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### **Comorbidity Features of Autism Spectrum Disorders and Its Related Challenges in District Faisalabad**

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### **Abstract**

The study identified the comorbidity features of Autism Spectrum Disorders and its related challenges in district Faisalabad. The study also explored the strategies to resolve the comorbidity related challenges of children with autism spectrum disorder. The research was descriptive in nature. The population of the study consisted of all the special education teachers presently teaching the children with autism spectrum disorder in public/private special education institutions of district Faisalabad. In sample size, there were 40 teachers of children with autism spectrum disorder of public/private special education institutions of district Faisalabad. Convenience sampling technique was used for the sample selection. Researcher used a self-structured questionnaire as a research instrument and technique for the purpose of data collection. Questionnaire was comprised of 20 statements. The questionnaire was designed to collect information from the teachers of students with autism spectrum disorder. Researcher prepared forty copies of the questionnaire for the data collection from the special education teachers of children with autism spectrum disorder for the data collection. The main purpose and objectives of the study were shared with study subjects before the distribution of questionnaire. The questionnaire was given to teachers for completion and was elaborated in easy wording. The questionnaires were

collected back after completion. The collected facts of the study were kept in record carefully and the data was tabulated and interpreted. The analysis of the data was made by using the descriptive statistics. The results of the study showed that students with autism have the comorbid features of schizophrenia, epilepsy, down syndrome and mental illness. The educational as well as the social challenges were the basic hurdles to handle the students with autism. Regular medication, use of motivation and reinforcement, giving positive feedback and use of hands-on activities to improve attention, were most suitable strategies to cope the challenges of comorbid features of students with autism spectrum disorder. The future research may be conducted in other metropolitan cities of the region.

**Keywords:** Comorbidity, Autism Spectrum Disorder, Challenges.

### **Introduction**

The aim of special education is to remove or overcome the barriers that prevent children with disabilities from attending school. It gives students with disabilities a friendly and accepting atmosphere in which special education is tailored to their individual learning requirements and gives them equal chances to reach their greatest potential. Children who are intellectually challenged, physically limited, socially disadvantaged, and emotionally unstable are among the target populations of special education programs (Kazmi & Ali, 2021). In order to help educators, parents and administrators plan a student's educational career, special education much a construction blueprint, need a framework. In the area of special education, this structure is called an Individualized Education Plan. Student must receive specifically tailored teaching and be housed in the most restrictive setting feasible, under the special education definition supplied by the group of professionals. Various approaches to special education for children with exceptional needs. A student's current performance levels show how well they are meeting grade-level standards. The strengths, mistakes, and observations-- including in this portion of the IEP.

Every student has a set of goals that they must accomplish throughout the year. Objectives should to be quantifiable and focus on weak points. the professionals who will work with the student and how long they will spend with them-- weekly or monthly are included in the services. A speech language pathologist might offer 30 minutes of assistance each week, whereas a special education teacher might offer three hours. Here the learner will spend the most of the day in what is called the Least Restrictive Environment. This will correspond to the services that are being provided. Under the category of student aids are accommodations and modifications (Ghaziuddin, 1992). The services and supports provided to one student can differ significantly from those provided to another. The focus is on giving each child the tools they need to advance academically. For instance, some children may spend most of their day in a general education classroom, while others might only work with a specialist for an hour or two in a resource room. Additionally, some students may need to attend a specialized

school that focuses on teaching students with disabilities. Students with an Individualized Education Program (IEP) are eligible for special education. They receive specialized instruction and other services at no cost to their families. Experts work with children to develop their strengths and address their challenges. Families also play a crucial role in the team that determines what children need to succeed in school (Cawthorpe, 2017).

People that struggle with social communication are generally referred to as having "autism spectrum disorder" (ASD) (David, 2020). ASD is a term used to describe a collection of symptoms that may have a substantial hereditary component, such as repetitive sensory-motor behaviours, early onset social communication difficulties, and other issues. The prognosis for many people with ASD has improved over the past fifty years; more of these people can now read, speak, and live in communities; by the time they reach adulthood, some of them may even be largely symptom-free. Nonetheless, most individuals with ASD do not lead independent lives or have full-time jobs. Despite the lack of applicability at this time, neurology and genetics have found interesting patterns of risk. It is still unclear which children, even those with serious comorbidities, benefit from behavioural and medication interventions, as well as the best timing and circumstances for them. Equally important are using current information and creating resources for adults with ASD. In addition to anticipating transitions such as family changes and school entry and departure, clinicians can also make a difference by managing recommendations and access to social support systems for families in a timely and tailored manner, supplying accurate data despite often unprocessed media input (Matson & Williams, 2013).

Early onset social communication difficulties and inflexible, repetitive patterns of behavior and interests are used to identify autism as a developmental disorder. Age and ability significantly influence the manifestation of these traits, leading to the proposal of an Autism Spectrum Disorder (ASD) concept to account for this variation. Our discussion on the nature and causation of ASDs begins with a case history demonstrating the spectrum of symptoms associated with ASDs (Frith & Happe, 2005). Children diagnosed with autism spectrum disorder often experience difficulties initiating and maintaining sleep. These sleep issues can impact daytime behavior, memory, learning, and cause considerable stress for caregivers. Common factors contributing to sleep behavior disorders include hormonal instability, sensitivity to environmental cues, behavioral paralysis syndromes, delayed sleep phase syndrome, rapid eye movement sleep behavior disorder, stress, depressive disorders, and seizures (Kotagal & Broomall, 2012).

Comorbidity is associated with more complex healthcare management, poorer health outcomes, and higher medical costs. However, there is no consensus on the definition of comorbidity, and related concepts like multiple medical conditions, comorbidity stress, and patient difficulties are not well understood. This post discusses definitions of comorbidity and their relation to similar concepts.

We illustrate that the usefulness of a construct depends on its ability to explain a specific occurrence of interest in the fields of 1) Medicine, 2) Epidemiology, or 3) Health services planning and financing. We analyze the processes (direct causation, linked risk factors, variation, independence) that may lead to a patient having two or more conditions simultaneously, considering implications for therapeutic management. Researchers concluded that better application of constructs, as suggested in this paper, would enhance studies on ill health in healthcare, epidemiology, and health services (Zafeiriou et al., 2007).

Although there is some variation in growth directions, Autism Spectrum Disorders (ASDs) should be regarded as permanent medical conditions. Therefore, psychologists working with adults should find ASDs to be of significant interest. Some studies have examined the clinical presentation and progression of these conditions during adulthood, as well as their relationship with other mental disorders. In fact, the frequency of ASDs shares similarities with other mental illnesses such as psychosis and compulsive-mood and personality disorders, leading to potential misdiagnoses. This review aims to provide an overview of the research on adult ASDs, with an emphasis on their clinical presentation, progression, and co-occurring mental illnesses. A thorough assessment for ASDs in adults could help elucidate the connection with associated psychiatric disorders and improve their prognosis and treatment outcomes (Vannucchi et al., 2014). In individuals, Autism Spectrum Disorder comorbidities are grouped into distinct subgroups rather than occurring randomly. Research indicates that persons with ASD may be classified into subgroups based on their comorbid multisystem condition or seizure behavior. Comorbidities in ASD do not occur evenly but tend to cluster into different subgroups. A recent study reported that ASD individuals can be subtyped according to whether they exhibit seizures, multisystem disorder, psychiatric disorder, or lack a defined comorbidity (Doshi et al., 2014).

### **Literature Review**

The co-occurrence of two or more illnesses in a single person is referred to as "comorbidity" (Kohane et al., 2012). Reviewing the literature on comorbidity, the current study examines comorbid behavioural and medical diseases in babies, children, adults, and persons of all ages. We also examine co-occurring illnesses such as epilepsy, attention deficit/hyperactivity disorder (ADHD), gastrointestinal symptoms, sleep problems, eating problems, and toileting problems in addition to autism spectrum disorder (Lunsky et al., 2009; Richdale & Schreck, 2009). Any simultaneous medical condition is known as a comorbidity. The term 'comorbidity' refers to a health issue, with the prefix 'co' indicating joint occurrence. In other words, it describes coexisting or co-occurring conditions (Balingit, 2022).

Neurodevelopmental disorders include autism, now known as Autism Spectrum Disorder (ASD). This developmental condition is brought on by variations in a child's brain. Individuals with ASD may exhibit distinct behaviors,

interactions, and learning styles compared to others. They might struggle with social situations and have difficulty understanding and using verbal and nonverbal cues (Cleveland Clinic, 2023). The term autism spectrum disorder (ASD) refers to a group of people who, from an early age, exhibit particular difficulties with social communication, repetitive behaviours, severely limited interests, and/or sensory behaviours (Hyman et al., 2020). The prevalence of autism is estimated to be just under 1% worldwide, with greater rates in high-income nations. Subtle structural and functional changes have been observed in post-mortem, neuroimaging, and electrophysiological studies, although severe brain damage is not typical of autism. Genetic discoveries have mostly been linked to heterogeneous groupings that are not specifically connected with autism, despite the early anticipation that precise behavioural assessments would identify particular genetic subtypes. Psychosocial therapies have the potential to mitigate symptoms and promote development in children by enhancing behaviours including language, social involvement, and cooperative attention (Lugnegård et al., 2011).

Further study is necessary to comprehend the long-term requirements of autistic individuals as well as to find therapies and support systems that may improve their level of independence and quality of life. In addition to the viewpoints of autistic individuals, families should be taken into account in research and practice as they frequently offer individuals with autism important support (Lord et al., 2020). Four elements of reading proficiency were evaluated in a study of 41 autistic children's reading abilities: word recognition, nonword decoding, text reading accuracy, and text comprehension. Although reading comprehension was poor, word and nonword reading accuracy as well as text reading accuracy were generally within ordinary bounds. Performance differed greatly; some kids read correctly but had trouble understanding what they were reading, which is a sign of a hyperlexia reading profile. While some people could read words but not interpret nonwords, others had trouble reading both words and nonwords. These results demonstrate how children with ASD have a wide range of reading abilities (Nation et al., 2006).

There are many different origins of autism spectrum disorder (ASD), and it is typically associated with severe lifetime handicap. Early behavioural patterns have been better understood thanks to developments in deep phenotyping and early diagnosis in high-risk infants. Promising biomarkers can identify ASD risk prior to the emergence of overt behavioural symptoms. Examples of these biomarkers include those that measure early structural and functional connections, visual orienting, and other biological processes. The average diagnosis age is still between four and five years old despite these advancements. Though they need a lot of resources and may take a while to complete due to high demand, comprehensive assessment guidelines are available. According to Zwaigenbaum and Penner (2018), this study examines early behavioural and biological markers, contemporary screening options and debates, and best practices in diagnostic

evaluation, which includes innovative service models.

Psychological factors also contribute, including reduced frustration tolerance, poor problem-solving skills, and maladaptive coping strategies in managing life difficulties. Additionally, PWID may experience stigmatization and various forms of abuse, the impacts of which should never be underestimated. Social and environmental influences further affect PWID, as they often have smaller social networks for seeking support and reduced opportunities in life due to their disabilities, limiting their independence. While the cause of ID is unknown for many individuals, some cases are associated with genetic syndromes. It's crucial to note that non-syndromic genetic causes of ID exist alongside syndromic ones like Down syndrome and fragile X syndrome, among others. Psychiatrists must be adept at recognizing major dysmorphic presentations of genetic syndromes associated with ID. Referral for assessment and further genetic testing by clinical geneticists is essential when a genetic syndrome is suspected. This approach not only enhances understanding of the individual's condition but also identifies potential physical and psychiatric comorbidities early, facilitating timely intervention (Doshi-Velez et al., 2014). When interacting with individuals on the autism spectrum, Dr. Stephen Shore, an educator specializing in autism, emphasizes the varied perspectives that people with ASD may have. Comorbidity refers to the presence of additional illnesses or conditions alongside an initial disorder.

These secondary conditions can exhibit distinct symptoms from the underlying ailment, constituting another diagnostic challenge (Al-Beltagi, 2021). Individuals with ASD are more susceptible than the general population to experiencing co-occurring physical and psychological disorders. Understanding the frequency of such co-occurring conditions is crucial for organizations, caregivers, family members, and medical professionals involved in the care and management of individuals with Autism Spectrum Disorder. This knowledge is essential in making informed decisions regarding lifelong care, addressing both physical and mental health needs. Effective management and treatment of multiple illnesses can significantly improve overall outcomes, including longevity, for individuals with autism.

Comorbidities can significantly impact behavior, development, and health outcomes, with some persisting throughout life while others may be managed during developmental stages. Many of these conditions may present symptoms similar to those of the original autism diagnosis. Long-term outcomes for individuals with autism and concurrent disorders can be enhanced through early detection, appropriate interventions, and comprehensive care strategies. Understanding and managing comorbid disorders and their prevalence alongside ASD are critical considerations." According to Herota et al. (2014), 35% of children with autism receive treatment involving at least one type of psychotropic drug, and 85% of them typically have a comorbid mental disorder. Among the

numerous psychological conditions prevalent in individuals with Autism Spectrum

**Disorder are:**

ADHD – 50 and 70% of people with autism spectrum disorder are impacted. Depression – 10% of the average person is impacted compared to 26% of autism spectrum disorder.

Anxiety – Compared to 10% of the whole population 30% of people with autism spectrum disorder.

Bipolar Disorder – compared to 2% across the whole population, 11% of people with autism spectrum disorder.

Schizophrenia – In contrast with 0.5% of the population as a whole 7% of people with autism spectrum disorder are impacted. Among multiple disorders, anxiousness, mood disorder, and ADHD are more commonly recognized.

Diagnosing comorbid mental health disorders can be especially difficult because many symptoms overlap with those of Autism Spectrum Disorder, such as speech and interaction issues, reduced cooperation, apathy, lack of concentration, repetitive behaviors, and difficulties managing emotions and impulsiveness. To fully understand the relationship between Autism Spectrum Disorder (ASD) and the occurrence of associated medical conditions, and to quantify how many individuals with ASD also experience these comorbid disorders, it is recommended that all children diagnosed with ASD undergo evaluation by a psychologist. Early identification and intervention can significantly influence long-term outcomes for many hereditary conditions. Autism has been linked to several genetic disorders, including Down syndrome, Duchenne muscular dystrophy, and Fragile X syndrome (FXS). Approximately 25% to 33% of individuals with FXS also have ASD, while FXS accounts for 2% to 3% of all ASD cases. In the broader population, down syndrome occurs in about 1 in 1,800 individuals, but the co-occurrence of ASD in those with Down syndrome is notably high, at around 40%.

Moreover, there is an increased risk of other genetically influenced conditions such as respiratory and hormonal disorders in individuals with ASD and the general population. Autism spectrum disorders are more prevalent within their affected community than in wider society. Characteristics such as enlarged head size, hydrocephalus, brain damage, migraines, headaches, disorders of the autonomic nervous system, and inherited neurological deficiencies are more commonly observed in individuals with autism. Neurological conditions are significantly more frequent among those on the autism spectrum, with approximately 30% also experiencing epilepsy (compared to 6-7% in the general population) and 60% exhibiting abnormal electroencephalograms (EEGs). Moreover, sensory impairments are more prevalent in autistic individuals. Those with sensory challenges may exhibit hyper- or hypo-responsiveness to stimuli due to difficulties in processing sensory information. These challenges can impact various daily activities such as eating habits, bathroom use, social interactions,

self-confidence, and concentration. The age at which children with autism achieve bowel and bladder control is closely linked to their cognitive and language development levels, crucial for achieving independence in daily living.

Sleep disturbances affect 50% to 80% of children with autism, often causing frequent awakenings and early morning awakenings. This can be deeply concerning for both the affected individuals and their families. Insufficient sleep can lead to challenges in learning, anxiety, attention, mental health, communication, and the ability to engage in daily activities among children with autism. Between 46% and 84% of individuals with Autism Spectrum Disorder (ASD) experience gastrointestinal (GI) issues. These include food intolerances, nausea, vomiting, flatulence, stomach discomfort, persistent constipation or diarrhea, heartburn, ulcers, intestinal inflammation, or failure to thrive. These conditions are often associated with underlying hormonal, immune, or functional abnormalities. Additionally, sensory and behavioral issues related to eating and diet can contribute to feeding difficulties, resulting in inadequate nutrition, dehydration, and limited food variety. Many GI issues in the ASD community are believed to be exacerbated by these factors.

Cardiovascular Disease, Allergies, Disorders, Diabetes, Immune, and Inflammatory Conditions:

- Immune dysfunction and vulnerability affect 25% of children diagnosed with Autism Spectrum Disorder.
- 37% of individuals with autism spectrum disorders and 23% of the general population experience heart problems.
- People with autism spectrum disorder show significantly higher prevalence of allergic conditions across all age groups, particularly influenza and atopic issues. There exists a correlation between the severity of autism and the degree of allergies, which can impact cognitive function.
- Additionally, food sensitivities are increasingly affecting 20% of children with autism spectrum disorder, compared to 5%-8% of the typical population.
- Obesity affects 30% of individuals with autism, contrasting with 13% in the general population. This observation may correlate with the finding that 8% of those with autism spectrum disorder have diabetes, compared to 4% of the general population.

"In healthcare and psychological health systems, the primary goals often involve evaluating, treating, and intervening in one condition at a time. Given the substantial data on the frequent coexistence of comorbid disorders with autism, a shift in perspective is necessary. This understanding must be applied to bring about significant holistic changes in treatment approaches. It's crucial to recognize



that symptoms aren't always directly linked to an individual's autism diagnosis and shouldn't be dismissed. When determining suitable and personalized interventions, therapies, or medications, it's essential to first rule out other medical or mental health comorbidities that could be contributing to these symptoms."

Trisomy 21, also known as having an extra copy of chromosome 21, results in physical and intellectual abnormalities in individuals with Down Syndrome. While the effects of Down Syndrome vary among individuals, they often lead to similar physical characteristics and typically involve a mild to moderate level of intellectual disability (Centre for Disease Control, 2014). The National Down Syndrome Society (NDSS) is a human rights group focused on community involvement, legislation lobbying, and providing services and support. Their website offers resources for individuals of all ages, including a helpline and local assistance. For updates on the organization's projects and activities, you can subscribe to their monthly email newsletter. They also feature articles, including those related to the co-diagnosis of Autism and Down Syndrome.

Obsessive Compulsive Disorder (OCD) is a mental health condition characterized by persistent obsessions and the urge to alleviate the distress they cause through specific behaviors (International OCD Foundation, 2021). Research by Leyfer and colleagues (2006) indicates that 37% of children diagnosed with autism also experience OCD. Behavioral methods are typically recommended as initial treatments for OCD. While cognitive behavioral therapy (CBT) is highly effective, its efficacy may vary for individuals with both Autism Spectrum Disorder and OCD (Hyman et al., 2020). The International OCD Foundation plays a crucial role in combating stigmas associated with OCD, improving treatment accessibility, conducting successful research, and supporting individuals affected by OCD along with their caregivers. Their website offers resources such as nearby programs, support groups, and therapist locators through the 'Find Help' section. Specific resources tailored for groups like children are also available. Visitors can subscribe to a regular magazine and access archives. Professionals can benefit from various materials provided by the International OCD Foundation, including opportunities like awards and convention applications.

ADHD, a prevalent neurocognitive disorder affecting people of all ages, is characterized by increased activity, difficulty managing emotions, and challenges with attention (Center for Disease Control, 2021). Research indicates that 31% of children diagnosed with autism also exhibit symptoms aligning with ADHD criteria (Hofvander et al., 2009). The National Resource Center on ADHD offers a multitude of resources for individuals with ADHD, their families, and professionals working with this population. These resources include publications, informational archives, caregiver tools, and advocacy initiatives, providing extensive support for individuals and their caregivers affected by ADHD.

#### **Statement of the problem**

The study aimed to determine the comorbidity features of Autism Spectrum

Disorders and its related challenges in district Faisalabad.

### **Objectives of the Study**

The study's goals were as follows:

1. To identify the comorbidity features of Autism Spectrum Disorders and its related challenges in district Faisalabad.
2. To explore the strategies to resolve the comorbidity related challenges of children with autism spectrum disorder (ASD).

### **Research questions**

The research questions were as follows:

1. What are the comorbidity features of Autism Spectrum Disorders and its related challenges in district Faisalabad?
2. What are the strategies to resolve the comorbidity related challenges of children with autism spectrum disorder (ASD)?

### **Research Methodology**

The research methodology involves a systematic investigation of methods used within a specific discipline. It may encompass a procedural description or a comprehensive compilation of theories, concepts, or ideas that align with the discipline or field of inquiry. The methodology employed in this study is outlined in the following sections.

### **Nature of the Study**

A quantitative approach was used to carry out the research. The study employed descriptive research, which is widely utilized. Descriptive research aims primarily to uncover the underlying reasons behind observed phenomena.

### **Population**

The study included all special education teachers currently teaching children with autism spectrum disorder in public and private special education institutions in the Faisalabad district.

### **Sample**

In statistics, a sample is a smaller group selected from a larger population. Conducting a census, which entails gathering data from every individual in the population, is often impractical due to the population's size. Instead, a sample, which is more manageable in size, is chosen to represent the entire population. In this study, the sample consisted of 40 teachers from public and private special education institutions in district Faisalabad who work with children diagnosed with autism spectrum disorder.

### **Sampling Technique**

Convenience sampling was employed to select the sample. It is a primary form of non-probability sampling where the sample consists of individuals who are readily accessible.

### **Instrumentation**

A research tool is a method for uncovering or assessing facts within a structured framework. In this study, the researcher employed a self-designed questionnaire as

the primary tool and method for gathering data. The questionnaire consisted of 20 statements specifically tailored to gather information from teachers of students diagnosed with autism spectrum disorder. The questionnaire was designed with the study objectives in mind. Input from the research supervisor and other faculty members at the University of Education Lahore, Faisalabad, was sought to enhance the questionnaire's validity for the research. Irrelevant statements were refined or removed as required for the study.

### **Data Collection**

The researcher prepared forty copies of a questionnaire to collect data from special education teachers working with children on the autism spectrum disorder. The study's main purpose and objectives were explained to the participants before distributing the questionnaires. The teachers received the questionnaires, which were presented in simple language for easy understanding. Once completed, the questionnaires were collected from the teachers.

### **Data Analysis**

The study's findings were meticulously recorded and the data was organized and analyzed. Statistical methods such as percentages, means, and standard deviations were used for data analysis. The conclusions and findings were derived based on this analysis.

### **Results**

The study aimed to investigate the comorbidity of Autism Spectrum Disorder and its associated challenges in district Faisalabad. It employed a descriptive research design, utilizing a survey method to gather data through questionnaires from teachers of children diagnosed with Autism Spectrum Disorder. Data collection involved 50 teachers selected as a sample from various special education schools. Researchers personally visited these schools and approached the respondents to collect the data. The findings of the study were analyzed using percentage analysis, as detailed below:

**Table 1**

*Poor intellectual functioning badly affects the academics of ASD students*

Response	Frequency	Percentage
SA	19	47.5
A	19	47.5
UD	2	5
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Uncecided, Disagree, SDA-Strongly Disagree*

Table 1 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that poor intellectual functioning badly affects the academics of students with autism spectrum disorder. 95%

respondents inclined with the idea that poor intellectual functioning badly affects the academics of students with autism spectrum disorder, 0% negated the idea while 5% could not give any opinion about the idea.

**Table 2**

*Schizophrenic hallucinations bring social instability among students' spectrum disorder*

Response	Frequency	Percentage
SA	15	37.5
A	15	37.5
UD	10	25
DA	0	0
SDA	6	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 2 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that schizophrenic hallucinations bring social instability among students' spectrum disorder. 75% respondents inclined with the idea that schizophrenic hallucinations bring social instability among students' spectrum disorder, 25% negated the idea while 0% could not give any opinion about the idea.

**Table 3**

*Epilepsy based loss of consciousness badly the life quality of students with autism spectrum disorder*

Response	Frequency	Percentage
SA	15	37.5
A	20	50
UD	5	12.5
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 3 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that epilepsy based loss of consciousness badly the life quality of students with autism spectrum disorder. 87.5% respondents inclined with the idea that epilepsy based loss of consciousness badly the life quality of ASD students, 12.5% negated the idea while 0% could not give any opinion about the idea.

**Table 4**

*Body stiffness often affects the reading and writing of students with autism spectrum disorder*

Response	Frequency	Percentage
SA	17	25
A	17	55
UD	6	20
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 4 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that body stiffness often affects the reading and writing of students with autism spectrum disorder. 80% respondents inclined with the idea that body stiffness often affects the reading and writing of students with autism spectrum disorder, 0% negated the idea while 20% could not give any opinion about the idea.

**Table 5**

*Hyperactive behavior of students with autism spectrum affects their level of attention in classroom activities*

Response	Frequency	Percentage
SA	17	42.5
A	20	50
UD	2	5
DA	1	2.5
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 5 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that hyperactive behavior of students with autism spectrum affects their level of attention in classroom activities. 92.5% respondents inclined with the idea that hyperactive behavior of students with autism spectrum affects their level of attention in classroom activities, 2.5% negated the idea while 5% could not give any opinion about the idea.

**Table 6**

*Attention deficit issues slow down the pace of learning of students with autism spectrum disorder*

Response	Frequency	Percentage
SA	20	50
A	12	30
UD	8	20
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 6 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that attention deficit issues slow down the pace of learning of students with autism spectrum disorder. 80% respondents inclined with the idea that attention deficit issues slow down the pace of learning of students with autism spectrum disorder, 0% negated the idea while 20% could not give any opinion about the idea.

**Table 7**

*Gastrointestinal issues disturb the students focus on educational tasks*

Response	Frequency	Percentage
SA	11	27.5
A	22	55
UD	16	40
DA	0	0
SDA	1	2.5
Total	20	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 7 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that gastrointestinal issues disturb the students focus on educational tasks. 82.5% respondents inclined with the idea that gastrointestinal issues disturb the students focus on educational tasks, 2.5% negated the idea while 40% could not give any opinion about the idea.

**Table 8**

*Depression features brings social instability in the life students with autism*

Response	Frequency	Percentage
SA	13	32.5
A	17	42.5
UD	7	17.5
DA	0	0
SDA	3	7.5
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 8 showed the view point of special education teachers of students with ASD pertaining to the idea that depression features brings social instability in the life ASD students. 75% respondents inclined with the idea that depression features bring social instability in the life ASD students, 7.5% negated the idea while 17.5% could not give any opinion about the idea.

**Table 9**

*Poor language skills affect the communication skills of ASD students*

Response	Frequency	Percentage
SA	14	35
A	18	45
UD	8	20
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 9 showed the view point of special education teachers of ASD students pertaining to the idea that poor language skills affect the communication skills of students with autism spectrum disorder, 80% respondents inclined with the idea that poor language skills affect the communication skills of students with autism spectrum disorder, 0% negated the idea while 20% could not give any opinion about the idea.

**Table 10**

*The adaptive skills of students with ASD are badly affects by the down syndrome features*

Response	Frequency	Percentage
SA	12	30
A	14	35
UD	11	27.5
DA	3	7.5
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 10 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that the adaptive skills of students with autism spectrum disorder are badly affects by the down syndrome features, 65% respondents inclined with the idea that the adaptive skills of students with autism spectrum disorder are badly affects by the down syndrome features, 7.5% negated the idea while 27.5% could not give any opinion about the idea.

**Table 11**

*Frequent fear and doubted features of ASD students affects their educational performance*

Response	Frequency	Percentage
SA	11	27.5
A	18	45
UD	7	17.5
DA	3	7.5
SDA	1	2.5
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 11 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that frequent fear and doubted features of the students with autism affects their educational performance. 72.5% respondents inclined with the idea that frequent fear and doubted features of the students with autism affects their educational performance, 10% negated the idea while 17.5% could not give any opinion about the idea.

**Table 12**

*Aggressive features highly disturb the social functioning of ASD students*

Response	Frequency	Percentage
SA	15	37.5
A	21	52.5
UD	2	5
DA	2	5
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 12 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that aggressive features highly disturb the social functioning of students with autism spectrum disorder, 90% respondents inclined with the idea that aggressive features highly disturb the social functioning of students with autism spectrum disorder, 5% negated the idea while 5% could not give any opinion about the idea.



**Table 13**

*Neurological rehabilitation should be arranged to treat the comorbid features of ASD*

Response	Frequency	Percentage
SA	14	35
A	17	42.5
UD	8	20
DA	0	0
SDA	1	2.5
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Uncecided, Disagree, SDA-Strongly Disagree*

Table 13 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that neurological rehabilitation should be arranged to treat the comorbid features of autism spectrum disorders, 77.5% respondents inclined with the idea that neurological rehabilitation should be arranged to treat the comorbid features of autism spectrum disorders, 2.5% negated the idea while 20% could not give any opinion about the idea.

**Table 14**

*Regular medication should be provided to handle the comorbid features of ASD students*

Response	Frequency	Percentage
SA	14	35
A	23	57.5
UD	2	5
DA	1	2.5
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Uncecided, Disagree, SDA-Strongly Disagree*

Table 14 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that regular medication should be provided to handle the comorbid features of students with autism spectrum disorder. 92.5% respondents inclined with the idea that regular medication should be provided to handle the comorbid features of students with autism spectrum disorder, 2.5% negated the idea while 5% could not give any opinion about the idea.

**Table 15**

*Psycho- therapy services should be provided to treat the depressive symptoms of students with autism disorder*

Response	Frequency	Percentage
SA	11	27.5
A	17	42.5
UD	10	25
DA	1	2.5
SDA	1	2.5
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 15 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that psycho-therapy services should be provided to treat the depressive symptoms of students with autism disorder. 70% respondents inclined with the idea that psycho-therapy services should be provided to treat the depressive symptoms of students with autism disorder, 5% negated the idea while 25% could not give any opinion about the idea.

**Table 16**

*Teacher may use motivation & reinforcement to improvise the educational performance*

Response	Frequency	Percentage
SA	23	57.5
A	14	35
UD	2	5
DA	1	2.5
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 16 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that teacher may be use motivation and reinforcement based activities to improvise the educational performance of autism. 92.5% respondents inclined with the idea that teacher may be use motivation and reinforcement based activities to improvise the educational performance of autism, 2.5% negated the idea while 5% could not give any opinion about the idea.

**Table 17**

*Guidance and counseling services should be arranged to deal with hallucinations issues of students with autism spectrum disorder*

Response	Frequency	Percentage
SA	13	32.5
A	22	55
UD	5	12.5
DA	0	0
SDA	0	0
Total	20	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 17 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that guidance and counseling services should be arranged to deal with hallucinations issues of students with autism spectrum disorder. 87.5% respondents inclined with the idea that guidance and counseling services should be arranged to deal with hallucinations issues of students with autism spectrum disorder, 0% negated the idea while 12.5% could not give any opinion about the idea.

**Table 18**

*Involvement in hands-on activities make the student with autism feel more attentive in class*

Response	Frequency	Percentage
SA	21	52.5
A	16	40
UD	3	7.5
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 18 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that involvement in hands on activities make the student with autism feel more attentive in class. 92.5% respondents inclined with the idea that involvement in hands on activities make the student with autism feel more attentive in class, 0% negated the idea while 7.5% could not give any opinion about the idea.

**Table 19**

*Positive feedback provokes the student with autism spectrum disorder to show better performance in classroom setting*

Response	Frequency	Percentage
SA	21	52.5
A	18	45
UD	1	2.5
DA	0	0
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 19 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that positive feedback provokes the student with autism spectrum disorder to show better performance in classroom setting. 97.5% respondents inclined with the idea that positive feedback provokes the student with autism spectrum disorder to show better performance in classroom setting, 0% negated the idea while 2.5% could not give any opinion about the idea.

**Table 20**

*Use of reward and incentives also help to mend the behavior of students with autism spectrum disorder*

Response	Frequency	Percentage
SA	17	42.5
A	18	45
UD	4	10
DA	1	2.5
SDA	0	0
Total	40	100

*Note: SA-Strongly Agree, A-Agree, UD-Undecided, Disagree, SDA-Strongly Disagree*

Table 20 showed the view point of special education teachers of students with autism spectrum disorder pertaining to the idea that use of reward and incentives also help to mend the behavior of students with autism spectrum disorder. 87.5% respondents inclined with the idea that use of reward and incentives also help to mend the behavior of students with autism spectrum disorder, 2.5% negated the idea while 10% could not give any opinion about the idea.

**Findings**

Following were the findings of the study:

1. 95% respondents inclined with the idea that poor intellectual functioning badly affects the academics of students with autism spectrum disorder.
2. 75% respondents inclined with the statement that schizophrenic hallucinations bring social instability among students' spectrum disorder.

3. 87.5% respondents supported the idea that epilepsy based loss of consciousness badly the life quality of students with autism spectrum disorder.
4. 80% respondents told that body stiffness often affects the reading and writing of students with autism spectrum disorder.
5. 92.5% respondents inclined with the idea that hyperactive behavior of students with autism spectrum affects their level of attention in classroom activities.
6. 80% respondents inclined with the idea that attention deficit issues slow down the pace of learning of students with autism spectrum disorder.
7. 82.5% respondents opined that gastrointestinal issues disturb the students focus on educational tasks.
8. 75% respondents said that depression features bring social instability in the life students with autism.
9. 80% respondents replied that poor language skills affect the communication skills of students with autism spectrum disorder.
10. 65% respondents inclined with the idea that adaptive skills of students with autism spectrum disorder are badly affects by the down syndrome features.
11. 72.5% respondents inclined with the idea that frequent fear and doubted features of the students with autism affects their educational performance.
12. 90% respondents inclined with the idea that aggressive features highly disturb the social functioning of students with autism spectrum disorder.
13. 77.5% respondents said that neurological rehabilitation should be arranged to treat the comorbid features of autism spectrum disorders.
14. 92.5% respondents viewed that Regular medication should be provided to handle the comorbid features of students with autism spectrum disorder.
15. 70% respondents reported that psycho-therapy services should be provided to treat the depressive symptoms of students with autism disorder.
16. 92.5% respondents inclined with the idea that teacher may be use motivation and reinforcement based activities to improvise the educational performance of autism.
17. 87.5% respondents inclined with the idea that guidance and counselling services should be arranged to deal with hallucinations issues of students with autism spectrum disorder.
18. 92.5% respondents replied that involvement in hands on activities make the student with autism feel more attentive in class.
19. 97.5% respondents opined that Positive feedback provokes the student with autism spectrum disorder to show better performance in classroom setting.
20. 87.5% respondents inclined with the idea that use of reward and incentives also help to mend the behavior of students with autism

spectrum disorder.

### **Discussion**

The study was carried out to explore the comorbid features of the students with Autism Spectrum Disorder. Majority of the respondents inclined with the idea that poor intellectual functioning badly affects the academics of students with autism spectrum disorder. A large number of the respondents inclined with the idea that Schizophrenic hallucinations bring social instability among students' spectrum disorder. Majority of the respondents inclined with the idea that Epilepsy based loss of consciousness badly impacts the life quality of students with autism spectrum disorder as has been previously reported (Loussouarn et al., 2019; Mannion & Leader, 2014). A large number of the respondents inclined with the idea that Body stiffness often affects the reading and writing of students with autism spectrum disorder.

Majority of the respondents inclined with the idea that Hyperactive behavior of students with autism spectrum affects their level of attention in classroom activities as has been previously explained (Mazzone, 2012). A large number of the respondents inclined with the idea that Attention deficit issues slow down the pace of learning of students with autism spectrum disorder.

Majority of the respondents inclined with the idea that Gastrointestinal issues disturb the students focus on educational tasks. Most of the respondents inclined with the idea that Depression features brings social instability in the life students with autism. A large number of the respondents inclined with the idea that poor language skills affect the communication skills of students with autism spectrum disorder as has been previously explained (Barlattani et al, 2023). Most of the respondents inclined with the idea that adaptive skills of students with autism spectrum disorder are badly affects by the down syndrome features as has been explained in the previous research (Kent et al., 1999). Most of the respondents inclined with the idea that Frequent fear and doubted features of the students with autism affects their educational performance. Majority of the respondents inclined with the idea that Aggressive features highly disturb the social functioning of students with autism spectrum disorder as has been explained in the previous research (Casanova et al., 2020; Vannucchi et al., 2014).

Strategies were determined to cope with the challenges of comorbid features of students with autism spectrum disorder. A large number of the respondents inclined with the idea that Neurological rehabilitation should be arranged to treat the comorbid features of autism spectrum disorders. Majority of the respondents inclined with the idea that Regular medication should be provided to handle the comorbid features of students with autism spectrum disorder as has been explained in the previous research (Bauman, 2010). Most of the respondents inclined with the idea that Psycho-therapy services should be provided to treat the depressive symptoms of students with autism disorder.

A wide majority of the respondents inclined with the idea that Teacher

may be use motivation and reinforcement based activities to improvise the educational performance of autism. A large number of the respondents inclined with the idea that Guidance and counseling services should be arranged to deal with hallucinations issues of students with autism spectrum disorder as has been explained in the previous research (Paxton & Estay, 2007). A wide majority of the respondents inclined with the idea that Involvement in hands on activities make the student with autism feel more attentive in class. Majority of the respondents inclined with the idea that positive feedback provokes the student with autism spectrum disorder to show better performance in classroom setting. Most of the respondents inclined with the idea that use of reward and incentives also help to mend the behavior of students with autism spectrum disorder.

### **Conclusions**

In conclusion, the survey findings reveal a strong consensus among respondents regarding the significant impact of various cognitive, behavioral, and neurological factors on the academic and social functioning of students with Autism Spectrum Disorder (ASD). A majority of respondents acknowledged the detrimental effects of intellectual and attention-related issues, such as poor intellectual functioning, hyperactivity, and attention deficits, on students' academic performance. Additionally, comorbid conditions like epilepsy, schizophrenia, depression, and gastrointestinal problems were seen as major disruptors of students' quality of life and focus on educational tasks. The importance of targeted interventions, such as neurological rehabilitation, regular medication, and psycho-therapy services, was widely supported, underscoring the need for a comprehensive, multifaceted approach to supporting students with ASD. Moreover, respondents highlighted the value of positive reinforcement, motivational strategies, and hands-on activities in enhancing the learning experience and social integration of these students. These findings point to the necessity for a collaborative effort among educators, healthcare providers, and families to address the complex needs of students with ASD, ensuring better academic and social outcomes.

### **Recommendations**

Following were the recommendations of the study:

1. Teacher should teach the children gently, if they are not learning, use some other methods so that children with autism may respond effectively.
2. Teacher should use drill method practice method to improve the learning abilities.
3. Teacher should make a video or provide things to the child who cannot see and is also with autism.
4. The teacher should guide if he/she is depressed and also has autism, counselling would be very helpful to help him move forward and achieve goals.

5. Special assessment and intervention should be provided for the students with autism and comorbid features.
6. Special incentives should be given to the teachers dealing with the autism children having comorbid features.

### **Limitations of the research**

The investigation was carried out to identify the comorbidity features of Autism Spectrum Disorders and its related challenges in district Faisalabad. The study was confined to the limited number of comorbid features of the children with spectrum disorder.

### **Delimitations of the research**

The research was delimited to the following:

1. District Faisalabad.
2. Govt. Special Education Schools.
3. Sample of 40 Teachers of Students with Autism Spectrum Disorder.

### **Ethical Considerations**

All the participants of the study were informed about the whole procedure and basic objective of the study and data was collected after their voluntary consent and willingness to share the data for the study. The legitimacy of results was safeguarded by honest reporting without considering any prejudice.

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