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Transforming Clinician Interaction with HMIS : Effective Strategies for Improved Adoption and Usage

Mixed method study model in SMS medical College and hospital, Jaipur

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About the organization

Ohum Healthcare Solutions, by Ohum Healthcare Private Limited, leads in Clinical Transformation by enhancing healthcare delivery in hospitals and public health communities.

They developed OhumSky, a top cloud-based hospital management system that controls costs and improves patient care, including Financial, Administrative, and Clinical Management. It features OhumBI for advanced analytics.

Their cloud-based HMIS enables efficient management of hospital operations—patient management, clinical workflows, inventory control, and billing—with remote access for emergency response.

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Introduction

A "HMIS" is a complete, integrated information system that manages every facet of a hospital's operations, including dealing with administrative, financial, legal, and medical issues as well as processing associated services. In a broader sense, it increases the efficiency of the healthcare system as a whole. HMIS is a tool used to manage the patient care operations of hospitals by automating transactions, capturing necessary data, and producing a wealth of insights. Continuous progress in the system and the areas of our emphasis would be aided by routine monitoring using the data produced by the system. Above all, HMIS guarantees hassle-free, thorough, unbiased, and accurate data collection

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Background

Technologies adoption faces a variety of difficulties that necessitate micro level research in order to comprehend the problems and implement solutions. A thorough strategy is required at this time since the use of HMIS encompasses both human and material (technological) components.

HMIS system is being used in SMS Hospital to run the hospital and provide healthcare, so it is important to assess its impact and comprehend the difficulties associated with its adoption, usage and satisfaction. The study's goal is to ascertain how HMIS affects SMS Hospital’s healthcare services. Among healthcare professionals, a cross-sectional qualitative study will be conducted.

OBJECTIVES

BROAD

To analyse the usage and satisfaction levels of HMIS among healthcare workers at Sawai Man Singh Hospital, Jaipur.

SPECIFIC OBJECTIVE

a) To evaluate the HMIS implementation process within the hospital.

b)To investigate HMIS usage across different departments of the hospital.

c)To assess the satisfaction levels of healthcare workers with HMIS in the hospital.

METHODOLOGY

Study type - Descriptive cross sectional study. The particular study is prospective and observational in nature

Study period and area - The particular study is carried out for a period of three-month duration in SMS Hospital Jaipur

Sample size- A sample of 120 survey reports was taken up for the study.

Sampling method- Purposive and convenience sampling have been used in the study for collection of the data to analyze the HMIS adoption rate, satisfaction and HMIS utilization among the healthcare providers.

Data collection technique-

➢ Questionnaire form For evaluation of HMIS satisfaction among healthcare workers, primary data was collected from 120 respondents through a Google Sheet questionnaire.

➢ Personal interview

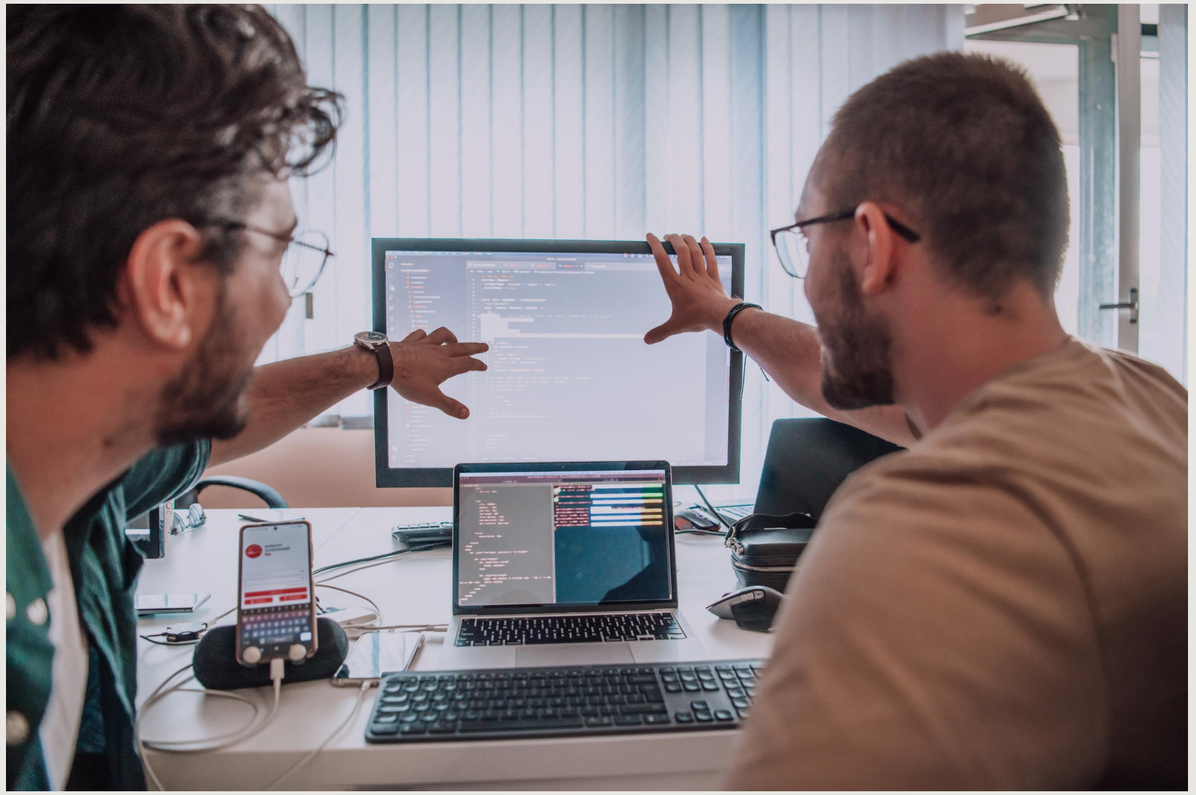
1) Healthcare workers(clinicians)- For determination and analysis of HMIS usage

2) IT Department professionals- For the study of HMIS implementation in the hospital.

➢ Direct observation - For determination and analysis of HMIS usage. Data analysis methodology- - MS Excel and Likert sclae and graphical analysis through bar graphs and pie charts was done.

HMIS IMPLEMENTATION AND ITS STAGES

1) Planning
2) Analysis
3) Design
4) Development
5) Testing
6) Training
7) Deployment and go live
8) Maintenance



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HMIS MODULES

1. Appointment
2. Registration
3. Kiosk
4. ADT
5. Billing
6. Blood bank
7. Diet
8. Queue Management
9. Ambulance
10. Bio medical waste management
11. Inventory
12. Linen & Laundry
13. CSSD
14. Chemotherapy
15. Care plan and nursing
16. Clinical Decision support system
17. Medical Records
18. Laboratory
19. Mortuary
20. Grievance
21. Patient portal
22. Radiology
23. OT
24. PACS interface
25. BI tools
26. Drug database
27. Email, WhatsApp interface
28. Telemedicine
29. Teleconsultation

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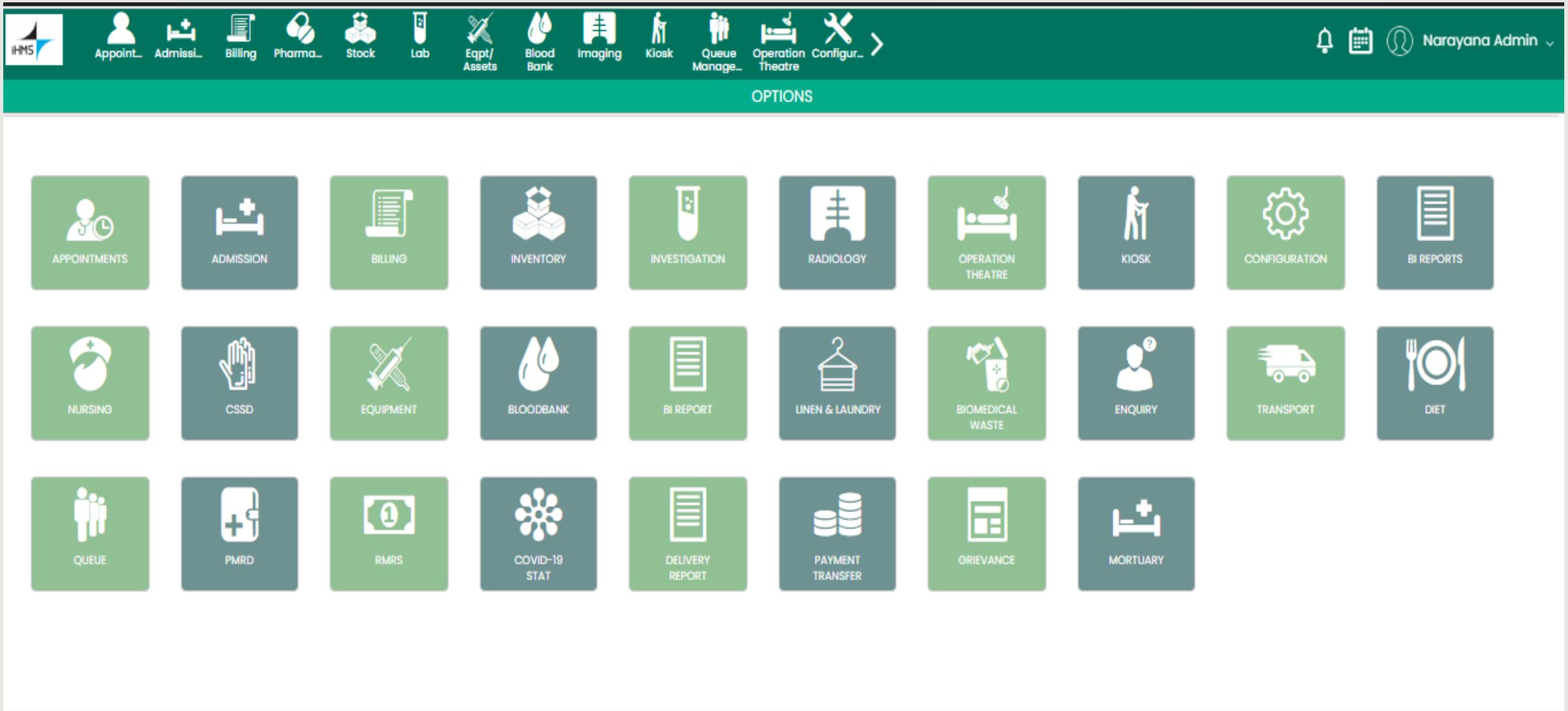
HMIS Module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Imaging
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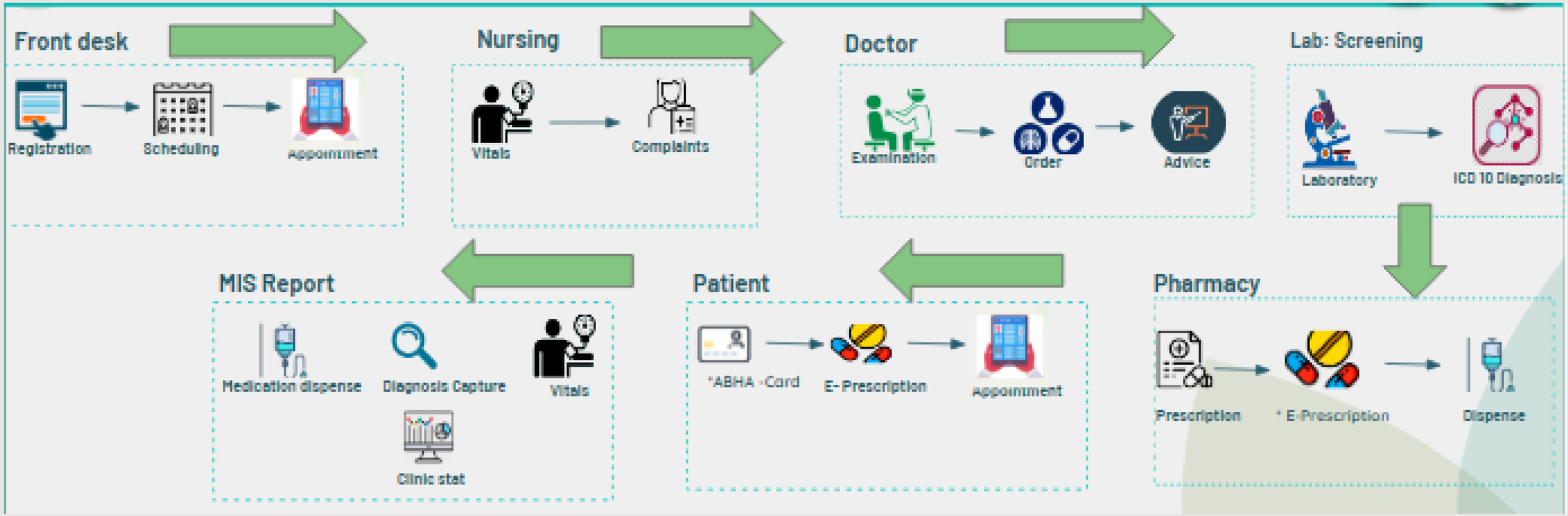
Narayana Admin
OPTIONS
APPOINTMENTS
ADMISSION
BILLING
INVENTORY
INVESTIGATION
RADIOLOGY
OPERATION THEATRE
KIOSK
CONFIGURATION
BI REPORTS
NURSING
CSSD
EQUIPMENT
BLOODBANK
BI REPORT
LINEN & LAUNDRY
BIOMEDICAL WASTE
ENQUIRY
TRANSPORT
DIET
QUEUE
PMRD
RMRS
COVID-19 STAT
DELIVERY REPORT
PAYMENT TRANSFER
GRIEVANCE
MORTUARY

HMIS Usage in Different Departments



DATA ANALYSIS

Descriptive study

The questionnaire had two parts: the first component outlined the demographics and broad data. The second component contained questions concerning five independent variables on Likert model. Each question was scored on a Likert scale with a range of 1 to 5.

VARIABLES

1. Content 2. Format 3. Accuracy 4. Timeliness 5. User Satisfaction

Categories

Extremely Not Good 20-35%

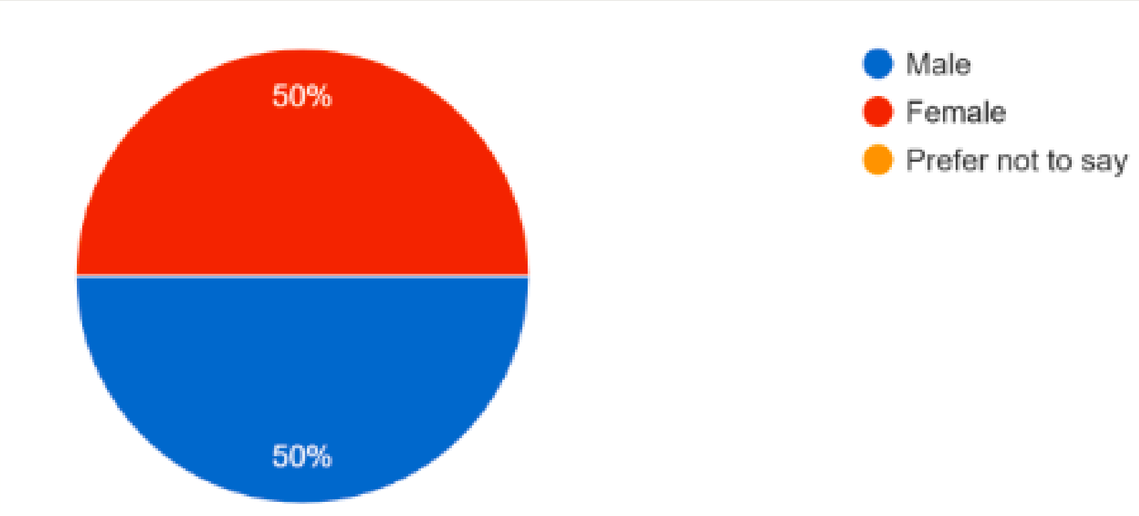
Not Good 36 – 51%

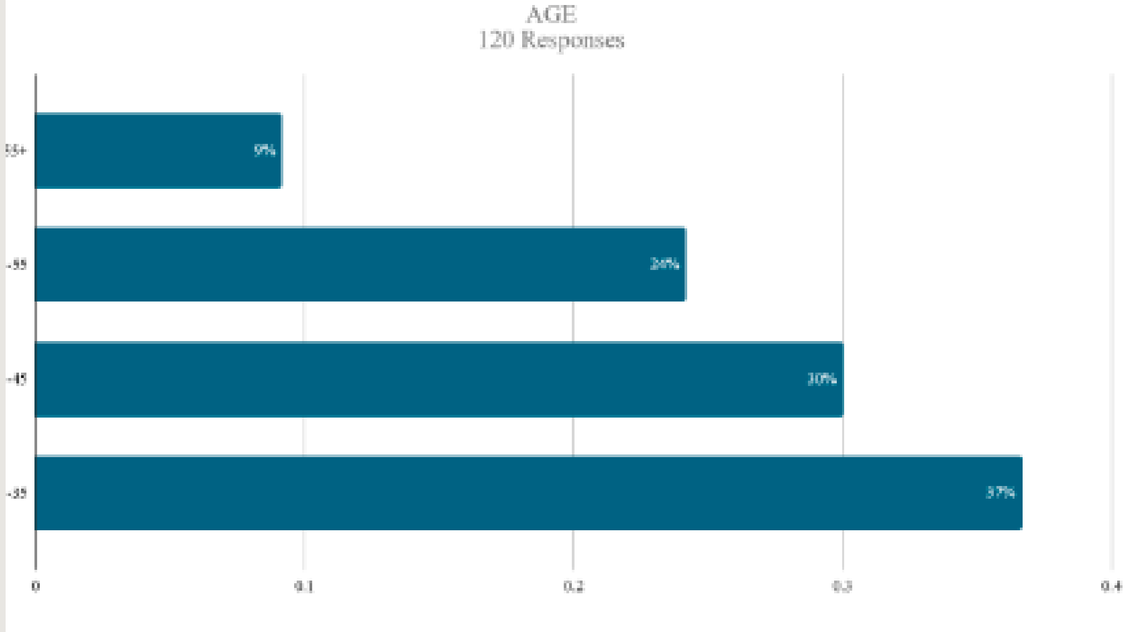
Fairly Good 52 – 67%

Good 68 – 83 %

Very Good 84 – 100%

AGE DISTRIBUTION AND GENDER OF RESPONDENT

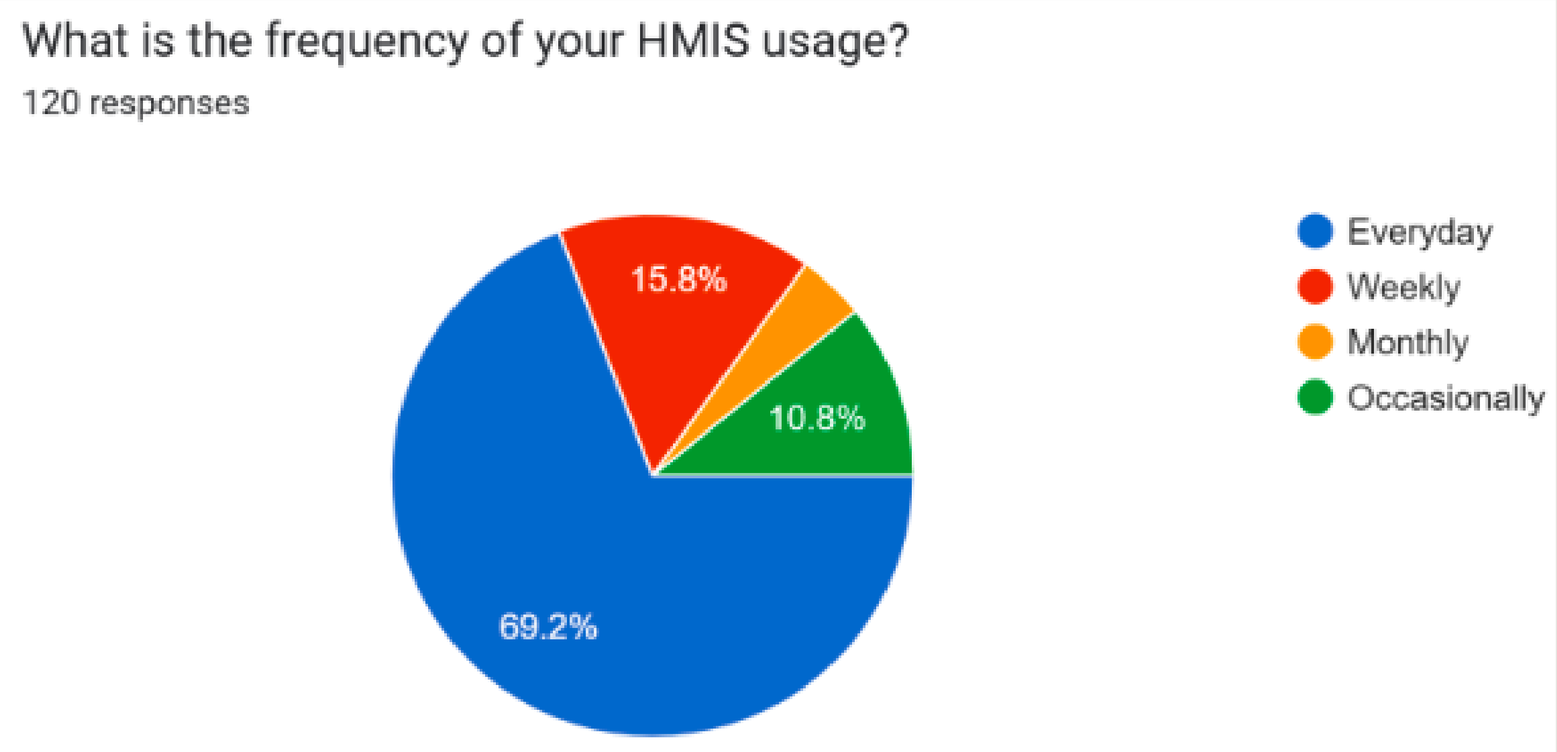




Out of 120 respondents, we have 50 male and 50 female respondents who were using HMIS.

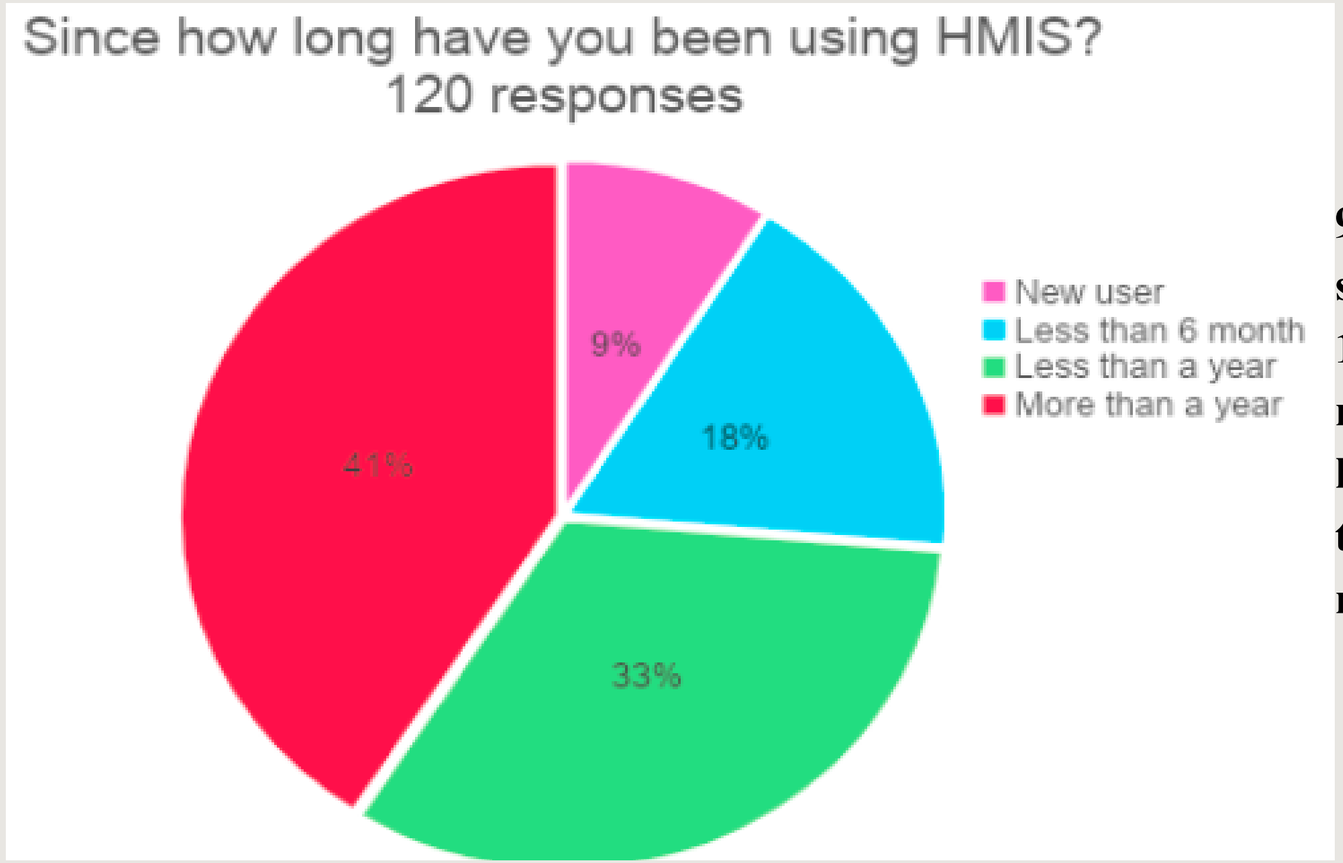
Out of the 120 respondents, (37%) were aged between 25 to 35 years, (30%) were between 36 and 45 years old, and (24%) were over 46 to 55 years old.

FREQUENCY OF USE



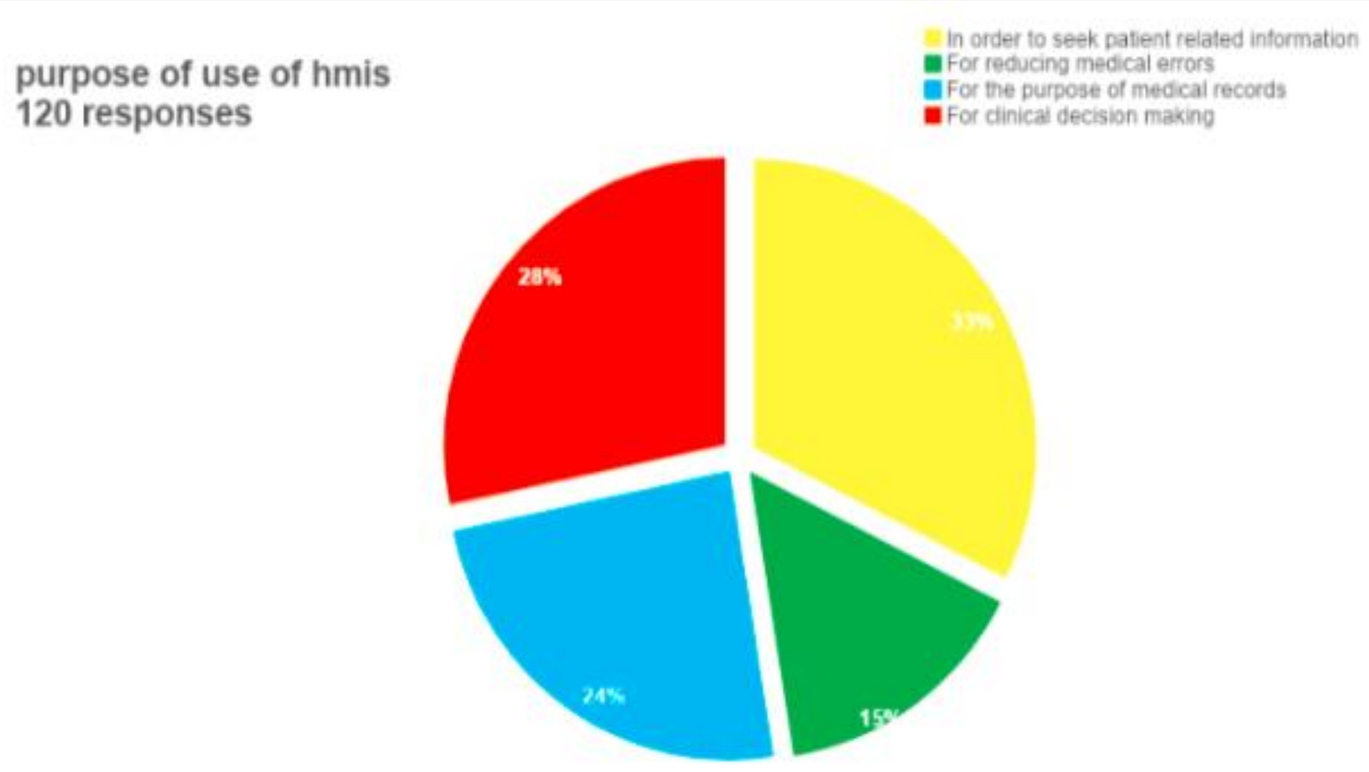
Out of 120 respondents, 69% used HMIS daily,
15.8% used it weekly,
4.2% used it monthly, and
10.8% were occasional users.

TIME PERIOD OF HMIS USAGE



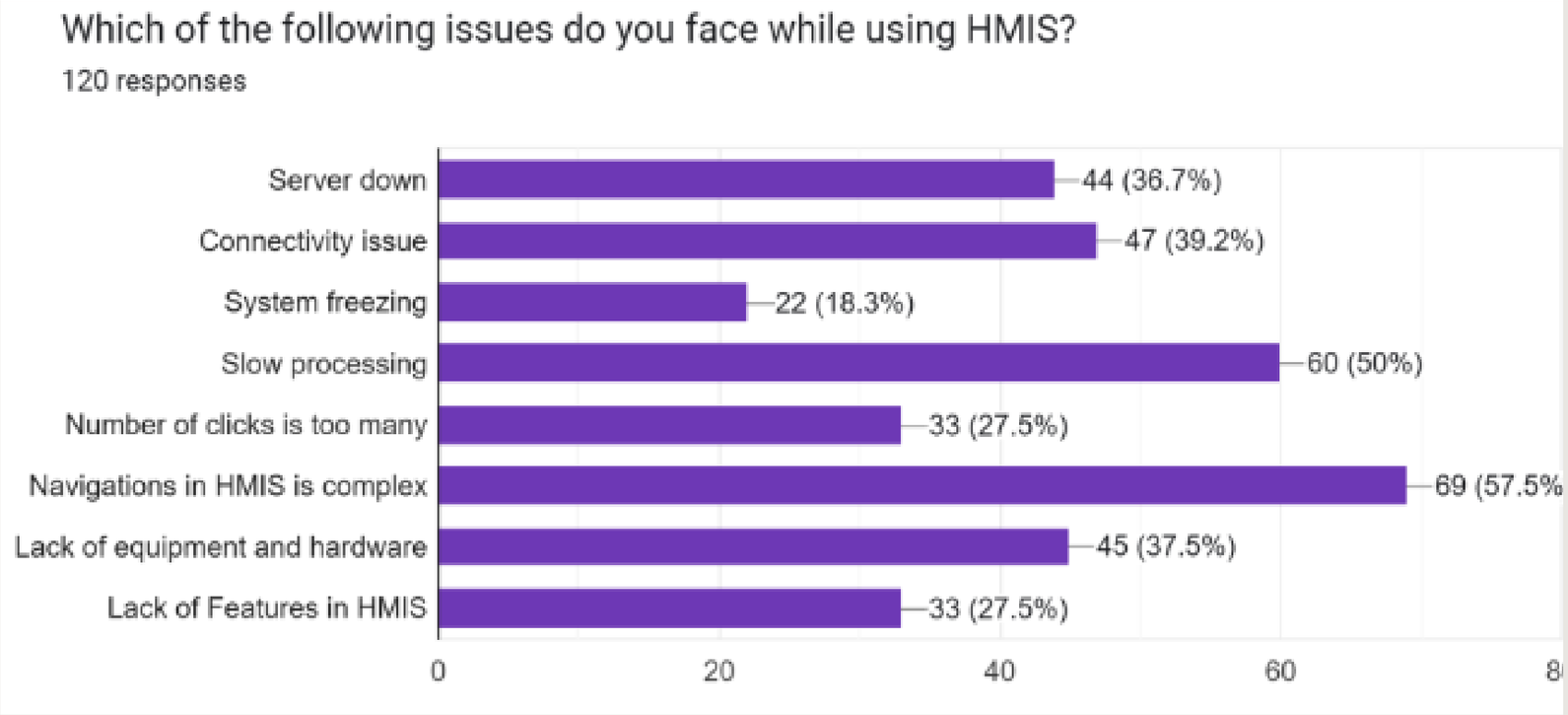
9% of respondents were new users who were still adapting to HMIS usage in the hospital. 18% had been using HMIS for less than 6 months due to their recent recruitment. 33% had been using HMIS for less than a year, while the majority, 41%, had been using HMIS for more than a year.

PURPOSE OF HMIS USAGE



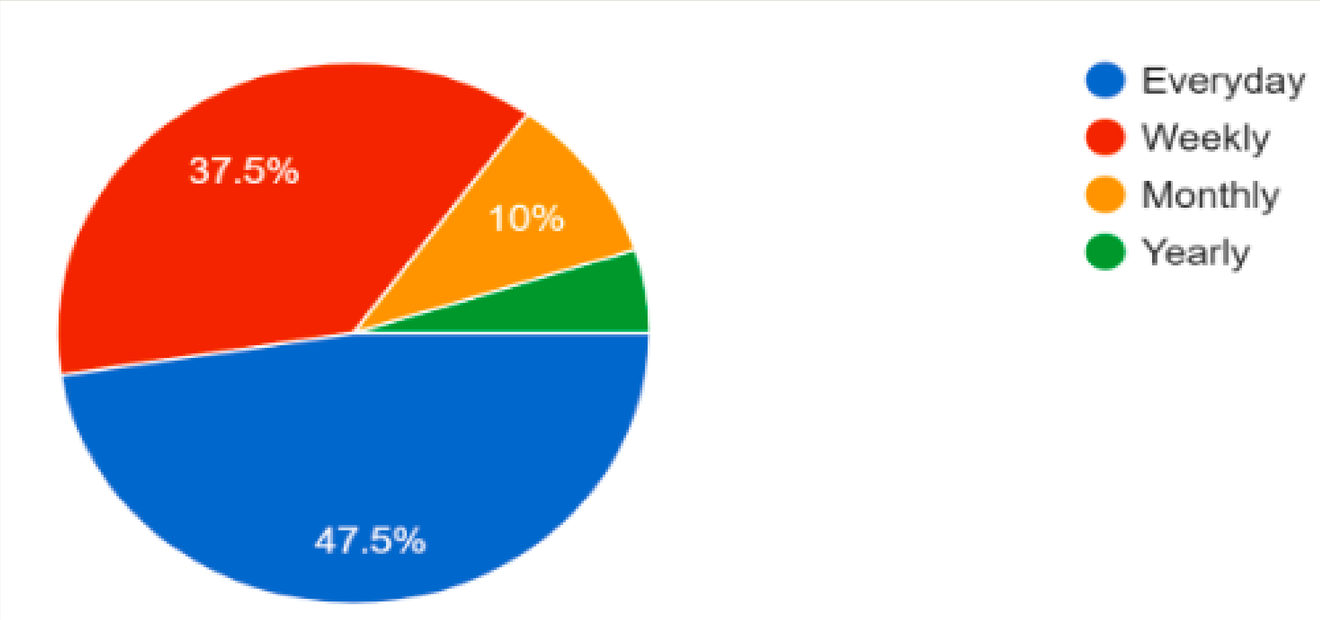
Hospital using HMIS around 33% for seeking patient related information, 24% for purpose of keeping medical record, 15% in reducing medical errors (mostly in clinics) and 28% for clinical decision making

ISSUES FACED WHILE USING HMIS



The primary issue with the hospital's HMIS was its complex navigation, reported by 57.5% of respondents. Slow processing and lengthy data loading times were experienced by 50%, followed by connectivity issues (39.2%) and server downtimes (36.7%). Additionally, 37.5% faced equipment and hardware problems, and 27.5% reported excessive clicks required for functions.Other challenges included complex HMIS navigation, insufficient features, and the excessive number of steps and clicks required for HMIS functions in the different department, making the process time-consuming.

ISSUES FACED WHILE USING HMIS



Out of 120 respondents, 47.5% encountered issues with the HMIS on a daily and regular basis, whereas the remaining 37.5% experienced problems weekly and 10% experienced monthly. The fact that the majority of respondents faced issues daily with the HMIS with minor problems indicates a tremendous use of the system and shows a positive sign for technology adoption at the hospital.

RESULTS

The study concluded that the aspects of Content (A1), Accuracy (A2), Format (A3) and Timelines (A4) were rated in the fairly good to good categories, with approximate values of 69.05%, 60%, 70%, 70%, respectively.

- Based on the descriptive analysis, User Satisfaction (B) with HMIS was rated in the good category, with an approximate value of 70.4%.

- 85.8% of respondents indicated that the HMIS effectively maintained the confidentiality of patient information.
- 86.7% of respondents were aware that HMIS is a comprehensive system interconnected with various hospital departments.
- 69.2% of respondents used HMIS daily, while only 10.8% used it occasionally
- The main issues identified with the HMIS were navigation is complex within the application by 57.5% and followed by slow processing and connectivity issues, 50% and 39.2% respectively reported by respondents.
- 47.5% of respondents experienced regular issues with the HMIS system, though the problems are minor and it also reflect a extensive use of the system
- The most common problems reported included navigation in the application, server downtimes and slow processing, system hang-ups, and insufficient user training.

LIMITATIONS

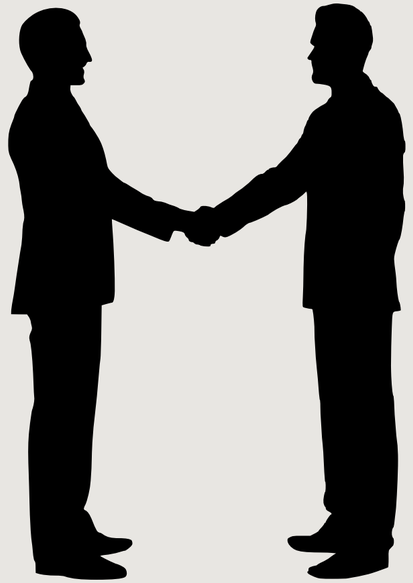
The major limitation of our study was its small sample size, thus if we need to generalize the results, we will be needing to conduct a subsequent study with a larger sample size.

RECOMMENDATIONS

1.Training and Support
2.All healthcare workers should be given an equal opportunity to handle HIMS on a rotational
3.basis, to empower them with technology.
4.Standardization
5.Clear Communication
6.User-Friendly Interface
7.Modern features (such as hyperlinking, offline help for Windows, software, hardware, etc.) maybe added to the HIMS system.
8.Integration with Other Systems
9.Rewarding and recognizing healthcare professionals who successfully use the HMIS and
10.contribute to its success.
11.Continuous Improvement

CONCLUSION

The overall end-user acceptance for HIMS was good, although there was an appreciable
scope for improvement.
- The findings of the study provided insights into the effectiveness of HMIS in enhancing
the quality of hospital services and patient outcomes through :-
- Improved employee retention.
- Increased efficiency and productivity.
- Improved patient care.
- Monitoring collective/individual performance of hospitals across the administrative channel.
- Cost savings
- Gaining competitive advantage over other hospitals



THANK YOU