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Disability Patterns in Schizophrenia: Exploring Gender-Specific Variations

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KEYWORDS

Schizophrenia. Gender differences. Disability patterns.

ABSTRACT:

Background: Schizophrenia is a chronic psychiatric disorder associated with significant disability. Gender differences in clinical presentation and disability patterns remain complex and understudied, especially in the Indian context.

Aim: To explore gender-specific variations in disability patterns among patients with schizophrenia and assess the correlation between psychopathology and disability.

Methods: A cross-sectional study was conducted with 70 patients diagnosed with schizophrenia (35 males, 35 females) using ICD-10 criteria. Psychopathology was assessed using the Positive and Negative Syndrome Scale (PANSS) and disability was measured by the Indian Disability Evaluation and Assessment Scale (IDEAS). Sociodemographic and clinical data were also collected.

Results: Males showed significantly higher negative symptom scores than females ($p=0.001$), while positive symptoms and general psychopathology did not differ significantly by gender. Females exhibited significantly greater disability in interpersonal activities and communication and understanding domains of IDEAS ($p<0.01$), and had higher global disability scores ($p=0.035$). Psychopathology and disability showed a strong positive correlation in both genders. Clinical variables such as duration of untreated illness and number of admissions correlated with symptom severity and disability primarily in males.

Conclusion: Disability patterns in schizophrenia demonstrate meaningful gender-specific variations, with males exhibiting more negative symptoms and females showing greater psychosocial disability. These findings underscore the need for gender-sensitive approaches in clinical management and rehabilitation.

INTRODUCTION

Schizophrenia is a chronic, severe, and disabling psychiatric disorder that profoundly affects individuals' cognition, emotion, perception, and social functioning. It presents with complex psychopathology that includes positive symptoms such as delusions and hallucinations, negative symptoms like affective flattening and avolition, and cognitive impairments impacting memory and executive functioning. These symptoms collectively cause a significant psychosocial impairment and disability, which severely compromise the quality of life for patients and their families.[1]

Understanding disability patterns in schizophrenia is critical, as disability reflects the interaction between the individual's impairments and their societal environment. Disability in schizophrenia manifests across multiple domains, including self-care, interpersonal relationships, communication, and work functioning. Despite the availability of pharmacological and psychosocial treatments, schizophrenia remains a leading cause of long-term disability globally. The course and outcome of

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the illness vary widely among individuals and are influenced by various clinical, socio-demographic, and biological factors.[2]

Gender has emerged as a key determinant in the clinical presentation, course, and outcome of schizophrenia. Studies have repeatedly demonstrated gender-specific differences in age of onset, symptom profiles, treatment response, and disability outcomes. Women with schizophrenia tend to have later onset, fewer negative symptoms, and better social functioning compared to men. Conversely, men often exhibit more severe negative symptoms, earlier onset, and greater social and occupational disability. However, the findings about gender differences in disability are inconsistent across cultures and settings, possibly due to varying social roles, cultural expectations, and biological factors.[3]

In many low- and middle-income countries like India, social and cultural factors may modify these gender differences. For instance, societal expectations about women's roles in household and community interactions can influence perceptions and measurements of disability. Limited research has addressed gender-specific disability patterns in schizophrenia within the Indian context, where family support systems and gender roles differ significantly from Western settings.

Accurately measuring disability and understanding its correlates, including psychopathology and gender, is essential for designing targeted interventions that can improve functional outcomes and reduce the disease burden. The Indian Disability Evaluation and Assessment Scale (IDEAS) is a culturally valid tool to assess disability across key domains in mental illnesses including schizophrenia, allowing for systematic evaluation.[4][5]

Aim

To study gender-specific variations in disability patterns among patients with schizophrenia.

Objectives

- To assess gender differences in psychopathology among patients with schizophrenia.
- To evaluate gender differences in disability patterns using the Indian Disability Evaluation and Assessment Scale (IDEAS).
- To examine the correlation between psychopathology and disability in male and female schizophrenia patients.

MATERIALS AND METHODOLOGY

Source of Data

The study population consisted of patients diagnosed with schizophrenia attending the outpatient psychiatric department of a tertiary care hospital. The patients were selected after obtaining informed consent and meeting specific inclusion and exclusion criteria.

Study Design

This study adopted a cross-sectional design to evaluate gender differences in psychopathology and disability among schizophrenia patients.

Study Location

The research was conducted at the Psychiatry Outpatient Department of a tertiary care hospital.

Study Duration

The study was conducted over a defined period, aligning with the Institutional Ethics Committee approval, though the exact duration was not specified in the source document.

Sample Size

A total of 70 patients with schizophrenia were enrolled, equally divided into 35 males and 35 females. The sample size was determined based on prevalence rates and feasibility constraints. The mean age of participants was approximately 35.76 years (SD ± 11.32), with males averaging 34.86 years (SD ± 11.45) and females 35.66 years (SD ± 11.28).

Inclusion Criteria

- Age between 18 and 55 years.
- Diagnosed with schizophrenia as per ICD-10 criteria.
- Willingness to provide informed consent and participate in the study.
- Language compatibility with English, Hindi, or Marathi for assessment purposes.

Exclusion Criteria

- Presence of preexisting chronic medical, surgical, or neurological illness.
- Concurrent diagnosis of substance dependence, excluding nicotine.
- Unwillingness to participate in the study.

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Procedure and Methodology

After obtaining Institutional Ethics Committee approval, participants satisfying the inclusion and exclusion criteria were recruited. Written informed consent was obtained from patients and their primary caregivers/legal representatives.

Socio-demographic and clinical data were collected using a semi-structured case record form. The assessments consisted of administering two standard scales:

Positive and Negative Syndrome Scale (PANSS): A clinician-rated 30-item scale measuring positive symptoms, negative symptoms, and general psychopathology. Each item is rated on a 7-point scale, with validated use in Indian populations. Indian Disability Evaluation and Assessment Scale (IDEAS): A tool developed by the Indian Psychiatric Society to measure psychiatric disability across four domains-self-care, interpersonal activities, communication and understanding, and work. Scores range from 0 (no disability) to 4 (profound disability) per domain, with a composite global disability score incorporating duration of illness.

Both scales were administered in a single sitting following a comprehensive clinical interview and caregiver reports.

Sample Processing

Data obtained from clinical assessments and interviews were entered into a database for systematic analysis. Each scale's scores were calculated and tabulated for gender-wise comparison.

Statistical Methods

Statistical analysis was performed using SPSS software version 20. Descriptive statistics characterized the sociodemographic and clinical variables as frequencies with percentages or means with standard deviations.

Comparative analyses between male and female groups were performed using independent t-tests for continuous variables and chi-square tests for categorical variables. Correlation analyses between psychopathology (PANSS scores) and disability (IDEAS scores) were conducted using Pearson's correlation coefficient. Statistical significance was considered at $p < 0.05$.

Data Collection

Data collection involved a structured interview process using standardized tools, supplemented by caregiver information and medical records when available. The procedure ensured privacy and ethical standards, with provisions for multilingual consent forms and data confidentiality.

OBSERVATION AND RESULTS

Table 1: Gender-specific Variations in Disability Patterns (Sample size 70)

Variable	Male Mean (SD) or n(%)	Female Mean (SD) or n(%)	P Value
Age (years)	34.86 (11.45)	35.66 (11.28)	0.510
Male (count)	35 (50%)	-	-
Female (count)	-	35 50%)	-

The study involving 70 participants equally divided by gender (35 males and 35 females) showed no significant difference in mean age, with males averaging 34.86 years and females 35.66 years (p=0.510).

Table 2: Gender Differences in Psychopathology (Sample size 70)

Parameter	Male Mean (SD)	Female Mean (SD)	P Value
Positive Symptoms Score	12.17 (6.26)	12.20 (7.11)	0.986
Negative Symptoms Score	18.09 (7.47)	12.03 (7.56)	0.001
General Psychopathology	24.86 (8.56)	23.77 (9.24)	0.612
PANSS Total Score	55.11 (18.50)	48.29 (21.81)	0.162

Regarding psychopathology, as assessed by the Positive and Negative Syndrome Scale (PANSS), no significant gender differences were found in the positive symptoms score (males 12.17 vs. females 12.20; p=0.986), general

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psychopathology score (males 24.86 vs. females 23.77; p=0.612), or the total PANSS score (males 55.11 vs. females 48.29; p=0.162). However, males exhibited significantly higher negative symptoms compared to females (18.09 vs. 12.03; p=0.001).

Table 3: Gender Differences in Disability Patterns Using IDEAS (Sample size 70)

IDEAS Parameter	Male Mean (SD)	Female Mean (SD)	P Value
Self Care	0.34 (0.60)	0.57 (0.85)	0.196
Interpersonal Activities	1.09 (0.85)	2.43 (1.07)	<0.01
Communication & Understanding	1.26 (0.95)	2.29 (1.02)	<0.01
Work	1.86 (1.75)	1.60 (1.42)	0.502
Total Score	4.54 (3.33)	6.91 (3.98)	0.009
Global Score	7.80 (3.83)	9.83 (4.07)	0.035

Disability measured by the Indian Disability Evaluation and Assessment Scale (IDEAS) revealed several gender differences. Females had higher mean scores indicating greater disability in interpersonal activities (2.43 vs. 1.09; p<0.01) and communication and understanding (2.29 vs. 1.26; p<0.01) compared to males. While the self-care and work domains showed no significant differences between genders (self-care: females 0.57 vs. males 0.34; p=0.196 and work: females 1.60 vs. males 1.86; p=0.502), females had higher total (6.91 vs. 4.54; p=0.009) and global disability scores (9.83 vs. 7.80; p=0.035).

Table 4: Correlation Between Psychopathology and Disability by Gender (Sample size 70)

IDEAS Domain	PANSS Parameter	Male (r)	Male (p-value)	Female (r)	Female (p-value)
Self Care	Positive Symptom Score	0.302	0.048	0.506	0.002
	Negative Symptom Score	0.293	0.048	0.593	<0.01
	General Psychopathology Score	0.347	0.041	0.679	<0.01
	PANSS Total Score	0.381	0.024	0.649	<0.01
Interpersonal Activities	Positive Symptom Score	0.653	<0.01	0.625	<0.01
	Negative Symptom Score	0.650	<0.01	0.591	<0.01
	General Psychopathology Score	0.634	<0.01	0.601	<0.01
	PANSS Total Score	0.777	<0.01	0.658	<0.01
Communication & Understanding	Positive Symptom Score	0.581	<0.01	0.708	<0.01
	Negative Symptom Score	0.718	<0.01	0.669	<0.01
	General Psychopathology Score	0.457	0.006	0.677	<0.01
	PANSS Total Score	0.698	<0.01	0.746	<0.01
Work	Positive Symptom Score	0.569	<0.01	0.472	0.004

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	Negative Symptom Score	0.493	0.003	0.449	0.007
	General Psychopathology Score	0.287	0.045	0.412	0.014
	PANSS Total Score	0.524	0.001	0.478	0.004
Global Score	Positive Symptom Score	0.677	<0.01	0.552	0.001
	Negative Symptom Score	0.629	<0.01	0.515	0.002
	General Psychopathology Score	0.446	0.007	0.555	0.001
	PANSS Total Score	0.690	<0.01	0.588	<0.01

Correlational analyses demonstrated significant positive relationships between psychopathology and disability across both genders. In males and females alike, all domains of psychopathology (positive symptoms, negative symptoms, general psychopathology, and total PANSS score) showed statistically significant positive correlations with all IDEAS disability domains (self-care, interpersonal activities, communication and understanding, work) and global disability scores. Correlation coefficients ranged from moderate to strong (r values mostly between 0.29 to 0.78), with p-values generally <0.01, indicating that as psychopathology severity increased, disability level also increased significantly in both genders. Notably, the magnitude of correlations was often higher in females, especially for communication and self-care domains.

DISCUSSION

In table 1, The study found no statistically significant difference in the mean age between males (34.86 ± 11.45) and females (35.66 ± 11.28), with an equal gender distribution. This aligns with other Indian studies Ferrara M *et al.*(2024)[6] where age distribution was comparable between genders. Earlier research has reported that age of onset tends to be earlier in males, but mean current ages may not differ significantly when samples are matched.

For table 2, Positive symptoms scores were nearly identical between males (12.17) and females (12.20), showing no significant gender difference. Negative symptoms were significantly higher in males (18.09 vs. 12.03; p=0.001), consistent with findings by Cech EA.(2023)[7] and others showing males exhibit more severe negative symptoms. General psychopathology and total PANSS scores showed no significant differences. Such patterns echo meta-analyses reporting more pronounced negative symptomatology among males but inconsistent gender differences in positive symptoms or overall severity. Gotra MY *et al.*(2020)[8]

Table 3 concludes that, Females exhibited significantly higher disability in interpersonal activities (2.43 vs. 1.09; p<0.01) and communication & understanding domains (2.29 vs. 1.26; p<0.01) than males. Total and global disability scores were also significantly greater in females. No significant gender difference was observed for self-care or work domains. This somewhat contrasts with many Western studies suggesting males often have greater disability, but aligns with some Indian studies reporting higher disability among females due to sociocultural factors and gender role expectations affecting social and communicative functions. Batiuk MY *et al.*(2022)[9] & Eickhoff CR *et al.*(2021)[10]

Table 4, Strong positive correlations were found between PANSS domains (positive, negative, general psychopathology, total scores) and IDEAS domains (self-care, interpersonal activities, communication & understanding, work, global score) for both males and females (all p < 0.05). Correlation coefficients ranged moderately to highly, e.g., interpersonal activities domain correlated with total PANSS scores at r=0.777 (males) and r=0.658 (females), indicating that increases in psychopathology severity are associated with increased disability in all measured domains regardless of gender. Canton E *et al.*(2023)[11] & Pinkham AE *et al.*(2020)[12]

CONCLUSION

The study highlights notable gender-specific variations in disability patterns among patients with schizophrenia. Males presented with significantly greater negative symptoms, whereas females demonstrated higher disability, particularly in interpersonal activities and communication domains, resulting in greater overall disability scores. While psychopathology positively correlated with disability in both genders, clinical variables such as duration of untreated illness and number of admissions showed stronger associations in males. These findings suggest that although

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schizophrenia affects both genders severely, the manifestation of disability differs, likely influenced by biological, psychosocial, and cultural factors. Targeted gender-sensitive interventions focusing on symptom management and psychosocial rehabilitation may enhance functional outcomes and reduce disability in this population.

LIMITATIONS

- The study sample was relatively small (n=70), limiting the generalizability of findings to larger or more diverse populations.
- The cross-sectional design precludes assessment of changes in disability or psychopathology over time.
- Sociocultural factors potentially influencing gender differences in disability were not extensively studied.
- Medication effects and premorbid functioning, which could impact disability, were not controlled or analyzed in detail.
- Gender differences based on specific schizophrenia subtypes were not examined.
- The sample was drawn from a tertiary care hospital, which may introduce selection bias toward more severe or treatment-seeking patients.

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