Enhancing Patient Safety and Operational Efficiency

Admission Workflow Optimization and IPSG Implementation in Apollo Hospital, Ahmedabad

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Introduction

Apollo Hospital, Ahmedabad, a part of the Apollo Hospitals Group, is a leading NABH and NABL accredited multi-speciality hospital with over 300 beds. Established in 2003, it offers advanced care in cardiology, neurology, orthopaedics, oncology, and more, backed by modern infrastructure and expert medical professionals.

Background & Rationale

The Need for Admission Workflow Optimization in Indian Tertiary Hospitals

- Admission Bottlenecks: Delays in registration, billing, and TPA caused average TAT to exceed 90 minutes.
- Safety Challenges: Low IPSG compliance at admission increased risks, especially in patient ID and infection control.
- Strategic Alignment: Improving workflows aligns operational goals with IPSG-based safety and accreditation standards.

Study Objectives

Goals of Admission Workflow and IPSG Optimization at Apollo Hospital

Reduce Admission TAT
Implement workflow improvements to cut turnaround time from registration to bed allotment.

Boost IPSG Compliance
Increase adherence to IPSG standards via training, SOPs, and real-time monitoring tools.

Improve Satisfaction & Awareness
Enhance patient satisfaction and staff knowledge of safety protocols through structured interventions.

Research Methodology

Study Design
Quantitative pre-post intervention using surveys, audits, and system logs.

Sample & Setting
100+ patients, 40 staff, Apollo Hospital IPD; focus on Medicine, Surgery, Cardiology.

Assessment Tools
TAT logs, IPSG checklists, staff questionnaires, patient feedback forms.

Sample Size and Sampling Technique

Sample Size

The sample size was determined based on feasibility, hospital admission volume, and the need to ensure adequate representation across pre- and post-intervention phases. The sample distribution for each study domain is as follows:

Domain	Sample Size	Pre-Intervention	Post-Intervention
Admission Turnaround Time (TAT)	100 patients	50 patients	50 patients
IPSG Compliance	60 audit observations	30 cases	30 cases
Staff IPSG Awareness	40 staff members	20 participants	20 participants
Patient Satisfaction	80 patients	40 feedbacks	40 feedbacks

Review of literature

Author/Source	Focus Area	Methodology	Key Findings
Dutta et al. (2023)	Admission TAT (Delhi NCR)	Lean & Fishbone Analysis	77% admissions >45 min; identified bottlenecks in registration & coordination
SMC Surat (2025)	Digital Admission Automation	Case Study	e-Registration system processed 89K+ patients, improved flow & documentation
Global IPSG Audit	IPSG Staff Awareness	Audit + Survey	Clinical staff ~80–85% aware; gaps in communication and med safety noted
Lean Six Sigma Chennai (ResearchGate)	TAT & LOS Reduction	Six Sigma (DMAIC)	Reduced delays significantly with structured quality tools
AMRI Hospital Study	Turnaround Optimization	Case Aalysis	Process restructuring enhanced throughput
ISQua White Paper (2025)	Accreditation & Safety Culture	Policy Review	Emphasized leadership and training for patient safety goals
Apollo Chennai Study	Admission/Discharge Delays	Observational	Billing & documentation identified as key delay points
WHO (2023)	Global Patient Safety	Strategic Review	Advocates system-wide safety integration beyond clinical zones

Pre-Intervention Findings

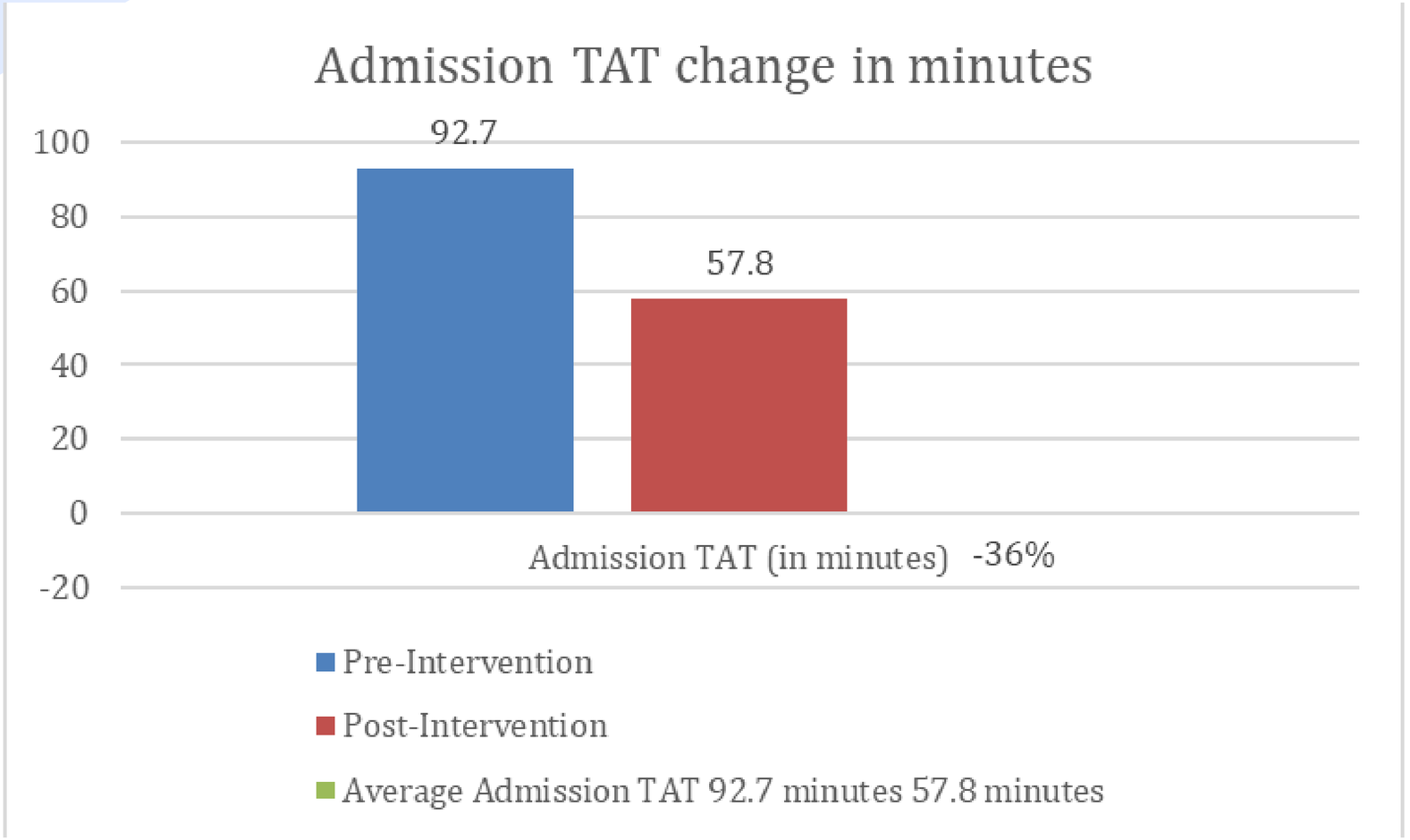
- Average Admission TAT was 94 minutes, indicating significant delays.
- Major delays occurred in TPA and billing coordination.
- Lack of role clarity and weak interdepartmental communication added to inefficiencies.
- IPSG compliance was inconsistent, especially in patient ID and infection control.
- Only 51.4% of staff had adequate awareness of IPSG goals.
- Patient satisfaction stood at 67.8%, with feedback highlighting long wait times and unclear processes.

Post-Intervention Analysis

- Average Admission TAT reduced to 58 minutes (↓36% improvement).
- Delays in billing and TPA processes were minimized through workflow re-design.
- Clear SOPs and improved interdepartmental coordination enhanced process flow.
- IPSG compliance rose from 61.7% to 88.3%, with marked gains in patient identification and infection control.
- Staff awareness of IPSG goals increased from 51.4% to 71.7% post-training.
- Patient satisfaction improved to 87.9%, reflecting better communication and reduced wait times.

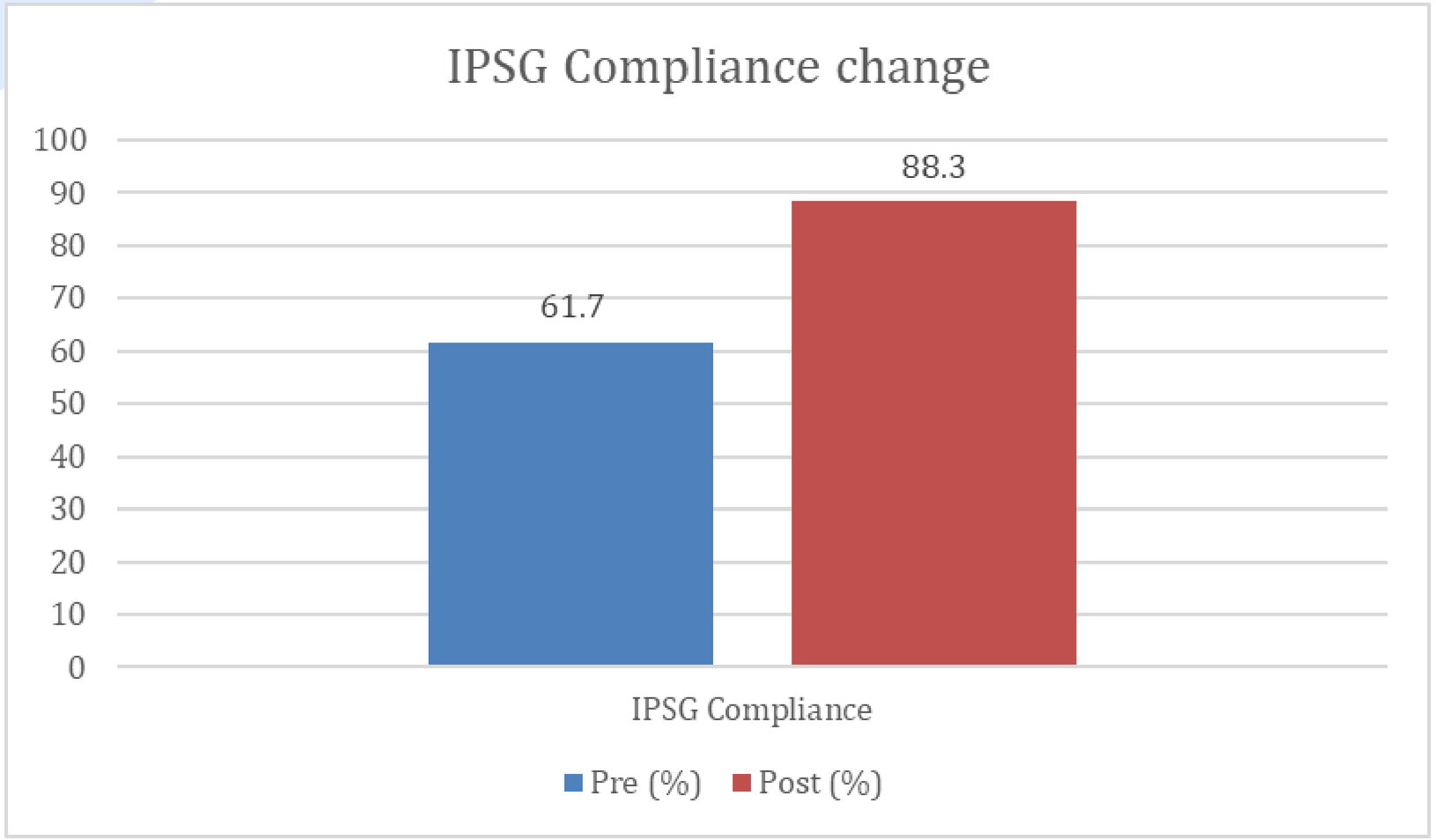
Domain wise Analysis

1. Admission Turnaround Time (TAT)



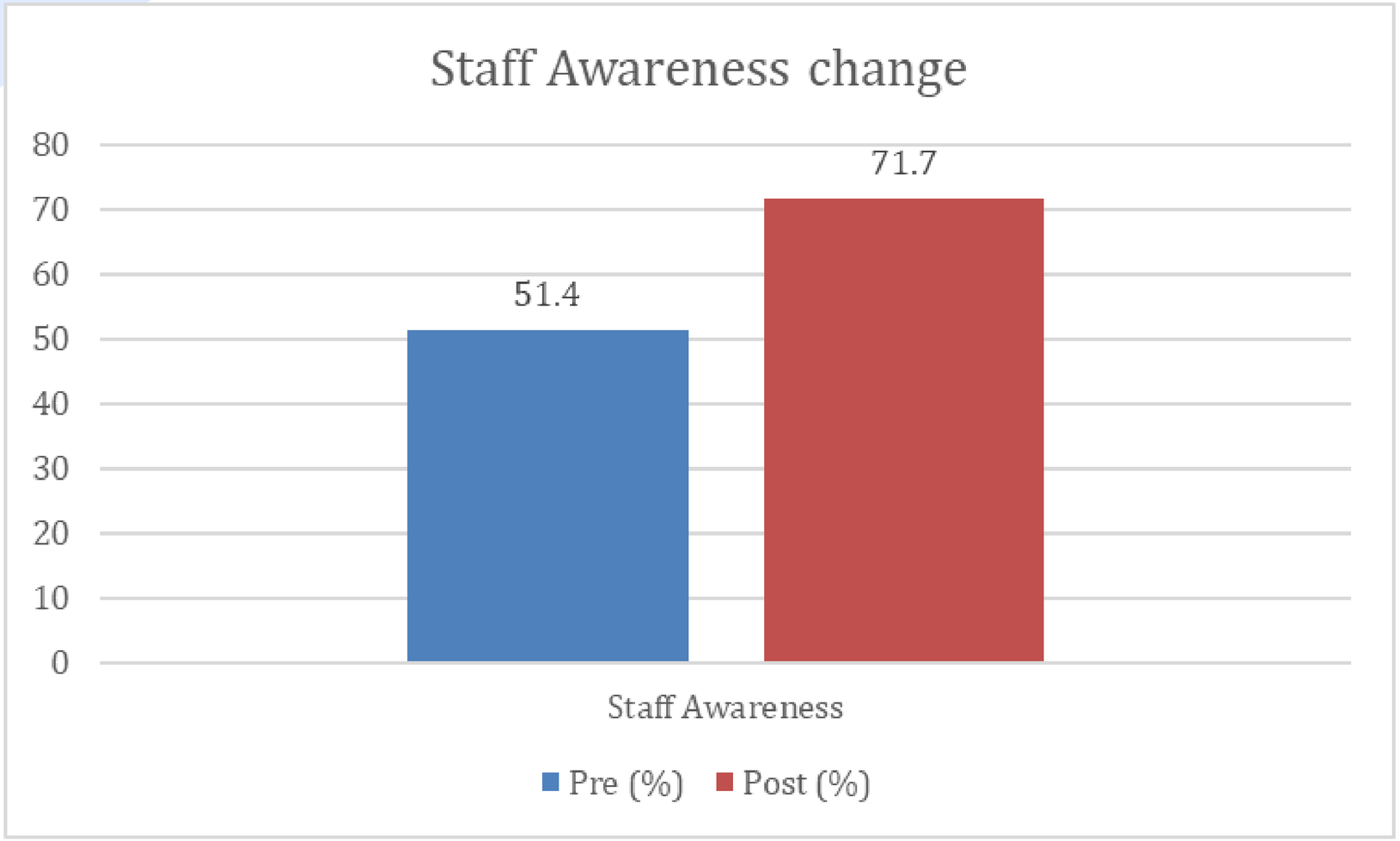
Domain wise Analysis

2. IPSG Compliance



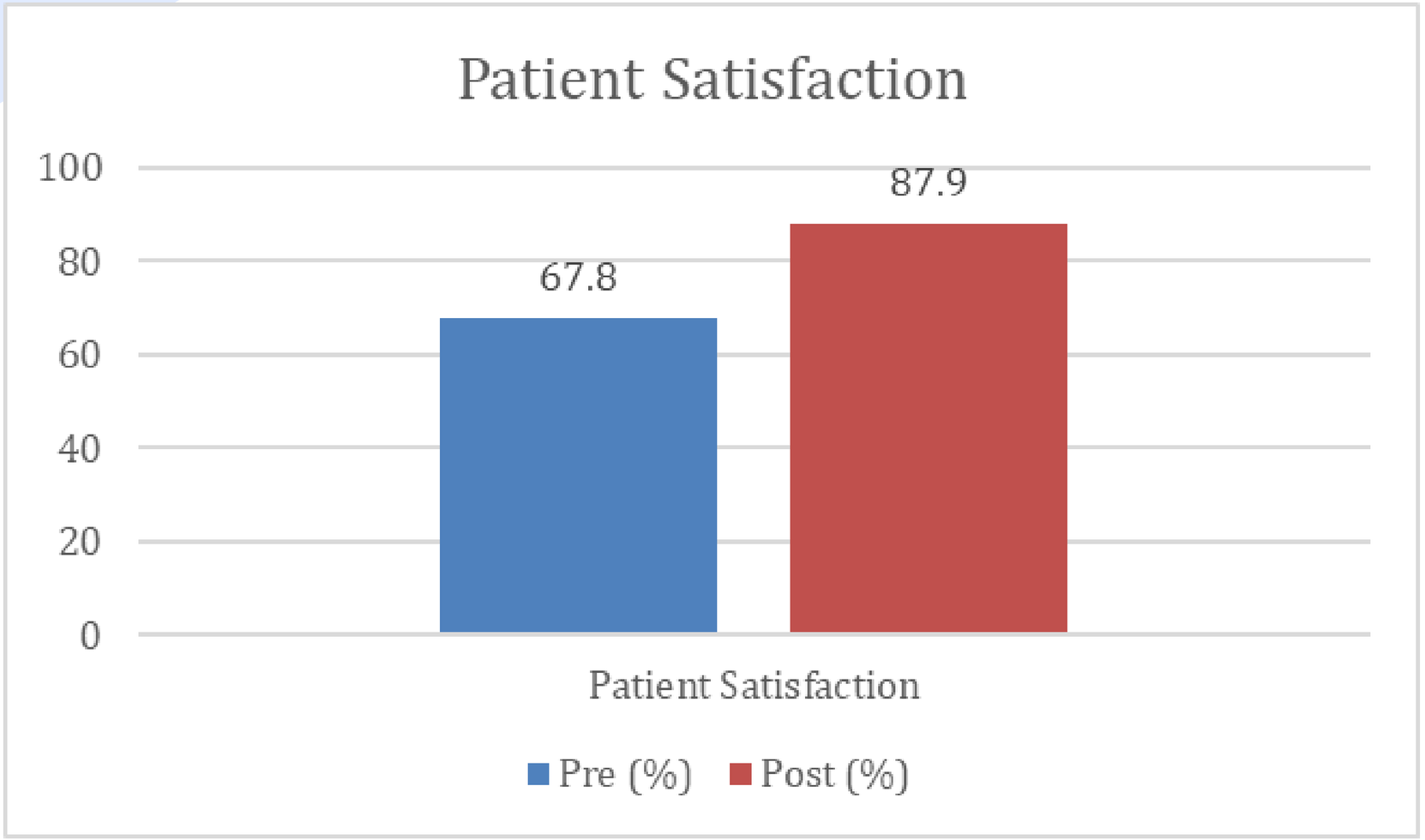
Domain wise Analysis

3. Staff IPSG Awareness



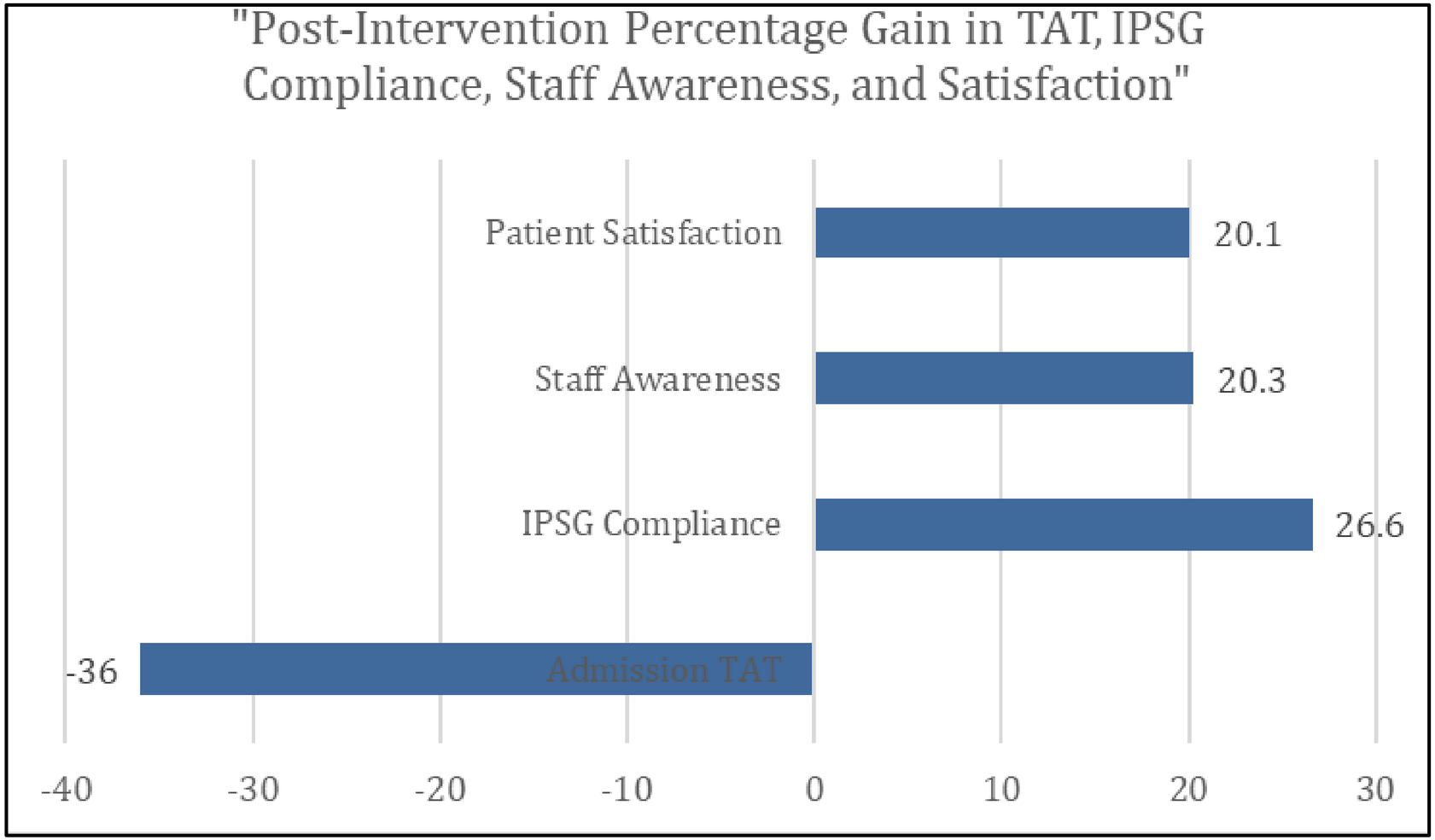
Domain wise Analysis

4. Patient Satisfaction



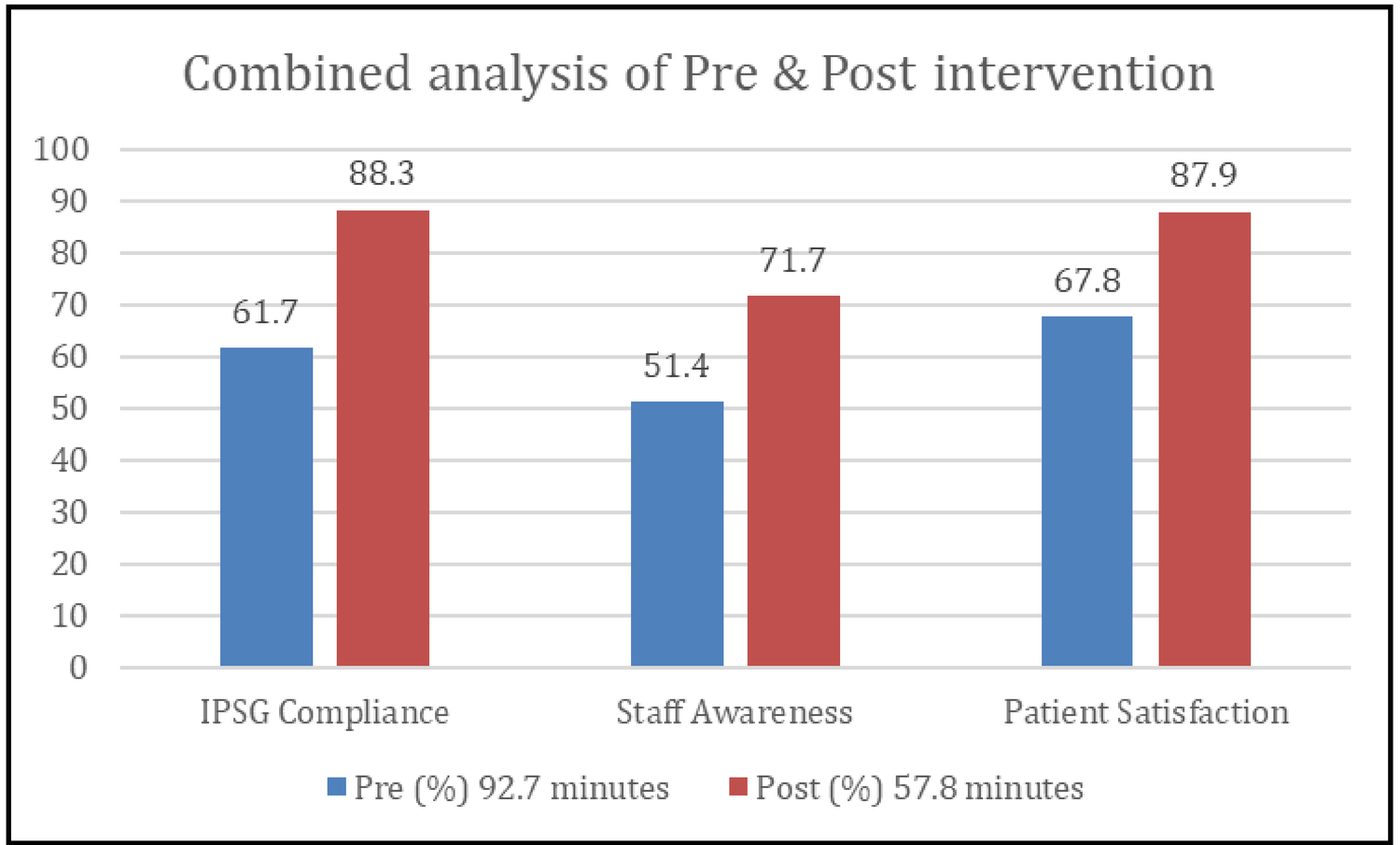
Combined Analysis of Pre & Post Intervention

Domain	% Change
Admission TAT	-36
IPSG Compliance	26.6
Staff Awareness	20.3
Patient Satisfaction	20.1



Combined Change Analysis of Domains

Metric	Pre-Intervention	Post-Intervention	% Change
Average Admission TAT	**94 minutes**	**58 minutes**	**-36%**
IPSG Compliance (Overall)	61.7	88.3	26.60%
Staff IPSG Awareness Score	51.4	71.7	20.30%
Patient Satisfaction Score	67.8	87.9	20.10%



conclusion

- Admission TAT reduced by 36%, indicating faster patient processing.
- IPSG compliance improved by 26.6%, enhancing safety practices.
- Staff awareness of safety goals increased by 20.3% post-training.
- Patient satisfaction rose by 20.1%, reflecting better communication and experience.
- The intervention proved that workflow redesign + IPSG training can drive measurable improvements.
- Administrative efficiency is crucial for ensuring safe and patient-centered care.

Recommendations

- Institutionalize regular IPSG training for all admission-related staff.
- Integrate IPSG checklists and SOPs into the digital admission system.
- Implement real-time dashboards to monitor Admission TAT and compliance.
- Conduct monthly internal audits to track adherence and spot delays.
- Provide role-based SOP handbooks for registration, billing, and TPA teams.
- Collect structured patient feedback after every admission to guide improvements.
- Facilitate cross-departmental coordination through regular joint training sessions

Thank you!