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EVALUATING PSYCHOSOCIAL SUPPORT AND TREATMENT ADHERENCE AMONG RURAL BREAST CANCER PATIENTS ATTENDING PUNJABI TERTIARY HOSPITALS

Original Research

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ABSTRACT

Background: Breast cancer treatment adherence is critical for improving survival outcomes, yet rural patients often face significant barriers. Psychosocial support has been shown to influence adherence in chronic diseases, but its role among rural breast cancer patients in Pakistan remains underexplored.

Objective: To evaluate the relationship between psychosocial support and treatment adherence among rural breast cancer patients receiving care at two tertiary hospitals in Punjab, Pakistan, and to identify key psychosocial factors influencing adherence.

Methods: This cross-sectional observational study was conducted over eight months at Nishtar Medical University Hospital, Multan, and Allied Hospital, Faisalabad. A total of 200 female breast cancer patients from rural areas were recruited using consecutive sampling. Psychosocial support was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS), and treatment adherence was measured via the Morisky Medication Adherence Scale (MMAS-8). Sociodemographic data were collected through structured interviews. Pearson correlation and multiple linear regression analyses were conducted using SPSS v26.

Results: The mean total MSPSS score was 5.1 (±1.0), with family support rated highest. High adherence (MMAS-8 score ≥6) was observed in 63% of participants. A significant positive correlation was found between total MSPSS and MMAS-8 scores ($r = 0.47$, $p < 0.001$). Family support demonstrated the strongest association with adherence ($r = 0.42$, $p < 0.001$), followed by support from significant others and friends. Higher education and closer proximity to hospitals also correlated with better adherence.

Conclusion: Psychosocial support, especially from family, plays a crucial role in promoting treatment adherence among rural breast cancer patients. Integrating psychosocial interventions into rural oncology care could enhance treatment continuity and outcomes.

Keywords: Breast Neoplasms, Medication Adherence, Oncology Nursing, Psychosocial Support Systems, Rural Health Services, Social Support, Treatment Compliance.

INTRODUCTION

Breast cancer remains one of the most prevalent malignancies affecting women worldwide, and its growing incidence in low- and middle-income countries, including India, poses a significant public health challenge. In India, breast cancer has overtaken cervical cancer as the most common cancer among women, with a steadily rising incidence rate, particularly in urban centers, but increasingly in rural regions as well (1). Despite advances in early detection and treatment protocols, rural populations often continue to experience delayed diagnoses, poor treatment outcomes, and lower survival rates. Among the multitude of factors influencing this disparity, psychosocial support has emerged as a critical determinant of how effectively patients engage with and adhere to prescribed treatments. Treatment adherence in breast cancer is essential for optimal clinical outcomes (2). However, it is often compromised by a complex interplay of psychological, social, cultural, and logistical barriers. For rural women, particularly in states like Punjab, these challenges are further compounded by low health literacy, limited access to tertiary care, financial burdens, and deeply entrenched cultural norms. Emotional distress, lack of familial or community support, stigma, and fear surrounding cancer are common psychosocial hurdles that often go unaddressed (3,4). Moreover, systemic factors such as long travel distances to hospitals, scarcity of oncology support services near villages, and insufficient communication between healthcare providers and patients amplify the psychological burden, often leading to treatment delays or discontinuation (5). Studies across different cultural contexts have consistently demonstrated that psychosocial support — encompassing emotional, informational, and instrumental assistance — plays a pivotal role in how patients navigate the cancer care continuum (6,7). Support from family members, community health workers, peers, and even religious leaders can buffer the emotional toll of a cancer diagnosis and foster a sense of hope and resilience. In parallel, institutional support from hospitals and healthcare teams in the form of counseling services, patient navigators, and regular follow-up can significantly boost adherence by reinforcing trust in the treatment process and addressing concerns in a timely and empathetic manner (8,9).

Despite this established understanding, there remains a dearth of empirical evidence from rural Indian populations, particularly from Punjabi communities, examining how psychosocial support interfaces with treatment adherence in real-world clinical settings. Punjab, with its unique sociocultural landscape, presents a complex scenario for rural healthcare delivery. Strong familial bonds and community ties coexist with pervasive gender inequalities, economic constraints, and stigma related to serious illnesses like cancer. In this setting, understanding how psychosocial dynamics influence treatment adherence becomes especially vital (10). While some patients may find strength and encouragement from their families and social circles, others may experience isolation, neglect, or pressure to abandon treatment due to financial strain or fatalistic beliefs. Therefore, studying these dynamics within the specific context of rural Punjab is not only relevant but urgent. Existing literature on treatment adherence among cancer patients in India often focuses on urban or semi-urban populations, with minimal representation of rural voices (11-13). Moreover, psychosocial dimensions are frequently overlooked or treated as secondary considerations in adherence research. This has created a significant gap in understanding the lived experiences of rural breast cancer patients and the role that targeted psychosocial interventions might play in improving adherence rates. By shedding light on these underexplored aspects, the current study aims to contribute meaningful insights that could inform the development of culturally appropriate, patient-centered strategies to enhance cancer care delivery in rural settings. Against this backdrop, the present study seeks to evaluate the relationship between psychosocial support and treatment adherence among rural breast cancer patients attending two tertiary hospitals in Punjab. The specific objective is to identify key psychosocial factors that influence adherence to prescribed cancer treatments, with the broader aim of informing interventions that can improve patient outcomes through strengthened psychosocial care frameworks.

METHODS

This cross-sectional observational study was conducted over an eight-month period at two tertiary care hospitals situated in rural-serving districts of Punjab, Pakistan. These institutions were selected due to their wide catchment area and consistent inflow of breast cancer patients from rural and semi-rural regions. The study aimed to evaluate the relationship between psychosocial support and treatment adherence among rural breast cancer patients, and to identify specific psychosocial factors that may significantly influence adherence to prescribed treatment regimens. Participants were recruited from the oncology outpatient departments and day-care chemotherapy units of both hospitals. The target population consisted of adult female breast cancer patients (aged 18 years and above) who had been

diagnosed histologically and were currently undergoing treatment (surgery, chemotherapy, radiotherapy, or hormone therapy). Inclusion criteria required participants to be permanent residents of rural areas as defined by the Pakistan Bureau of Statistics, have completed at least one month of treatment at the hospital, and be willing to provide informed consent. Patients with recurrent or metastatic disease, those with comorbid severe psychiatric disorders (e.g., schizophrenia, bipolar disorder), or those who were cognitively impaired and unable to participate in the interview process were excluded from the study. A minimum required sample size of 180 participants was calculated using G*Power software version 3.1, assuming a medium effect size (Cohen's $f^2 = 0.15$), a power of 0.80, and a significance level of 0.05 for multiple regression analysis with up to five predictor variables. To account for potential dropouts and incomplete responses, a total of 200 participants were targeted and successfully enrolled (2,3).

Data collection was conducted via face-to-face structured interviews using a pretested, bilingual questionnaire developed after reviewing relevant literature and consulting oncology experts. The questionnaire comprised three main sections: socio-demographic and clinical data, assessment of psychosocial support, and treatment adherence. Psychosocial support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS), a validated 12-item instrument that evaluates perceived support from family, friends, and significant others on a 7-point Likert scale. Higher scores on the MSPSS reflect greater perceived support. Treatment adherence was assessed using the Morisky Medication Adherence Scale (MMAS-8), a widely used and validated tool for measuring medication-taking behavior. Scores on the MMAS-8 range from 0 to 8, with higher scores indicating better adherence. For the purposes of this study, adherence was dichotomized into two categories: high adherence (score ≥6) and low adherence (score <6), based on established cut-off points in oncology literature (14-16). Additionally, clinical adherence to treatment appointments and chemotherapy sessions was verified from hospital records to supplement self-reported data. All data were collected by trained research assistants under the supervision of the principal investigator to ensure consistency and minimize interviewer bias. To ensure accuracy, data were entered into a secure, password-protected database and cross-verified by two independent data entry officers.

Statistical analysis was carried out using IBM SPSS Statistics version 26. Descriptive statistics were used to summarize demographic, clinical, and psychosocial characteristics. Continuous variables were presented as means and standard deviations, while categorical variables were expressed as frequencies and percentages. The Shapiro-Wilk test confirmed normal distribution of continuous data, allowing the use of parametric tests for analysis. Independent sample t-tests and one-way ANOVA were applied to explore associations between psychosocial support levels and demographic or clinical variables. To evaluate the relationship between psychosocial support and treatment adherence, Pearson correlation coefficients were computed, followed by multiple linear regression analysis to identify significant psychosocial predictors of adherence while adjusting for potential confounders such as age, education level, treatment modality, and travel distance to the hospital. A p-value of less than 0.05 was considered statistically significant for all analyses. Ethical approval for the study was obtained from the Institutional Review Boards of both participating hospitals. All participants provided written informed consent after being briefed about the study's purpose, voluntary nature of participation, and assurance of confidentiality. No identifying personal data were collected, and participants were assured that their treatment would not be affected by their decision to participate or withdraw at any stage. This methodological approach ensured a rigorous, transparent, and replicable investigation into how psychosocial support shapes adherence to breast cancer treatment among underserved rural populations in Punjab, Pakistan.

RESULTS

The study included 200 female breast cancer patients from rural areas of Punjab, with a mean age of 49.2 years (SD ±10.6). Most participants were married (84.0%), and a substantial proportion had limited formal education. Monthly household income below PKR 25,000 was reported by 60.5% of participants, while 68.5% resided more than 50 kilometers from the hospital, indicating logistical challenges in treatment access. Psychosocial support, as measured by the Multidimensional Scale of Perceived Social Support (MSPSS), revealed the highest mean score from family (5.8 ± 1.1), followed by significant others (5.0 ± 1.2), and friends (4.6 ± 1.3). The overall mean total MSPSS score was 5.1 ± 1.0, suggesting a moderate to high perceived support level across the cohort. Adherence to treatment, assessed using the Morisky Medication Adherence Scale (MMAS-8), showed that 63.0% of participants (n=126) were categorized as having high adherence (score ≥6), while 37.0% (n=74) demonstrated low adherence (score <6). Adherence rates were notably higher among participants with secondary or higher education, as visualized in Chart 1. A statistically significant positive correlation was observed between total MSPSS scores and MMAS-8 adherence levels ($r = 0.47$, $p < 0.001$), indicating that greater perceived psychosocial support was associated with better adherence. Among the MSPSS subdomains, family support demonstrated the strongest correlation with adherence ($r = 0.42$, $p < 0.001$), followed by significant others ($r = 0.31$, $p = 0.003$), and friends ($r = 0.25$, $p = 0.011$). These correlations were consistent with the distribution of MSPSS total scores shown in Chart 2. Overall, the results suggested a clear

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pattern: patients perceiving stronger psychosocial support, particularly from their families, were more likely to adhere to prescribed cancer treatments. This pattern was consistent across socio-demographic strata, especially among those with better education levels and closer proximity to the hospital.

Table 1: Demographic Characteristics (n = 200)

Variable	Value
Age (Mean ± SD)	49.2 ± 10.6
Marital Status (Married)	168 (84.0%)
Education (No formal education)	56 (28.0%)
Education (Primary)	72 (36.0%)
Education (Secondary or above)	72 (36.0%)
Monthly Income < PKR 25,000	121 (60.5%)
Distance from Hospital > 50 km	137 (68.5%)

Table 2: MSPSS Scores

Support Source	Mean ± SD
Family	5.8 ± 1.1
Friends	4.6 ± 1.3
Significant Others	5.0 ± 1.2
Total MSPSS Score	5.1 ± 1.0

Table 3: MMAS-8 Adherence Categories

Adherence Category	Frequency (%)
High (Score ≥6)	126 (63.0%)
Low (Score <6)	74 (37.0%)

Table 4: Correlation Between MSPSS and MMAS-8 Adherence

MSPSS Domain	Pearson Correlation (r)	p-value
Family	0.42	<0.001
Friends	0.25	0.011
Significant Others	0.31	0.003
Total Score	0.47	<0.001

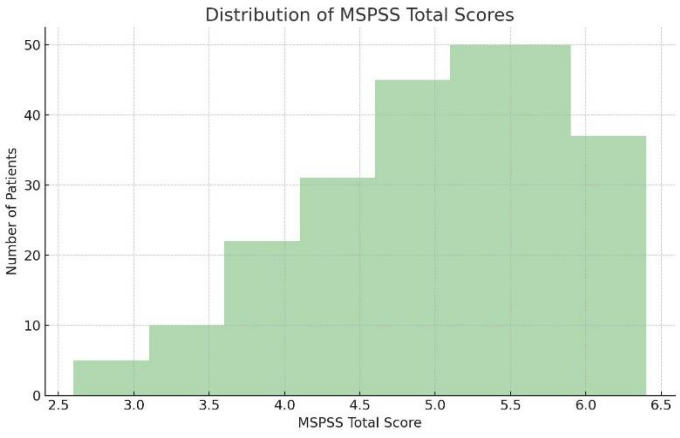

Figure 1 Distribution of MSPSS Total Scores

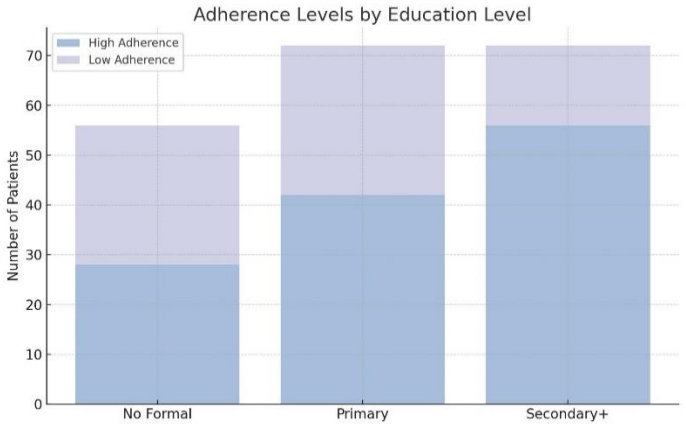

Figure 2 Adherence Levels by Education Level

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DISCUSSION

The results of this study underscore the central role of psychosocial support in influencing adherence to treatment among rural breast cancer patients in Punjab, Pakistan. Consistent with global literature, the findings reveal a significant positive association between perceived social support and adherence levels, with family support emerging as the strongest predictor. These insights resonate with several recent studies emphasizing that psychosocial well-being plays a pivotal role in improving compliance with medical recommendations in breast cancer management. In this cohort, participants who reported higher levels of perceived family support demonstrated substantially better adherence to their prescribed treatment regimens. This aligns with findings from studies which concluded that the presence of a strong family support network substantially improves treatment continuity and patient engagement, particularly among women navigating the psychosocial burden of breast cancer (16-18). Similarly, a study highlighted that psychosocial adaptation directly influences quality of life and treatment adherence, with social support playing a mediating role between psychological well-being and medication compliance (19). The study's results also confirmed that greater perceived support from significant others and friends contributed positively to adherence, albeit to a lesser extent than family support. This finding supports a study, which demonstrated that emotional well-being, access to emotional support, and reduced social isolation significantly influence breast cancer screening and treatment adherence in a large national sample (20). Moreover, psychosocial interventions like peer-support groups and counseling services were associated with improved coping and treatment outcomes in diverse settings, including low-resource regions (21). Interestingly, the present findings also mirror prior conclusions from systematic reviews that have identified the patient-provider relationship and health literacy as critical elements influencing medication adherence among breast cancer patients (22). The trust and empathy conveyed by oncology care teams likely enhance patients' psychological readiness to comply with complex treatment regimens, particularly in emotionally vulnerable phases. Likewise, a study found that supportive communication from oncologists is positively linked with treatment satisfaction and adherence outcomes (23).

A major strength of this study was its focus on an underrepresented rural population within a low-resource healthcare context. The use of validated tools (MSPSS and MMAS-8) provided reliable quantification of psychosocial and behavioral variables. The inclusion of two tertiary care hospitals across distinct rural catchment areas also enhanced the generalizability of the findings within Punjab. However, several limitations merit consideration. The cross-sectional design restricts causal inference, and self-reported adherence may be influenced by recall or social desirability bias. Although hospital records were used to validate self-reports, more objective measures such as pharmacy refill data or electronic medication monitoring could improve accuracy. Additionally, psychosocial support was treated as a static variable; in reality, it likely fluctuates across the treatment journey. A longitudinal design could better capture these dynamic changes. Finally, cultural nuances such as the role of spiritual beliefs or stigma associated with cancer were not directly measured, despite their possible influence on psychosocial experiences. Future research should consider exploring interventions that enhance psychosocial support structures, particularly family-based counseling, community peer-support models, and structured communication strategies between healthcare providers and patients (24). Moreover, integrating psychosocial assessments as part of routine oncology care in rural settings could facilitate early identification of patients at risk of nonadherence. In conclusion, this study provides robust evidence that psychosocial support, especially from family, significantly enhances treatment adherence among rural breast cancer patients. These findings advocate for more integrated, culturally sensitive psychosocial care strategies to be embedded within oncology services in resource-constrained settings.

CONCLUSION

This study highlights the significant role of psychosocial support—particularly from family—in enhancing treatment adherence among rural breast cancer patients in Punjab. Strengthening social and emotional support systems can substantially improve patient engagement and treatment outcomes. These findings underscore the need to integrate culturally sensitive psychosocial care into rural oncology services to ensure more equitable and effective cancer treatment delivery.

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AUTHOR CONTRIBUTION

Author	Contribution
Attiq Ullah*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Zahra Hayat	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Shehroz Nafees	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Seemal Fatima	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Irfan Ishaque	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Talia Ashfaq	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Waqas Ahmad	Contributed to study concept and Data collection Has given Final Approval of the version to be published

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