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Original Research Article

EFFECT OF SOCIAL MEDIA USE ON NEGATIVE SYMPTOMS IN INDIVIDUALS WITH SCHIZOPHRENIA

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ABSTRACT

Background: Schizophrenia is a chronic psychiatric disorder characterized by positive and negative symptoms, with negative symptoms contributing substantially to long-term functional impairment and poor quality of life. The increasing use of social media has created new opportunities for social interaction and digital engagement among individuals with schizophrenia. However, the relationship between social media use and negative symptom severity remains inadequately explored. This study aimed to evaluate the association between social media use and negative symptoms in individuals with schizophrenia.

Materials and Methods: A hospital-based cross-sectional study was conducted among 110 individuals diagnosed with schizophrenia attending the Psychiatry Outpatient Department of P.E.S. Institute of Medical Sciences and Research, Kuppam, Andhra Pradesh, India. Participants meeting the ICD-10 diagnostic criteria were assessed using a semi-structured proforma, the Social Media Use Integration Scale (SMUIS), and the Scale for the Assessment of Negative Symptoms (SANS). Sociodemographic and clinical characteristics were recorded. Data were analyzed using descriptive statistics, independent samples t-test, one-way ANOVA, Chi-square test, and Pearson's correlation coefficient. Statistical significance was considered at $p < 0.05$.

Results: Participants with paranoid schizophrenia demonstrated significantly higher SMUIS scores than those with catatonic and undifferentiated schizophrenia ($p = 0.0002$). Greater daily social media use was significantly associated with higher social media integration ($r = 0.94$, $p < 0.001$) and lower negative symptom severity ($r = -0.78$, $p < 0.001$). Longer duration of social media use was also associated with significantly lower SANS scores. Diagnosis, duration of illness, and family history showed significant associations with negative symptom severity.

Conclusion: Greater social media engagement was associated with lower negative symptom severity and higher social media integration among individuals with schizophrenia. These findings suggest that digital engagement may reflect better psychosocial functioning and could represent a promising avenue for future psychosocial interventions. Longitudinal and interventional studies are warranted to establish causality and determine the therapeutic role of structured social media-based interventions.

Keywords: Schizophrenia; social media; Negative Symptoms; Social Media Use Integration Scale; Scale for the Assessment of Negative Symptoms; Digital Psychiatry; Psychosocial Functioning.

INTRODUCTION

Schizophrenia is a chronic and debilitating psychiatric disorder characterized by positive symptoms, including hallucinations and delusions, as well as negative symptoms such as affective flattening, alogia, avolition, anhedonia, and social withdrawal. Among these symptom domains,

negative symptoms are particularly challenging because they persist despite treatment, substantially impair psychosocial functioning, and contribute to poor occupational performance, reduced quality of life, and limited functional recovery.[1]. Consequently, identifying modifiable factors associated with negative symptom severity has become an important focus of contemporary schizophrenia research.[2].

The rapid expansion of digital technology has transformed the way people communicate and interact. Social media platforms have become integral to daily life and are increasingly used by individuals with severe mental illnesses, including schizophrenia.[3].Contrary to the traditional perception that people with schizophrenia remain socially isolated, several studies have demonstrated that many individuals actively engage with platforms such as WhatsApp, Facebook, Instagram, and YouTube.[4] Digital platforms may facilitate interpersonal communication, enhance social connectedness, reduce perceived stigma, and improve access to peer support and mental health information. Moreover, advances in digital psychiatry have highlighted the potential of online behaviour and social media activity as clinically relevant indicators for symptom monitoring, relapse prediction, and digital phenotyping.[5]

Although growing evidence suggests that digital engagement may be associated with improved psychosocial functioning, the relationship between social media use and negative symptoms remains inadequately understood.[6]. Previous studies have primarily focused on patterns of technology use, digital literacy, or online behaviour, whereas relatively few have evaluated how the extent of social media engagement relates to the severity of negative symptoms in schizophrenia.[7,8] Understanding this association may provide valuable insights into the role of digital communication in psychosocial functioning and may inform future technology-assisted interventions.

Therefore, the present study was undertaken to evaluate the association between social media use and negative symptom severity among individuals with schizophrenia attending a tertiary care teaching hospital. The study also examined the relationship between social media integration and selected sociodemographic and clinical characteristics to better understand factors influencing digital engagement in this population.

MATERIALS AND METHODS

Study Design and Setting: A hospital-based cross-sectional observational study was conducted over 18 months in the Department of Psychiatry at P.E.S. Institute of Medical Sciences and Research (PESIMSR), Kuppam, Andhra Pradesh, India. Participants were recruited consecutively from the Psychiatry Outpatient Department (OPD). The study protocol was approved by the Institutional Ethics Committee, and written informed consent was obtained from all participants prior to enrolment. Confidentiality and anonymity were maintained throughout the study.

Study Population: The study included 110 adult patients diagnosed with schizophrenia according to the International Classification of Diseases, Tenth Revision (ICD-10). The sample size was calculated based on the methodology described by Elleuch et al. and represented the minimum number of participants required to achieve adequate statistical power.

Inclusion Criteria

Participants were eligible if they:

- were aged 18 years or older;
- had a diagnosis of schizophrenia according to ICD-10 criteria; and
- were regular users of at least one social media platform (WhatsApp, Facebook, Instagram, or YouTube), defined as daily or near-daily use during the preceding three months.

Exclusion Criteria

Participants were excluded if they:

- were experiencing an acute psychotic episode;
- had comorbid intellectual disability;
- had severe cognitive impairment; or
- had major neurological disorders that could interfere with study assessments.

Data Collection: Data were collected using a structured case record form comprising sociodemographic and clinical characteristics, including age, sex, educational status, occupation, marital status, family type, place of residence, schizophrenia subtype, family history of schizophrenia, duration of illness, duration of daily social media use, and the predominant social media platform used.

Negative symptoms were assessed using the Scale for the Assessment of Negative Symptoms (SANS),[9] a validated instrument evaluating affective flattening, alogia, avolition/apathy, anhedonia/asociality, and attentional impairment. Higher SANS scores indicate greater negative symptom severity.

Social media engagement was measured using the Social Media Use Integration Scale (SMUIS),[10] a validated 10-item questionnaire assessing emotional attachment to social media and integration of social media into daily routines. Higher scores indicate greater social media integration.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using IBM SPSS Statistics software. Continuous variables were expressed as mean ± standard deviation, whereas categorical variables were summarized as frequencies and percentages. Independent-samples t-tests and one-way analysis of variance (ANOVA) were used to compare mean scores between groups. Pearson's correlation coefficient was employed to

evaluate associations between daily duration of social media use, SMUIS scores, and SANS scores. A two-tailed p value <0.05 was considered statistically significant.

RESULTS

A total of 110 individuals with schizophrenia participated in the study. Social media use integration and negative symptom severity were evaluated using the Social Media Use Integration Scale (SMUIS) and the Scale for the Assessment of Negative Symptoms (SANS), respectively.

The association between sociodemographic and clinical characteristics and SMUIS scores is presented in [Table 1]. No statistically significant differences in mean SMUIS scores were observed according to gender, educational status, occupation, marital status, family type, place of residence, family history of schizophrenia, or predominant social media platform (all p> 0.05).

Significant differences in SMUIS scores were observed across schizophrenia subtypes (F = 9.42, p = 0.0002), with participants diagnosed with paranoid schizophrenia demonstrating significantly higher social media integration than those with catatonic and undifferentiated schizophrenia. Duration of illness was also significantly associated with SMUIS scores (F = 2.33, p = 0.047), with participants having an illness duration of 3–4 years exhibiting the highest mean integration scores. Furthermore, daily duration of social media use demonstrated a highly significant association with SMUIS scores (p< 0.001), showing a progressive increase in social media integration with increasing daily usage.

Table 1: Association of Sociodemographic and Clinical Variables with Mean Social Media Use Integration Scores among Patients with Schizophrenia (N = 110)

Variable	Categories	Mean ± SD	Test Statistic	p value
Gender	Female	28.98 ± 12.71	t = -0.73	0.469
	Male	30.75 ± 12.53		
Education	Graduate	32.14 ± 11.35	F = 0.70	0.596
	High School	26.45 ± 15.00		
	Illiterate	29.83 ± 11.13		
	Primary Education	32.03 ± 11.79		
	Secondary Education	29.36 ± 13.62		
Occupation	Semi-skilled	29.60 ± 13.36	F = 0.92	0.435
	Skilled	30.67 ± 10.60		
	Unemployed	30.88 ± 12.10		
	Unskilled	23.90 ± 15.12		
Marital Status	Married	29.53 ± 12.52	F = 0.23	0.793
	S/D/W	31.52 ± 12.97		
	Single	29.80 ± 13.02		
Type of Family	Extended	31.97 ± 12.35	F = 0.81	0.446
	Joint	30.29 ± 12.65		
	Nuclear	28.28 ± 12.75		
Residence	Rural	30.65 ± 12.37	F = 0.70	0.404
	Semiurban	28.44 ± 13.12		
Diagnosis	Catatonic	15.86 ± 2.73	F = 9.42	0.0002*
	Paranoid	31.70 ± 12.26		
	Undifferentiated	16.60 ± 2.88		
Family History	Absent	29.95 ± 12.55	t = -0.18	0.855
	Present	30.86 ± 13.96		
Duration of Illness	<1 year	28.80 ± 12.81	F = 2.33	0.047*
	1–2 years	23.96 ± 11.51		
	2–3 years	32.19 ± 12.81		
	3–4 years	35.71 ± 11.31		
	4–5 years	31.00 ± 13.11		
	>5 years	32.50 ± 11.59		
Duration of Social Media Use per Day	<1 hr	13.68 ± 2.48	489.63	<0.001*
	1–2 hrs	20.56 ± 1.62		
	2–3 hrs	28.70 ± 3.56		
	3–4 hrs	39.70 ± 2.55		
	4–5 hrs	46.00 ± 1.34		
	>5 hrs	45.85 ± 3.02		
Predominant Social Media Platform	Facebook	28.93 ± 11.90	F = 0.42	0.738
	Instagram	32.07 ± 12.63		
	WhatsApp	27.60 ± 15.34		
	YouTube	30.00 ± 13.38		

Table 2: Association of Sociodemographic and Clinical Variables with Mean Negative Symptom Scores among Patients with Schizophrenia (N = 110)

Variable	Categories	Mean ± SD	Test Statistic	p value
Gender	Female	56.35 ± 15.71	t = 0.02	0.987
	Male	56.30 ± 16.78		
Education	Graduate	50.29 ± 12.19	F = 0.96	0.431
	High School	59.25 ± 18.76		
	Illiterate	55.21 ± 14.03		
	Primary Education	54.11 ± 15.95		
	Secondary Education	60.50 ± 17.68		
Occupation	Semi-skilled	54.80 ± 15.98	F = 0.54	0.659
	Skilled	52.33 ± 10.02		
	Unemployed	56.12 ± 16.21		
	Unskilled	62.10 ± 19.44		
Marital Status	Married	55.41 ± 15.53	F = 0.56	0.572
	S/D/W	59.36 ± 18.65		
	Single	55.50 ± 16.15		
Type of Family	Extended	53.64 ± 15.49	F = 0.64	0.531
	Joint	57.50 ± 16.51		
	Nuclear	57.44 ± 16.79		
Residence	Rural	55.56 ± 15.76	F = 0.57	0.450
	Semiurban	58.16 ± 17.58		
Diagnosis	Catatonic	76.57 ± 9.78	F = 9.43	0.0002*
	Paranoid	54.15 ± 15.66		
	Undifferentiated	70.40 ± 6.47		
Family History	Absent	55.41 ± 15.80	t = -2.29	0.024*
	Present	69.71 ± 18.54		
Duration of Illness	<1 year	55.76 ± 16.34	F = 4.66	0.0007*
	1–2 years	61.77 ± 14.42		
	2–3 years	51.68 ± 15.51		
	3–4 years	47.94 ± 13.24		
	4–5 years	80.00 ± 12.77		
	>5 years	67.25 ± 15.21		
Duration of Social Media Use per Day	<1 hr	77.08 ± 5.63	45.71	<0.001*
	1–2 hrs	62.61 ± 3.13		
	2–3 hrs	55.55 ± 6.89		
	3–4 hrs	45.30 ± 5.64		
	4–5 hrs	42.36 ± 18.12		
	>5 hrs	40.15 ± 16.35		
Predominant Social Media Platform	Facebook	58.30 ± 15.70	F = 0.61	0.609
	Instagram	53.03 ± 16.37		
	WhatsApp	57.40 ± 19.03		
	YouTube	56.41 ± 16.86		

The relationship between participant characteristics and SANS scores is summarized in [Table 2]. Mean negative symptom scores did not differ significantly according to gender, educational status, occupation, marital status, family type, place of residence, or predominant social media platform (all p> 0.05).

Diagnosis showed a significant association with negative symptom severity (F = 9.43, p = 0.0002). Participants with catatonic schizophrenia had the highest SANS scores, followed by those with undifferentiated schizophrenia, whereas individuals with paranoid schizophrenia had comparatively lower negative symptom scores. Participants with a positive family history of schizophrenia demonstrated significantly higher SANS scores than those without a family history (p = 0.024). Duration of illness was also significantly associated with negative symptom severity (F = 4.66, p = 0.0007).

Daily duration of social media use showed a strong inverse association with negative symptom severity (p< 0.001). Participants who used social media for less than one hour per day had the highest mean SANS scores, whereas those reporting more than five hours of daily use demonstrated the lowest scores, indicating lower negative symptom severity with increasing social media engagement.

Table 3: SMUIS and SANS scores in the Study population

Variable	Mean	Standard Deviation
SMUIS (Social Media Use Integration Scale)	30.01	12.58
SANS (Negative Symptoms Scale)	56.32	16.27

The mean SMUIS score among study participants was 30.01 ± 12.58, while the mean SANS score was 56.32 ± 16.27, indicating moderate levels of social media integration and negative symptom severity within the study population [Table 3].

Table 4: Correlation of Duration of Social Media Use per Day with Major Variables

Variable		r value	p-value
Duration of Social Media Use	SMUIS	0.94	<0.001
	SANS	-0.78	<0.001
*P<0.05 is statistically significant; **P<0.01 is statistically highly significant			

Correlation analysis demonstrated a very strong positive correlation between the duration of daily social media use and SMUIS scores ($r = 0.94$, $p< 0.001$), indicating that greater time spent on social media was associated with higher levels of social media integration. Conversely, a strong negative correlation was observed between daily social media use and SANS scores ($r = –0.78$, $p< 0.001$), suggesting that increased social media use was associated with lower severity of negative symptoms [Table 4].

DISCUSSION

The present study demonstrated that longer daily social media use was associated with greater social media integration and lower negative symptom severity among individuals with schizophrenia. Participants who reported spending more time on social media had significantly higher Social Media Use Integration Scale (SMUIS) scores and lower scores on the Scale for the Assessment of Negative Symptoms (SANS), suggesting that greater social media engagement was associated with lower negative symptom severity and greater integration of social media into daily life. Furthermore, participants with paranoid schizophrenia showed significantly higher SMUIS scores than those with catatonic and undifferentiated schizophrenia, indicating that social media integration may vary across schizophrenia subtypes according to differences in symptom profiles and functional capacity.

Our findings are consistent with previous studies demonstrating that digital technology use is associated with better psychosocial functioning and fewer negative symptoms in schizophrenia. Hoşgelen et al. (2025) reported that patients using mobile applications and social media had significantly higher personal and social performance scores and lower negative symptom severity than non-users, despite no significant differences in positive symptoms. Similarly, Rekhi et al. (2019) found that social media users were generally younger, more educated, and had lower negative and depressive symptom severity, particularly within the motivation–pleasure domain. These findings closely parallel our results, as participants with greater daily social media use also demonstrated significantly lower negative symptom severity and higher social media integration. Together, these findings indicate an association between greater social media engagement and lower negative symptom severity. Whether increased social media use contributes to improved psychosocial functioning or whether individuals with fewer negative symptoms are more likely to engage with digital platforms remains uncertain and warrants investigation in longitudinal studies.

The relationship observed in our study is also supported by qualitative evidence describing the lived experience of negative symptoms. Butcher et al. (2020) reported that individuals with schizophrenia commonly experience persistent loss of motivation, diminished emotional expression, impaired concentration, and social withdrawal, often attributing these experiences to adverse life events and limited social support. These descriptions closely reflect the domains measured by the BNSS. In our study, participants with lower negative symptom severity demonstrated significantly greater integration of social media into their daily lives, suggesting that digital platforms may represent one means through which individuals with relatively preserved motivation maintain social contact and everyday engagement. Although causality cannot be established, our findings support the concept that social media engagement is closely linked with motivational and social aspects of schizophrenia.

Previous reviews have also shown that social media has become an important component of everyday social interaction for people with psychosis. Jakubowska et al. (2019) concluded that individuals with psychosis use online social networks at rates comparable to the general population during periods of clinical stability, with younger age and higher educational attainment predicting greater use and no convincing evidence that social media worsens psychotic symptoms. Likewise, Suárez-Llevat et al. (2024) reported that most research has focused on stigma, mental health literacy, and the identification of schizophrenia-related patterns across platforms such as Facebook, X, YouTube, TikTok, Instagram, and Weibo, while relatively few studies have examined associations between social media use and clinical symptom dimensions. Our study extends this literature by demonstrating that greater social media integration is associated with lower negative symptom severity. Unlike previous reviews that primarily described patterns of use, our findings directly relate digital engagement to negative symptoms, providing further evidence that social media behaviour may reflect broader psychosocial functioning in schizophrenia.

The manner in which social media is used may also influence its relationship with mental health outcomes. Paquin et al. (2024) found that episodes of social media use were followed by modest reductions in paranoia among individuals with schizophrenia spectrum and bipolar disorders,

whereas paranoia did not predict subsequent social media use. In contrast, Berry et al. (2018) observed that although overall social media use was associated with increased negative mood, specific patterns of engagement produced different effects. Posting about daily activities and passively viewing newsfeeds were associated with more positive affect and reduced paranoia, whereas emotionally expressive or venting posts were linked with lower self-esteem and greater paranoia. These findings complement our results. Although our study evaluated overall duration of social media use and social media integration rather than the quality or type of online interactions, the association between greater social media engagement and lower negative symptom severity suggests that both the quantity and nature of digital engagement are likely to influence psychological outcomes. Future studies should therefore examine qualitative patterns of social media use in addition to duration of use.

The broader literature on social functioning further supports the associations observed in our study. Sibitz et al. (2020) demonstrated that poorer social networks contributed to increased internalized stigma, reduced empowerment, greater depression, and poorer quality of life, although network size itself did not directly influence outcomes. Our findings are consistent with this framework, as participants with greater social media integration had lower negative symptom severity. Online social platforms may provide opportunities to maintain interpersonal relationships, reduce perceived isolation, and strengthen social connectedness, thereby buffering some of the adverse psychological consequences associated with social withdrawal and stigma in schizophrenia.

Recent advances have also highlighted the value of social media data in understanding schizophrenia. Bae et al. (2021) applied supervised machine learning techniques to Reddit posts and demonstrated that linguistic and thematic characteristics of user-generated content could accurately distinguish schizophrenia-related posts from control posts. Although our study did not analyse social media content, the significant association between greater social media integration and lower negative symptom severity supports the growing importance of digital behaviour as a clinically meaningful marker. Together, these findings suggest that social media may contribute not only to social engagement but also to future approaches involving digital phenotyping and early identification of clinically relevant changes in schizophrenia.

Despite increasing interest in digital technologies, evidence supporting structured social media-based interventions remains limited. Välimäki et al. (2016), in a systematic review and meta-analysis, identified only two randomized controlled trials evaluating social media within psychoeducation and online peer-support interventions. These studies demonstrated modest improvements in perceived stress and social support but inconsistent effects on psychological distress and overall clinical outcomes. Our findings are consistent with observational studies showing that greater social media engagement is associated with lower negative symptom severity and better psychosocial functioning. However, similar to previous authors, our cross-sectional study cannot determine whether increasing social media use itself leads to clinical improvement. Consequently, while our findings support an association between social media integration and better functioning, further randomized controlled trials are required to determine whether structured digital interventions can effectively reduce negative symptoms and improve recovery.

Limitations: The present study has several limitations that should be considered while interpreting the findings. First, the cross-sectional study design precludes the establishment of a causal relationship between social media use and negative symptom severity. Individuals with lower negative symptom severity may be more likely to engage with social media rather than social media use directly influencing symptom severity. Second, the study was conducted at a single rural tertiary care teaching hospital, which may limit the generalizability of the findings to urban settings and other populations. Third, social media use was assessed using self-reported measures, which are subject to recall bias and may not accurately capture the quality, purpose, or pattern of online engagement. Finally, potentially important confounding factors, including depressive symptoms, cognitive functioning, medication adherence, digital literacy, and socioeconomic status, were not evaluated and may have influenced the observed associations.

Despite these limitations, the present study contributes to the growing body of evidence exploring digital engagement in schizophrenia. Greater social media use and higher social media integration were associated with lower negative symptom severity, consistent with previous observational studies. Furthermore, this study adds evidence from a rural Indian population and demonstrates differences in social media integration across schizophrenia subtypes. As digital communication continues to become an integral component of everyday life, understanding its relationship with clinical outcomes may facilitate the development of innovative approaches for patient assessment, monitoring, and psychosocial support. Future longitudinal and interventional studies are required to clarify the direction of these associations and to determine whether structured digital interventions can improve clinical and functional outcomes in individuals with schizophrenia.

CONCLUSION

Greater social media use was associated with higher social media integration and lower negative symptom severity among individuals with schizophrenia. Although causality cannot be inferred from the present cross-sectional study, the findings suggest that digital engagement may represent an important marker of psychosocial functioning in this population. Further longitudinal and interventional studies are warranted to determine whether structured social media-based interventions can contribute to improved clinical and functional outcomes.

Recommendations:

- Longitudinal studies should be undertaken to establish the temporal relationship between social media use and negative symptom severity.
- Future research should evaluate the influence of the quality, purpose, and pattern of social media use rather than duration alone.
- Randomized controlled trials are needed to assess the effectiveness of structured social media-based psychosocial interventions in schizophrenia.
- Mental health professionals should consider digital engagement as a complementary aspect of psychosocial assessment while encouraging safe and appropriate use of social media among individuals with schizophrenia.

Ethics Statement: The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Ethical approval was obtained from the Institutional Ethics Committee of P.E.S. Institute of Medical Sciences and Research (PESIMSR), Kuppam, Andhra Pradesh, India, before commencement of the study. Written informed consent was obtained from all participants prior to enrolment, and confidentiality and anonymity of participant information were maintained throughout the study.

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