

STRENGTHENING OPD SCREENING OF VULNERABLE PATIENTS FOR FALL REDUCTION: A STRUCTURED QUALITY IMPROVEMENT STUDY IN AN OUTPATIENT DEPARTMENT

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Abstract: This study has been undertaken to improve early identification of fall-risk patients in the OPD through structured screening and reduce fall incidents. Patient falls are an important patient safety concern in outpatient departments, where high patient volume, diverse patient profiles, and limited observation time can delay the identification of vulnerable patients. This Quality Improvement project was conducted to strengthen early screening of fall-risk patients in the Outpatient Department of Apollomedics Super Specialty Hospitals, Lucknow, and to reduce fall incidence among vulnerable patients. A baseline assessment identified gaps including absence of standardized fall-risk screening, inconsistent documentation, delayed prioritization of high-risk patients, limited staff awareness, and environmental hazards. The intervention was implemented using the Plan–Do–Study–Act methodology and included a standardized visual fall-risk screening checklist, identification and flagging of vulnerable patients, patient prioritization, assistance during mobility, patient and caregiver education, staff training and competency assessment, environmental safety improvements, regular audits, and strengthened post-fall response processes. Baseline data showed 21 falls over six months, with an average of 3.5 falls per month. Overall fall-prevention compliance improved from 53% to 100%, while staff knowledge improved from 75% to 100% following the intervention. Fall-risk identification, protocol compliance, patient flagging, safe transfer practices, patient education, environmental safety, and documentation compliance also improved to 100%. Fall incidence reduced from 0.022% to 0%, with no falls reported during the post-intervention period. The project demonstrates that a structured, multidisciplinary, and continuously monitored fall-risk screening process is feasible and effective in improving outpatient patient safety and sustaining fall prevention practices.

Index Terms -Patient safety; Falls prevention; Outpatient department; Vulnerable patients; Fall-risk assessment; Quality improvement; PDSA cycle; Nursing quality

1. Introduction

Patient falls are among the most common preventable adverse events in healthcare settings and represent an important concern for patient safety and quality of care. Falls may result in injuries, disability, prolonged recovery, increased healthcare costs, and psychological consequences for patients and their families.

Although fall prevention has traditionally received significant attention in inpatient settings, outpatient departments also present considerable risks. OPDs experience high patient volumes and include patients from vulnerable populations such as older adults, children, women in labour, patients with mobility limitations, cognitively impaired patients, and individuals with physical weakness or other functional limitations.

Effective fall prevention requires early identification of patients at risk and the timely implementation of appropriate preventive measures. A structured screening process enables healthcare professionals to identify vulnerable patients promptly and initiate interventions such as assistance during mobility, prioritization for consultation, environmental safety measures, patient education, and appropriate documentation.

The OPD at Apollomedics Super Specialty Hospitals manages approximately 622 patients daily, including a substantial number of vulnerable patients. Baseline assessment demonstrated the absence of a standardized fall-risk screening process and inconsistent documentation of fall risk. Therefore, a structured Quality Improvement initiative was undertaken to strengthen early identification and management of vulnerable patients and reduce falls in the outpatient setting.

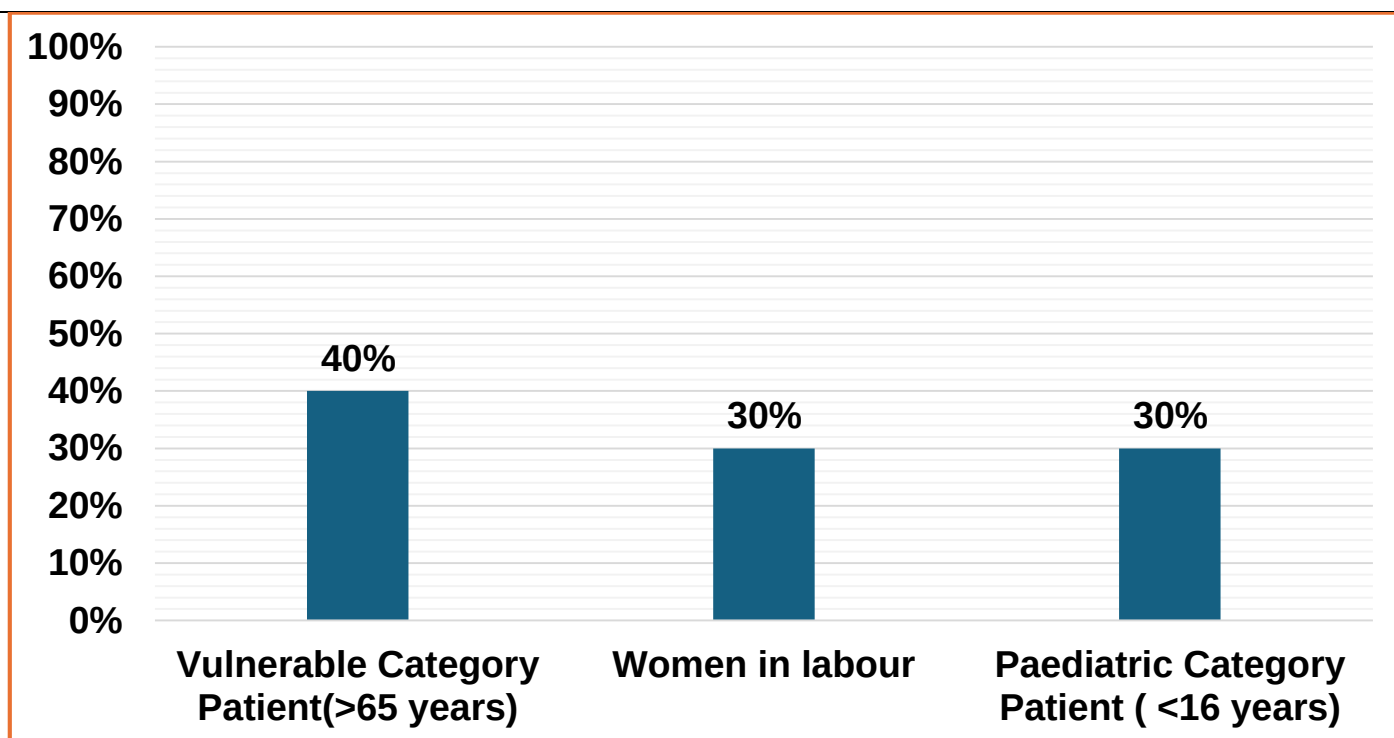


Fig:1 - Trend of OPD Patient Visits

2.Need of the Study

The OPD manages approximately 622 patients daily, including elderly patients, paediatric patients, women in labour, and patients with mobility or cognitive impairments. Despite the presence of vulnerable patient populations, there was no standardized process for systematic fall-risk screening at OPD entry.

A baseline review identified:

- No standardized OPD fall-risk screening process.
- Fall risk was not assessed consistently in all vulnerable patients.
- Inconsistent documentation of fall-risk assessment and preventive measures.
- Delayed prioritization of high-risk patients.
- Limited identification and flagging of vulnerable patients.
- Inadequate awareness regarding fall-prevention protocols.
- Environmental hazards, including unsuitable chairs and lack of grab bars in some areas.
- High patient load and time constraints.
- Delayed post-fall assessment processes.

During the baseline period, 21 falls were reported over six months, with an average of 3.5 falls per month.

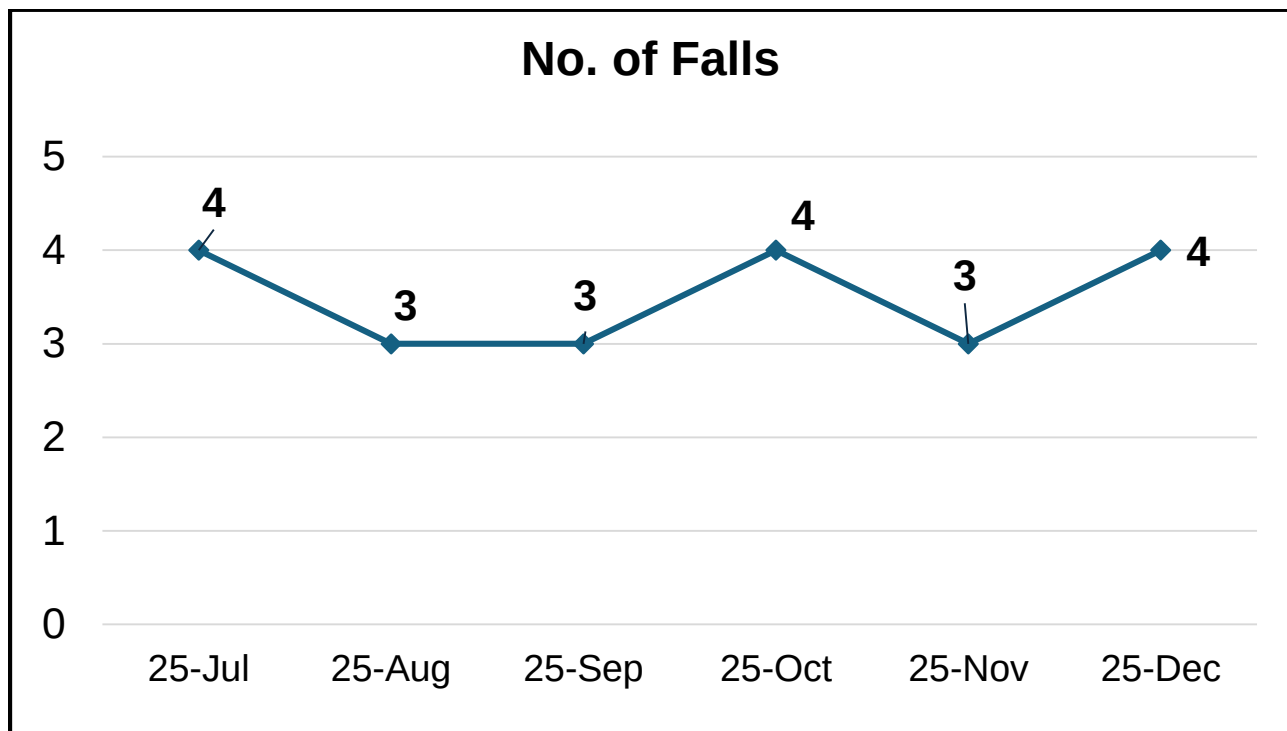


Fig:2 - Need for the study / Fall Trend

2.1 Objectives

- To identify vulnerable patients at risk of falls during OPD visits.
- To implement a standardized fall-risk screening tool in the OPD.
- To improve staff awareness and compliance with fall-risk screening procedures.
- To strengthen patient identification, prioritization, assistance, and documentation.
- To improve environmental safety within the OPD.
- To reduce the incidence of falls among vulnerable OPD patients.

3. Research Methodology

3.1 Study Design

The Study focused on improving existing clinical processes rather than testing a clinical treatment. The intervention involved systematic assessment of fall-prevention practices, implementation of standardized screening procedures, staff education, environmental improvements, and continuous monitoring.

3.2 Setting

The study was conducted in the Outpatient Department of Apollomedics Super Specialty Hospitals. The OPD manages approximately 622 patients per day and provides services to a diverse patient population, including vulnerable categories such as:

- Geriatric patients aged 65 years and above.
- Paediatric patients below 16 years.
- Women presenting in labour.
- Patients with cognitive impairment.
- Patients with physical, visual, hearing, or mobility impairments.

- Patients unable to perform activities of daily living independently.
- Terminally ill patients.
- Patients at risk of self-harm.

3.3 Root Cause Analysis

A fishbone analysis was conducted to identify factors contributing to patient falls in the OPD.

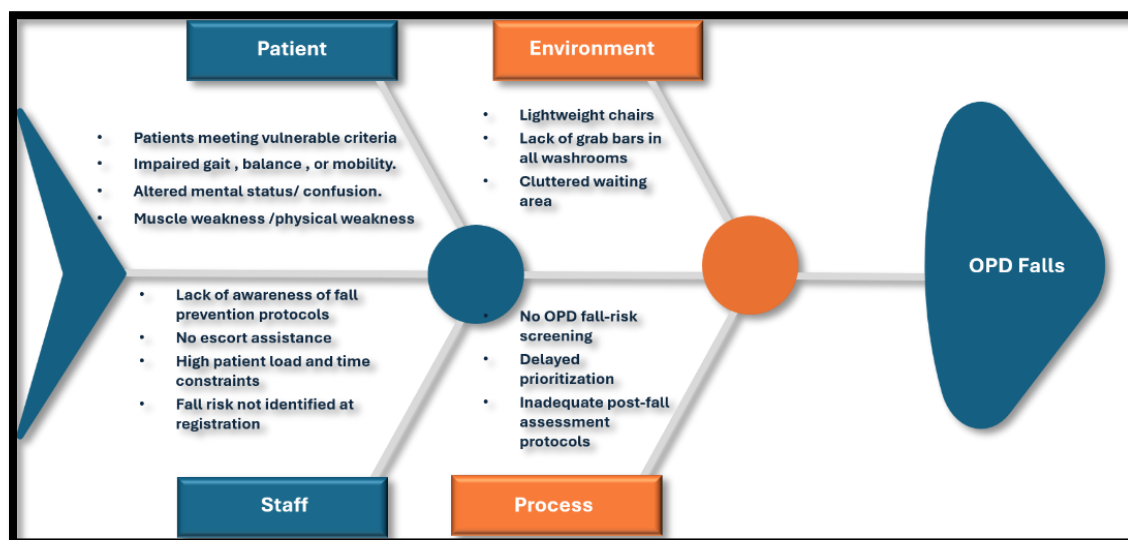


Fig. 3.3- A fishbone analysis

3.4 Intervention

The interventions were implemented using the Plan Do Study Act (PDSA) methodology.

A) Plan

The Researcher:

- Developed a standardized fall-risk screening checklist.
- Identified vulnerable patient categories.
- Established baseline data.
- Defined screening and documentation processes.
- Developed a workflow for fall prevention.

B) Do

The following interventions were implemented:

- Screening of vulnerable patients at OPD entry.
- Introduction of visual fall-risk screening.
- Identification and flagging of high-risk patients.
- Prioritization for consultation.
- Provision of assistance and ambulatory aids.
- Patient and caregiver education.
- Environmental safety improvements.

C) Study

The Researcher monitored:

- Compliance with fall-risk screening.
- Fall incidents.
- Documentation practices.
- Staff competency.
- Patient safety practices.
- Staff feedback.

D) Act

Based on audit findings and feedback:

- The checklist was modified and reinforced.
- Additional staff training was conducted.
- Compliance monitoring was strengthened.
- The process was integrated into routine OPD practices.
- Sustainability measures were introduced.

3.5 Fall-Risk Screening Process

A standardized visual fall-risk screening checklist was implemented to identify patients at risk.

The screening included assessment of:

- Unsteady gait and balance.
- Vision impairment.
- Dizziness or light-headedness.
- Altered mental status or confusion.
- Lower body weakness.
- Numbness or tingling in the feet.
- Polypharmacy.
- Use of high-risk medications.
- Use of assistive device
- Requirement for assistance during standing or walking.

Fig: 3.5 (a)- Audit Assessment Tools

AUDIT TOOL- OPD FALL RISK ASSESSMENT						
S. No.	OP No.	OP Fall Risk Assessment	Prioritization for Consultation	Environmental Safety	Assistance Given	Patient Education

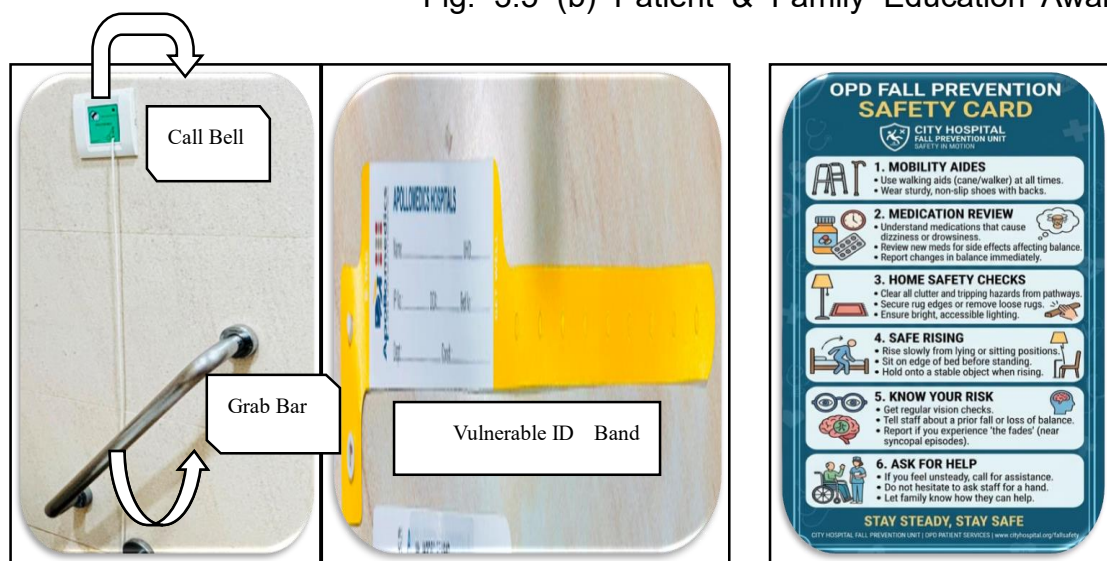
Remarks: If Patient is marked Vulnerable, then Prioritization, assistance and Patient Education must be given along with ensuring Environmental Safety. Mark only Yes/ No/ NA

S. NO.	Vulnerability Criteria	Yes	No
1	Geriatric Patients ≥ 65 Years		
2	Paediatric Patients < 16 Years		
3	Mentally Challenged/ Cognitively Impaired		
4	Women in Labour (Presenting in OPD)		
5	Physically Challenged (mobility/visual/ hearing impairment) Victim of abuse (social/sexual domestic)		
6	Terminally ill (dialysis/ chemotherapy/ advanced disease)		
7	Unable to perform Activities of Daily Living (ADL)		
8	Patient at risk for Suicide/ self-harm		
Vulnerability Status			
	Vulnerable Patient Identified		

Risk Factor / Category	Screening Checklist Question	Yes	No	N/A
Past Falls	Does the patient look or feel unsteady when walking?			
Unsteady Balance (GAIT)	Does poor eyesight make it hard for them to move safely?			
Vision Loss	Does the patient feel lightheaded or dizzy when standing up?			
Dizziness	Is the patient confused, forgetful, or rushing today?			
Altered Mental State	Does the patient need help or support to stand up?			
Lower Body Weakness	Does the patient have numbness or tingling in their feet?			
Numbness	Does the patient take 4 or more daily prescription medicines?			
Polypharmacy	Do they take sleep aids, sedatives, or blood pressure pills?			
High-Risk Meds	Do they use a cane, walker, or hold furniture to walk?			
Assistive Devices	Do they use a cane, walker, or hold furniture to walk?			
Total "Yes" Checks Score:		/ 10		
Risk Level: High Risk if 1 or more boxes are checked.				

Patients with one or more identified risk factors were considered at high risk and received appropriate preventive interventions.

Fig: 3.5 (b) Patient & Family Education Awareness



3.6 Key Interventions

a) Patient-Focused Interventions

- Vulnerable patients were identified at OPD entry.
- High-risk patients were prioritized for consultation.
- Assistance was provided during mobility and transfers.
- Vulnerable patients were appropriately flagged.
- Patient and family education regarding fall prevention was provided.

b) Staff-Focused Interventions

- Periodic staff training on fall prevention was conducted.
- Competency assessment was performed.
- Staff awareness regarding identification and management of high-risk patients was strengthened.
- Safe patient transfer practices were reinforced.
- Ongoing supervision supported compliance.

c) Environmental Interventions

- Environmental safety was improved through:
- Replacement of unstable chairs with stable chairs having armrests and anti-slip feet.
- Installation of grab bars.
- Improvement of anti-skid measures.
- Maintenance of clear and uncluttered pathways.
- Regular environmental safety rounds.

3.7 Process Improvements

The following process improvements were introduced:

- Standardized OPD visual fall-risk screening.
- Identification and flagging of vulnerable patients.
- Fast-track consultation for high-risk patients.
- Standardized documentation.
- Strengthened post-fall assessment procedures.
- Regular compliance audits.

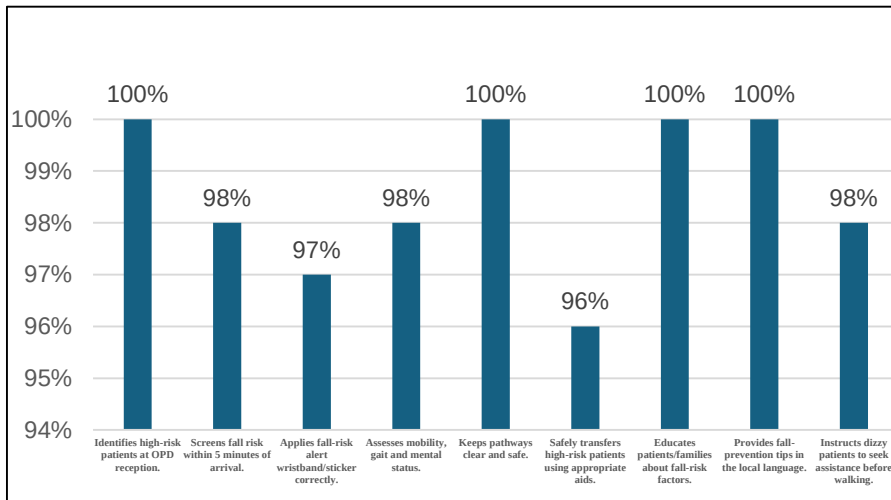
3.7 (a) Staff Education and Competency Development

Staff training was an important component of the intervention. A total of 18 staff members participated in competency assessment related to outpatient fall mitigation.

3.7(b) areas included:

- Identification of high-risk patients at OPD reception.
- Timely fall-risk screening.
- Correct application of fall-risk identification.
- Assessment of mobility, gait, and mental status.
- Maintenance of safe and clear pathways.
- Safe transfer of high-risk patients.
- Patient and family education.
- Communication of fall-prevention measures in the local language.
- Instructions for dizzy patients to seek assistance before walk

Fig:3.7(a) Competency Performance in Outpatient Fall Mitigation



Implementing fall reduction practices in the outpatient department.

No.	Competency Checklist	2 Met	1 Partially Met	0 Not Met
1	Identifies patients at risk for falls using appropriate screening tools.	☐	☐	☐
2	Explains fall risk to patients and caregivers and provides education on prevention.	☐	☐	☐
3	Ensures a safe environment in waiting and treatment areas (e.g., clear walkways, adequate lighting, no clutter).	☐	☐	☐
4	Assists patients who need help with mobility (e.g., walking, transferring).	☐	☐	☐
5	Encourages use of assistive devices as prescribed (e.g., cane, walker).	☐	☐	☐
6	Ensures patients wear appropriate footwear.	☐	☐	☐
7	Keeps personal items and commonly used items within easy reach.	☐	☐	☐
8	Responds appropriately to a fall or near-fall incident.	☐	☐	☐
9	Documents fall risk assessment, interventions, and education provided accurately.	☐	☐	☐

Assessor Name: _____ Date: _____

4.Results

Improvement in Fall-Prevention Practices

Table 4.1: Results of Descriptive Statistics of Study Variables

S. No.	Study Variable	Baseline Compliance (%)	Performance Level
1	Fall-risk identification	42%	Low
2	Protocol compliance	35%	Low
3	Patient flagging	50%	Moderate
4	Referral pathways	28%	Low
5	Timely fall-risk screening	32%	Low
6	Safe patient transfer	45%	Low
7	Patient and family education	52%	Moderate
8	Environmental safety compliance	37%	Low
9	Documentation compliance	45%	Low
10	Awareness regarding mobility aids	25%	Low

Table 4.1 The descriptive statistics showed wide variation in baseline fall-prevention practices across the monitored study variables. Patient and family education showed the highest baseline compliance at 52%, followed by patient flagging at 50%, safe patient transfer and documentation compliance at 45% each, and fall-risk identification at 42%. Environmental safety compliance was 37%, protocol compliance was 35%, timely fall-risk screening was 32%, referral pathway compliance was 28%, and awareness regarding mobility aids was the lowest at 25%. These findings indicate that most fall-prevention practices were at a low baseline performance level before implementation of the structured intervention, highlighting the need for standardized screening, staff education, improved referral pathways, patient flagging, environmental safety measures, and consistent documentation.

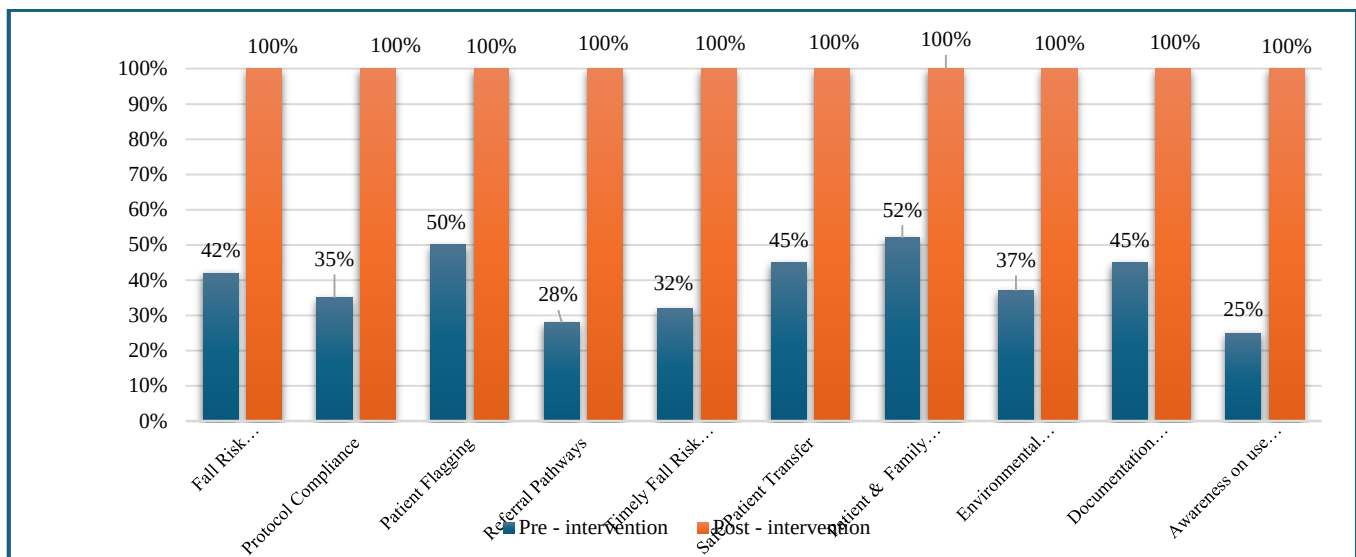


Fig: 4 Intervention Impact Assessment

4.2 Post-Intervention Results of Study Variables

Table 4.2: Comparison of Baseline and Post-Intervention Compliance

S. No.	Variable	Baseline Compliance (%)	Post-Intervention Compliance (%)	Improvement
1	Staff knowledge assessment	75%	100%	25 percentage points
2	Overall fall-prevention compliance	53%	100%	47 percentage points
3	Monitored fall-prevention parameters	Variable baseline performance	100%	Achieved full compliance

Table.4.2 The post-intervention descriptive findings showed marked improvement across all measured fall-prevention indicators. Staff knowledge assessment improved from 75% at baseline to 100% following focused education and competency assessment. Overall fall-prevention compliance increased from 53% at baseline to 100% after implementation of standardized fall-risk screening, regular compliance audits, improved patient identification and flagging, strengthened referral pathways, enhanced patient education, and improved documentation practices. Following the intervention, all monitored fall-prevention parameters reached 100% compliance, indicating successful implementation and adoption of the structured OPD fall-prevention process.

5.Result

and

Discussion

A Quality Improvement (QI) project using the Plan–Do–Study–Act (PDSA) methodology was implemented at Apollomedics Super Specialty Hospitals. Baseline assessment included review of fall incidents, identification of root causes, and assessment of existing fall-prevention practices. A standardized visual fall-risk screening checklist and vulnerable patient identification process were introduced. Interventions included staff education and competency assessment, patient flagging, prioritization for consultation, assistance for high-risk patients, environmental safety improvements, patient and family education, regular audits, and strengthening of post-fall management processes.

The baseline assessment identified 21 falls over six months, with an average of 3.5 falls per month in an OPD serving approximately 622 patients daily. Baseline overall fall-prevention compliance was 53%, which improved to 100% following implementation of the intervention. Staff knowledge improved from 75% at baseline to 100% following the intervention. Fall-risk identification, protocol compliance, patient flagging, referral pathways, timely screening, safe transfer practices, patient and family education, environmental safety,

documentation compliance, and awareness regarding mobility aids improved to 100%. The fall incidence decreased from 0.022% (4 falls per 18,000 visits) to 0%, with no falls reported during the post-intervention period.

6. Conclusion

Implementation of a structured OPD fall-risk screening process, combined with staff training, patient identification, environmental modifications, and regular audits, significantly improved fall-prevention compliance and reduced patient fall to zero during the post-intervention period. The initiative demonstrated that a simple, structured, and multidisciplinary approach can be feasible, sustainable, and scalable across outpatient services.

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