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A STUDY ON EFFECTIVENESS OF OPD OPERATIONS

P.INDHU [1], LAKSHMI [2], R.J.T NIRMAL RAJ [3]

[1]MBA 2nd year - Hospital Management, School of Management, Hindustan Instituteof Technology and Science (Deemed to be University), Chennai.
Email: indhu3071@gmail.com
[2] Assistant Professor-Management studies, The Sankara Nethralaya Academy, Chennai
Email: lakshmi.sen29@gmail.com, Ph 9940072669
[3]Assistant professor (Selection Grade) School of Management, Hindustan Institute ofTechnology and Science (Deemed to be University), Chennai.
Email: rjtnirmal@hindustanuniv.ac.in, Ph 9043588234

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Abstract

An outpatient department provides primary as well as comprehensive health care for patients who come for diagnosis, treatment or follow-up care. It is the point of first contact between a hospital and the patients. Good service and timely treatment of the patient are necessary for the faster recovery of the patient. The outpatient department is a crucial first step for any medical treatment. It helps the patient recover or improves from a certain health condition.

OPD is the section that also provides additional services like diagnosis, lab tests, precautionary advice, etc. It controls the spread of infectious diseases and supports functions such as vaccination, etc. Despite many beneficial functions of the outpatient department, the facilities and the quality of treatment varies from hospital to hospital. This study will help to understand the effectiveness of OPD operations which includes service quality and efficiencyof treatment effectiveness & service of clinical & non clinical staffs and hospital environmentwhich include waiting area, physical facilities, and sanitation and canteen facilities. The study deals with quantitative accumulation of source, by spreading out structured questionnaire, using convenience sampling method. In conclusion, this study attempts to know the efficiency of OPD operations.

Key Words: Hospital, Service Effectiveness & efficiency, Outpatient department

INTRODUCTION:

Healthcare has become one of India's largest sectors, both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medicalequipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services, andincreasing expenditure by public as well as private players. India's healthcare delivery system is categorised into two majorcomponents - public and private.Outpatient clinics have grown significantlyas a result of technological developments. By facilitating remote access to medical consultations and follow-up care, telemedicine and digital health tools have helped advance the outpatient care model. The growing demand for outpatient clinics is primarily due to the aging population. The need for senior care and rehabilitation and specialized outpatient services, such aschronic disease management, is increasing as the senior population keeps expanding.

REVIEW OF LITERATURE:

A scoping review assessed primary care initiatives to optimize outpatient services, focusing on referral patterns, collaborative efforts, and patient behaviour interventions. Transferring services to primary care and altering referral patterns showed potential in reducing referrals and improving appropriateness, while telemedicine and expert advice could lower costs.[1]

Missed patient visits pose financial losses and risks for healthcare providers. Automated phone reminders can reduce missed appointments, but understanding patient characteristics is vital for effective interventions. In an academic outpatient practice, patients were randomly assigned to receive automated, staff, or no reminders. Staff reminders significantly lowered no-show rates compared to automated or no reminders. Age, specialty, visit type, wait duration, insurance, and reminder type predicted no-show rates. Patients appreciated reminders but had difficulty distinguishing betweenautomated and staff reminders.[2]

The study evaluates outpatient clinics' effectiveness at a hospital using DEA. Data from a medical information system, costing system, and customer satisfaction reports were analyzed. Efficiency scoresranged from 57.56% to 100%, suggesting overall effective operation with

room for improvement in some clinics.[3]

This paper addresses the complexity of outpatient scheduling by proposing a bidding method and transforming it into a group role assignment problem, validated through simulations and experiments. The significant contribution lies in making automatic outpatient scheduling practical, viewing it as a collaborative activity, and introducing a qualification matrix for effective implementation of the group role assignment algorithm. [4].

The study employs computer simulation toanalyze outpatient clinic dynamics,utilizing detailed time and role data. It assesses the impact of structural changes on patient and doctor waiting times, investigating clinic size, consultation duration, patient demographics,scheduling, and non-attendance effects. Findings suggest optimizing appointment scheduling significantly reduces patient waiting times, and clinic composition influences waiting times, particularly in mixed clinics. Computer modeling aids in optimizing clinic management, enhancing outpatient service delivery. [5]

The study focuses on enhancing efficiency and efficacy in a medium-sized community hospital facing challenges in meeting waiting time Key Performance Indicators (KPIs). Through qualitative and quantitative data collection, including staffinterviews and observations, key issues within the Outpatient Department (OPD) are identified. Utilizing Lean tools like root cause analysis and simulation software, recommendations are made to optimize operations, resulting in an 8% reduction in system time for social securitypatients. [6]

This paper presents a method for smoothing daily variations in patient visits to hospital outpatient departments. It analyzes departments both with and without appointment systems using data from the Naval Hospital of Athens. [7]

The study aims to optimize doctor numbers and schedules at a Gastrology Out-Patient Department (OPD) in aPakistani hospital using discrete event simulation. Data collection involves patient arrival and service rates, fees, and service times at various channels. Analysis suggests extending existing doctor hoursrather than hiring new ones, given most patients have appointments with specific doctors. [8]

The research aimed to compare the effectiveness of phone reminders from general practitioners

(GPs) versus hospital reminders in reducing nonattendance at outpatient clinics. Over three months, visits were randomized into Hospital, GP, and Control groups. Phone reminders significantly reduced "no show" rates across all groups, with no difference between GP and hospital reminders. [9]

slot design to efficiently schedule appointments, considering physician idletime and patient wait periods. Implementation outcomes from three case studies demonstrate successful reduction of patient wait times by up to 56%, while maintaining physician productivity. This research aims to improve the outpatient experience and raise service standards. [10]

OBJECTIVES OF THE STUDY:

To study the existing process inOPD.
To identify the factors influencingeffectiveness of OPD operations

RESEARCH METHODOLOGY:

The research in the field of operations adopts a descriptive approach. Datacollection primarily relies on structured questionnaires administered directly to participants. The study was conducted from February 5th to April 5th, 2024, involving a sample size of 80 patients selected through convenience sampling. Statistical analysis employed various tools, including Percentage Analysis, Weighted Average, and Chi-Square Analysis, tointerpret the collected data and derive meaningful conclusions.

PERCENTAGE ANALYSIS

Table 1-The table shows that among 80 respondents, 55% are male and 45% are female.

GENDER	**NO OF RESPONDENTS**	**PERCENTAGE**
Male	35	43.75%
Female	45	56.25%
Total	80	100%

Table 2-The table shows that among 80 respondents, 25% of respondents belong to 20-29 years, 26.2% of respondents belong to 30-39 years, 11.3% of respondents belong to 40-49 years, 37.5% of respondents belong to >49 years.

AGE GROUP	NO OF RESPONDENTS	PERCENTAGE
20-29	20	25%
30-39	1	26.25%
40-49	9	11.25%
>49	30	37.5%
TOTAL	80	100%

Table 3 -The table shows that among 80 respondents, 28% are walk-in patients,71% are appointment patients and 1% not responded.

MODE OF APPOINTMENT	NO.OF RESPONDENTS	PERCENTAGE
Walk-in patients	23	28.75%
Appointment patients	57	71.25%
Total	80	100%

Table 4 -The table shows that among 80 respondents, 85% are existing patients and 15% are new patients

TYPE OF PATIENT	NO.OF RESPONDENTS	PERCENTAGE
Existing patients	68	85%
New patients	12	15%
Total	80	100%

WEIGHTED AVERAGE

Table 6

SERVICE QUALITY INFLUENCE OPD EFFECTIVENESS

Criteria	**Strongly Agree (5)**	**Agree(4)**	**Neutral (3)**	**Disagree (2)**	**Strongly Disagree (1)**	**Total**	**Weighted Average**
Treatment effectiveness	**20**	**52**	**7**	**1**	**0**	**80**	**4.1**
Imaging services atOPD	**12**	**50**	**14**	**4**	**0**	**80**	**3.8**
Nursing level	**22**	**49**	**8**	**1**	**0**	**80**	**4.1**
Transparency in fees	**0**	**57**	**21**	**2**	**0**	**80**	**3.6**
Laboratory tests	**15**	**49**	**15**	**1**	**0**	**80**	**3.9**

Interpretation

The above table indicates that the highest weighted average is 4.1 shows high Treatment effectiveness and nursing level, and the least weighted average is 3.6 shows Transparency in fees

Table-7

SERVICE EFFICIENCY INFLUENCE OPD EFFECTIVENESS

Criteria	**Strongly Agree(5)**	**Agree(4)**	**Neutral (3)**	**Disagree (2)**	**Strongly Disagree (1)**	**Total**	**Weighted Average**
Ease of making	**30**	**37**	**13**	**0**	**0**	**80**	**4.2**

appointments							
Optimum waiting time and accuracy in billing	**11**	**33**	**29**	**7**	**0**	**80**	**3.6**
Optimum waiting time and accuracy in registration process	**10**	**42**	**26**	**2**	**0**	**80**	**3.7**
Optimum waiting time and accuracy in pharmacy	**6**	**45**	**24**	**5**	**0**	**80**	**3.6**
Reports delivering process is efficient	**10**	**50**	**19**	**1**	**0**	**80**	**3.8**

Interpretation

The above table indicates that the highest weighted average is 4.2 shows ease of making appointments, and the least weighted average is 3.6 shows optimum waiting time and accuracy in pharmacy & billing

Table-8

SERVICE EXCELLENCE INFLUENCE OPD EFFECTIVENESS

Criteria	**Strongly agree(5)**	**Agree(4)**	**Neutral (3)**	**Disagree (2)**	**Strongly Disagree(1)**	**Total**	**Weighted Average**
Service of doctors	**32**	**41**	**6**	**1**	**0**	**80**	**4.3**
Nursing service	**25**	**49**	**5**	**0**	**1**	**80**	**4.2**
Privacy protection	**26**	**49**	**4**	**1**	**0**	**80**	**4.2**
Escort services	**8**	**43**	**28**	**1**	**0**	**80**	**3.7**
Housekeeping services	**19**	**44**	**7**	**10**	**0**	**80**	**3.9**

Interpretation :-The above table indicates that the highest weighted average is 4.3 shows Service of doctors , and the least weighted average is 3.7 shows Escort services.

Table-9

HOSPITAL ENVIRONMENT INFLUENCE OPD EFFECTIVENESS

Criteria	**Strongly Agree (5)**	**Agree(4)**	**Neutral (3)**	**Disagree (2)**	**Strongly Disagree (1)**	**Total**	**Weighted Average**
Comfortness at waiting area	**22**	**41**	**13**	**4**	**0**	**80**	**4**
Physical facilities	**23**	**37**	**14**	**4**	**2**	**80**	**3.9**
Environmental sanitation	**19**	**44**	**12**	**5**	**0**	**80**	**3.9**
Canteen facilities	**9**	**39**	**16**	**10**	**6**	**80**	**3.4**

Interpretation:- The above table indicates that the highest weighted average is 4 shows Comfortness at waiting area , and the least weighted average is 3.4 shows canteen facilities.

CHI-SQUARE

Table - 10

ASSOCIATION BETWEEN COMFORTABLE WAITING AREA AND THE APPOINTMENT MODE OF PATIENTS

H_0 - There is no association between comfortable waiting area and the appointment mode of patients

H_1- There is a association between comfortable waiting area and the appointment mode of patients

CRITERIA		**Waiting area is comfortable**					**Total**
		Strongly agree(5)	**Agree(4)**	**Neutral(3)**	**Disagree(2)**	**Strongly Disagree(1)**	
Mode of appointments	Walkin Patients	3	11	3	4	0	21
	Appointment Patients	18	30	11	0	0	59
Total		21	41	14	4	0	80

Test Statistic	12.302
P - Value	0.006

Source of data: primary data)

p-value<0.05

FINDINGS:

The above table shows that 73% of total population are appointment patients who agrees that waiting area is comfortable.

INTERPRETATION:

Hence H_1 is accepted

since the significant value is less than the p-value <0.05, There is a significant association between between comfortable waiting area and the appointment mode of patients

Table - 11

ASSOCIATION BETWEEN EASE OF MAKING APPOINTMENTS AND TYPE OF PATIENTS

H_0- There is no association between ease of making appointments and type of patientsH_1- There is association between ease of making appointments and type of patients

CRITERIA		**Ease of making appointments**					**Total**
		Strongly Agree(5)	**Agree(4)**	**Neutral (3)**	**Disagree (2)**	**Strongly disagree(1)**	
PatientType	Existing Patients	27	33	7	0	0	67
	New Patients	3	4	6	0	0	13
Total		30	37	13	0	0	80

Test Statistic	11.616
P - Value	0.003

Source of data:(primary data)

p-value<0.05

FINDINGS:

The above table shows that 83% of the total population are old patients who agrees that ease of making appointment process is efficient.

INTERPRETATION:

Hence H1 is accepted

Since the significant value is less than the p-value <0.05, There is a significant There is association between ease of making appointments and type of patients

Table-12

ASSOCIATION BETWEEN IMAGING SERVICES AND THE APPOINTMENT MODE OF PATIENTS

H0-There is no association between imaging services and the the appointment mode of patients

H1-There is association between imaging services and the appointment mode of patients

Criteria		**Imaging services**					**Total**
		Strongly Agree(5)	**Agree(4)**	**Neutral(3)**	**Disagree(2)**	**Strongly disagree(1)**	
Mode of appointments	Walkin Patients	0	7	6	4	0	13
	Appointment Patients	11	44	8	0	0	67
Total		11	51	14	4	0	80

Test Statistic	11.4
P - Value	0.01

Source of data:(primary data)

p-value<0.05

FINDINGS:

The above table shows that 83% of the total population are Appointment Patients who agrees thatimaging services is effective.

INTERPRETATION:

Hence H_1 is accepted

Since the significant value is less than the p-value <0.05, There is association between imaging services and the appointment mode of patients

SUGGESTIONS AND RECOMMENDATION

It is recommended to regular monitoring of technicians to oversee the task done ontime and recognize and reward their efforts.

It is recommended to provide patients with a breakdown of expenses in order to support fee invoices. transparent terms and conditions, a provider-friendly statement,an easy-to-understand pricing schedule, an implementing notification system, and customer assistance.

It is recommended to implement automation diagnostic lab ,evaluate process & maintain equipments on regular basis.

It is recommended to optimise staff allocation & productivity , and implementation ofself-service kiosks reduce long queues.

It is recommended to implement report generation on mobile app

It is recommended to plan and manage human resources carefully on the basis ofpatient flow.

It is recommended to have partnership with outsource companys like peddlers son using freshest and finest food ingredients to create healthy foods and snacks in thecanteen improve the patient experience.

It is recommended to conduct regular audits and reviews to maintain and improve the effectiveness of OPD.

CONCLUTION

Based on finding, it is concluded more than half of the patients were agreed that the existing OPD process is effective. They are agree with the factors such as treatment effectiveness, nursing level, ease of making appointments, service of doctors, privacy protection but are disagreed with canteen facilities, transparency in fees, optimum waiting time& accuracy in billing and registration, escort services. Therefore over all OPD operations is effective and can be maintained. Also few factors can be improved and implemented for the better and the best experience for patients inside the campus.

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