Internship Training

At

Eye-Q Vision Private Limited

On

Submitted by

Dr. Bhavika Aggarwal (PT)

PG/21/024

Under the esteemed guidance of

Dr. Nidhi Yadav

Associate Professor

International Institute of Health Management Research

New Delhi

Internship Training

At

Eye-Q Vision Private Limited

On

Assessing the impact of a Whatsapp Appointment booking system on workflow efficiency and gap mitigation: A retrospective quantitative study in the hospital system

Submitted by

Dr. Bhavika Aggarwal (PT)

PG/21/024

International Institute of Health Management Research

New Delhi

The certificate is awarded to

Dr. Bhavika Aggarwal (PT)

In recognition of having successfully completed his/her

Internship in the department of

Information Technology

And has successfully completed his project on

Assessing the impact of a Whatsapp Appointment booking system on workflow efficiency and gap mitigation: A retrospective quantitative study in the hospital system

16th January 2023 – 1st May, 2023

In

Eye-Q Vision Private Limited.

He comes across as a diligent person who has a strong drive and zeal for learning

We wish him all the best for future endeavors.

Training and Development

Mr. Sumit Bhasin

Vice President – Human Resources

EyeQ Vision Private Limited

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr. Bhavika Aggarwal (PT), student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at Eye-Q Vision Private Limited from 16th January to 30th April, 2023. The Candidate as successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical. The Internship is in fulfilment of the course requirements. I wish her all success in all her future endeavors.

Dr. Sumesh Kumar
Associate Dean, Academic and Student Affairs
IIHMR Delhi

Dr. Nidhi Yadav
Associate Professor
IIHMR Delhi

FEEDBACK FORM

Name of the Student: Dr. Bhavika Aggarwal (PT)

Name of the Organization in Which Dissertation Has Been Completed: EYE-Q Hospitals Pvt. Ltd, Gurugram, Haryana

Area of Dissertation: IT department

Attendance: Adherence to Dissertation Norms

Objectives achieved: Yes

Deliverables: 1. Resolving and analyzing the Internal user's issues and tickets
2. Requirement analysis, designing, testing and initial implementation done of the Appointment Management System and the Whatsapp booking system

Strengths: 1. Hardworking
2. Open to new learnings
3. Good communication skills
4. Analytical skills
5. Attention to details

Suggestions for Improvement:

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):
More exposure can be given to the students for practical workshops.

Signature of the Officer-in-Charge/ Organization Mentor (Dissertation)

Date: 29/07/2023
Place: Gurugram. Haryana

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CERTIFICATE ON PLAGIARISM CHECK

Name of Student (In block letter)	Dr/Mr./Ms.: BHAVIKA AGGARWAL (PT)		
Enrolment/Roll No.	PG/21/24	Batch Year	2021-2023
Course Specialization (Choose one)	Hospital Management	Health Management	Healthcare IT
Name of Guide/Supervisor	Dr/ Prof.: NIDHI YADAV		
Title of the Dissertation/Summer Assignment	Assessing the impact of whatsapp based booking system on workflow efficiency and gap mitigation : A retrospective quantitative study in hospital system		
Plagiarism detects software used	"TURNITIN"		
Similar contents acceptable (%)	Up to 15 Percent as per policy		
Total words and % of similar contents identified	5346 And 6 %. SIMILARITY INDEX		
Date of validation (DD/MM/YYYY)			

Guide/Supervisor
Name: Dr Nidhi Yadav
Signature: Nidhi

Student
Name: BHAVIKA AGGARWAL
Signature: Bhavika Aggarwal

Report checked by

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Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Bhavika Aggarwal (PT)**, a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. He/ She is submitting this dissertation titled "

Assessing the Impact of a WhatsApp-based Booking System on Workflow Efficiency and Gap Mitigation: A Retrospective Quantitative Study in the Hospital System

" At

"EYE-Q Hospitals Pvt. Ltd, Gurugram, Haryana"

In partial fulfillment of the requirements for the award of the **PGDM (Hospital & Health Management).**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Dr. Nidhi Yadav
Associate Professor
Institute Mentor Name,
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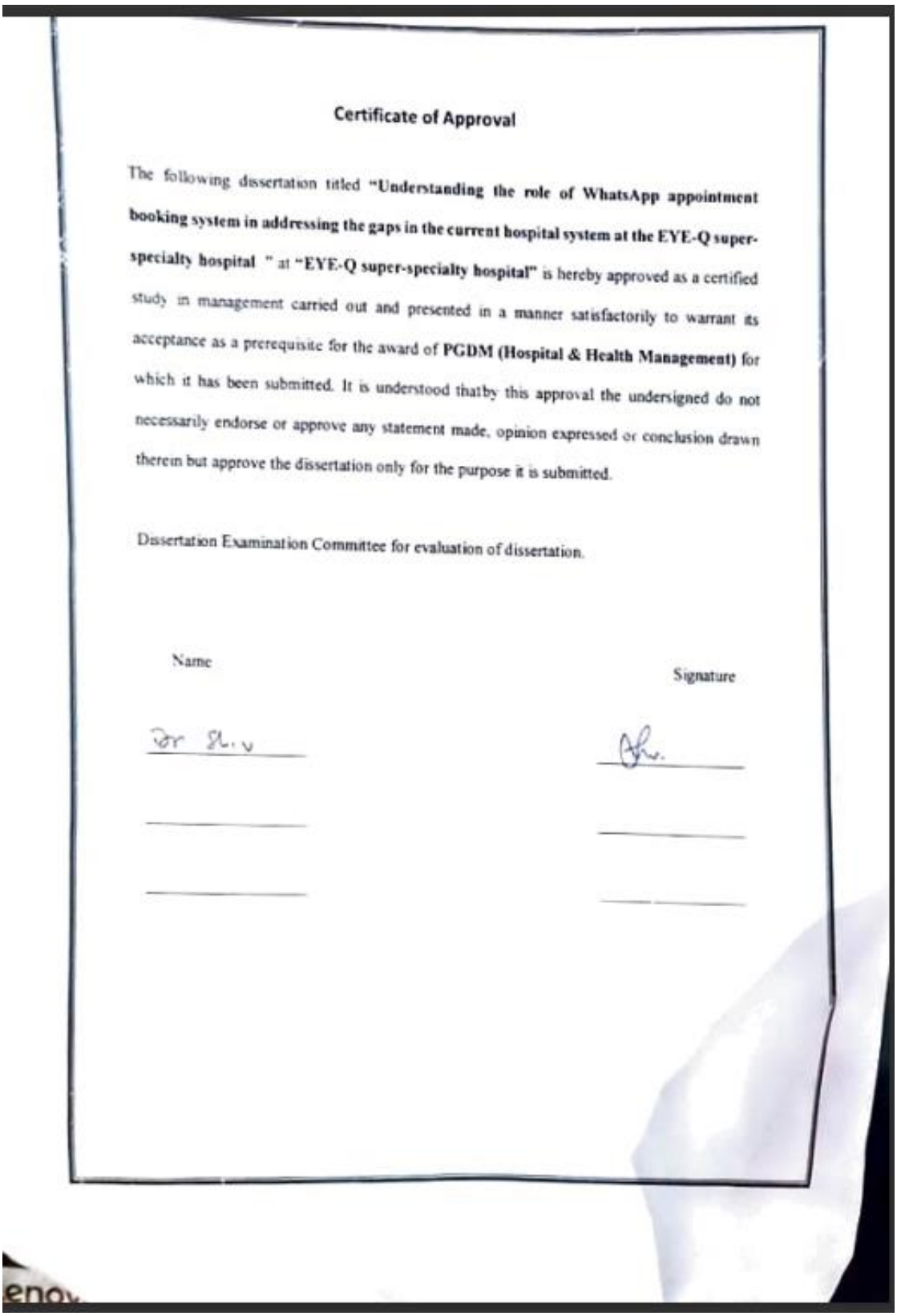

Certificate of Approval

The following dissertation titled **"Understanding the role of WhatsApp appointment booking system in addressing the gaps in the current hospital system at the EYE-Q super-specialty hospital "** at **"EYE-Q super-specialty hospital"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood thatby this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
Dr S.V	

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,

NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **assessing the impact of a Whatsapp Appointment booking system on workflow efficiency and gap mitigation: A retrospective quantitative study in the hospital system** and submitted by **Dr. Bhavika Aggarwal (PT)** Enrollment No. **PG/21/024** under the supervision of **Dr. Nidhi Yadav** and **Mr. Sachin Wangoo** for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from **16th January 2023** to **1st May, 2023** embodies my original work and has not formed the basis for the award of any degree, diploma asso ıte ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

ABSTRACT

The purpose of this retrospective quantitative study is to evaluate the impact of a WhatsApp-based booking system on workflow efficiency and gap reduction in the hospital system. The research looks at how implementing a WhatsApp-based system affects communication, appointment management, wait times, and real-time updates. The study analyzed quantitative data collected from a hospital system to assess the results of implementing the WhatsApp-based booking system. The study's findings show that implementing the WhatsApp-based booking system resulted in significant improvements in workflow efficiency and gap mitigation. Patients, healthcare providers, and administrative staff all communicated more effectively, resulting in fewer communication gaps and increased workflow efficiency. The automated appointment management features sped up the scheduling process while reducing errors and optimizing resource allocation.

BACKGROUND

Efficient workflow management and effective gap mitigation are critical components of ensuring smooth hospital system operations. Technology and digital platforms have gained traction in a variety of industries, including healthcare, in recent years. WhatsApp, a popular instant messaging app with extensive communication capabilities, is one such platform. Historically, hospital systems relied on manual methods for appointment scheduling, communication, and gap management. Phone calls, paper-based systems, and manual coordination are frequently used in these processes, which can be time-consuming, error-prone, and result in communication gaps. Integrating a WhatsApp-based booking system has the potential to improve workflow efficiency and close gaps in the hospital system. WhatsApp has an easy-to-use interface that allows for instant messaging, file sharing, and other functions.

KEYWORDS: WhatsApp-based booking system, workflow efficiency, gap mitigation, retrospective study, hospital system, communication, appointment management, waiting times, quantitative analysis.

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INTRODUCTION

Eye-Q Hospitals is an Indian chain of Super-Speciality Eye Hospitals. Since its inception in 2007, the organization has expanded to include 32 hospitals in key cities such as Delhi-NCR, Haryana, Uttar Pradesh, Uttarakhand, and Gujarat. Eye-Q has expanded its international reach with three hospitals in Nigeria, Africa, in addition to its strong presence in India. Eye-Q has earned a reputation for excellence in eye care under the leadership of its Founder and CMD, Dr. Ajay Sharma, who is recognized as one of India's most renowned eye surgeons.

It is notable for its commitment to providing high-quality eye care at a reasonable price. This dedication makes eye care available to a larger population, ensuring that people from all walks of life can benefit. It is an Indian chain of Super-Speciality Eye Hospitals. Since its inception in 2007, the organization has expanded to include 32 hospitals in key cities such as Delhi-NCR, Haryana, Uttar Pradesh, Uttarakhand, and Gujarat. Eye-Q has expanded its international reach with three hospitals in Nigeria, Africa, in addition to its strong presence in India. Eye-Q has earned a reputation for excellence in eye care under the leadership of its Founder and CMD, Dr. Ajay Sharma, who is recognized as one of India's most renowned eye surgeons.

The patient receives the highest level of care, as well as personalized attention and honesty in all interactions.

Its core values are the foundation of its operations. Honesty, responsibility, support, compassion, respect, and social impact are among these values. By adhering to these principles, Eye-Q fosters an environment that encourages open and honest communication, holds individuals accountable for their commitments, encourages mutual support among team members, and prioritizes compassionate care for patients and colleagues alike.

Overall, it is an intriguing research topic, providing insights into the delivery of high-quality, affordable eye care services as well as the factors that contribute to its success as a leading chain of eye hospitals in India.

The healthcare sector is constantly changing and working to improve patient care while streamlining administrative procedures. Utilizing technology to improve healthcare operations is one way to reach these objectives. In this study, we will look at how a new application might be used to fill in gaps in the existing hospital system and how that might affect workflow.

Numerous issues, such as issues in workflow procedures, communication issues between departments, and subpar patient care, plague the current hospital system. These problems have serious repercussions, including rising healthcare costs, worries about patient satisfaction, and employee burnout. Innovative solutions that can improve the effectiveness and efficiency of hospital operations are required to address these issues.

The goal of this research is to determine whether a new application could fill any gaps in the hospital system in place today. To assess the viability and potential advantages of the application, we will evaluate the requirements and their impact on workflow. The study will

involve a thorough examination of hospital workflow procedures and the discovery of application-relevant system gaps.

In general, this research is necessary to assess the viability and potential effects of the new application on the healthcare system. It will add to the body of knowledge on the use of technology to enhance patient care and healthcare operations while streamlining workflow procedures

INTRODUCTION TO NEW APPLICATION– Whatsapp Booking System under the project "Patient Management System"

An innovative application that aims to streamline the process of scheduling appointments for patients in hospitals is the WhatsApp slot booking system in the hospital system. Through the widely used messaging app, WhatsApp, patients can quickly make appointments with doctors or specialists using this application. Patients can use the app by sending a WhatsApp message to a designated hospital number, where they will be asked to enter their information and the kind of appointment they need. The computer will then determine whether the doctor or specialist is available and present the patient with a list of available times.

The system will confirm the appointment and send a notification to the patient's WhatsApp account once the patient chooses an appropriate time slot. Patients may additionally get they will receive WhatsApp appointment reminders, ensuring they don't miss their scheduled appointments.

The hospital's WhatsApp slot booking system has a number of benefits over conventional appointment scheduling systems. It is simple to use, available from anywhere, and saves users from having to wait in queue for hours or make long phone calls to schedule appointments. The system also lowers the possibility of mistakes and double bookings, increasing the general effectiveness of the hospital's appointment scheduling process.

Overall, the WhatsApp slot booking system is a great tool for hospitals to simplify their appointment scheduling process and give patients a more practical and effective way to schedule appointments.

RATIONALE OF THE STUDY

The current hospital system, however, is frequently characterized by inefficiencies and difficulties that have a negative impact on the workflow of hospital staff, including extended waiting times, task duplication, a lack of departmental coordination, human errors, dependency on staff for appointment booking, losses incurred as company unable to handle patient inquiries outside of regular hours and inadequate communication channels. The

quality of patient care may suffer as a result of these difficulties, which may also increase hospital staff workload and stress.

By offering a more effective and organized workflow, facilitating better communication and teamwork among hospital staff, and enhancing the general standard of care given to patients, a new application has the potential to address these issues. However, it is crucial to conduct a needs analysis and assess the potential effects of the new application on the workflow of hospital staff in order to develop and implement a new application effectively.

The results of this study can be used to determine the precise specifications and features required for a new application to successfully address the shortcomings and difficulties in the existing hospital system. The study can also offer insightful information regarding the potential advantages and disadvantages of the new application and can assist in identifying any possible implementation obstacles.

The study's overall goal is to offer evidence-based insights into the potential of a new application to address the shortcomings and difficulties in the existing hospital system and to enhance hospital staff productivity, which will ultimately result in better patient outcomes and improved healthcare delivery.

RATIONALE TO THE NEW APLLICATION

The study's justification for integrating a WhatsApp slot booking system into the hospital system is to address the difficulties and restrictions associated with the conventional hospital appointment booking procedure. Ineffective appointment scheduling procedures, and the possibility of mistakes , missing out patients after working hours and double bookings are a few of the common problems experienced by patients and hospital staff when using traditional appointment scheduling.

Hospitals can enhance the appointment booking process and make it more convenient and effective for patients by implementing a WhatsApp slot booking system. By automating a few steps in the booking process, such as appointment confirmations and reminders, the system can also lessen the workload of hospital staff.

Additionally, the WhatsApp slot booking system can increase patient satisfaction and engagement by giving patients with a smooth and customized booking process. Patients have access to real-time updates on the availability of doctors and specialists, can schedule appointments at their convenience, and can receive reminders and notifications via WhatsApp.

The study can also investigate how the hospital's general effectiveness and patient outcomes may be impacted by the use of WhatsApp for slot reservations. By ensuring that patients are seen by doctors or specialists at their scheduled appointment times, for instance, the system could help decrease patient wait times and improve the quality of care.

OBJECTIVE OF THE STUDY

- To determine the gaps in the current hospital system:

The first goal is to identify and analyze the existing gaps in the hospital system. This will entail an in-depth examination of the workflow procedures, communication channels, and patient care processes. The study's goal is to establish a foundation for evaluating the potential benefits of implementing a WhatsApp booking system by understanding the shortcomings of the current system.

- To assess the potential effects on hospital workflow of WhatsApp booking system:

The second goal is to examine the potential impact of a WhatsApp booking system on hospital workflow. This assessment will collect qualitative data from healthcare professionals, administrators, and IT personnel through interviews and focus group discussions. The study aims to understand how the implementation of a WhatsApp booking system may affect various stakeholders by gathering insights and perspectives from various stakeholders.

- To assess whether it will fill the gaps, present in the current system:

The third goal is to determine whether a WhatsApp booking system can effectively fill the gaps identified in the current hospital system. This analysis will include quantitative data... The quantitative analysis will include statistical analysis of survey data to determine the perceived benefits and challenges of implementing a WhatsApp booking system. The study intends to determine the system's feasibility in addressing the identified gaps and improving overall workflow by combining these analyses.

LITERATURE REVIEW

1. *Cynthia J. Sieck PhD, Tim R. Huerta (2019)* :- HIT has become more integrated into the health-care ecosystem, and there is a need for training to address the "why" of the task and how providers and patients can use it collaboratively. Users require individualized and diverse levels of training in the use of HIT, such as basic literacy, health literacy, and e-health literacy skills, as well as tool-specific instruction. Furthermore, providers and patients require training in how to collaborate use, such as EHRs that allow providers to share their screen to show patients lab and test results or verify the accuracy of information, secure messaging through patient portals, and additional training in how and when to communicate.(1)

2. *Shoran Srinivas1, A. Ravi Ravindran (2019)* :- This paper proposes a scenario-based approach to designing a hybrid appointment system, estimating the expected total cost using a stochastic MILP model and a frequency heuristic. It suggests that the last slot for all settings be single-booked to avoid unnecessary overtime operation. The proposed approach and findings from our analysis will assist healthcare practitioners in developing an effective appointment system for a specific clinic setting. The best strategy for dynamically updating schedule configuration is to assign the patient's and resource's time to a cost based on their median income.(2)

3. *Ann-Chatrin Linqvist Leonardsen, Camilla Hardeland(2020*) :- This integrated review deepens understanding of patients' experiences with technologically enhanced care solutions. Patients' experiences are related to how the equipment or solution impacts their daily lives, not just the practical or technical aspects, according to the findings. As part of a comprehensive patient route, future healthcare services will undoubtedly rely heavily on technology-enabled care. Patient participation in the development, adoption, and implementation of such solutions should be viewed as an essential component of healthcare quality initiatives.(3)

4. *Wenjun Cao, Yi Wan (2011*) :- Our study found that deploying a WAS can significantly reduce patient wait times and improve patient satisfaction with the registration process. The main barrier to implementing the system was a lack of knowledge about online appointments. The development of an online registration system will inevitably encounter the problem of non-attendance. Further research on various interventions, such as the promotion of online registration and the use of a reminder system, should be considered in order to improve the registration system's effectiveness and lower non-attendance rates.(4)

5. Xin Li a, Jin Wang b :- This article focuses on the OPD appointment scheduling procedure with patient preferences and options in order to increase patient satisfaction throughout the appointment booking process. An MDP model is proposed to

address the issue of sequential appointment scheduling. The model's features are derived theoretically and experimentally, making algorithm design easier. Two approximation algorithms—the simulation-based and the aggregation algorithms—are proposed to calculate the value of a Revenue derived from the outcomes of various aggregation levels. Prior research should be expanded upon in future work. To begin, we simply show in this study that the suggested methods are effective in the novel situation. More techniques could be used to solve the model. We can investigate how well(5) in the future.

6. *Rachel R. Chen (2014*) :- The Routine-Block policy is used in this study to examine the optimal sequencing and scheduling decisions for same-day patients. The optimal sequence is found to be largely independent of service time variability, patient waiting costs, overtime surcharges, and so on. The composition of same-day and routine patients, on the other hand, has a significant impact on the sequencing decision. Furthermore, rounding appointment times to discrete intervals results in minimal performance loss and higher job allowances. Finally, expanding the model to include appointment delays reduces costs.(6)

METHODOLOGY

Research Design

The primary goal of a retrospective quantitative research design is to analyze existing data and records in order to assess the potential impact of a WhatsApp booking system on filling gaps in the current hospital system and improving workflow. When historical data is available, this design can provide valuable insights into the research objectives.

This study's data collection will entail accessing and extracting relevant information from the hospital's existing records and databases. Electronic health records, appointment scheduling systems, communication logs, and other administrative databases are examples of such sources. The data collected will cover a specific time period determined by the records' availability and accessibility. The study will identify critical variables for understanding the gaps in the current system. As well as the potential consequences of implementing a WhatsApp booking system. Workflow efficiency, patient satisfaction, communication effectiveness, resource allocation, and other relevant metrics are examples of these variables. To facilitate objective analysis, each variable will be defined and measured using quantitative scales or numerical indicators. The collected data will be thoroughly quantified using appropriate statistical methods. To summarize the data and provide an overview of the current system's performance, descriptive statistics such as means, frequencies, and percentages will be used. For example, average appointment wait times, appointment cancellation rates, and so on.

Comparative analysis can be used to compare key metrics before and after the potential implementation of the WhatsApp booking system. This may entail comparing relevant indicators such as appointment wait times, Errors, missed calls, etc. Researchers can assess whether the implementation of the WhatsApp booking system resulted in improvements in the identified gaps by comparing data before and after the potential intervention.

Finally, the retrospective quantitative research design used in this study allows for the analysis of existing numerical data in order to assess the potential impact of a WhatsApp booking system on filling gaps in the current hospital system and improving workflow. This design allows for an objective and data-driven evaluation of the potential effectiveness of the new application by utilizing historical data from hospital records and databases.

Research Type: Secondary research

Area of study: EYE-Q Superspeciality Hospitals

Sampling Strategy

There will be no sampling strategy used in this retrospective quantitative study because the entire available dataset will be analyzed. All existing data and records will be used in the study to assess the potential impact of a WhatsApp booking system on filling gaps in the current hospital system and improving workflow. The lack of sampling allows for a thorough

examination of the population of interest, ensuring that the findings are representative of the entire dataset. However, limitations related to data quality and accuracy will be taken into account when interpreting the results.

Data Collection Tool &Techniques

- This study's data collection will entail using a management information system (MIS) to generate reports and extract relevant data for analysis.

In this study, the MIS will be used to generate reports containing hospital-related data such as patient appointments and performance metrics. The MIS will be a valuable resource for obtaining comprehensive and well-organized data. The reports will be carefully chosen to capture the variables relevant to the study's objectives. This may entail querying the system to extract specific data sets or customizing reports to include the desired data.

- Microsoft Excel will also be the primary tool for analyzing the extracted data.

The primary tool for data analysis will be Excel. Excel has a plethora of useful features and functions for organizing, manipulating, and analyzing data.

The extracted data will be imported into Excel, where it will be organized into worksheets and data tables as needed.

The calculations have provided a quantitative overview of the data and enable comparisons between different variables or time periods.

Excel's charting capabilities can also be used to create visual representations of data such as bar graphs, line charts, and pie charts. Visualizations aid in the effective presentation of findings and facilitate a better understanding of data patterns.

Data Analysis Methodology

Methodology for Data Analysis:

I used a retrospective quantitative approach to analyze existing data and assess the potential impact of a WhatsApp booking system on filling gaps in the current hospital system and improving workflow for my research. Here's how I went about analyzing the data:

- I thoroughly reviewed and gained a thorough understanding of the collected data, which included management information system-generated reports and relevant data extracted for analysis.

- Extracted Relevant Data: I extracted the quantitative data required from the management information system reports. This data was specific to hospital workflow, such as booking processes, department communication, and patient care.
- Data Organization and Structure: I methodically organized and structured the extracted data. This entailed categorizing. The data based on different variables, such as time period, departments, or specific workflow components.
- Conducted Quantitative Data Analysis: I conducted a retrospective quantitative analysis of the data using tools such as Excel. To identify trends, patterns, and potential correlations, statistical measures such as frequencies, percentages, or averages were calculated.
- Interpreted the Findings: I interpreted the quantitative data analysis findings. I compared the findings to the research objectives in order to determine the potential impact of a WhatsApp booking system on filling the identified gaps in the hospital system's workflow.

This study used a retrospective quantitative data analysis methodology to provide insights into the potential impact of a WhatsApp booking system on filling gaps in the current hospital system.

Ethical Consideration

Several ethical factors will be taken into account accounted for in this study.

RESULTS

FINDINGS

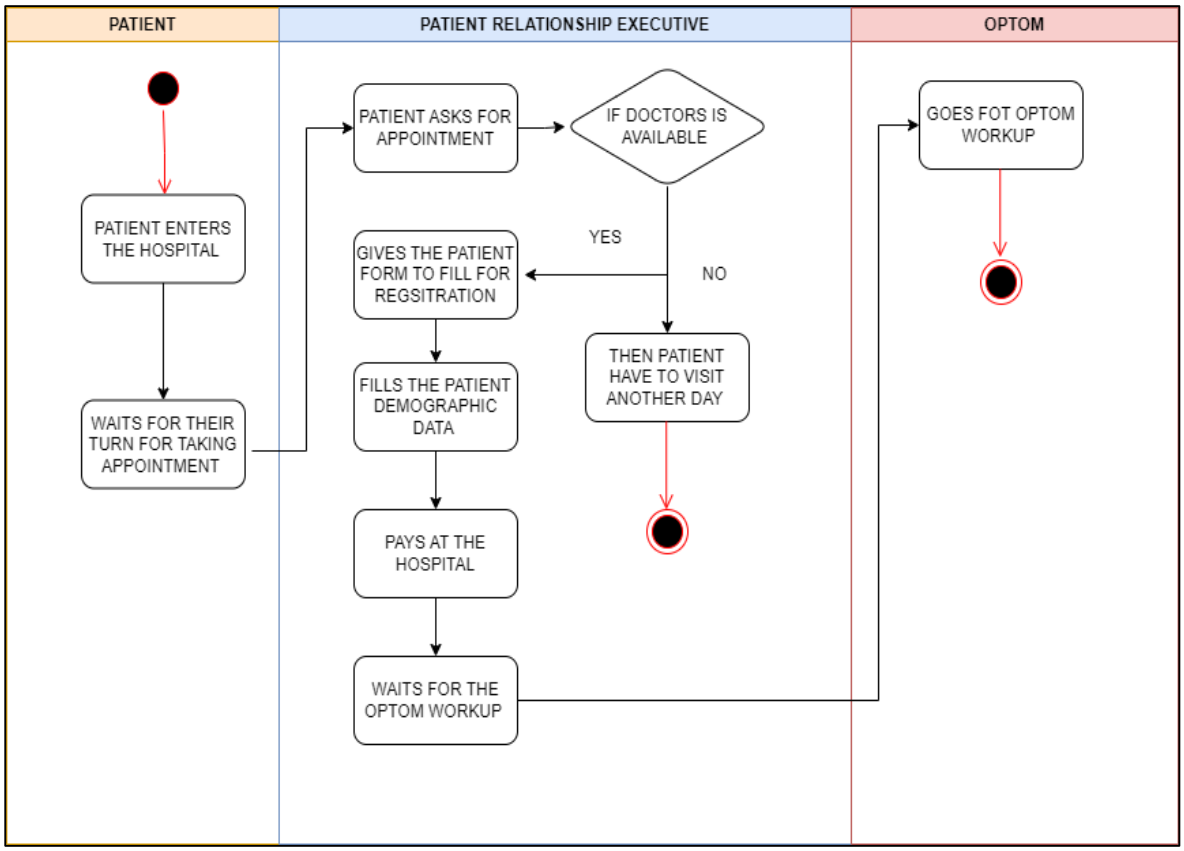


Fig no. 1 shows the walk in appointment current flow of the EYE-Q hospitals system

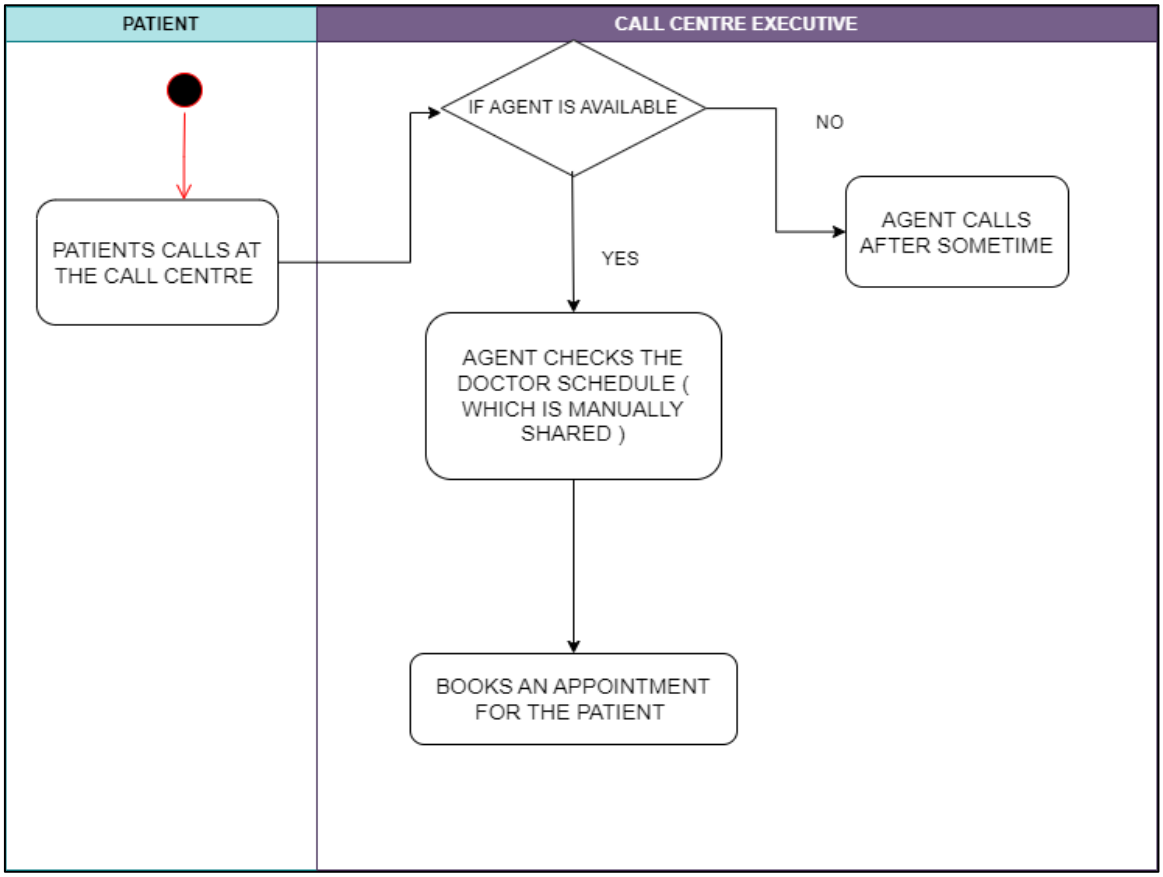
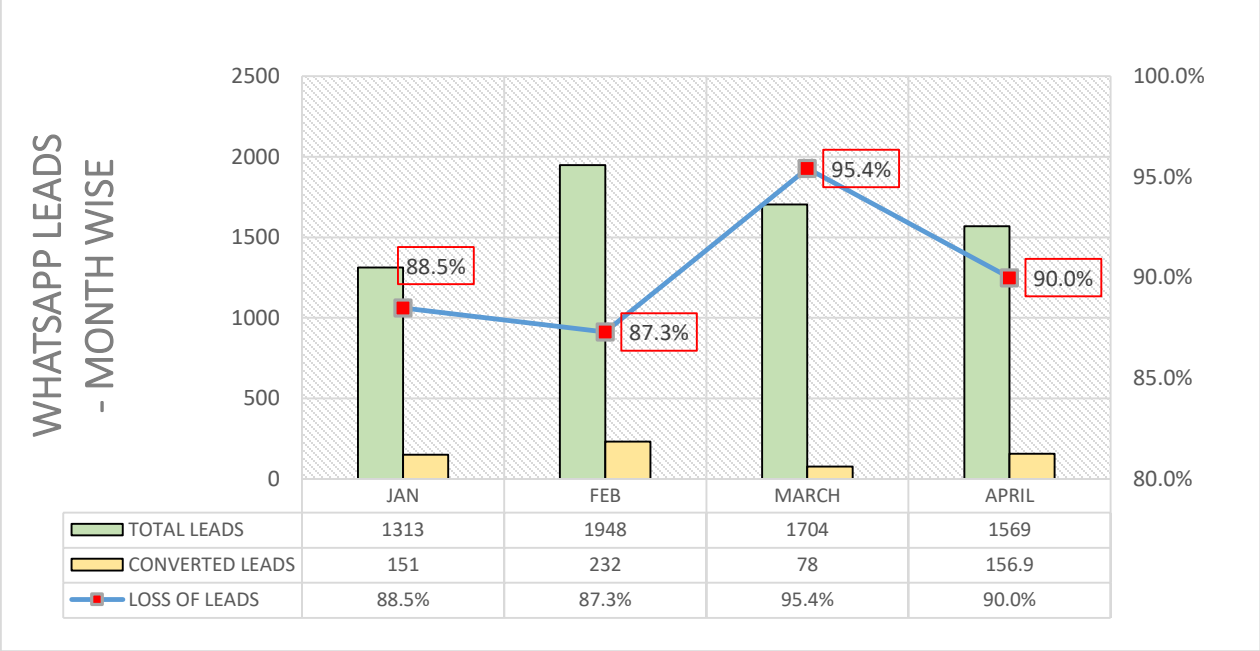
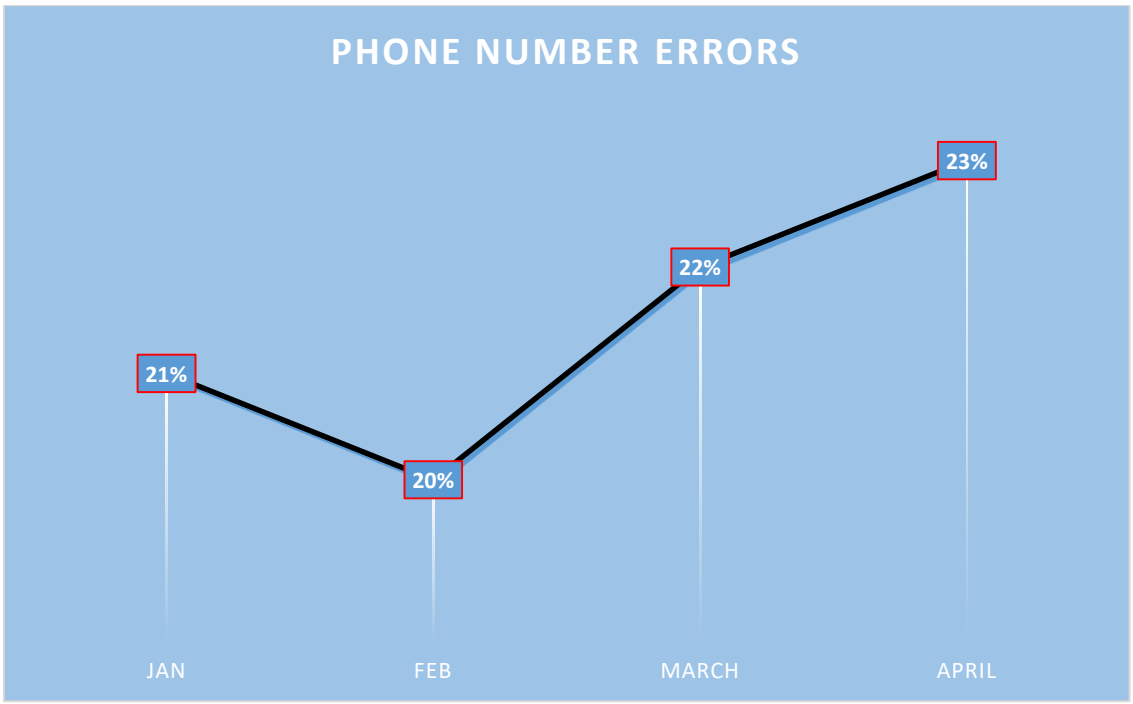


Fig no. 2 shows the call center appointment current flow of the EYE-Q hospitals system

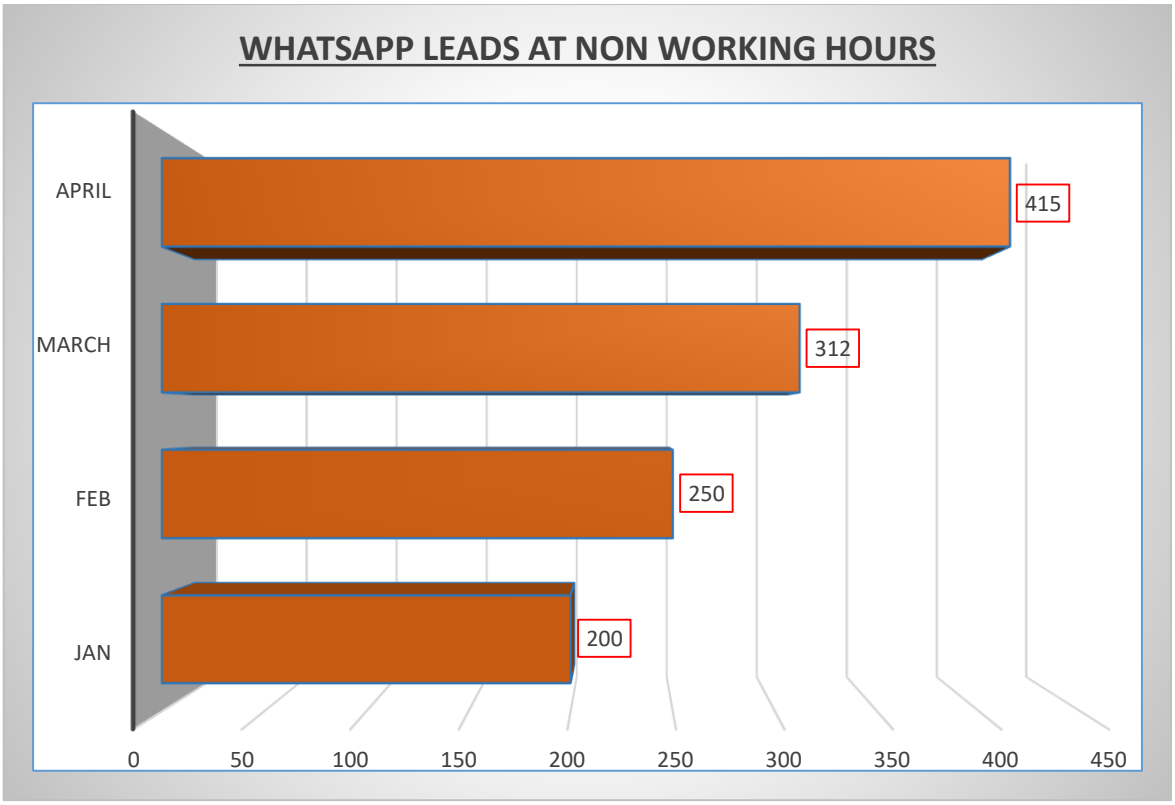
The Fig no. 1 and 2 shows the current appointment system workflow which involves the existing appointment management system and technology used for it.



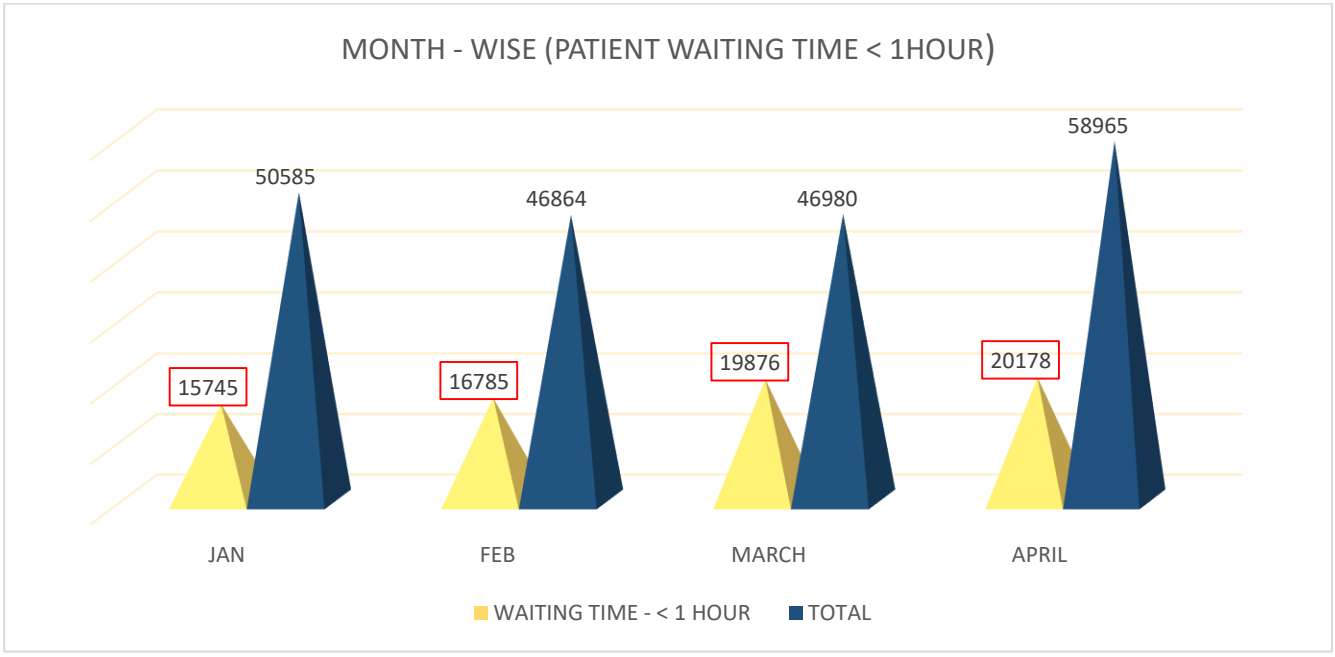
Graph 1 shows the WhatsApp leads (Jan, 2023 to Apr, 2023), their converted leads and the % of loss leads



Graph 2 shows the data of phone number errors by PRE or CCE



Graph 3 shows the number of WhatsApp leads at Non-working hours



Graph 4 shows the data of waiting time of the patient (excluding the Dilation time of the patient)

The findings of a retrospective quantitative study on the impact of a WhatsApp-based booking system in the hospital system revealed significant improvements in workflow efficiency and gap closure. The implementation of this system has resulted in positive changes in several key areas, including improved communication, appointment management, shorter wait times, and real-time updates and notifications. One of the study's most notable outcomes is improved communication among patients, healthcare providers, and administrative staff. The use of WhatsApp has enabled seamless interaction and quick responses, reducing communication gaps and improving overall workflow efficiency. Healthcare professionals were able to respond to patient inquiries more quickly, provide necessary information, and coordinate appointments more effectively, resulting in higher patient satisfaction. The automated appointment management features provided by the WhatsApp-based system have also helped to improve workflow efficiency. The system's ability to automate scheduling and send patient reminders has reduced the administrative burden on staff, allowing them to focus on more important tasks. By streamlining the appointment management process, the system has reduced errors, optimized resource allocation, and increased the hospital system's overall efficiency.

Furthermore, the study findings show that the implementation of the WhatsApp-based booking system resulted in a significant reduction in waiting times and gaps between appointments. Hospitals were able to ensure a more consistent and organized patient flow by efficiently managing appointments, resulting in shorter wait times and a better patient experience. The automated appointment management features provided by the WhatsApp-based system have also helped to improve workflow efficiency. The system's ability to automate scheduling and send patient reminders has reduced the administrative burden on staff, allowing them to focus on more important tasks. By streamlining the appointment management process, the system has reduced errors, optimized resource allocation, and increased the hospital system's overall efficiency.

Furthermore, the study findings show that the implementation of the WhatsApp-based booking system resulted in a significant reduction in waiting times and gaps between appointments. Hospitals were able to ensure a more consistent and organized patient flow by efficiently managing appointments, resulting in shorter wait times and a better patient experience. This reduction in appointment gaps has also

DISCUSSIONS

- The first figure i.e. Fig no. 1 represents the walk-in appointment booking process in the current hospital system,

It depicts the patient's journey from arrival to interaction with various hospital departments. This workflow includes several steps, such as appointment scheduling, queuing, payment processing, and consultation with an optometrist. It does, however, highlight the potential difficulties and issues associated with this process. When patients arrive at the hospital, they must make an appointment by waiting in queue. The Patient Registration and Engagement (PRE) department manages the appointment booking system, which handles data entry and appointment scheduling. Patients then proceed to the hospital to make the necessary payment before waiting their turn to see the optometrist. However, if the requested doctor is not available, the patient may face additional delays or be forced to reschedule their appointment, resulting in to potential dissatisfaction.

The figure highlights the difficulties encountered by the current appointment booking system, particularly the potential overload on the PRE department. Handling appointment data and patient information manually can lead to administrative burdens and an increased risk of human error. These mistakes can include incorrect scheduling, miscommunication, or outdated information, causing chaos and inconvenience for both patients and hospital personnel. Such issues can have a negative impact on workflow efficiency and patient experience.

- Figure 2: Appointment Booking System for Call Centers

The second figure depicts the hospital's call center appointment booking system. Patients can use this system to contact the hospital's designated call center, where agents are available to handle appointment bookings. The call center representatives review the pre-roster.
Based on that information, the patient will be able to schedule an appointment with one of the available doctors for the upcoming month. It is important to note, however, that the pre-roster may not be updated in real-time, which could lead to errors and confusion.
The diagram depicts the call center appointment booking system's limitations. Because of the reliance on a pre-roster, there is a risk of discrepancies between available slots and actual doctor availability. This can lead to scheduling conflicts, longer wait times, or the need to reschedule. Patients may become frustrated and dissatisfied if they are scheduled for appointments that cannot be kept due to outdated information.

- Graph 1: WhatsApp Leads from January 2023 to April 2023 :

It depicts the trend of WhatsApp leads from January 2023 to April 2023 over a four-month period. During this time period, there was a decrease in the number of conversations and an increase in the number of lost leads. Leads are lost due to a variety of factors, including leads received outside of working hours, missed calls by call center executives, communication gaps, and an overreliance on human intervention, which can result in errors.

- Graph 2: Errors in Phone Number Input

This depicts the occurrence of phone number input errors in the existing software. Over the last four months, the graph shows a steady increase in manual errors. Because the hospital staff is unable to contact the patients due to incorrect phone numbers, these errors result in dead leads. This emphasizes the significance of accurate data entry and the need for effective error-checking mechanisms to avoid such problems.

- Graph 3: Dependency on Employees and Non-Working Hours Leads

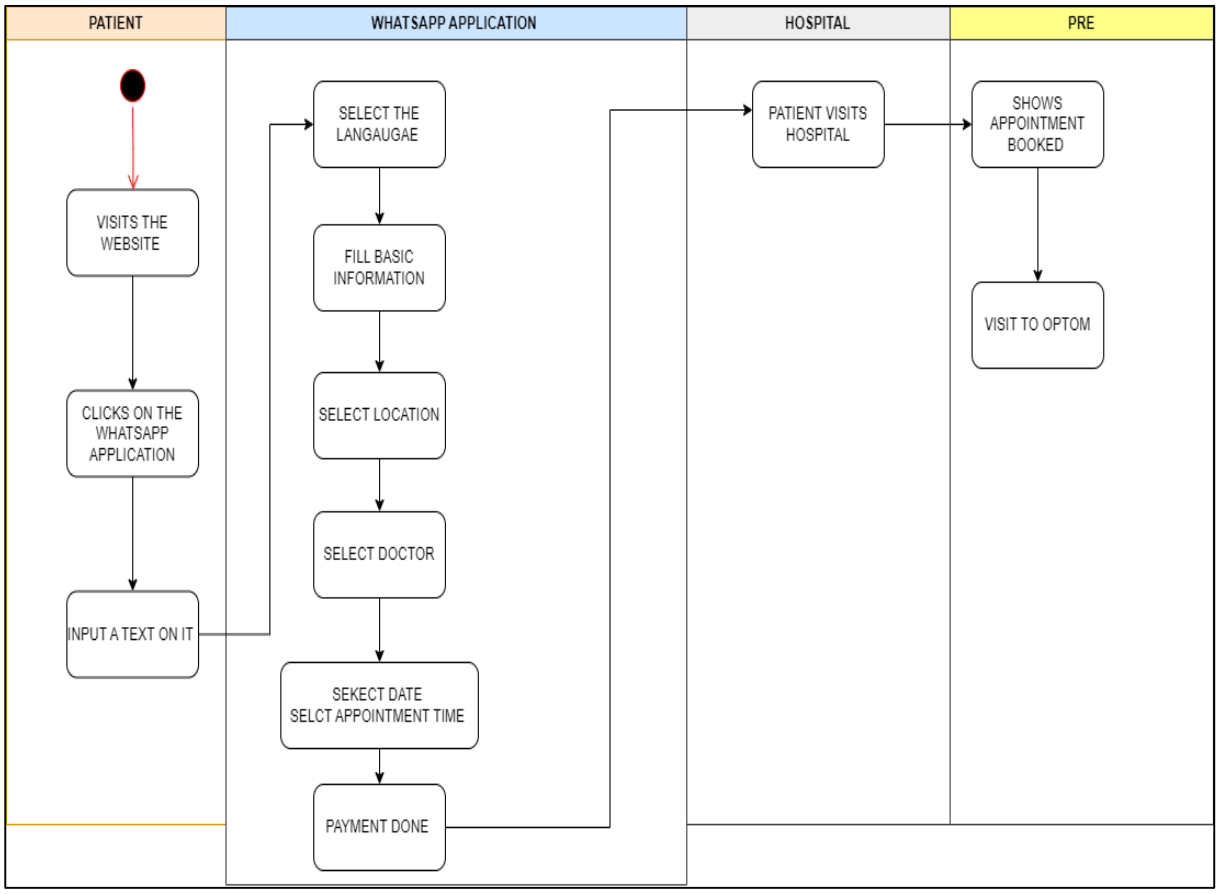
It depicts the reliance on employees as well as the impact of leads received during non-working hours. According to the graph, a significant portion of leads are received outside of regular business hours, which can result in the loss of patients and potential business revenue. Overreliance on human availability outside of working hours can lead to missed opportunities and a subpar patient experience.

- Graph 4: Patient Waiting Time

This depicts the patient wait time for consultation meetings at 32 different centers over a four-month period. It emphasizes that approximately 30% of patients have a waiting time of more than one hour (excluding dilation time). Prolonged wait times can contribute to patient dissatisfaction and a negative patient experience. It is critical to address this issue in order to ensure efficient workflow and improve patient satisfaction.

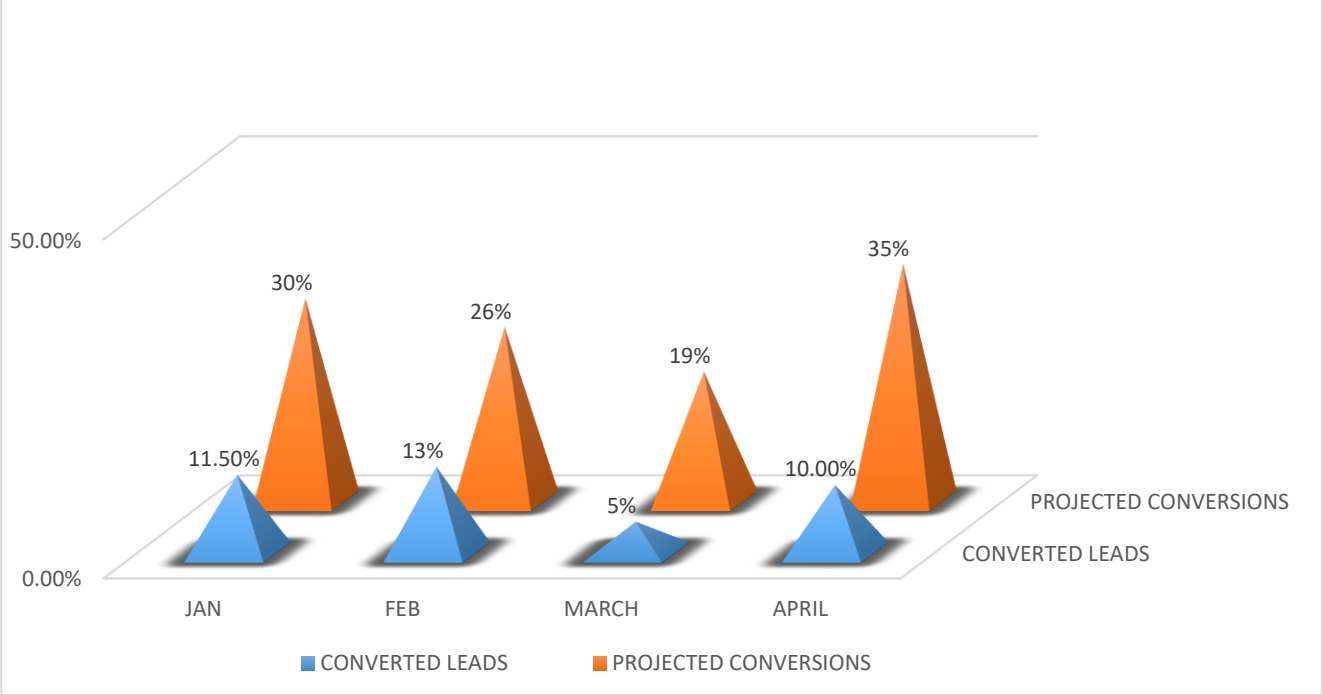
Finally, the graphs presented shed light on key aspects of the Eye-Q Superspeciality Hospitals' operations. They reveal issues with WhatsApp leads, phone number input errors, reliance on employees during non-working hours, and patient wait times. Recognizing these challenges allows for the identification of areas in which the hospital's performance can be improved.

PROJECTED GROWTH



This is fig no. 3 which shows the workflow after the implementation of the Whatsapp booking system in the EYE-Q hospitals

This figure depicts the workflow in Eye-Q hospitals following the implementation of the Whatsapp booking system which includes the ability for patients to book appointments from anywhere, as well as the ability to select the desired location, doctor, time, and slot. Furthermore, patients have the freedom to reschedule or cancel appointments at any time, without regard to working or non-working hours. Even they can pay online and have the feature to book for themselves as well as for their parents / another from their number only The Whatsapp booking system also has the advantage of automatically retrieving patient information from the database, which helps to reduce errors that may occur during manual data entry. This streamlined process improves appointment booking efficiency and accuracy, contributing to a more efficient hospital workflow.



This Graph 5 shows the projected leads conversion after the implementation of the WhatsApp booking system in the EYE-Q hospital systems

CONCLUSIONS

Finally, the study's findings strongly support the implementation of a WhatsApp appointment booking system as a solution to the gaps in the current healthcare system. The research has provided valuable insights into the advantages and potential growth opportunities associated with this novel approach.

The data analysis clearly shows that the WhatsApp booking system fills critical gaps in the current hospital system. The system provides convenience and flexibility by allowing patients to book appointments remotely and providing options for location, doctor, and time selection. Patients can easily reschedule or cancel appointments, regardless of whether they are working or not, resulting in higher patient satisfaction. The automated data retrieval feature reduces errors, increases efficiency, and streamlines the appointment booking process overall. Furthermore, the implementation of a WhatsApp booking system provides the organization with significant growth opportunities. According to the findings, this systematic approach can result in a minimum growth rate of 20-25% for the company. This expansion can be attributed to a variety of factors. For starters, the system's improved convenience and flexibility attract more patients, resulting in increased hospital footfall. Furthermore, the streamlined workflow and shorter wait times contribute to a better patient experience and satisfaction, which leads to positive word-of-mouth referrals and an expanded patient base.

Furthermore, the WhatsApp booking system aligns with evolving trends in healthcare, where technology plays an important role in improving accessibility and patient care. Eye-Q Superspeciality Hospitals positions itself as a leader by implementing this innovative solution. , attracting patients looking for modern, efficient healthcare.

To maximize growth potential, the WhatsApp booking system must be implemented in a systematic and well-planned manner. This includes ensuring that the new system integrates seamlessly with existing hospital systems, providing proper staff training, and effectively communicating the benefits of the new system to both employees and patients. Furthermore, continuous monitoring and evaluation of the system's performance will enable timely adjustments and improvements, enhancing the overall patient experience and business growth.

Finally, the study's findings strongly support the implementation of a WhatsApp appointment booking system in Eye-Q Superspeciality Hospitals. The system fills existing gaps in the current healthcare system and offers significant growth opportunities for the organization. By accepting this, through increased patient footfall, improved patient satisfaction, and positioning themselves as industry pioneers, hospitals can expect a minimum growth rate of 20-25% by embracing this systematic approach. To maximize the

benefits and drive sustainable growth in the business, the implementation process should be carefully executed, ensuring seamless integration and continuous evaluation.

LIMITATIONS

•Limited Scope: The research focuses on the influence of the WhatsApp appointment booking system on workflow in a specific medical context only

•External Factors: Changes in technology, healthcare policies, or organizational issues, for example, could all have an impact on the study's findings.

•Lack of Comparison Group: The study may not have included a comparison group that did not have WhatsApp access.

Bhavika Aggarwal report

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