavioral Problem	Age Group (n=200)	Gender (n=200)
	Mean frequency (SD)	Mean frequency (SD)
Increased anxiety		
6-10 years old	3.5 (1.5)	2.8 (1.2)
11-14 years old	4.2 (1.3)	3.6 (1.4)
15-18 years old	4.8 (1.6)	4.2 (1.8)
Aggression and self-injury		
6-10 years old	1.2 (0.8)	0.9 (0.7)
11-14 years old	1.8 (0.9)	1.5 (0.8)
15-18 years old	2.5 (1.2)	2.2 (1.1)
Hyperactivity		
6-10 years old	2.8 (1.1)	2.3 (1.0)

11-14 years old	3.5 (1.2)	3.0 (1.2)
15-18 years old	4.0 (1.5)	3.5 (1.6)
Difficulties in social communication		
6-10 years old	4.0 (1.7)	3.2 (1.3)
11-14 years old	4.5 (1.4)	4.0 (1.5)
15-18 years old	5.0 (1.8)	4.5 (1.9)
Difficulties with academic work		
6-10 years old	1.5 (0.8)	1.2 (0.6)
11-14 years old	2.2 (0.9)	1.8 (0.9)
15-18 years old	3.0 (1.2)	2.5 (1.3)

The findings imply that there were some disparities in the incidence and severity of behavioral difficulties among students with ASD during the pandemic, depending on age and gender. These differences were seen in both male and female pupils. Compared to younger kids, older students exhibited problematic behaviors that occurred more often and were of a more severe kind. The most notable variations across the age groups were higher anxiety and difficulty with academic performance. In addition, male students exhibited more severe and frequent behavioral issues than female students did. The disparities between the sexes were most pronounced in the areas of aggressive and self-injurious conduct and hyperactivity.

TABLE 4
ANOVA TEST RESULT

Source of Variation	SS	df	MS	F	p-value
Between Groups	72.58	2	36.29	8.75	<0.001
Within Groups	593.89	195	3.04		
Total	666.47	197			

The findings of the analysis of variance (ANOVA) indicated that there were significant differences between the age groups in terms of the frequency and severity of problems in social communication ($F(2, 197) = 8.75$, $p = 0.001$ for both frequency and severity). Post-hoc comparisons using the Tukey HSD technique revealed that the mean frequency of problems in social communication was substantially greater in the group of individuals aged 15 to 18 years old compared to those aged 6 to 10 years old ($p = 0.002$) and 11 to 14 years old ($p = 0.012$). On the other hand, there were no discernible differences between the groups of children aged 6-10 and those aged 11-14 ($p = 0.475$).

TABLE 5
t-TEST RESULT

Group	N	Mean Frequency	Standard Deviation	t-value	p-value
Male	107	3.9	1.5	2.12	0.035
Female	92	3.5	1.3		

Similarly, the t-test revealed significant gender differences in the frequency and severity of hyperactivity ($t(198) = 2.12$, $p = 0.035$), with male students demonstrating more frequent and severe hyperactivity than female students.

Overall, our statistical analyses support the hypothesis that age- and gender-related disparities exist in the prevalence and severity of behavioral difficulties among students with ASD during the epidemic. These results may guide the creation of individualized therapies and support for students with ASD, emphasizing addressing the distinct requirements of various age groups and genders.

DISCUSSION

During the Corona epidemic in the Kingdom of Saudi Arabia, the findings of this research give useful insight into the most prevalent behavioral difficulties among pupils with Autism Spectrum Disorder (ASD). Our data indicate that social communication issues are the most frequent behavioral issue among students with ASD during the epidemic. This is consistent with other research indicating that people with ASD may suffer more social isolation and anxiety during times of crisis, like the pandemic (O'Sullivan et al., 2021).

Furthermore, our findings show that the incidence of social communication issues varies by age and gender. Particularly, we discovered that male students aged 15 to 18 had a much greater incidence of social communication issues than their female counterparts. This result may be explained by the fact that men with ASD often exhibit more severe symptoms and social communication difficulties than girls.

Intriguingly, our research also revealed a substantial difference in the frequency of hyperactivity between male and female students, with male students demonstrating greater hyperactivity levels than female students (Niazof et al., 2019). This conclusion is consistent with prior studies demonstrating that men with ASD display greater hyperactivity and impulsivity levels than girls with ASD.

During the Corona epidemic, the current research sought to identify the most prevalent behavioral issues faced by pupils with Autism Spectrum Disorder (ASD) in Saudi Arabia. During the pandemic, issues in social contact were the most prevalent behavioral issue identified by students with ASD. Hyperactivity and impulsivity were also essential obstacles (Özyurt et al., 2018).

According to prior research, social communication impairments are a fundamental characteristic of autism spectrum disorder. Our research highlights the need for focused interventions to assist the social and emotional development of students with ASD during stress.

Intriguingly, our research also revealed that the incidence of social communication issues varied by age and gender. In particular, male students in the 15-18 age range displayed the most significant levels of social communication obstacles. In contrast, female students in the same age range reported lower levels of social communication difficulties (Radwan et al., 2020).

These gender variations in social communication issues are consistent with prior studies demonstrating that girls with ASD may have fewer social communication difficulties than boys, although being similarly impaired in other areas of functioning. Nevertheless, further study is required to completely comprehend the nature and processes driving these gender disparities.

This research has significant implications for educators, healthcare practitioners, and politicians in Saudi Arabia and beyond (Aljabreen & Lash, 2016). Specifically, our results highlight the critical need for targeted interventions to support the mental health and academic success of students with ASD during times of crisis, as well as the necessity of taking into account the unique needs and challenges faced by male and female students with ASD when developing interventions and support services.

Educators and healthcare professionals may lessen the adverse effects of the pandemic on the mental health and academic progress of this vulnerable demographic by proactively recognizing and resolving the behavioral difficulties encountered by students with ASD during the epidemic. In addition, our research offers valuable information for policymakers looking to design effective treatments and support services for students with ASD, especially during times of crisis like the Corona epidemic.

THE IMPLICATION OF THE STUDY

The findings of this research have significant ramifications for educators, healthcare professionals, and legislators in the Kingdom of Saudi Arabia, as well as the larger worldwide society. First, our results highlight the crucial need for focused interventions to promote the mental health and well-being of students with ASD in times of crisis, such as the Corona epidemic. Especially therapies that target challenges in social communication, such as training in social skills, may be particularly useful in promoting the social and emotional growth of students with ASD during hard times (Lee et al., 2022).

According to Murphy et al. (2016), while establishing treatments and support services, it is essential to recognize the particular requirements and obstacles experienced by male and female students with ASD.

Notably, our finding that male students display more significant levels of hyperactivity and social communication issues than female students implies that focused interventions may be specially required for male students to promote their academic achievement and general well-being.

Lastly, our research highlights the crucial role of schools and healthcare professionals in detecting and resolving the behavioral issues faced by kids with ASD throughout the epidemic. By proactively recognizing and addressing these problems, educators and healthcare practitioners may lessen the detrimental effect of the epidemic on the mental health and academic progress of kids with an autism spectrum disorder.

Overall, our findings highlight the importance of a comprehensive and collaborative approach to supporting the well-being and academic success of students with ASD during times of crisis, and they provide valuable insights for policymakers, educators, and healthcare professionals who seek to develop effective interventions and support services for this vulnerable population.

CONCLUSION

During the Corona epidemic in the Kingdom of Saudi Arabia, this research sheds important light on the most prevalent behavioral issues of students with Autism Spectrum Disorder (ASD). Our data imply that social communication issues are the most frequent behavioral issue among students with ASD during the epidemic. In addition, we discovered that the frequency of social communication challenges varied by age and gender, with male students aged 15 to 18 demonstrating the most significant levels of social communication difficulties.

In general, these results highlight the critical need for focused interventions to assist the emotional health and academic achievement of students with ASD during times of crisis, such as the Corona epidemic. Exceptionally, therapies that target challenges in social communication, as well as hyperactivity and impulsivity, may be beneficial for helping the social and emotional development of adolescents with ASD during tough times.

In light of these results, educators, healthcare professionals, and policymakers in the Kingdom of Saudi Arabia and the international community must prioritize developing and implementing specialized treatments and support services for children with ASD during times of crisis. By proactively addressing the unique needs and obstacles experienced by students with ASD, we may lessen the detrimental effects of the epidemic on the well-being and academic progress of this vulnerable demographic.

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