
Nursing Call Bell Response System & TAT in Response Time: A descriptive study

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INTRODUCTION

- Assessment of patient satisfaction is one of the very important parameters toward ensuring quality healthcare delivery in any setup
 - The nursing call bell system is critical in healthcare for its role in providing immediate access to assistance, enhancing patient safety, and improving overall satisfaction by ensuring prompt responses to patient needs. It optimizes resource allocation and supports regulatory compliance, contributing to efficient and patient-centered care delivery.
 - The study identifies gaps in patient care, communication, and service delivery in the IPD.
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Review of literature

- The first literature review of **Varghese et al. (2019)** showed that strategic hospital design and proximity of nursing stations significantly improve nurse call response times. Advanced call bell systems, staff training, and process optimization are essential for efficient responses. This study aims to implement these best practices at Godrej Memorial Hospital to enhance patient satisfaction and care quality.
 - The second literature review of **Robin Digby, Melissa Bloomer, & T. Howard** found that improving call bell response times and increasing staff awareness significantly enhanced patient outcomes, though the number of call bell activations remained unchanged. Emphasizing leadership and visual supervision of high-risk patients was crucial in reducing falls. These insights will inform my research at Godrej Memorial Hospital, focusing on training staff, leadership initiatives, and monitoring high-risk patients to improve call bell response times and patient satisfaction.
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- The third literature review of **Isaac Austin & Dayana Angel** highlighted that call bell response times vary across different units and shifts due to factors such as staff-to-patient ratios and workload. This study's findings on the necessity of reviewing response times by shifts and units are directly applicable to improving the Nursing Call Bell Response System at Godrej Memorial Hospital. By incorporating these insights, the aim is to enhance staff scheduling, resource optimization, and continuous monitoring for better patient satisfaction and care quality
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Research Question

How might a Nursing Call Bell Response System set up the service excellence and reduce response time in healthcare settings?

PURPOSE OF THE STUDY

To evaluate the Nursing Call Bell Response System in the In-Patient Department (IPD) of Godrej Memorial Hospital, Mumbai, with the aim of identifying and addressing factors that contribute to delays in nursing responses.

OBJECTIVES

- To evaluate the TAT of Nursing Call Bell Response System
- To identify its affect on patient satisfaction.

Methodology

Study Design

This cross-sectional study analyzes data from the nursing call bell system over one month for a sample size of 30 beds, including twin sharing, general ward, suite room, and economy ward. Key parameters include:

- Floor number
 - Bed number
 - Number of calls per patient
 - Time of the call
 - Nurse response time
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Study Setting

- Location: IPD, 2nd floor, Godrej Memorial Hospital, Mumbai
- Areas covered : General ward, twin sharing, economy ward, suite room
- Focus: Assess patient wellness, nursing care, and overall service quality during hospital stays

Study Tool : The primary tools for data collection of TAT will include

- Nursing Call Bell System Logs
- Patient Satisfaction Questionnaires

Study Duration: One month (30 days)

Steps for calculation of TAT:

- The data for response entries 1400 was collected to calculate TAT of response time from the Nursing bell response system software.
 - This has software data from the time and date of calling and the date & time of the response.
 - The TAT is determined by calculating the difference between the time of getting a call and the time of responding for each entry from 1 to 1400 calls.
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Formula for Calculating TAT

$$TAT = \sum_{i=1}^N (T_{\text{response}} - T_{\text{call}}) / N$$

Where:

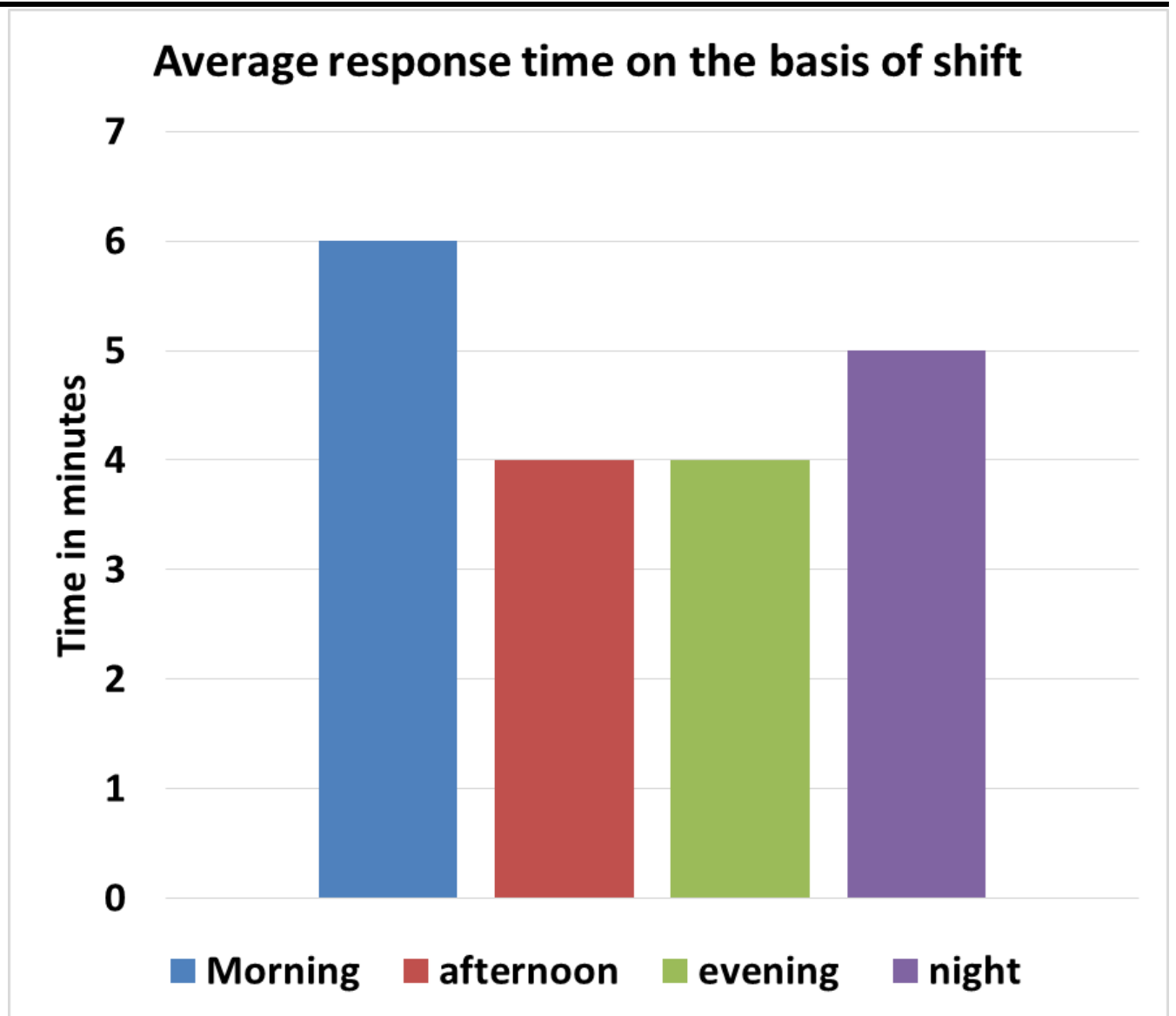
- T_{call} = time when the call was made.
 - T_{response} = time when the call was responded to
 - N is the total number of calls
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RESULTS

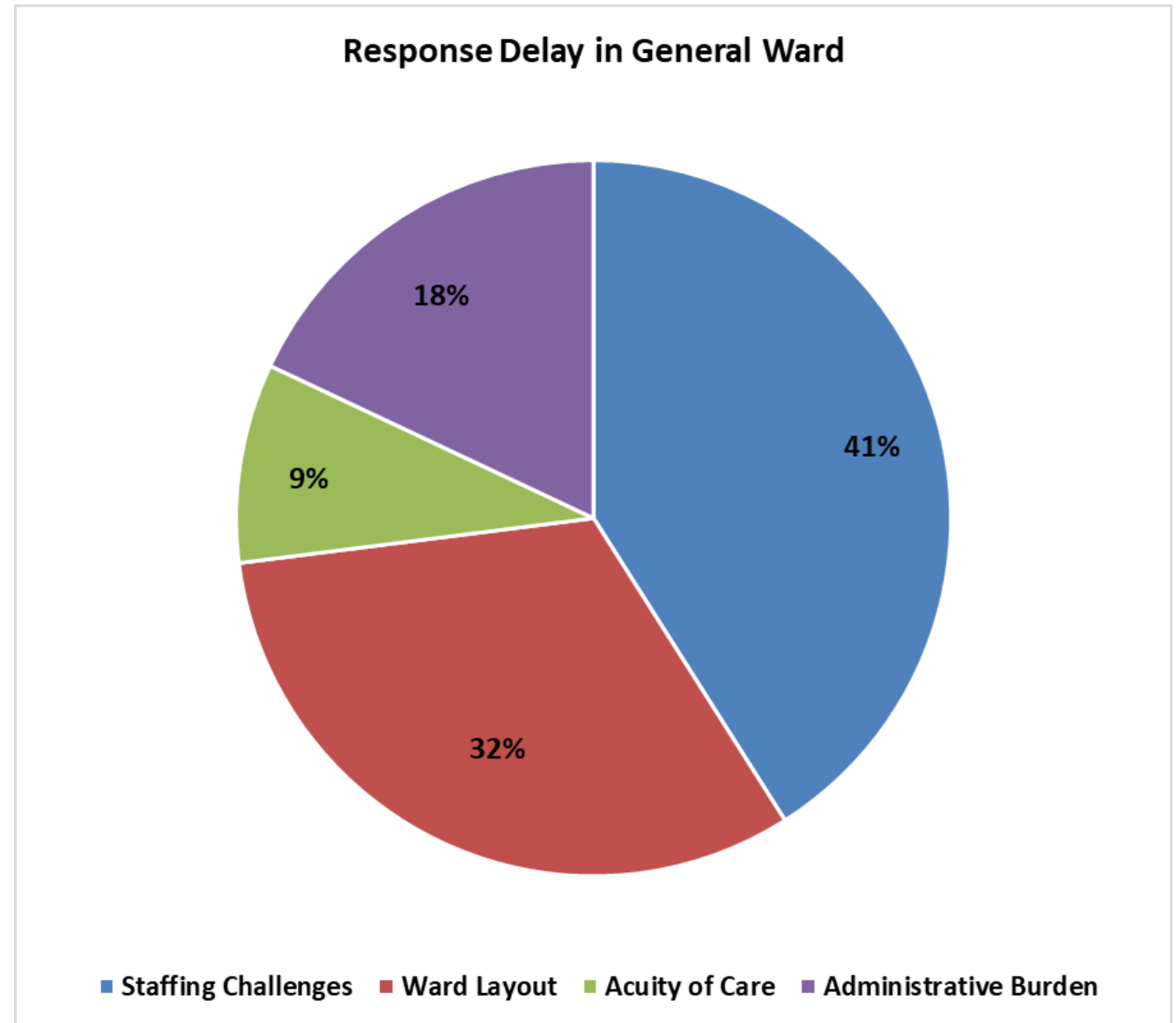
Factors Contributing to Delays

- Higher Patient-to-Nurse Ratio: Significantly impacts response times.
 - Inefficient Shift Transitions: Leads to delays in attending patient calls.
 - Patient Acuity Levels: Higher care requirements contribute to response delays.
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- Morning: High patient activity levels, numerous administrative tasks, doctors rounds
- Afternoon: High patient-to-nurse ratio, frequent shift changes, increased number of emergencies, cumulative fatigue.
- Evening: Increased patient activity, medium administrative task load, preparations for the next shift transition.
- Night: Reduced staffing levels, decreased alertness due to natural circadian rhythms.

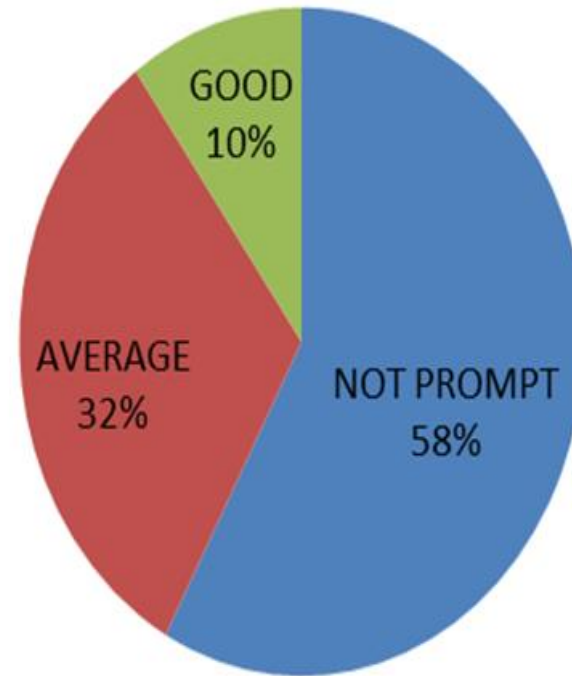


- **Staffing Challenges:** 41% of delays are due to a higher patient-to-nurse ratio, leading to prioritization of critical needs over non-urgent calls.
- **Ward Layout:** 32% of delays result from the physical distance between the nursing station and patient wards, increasing travel time.
- **Acuity of Care:** 9% of delays are due to the complexity of care required by certain patients, affecting immediate response capability.
- **Administrative Burden:** 18% of delays are caused by administrative tasks, with potential improvements through streamlined documentation and technology use.



- **Patient Dissatisfaction:** 58% patients were not satisfied with the nursing staff's response time to call bells.
- **Quality of Service:** Despite dissatisfaction with response times, patients reported no issues with the quality of care provided by the nursing staff.
- **Key Feedback:** The primary concern highlighted by patients was the delay in response time, not the quality of the service itself.

Patient Satisfaction



Three primary factors contributing to delays in nurse responses were identified

- Higher patient-to-nurse ratio: This significantly impacts response times.
 - Inefficient shift transitions: Poor handling leads to delays in attending to patient calls.
 - Patient acuity: The level of care required by patients influences response delays
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Discussions

Strengths of the Study

- Comprehensive Data Collection.
- Shift Analysis
- Multifaceted Approach

Limitations of the Study

- Single Hospital Setting:
 - Focus on One Floor:
 - Patient Feedback: .
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Conclusion

- **Significant Delays Identified:**
 - Understaffing: 41% of delays
 - Inefficient shift changes: Unspecified %
 - Complexity of patient care: 9% of delays
 - Distance between nurses and patients: 32% of delays
 - Administrative tasks: 18% of delays
 - **Shift-Specific Insights:**
 - Evening shift: Fastest response time at 4 minutes
 - Morning shift: Slowest response time at 6 minutes due to high activity levels, paperwork, doctor visits, and possible fatigue
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Recommendations

- Adjust staffing levels based on patient needs
 - Streamline shift handovers
 - Improve ward layout to reduce travel time
 - Use technology to reduce paperwork for nurses
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Thankyou
