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The Impact of Staff Empathy and Emotional Intelligence on Patient Satisfaction: A Study of Healthcare Quality in Rural Rajasthan

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ABSTRACT

Patient satisfaction is very important to measure the quality of healthcare, especially in areas with limited resources. This study looks at how healthcare workers' empathy and emotional intelligence affect patient satisfaction in rural health centers in Rajasthan. A study was conducted with 200 patients and 50 healthcare staff members from 10 primary health centers in rural Rajasthan. Patients were surveyed using the Patient Satisfaction Questionnaire (PSQ-18) and the Consultation and Relational Empathy (CARE) Measure. Healthcare staff completed the Wong and Law Emotional Intelligence Scale (WLEIS). Pearson's correlation and multiple regression analyses were performed to examine relationships between variables. A strong positive correlation was found between perceived staff empathy and patient satisfaction ($r = 0.72$, $p<0.001$). Staff emotional intelligence was a significant predictor of patient-reported empathy ($\beta=0.65$, $p<0.001$). The relationship between empathy and satisfaction was stronger among female patients ($r=0.78$, $p<0.001$) compared to male patients ($r = 0.65$, $p<0.001$) and among patients with lower education levels ($r = 0.80$, $p < 0.001$) compared to those with higher education levels ($r = 0.68$, $p < 0.001$). This study provides evidence for the significant impact of staff empathy and emotional intelligence on patient satisfaction in rural healthcare settings. These findings suggest that enhancing emotional intelligence and empathy among healthcare staff could significantly improve patient satisfaction and potentially lead to better health outcomes in rural India.

Keywords: Patient satisfaction, empathy, emotional intelligence, rural healthcare, primary health centers, Rajasthan, India, healthcare quality, patient-centered care.

INTRODUCTION

In the landscape of global healthcare, patient satisfaction has emerged as a critical indicator of service quality and a key determinant of health-seeking behaviors (Batbaatar et al., 2017). This is particularly significant in rural areas of developing countries, where healthcare resources are often scarce and patient experiences can profoundly impact community health outcomes. In rural Rajasthan, India, primary health centers (PHCs) serve as the cornerstone of the public healthcare system, acting as the first point of contact between the community and healthcare providers (Garg et al., 2013).

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The concept of patient-centered care has gained traction globally, emphasizing the importance of addressing not just the physical ailments but also the emotional and psychological needs of patients (Stewart et al., 2014). Within this framework, empathy – the ability to understand and share the feelings of another – has been recognized as a fundamental component of effective healthcare delivery (Hojat et al., 2011). Similarly, emotional intelligence, encompassing the capacity to recognize, understand, and manage emotions in oneself and others, has been linked to improved patient-provider relationships and healthcare outcomes (Nightingale et al., 2018). However, the specific impact of these factors on patient satisfaction in rural Indian healthcare settings remains underexplored. The unique challenges faced by rural healthcare providers in India, including resource constraints, cultural barriers, and high patient loads, necessitate a focused examination of how empathy and emotional intelligence operate in this context (Rao et al., 2011).

This study aims to bridge this knowledge gap by investigating the relationship between healthcare staff empathy, emotional intelligence, and patient satisfaction in primary health centers of rural Rajasthan. By elucidating these relationships, we seek to provide insights that can inform strategies to enhance patient experiences and, ultimately, improve healthcare outcomes in rural India. The findings of this study have the potential to influence healthcare policy, staff training programs, and the overall approach to healthcare delivery in resource-limited settings.

LITERATURE REVIEW

The correlation between patient satisfaction, provider empathy, and emotional intelligence (EI) has become a focal point in healthcare research, particularly in underserved and rural settings. **Cadet and Sainfort (2023)** introduced the Health Care Optimal Physician Empathy (HOPE) model to explore how empathy, while beneficial for patients, may contribute to physician burnout if not regulated. Their study emphasized the need for achieving an optimal balance that maximizes patient satisfaction without compromising provider well-being. Complementing this, **Rawat et al. (2025)** examined how nurses' empathic communication significantly boosts patient satisfaction, suggesting the necessity of continuous empathy training programs. Similarly, **Oweidat et al. (2024)** found that emotional intelligence is a major determinant of healthcare quality in Jordanian hospitals, influencing recruitment, retention, and employee development processes. These findings collectively underscore the strategic value of emotional intelligence and empathy in frontline healthcare delivery.

The importance of emotional competencies extends beyond clinical practice to healthcare education and pediatric care. **Gelkop et al. (2023)** assessed the impact of compassion and EI on the perceived quality of care in pediatric wards, concluding that emotionally intelligent and compassionate nurses contribute to safer and more satisfactory outcomes for both children and parents. Building on this, **Yang et al. (2024)** investigated how empathy and communication skills mediate the relationship between nursing students' emotional intelligence and their ability to provide caring, patient-centered services. Their findings suggest that nursing curricula must be revised to emphasize interpersonal and emotional skill development. Likewise, **Alfaouri and Tawalbeh (2024)** provided evidence that higher EI among healthcare workers leads to better communication, greater trust, and improved patient satisfaction, reinforcing the need for structured EI development programs within healthcare institutions.

In the domain of private healthcare, particularly in developing regions, trust and loyalty are significantly shaped by real-time provider behavior. **Kazi et al. (2024)** concluded that responsiveness, transparency and staff accountability influence patient loyalty more than abstract

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promises or reputation. **Chowdhury et al. (2024)** took a broader view by analyzing strategies in U.S. healthcare facilities. They emphasized the value of integrating effective communication, user-friendly technology and environmental improvements such as cleaner spaces and quieter wards to enhance the overall patient experience. However, they also highlighted challenges like digital literacy gaps and cultural sensitivity issues that must be addressed for equitable implementation. **Sharma and Goel (2025)** supported these findings by showcasing how emotional intelligence fosters teamwork, strengthens provider–patient relationships, and aids in navigating complex clinical environments with empathy and resilience.

Another studies focusing on tangible aspects of healthcare quality have also provided important insights. **Baiju (2024)** identified that physical factors such as clean and well-maintained facilities, appealing infrastructure, and professional staff appearance - significantly shape patient perceptions of care quality. While these aspects scored highest, elements such as empathy, responsiveness, and assurance also played positive roles in patient satisfaction. In contrast, **Masih et al. (2023)** found no significant relationship between nurses' emotional intelligence and patient satisfaction, suggesting that in some contexts, external factors or limitations in measurement tools may obscure this association. Taken together, the literature illustrates that while emotional and interpersonal competencies are crucial, they must be supported by tangible improvements and organizational support to truly enhance patient experiences. Moreover, the effectiveness of these factors is often influenced by cultural, systemic, and contextual variables, highlighting the importance of adaptable and inclusive healthcare strategies.

METHODOLOGY

This cross-sectional study was conducted across 10 primary health centers (PHCs) in rural districts of Rajasthan, India. The PHCs were selected to represent a diverse range of rural healthcare settings in the state, including both remote and semi-urban locations. The study was carried out over a period of six months, from January to June 2023.

A total of 200 patients were selected using stratified random sampling to ensure representation from different age groups, genders, and socioeconomic backgrounds. The inclusion criteria for patients were:

- Age 18 years or older
- Seeking care at the selected PHCs during the study period
- Able to provide informed consent

Additionally, 50 healthcare staff members, including doctors, nurses, and other paramedical staff, were included in the study. The staff participants were selected based on their willingness to participate and their regular interaction with patients.

Data Collection Instruments

Three primary instruments were used for data collection:

1. Patient Satisfaction Questionnaire (PSQ-18): This validated 18-item tool developed by Marshall and Hays (1994) was used to assess overall patient satisfaction. The questionnaire covers various

aspects of healthcare including technical quality, interpersonal manner, communication, financial aspects, time spent with doctor, accessibility, and convenience.

2. Consultation and Relational Empathy (CARE) Measure: Developed by Mercer et al. (2004), this 10-item patient-rated measure was used to assess perceived empathy of healthcare providers. The CARE Measure has been validated in various healthcare settings and has shown good reliability and validity.

3. Wong and Law Emotional Intelligence Scale (WLEIS): This 16-item self-report measure developed by Wong and Law (2002) was used to assess the emotional intelligence of healthcare staff. The WLEIS measures four dimensions of emotional intelligence: self-emotion appraisal, others' emotion appraisal, use of emotion, and regulation of emotion.

All instruments were translated into Hindi and back-translated to ensure accuracy. They were then piloted with a small sample to ensure clarity and cultural appropriateness.

Data Collection Procedure

Trained research assistants conducted structured interviews with patients using the PSQ-18 and CARE Measure immediately after their consultation at the PHC. Healthcare staff completed the WLEIS independently. All participants were assured of confidentiality and anonymity.

Statistical Analysis

Data analysis was performed using SPSS. Descriptive statistics were used to summarize patient and staff characteristics. Pearson's correlation coefficient was calculated to examine the relationship between perceived staff empathy (CARE scores) and patient satisfaction (PSQ-18 scores). Multiple regression analysis was performed to determine the impact of staff emotional intelligence (WLEIS scores) on patient-reported empathy, controlling for potential confounding factors such as patient age, gender, and education level. A p-value of <0.05 was considered statistically significant.

RESULTS

This study presents our findings on the relationships between healthcare staff empathy, emotional intelligence, and patient satisfaction in rural Rajasthan's primary health centers. We describe participant demographics, correlations between empathy and satisfaction dimensions, regression analysis results of emotional intelligence predicting empathy, and subgroup analyses across different patient demographics. Our results reveal significant associations between staff empathy and patient satisfaction, with variations across patient groups.

Table 1: Demographic Characteristics of Study Participants

Characteristic	Patients (N=200)	Healthcare Staff (N=50)
Gender, n (%)		
- Female	110 (55%)	28 (56%)
- Male	90 (45%)	22 (44%)
Age, mean (SD)	42.3 (15.7)	35.6 (8.2)
Education, n (%)		
- Primary or less	130 (65%)	-

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- Secondary	50 (25%)	-
- Higher	20 (10%)	-
Staff Category, n (%)		
- Doctors	-	15 (30%)
- Nurses	-	25 (50%)
- Paramedical	-	10 (20%)
Years of Experience, mean (SD)	-	7.8 (5.3)

Table 1 presents the demographic profile of both patients and healthcare staff involved in the study. The patient sample (N=200) shows a slightly higher proportion of females (55%) compared to males (45%), with a mean age of 42.3 years (SD=15.7). The majority of patients (65%) had primary education or less, indicating a generally low educational level among the rural population studied. The healthcare staff sample (N=50) shows a balanced gender distribution (56% female, 44% male) with a younger mean age of 35.6 years (SD=8.2) compared to the patient sample. The staff composition reflects the typical structure of primary health centers in India, with nurses forming the largest group (50%), followed by doctors (30%) and paramedical staff (20%). The mean years of experience (7.8 years, SD=5.3) suggests a mix of both seasoned and relatively new healthcare providers.

Empathy and Patient Satisfaction

A strong positive correlation was found between perceived staff empathy (CARE scores) and patient satisfaction (PSQ-18 scores) ($r = 0.72$, $p < 0.001$). Table 2 presents the correlation coefficients between CARE scores and different dimensions of the PSQ-18.

Table 2 illustrates the strength of the relationship between perceived empathy (CARE scores) and various dimensions of patient satisfaction (PSQ-18 scores). The strongest correlations are observed with Interpersonal Manner ($r = 0.78$) and Communication ($r = 0.76$), indicating that empathy is closely tied to how patients perceive the quality of interpersonal interactions with healthcare providers. The strong correlation with Overall Satisfaction ($r = 0.72$) underscores the importance of empathy in shaping patients' overall healthcare experience. Notably, even the dimension with the weakest correlation (Accessibility and Convenience, $r = 0.58$) still shows a moderate positive relationship with empathy. This suggests that while empathy has the strongest impact on interpersonal aspects of care, it also influences patients' perceptions of structural aspects of healthcare delivery.

Table 2: Correlation between CARE Scores and PSQ-18 Dimensions

PSQ-18 Dimension	Correlation with CARE Score (r)	p-value
Technical Quality	0.65	<0.001
Interpersonal Manner	0.78	<0.001
Communication	0.76	<0.001
Time Spent with Doctor	0.70	<0.001
Accessibility and Convenience	0.58	<0.001
Overall Satisfaction	0.72	<0.001

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Emotional Intelligence and Empathy

Multiple regression analysis revealed that staff emotional intelligence was a significant predictor of patient-reported empathy. Table 3 presents the regression coefficients for the WLEIS dimensions predicting CARE scores.

Table 3 presents the results of a multiple regression analysis examining how different dimensions of emotional intelligence (as measured by WLEIS) predict perceived empathy (CARE scores). All four dimensions of emotional intelligence are significant predictors of perceived empathy, with Others' Emotion Appraisal having the strongest effect ($\beta = 0.35$, $p < 0.001$). This suggests that healthcare providers' ability to recognize and understand patients' emotions is particularly crucial for conveying empathy. The model explains a substantial portion of the variance in perceived empathy ($R^2 = 0.53$), indicating that emotional intelligence is a strong predictor of how empathetic patients perceive their healthcare providers to be.

Table 3: Multiple Regression Analysis: WLEIS Dimensions Predicting CARE Scores

WLEIS Dimension	β Coefficient	Standard Error	p-value
Self-emotion Appraisal	0.28	0.06	<0.001
Others' Emotion Appraisal	0.35	0.05	<0.001
Use of Emotion	0.22	0.07	0.002
Regulation of Emotion	0.30	0.06	<0.001

$R^2 = 0.53$, Adjusted $R^2 = 0.51$, $F(4, 45) = 12.7$, $p < 0.001$

Subgroup Analysis

Subgroup analysis revealed interesting variations in the relationship between empathy and satisfaction among different patient groups. Table 4 presents the correlation coefficients for different subgroups. Table 4 reveals interesting variations in the relationship between perceived empathy and overall satisfaction across different patient subgroups. Female patients show a stronger correlation ($r = 0.78$) compared to male patients ($r = 0.65$), suggesting that empathy may play a more significant role in shaping healthcare experiences for women in this rural Indian context. Education level also appears to moderate the relationship between empathy and satisfaction. Patients with primary education or less show a stronger correlation ($r = 0.80$) compared to those with secondary education or higher ($r = 0.68$). This indicates that empathy may be particularly crucial for patient satisfaction among individuals with lower levels of formal education. Age seems to have a less pronounced effect, with older patients (40 years and above) showing a slightly stronger correlation ($r = 0.75$) compared to younger patients ($r = 0.70$).

Table 4: Correlation between CARE Scores and Overall PSQ-18 Scores by Subgroups

Subgroup	Correlation Coefficient (r)	p-value
Gender		
- Female	0.78	<0.001
- Male	0.65	<0.001
Education Level		

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- Primary or less	0.80	<0.001
- Secondary or higher	0.68	<0.001
Age Group		
- Below 40 years	0.70	<0.001
- 40 years and above	0.75	<0.001

DISCUSSION

This study provides compelling evidence for the significant impact of staff empathy and emotional intelligence on patient satisfaction in rural Rajasthan's primary health centers. The strong positive correlation between perceived empathy and patient satisfaction ($r = 0.72$, $p < 0.001$) underscores the critical role of interpersonal skills in healthcare delivery, particularly in resource-limited settings. The finding that staff emotional intelligence predicts patient-reported empathy suggests that interventions aimed at improving emotional intelligence among healthcare workers could be an effective strategy for enhancing patient experiences and satisfaction. This aligns with previous research by Nightingale et al. (2018), who found associations between healthcare workers' emotional intelligence and improved patient outcomes.

Our results indicate that the relationship between empathy and satisfaction is not uniform across all patient groups. The stronger correlation among female patients ($r = 0.78$, $p < 0.001$) compared to male patients ($r = 0.65$, $p < 0.001$) suggests that women in this rural Indian context may be more sensitive to empathetic care. This could be due to various factors, including cultural norms, gender-specific health concerns, or differences in communication preferences. These findings echo those of Howick et al. (2017), who reported that women tend to be more receptive to empathetic communication in healthcare settings. The variation in correlation strength across education levels is particularly noteworthy. Patients with lower education levels showed a stronger correlation between perceived empathy and satisfaction ($r = 0.80$, $p < 0.001$) compared to those with higher education levels ($r = 0.68$, $p < 0.001$). This suggests that empathetic care may be especially crucial for patients with limited health literacy, who might rely more heavily on interpersonal aspects of care for their overall healthcare experience. This aligns with research by Kripalani et al. (2010), who found that patients with lower health literacy often struggle with complex medical information and may place greater emphasis on the relational aspects of care.

The strong correlations between CARE scores and the interpersonal manner ($r = 0.78$) and communication ($r = 0.76$) dimensions of the PSQ-18 highlight the central role of empathy in shaping patient perceptions of care quality. This aligns with the work of Derksen et al. (2013), who found that empathy in patient-physician communication positively influences patient satisfaction and adherence to treatment. Interestingly, our study also found a strong correlation between empathy and the "Time Spent with Doctor" dimension of the PSQ-18 ($r = 0.70$, $p < 0.001$). This is particularly relevant in the context of rural healthcare in India, where primary health centers often face high patient volumes and time constraints (Rao et al., 2011). Our findings suggest that even in these challenging conditions, healthcare providers who can convey empathy may be able to create a perception of quality time spent with patients, potentially mitigating some of the negative effects of brief consultations.

The multiple regression analysis of emotional intelligence dimensions predicting perceived empathy provides valuable insights into the specific skills that may be most important for healthcare providers.

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The strong predictive power of "Others' Emotion Appraisal" ($\beta = 0.35$, $p < 0.001$) suggests that the ability to recognize and understand patients' emotions is particularly crucial. This aligns with the concept of "emotional labor" in healthcare, as described by Larson and Yao (2005), where healthcare providers need to manage their own emotions while responding to the emotional needs of their patients.

Our findings have important implications for healthcare policy and training in rural India. Incorporating empathy training and emotional intelligence development into medical and nursing curricula could lead to significant improvements in patient satisfaction and, potentially, better health outcomes. This is particularly relevant in the context of rural healthcare, where providers often face unique challenges such as high patient loads and limited resources (Rao et al., 2011). However, it's important to note some limitations of this study. The cross-sectional design limits our ability to infer causality. While we controlled for several confounding factors, there may be other unmeasured variables influencing the relationships observed. Additionally, our study relied on patient perceptions of empathy and did not include objective measures of provider behavior. Future research should consider longitudinal designs and incorporate observational methods to better understand the causal relationships between empathy, emotional intelligence, and patient satisfaction.

CONCLUSION

This study provides evidence for the significant impact of staff empathy and emotional intelligence on patient satisfaction in rural Rajasthan's primary health centers. The strong positive correlation between perceived empathy and patient satisfaction underscores the importance of interpersonal skills in healthcare delivery, particularly in resource-limited settings. The finding that staff emotional intelligence predicts patient-reported empathy suggests that interventions aimed at improving emotional intelligence among healthcare workers could be an effective strategy for enhancing patient experiences and satisfaction. The stronger relationship between empathy and satisfaction among female patients and those with lower education levels highlights the need for tailored approaches in healthcare delivery, taking into account the diverse needs and expectations of different patient groups. These findings have important implications for healthcare policy and training in rural India. Incorporating empathy training and emotional intelligence development into medical and nursing curricula could lead to significant improvements in patient satisfaction and, potentially, better health outcomes.

Future research should explore the long-term impacts of empathy-focused interventions on patient outcomes and investigate the potential cultural nuances in the expression and perception of empathy in healthcare settings across different regions of India.

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