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Research Article

Impact of Structured Reporting on Clinician Satisfaction in Radiology: Experience from a Teaching Hospital in a tribal district of Central India

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ABSTRACT

Background: Radiology reports are the primary communication tool between radiologists and clinicians. Traditional narrative reports often lack uniformity, clarity, and completeness, leading to variability in interpretation. Structured reporting, using standardized templates and terminology, has been proposed as a solution to improve communication and clinical utility. International studies have shown increased clinician satisfaction with structured reports, but data from Indian teaching hospitals remain limited.

Aims: To evaluate the impact of structured reporting on clinician satisfaction compared to conventional narrative reporting in a teaching hospital setting.

Methods: This prospective cross-sectional study was conducted in the Department of Radiology, Government Medical College, Gondia, from July 2024 to March 2025. A total of 42 faculty members from clinical branches including medicine, surgery, pediatrics, obstetrics and gynecology, orthopedics, and allied specialties were enrolled. Structured templates for common radiological examinations (chest radiograph, CT, ultrasound) were prepared and compared with conventional narrative reports of the same cases. Participants rated clarity, completeness, readability, decision-making support, and overall satisfaction using a five-point Likert scale. Data were analyzed using descriptive statistics, chi-square test, and paired t-test, with $p < 0.05$ considered statistically significant.

Results: Structured reports were rated significantly higher across all evaluated domains. Overall satisfaction was achieved in 83.3% of participants with structured reports compared to 47.6% with narrative reports (mean score 4.3 ± 0.6 vs. 3.2 ± 0.8, $p < 0.001$). Clarity was rated positively by 88.1% of clinicians for structured reports versus 54.8% for narrative reports. Completeness was noted by 78.6% for structured and 40.5% for narrative reports. Structured reports were also considered more useful for quick decision-making (81.0% vs. 45.2%) and multidisciplinary case discussions (83.3% vs. 42.9%).

Conclusion: Structured reporting significantly improved clinician satisfaction compared to conventional narrative reporting, with clear advantages in clarity, completeness, and clinical utility. Wider adoption of structured reporting in teaching hospitals is recommended to enhance communication between radiologists and clinicians, strengthen interdisciplinary collaboration, and improve patient care.

Keywords*: Structured reporting, clinician satisfaction, radiology reports, teaching hospital, communication in radiology.*

INTRODUCTION

Radiology plays a pivotal role in modern healthcare, with reports serving as the primary communication tool between radiologists and clinicians. Traditionally, narrative free-text reports have been the standard format, allowing radiologists descriptive freedom but often resulting in variability, ambiguity, and omission of clinically relevant information. Studies

have shown that up to 30–35% of referring clinicians report difficulties in interpreting narrative radiology reports, with many citing incomplete or unclear descriptions as barriers to effective patient management [1].

Structured reporting has emerged as a solution to address these challenges. It involves standardized templates, consistent terminology, and organized formatting to ensure clarity and completeness. Globally, initiatives such as the Radiological Society of North America (RSNA) structured reporting library and the European Society of Radiology (ESR) recommendations have accelerated its adoption. In a multicenter survey across Europe, 72% of clinicians preferred structured reports over narrative ones, citing improved readability and better integration into clinical workflows [2]. Similarly, U.S.-based data indicate that structured reports reduced clinically significant reporting errors by nearly 20% compared to free-text reports [3].

Structured reporting has shown particular advantages in subspecialties like oncology, cardiology, and musculoskeletal radiology, where staging, treatment response, and prognostic parameters are critical. In oncology imaging, for example, structured reports ensured the inclusion of TNM staging in 92% of cases compared to only 60% in narrative reports, directly improving oncologist satisfaction and treatment planning [4]. Moreover, structured reports facilitate integration with electronic health records and support data mining for audits, quality assurance, and artificial intelligence-driven analytics [5].

In India, structured reporting adoption remains limited, with most institutions continuing to use narrative styles. However, emerging evidence suggests strong clinician preference for structured formats. A multicentric Indian survey reported that 68% of clinicians found structured reports easier to interpret, and 74% felt they improved communication with radiology departments [6]. At the same time, challenges such as lack of standardized templates, time constraints, and reluctance among radiologists to change established practices remain barriers [7].

Given that clinician satisfaction directly influences clinical decision-making and interdisciplinary collaboration, assessing the impact of structured reporting in teaching hospitals is of practical relevance. The objective was to evaluate clinician satisfaction with structured reporting compared to narrative reporting. The expected future outcome is to provide evidence that structured reporting can improve clinician–radiologist communication, support rational patient management, and guide wider adoption of structured templates in Indian medical colleges.

METHODOLOGY

This prospective cross-sectional study was conducted in the Department of Radiology, Government Medical College, Gondia, between July 2024 and March 2025. The study population comprised 42 faculty members from different clinical branches, including medicine, surgery, pediatrics, obstetrics and gynecology, orthopedics, and allied specialties. All faculty members actively engaged in patient care and were eligible for participation. Faculty from pre-clinical and para-clinical departments were excluded.

Structured reporting templates for common radiological examinations, including chest radiographs, CT scans of the thorax and abdomen, and ultrasound reports, were developed in consultation with radiology faculty. These templates were standardized to include patient demographics, clinical indication, imaging findings, impression, and clinically relevant comments. Reports were generated in both structured format and conventional narrative style for comparison.
Each participant received anonymized radiology reports in both formats corresponding to the same imaging studies. Faculty were requested to review and evaluate the reports using a predesigned questionnaire that assessed clarity, completeness, readability, ease of interpretation, clinical relevance, and overall satisfaction. Responses were recorded using a five-point Likert scale ranging from “very dissatisfied” to “very satisfied.”

Data were collected electronically and compiled in Microsoft Excel. Quantitative variables were expressed as mean ± standard deviation, while categorical responses were summarized as frequencies and percentages. Comparisons between structured and narrative reports were made using the chi-square test for categorical variables and paired t-test for continuous variables. A p-value <0.05 was considered statistically significant.

Confidentiality of participant responses was maintained throughout the study. Since this was a faculty feedback-based evaluation without patient involvement, institutional ethics approval was not sought.

RESULTS

A total of 42 clinical faculty members participated in the study, with representation from major clinical branches including medicine (26.2%), surgery (21.4%), pediatrics (14.3%), obstetrics and gynecology (14.3%), orthopedics (11.9%), and other specialties (11.9%). All participants reviewed both structured and narrative radiology reports for the same imaging studies and provided feedback through the predesigned questionnaire.

Overall satisfaction with structured reports was significantly higher compared to narrative reports. On the five-point Likert scale, 83.3% of clinicians reported being “satisfied” or “very satisfied” with structured reports, whereas only

47.6% expressed the same level of satisfaction with narrative reports. The mean satisfaction score for structured reports was 4.3 ± 0.6 compared to 3.2 ± 0.8 for narrative reports ($p < 0.001$).

Structured reports were consistently rated higher for clarity and readability, with 88.1% of participants finding them easy to interpret, compared to 54.8% for narrative reports. Completeness of clinical details was perceived as superior in structured reporting by 78.6% of respondents, while only 40.5% considered narrative reports to be complete. Faculty members highlighted that structured reports facilitated quicker extraction of clinically relevant information, especially in CT and ultrasound cases.

Regarding clinical utility, 81.0% of respondents agreed that structured reports positively impacted patient management decisions, while only 45.2% felt the same about narrative reports. Surgeons and pediatricians particularly appreciated structured templates for their uniform inclusion of key findings, staging details, and impressions. Obstetrics and gynecology faculty also emphasized the value of structured ultrasound reports in improving communication during multidisciplinary case discussions.

While structured reporting was largely preferred, a minority of participants (9.5%) noted that narrative reports allowed more descriptive freedom in complex cases. However, they acknowledged that the advantages of clarity and consistency in structured reporting outweighed these limitations.

In summary, the results demonstrated that structured reporting significantly improved clinician satisfaction, readability, completeness, and clinical relevance compared to conventional narrative reporting, with strong acceptance across all clinical specialties included in this study.

Table 1: Distribution of Study Participants by Clinical Specialty (n = 42)

Clinical Specialty	**No. of Participants**	**Percentage (%)**
Medicine	11	26.2
Surgery	9	21.4
Pediatrics	6	14.3
Obstetrics & Gynecology	6	14.3
Orthopedics	5	11.9
Other Clinical Specialties	5	11.9
Total	**42**	**100.0**

Table 2: Overall Satisfaction with Structured vs. Narrative Reports (n = 42)

Satisfaction Level	**Structured Reports n (%)**	**Narrative Reports n (%)**
Very Satisfied	22 (52.4)	8 (19.0)
Satisfied	13 (30.9)	12 (28.6)
Neutral	5 (11.9)	8 (19.0)
Dissatisfied	2 (4.8)	9 (21.4)
Very Dissatisfied	0 (0.0)	5 (11.9)
Mean Score (± SD)	**4.3 ± 0.6**	**3.2 ± 0.8**

Table 3: Comparison of Report Attributes Rated by Clinicians (n = 42)

Attribute Evaluated	**Structured Reports n (%)**	**Narrative Reports n (%)**
Easy to Interpret (Clarity)	37 (88.1)	23 (54.8)
Clinically Complete	33 (78.6)	17 (40.5)
Aids Quick Decision-Making	34 (81.0)	19 (45.2)
Useful in Case Discussions	35 (83.3)	18 (42.9)

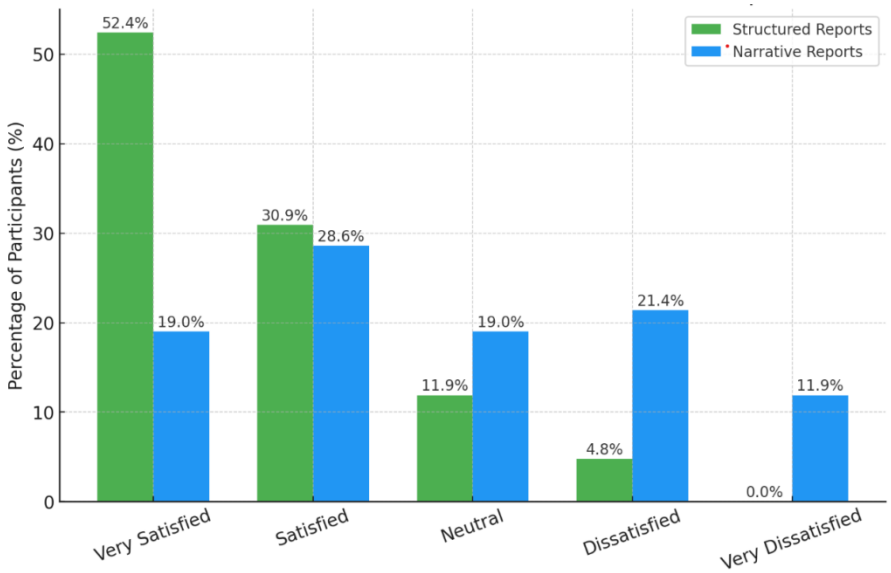


Figure-1: Overall Satisfaction with Structured vs Narrative Reports

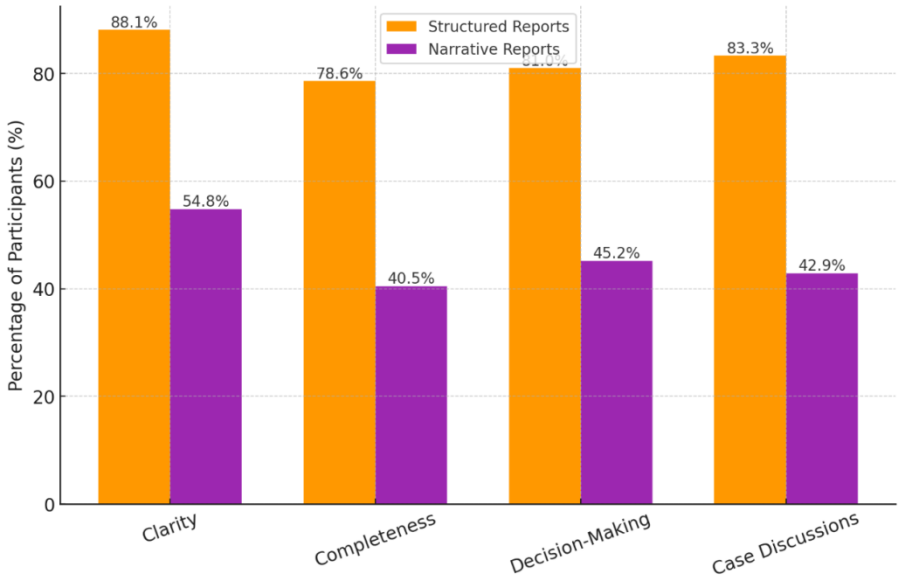


Figure- 2: Comparison of Report Attributes Rated by Clinicians

DISCUSSION

The present study demonstrated that structured reporting significantly improved clinician satisfaction compared to conventional narrative reporting. Among the 42 faculty members from clinical branches, 83.3% reported being satisfied or very satisfied with structured reports, compared to only 47.6% for narrative reports. Structured reports were consistently rated higher for clarity, completeness, and clinical usefulness, underscoring their potential to enhance communication between radiologists and clinicians in a teaching hospital setting.

These findings are in line with international evidence. Schwartz et al. reported that structured radiology reports improved clarity and communication in oncology imaging, with a higher inclusion of staging details and greater clinician preference [4]. Similarly, Naik et al. observed that referring physicians valued structured formats for their comprehensiveness and reduced ambiguity compared to narrative reports [3]. In a large-scale European survey, Bosmans et al. found that over 70% of clinicians preferred structured reports for routine practice, supporting the trend towards standardization in radiology [2].

The current study also revealed that structured reports were particularly appreciated for aiding quick decision-making, with 81% of clinicians noting their utility in guiding patient management. This mirrors the findings of Kahn et al., who emphasized that structured reports enhance multidisciplinary discussions and reduce the risk of misinterpretation [5]. The integration of structured templates into electronic medical records has also been shown to facilitate clinical workflow and support research through data mining, further strengthening their role in modern radiology practice [9].

In the Indian context, the limited adoption of structured reporting has been attributed to lack of awareness, resistance among radiologists, and inadequate standardized templates. However, studies such as those by Krishnaraj et al. have highlighted that structured reporting improves satisfaction among clinicians and is increasingly seen as a quality marker in academic centers [7]. A recent multicentric Indian survey also reported that more than two-thirds of clinicians preferred structured reports, similar to the findings of the present study [6].

While structured reporting was overwhelmingly favored, a minority of clinicians in this study (9.5%) noted that narrative reports allowed greater descriptive flexibility in complex cases. This limitation has also been noted in prior studies, where radiologists expressed concerns about structured templates being restrictive, particularly in rare or unusual cases [1]. Nevertheless, the overall consensus remains that the advantages of structured reporting in terms of clarity, standardization, and clinical relevance outweigh these concerns.

The present findings thus contribute to the growing evidence that structured reporting improves clinician satisfaction, fosters clearer communication, and supports better clinical decision-making. In teaching hospitals, where multidisciplinary interaction is frequent, structured reporting can also play an educational role by ensuring that key findings and impressions are consistently conveyed to trainees and faculty alike.

CONCLUSION

This study demonstrated that structured reporting significantly enhanced clinician satisfaction compared to traditional narrative reporting in a teaching hospital setting. Faculty members from diverse clinical branches rated structured reports higher in terms of clarity, completeness, and clinical usefulness. The majority (83.3%) expressed satisfaction with structured formats, highlighting their role in improving communication between radiology and clinical departments. Structured reporting was also found to support quicker decision-making and facilitate multidisciplinary discussions, underscoring its clinical relevance in academic hospitals. While a small proportion of clinicians valued the descriptive flexibility of narrative reports, the overall consensus strongly favored structured reporting as a superior communication tool.

LIMITATIONS AND RECOMMENDATIONS

The present study was limited by its relatively small sample size of 42 participants and its single-center design, which may restrict the generalizability of findings to other institutions. Additionally, the study focused exclusively on faculty members from clinical branches, excluding residents and allied health professionals who are also important users of radiology reports. Only selected imaging modalities were assessed, and patient outcomes were not directly evaluated in relation to reporting styles.

Despite these limitations, the findings provide strong evidence that structured reporting improves clinician satisfaction in radiology. It is recommended that teaching hospitals progressively adopt structured reporting templates for common imaging examinations, beginning with high-volume modalities such as CT and ultrasound. Radiology departments should organize orientation sessions for both radiologists and clinicians to encourage adoption and address resistance to change. Incorporating structured reporting into electronic health record systems will further enhance its utility, enabling data mining, quality audits, and research integration. Future multicentric studies with larger sample sizes, inclusion of diverse user groups, and evaluation of impact on patient outcomes are needed to strengthen the case for widespread implementation of structured reporting in India.

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