

**RESEARCH PAPER****Investigating Socio-Cultural Factors affecting the Diagnosis of Children with Autism Spectrum Disorder (ASD) in South Punjab****¹Dr. Muhammad Javed Aftab, ²Naeem Haider and ³Faisal Amjad**

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Corresponding Author drmjavedaftab@ue.edu.pk**ABSTRACT**

This study investigates the socio-cultural factors influencing the diagnosis of Autism Spectrum Disorder (ASD) in South Punjab. The research analyzes data collected from 100 participants to understand perceptions regarding ASD awareness, access to healthcare services, cultural influences, Stigma associated with seeking a diagnosis, and healthcare providers' cultural competence. Also parental awareness, socio-economic status impact, community-led awareness programs, the necessity of cultural competence training, and the role of government initiatives. Results indicate a lack of sufficient ASD awareness and access to healthcare services. 87% and 90% of respondents, respectively, expressed disagreement. However, opinions vary on the influence of cultural beliefs, stigma, and the necessity of cultural competence training for healthcare providers. T-tests and ANOVA were conducted to explore the association between demographic variables and perceptions of ASD diagnosis. The t-tests confirmed no statistically significant difference in means between genders ($p = .509$), and ANOVA revealed no significant differences in means across education levels ($p = .304$) or age groups ($p = .436$). This research contributes to understanding the complex socio-cultural dynamics impacting ASD diagnosis in South Punjab. This research contributes to implications for policy, healthcare practices, and community engagement initiatives.

Keywords: Autism Spectrum Disorder, Children with ASD, Diagnosis, Socio-cultural Factors, South Punjab**Introduction**

Autism Spectrum Disorder (ASD) is a multifaceted neurodevelopmental condition characterized by challenges in social communication and repetitive behaviors. It is also affecting individuals across diverse cultural contexts (American Psychiatric Association, 2013). The intricate interplay between genetic and environmental factors contributes to the heterogeneity of ASD (Cheroni, et al. 2020). It is also making it imperative to consider the influence of sociocultural elements in the diagnostic process (Corin, E. 2017). This research seeks to delve into the socio-cultural factors influencing the diagnosis of children with ASD in the distinctive setting of South Punjab, Pakistan. South Punjab is situated in the heart of Pakistan. It boasts a rich cultural heritage (Rengel, 2003). But like many regions worldwide it is facing unique challenges in understanding and addressing ASD. The prevalence of ASD in the region is estimated at 1 in 160 children (Eqani, S. A. M. A. S., et al 2020). The socio-cultural landscape of South Punjab introduces specific nuances related to cultural practices, beliefs, and access to healthcare services. The cultural fabric of South Punjab is woven with intricate threads, and understanding how these threads intersect with the diagnostic journey of children with ASD is vital. The integral components that shape the lens through which ASD is perceived and addressed within this community are local traditions, community structures, and familial dynamics.

Previous research underscores the pivotal role of sociocultural factors in shaping the perception, identification, and management of ASD within diverse communities (Matson et al., 2011). Cultural norms and practices influence not only how ASD is conceptualized but also impact help-seeking behaviors and the utilization of diagnostic services (Crane et al., 2018). Within the specific context of South Punjab, there is a noticeable dearth of comprehensive studies that delve into the intricate interplay of sociocultural factors on the diagnosis of children with ASD. Understanding the socio-cultural influences on ASD diagnosis is crucial not only for providing culturally sensitive interventions but also for dispelling misconceptions and reducing stigma. The existing literature highlights the global nature of these challenges and the need for regional investigations to inform targeted and effective interventions (Ratto et al., 2019). Despite global efforts to de-stigmatize and raise awareness about ASD, the socio-cultural determinants impacting the diagnosis of children with ASD in South Punjab are not well understood. Misdiagnosis, delayed diagnosis, and societal misconceptions persist, necessitating an in-depth investigation into the specific factors contributing to the diagnostic journey of children with ASD in this region. The prevailing beliefs, such as attributing ASD symptoms to supernatural causes or cultural myths may contribute to the under recognition of the disorder in South Punjab. The limited access to specialized healthcare services and societal perceptions of neurodevelopmental differences further compound the challenges faced by families seeking an accurate diagnosis for their children.

This research aims to address a critical gap in the existing literature by delving into the socio-cultural factors affecting the diagnosis of children with ASD in South Punjab. While studies on ASD exist globally, a focused examination of the unique socio-cultural influences on diagnosis in this specific region is lacking. The uniqueness of South Punjab lies not only in its cultural diversity but also in the coexistence of traditional practices with evolving urban dynamics. This investigation seeks to inform targeted interventions. It also enhances community awareness, and ultimately improves the diagnostic landscape for children with ASD. This research also acknowledges the potential variation in the manifestation and recognition of ASD symptoms across different cultural contexts. It aims to contribute to the broader discourse on cross-cultural considerations in ASD diagnosis, recognizing the significance of aligning diagnostic practices with the socio-cultural realities of the populations being studied. The primary objective of this research is to investigate and understand the socio-cultural factors influencing the diagnosis of children with ASD in South Punjab. The central research question guiding this inquiry is: What specific socio-cultural factors impact the diagnosis of children with ASD in the context of South Punjab?

Through this exploration, we aim to contribute empirical evidence that informs interventions and policy-making. Also, community engagement strategies are tailored to the socio-cultural nuances of South Punjab. The investigation seeks to identify how cultural beliefs, community perceptions, and healthcare accessibility intersect to influence the diagnostic trajectory of children with ASD. In addition to the research question, this study will explore secondary questions such as the role of cultural competence among healthcare providers and community awareness programs. These explorations will provide a holistic understanding of the socio-cultural factors shaping ASD diagnosis in South Punjab. The hypothesis guiding this research is that a comprehensive examination of socio-cultural factors will reveal unique insights into the diagnosis of children with ASD in South Punjab. It also paves the way for more targeted and culturally sensitive interventions. The study anticipates that the findings will not only contribute to the local understanding of ASD but also serve as a valuable reference for similar socio-cultural investigations in diverse global contexts.

Theoretical Framework

The theoretical framework for this research is grounded in the Social Ecological Model (Bronfenbrenner, 1979) and the Health Belief Model (Rosenstock, et al. 1988). These

theoretical perspectives provide a comprehensive lens to examine the multi-level influences on the diagnosis of Autism Spectrum Disorder (ASD) in South Punjab. Bronfenbrenner's Social Ecological Model posits that an individual's development is shaped by the interaction of various environmental systems, ranging from the microsystem to the macro system. In the context of ASD diagnosis this model allows for the exploration of how individual, family, community, and societal factors interact to influence the identification and understanding of ASD (Bronfenbrenner, 1979). For instance, the microsystem may encompass the individual characteristics of the child. Also the family's beliefs, and the accessibility of healthcare services. While the macrosystem includes cultural beliefs and societal attitudes toward neurodevelopmental disorders. The Health Belief Model emphasizes the role of perceived susceptibility, severity, benefits, and barriers in shaping health-related behaviors (Rosenstock et al., 1988). This model helps in understanding how parents perceive the susceptibility of their child to ASD. How the severity of the condition and the perceived benefits and barriers to seeking a diagnosis. By examining these factors, the model provides insights into the decision-making processes related to pursuing ASD diagnosis for children in South Punjab.

Literature Review

Autism Spectrum Disorder (ASD) is a multifaceted neurodevelopmental condition characterized by challenges in social communication and repetitive behaviors, with its onset typically observed in early childhood (American Psychiatric Association, 2013). This literature review aims to explore the existing research on the socio-cultural factors influencing the diagnosis of children with ASD in South Punjab, Pakistan. The review is organized around cultural variations in autism diagnosis, community perceptions and stigma, healthcare accessibility, cultural competence in healthcare providers, and parental perspectives and decision-making.

Cultural variations significantly influence the identification and interpretation of ASD symptoms, impacting diagnostic pathways and outcomes (Nevison & Parker, 2020). In South Asian cultures including Pakistan, collective identity and familial interconnectedness are emphasized. It recognizes that individual differences may be challenging potentially leading to delayed or overlooked ASD diagnoses (Ludlow et al., 2012). Understanding these cultural nuances is crucial for developing effective diagnostic strategies that align with the cultural context of South Punjab.

Community perceptions and stigma surrounding ASD contribute substantially to the diagnostic journey. Dillenburger et al. (2013) highlight the impact of societal attitudes on parental help-seeking behaviors and diagnostic access. In South Punjab, societal misconceptions and stigmas related to neurodevelopmental disorders may contribute to parental reluctance to seek timely diagnoses. These factors can influence the prevalence rates reported by the Pakistan Autism Society (n.d.) and hinder the development of a supportive and informed community.

Access to healthcare services is a critical determinant in the diagnostic process for children with ASD. Studies by Durkin et al. (2017) underscore the importance of healthcare infrastructure in recognizing and addressing ASD. Limited access to specialized diagnostic services in South Punjab may contribute to disparities in ASD diagnosis. Particularly in rural or remote areas where healthcare resources are scarce. Addressing these disparities is vital for ensuring equitable access to timely and accurate diagnoses.

Cultural competence among healthcare professionals is essential for navigating the cultural intricacies influencing the diagnostic process (Fuligni et al., 2018). Practices that consider traditional healing methods alongside evidence-based assessments may enhance the accuracy and acceptance of ASD diagnoses in South Punjab. Understanding the cultural

beliefs and practices prevalent in the region is crucial for healthcare providers to establish effective communication and build trust with families seeking ASD diagnoses.

Parental perspectives and decision-making significantly impact the diagnostic journey of children with ASD. Crane et al. (2016) highlight the emotional and psychological experiences of parents during the diagnostic process. In South Punjab, cultural beliefs may influence parental perceptions of ASD, and understanding the factors influencing parental decision-making is crucial. Exploring these perspectives can provide insights into designing interventions that align with the needs and expectations of families in South Punjab.

Material and Methods

This research employed a quantitative approach to investigate the socio-cultural factors that influenced the diagnosis of children with Autism Spectrum Disorder (ASD) in South Punjab. The study focused on gathering numerical data through structured surveys to diagnostic experiences, and perceptions related to ASD within the specified population. The target population comprised parents of children with ASD, healthcare professionals and community leaders in South Punjab. A stratified random sampling strategy was used to ensure representation from urban and rural areas. The sample size was 100 participants. Structured surveys were administered to the selected participants using a standardized questionnaire. The survey included demographic questions, as well as items designed to assess diagnostic experiences and perceptions related to ASD. The survey instrument was pre-tested for reliability and validity before the main data collection phase.

Demographic information and key variables were summarized using descriptive statistics such as frequencies, percentages, means, and standard deviations. Inferential statistical techniques, including T-tests and ANOVA, were conducted to explore the association between demographic variables and perceptions of ASD diagnosis. Statistical Package for the Social Sciences (SPSS) was utilized for data entry and analysis.

Ethical Considerations and Limitations

The research adhered to ethical guidelines. It ensures confidentiality and respect for participants' rights. Participants were fully informed about the study's purpose, procedures, and their right to withdraw at any point without consequences.

Quantitative research provides valuable numerical insights. It had limitations in capturing the depth and context of socio-cultural factors. The study acknowledged potential biases related to the self-reporting of participants in surveys and the generalizability of findings in the sampled population. This quantitative approach aimed to provide a robust understanding of the socio-cultural correlates of ASD diagnosis in South Punjab. The findings contributed to evidence-based interventions and policy recommendations. Ultimately it enhances the diagnostic landscape for children with ASD in the region.

Results and Discussion

Table 1
Perceptions on socio-cultural factors and ASD diagnosis

Descriptions	Strongly Disagree f(%)	Disagree f(%)	Neutral f(%)	Agree f(%)	Strongly Agree f(%)
1 I believe that there is sufficient awareness about ASD within the community in South Punjab.	28(28)	61(61)	6(6)	4(4)	1(1)

2	Access to healthcare services for diagnosing ASD is readily available in South Punjab.	32(32)	58(58)	5(5)	4(4)	1(1)
3	The cultural beliefs and practices in South Punjab influence the diagnosis of ASD in children.	2(2)	9(9)	6(6)	52(52)	31(31)
4	There is a stigma associated with seeking a diagnosis for ASD in the community of South Punjab.	1(1)	6(6)	7(7)	48(48)	38(38)
5	The cultural competence of healthcare providers significantly impacts ASD diagnosis in South Punjab.	1(1)	7(7)	(7)	49(49)	36(36)
6	Parents in South Punjab Are Adequately Informed about the signs and Symptoms of ASD.	30(30)	61(61)	4(40)	4(4)	1(1)
7	The socio-economic status of families affects the likelihood of seeking an ASD diagnosis in South Punjab.	1(1)	6(6)	7(7)	49(49)	37(37)
8	Community-led awareness programs could positively impact the rate of ASD diagnosis in South Punjab.	1(1)	9(9)	5(5)	49(49)	36(36)
9	I believe that cultural competence training for healthcare providers is necessary for improving ASD diagnosis in South Punjab.	1(1)	7(7)	(7)	49(49)	36(36)
10	Government initiatives can play a significant role in enhancing ASD awareness and diagnosis in South Punjab.	1(1)	6(6)	7(7)	49(49)	37(37)

Examining perceptions on socio-cultural factors and ASD diagnosis in Table.1.It becomes apparent that there is a prevailing lack of awareness about ASD within the community in South Punjab. 89% of respondents expressed disagreement or strong disagreement with the notion of sufficient awareness. A significant majority (90%) disagreed or strongly disagreed with the notion that access to healthcare services for diagnosing ASD is readily available in South Punjab. The opinions were divided regarding the influence of cultural beliefs and practices on ASD diagnosis. A substantial proportion of respondents (83%) either agree or strongly agree that such factors play a role. It is a notable stigma associated with seeking a diagnosis for ASD appears in the community. 86% of respondents agree or strongly agree with this assertion. Interestingly, the vast majority (85%) also agreed or strongly agreed that the cultural competence of healthcare providers significantly impacts ASD diagnosis in South Punjab. A large majority of respondents (91%) disagreed or strongly disagreed that parents in South Punjab are adequately informed about the signs and symptoms of ASD. It highlights a potential area for improvement in awareness efforts. The data also suggests that the socio-economic status of families may affect the likelihood of seeking an ASD diagnosis.86% of respondents agreed or strongly agreed with this statement. Respondents expressed varying levels of optimism regarding the potential impact of community-led awareness programs.85% agree or strongly agree with their positive impact. Similarly, there was overwhelming agreement (85%) on the necessity of cultural competence training for healthcare providers to improve ASD diagnosis in South Punjab. Finally, respondents were generally supportive of the role of government initiatives in enhancing ASD awareness and diagnosis. 86% expressed agreement or strong agreement with this notion.

Table 2
Comparison of Means at Basis of Gender (Independent Sample t-test)

Gender	N	M	S.D	t	Df	Sig.
Female	22	32.6364	7.05452	-1.458	98	.509
Male	78	34.8846	6.19170			

*p>.05 Level of Significance

Table 2 displays the outcomes of an independent sample t-test that compares means by gender in the group. There are 78 male respondents and 22 female respondents included in the analysis. Male respondents had a slightly higher mean score ($M = 34.8846$, $SD = 6.19170$) compared to female respondents ($M = 32.6364$, $SD = 7.05452$). The t-value of -1.458 with 98 degrees of freedom and a significance level of $.509$ suggests that the difference between the means is not statistically significant ($p > .05$). Thus, there is inadequate evidence to determine a notable disparity in the views of females and males regarding Socio-Cultural Factors Affecting the Diagnosis of Children with Autism Spectrum Disorder (ASD) in South Punjab.

Table 3
Comparison of Mean at Basis of Education-Level (One Way ANOVA)

Description	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	150.849	3	50.283	1.227	.304
Within Groups	3932.941	96	40.968		
Total	4083.790	99			

* $P > .05$ Level of Significance

Table 3 displays the outcomes of a one-way ANOVA that compares means according to the education levels of the respondents in the sample surveyed. The analysis investigates the differences in perceptions among various educational level groups. The between-groups sum of squares is 150.849, with 3 degree of freedom, leading to a mean square of 50.283. The sum of squares within groups is 3932.941, with 96 degrees of freedom, resulting in a mean square of 40.968. The F-ratio is 1.227 with a significance level of $.304$, indicating that the p-value is greater than $.05$. The insignificant p-value indicates that there is no statistically significant difference in perceptions regarding ASD diagnosis across different education levels.

Table 4
Comparison of Mean at Basis of Age-Groups. (One Way ANOVA)

Description	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	157.864	4	39.466	.955	.436
Within Groups	3925.926	95	41.326		
Total	4083.790	99			

* $P > .05$ Level of Significance

Table 4 displays the outcomes of a one-way ANOVA that compares means according to the different Age groups of the respondents in the sample surveyed. The analysis investigates the differences in perceptions among various Age groups. The between-groups sum of squares is 157.864, with 4 degree of freedom, leading to a mean square of 39.466. The sum of squares within groups is 3925.926, with 95 degrees of freedom, resulting in a mean square of 41.326. The F-ratio is $.955$ with a significance level of $.436$, indicating that the p-value is greater than $.05$. The insignificant p-value indicates that there is no statistically significant difference in perceptions regarding ASD diagnosis across different age level persons.

Discussion

The findings of this study shed light on various socio-cultural factors influencing the diagnosis of ASD in South Punjab. The disparities in gender representation within the sample. Males comprising a significant majority. They reflect broader societal trends and may have implications for access to healthcare services and awareness programs. The distribution of education levels highlights potential challenges in disseminating information about ASD across different educational backgrounds. The data revealed a pervasive lack of sufficient awareness about ASD within the community. It is evidenced by the overwhelming

majority of respondents expressing disagreement regarding the adequacy of ASD awareness. This suggests a critical need for targeted awareness campaigns and educational initiatives. It will enhance understanding and recognition of ASD symptoms among the population in South Punjab. Furthermore, the perceived lack of access to healthcare services for diagnosing ASD underscores systemic barriers. Which may hinder timely diagnosis and intervention. Addressing these barriers requires concerted efforts to improve healthcare infrastructure and increase the availability of specialized services for individuals with ASD. The influence of cultural beliefs and practices on ASD diagnosis emerged as a complex and multifaceted issue. While a substantial proportion of respondents acknowledged the impact of cultural factors. But the opinions were varied. These opinions suggest the need for culturally sensitive approaches to ASD diagnosis and intervention. The stigma surrounding ASD diagnosis was identified as a significant concern. A considerable proportion of respondents indicated its presence within the community. Addressing stigma requires comprehensive strategies aimed at reducing societal misconceptions. It also promotes acceptance and understanding of individuals with ASD. The perceived importance of healthcare providers' cultural competence highlights the need for training programs. Which will equip professionals with the knowledge and skills. As a result, they will effectively engage with diverse communities and provide culturally appropriate care. Furthermore, the findings underscore the critical role of government initiatives in enhancing ASD awareness and diagnosis. Policymakers must prioritize investment in ASD education, healthcare infrastructure, and support services. It will address the growing needs of individuals with ASD and their families in South Punjab.

Conclusion

This study provides a comprehensive examination of the socio-cultural factors influencing the diagnosis of Autism Spectrum Disorder (ASD) in South Punjab. Through analysis of survey data from 100 participants, significant insights have been gained into the perceptions and challenges surrounding ASD awareness, access to healthcare services, cultural influences, stigma, and the role of government initiatives. The findings highlight several critical areas for action. Firstly, there is a pressing need for increased ASD awareness within the community. Efforts should focus on raising public consciousness about ASD symptoms, early intervention strategies, and available support services. Additionally, addressing barriers to accessing healthcare services is imperative to ensure timely diagnosis and intervention for individuals with ASD. Cultural beliefs and practices play a significant role in shaping perceptions of ASD within the community. Recognizing and understanding these cultural dynamics is essential for developing culturally sensitive diagnostic and intervention approaches that respect the diversity of beliefs and values held by community members. Addressing stigma associated with ASD diagnosis is another key priority. Efforts to challenge misconceptions and promote acceptance of individuals with ASD are essential for fostering inclusive communities that provide support and opportunities for all. Furthermore, healthcare providers' cultural competence must be enhanced to ensure effective engagement with diverse populations and delivery of culturally appropriate care. Training programs should be implemented to equip healthcare professionals with the knowledge and skills needed to navigate cultural differences and provide high-quality care to individuals with ASD. Finally, government initiatives play a crucial role in driving systemic change and addressing the broader structural challenges impacting ASD diagnosis and support services. Policymakers must prioritize ASD education, invest in healthcare infrastructure, and develop policies that support the needs of individuals with ASD and their families. In conclusion, this study underscores the complex interplay of socio-cultural factors in ASD diagnosis and emphasizes the importance of collaborative efforts involving community members, healthcare professionals, policymakers, and advocacy groups. By addressing the identified challenges and leveraging existing resources, we can work towards creating a more inclusive and supportive environment for individuals with ASD in South Punjab.

Recommendations

Based on the findings of this study, several recommendations are proposed to improve the diagnosis and support services for Autism Spectrum Disorder (ASD) in South Punjab. The stakeholders should implement targeted awareness campaigns and educational programs to enhance understanding of ASD symptoms. Also to improve early intervention strategies, and available support services within the community. It may ensure cultural sensitivity and accessibility across different education levels. The stakeholders should address systemic barriers to accessing healthcare services for ASD diagnosis. It can be done by investing in healthcare infrastructure, increasing the availability of specialized services, and ensuring equitable access to diagnostic and intervention resources across urban and rural areas. The stakeholders should develop and implement cultural competence training programs for healthcare providers. It aims to improve their ability to engage with diverse populations and deliver culturally appropriate care to individuals with ASD and their families. The stakeholders should launch anti-stigma campaigns to challenge misconceptions. Also, we should promote acceptance of individuals with ASD within the community. It can be done by engaging community leaders, religious institutions, and local organizations to foster inclusive attitudes and reduce discrimination. The stakeholders should advocate for government policies and initiatives that prioritize ASD awareness, education, and support services. Also for allocating resources to support the development and implementation of comprehensive ASD programs and interventions at the national and local levels. The stakeholders should foster collaboration between community members, healthcare professionals, policymakers, and advocacy groups. It aims to address the unique needs of individuals with ASD and their families, encouraging community-led initiatives that promote inclusivity and support. The stakeholders should invest in research initiatives to further understand the socio-cultural factors influencing ASD diagnosis and intervention in South Punjab. Invest in collecting and analyzing data to inform evidence-based practices and policy decisions aimed at improving outcomes for individuals with ASD. By implementing these recommendations, stakeholders can work together to create a more supportive and inclusive environment for individuals with ASD in South Punjab. Ultimately it will improve their quality of life and promote their full participation in society.

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