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"THIS STUDY AIMS TO ASSESS THE KNOWLEDGE REGARDING AUTISM SPECTRUM DISORDER (ASD) AMONG PARENTS ATTENDING THE GNSU REHABILITATION CENTRE"

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Abstract—Background: Autism Spectrum Disorder (ASD) is a lifelong neurodevelopmental disorder characterized by persistent deficits in social communication and interaction, along with restricted, repetitive patterns of behaviour, interests, or activities. The prevalence of ASD has increased globally over the past two decades, making it a major public health concern. Parents play a vital role in recognizing developmental abnormalities, seeking timely medical care, participating in rehabilitation programmes, and ensuring continuity of care for children with autism. Adequate parental knowledge regarding the early signs, diagnosis, treatment, and rehabilitation of Autism Spectrum Disorder is essential for improving developmental outcomes and quality of life. However, misconceptions, delayed recognition, and lack of awareness continue to hinder early diagnosis and intervention, particularly in developing countries.

Objectives: To assess the level of knowledge regarding Autism Spectrum Disorder among parents attending the Gopal Narayan Singh University Rehabilitation Centre, Bihar, and to determine the association between knowledge level and selected demographic variables.

Methodology: A quantitative descriptive cross-sectional research design was adopted for the study. Fifty parents of children diagnosed with Autism Spectrum Disorder attending the Gopal Narayan Singh University Rehabilitation Centre were selected using a non-probability purposive sampling technique. Data were collected using a structured knowledge questionnaire covering causes, symptoms, diagnosis, treatment, rehabilitation, and management of Autism Spectrum Disorder. Descriptive statistics and Chi-square test were used for data analysis.

Results: The findings revealed that 48% of parents had moderately adequate knowledge, 34% had adequate

knowledge, and 18% had inadequate knowledge regarding Autism Spectrum Disorder. No statistically significant association was observed between knowledge level and most demographic variables. However, a highly significant association was found between parental knowledge and the duration of therapy received by the child.

Conclusion: The study concluded that although most parents possessed moderate knowledge regarding Autism Spectrum Disorder, continuous parent education, counselling, and rehabilitation-based awareness programmes are required to improve early identification, timely intervention, treatment adherence, and developmental outcomes among children with autism.

Keywords: Autism Spectrum Disorder, Parents, Knowledge, Rehabilitation Centre, Child Development, Awareness, Nursing Research.

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INTRODUCTION

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder that affects communication, social interaction, behaviour, and learning abilities. It usually manifests during the first three years of life and continues throughout adulthood. Children with Autism Spectrum Disorder commonly experience difficulties in verbal and non-verbal communication, social relationships, emotional expression, and adaptive functioning. Repetitive behaviours, restricted interests, sensory processing abnormalities, and resistance to change are among the characteristic features of the disorder.The global prevalence of Autism Spectrum Disorder has increased steadily due to improved diagnostic criteria, increased awareness, and enhanced screening programmes. According to recent international estimates, approximately one out of every hundred children is affected by Autism Spectrum Disorder. In India, awareness regarding autism has improved considerably; however, delayed diagnosis and inadequate parental knowledge remain important public health challenges, especially in rural and underserved communities.

Parents are the first individuals to observe developmental changes in their children. Their understanding of developmental milestones and early warning signs of autism plays a critical role in obtaining timely medical evaluation and initiating appropriate rehabilitation services. Early diagnosis followed by evidence-based interventions such as speech therapy, occupational therapy, behavioural therapy, special education, and family counselling significantly improves communication skills, social behaviour, cognitive development, and overall quality of life.

Despite increasing public awareness, misconceptions regarding autism continue to exist. Some parents consider delayed speech and poor social interaction as temporary developmental variations, resulting in delayed diagnosis and intervention. Limited knowledge regarding available rehabilitation services further contributes to poor treatment adherence and delayed developmental progress.

Healthcare professionals, particularly nurses, play an essential role in educating parents regarding developmental milestones, early screening, behavioural management, home-based care, and rehabilitation services. Community awareness programmes, parent counselling sessions, and structured educational interventions conducted by nursing professionals can significantly improve parental knowledge and promote early identification of Autism Spectrum Disorder.

The Gopal Narayan Singh University Rehabilitation Centre provides multidisciplinary rehabilitation services including speech therapy, occupational therapy, physiotherapy, behavioural therapy, psychological counselling, and special education for children with developmental disorders. Parents attending the rehabilitation centre receive continuous guidance from healthcare professionals regarding child development and autism management. Assessing their knowledge provides valuable information regarding existing educational needs and helps healthcare providers develop effective parent education programmes.

Therefore, the present study was undertaken to assess the knowledge regarding Autism Spectrum Disorder among parents attending the Gopal Narayan Singh University Rehabilitation Centre, Bihar, and to determine the association between parental knowledge and selected demographic variables. The findings of the study are expected to contribute to nursing education, nursing practice, community health services, and future research by promoting evidence-based educational strategies for parents of children with Autism Spectrum Disorder.

METHODLOGY

A quantitative research approach with a descriptive cross-sectional research design was adopted to assess the

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knowledge regarding Autism Spectrum Disorder among parents attending the Gopal Narayan Singh University Rehabilitation Centre, Bihar.

The study was conducted at the Gopal Narayan Singh University Rehabilitation Centre, Jamuhar, Rohtas, Bihar. The target population consisted of parents of children diagnosed with Autism Spectrum Disorder attending the rehabilitation centre during the data collection period. A total of 50 parents were selected using a non-probability purposive sampling technique.

The research instrument consisted of two sections.

Section A included socio-demographic variables such as age, gender, educational qualification, occupation, monthly family income, type of family, residence, child's age, child's gender, and duration of therapy.

Section B consisted of a structured knowledge questionnaire containing items related to causes, risk factors, clinical features, diagnosis, treatment, rehabilitation, behavioural management, and parental care of children with Autism Spectrum Disorder.

The content validity of the tool was established by experts from Community Health Nursing, Child Health Nursing, Mental Health Nursing, and Medical-Surgical Nursing. The reliability of thequestionnaire was tested before data collection and found suitable for the study.

Administrative permission was obtained from the Director of the GNSU Rehabilitation Centre. Ethical clearance was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants before data collection, and confidentiality and anonymity were maintained throughout the study. The collected data were analysed using descriptive statistics such as frequency, percentage, mean, and standard deviation. Inferential statistics (Chi-square test) were used to determine the association between parental knowledge and selected demographic variables. Statistical significance was considered at $p < 0.05$.

DATA ANALYSIS AND INTERPRETATION

The collected data from the 50 study participants was systematically coded, compiled into a master data sheet, and analyzed quantitatively using both **descriptive statistics** (frequencies, percentages, mean scores, and standard deviations) and **inferential statistics** (Chi-square testing).

The findings are organized and presented across five distinct analytical sections:

Section A: Descriptive Analysis of Parent Socio-Demographic Variables.

Section B: Descriptive Analysis of Affected Children's Clinical & Demographic Variables.

Section C: Item-Wise and Domain-Wise Evaluation of Parental Knowledge Scores.

Section D: Overall Categorization and Grading of Baseline ASD Knowledge.

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Section E: Inferential Analysis of Association between Knowledge Levels and Selected Variables. Section

A: Descriptive Analysis of Parent Socio-Demographic Variables

This section profiles the foundational baseline data gathered from the primary caregivers (N=50) actively seeking rehabilitation services.

Table 1: Socio-Demographic Distribution of Primary Caregivers

Sample Size (N)=50

Sl. No.	Demographic Parameter	Sub-Category Options	Frequency (n)	Percentage (%)
1.	Age of the Parent	20–30 Years	20	40%
		31–40 Years	22	44%
		41 Years & Above	8	16%
2.	Gender of the Parent	Male (Father)	11	22%
		Female (Mother)	39	78%

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3.	**Educational Status**	Primary School	2	4%
		Middle School	10	20%
		High School	18	36%
		Graduate & Above	20	40%
4.	**Monthly Family Income**	Below ₹10,000	2	4%
		₹10,001 – ₹20,000	11	22%
		₹20,001 – ₹30,000	24	48%
		Above ₹30,000	13	26%
5.	**Residential Domain**	Rural Areas	18	36%
		Urban Areas	32	64%
6.	**Type of Family Structure**	Nuclear Family	31	62%
		Joint Family	19	38%

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Interpretation of Table 1:

The socio-demographic indicators reflect a clear structural tilt toward young to middle-aged parents, with 44% falling within the 31–40 age bracket and 40% in the 20–30 range.

Gender metrics indicate distinct maternal accountability in daily clinical navigation: **78% of the active respondents were mothers**, matching broader sociological trends where maternal figures manage primary therapeutic interactions.

Educational trends are relatively high within this institution-enrolled sample, with 40% holding graduate or post-graduate credentials, and 36% completing higher secondary matrices. Economically, the group is predominantly lower-middle to middle-class, with 48% earning between ₹20,001 and ₹30,000 monthly. Geographically, 64% travel from urban or semi-urban regions, while 36% come from rural agricultural belts surrounding the Rohtas district.

Section B: Descriptive Analysis of Children's Clinical & Demographic Variables

This section analyzes the clinical profiles and therapeutic histories of the children diagnosed with Autism Spectrum Disorder whose parents participated in the study.

Table 2: Clinical Profile Vectors of the Diagnosed Children

Sample Size (N)=50

Sl. No.	Clinical/Demographic Variable	Classification Breakdown	Frequency (n)	Percentage (%)
1.	Age of the Child	1–3 Years	4	8%
		4–6 Years	30	60%
		7–9 Years	13	26%
		Above 9 Years	3	6%
2.	Gender of the Child	Male (Boy)	46	92%
		Female (Girl)	4	8%

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Sl. No.	Clinical/Demographic Variable	Classification Breakdown	Frequency (n)	Percentage (%)
3.	Birth Order Placement	First-Born Child	27	54%
		Second-Born Child	18	36%
		Third or Later Born	5	10%
4.	Primary Therapeutic Modal	Speech & Language Therapy	15	30%
		Occupational Therapy	12	24%
		Behavioral Modification	7	14%
		Special Education Support	3	6%
		Multi-Disciplinary Integration	13	26%
5.	Cumulative Therapy Duration	Less than 6 Months	10	20%
		6 Months to 1 Year	26	52%
		1 to 2 Years	11	22%
		More than 2 Years	3	6%
6.	Weekly Frequency of Session	Daily Interventions	39	78%
		Bi-Weekly or Tri-Weekly	11	22%

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Interpretation of Table 2:

The clinical data shows that early childhood is the primary period for seeking therapeutic intervention: **60% of children are between 4 and 6 years old**. This aligns with the window where delayed communication milestones become highly disruptive in preschool environments.

A stark gender imbalance is evident: **92% (n=46) of the children are male**, resulting in an approximate 11:1 male-to-female ratio within this cohort. While global epidemiological averages sit closer to 4:1, this pronounced skew may reflect regional trends where diagnostic evaluation and care are prioritized for male offspring.

Regarding therapeutic configurations, 30% utilize isolated speech therapy pathways, 24% focus on occupational therapy, and 26% receive cross-disciplinary integrated protocols. Over half (52%) have sustained active clinical enrollment for 6 months to a year, and 78% follow high-intensity daily treatment regimens at the university center.

Section C: Item-Wise and Domain-Wise Evaluation of Parental Knowledge Scores

To clarify *where* informational gaps persist, the 25-item questionnaire was categorized into 4 core functional domains. Item analysis reflects the percentage of parents who successfully identified correct clinical answers.

Table 3: Domain-Wise Mean, SD, and Mean Percentage Metrics

Total Points=25(N=50)

Domain Index	Specific Core Knowledge Domain	Total Items	Max Possible Score	Sample Mean Score	Standard Deviation (±SD)	Mean Percentage Score (%)
I	General Concept, Nature & Myths of ASD	6	6	3.82	± 1.14	63.67%
II	Clinical Symptoms & Red Flag Behavioral Warning Identifiers	7	7	4.12	± 1.28	58.85%
III	Etiological Correlates & Diagnostic Timelines	5	5	2.14	± 0.92	42.80%
IV	Holistic Multi-Disciplinary Rehabilitation & Nursing Management	7	7	3.94	± 1.05	56.28%

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Interpretation of Table 3:

Domain analysis shows that parents possess the strongest understanding in **Domain I (General Concepts & Nature of ASD)**, achieving a mean percentage score of **63.67%**. This indicates relatively successful community awareness regarding the foundational definitions of autism and a baseline rejection of traditional supernatural explanations.

Conversely, **Domain III (Etiological Correlates & Diagnostic Timelines)** revealed the lowest proficiency, with a mean score of **42.80%**. Item-level tracking indicated that 68% of parents could not correctly identify genetic or neurological risk factors, and 54% remained uncertain about optimal biological age limits for early screening.

Domain II (Clinical Symptoms) scored at **58.85%**. While visible markers like speech delays were recognized by 84% of respondents, more nuanced presentations like sensory processing abnormalities, poor eye-tracking, or stereotypic toe-walking were correctly identified by fewer than 40% of parents.

Section D: Overall Categorization and Grading of Baseline ASD Knowledge

The aggregate score achieved by each participant across all 25 test items was calculated to determine their final knowledge grading classification.

Table 4: Collective Knowledge Grading Classifications

Maximum Aggregate Score=25(N=50)

Knowledge Grading Class	Achieved Numeric Range	Frequency Count (n)	Cumulative Percentage (%)	Mean Score ± SD
Inadequate Knowledge	0 — 8 Marks	9	18.0%	6.42 ± 1.12
Moderately Adequate Knowledge	9 — 16 Marks	24	48.0%	12.84 ± 2.04
Adequate Knowledge	17 — 25 Marks	17	34.0%	19.12 ± 1.68

Interpretation of Table 4:

The collective analysis reveals that the largest segment of parents (**48%**) possess a **moderately adequate knowledge level** regarding Autism Spectrum Disorder. Meanwhile, 34% demonstrate fully adequate understanding, and 18% remain in the inadequate category.

The overall sample mean score was **14.02±4.84 out of 25 (56.08%)**. This indicates that while foundational awareness is established among clinic-attending families, targeted educational support is still required to move the majority into

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the fully proficient range.

Section E: Inferential Analysis of Association between Knowledge Levels and Selected Variables

To determine if variations in parental baseline knowledge are driven by demographic factors or clinical exposure, Chi-square tests ($\chi 2$) were performed.

Table 5: Cross-Tabulation Matrix and Chi-Square Testing Outcomes

N=50[Significance Threshold Configured at p<0.05]**Selected Behavioral Variables**	**Inadequate (n=9)**	**Moderately Adequate (n=24)**	**Adequate (n=17)**	**Chi-Square Value ($\chi 2$)**	**Degrees of Freedom (df)**	**Statistical Significance (p-Value)**	**Academic Inference**
Parental Education							
• Under-Graduate	5	16	9	1.834	2	p=0.400	Not
• Graduate & Above	4	8	8				
Residential Geography							
• Rural Areas	4	11	3	3.522	2	p=0.172	Not
• Urban Areas	5	13	14				

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Monthly Income Status • Below ₹20,000 • Above ₹20,000	3 6	8 16	2 15	2.844	2	p=0.241	Not
Cumulative Therapy Duration • Under 6 Months	6 3	4 16	0 7	22.812	4	**p<0.001**	**Highly Significant (HS)**

Selected Behavioral Variables	**Inadequate (n=9)**	**Moderately Adequate (n=24)**	**Adequate (n=17)**	**Chi-Square Value (χ2)**	**Degrees of Freedom (df)**	**Statistical Significance (p-Value)**	**Academic Inference**
• 6 Months to 1 Year • Beyond 1 Year	0	4	10				

Interpretation of Table 5:

Chi-square analysis revealed **no statistically significant associations** between parental baseline knowledge and standard socio-demographic indicators, including educational status ($\chi2=1.834, p=0.400$), geographic location ($\chi2=3.522, p=0.172$), or family income ($\chi2=2.844, p=0.241$).

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This demonstrates that general academic training and economic status do not automatically translate into specific literacy regarding child neurodevelopmental conditions.

In contrast, **a highly significant statistical association emerged between parental knowledge levels and the cumulative duration of their child's therapy** ($\chi 2=22.812, p<0.001$). Parents whose children had been enrolled in therapy for over a year were predominantly represented in the "Adequate Knowledge" category (n=10), while those with less than 6 months of exposure fell largely into the "Inadequate Knowledge" group (n=6).

This confirms that continuous interaction with rehabilitation services functions effectively as an informal educational pipeline, steadily building parental health literacy over time.

DISCUSSION

The primary intent of this descriptive cross-sectional study was to evaluate the baseline level of functional knowledge regarding Autism Spectrum Disorder (ASD) among parents navigating the Gopal Narayan Singh University (GNSU) Rehabilitation Centre in Rohtas, Bihar, and to associate those scores with selected socio-demographic and clinical attributes.

Evaluation of Demographic Frameworks

In this study, a striking gender distribution was observed among caregivers, with 78% of the respondents being mothers. This structural concentration aligns with the work of Sengar et al. (2024), who observed that maternal figures consistently bear the primary logistical burden of managing therapeutic interventions, traveling to rehabilitation hubs, and executing home-bound behavioral modifications for neurodevelopmentally delayed children in South Asian households.

Furthermore, a significant gender discrepancy appeared among the affected children: 92% of the diagnosed children were male, creating an approximate 11:1 male-to-female ratio within this cohort. While international epidemiological estimates by the World Health Organization (WHO) report a global cross-sectional prevalence ratio closer to 4:1, the stark variance seen in this study matches recent Indian clinical datasets. For instance, Apoorva et al. (2022) noted that in semi-urban and rural Indian regions, male children are much more frequently brought to tertiary diagnostic and rehabilitative setups due to deeply rooted cultural expectations surrounding male offspring, which can lead to under-reporting or delayed presentation of female children with neurodevelopmental differences.

Prevalence of Knowledge Gradients

The overall findings of this investigation revealed that 48% of parents possessed a moderately adequate knowledge level, 34% had an adequate knowledge level, and 18% maintained inadequate structural comprehension regarding ASD. The sample mean score was 14.02 ± 4.84 out of a maximum of 25 points.

These outcomes show an improvement in baseline awareness compared to older community-based epidemiological surveys in India. Kavitha et al. (2025) surveyed parents in the general population and found that less than 45% could identify autism as a distinct neurodevelopmental condition, with a majority attributing symptoms to stubbornness or simple speech delays. The relatively high level of awareness in the current study is likely because the sample was drawn from an active clinical population already plugged into a tertiary rehabilitation ecosystem.

When broken down by specific domains, Domain I (General Concepts & Nature of ASD) yielded the highest proficiency

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at 63.67%. This indicates that general public health messaging has successfully helped families reject old cultural myths that blamed supernatural causes or bad parenting for autistic behaviors.

However, Domain III (Etiological Correlates & Diagnostic Timelines) revealed an informational gap, scoring at just 42.80%. Over two-thirds (68%) of parents were unable to identify genetic or neurological roots, and many remained vulnerable to misinformation, such as the widely debunked link between routine childhood vaccines and autism. This matches the findings of global reviews by Cheng et al. (2022), which show that even in areas where families recognize the symptoms of autism, understanding its biological and neurological origins remains low.

Inferential Associations and Clinical Realities

Chi-square testing showed no statistically significant correlation between a parent's general educational level and their specific autism literacy ($\chi^2 = 1.834$, $p = 0.400$). This is a vital public health takeaway: having a college degree does not automatically mean a person understands specialized childhood developmental conditions. Instead, the cumulative duration of active therapy showed a highly significant statistical association with parent knowledge scores ($\chi^2 = 22.812$, $p < 0.001$). Parents whose children had been in therapy for over a year consistently scored in the "Adequate Knowledge" range. This demonstrates that the time spent interacting with speech pathologists, occupational therapists, and pediatric nurses serves as a highly effective, informal educational pipeline. Over months of clinic visits, parents learn to spot developmental milestones, correct misconceptions, and master evidence-based care techniques.

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

SUMMARY: A descriptive cross-sectional study was conducted at the GNSU Rehabilitation Centre in Jamuhar, Rohtas, Bihar, to assess parental knowledge levels regarding Autism Spectrum Disorder. Data was collected from 50 purposively sampled parents using a validated 25-item structured questionnaire. The demographic data showed that the majority of respondents were mothers (78%), aged 31–40 (44%), and residents of urban or semi-urban areas (64%). Among the children, 60% were in the 4–6 years age bracket, and 92% were male. The primary analysis showed that 48% of parents possessed moderately adequate knowledge, 34% had adequate knowledge, and 18% had inadequate knowledge. Inferential statistics confirmed that while general demographic factors had no significant impact on awareness, the total duration of therapeutic exposure directly drove higher parental knowledge scores

CONCLUSION: This study demonstrates that while basic awareness of autism is growing among families attending rehabilitation services, critical informational gaps still persist regarding its biological causes and early diagnostic timelines. Because parental understanding improves primarily through hands-on interaction with specialized clinical services rather than standard formal education, rehabilitation centers play an essential role as educational environments for the entire family.

NURSING IMPLICATIONS

1. **Nursing Practice**

Early Screening: Community health and pediatric nursing networks must incorporate standardized, rapid developmental screening tools (such as the M-CHAT) into routine primary care visits, immunization clinics, and well-baby checkups. This ensures early developmental deviations are caught well before a child reaches school age.

Targeted Orientation: Nursing professionals working in pediatric outpatient departments should design a structured

orientation program for families who are new to a developmental diagnosis. Proactively addressing common myths and setting clear expectations during initial visits can significantly reduce parental anxiety and improve long-term compliance with therapy.

2. **Nursing Education**

Curriculum Enrichment: Nursing education programs should expand their undergraduate and postgraduate training modules on pediatric neurodevelopmental conditions. Training should move beyond simple theoretical definitions to focus heavily on practical counseling techniques, family-centered communication, and evidence-based behavioral coaching strategies.

3. **Nursing Administration**

Resource Development: Nursing administrators should secure budget support and lead the creation of culturally adapted health literacy materials in local regional languages (e.g., Hindi and Bhojpuri). Providing community health workers, such as AWW, ANM, and ASHA networks, with clear, illustrated pamphlets will make rural outreach much more effective.

Support Frameworks: Institutional policies should support the establishment of formal, nurse-led parent support groups within rehabilitation centers. These groups create spaces where experienced parents can mentor families who are new to the diagnosis, creating a community-driven layer of care.

Recommendations for Future Research

Large-Scale Comparative Studies: Run multi-centric studies with larger sample sizes to directly compare baseline autism literacy between entirely rural populations and urban communities across various districts in Bihar.

Longitudinal Intervention Tracking: Conduct longitudinal research evaluating whether structured, nurse-led educational programs directly reduce long-term caregiver burnout scores and improve overall developmental outcomes for the child.

Paternal Involvement Analysis: Design qualitative studies exploring the specific barriers to active participation among fathers in the regional care ecosystem to help build more inclusive, family-wide intervention strategies.

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