

Patient's Self-Referral Decongestion Framework

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ABSTRACT

The Referral Framework enables control of client health demands that cannot be met locally. Patients walking into referral hospitals is increasing, resulting in overuse of available services and a deterioration of the facility's standard of care. In this research paper, A patient Decongestion framework was developed. A descriptive research design was used to interview self-referral patients who visit the outpatient department at Kisii Teaching and Referral Hospital.

The study findings established a significant positive relationship ($r=.7438$) between Socio-Demographic Factors and hospital decongestion in the referral hospitals. The study highlighted a positive relationship ($r=.703$) between primary health facility characteristics and hospital decongestion. The study further established a positive relationship between Referral Facility Characteristics ($r=.431$) and hospital decongestion. The study findings further highlighted that the current referral framework positively influenced hospital decongestion

1.0 Introduction

People who refer themselves may not be using all the primary health care resources and maybe over burdening hospitals, leading to higher healthcare expenses. Because of this policy, a lot of patients have to wait a long time before they visit a healthcare provider, and as a result, their cases get mishandled, which limits vulnerable patients' access to well-trained health specialists. The facilities frequently run out of human and physical resources, which results in hospitals losing the treatments they provide to patients (Wolkite et al., 2015). An even higher proportion of self-referred patients exists in several nations. 62.8% of patients in England are self-referrals. In the United States, there are just a few general practitioners (GPs) for every hundred thousand people; therefore, patients frequently refer themselves to specialty care. 30% of patients self-refer to primary care, and self-referred patients should receive primary care. In the study that was done in Sri Lanka, it was discovered that approximately two-thirds of people who sought treatment in rural areas passed the basic level of treatment (Kraaijvanger et al., 2016).

A well-designed healthcare plan would typically include provisions that help caregivers focus on locating and receiving primary care in the first place, and then if possible direct them to higher levels of care. The caretaker's health care costs will be insignificant if they follow the referral scheme. However, many countries (primarily in the developing world) prefer to avoid primary care facilities altogether and instead only use referral care clinics (i.e. those that refer patients to other healthcare facilities, especially for diseases that can be effectively treated in the primary care facility). Referral centers bear an unnecessary financial burden because of this. This also increases caregivers' costs and the overall health care system (Edosa et al., 2019).

This paper proposes a patient's self-referral decongestion framework to alleviate congestion in the referral Hospitals.

The main aim of this paper includes the following

- i. Investigation of the of current referral systems.

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- ii. finding out the current decongestion frameworks in hospitals.
- iii. developing a framework for decongesting patient self-referrals.

1.2 Problem analysis

An increase in cost for health care may occur because of using self-referrals, resulting to underutilization of primary health care and overuse, congestion, as well overburdening of hospitals. Thus limits patients' access to highly skilled health workers because it compels patients to wait lengthy amounts of time to be seen by health personnel in hospitals. since patients use up all available human and physical resources (Wolkite et al., 2015).

Aliyu et al. (2015) devised an appointment framework for improving patient throughput, yet current hospitals have not improved, suggesting the poor scheduling mechanism has made little difference. To better alleviate traffic congestion, a patient flow framework has been implemented in various service points but still the patient congestion has remained to be a problem.

2.0 Related work

There are many referral systems in place, depending on the jurisdiction and country. merging autonomous health systems at all levels into a comprehensive and coordinated National Health Service is implemented in South Africa (NHS). Primary health care practitioners should be used to deliver primary health care, and referral systems should be present at all three levels of health care to facilitate this goal (South Africa Ministry of Health, 2009). A qualitative study (Shams et al, 2015) demonstrated that the referral system is ineffective and inefficient and hence must be changed with regards to performance.

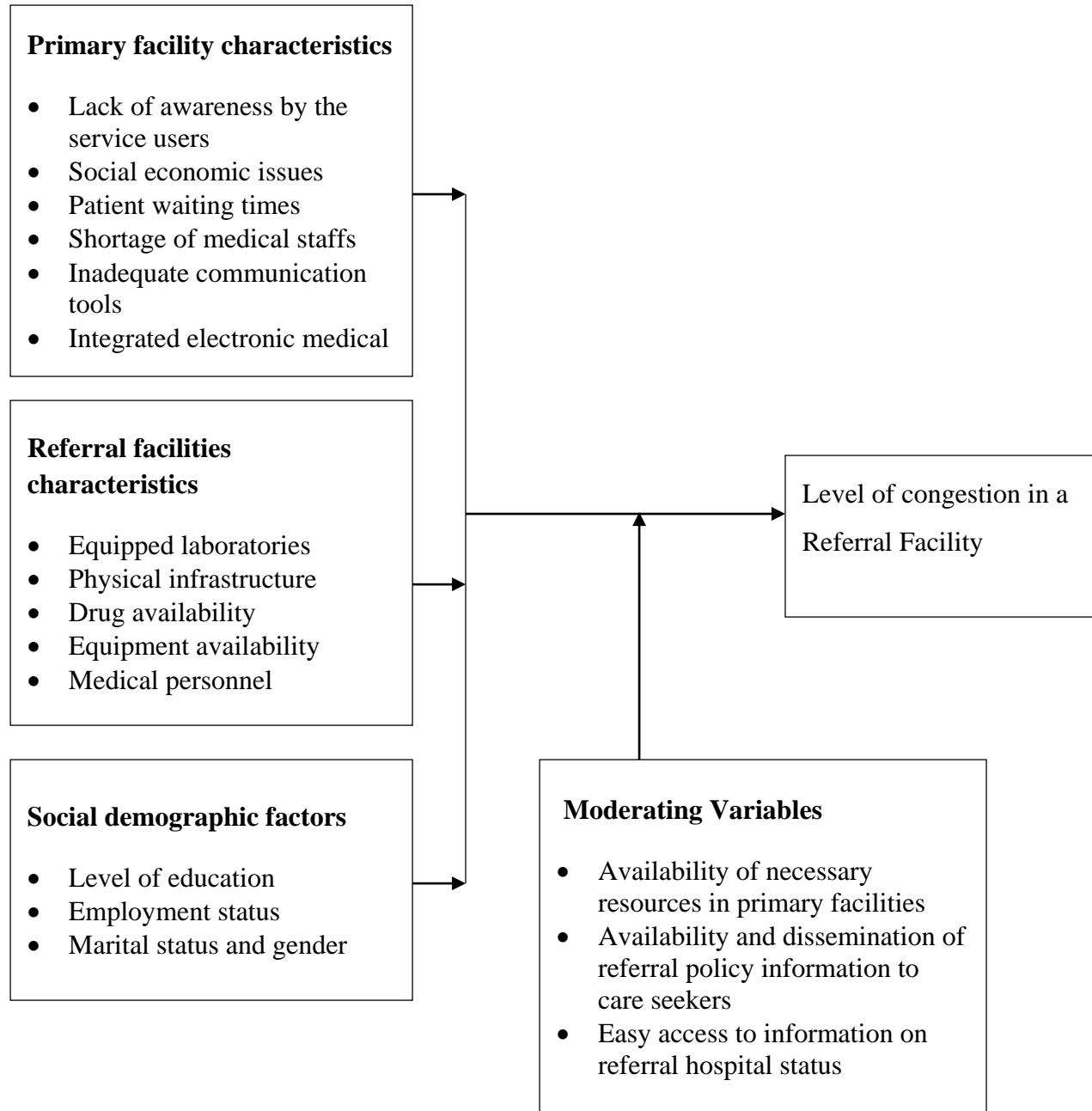
Referral frameworks are widely seen as key to providing successful health care delivery. Referral systems that are successful require preparation, which includes having a referral strategy, which is based on the assessment of population needs and available health system capacity, a suitable referral location, coordination with other stakeholders, established communications and transportation networks, and agreement with referrer and recipient protocols. It is crucial to emphasize that ineffective self-directed reference leads to system inefficiency and patient payment difficulties, as well as the accumulation of unnecessary costs and a dearth of comprehensive patient health care information. The study reviewed various frameworks including Patient flow framework, patient appointment framework, patient referral framework among others.

2.1 Conceptual Framework

The existing referral system faces a number of obstacles, including a shortage of understanding on the part of service users; socioeconomic challenges; patient wait times; a shortage of medical staff; unavailability of drugs, amenities, and equipment; insufficient communication tools; the essence of illness; and a lack of incorporation of electronic health records.

The study will adopt an enhanced patient referral framework for decongesting self-referrals to referral hospitals. Using the developed framework, patients will easily and actively engage with their own health by way of digital services, hence helping address waiting time at referral health facilities, shortage of medical staffs and amenities. Depending on the nature of illness, it is expected that digital services provided by medical expert systems can give personalized diagnosis and curative recommendations, hence addressing quality of care and equipment unavailability issues. Moreover, digital services such as online stores can provide avenues for drug ordering from anywhere on the globe, hence countering the drug unavailability problem.

Conceptual Framework



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3.0 Methodology

A descriptive research design was used to interview self-referral patients who visit the outpatient department at Kisii Teaching and Referral Hospital. Purposive random sampling was used to pick interviewee from the facility. Respondents were provided with questionnaires to answer, and the data was analyzed quantitatively using the Statistical Package for Social Sciences (SPSS). Quantitative

data were presented in the form of tables and pie charts, quantitative methods (descriptive and inferential analysis) such as frequencies and percentages were used. The resulting framework is expected to aid in the decongestion of patient self-referrals.

3.1 Target Population

This study targeted 182 patients who visited Kisii Teaching and Referral Hospital.

4.0 Results and discussion

The study findings established a significant positive relationship ($r=.7438$) between Socio-Demographic Factors and hospital decongestion in the referral hospitals. The study highlighted a positive relationship ($r=.703$) between primary health facility characteristics and hospital decongestion. The study established a positive relationship between Referral Facility Characteristics ($r=.431$) and hospital decongestion.. The study findings highlighted that a unit increase of 0.01 by Referral Facility Characteristics could increase hospital decongestion of referral hospitals. The study findings also revealed that the current referral framework also influenced the level of referral hospital congestion

4.1. Respondents Referred from Facility

The respondents were required to provide their opinion on how they determined their referral facility and the findings are as tabulated below.

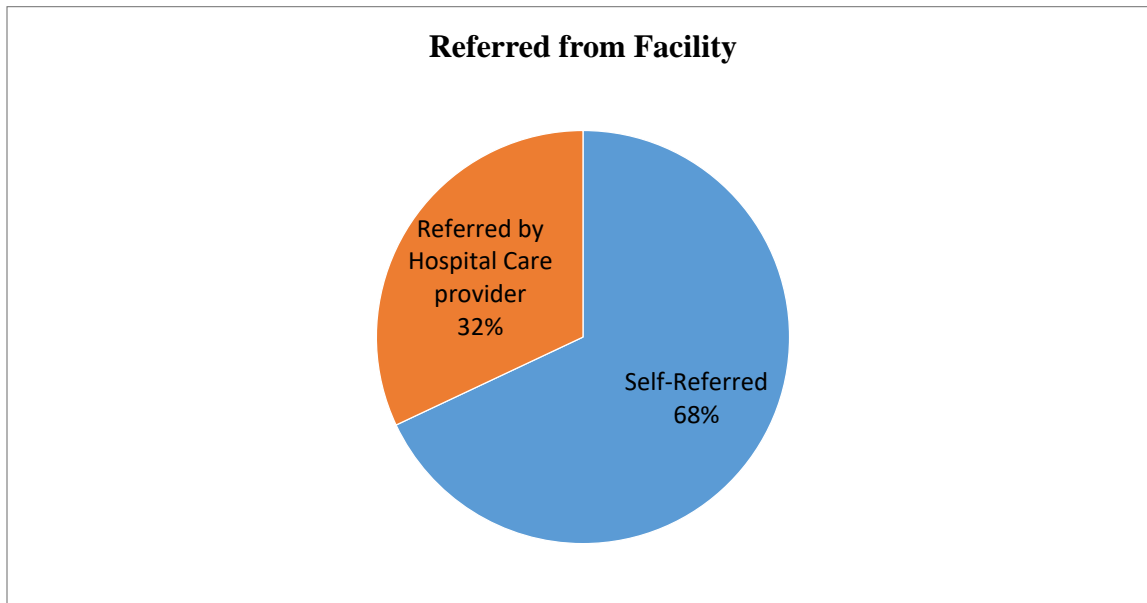


Fig 1: Respondents Referred From Facility

The study findings highlighted that 68% of the respondents indicated that they self-referred themselves and 32% of the respondents indicated they were referred by their healthcare provider.

Primary Health Facility Characteristics

The study focused on identifying the primary health facility characteristics and the findings are as presented below.

Table 4.2: Primary Health Facility Characteristics

Statements	NO	YES	Mean	St.D
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Fare to PHC affordable	78 45%	94 55%	2.89	0.031
PHC always open and accessible	123 72%	49 28%	4.00	.643
Waiting time is short at the PHC	146 85%	26 15%	4.06	.682
Drugs are always available in PHC	158 92%	14 8%	4.02	.850
Lab test available at PHC	138 80%	34 20%	4.11	.895
Primary Health Centre is clean	102 59%	70 41%	3.60	.568
I receive all services at the PHC	98 57%	74 43%	3.20	.785
Provider gives required information at the PHC	67 39%	105 61%	1.66	.8042

The study highlighted that there is a positive relationship ($r = .703$) between primary health facility characteristics and level of hospital decongestion. The study found out that a unit increase in primary health facility characteristics of 0.227 influenced an increase in level of hospital congestion. This is confirmed from the findings where the PHC lacked most of the services required despite the fact of it being near, taking less waiting time and being conducive in terms of hygiene.

Table 4.3.2: Current referral framework

Statements	NO	YES	Mean	St. D
D1: Is this your first time seeking health services in this facility? If No answer D3 and if yes answer the next question	133 77%	39 23%	2.78	1.133
D2: Did you know that you are supposed to seek for health services from the primary health care first?	137 80%	35 20%	2.68	.687
D3: Have you attended the primary health care facility before?	149 87%	23 13%	2.70	.1728
D4: Did you get all the services at the primary health care facility? If No, answer question D5	110 64%	62 36%	1.83	.843
D5: Were you referred by the health care provider to this facility? If yes answer question D6?	103 60%	69 40%	1.42	.307
D6: Were you given a referral letter to the referring facility?	105 61%	67 39%	1.38	.588

D7: When you arrived at the referral facility, did the health care provider tell you that they were aware about your referral?	97	75	1.26	.506
	56%	44%		
D8: When you seek for health care services in the primary health care, are you normally advised on what you can do in case you want to seek health services at the referral hospital?	109	63	1.08	.478
	63%	37%		
If No answer the next question				
D: At the primary health care, are there posters giving guidelines on how a patients are supposed to seek health services in referral hospitals?	115	57	1.56	.602
	67%	33%		

The finding in this study reveals that the level of congestion in the referral facilities is influenced by the current referral framework factors whereby most patients reported that it was not their first time accessing medical services at the referral facility. They were not given any advice of seeking those services at the PHC because they kept referring themselves back, meaning they were not even aware of the referral guidelines. Those patients who attended the primary facility reported that they did not receive all the services they wanted, and this made them self refer to the referral facility. Despite the challenge of not receiving all the services, they were not advised appropriately on where to get the services, and even those they referred to the referral facility were not given referral letters; this shows that there was a communication challenge among the health care providers. Additionally, at the referral facility, the health care providers were not aware of their referral, meaning even the health care providers could be. They ignored the referral guidelines or were not aware of the same. Further, most of the participants accepted that there were no posters explaining the procedures for patients who wanted referrals on request, and this situation maybe if they were posters, patients could abide by the referral guidelines hence decongest the referral facility

Correlation Analysis

A correlation describes a number that shows the relationship between two study variables (Wilcox, D., 2010). Correlation analysis is applied in most studies since it brings valuable statistics. In the study, Pearson’s correlation analysis was carried out at 95%t confidence interval and 5% at a confidence level, which tailed between each of the study variables was adopted in determining the significance and association degree between dependent and independent variables. The table below indicates the correlation matrix obtained.

Table 4.3.1: Summary of Pearson’s Correlations

Correlations		Socio-Demographic Factors	Primary health facility characteristics	Referral Facility Characteristics	Hospital congestion
Socio-Demographic Factors	Pearson Correlation	1	.012	.080	.030
	Sig. (2-tailed)		.905	.445	.7172
	N	172	172	172	172

Primary health facility characteristics	Pearson Correlation	.012	1	.313**	.025
	Sig. (2-tailed)	.905		.002	.807
	N	172	172	172	172
Referral Facility Characteristics	Pearson Correlation	.080	.313**	1	.101
	Sig. (2-tailed)	.445**	.002		.332
	N	172	172	172	172
Administrative(current referral framework)	Pearson Correlation	.030	.025	.101	1
	Sig. (2-tailed)	.7438**	.703**	.431**	
	N	172	172	172	172

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The study findings established that there is a significant positive relationship ($r = .7438$) between Socio-Demographic Factors and level of congestion in the referral hospitals. The study also highlighted a positive relationship ($r = .703$) between primary health facility characteristics and hospital congestion. Lastly, the study established that there was a positive relationship between Referral Facility Characteristics ($r=.431$) and Hospital congestion

Conclusion

The main aim of this paper is to develop a patient self-referral decongestion framework for referral hospitals and the framework is as stated below

The referral guidelines should be updated and the Health care providers be given proper notification and enforced so that they can be followed.

All the patients should be informed on what to do once they miss the services they were intended to receive

Public awareness of the various referral levels and the respective functions should be addressed.

A healthcare provider should be employed to oversee all levels of care, coordinate referrals, and be available 24/7.

Introduction of e-consultation and e-referral of patients as new approach of improving infrastructure of primary health care facilities and communities

References

1. Abdelrahman E. M., Ezzat, H.S., and Bader E. F. (2015) *Factors affecting patient flow planning in hospitals*.
2. Abdi, W. O., Salgado, W. B., & Nebeb, G. T. (2015). Magnitude and Determinants of Self-Referral of Patients at a General Hospital, Western Ethiopia. *Science Journal of Clinical Medicine*, 4(5), 86-92
3. Agola, J., & Raburu, G. (2018). Analysis of scheduling models applicable in referral health systems.

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<http://dx.doi.org/10.29322/IJSRP.12.02.2022.p12223>

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4. Alberti H, Alberti B. The influence of gender on the primary care management of diabetes in Tunisia. *Pan Afr Med J.* 2015 Aug 22;3:2
5. Koce, F., Randhawa, G., & Ochieng, B. (2019). Understanding healthcare self-referral in Nigeria from the service users' perspective: a qualitative study of Niger state. *BMC health services research*, 19(1), 209.
6. Kraaijvanger, N., van Leeuwen, H., Rijpsma, D., & Edwards, M. (2016). Motives for self-referral to the emergency department: a systematic review of the literature. *BMC health services research*, 16(1), 1-19.
7. Schmiedhofer, M., Möckel, M., Slagman, A., Frick, J., Ruhla, S., & Searle, J. (2016). Patient motives behind low-acuity visits to the emergency department in Germany: a qualitative study comparing urban and rural sites. *BMJ open*, 6(11), e013323.
8. Shams, A., Mofid, M. and Reijlian, F. (2015). Survey of referral system influenced factors from the perspective of referring of Isfahan Educational Management
9. Somasundaram, R., Geissler, A., Leidel, B. A., & Wrede, C. E. (2018). Beweggründe für die Inanspruchnahme von Notaufnahmen – Ergebnisse einer Patientenbefragung. *Das Gesundheitswesen*, 80(07), 621-627.
10. Tiago, S. M., (2017). *Reinforcement Learning for primary care appointment scheduling*, Faculdade de Engenharia da Universidade do Porto Mestrado de Engenharia da Informação
11. Visser, C.A., Govender, I., Ogunbanjo, G.A., Marincowitz, G.J., (2015). *Reasons for and perceptions of patients with minor ailments by passing local primary health care facilities*. South African Family Practice.
12. Wambui, M. F. (2013). Determinants of self-directed referral amongst patients seeking health services at Kenyatta National Hospital, Nairobi, Kenya (Doctoral dissertation). *Kenya: Kenyatta University*.
13. World Health Organization (2018). *Quality in primary health care* (No. WHO/HIS/SDS/2018.54). World Health Organization.
14. World Health Organization. (2013). *Management of Patient Information*, 6. Retrieved from http://apps.who.int/iris/bitstream/10665/76794/1/9789241504645_eng.pdf?ua=1