

**A STUDY ON STRATEGIZING AND IMPLEMENTING OUTPATIENT  
DEPARTMENT SERVICES IN A NEWLY ESTABLISHED HEALTHCARE  
FACILITY**

Dissertation Submitted to



**The IIHMR University, Jaipur**

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in

Hospital and Health Management

By

Nitika Yadav

Under the Supervision and Guidance of

Col. Dr Mahender Kumar

2024

**No. FHL-MANESAR-EX-13**

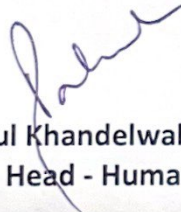
**01-July-2024**

**TO WHOMSOEVER IT MAY CONCERN**

This is to certify that **Dr. Nitika Yadav D/o Mr. Jitender Kumar** has completed her "**Dissertation**" as a part of the course curriculum in the department of **General Administration** at Fortis Hospital, Manesar, Gurugram from **April 01, 2024 to June 30, 2024**.

We wish her all the best in her future endeavors

**For Fortis Hospital, Manesar, Gurugram**



**Rahul Khandelwal**  
**Unit Head - Human Resources**

## DECLARATION BY STUDENT

I hereby declare that this dissertation titled **“A study on Strategizing and implementing out-patient department services in a newly established healthcare facility”** is the Bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



Dr. Nitika Yadav

Date: 05/07/2024

### **CERTIFICATE**

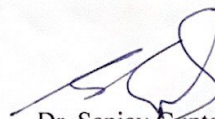
This is to certify that dissertation titled **“A STUDY ON STRATEGIZING AND IMPLEMENTING OUT-PATIENT DEPARTMENT SERVICES IN A NEWLY ESTABLISHED HEALTHCARE FACILITY”** is a record of the research work undertaken by **Dr. NITIKA YADAV** in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

A handwritten signature in blue ink, appearing to read 'Mahender Kumar', written over a horizontal line.

Dr. (Col) Mahender Kumar

IIHMR University, Jaipur

Date – 05/07/2024

A handwritten signature in blue ink, appearing to read 'Sanjay Gupta', written over a horizontal line.

Dr. Sanjay Gupta

IIHMR University, Jaipur

Date - 05/07/2024

## **Abstract**

Research and analysis on strategizing and implementing the services of an Outpatient Department in a new Health Care facility.

It mainly stems from growing technology, changing pace and maturity of patient needs, and changing the guard of healthcare policies. Precisely, for newly developed healthcare facilities, mainly Fortis Hospital in Manesar India, it is essential to establish a strong operational platform. One of the pillars in this foundation is the Outpatient Department (OPD) that has a central responsibility in improving the patients' experience and performance. This paper attempts to present an analysis of new healthcare settings about the OPD services in terms of their necessity, importance, and impact on the strategic planning and implementation of OPD services.

The main aim of this research work was to detail important determinant factors that must be fulfilled for proper planning and Manager OPD' services at Fortis Hospital Manesar. Therefore, this study sought to identify some of the important specialties and patient preferences to guide development of the OPD services that would be relevant to the community's needs.

A cross-sectional survey design is used in this present study and the study took three months; A google form was used to administer the cross-sectional survey to the residents of Manesar. Through this survey, data was collected concerning the demography, health care inclinations and the specializations in medicine that cannot be done online. Using an available method of sampling, the study managed to get responses from 283 participants. A quantification of the data gathered from the surveys provided insights to the management that helps in strategizing the delivery of OPD services.

Thus, according to the survey results, patients most often addressed Gynaecology and Obstetrics, General Medicine, Pediatrics, Diagnostics, and Orthopaedics specialists. Though, there was a relatively high demand for Cardiology, Oncologic and Nephrologic specialties as they were mainly lacking in the region. The determined and separate preferences mentioned by the patients include the degree of cleanliness and hygiene of hospitals, quality of treatment, cost, variety of services offered, time, and word of mouth, area, respectively. Particularly, patients valued cleanness and antisepsis in the centers, effectiveness, and quality of treatment services, and the cost of treatment services.

Here follow the recommendations about the benchmarking of OPD Services for Fortis Hospital Manesar, based on the preceding findings. First, it is necessary to create integrated units for the Gynaecology, Cardiology, and Oncology professions as these services are in high demand. Maintaining the highest levels of cleanliness and hygiene on the facility is also very important given that this was one of the key concerns of the patients. In addition, operational management of patient pathways leads to congestion reduction and patients' satisfaction enhancement.

The above tactical guidelines are intended to increase patient satisfaction, optimize internal processes, and strengthen the hospital's brand. In this case, Fortis Hospital Manesar has the ability to meet the outlined objective and sustains its long-term effectiveness by identifying and catering for the needs of the Manesar community and narrowing down the key issues that affect patients' decisions. Thus, the main recommendation will be a need to continue constantly changing to suit the current healthcare environment and placing premium focus on the patients.

Therefore, it may be concluded that certain key aspects are crucial for the successful delivery of OPD services in a relatively new healthcare facility like Fortis Hospital Manesar patients' needs and preferences. With reference to the most often sought after medical specialties as well as increasing some of the functions related to the Hospital service quality and cleanness, and cost issues, the hospital can develop a solid operational platform. The same will promote positive experiences from the patient's side while at the same time making the health facility more sustainable and profitable in the face of increased competition in the market.

**Keyword:** Outpatient Department, Healthcare Facility, OPD Services, Strategic Planning, Patient Preferences

## **ACKNOWLEDGEMENT**

Firstly, I would like to appreciate those who have made this dissertation possible with their input.

I take this opportunity to express my deep gratitude to Dr P.R. Sodani, President IIHMR University Jaipur; deserves much appreciation for his support and guidance as he made it easy for me to get the right academic environment necessary for pursuing a career in academics. I would like to express my gratitude to Dr.(col) Mahender Kumar my academic mentor who has been supporting and motivating me through various stages of the project.

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My family and in particular my parents deserve more than thanks for their continuous care, love and encouragement during all these years of education that kept pushing me each day they believed in me more than I believed in myself.

Lastly, I want to acknowledge the invaluable support of Dr. Monika Patni for her expert guidance and constant support throughout this endeavor. Her mentorship has been truly invaluable.

I am truly grateful to each of these individuals for their contributions, without which the successful completion of my dissertation would not have been possible.

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## List of Abbreviations

|    |                                               |  |
|----|-----------------------------------------------|--|
| 1. | MBA - Master of Business Administration       |  |
| 2. | IIHMR - Indian Institute of Health Management |  |
| 3. | OPD - Outpatient Department                   |  |
| 4. | ICU - Intensive Care Unit                     |  |
| 5. | OTs - Operating Theatres                      |  |
| 6. | MRI - Magnetic Resonance Imaging              |  |
| 7. | CT - Computed Tomography                      |  |
| 8. | NCR - National Capital Region                 |  |
| 9. | ENT - Ear, Nose, and Throat                   |  |

## **Chapter 1: Introduction**

Technological advancement, changing patient expectations and new healthcare policies are driving rapid changes in the healthcare landscape. For newly established healthcare facilities, among other things, setting up a strong operational base is essential with Outpatient Department (OPD) being one of the core areas. This research paper seeks to evaluate why strategizing and implementing OPD services in fresh health care settings are necessary.

### **What are the services of the Outpatient Department (OPD)?**

Outpatient department (OPD) services are an essential part of any health facility as they provide medical care to patients who do not need to be admitted for overnight stays. These services target people seeking medical advice, diagnosis, treatment and follow-up care on an ambulatory basis. Patient satisfaction and overall efficiency in hospitals grossly depend on how effective these points are.

### **OPD Services Components:**

- General and Specialty Consultations:

General Practice: Typically, general practitioners initiate work at the outpatient level. Here they handle many ordinary illnesses.

- Specialty Clinics: Examples are cardiology, neurology or orthopedics among others. These units attend to specific diseases or conditions that need specialization in a particular area of medicine for effective management.

Other constituents comprise.

General and Specialty Consultations: Outpatient departments where patients seek help from specialists as well as general physicians.

Diagnostic Services: Radiology centers which offer imaging services; laboratory examinations like blood tests etc., plus any other necessary tests used for diagnosis.

Day Care Procedures: Treatments or minor surgeries that do not require hospital admission.

Preventive Health Services: Vaccinations, screenings, health education etcetera.

- Why is Strategic Planning Important for OPD Services in a New Healthcare Facility?

Strategic planning is a necessary activity during establishment as well running stages of OPD Services especially when dealing with a newly set up hospital. It ensures that these services meet community needs and align them with wider organizational goals.

- The Requirement of Strategizing and Implementing Outpatient Department Services

OPD Services as the primary contact point for patients seeking consultations, diagnostics, or treatment; it is important that they provide timely comprehensive care, and this will only be possible if such services are efficient and well organized. In other words, for new hospitals especially those that are still struggling to survive in competitive health markets an effectively planned out outpatient department becomes even much more significant because through it they can manage patient flow better, optimize resources and gain confidence from clients which may enable them to live longer.

- Importance of Strategizing and Implementing Outpatient Department Services

Different approaches may be used when strategizing on how to provide these services so as not only improve service delivery but also enhance operational efficiency within health facilities. Coordination among OPDs should be done properly as this plays a huge role in in terms of reducing waiting time and in turn creating smooth pathways for care of patients with chronic illnesses who need frequent follow ups. Development of this area helps in managing the use of resources by the hospital, by giving the impression and to make people believe that this is hospital of high reputation then people will prefer seeking medical help from there hence making the well-planned facilities sustainable.

- Impact of Streamlined and Strategized OPD Services: •

A direct result of justifying of OPD Services is the waiting time was reduced and this made way to a number of access points to the health system that led to the increased levels of satisfaction with treatments offered and good adherence rates.

. On the other hand, larger numbers can easily be managed by hospitals if they operate efficiently simultaneously managing resources more consciously within such facilities. Financially speaking higher revenue generation is recorded during provision because there is increased patient output due shorter stays per patient paired with lower costs expense therefore making patients have positive perception of putting needs first always

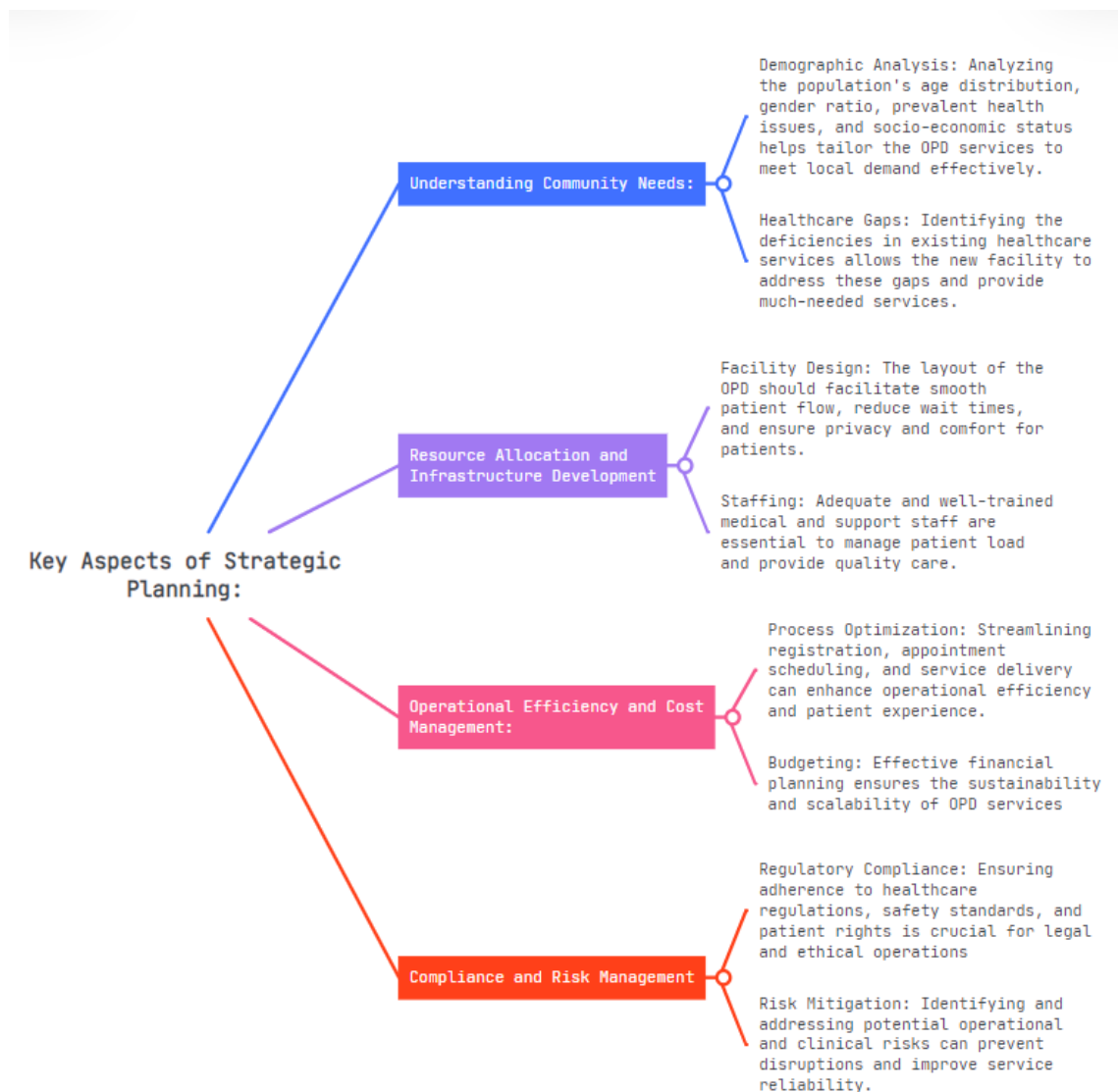


Fig – 1.1: Key Aspects of Strategic Planning.



Fig – 1.2: Key Factors Influencing Patient’s Preference for OPD Services

### 1.1 RESEARCH QUESTION:

How can OPD services be strategically planned and implemented in a newly established healthcare facility such as Fortis Hospital, Manesar?

### 1.2 AIM:

To study the factors essential for strategic planning and implementation of OPD services in a newly established tertiary care hospital.

### 1.3 OBJECTIVE:

- To study the demographics of the area in which the hospital is planned.

- To study the factors which influence the patient's preference while selecting a hospital facility for treatment.
- To study the requirements of the targeted audience.
- To incorporate the outcomes of the market, need analysis into planning and strategizing the OPD services in a tertiary care hospital.

This study was spanned over the duration of three months, during which a questionnaire was made and forwarded to the people of Manesar predominantly. A questionnaire in the form of google form was forwarded to get the insights of people preference while selecting a health care facility. Each step of the market (population) need assessment process is carried out from recording the demographic details of the population on basis of gender distribution, age distribution, availability of healthcare facility, factors that influence their selection of healthcare facility and what they expect and require in a new healthcare facility. This meticulous examination will provide insights about the needs of the population so that the result from analyzing the data can be interpreted and incorporated into planning of the OPD department of fortis hospital, Manesar. The study was conducted at Fortis Hospital Manesar.

A crucial aspect of the study was the analysis of need assessment of the population of Manesar. The collected data serves the key matric to assess the requirements of population and to give insights for implementation of various methods to increase the patient foot fall into the hospital while keeping in mind the needs of the people around the hospital. Furthermore, the analyzed data is utilized to find the key areas to focus on while planning and strategizing the OPD department, enabling and carving the path for smooth functioning of the OPD services in the hospital.

Based on the study, process and solution focused recommendations were formulated to address the identified factors contributing to the smooth functioning of OPD services.

## Chapter 2: Review of Literature

The study focuses on the need assessment of the services and medical specialties of the population of Manesar. Relevant articles, research studies, and reports on market need assessment and OPD planning were collected from electronic databases, academic journals, and credible websites.

The selected literature was carefully analyzed to identify common themes and factors associated with OPD Planning.

| S.no. | Author (date)                                                  | Study Location                                             | Sample Size                                                                                                                                                          | Sampling Technique                                                                                                                                                                                                                                      | Silent Features                                                                                                                                                                                                                                                                                                                                                                                      |
|-------|----------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Chawis Boonmee, Chompoonoot Kasemset, and T. Phongthiya. 2022. | The study was conducted in a hospital setting in Thailand. | The study does not refer to a traditional sample size as it is a simulation study. Instead, it evaluates different layout scenarios within the outpatient department | Since this is a simulation study, traditional sampling techniques were not used. The research involved creating different scenarios based on data from existing hospital operations to analyze the efficiency of various outpatient department layouts. | The study utilized Activity Relationship Analysis (ARA) and simulation to evaluate multiple layout designs (A, B, C, D, E, F) for the outpatient department.<br>- The efficiency of each layout was measured by the average total service time per patient.<br>- Layouts A, D, E, and F showed lower average service times compared to B and C, with Scenario A being selected as the most efficient |

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|   |                                                                                                                                                                                                                             |                                                                   |                                                                                                                 |                                                                                                                                                                                                                                    | after careful consideration by hospital specialists.                                                                                                                                                                                                                                                                                                                                                                                                               |
| 2 | Collins Ugwu, Ogbonnaya Ogbu, Ngozi Immaculata Ugwu, Nneka M. Chika-Igwenyi, Richard Chinaza Ikeagwulonu, Onyedikachi Echefu Chukwu, Amadi U. Kalu, Olaronke F. Afolabi, Tobechukwu C. Iyidobi, Chigozie Jesse Uneke. 2022. | This study was conducted at a mission health facility in Nigeria. | The study involved 120 patients who utilized the outpatient department services at the mission health facility. | The study used systematic sampling to select patients. This technique involved selecting every nth patient visiting the outpatient department during the study period, ensuring a representative sample of the patient population. | The appraisal focused on evaluating the quality of outpatient healthcare services and measuring patient satisfaction.<br>- Key dimensions assessed included service delivery efficiency, healthcare providers' professionalism, facility cleanliness, and the comprehensiveness of medical care.<br>- The study found that while most patients were generally satisfied with the services provided, there were notable areas for improvement, particularly in wait |

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|   |                                                                                          |                                                                                                   |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                      | <p>times and the availability of specific medical services.</p> <p>- The findings underscored the importance of continuous quality improvement in enhancing patient satisfaction and healthcare outcomes at the mission health facility.</p>                                                              |
| 3 | <p>D. Herrera-Granda, María del Mar Eva Alemany, Diego Hernán Peluffo-Ordóñez. 2022.</p> | <p>The study has been conducted by authors affiliated with academic or research institutions.</p> | <p>As a literature review, this study does not have a traditional sample size. Instead, it reviews and analyses many articles and research papers related to facility layout planning in the field of Operations Management (OM). Typically,</p> | <p>The review uses a systematic review approach, which involves systematically identifying, evaluating, and synthesizing research studies on facility layout planning from various academic databases. Inclusion</p> | <p>- The study provides a comprehensive analysis of existing literature reviews on facility layout planning from an operations Management perspective.</p> <p>- It identifies key themes and trends within the literature, such as the evolution of layout planning methodologies, the application of</p> |

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|  |  |  | <p>such reviews cover dozens to hundreds of sources to ensure a comprehensive analysis.</p> | <p>criteria likely include relevance to the topic, the methodological quality of the studies, and publication in reputable journals.</p> | <p>various optimization techniques, and the practical implications of layout design in different industries.</p> <ul style="list-style-type: none"> <li>- The review highlights the most influential theories, models, and practices in facility layout planning and assesses their effectiveness and impact on operational efficiency.</li> <li>- The conclusions rest on recognising the significance of facility layout planning in relation to its organisational objectives and adopted work patterns in order to raise organisational effectiveness.</li> </ul> |
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| 4 | Rajagopal. 2016. | Rajagopal is typically associated with research institutions or universities. | Since this is likely a chapter from a book on market research and organizational design, there is no conventional sample size as the work is theoretical and conceptual in nature rather than empirical research involving direct sample data collection | The content is derived from literature review and conceptual analysis rather than empirical sampling techniques. The approach involves synthesizing existing knowledge and theories from various sources to present a comprehensive view of market research and organizational design | Market research is a symphony in the chapter; it is defined as the coordination between business information gathering and organizational design.<br>- It talks about different strategies on how to carry out market analysis and how these findings are useful in decision making regarding the organization's structure, people, and work procedures.<br>- Citing concepts from both the market and organizational perspectives, the author gives examples of ways through which companies can synchronize the structures within their organizations |
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|   |                                        |                            |                                  |                                       | <p>with the market environment in order to operate proficiently and in a more flexible manner.</p> <p>- This is done with the aim of illustrating specific instances where market research information was used in defining organisational structures and business strategies of the firm.</p> <p>- Developing the role of technology and the function of data analysis in making market research more precise and efficient are discussed in the context of possible further evolution of organizational structures and strategies.</p> |
| 5 | William A. Flexner, Eric N. Berkowitz. | The study was conducted in | As the study revolves around the | The study primarily uses a conceptual | The paper proposes a model for integrating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|  |      |                             |                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|  | 1979 | Public Health Reports, U.S. | presentation of a model for marketing research in the implementation of health services, the study does not include a precise notion of sample size in the empirical research tradition. The model used in the study is conceptual based on the fact that it is theoretical in nature. | framework approach to develop a model for applying marketing research to health services planning. It integrates existing marketing and healthcare planning theories rather than utilizing direct sampling or empirical data collection. | marketing research into health services planning, emphasizing its importance for understanding and meeting community health needs.<br>- It outlines how health service planners can use marketing research techniques to gather data on population health trends, patient preferences, and service utilization.<br>- The model includes steps such as defining target markets, assessing needs and demands, designing health services to meet those needs, and evaluating service effectiveness.<br>- Flexner and Berkowitz argue that adopting marketing |
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|   |                          |                                                                   |                                                                                                          |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|   |                          |                                                                   |                                                                                                          |                                                                           | <p>principles in health planning can improve the alignment of services with patient expectations and enhance the overall efficiency and effectiveness of health services.</p> <p>- The study highlights several case studies and practical applications of the model, demonstrating how marketing research has been successfully used in different healthcare settings to guide service development and planning.</p> |
| 6 | Douglas E.<br>May. 1988. | The study is conducted in pharmaceutical industry, United States. | This paper is a methodological guide on how to conduct a needs assessment rather than an empirical study | As a methodological paper, it discusses various techniques for conducting | The paper provides a comprehensive guide on how to conduct a needs assessment in the context of drug information and                                                                                                                                                                                                                                                                                                  |

|  |  |  |                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|  |  |  | <p>with a traditional sample size. Therefore, it does not specify a sample size. The focus is on the process and techniques rather than data collection from a specific sample.</p> | <p>needs assessments, which may include:</p> <ul style="list-style-type: none"> <li>- Qualitative Methods Interviews, focus groups, and expert panels.</li> <li>- Quantitative Methods Surveys, questionnaires, and statistical analyses of existing data.</li> <li>- The paper likely provides a framework for choosing appropriate sampling methods based on the context and objectives of the needs assessment.</li> </ul> | <p>pharmaceutical services.</p> <ul style="list-style-type: none"> <li>- It outlines the steps involved in identifying and analysing the needs of a target population, including defining the scope, selecting appropriate data collection methods, and interpreting the results.</li> <li>- The methodology emphasizes the importance of a systematic approach to understanding the requirements and expectations of stakeholders in the healthcare and pharmaceutical sectors.</li> <li>- Key components of the needs assessment process covered include setting objectives, designing the study, gathering,</li> </ul> |
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|   |                                                                                             |                                                                                                                  |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                 | <p>and analysing data, and using findings to inform decision-making and service planning.</p> <ul style="list-style-type: none"> <li>- The guide also discusses practical considerations such as resource allocation, stakeholder engagement, and ethical issues in conducting needs assessments.</li> </ul>                           |
| 7 | <p>Farouq Halawa, Sreenath Chalil Madathil, Alice Gittler, Mohammad T. Khasawneh. 2020.</p> | <p>The study is international in scope, synthesizing global research findings in healthcare facility design.</p> | <p>This is a systematic literature review, so instead of a sample size typical of empirical studies, it involves the review and synthesis of existing research articles. The study likely reviewed numerous articles, typically</p> | <p>The study uses a systematic literature review method. This involves:</p> <ul style="list-style-type: none"> <li>- Defining specific inclusion and exclusion criteria for selecting relevant studies.</li> <li>- Systematically searching academic</li> </ul> | <p>The review highlights the importance of evidence-based design (EBD) in healthcare facilities, emphasizing how design decisions can significantly impact patient outcomes, staff efficiency, and overall healthcare quality.</p> <ul style="list-style-type: none"> <li>- It identifies key areas of facility design that</li> </ul> |

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|  |  |  | <p>ranging from several dozens to hundreds, to cover the breadth of evidence-based healthcare facility design.</p> | <p>databases and journals.</p> <ul style="list-style-type: none"> <li>- Screening and assessing the quality of studies to be included in the review.</li> <li>- Extracting and synthesizing data from these studies to provide a comprehensive overview of the current state of evidence-based healthcare facility design.</li> </ul> | <p>influence health outcomes, including layout efficiency, noise reduction, lighting, and air quality.</p> <ul style="list-style-type: none"> <li>- The study synthesizes findings from various research studies to outline how specific design features and environmental factors contribute to better patient recovery rates, reduced stress levels for staff, and improved operational efficiency.</li> <li>- It provides a comprehensive analysis of current trends and challenges in implementing EBD principles in healthcare settings.</li> <li>- The review also discusses the role of technology and innovation in</li> </ul> |
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|   |                                                              |                                                             |                                                                                                                                                                                |                                                                                                                                                                                                        | <p>advancing healthcare facility design, including the use of simulation tools and virtual reality to optimize space planning and design.</p> <ul style="list-style-type: none"> <li>- The findings are used to propose recommendations for future research and practical applications to enhance the adoption of EBD in healthcare facility planning and design.</li> </ul> |
| 8 | Pablo Pérez-Gosende, Josefa Mula, Manuel Díaz-Madroño. 2021. | The authors affiliated with research institutions in Spain. | This study is likely international in scope, with the authors affiliated with research institutions in Spain. Typically, authors from Spanish institutions are involved, given | The study employs a systematic literature review approach, which includes: <ul style="list-style-type: none"> <li>- Database Search</li> <li>- Conducting a thorough search across academic</li> </ul> | The review provides an extensive overview of the developments and methodologies in facility layout planning (FLP) over the past few decades. <ul style="list-style-type: none"> <li>- It categorizes the literature based on different</li> </ul>                                                                                                                            |

|  |  |  |                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|  |  |  | <p>the names and typical geographical affiliations of the authors in similar research.</p> | <p>databases and journals for relevant literature on facility layout planning.</p> <ul style="list-style-type: none"> <li>- Inclusion and Exclusion Criteria</li> </ul> <p>Establishing criteria to select studies that are most relevant to the research objectives.</p> <ul style="list-style-type: none"> <li>-Screening and Evaluation: Assessing the quality and relevance of identified studies through screening and evaluation processes.</li> <li>-Data Extraction and Synthesis: Extracting key data from the selected studies and</li> </ul> | <p>approaches to FLP, including **heuristic, metaheuristic, and hybrid methods**.</p> <ul style="list-style-type: none"> <li>- The study highlights the evolution of FLP from traditional methods to more advanced techniques incorporating **artificial intelligence (AI) and machine learning (ML)**.</li> <li>- It emphasizes the importance of integrating sustainability and flexibility into facility layout designs to adapt to changing demands and environmental considerations.</li> <li>- The review also discusses the application of simulation and virtual reality in testing and optimizing facility</li> </ul> |
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|  |  |  |  | <p>synthesizing the findings to provide a comprehensive overview.</p> | <p>layouts before implementation.</p> <ul style="list-style-type: none"> <li>- It identifies gaps in current research and proposes areas for future studies, such as the need for more integrated approaches that consider multiple objectives and constraints simultaneously.</li> </ul> |
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## **CHAPTER 3: METHODOLOGY**

### **3.1 Study Design**

This study employed a descriptive cross-sectional design to investigate factors influencing strategic planning and implementation of services offered by the Outpatient Department (OPD) at Fortis Hospital, Manesar. This approach was chosen because it enables researchers to capture data on current needs within communities within one time frame.

### **3.2 Setting (Research Area)**

Manesar area served as the location for this study which targeted its newly established tertiary care facility known as Fortis Hospital. The main objective was to explore demographic characteristics coupled with health service utilization patterns among residents living around this part of town to inform decision making regarding where best should certain clinics be situated or what type should they take after opening up such facilities.

### **3.3 Data Collection Methods**

Data collection was done through online survey method.

- **Online Surveys:** A structured questionnaire was distributed via Google Forms to the residents of Manesar in order gather information about their healthcare service preferences and requirements.

### **3.4 Sampling Design**

**3.4.1 Sample:** The sample comprised mainly People from Manesar.

**3.4.2 Sample Size:** To comprehensively understand community preference and requirement, 283 respondents participated in the survey.

**3.4.3 Sampling Technique:** In order to administer the survey, a method of convenient sampling was used. This approach was chosen because it is easy to use and can reach many different people in the community with various online platforms.

#### 3.4.4 Sampling Criteria:

##### 3.4.4.1 Inclusion Criteria:

- Residents of Manesar
- Individuals who have access to the internet can fill out an online questionnaire.

##### 3.4.4.2 Exclusion Criteria:

- Individuals who do not have access to the internet or are unable to complete the online survey.
- Current employees of Fortis Hospital to avoid bias.

#### 3.5 Study Tools / Data Collection Instruments

3.5.1 Development of the Tool: The survey questionnaire was developed after a thorough review of the literature on healthcare preferences. It was designed to align with the research objectives.

3.5.2 Description of the Tool: The questionnaire was structured into two main sections:

- Section A: Demographic Information
  - o Questions on age, gender, occupation, and current healthcare access.
- Section B: Healthcare Preferences and Requirements
  - o Questions aimed at understanding factors influencing the choice of healthcare facilities, expectations from a new healthcare facility, and specific requirements for OPD services.

#### 3.6 Scoring and Interpretation

Responses from the survey were quantitatively analyzed to identify trends and preferences within the population. The data were categorized and interpreted based on demographic factors and their influence on healthcare choices. Key factors were scored and prioritized to guide the strategic planning of the OPD services at Fortis Hospital, Manesar.

### 3.7 Content Validity

The questionnaire was reviewed by the Marketing Head at hospital to ensure it accurately captured the relevant data for strategic planning. Their feedback was incorporated to refine the questions and enhance the tool's validity.

### 3.8 Procedure for Data Collection

Data collection spanned over three months. The online survey was disseminated through social media in Manesar. Participants were encouraged to share the survey link to reach a wider audience. The responses were collected and stored securely, ensuring anonymity and confidentiality.

### 3.9 Ethical Considerations

Ethical approval was obtained by informing the Participants about the study's purpose. Participation was voluntary, and respondents could withdraw at any time. Data were anonymized to maintain confidentiality, and the results were used solely for the research purposes outlined in the study.

## Chapter 4: RESULTS

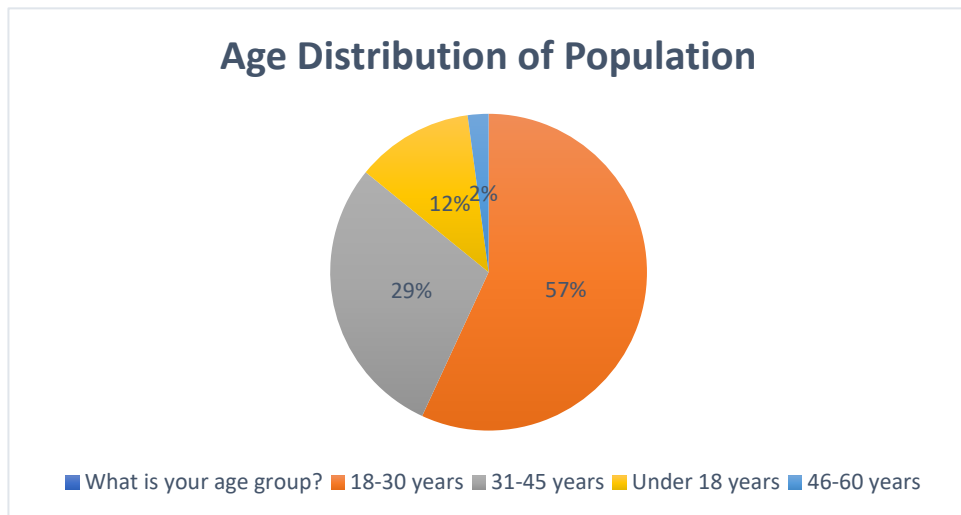


Fig – 4.1: Age Distribution of Population-based on Data Collected.

This pie chart depicts the age distribution of 283 respondents. The majority (58.9%) are in the 18-30 years age group, represented by the large orange segment. The 31-45 years age group accounts for 29% (yellow), while those under 18 years make up 12% (blue). A small green segment shows that 46-60 years old participants are the least represented.

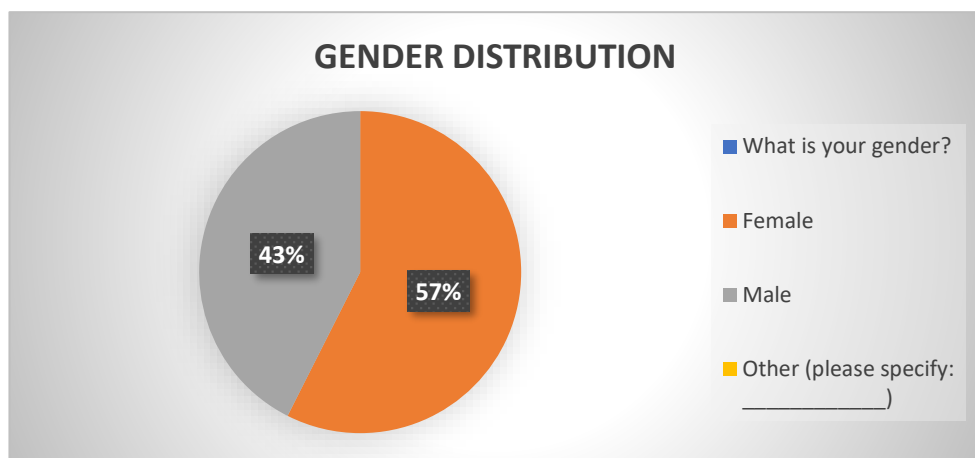


Fig – 4.2: Gender Distribution of Population- based on Data Collected.

The pie chart illustrates the gender distribution of 283 respondents. A majority, 57.6%, identify as female (represented by the red segment), highlighting a higher participation rate from women. Males, shown in blue, account for 42.4% of the respondents, making them the second-largest group. There is no visible segment for individuals identifying as "Other," indicating no or negligible representation in this category.

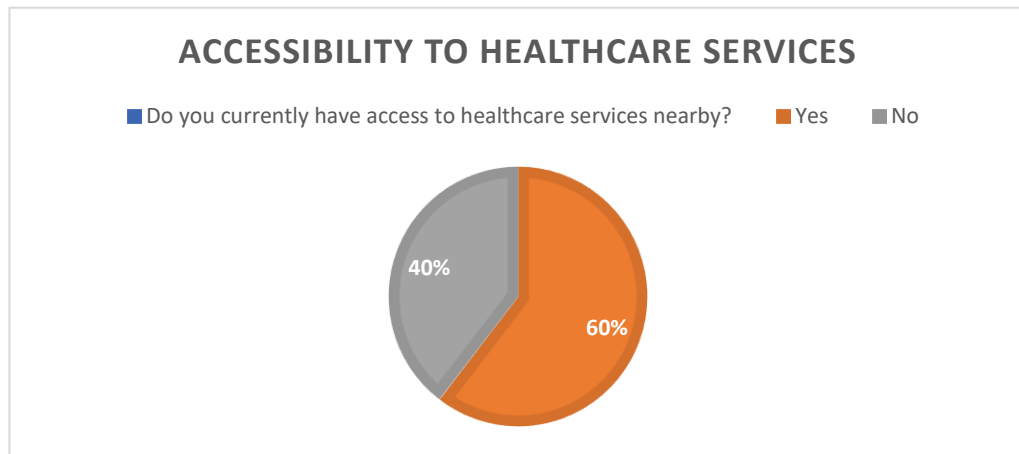


Fig – 4.3: Accessibility to Healthcare Services.

The pie chart displays responses from 283 participants regarding their access to nearby healthcare services. A majority, 60.4%, indicated that they have access (represented by the blue segment), suggesting that most respondents can easily reach healthcare facilities. Meanwhile, 39.6% of the participants reported not having nearby access (shown in red), highlighting a significant portion of the population facing challenges in obtaining local healthcare services. This disparity emphasizes the need to address gaps in healthcare availability for a considerable minority of the surveyed group.

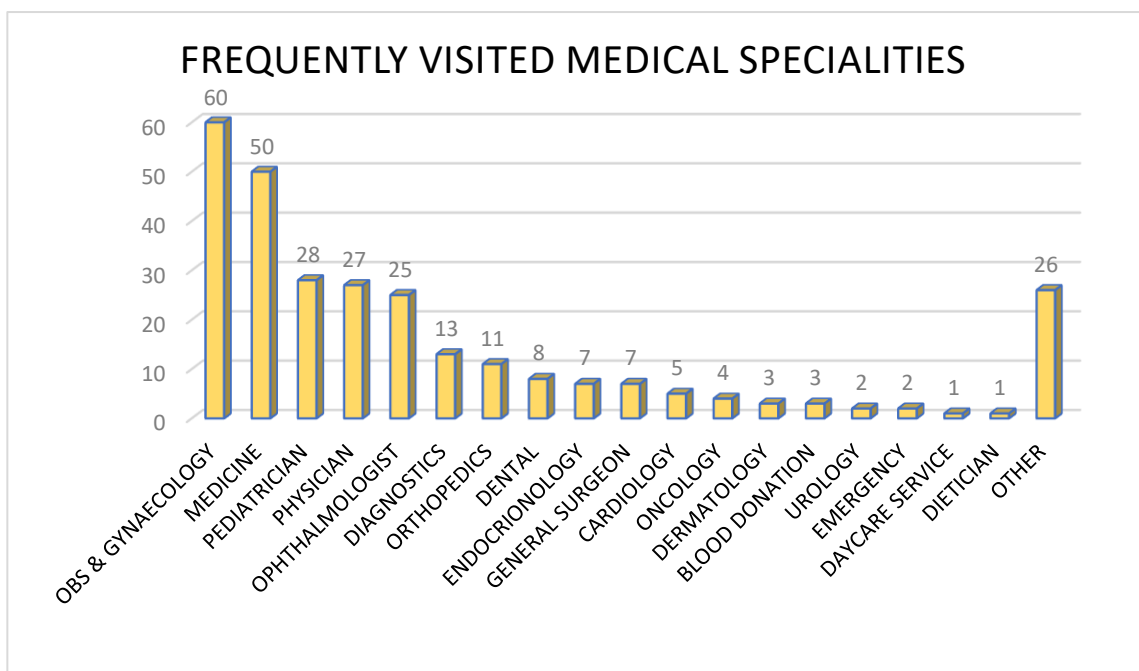


Fig – 4.4: Most Frequently Aailed Medical specialities.

## Most Visited Outpatient Departments (OPDs)

The analysis of the survey responses highlights the most visited medical specialties within the OPD services. The data collected from 283 respondents showed the following key areas of patient visits.

- Gynaecology and Obstetrics: 60 responses

Gynaecology and obstetrics emerged as the most visited specialty, indicating a high demand for maternal and women's health care. A dedicated unit with comprehensive prenatal, postnatal, and reproductive health services is essential to meet these needs.

- General Medicine: 50 responses

General medicine is fundamental for primary care and the management of common illnesses. A strong general medicine department can serve as the first point of contact for patients and provide comprehensive care for a wide range of health issues.

- Paediatrics: 28 answers

The importance of specialized care for children is shown by the frequent visits to pediatric services. Preventive, diagnostic and therapeutic needs of younger population should be taken care of in a comprehensive pediatric department.

- Diagnostics: 25 answers

Accurate diagnosis of diseases and planning treatment require diagnostic services. Clinical decision-making can be effectively supported by an advanced diagnostic unit equipped with imaging, laboratory and pathology services.

- Orthopaedics: 11 answers

There is always high demand for bone, joint and muscle care as shown by many orthopedic service users. Well-equipped orthopedic departments should be maintained to address these needs on regular basis.

- Dermatology: 8 answers

Dermatology deals with a wide range of skin conditions from minor ailments to complex dermatological diseases. Clearly there is need for specialized units in dermatology so that these problems can be solved holistically.

- ENT (Ear, Nose, and Throat): 7 responses

Common ear nose throat related infections like allergies; hearing problems among others are managed through ENT services which are essential in any health system. A dedicated facility for this purpose would provide comprehensive coverage in such areas.

- Neurology: 5 responses

People go to neurologists because they have disorders affecting their brain, spinal cord or nerves among other parts of body connected with nervous system. It therefore calls for establishment of well-staffed neurology departments where complicated conditions like those can be diagnosed and treated accordingly.

- Psychiatry: 4 answers

Mental health care is very important as indicated by demands made on psychiatric services by different people who visited this hospital during survey period. Creating an institution like one will offer necessary support & treatment options especially now when mental illnesses are increasingly recognized globally as major component towards achieving overall well beingness.

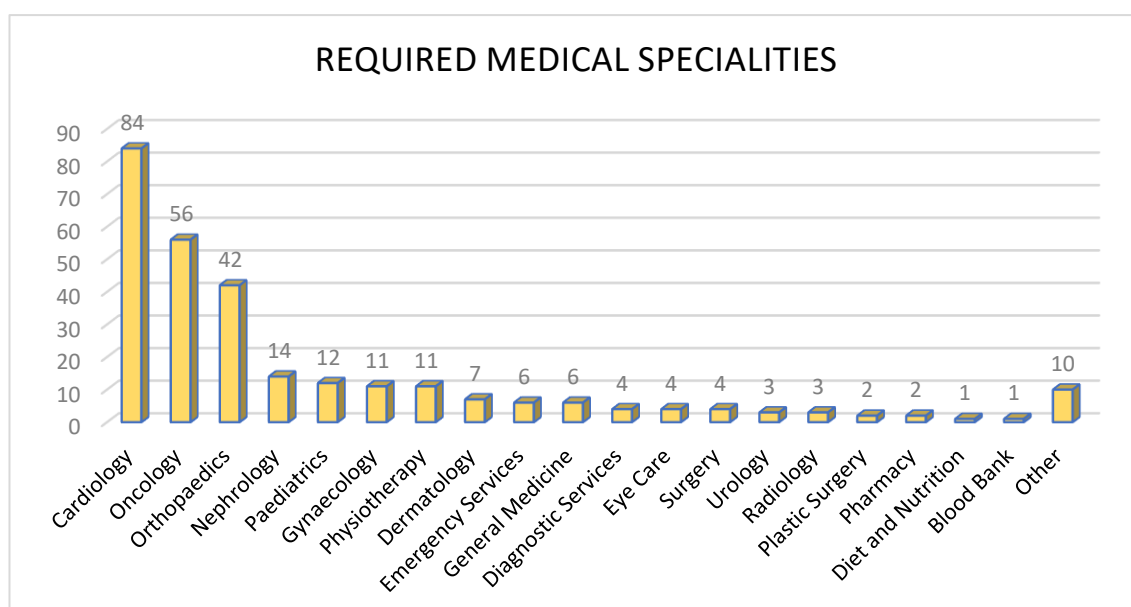


Fig – 4.5: Required Medical Specialities

### Required Medical Specialties

Some medical specialties were found to be lacking based on feedback received from respondents who felt underserved or lacked access to certain healthcare services within their locality. These were the identified missing medical fields that need inclusion into new health care facility:

- Cardiology: 84 responses

The high number of requests for this service indicates a huge demand for it among individuals suffering from different heart problems. Address these needs, there must be establishment of well-equipped cardiology department with advanced diagnostic and treatment facilities capable of dealing with all prevalent heart diseases within community.

- Oncology: 56 replies

Cancer is increasingly common; therefore, higher proportion of population may be affected by distinct types of cancer at some point in life. Thus what we need here is a comprehensive oncology unit that offers multi-disciplinary care like chemotherapy, radiotherapy & palliative care support etcetera.

- Orthopaedics: 42 responses

A survey was conducted and it showed that orthopedic surgery is one of the most required sections in the vicinity. This is so because the current position is basically an industrial zone and the employee population lives in the vicinity as well; bearing in mind both realities – occupational musculoskeletal injuries represent a substantial percentage of annual reported accidents. Therefore, there is the need to rehabilitative services and surgery operations, from the best clinicians, and surgeons.

- Nephrology: 14 replies

Seen from the above graph, it elicited relatively fewer replies than the other specialties, although its existence as a specialty was deemed imperative since the incidences that were experiencing chronic kidney diseases were increasing over time. Stroke care also requires coordination with consultation rooms where specialized physicians such as nephrologists can attend to their patient's needs should there be a need for a check-up or provision of advice.

- Paediatrics: 12 responses

The emphasis should be on children with special health care needs for infants are more vulnerable than the adult population to a myriad of illnesses that range from simple immunizations to comprehensive pediatric management of childhood illnesses through pediatric units.

- Gynaecology: 11 answers

This discipline involves issues to do with women's reproductive system hence enclosing but not limited to pregnancy issues which forms the bulk of gynecological conditions. This practice should therefore ensure that well trained practitioners are on duty during the day and at night putting into consideration modern amenities that create comfortability of the patients at such times.

- Physiotherapy: 11 answers

The study affirmed that in the context of population group, Manesar comprises of vast population of inhabitants; and with different age groups, both male and female, and with different medical conditions affecting them. It also expressed high usage of cardiology other general medical services within the institution – this corresponds to diseases on prevalence. The vast majority of them fall under productive they should, therefore, be accorded flexible easily reachable care based on their schedules.

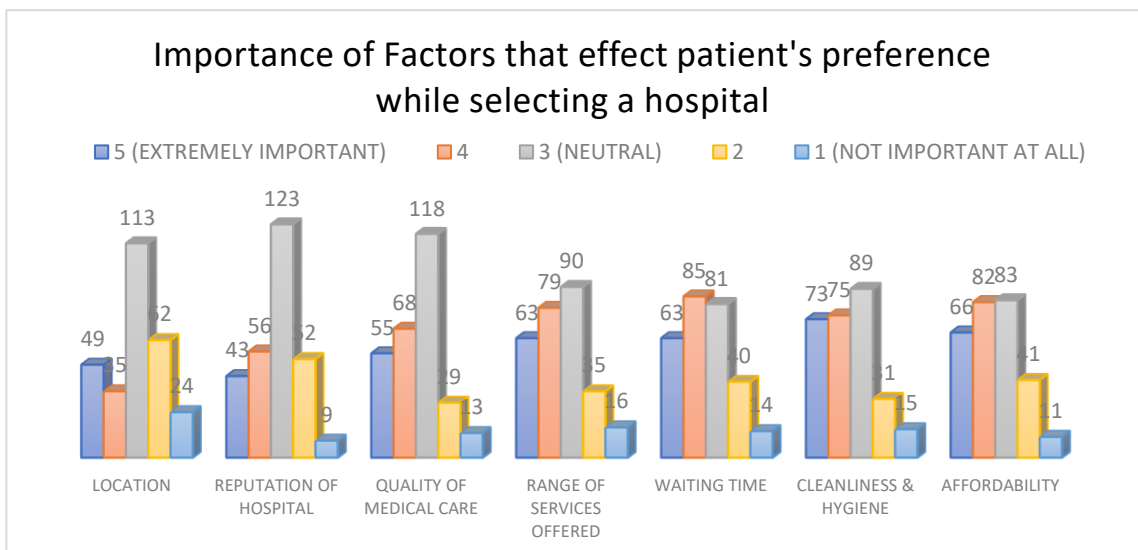


Fig – 4.6: Factors Effecting Patient's Preference in Selecting a hospital

Several factors influence patients' preferences when selecting a hospital. The survey results provided detailed insights into these factors, rated based on their importance:

- Cleanliness and Hygiene: Rated extremely important by 73 respondents

Cleanliness and hygiene are paramount for patient safety and comfort. Ensuring high standards of cleanliness can significantly enhance patient satisfaction and trust in the healthcare facility.

- Quality of Medical Care: Rated extremely important by 55 respondents

The quality of medical care is a critical determinant of patient outcomes. Providing high-quality care through skilled healthcare professionals and advanced medical technologies is essential for a reputable healthcare facility.

- Affordability: Rated extremely important by 66 respondents

The cost of healthcare services is a major concern for patients. Offering affordable healthcare options can increase accessibility and ensure that more patients can benefit from the services provided.

- . Range of Services Offered: Rated extremely important by 63 respondents

A wide range of services allows patients to receive comprehensive care under one roof. Expanding the variety of services can attract more patients and provide holistic care solutions.

- Waiting Time: Rated extremely important by 63 respondents

Long waiting times can deter patients from seeking care. Implementing efficient scheduling and patient flow management can reduce waiting times and improve the patient experience.

- Reputation of the Hospital: Rated extremely important by 43 respondents

The reputation of the hospital influences patient trust and decision-making. Building a positive reputation through excellent service and patient care can enhance the facility's attractiveness.

- Location: Rated extremely important by 49 respondents

The proximity of the healthcare facility to patients' homes or workplaces is a significant factor. Conveniently located facilities are more likely to be preferred by patients.

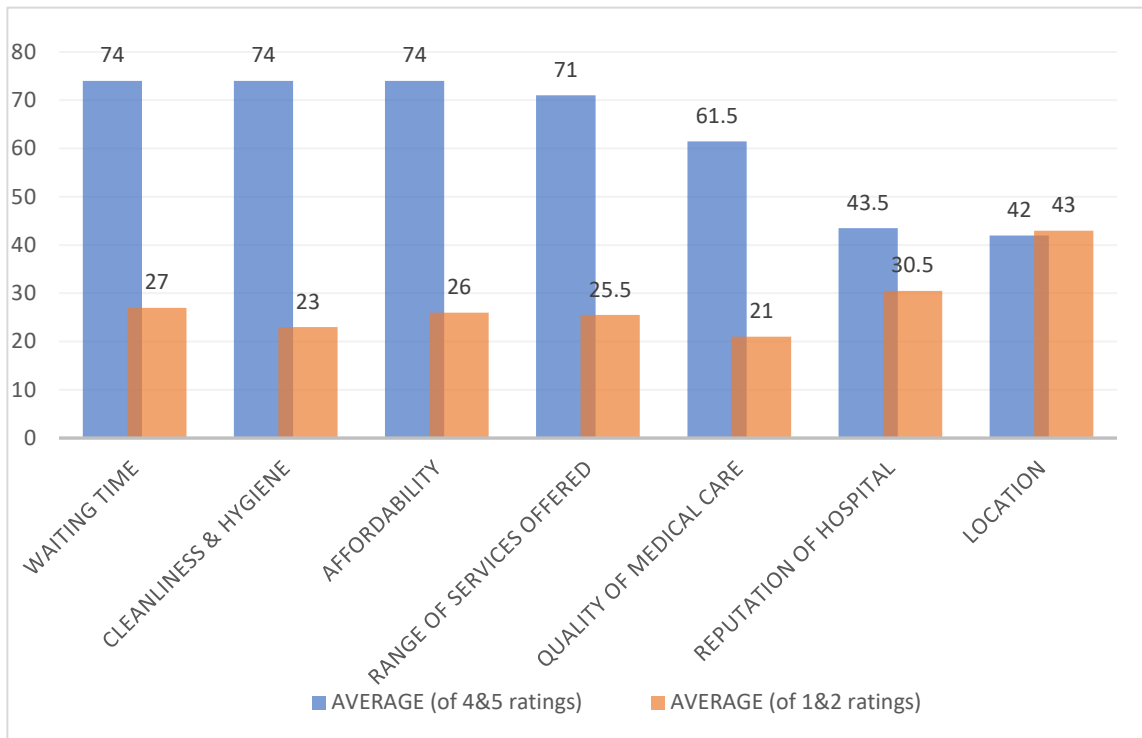


Fig – 4.7: Patient Priorities in Hospital Selection: High vs. Low Importance

The average ratings for factors affecting patient preferences are summarized as follows:

Waiting Time: High importance (74), Low importance (27)

Cleanliness and Hygiene: High importance (74), Low importance (23)

Affordability: High importance (74), Low importance (26)

Range of Services Offered: High importance (71), Low importance (25.5)

Quality of Medical Care: High importance (61.5), Low importance (21)

Reputation of the Hospital: High importance (43.5), Low importance (30.5)

Location: High importance (42), Low importance (43)

High importance ratings for cleanliness and hygiene, waiting time show that these are the most important factors when choosing a healthcare facility as perceived by patients. Patient satisfaction and loyalty can be increased in great bounds through ensuring

minimum waiting times, keeping high levels of cleanliness and offering affordable services.

## **Chapter 5: Discussion**

In new hospitals such as Fortis Hospital, Manesar strategic planning and implementation of Outpatient Department (OPD) services is vital for operational effectiveness and patient satisfaction. This discussion therefore looks at key findings from the demographic analysis done in Manesar as well as needs assessment conducted and how this can inform planning for effective OPDs.

### **Demographic Analysis and Healthcare Needs:**

The study established that in Manesar there exists a diversity of the populace subgroups in terms of age, gender and health. There is also more request for services in cardiology, orthopedics among other disciplines in general medicine which is in harmony with diseases dominant in the area. This was evidenced with the age distribution that revealed most of the people are under the working age group, therefore they should have flexible, accessible service to meet their tight schedules.

### **Factors Affecting Patient Choice:**

This paper looks at the factors that influence patients in choosing where to seek treatment after developing a particular illness: proximity, quality health services offered by the doctors and health facility, and availability of modern health facilities as observed in the survey. When it came to factors that exerted influence on the decision making, the degree of truth on the abilities of doctors in their capacity to treat you adequately.

### **Requirements/Expectations from New Healthcare Facilities:**

At the employment of a tertiary care hospital, it is expected that waiting time should be minimized through the effective operation of an appointment taking system. Secondly, they would wish to have specialized services within the hospital system so that the clients do not need to leave or seek the services somewhere else. Considering many

people looking for attention, particularly in the working hours digitalized health programs such as online appointment system could tremendously enhance rates of service delivery. Last, there should be increased implementation of technology-based solutions like telemedicine where through video call, doctors are able to diagnose their patients thus decongesting physical examination areas.

#### Strategic Planning and Service Implementation:

The OPD services must be planned carefully, and the following framework must be put into consideration.

**Wider reach:** The introduction of facilities at places that can be reached should be done jointly with changes in working hours.

**Service Integration:** Every section needs to be in one building because health demands vary, as do the services required to address those needs, therefore the demands can be met easily.

**Adoption of Technology:** Real things like booking appointments with systems; consultations etc should be embraced so that they can operate faster which means that the patients will be happier.

**Putting patients first:** Designing cases of civilizations that begin right from the moment one sets foot in the hospital and up to the time that the person gets fully healed. This may include such things as minimizing the time one has to wait for the doctor or having a good plan of follow-up among others.

Here is an overview of the two key components of the business strategy:

The strategies help in satisfying the customers and at the same time bring efficiency in all the operations. The hospital can then realign its logistic and patient traffic hence it will be able to admit more numbers while still innovating and adapting in the market.

**Optimizing Staffing Levels:** From examination of the number of patients, the hospital will be informed on which department needs how many staff or in other words, the number of health care givers to deal with patients in the shortest time possible thus shortening the waiting time of the congregation.

**Simplifying Registration Process:** Digitalizing the registration process will make it easier as well as convenient too. Patients will be able to enter some of their details online before coming to the hospital to cut short on the paperwork and on time they spend in queues.

**Efficient Triage System:** It is recommended that there should be an OPD triage point right from the entrance gate to assess patients depending on the severity of their situation. This will help in determination of pertinent conditions that require intervention; therefore, appropriate resources can be deployed.

**Better Signs and Directions:** It is the high time that many signs are posted throughout the hospital to locate any department or facility the moment an outsider encounters any of these departments or facilities, that way time is saved for the staff or even the patients for the reason that one does not search for any commodity but follows the instructions given by such sign postings.

**Effective Communication Systems:** They also include a communication system in the hospital that can enable one department be easily accessed by the other whenever possible. This decreases on time that may be taken between one unit and another thus improving on the overall patient care co-ordination.

One of the other ways that non-emergency cases would enter a healthcare facility would be through referral.

To further added on decreasing the waiting time for non-emergency ones; telemedicine service will be introduced. Thus, instead of going physically to OPD, minor illness patients can consult a doctor on the call or through the messaging application.

## **Chapter 6 : Conclusion**

This research highlights need for more targeted outpatient department (OPD) services at Fortis Hospital Manesar which takes into account specific demands and preferences of people living in this area. Patient satisfaction levels will be greatly improved if appropriate healthcare is planned and implemented strategically thereby making work easier for both medical practitioners administrators and enhancing overall reputation of hospital.

The study, first and foremost, calls attention to the high requirement for specialized medical services like Gynaecology and Obstetrics, General Medicine, Pediatrics, Diagnostics or even Orthopaedics. The hospital can address this need by establishing well-equipped specialized units that will enable them to offer holistic care for these common ailments. Also, the significant demand for Cardiology, Oncology and Nephrology services shows gaps in provision of healthcare today that if filled could greatly enhance patient outcomes as well as attract more people to come seek treatment at Fortis Hospital Manesar.

Secondly; those things which influence patients' choices such as tidiness & hygiene levels maintained within hospitals; types of medical treatments delivered there (quality); costs charged vis a vis what is affordable among different income groups; the number & variety of procedures available for patients' selection; time taken before being served by doctors after arrival at a hospital facility (waiting period); reputation of a given health institution in general terms plus location among others are very important indicators towards improving patient experience accordingly. In order to keep safe every patient who comes into contact with any part of these facilities it is crucial that strict hygiene standards be adhered to therefore cleaning should be done regularly through carrying out audits from time to time alongside training employees about this.

In addition, patients' satisfaction is done through quality medical care that serves as a determiner. Thus, the employees ought to work as hard as they can with the customers because if the results are positive, then not only will the customer be happy, but many other lives shall be saved and many other jobs soon shall be secured. This implies that we must focus our investment on programs for human capital development whereby nurses being endowed with the necessary skills—for working under different situations, when necessary, for instance, utilizing a ventilator if appropriate for the entire lifecycle

of a professional nurse in addition to utilizing the latest technology and any other necessary resources until such personnel is always ready.

The point of service should be able to offer affordable many people should be able to afford these establishments if prices are set according to various insurance schemes. Also, concerning the aspect of cost, much attention should be given to the fact that delivery of services relates a lot with costs; thus in this regard, Fortis Hospital Manesar has to come up with different strategies that would enable them practice cost effective measures when delivering health care services to clients regardless the financial status they have since there are only two options, through partnership with government health care plans or strategic pricing.

From the research, another thing is about decreasing the waiting time that a patient must spend, that is improving patient satisfaction. This can be achieved by proper appointment organization, and the elimination of long processes and the use of electronic systems such as E-Health Records among others that enable quicker access to the doctor hence reducing the operational downtimes mostly occasioned by overcrowding, overbooking done concurrently without prior planning also termed as overbooking. Moreover anyone requiring extra health care should be able to locate all or most requisite products and services within the facility which suggests that service diversification should be pursued with more fervor.

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