



Knowledge and Practice of Family Health Physicians about Referral System in Mansoura District, Egypt

Shymaa Mamdouh Mohamed Abdu, MD¹; Abdel-Hady El-Gilany, MD¹; Sahar Mohamed Youness, MD²

¹ Public health and community medicine Department, Faculty of medicine, Mansoura University, Mansoura, Egypt;

² Ministry of Health & Population, Mansoura, Egypt.

ABSTRACT

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Key Words:

Physicians; Knowledge; Practice; Referral system; Mansoura

Background: Referral system is one of the key elements in family health care facilities. Recently, Egypt has started to implement referral system that depends mainly on family physicians working in primary health care settings. **Objectives:** to assess the knowledge and practice of family health physicians about referral system and to identify their associated determinants. **Method:** A cross-sectional study on 138 physicians working in family health care facilities was conducted from October 2021 to December 2021. A structured self-administered questionnaire was used including socio-demographic data, questions regarding knowledge and practice about the referral system and suggestions to improve the referral system. **Results:** Most of physicians had good knowledge and practice of referral system (65.2% & 94.2%, respectively). The good knowledge was significantly higher among physicians working in Accredited than non-accredited facilities (81.8% vs. 50%). Also the good practice was significantly higher among physicians of family health units than those working in family health centers (96.8% vs. 66.7%). Both knowledge and practice do not vary significantly according to most parameters studied. Development of referral guidelines, medical education reform, payment method reform and establishment of culture-building activities were suggested by physicians for improvement of referral system (97.8%, 94.2%, 97.8%, and 97.8%, respectively). **Conclusion:** Good knowledge and practice of the referral system were showed by physicians working in family health facilities in Mansoura, Egypt. Facility accreditation and training programs are important factors for good knowledge and practice of the referral system.

INTRODUCTION

World Health Organization (WHO) defines referral as a dynamic process in which a health professional at one level of the health system, who lacks the resources or power to manage a patient's clinical condition, seeks the help of another facility at the same or higher level to help in the care pathway.¹ Referrals are one of the pillars of the primary care system. It is a comprehensive and long-term system that connects primary care units or centers to hospitals in both directions. It helps to continuously improve comprehensive health care for all patients by giving priority to those who need it.²

Cicatelli Associates, Inc. (CAI) and the Centers for Disease Control (CDC) established the fundamental components of a referral system framework to define the eight fundamental components needed for referral system application. Policy, referral personnel, procedures, referral guide, communications, and marketing, monitoring and evaluation, management and oversight, and organizational partnerships are the eight essential components.³ Referrals may be for a routine surgical operation or to seek further services for the client, such as admission for management.⁴

Corresponding Author: Shymaa Mamdouh Mohamed Abdu, Public Health & Community Medicine Department, Faculty of Medicine, Mansoura University, Mansoura, Egypt. Email: shaimaadr87@mans.edu.eg

Table 1: Distribution of knowledge responses of studied family health physician

Knowledge of referral	Number of correct answers
Referral means:	
Process of requesting another physician to examine a patient to obtain advice or management).	118 (85.5%)
Process of transferring patient to big hospitals (no)	19 (13.8%)
Process of transferring not sharing responsibilities in patient care (no)	113 (81.9%)
Process in which family physician has inadequate skills due to qualification and/or lesser facilities to manage a clinical case.	93 (67.4%)
The benefits of referral for the client	
Early detection of cases	135 (97.8%)
Draw the attention of specialist.	57 (41.3%)
Avoid the loss from one hospital to another	34 (24.6%)
The benefits of referral for the family physician	
Learning and training	67 (48.6%)
Organizing health services	136 (98.6%)
Improve image of PHCC	128 (92.8%)
Enhance communication	120 (87%)
The benefits of referral for the consultant in hospitals	
Save time and efforts.	133 (96.4%)
Gather data about patients	69 (50%)
Improve quality of care	134 (97.1%)
PHCC is the first level of care	
The first level of referral is	
HCC (no)	83 (60.1%)
General hospital	101 (73.2%)
Specialized hospital (no)	78 (56.5%)
Patient should attend to primary health centres before hospitals	
Patient must have a referral letter before going to hospitals	
Hospitals deal with severe/special cases only	
Reasons for referral	
Emergencies	127 (92%)
Patient request (no)	110 (79.7%)
Chronic illnesses needed admission and management.	134 (97.1%)
Cases needed to seek expert opinion regarding patient	131 (94.9%)
Cases need specific facilities for investigation	80 (58%)
It is necessary to notify the receiving centres before referring	
It is necessary to have an ambulance to transport critical cases	
Referral should always be received, or accepted without queries	
Elimination of self-requested referral by:	
Health education	130 (94.2%)
Increase health awareness of people	129 (93.5%)
Provision of better health services at PHC	131 (94.9%)
Total knowledge score:	
Poor	2 (1.4%)
Fair	46 (33.3%)
Good	90 (65.2%)

*PHCC: Primary Health Care Center, * HCC: Health Care Center

A good referral system should keep an effective record system; because it relies on referral letters, it must be simple, consistent across the country, and include both an original and a copy.⁵

Effective referral systems between levels of health-care delivery are critical to efficiently addressing clients' health needs and ensuring people receive the best possible care closest to home. The effectiveness, safety, and efficiency of medical care are all dependent on optimal referring processes.⁶

Egypt initiated the implementation of a referral system founded primarily on primary care family physicians. This initiative began as a pilot study that was subsequently expanded. It was initiated as part of the health sector reform program.⁷

Even when medical education, socioeconomic characteristics, and morbidity are all controlled for, a satisfactory explanation for the broad variation in referral rates among the general practitioners remains elusive.

Table 2: Association between socio- demographic characters of studied family health physicians and knowledge levels of referral

Variables	Total	Poor/ Fair Knowledge N (%)	Good knowledge N (%)	P
Overall	138	48 (34.8)	90 (65.2)	
Age				
< 40	58	20 (34.5)	38 (65.5)	0.950**
≥ 40	80	28 (35.0)	52 (65.0)	
Sex				
Male	57	21 (36.8)	36 (63.2)	0.670**
Female	81	27 (33.3)	54 (66.7)	
Residence				
Rural	58	19 (32.8)	39 (67.2)	0.671**
Urban	80	29 (36.3)	51 (63.8)	
Job title				
General Practitioner	96	34 (35.4)	62 (64.6)	0.813**
Family medicine residents/ Specialists	42	14 (33.3)	28 (66.7)	
Years of experience				
<15	61	20 (32.8)	41 (67.2)	0.661**
15≤	77	28 (36.4)	49 (63.6)	
Have a specific training course regarding referral system?				
Yes	5	3 (60.0)	2 (40.0)	0.342*
No	133	45 (33.8)	88 (66.2)	
Type of facility:				
Family medicine unit	126	41 (32.5)	85 (67.5)	.110*
Family medicine center	12	7 (58.3)	5 (41.7)	
Facility accreditation				
Yes	66	12 (18.2)	54 (81.8)	< 0.001**
No	72	36 (50.0)	36 (50.0)	

*Fishers exact test **Chi-square test

It appears that general practitioners' individual approaches to healthcare differ significantly, which context and individual approaches can explain.⁸

Egypt's 2018 reform law contains universal health insurance system (UHIS). The new UHIS implies major referral process changes.⁹ Controlled referrals and family-oriented primary health care (PHC) minimize expenses in a successful health program. It also stresses the significance of prevention, early detection, diagnosis, and treatment for non-advanced illnesses and the referral of severe cases to higher levels of medical care.¹⁰

Based on the patient's actual needs, an intelligent and controlled system guides the family doctor referral system.¹¹ Patients can only refer to one doctor (the health team); a family physician must construct and complete a patient's health record for any referral; and a family physician can only order a limited number of services, medications, and diagnostic tests. All other services are available at varying levels.¹²

According to an Egyptian study conducted in 2015, referral letters were the primary means of referral, and physician training was regarded as an essential factor for ensuring the quality of the referral system.¹³

To the best of authors' knowledge, there is no previous study that dealt with knowledge and practice of family health physicians about referral system in Egypt. Therefore, this study aimed to assess knowledge and practice of family health physicians about referral system, to identify factors associated with knowledge and practice, and to describe participant's suggestions of improvement of referral system.

METHODS

This cross-sectional study was conducted over two months (October 2021 to December 2021).

All family health facilities (centers and unites) of Mansoura District, Egypt. Mansoura Health

Table 3: Distribution of practice responses of studied family health physician

Practice of referral	Number of correct answer N (%)
Refer patients by	
Referral form	138 (100)
Verbally (no)	132 (95.6)
The information you write down in referral form	
Demographics and clinical history of patients	137 (99.3)
Details of treatment given	137 (99.3)
Clinical findings/provisional or definitive diagnosis	137 (99.3)
Specific reason or indication justifying the referral	136 (98.6)
The measures you follow	
Fill in an outward referral form	136 (98.6)
Communication with receiving facility	108 (78.3)
Information to the client and their family ([reasons and importance of referral, risks of non-referral, how to get to the receiving facility - location and transport, who to see and what is likely to happen, follow-up on return])	115 (83.3)
Empathy - understanding of implications for client and family (overall fear, transportation and cost of treatment)	105 (76.1)
How participant react when patient asked for a referral and his condition is not indicated	
They won't refer him	130 (94.2)
They explain to him that his condition is manageable and does not need to go to hospital	137 (99.3)
They will ignore his request	29 (21.0)
The most common reasons for non-acceptance of a referred patient:	
Inadequate information on referral forms or letters	125 (90.6)
Informally written	127 (92.0)
Illegible handwriting	38 (27.5)
Shortage of bed spaces, facilities, or services	119 (86.2)
Late referral	40 (29.0)
Improper diagnosis	78 (56.5)
Unskilled handling of patients	43 (31.2)
Total practice score:	
Poor	0 (0.0)
Fair	8 (5.8)
Good	130 (94.2)

Administration has 40 family health facilities, 10 centers and 30 units.

All doctors (general practitioner and family physicians) from the family facilities who were available at the time of visit and consented to participate in the study were recruited in the study. We targeted all family physicians working on family health facilities in Mansoura District fulfilling the legibility and are on duty at time of study. According to statistics of Local Health Administration there were 146 and 138 (94.5%) of them completed the questionnaire. Being a novel specialty in Egypt, it is

important to note that there were small number of family physicians in study locality.

Inclusion criteria: Egyptian family physicians with at least one-year working duration who accepted the participation in the study.

Exclusion criteria: Participants who refused to participate.

Data collection: The data collected by self-administered English questionnaire⁴⁴ prepared by the researcher during the study period to collect: *Socio-demographic profile* including age, sex, qualifications, years of experience in family health

Table 4: Association between socio- demographic characters of studied family health physicians and practice of referral

Variables	Total	Fair Practice N (%)	Good practice N (%)	P
Overall	138	8 (5.8)	130 (94.2)	
Age				
< 40	58	5 (8.6)	53 (91.4)	0.280*
≥ 40	80	3 (3.8)	77 (96.3)	
Sex				
Male	57	3 (5.3)	54 (94.7)	1*
Female	81	5 (6.2)	76 (93.8)	
Residence				
Rural	58	2 (3.4)	56 (96.6)	0.467*
Urban	80	6 (7.5)	74 (92.5)	
Job title				
General Practitioner	96	6 (6.3)	90 (93.8)	1*
Family medicine residents/ Specialists	42	2 (4.8)	40 (95.2)	
Years of experience				
<15	61	5 (8.2)	56 (91.8)	0.466*
15≤	77	3 (3.9)	74 (96.1)	
Have a specific training course regarding referral system?				
Yes	133	0 (0.0)	125 (94.0)	1*
No	5	8 (6.0)	5 (100)	
Type of facility:				
Family medicine unit	126	4 (3.2)	122 (96.8)	0.002*
Family medicine center	12	4 (33.3)	8 (66.7)	
Facility accreditation				
Yes	66	3 (4.5)	63 (95.5)	0.721*
No	72	5 (6.9)	67 (93.1)	
Knowledge level				
Poor/ Fair	48	5 (10.4)	43 (89.6)	0.126*
Good	90	3 (3.3)	87 (96.7)	

*Fisher's exact test

facilities, specific training courses in family medicine centers regarding referral system Facility & accreditation.

Questions related to knowledge & practice about referral system.

The questionnaire included questions concerning the knowledge and practice about the referral systems. Scoring method used and obtained by adding up 1 for the correct answers and 0 for the incorrect, to the investigated variables in the questionnaire. Total number of questions concerning the knowledge about referral was 32, thus the score for knowledge of referral was ranged (0-32), a score <16 considered as poor, scores between (16 and 23) considered as fair and scores ≥24 good. While regarding practice 13 questions were used to determine the practice about referral, where the score of practice ranged (0-13), <7 score

was considered as poor, while (7-9) considered as fair, and score of ≥10 was regarded as good. ¹⁴

Validity of the tool: the tool was forward translated into Arabic, then backward translated into English by two independent linguists. Next a panel of 10 experts in public health reviewed the construct for relevance and content translation. The content validity was measured as: for knowledge, item-content validity index (I-CVI) ranged from (0.4-1), scale- content validity index (S-CVI/Ave) = 0.95 and scale- content validity index/universal agreement (S-CVI/UA)= 0.87. For practice. I-CVI ranged from (0.8-1), S- CVI/Ave= 0.97 and S-CVI/UA= 0.77, respectively. This indicates a very good level of content validity. The reliability was tested using cronbach's alpha to detect the internal consistency of the tool. The cronbach's alpha of the tool in the present study was 0.80.

Table 5: Suggestions of participants for improvement of referral system

	Yes N (%)
Development of care and referral guidelines	135 (97.8)
Medical education reform (Reform of the basic medicine education curriculum, encourage specialty in family medicine, Training of working general practitioners and specialists)	130 (94.2)
Reform of payment method (Health-oriented payments, reward, and punishment system)	135 (97.8)
Establishment of culture-building activities (Continuous training, an excellence center, better available resources management, adequate feedback)	135 (97.8)

*Health-oriented payments: payments by costumers to be directed for improvement of referral system.

Suggestions of physicians to improve referral system: this is an open question, and the answer were post-coded for data entry.

Statistical analysis: Data were collected, coded, and analyzed using IBM SPSS version 26 (Armonk, NY: IBM Corp.). No missing data were detected. Qualitative data were summarized as number and percent. Chi-squared test was done for comparison between categorical variables. Fisher's exact test was done to test significance when cell count < 5. P value ≤ 0.05 was considered statistically significant.

RESULTS

Table 1 showed that most participants knew the definition of referral system (85.5%), the benefits of it for the client (97.8%) and PHCC as the first level of care (97.1%). Chronic diseases and emergencies at 97.1% and 92%, respectively, were the most common reasons for the referral system, according to family health care physicians. Also, 56.2%, 33.3% and 1.4% of physicians had good level, fair level and poor level of knowledge about the referral system, respectively.

Table 2 showed that female family physicians, rural residents, family health specialists, those with less than 15 years of experience, working in family medicine units, and those who have been trained, all have higher knowledge level about the referral system but with no statistically significant difference with their competitors ($p > 0.05$). Moreover, most physicians (81.8%) working in an accredited facility were more knowledgeable with highly statistically significant difference ($p \leq 0.001$).

Table 3 showed that all physicians 100% used referral form. Almost all doctors 99.3% wrote down the information in a referral form and explained to the patient that his condition will not require going to the hospital when requesting a referral. Also, the

client and family received information from 83.3% of participants. The least of them, 27.5%, reported illegible handwriting is a regular reason for patient rejection. Most physicians (94.2%) had high practice, 5.8% had fair practice, and none had bad practice.

Table 4 showed that although family physicians with more than 15 years of experience, those working in an accredited facility, and those with a good knowledge of the referral system had more good practice of the referral system than their competitors, but the difference was with not statistically significant difference ($p > 0.05$). Good practice of the referral system was observed among physicians working in family medicine units compared to those working in centers, and the difference was statistically significant.

Most family physicians proposed development of referral guidelines (97.8%), medical education reform (94.2%), payment method reform (97.8%), and establishment of culture building activities (97.8%) as solutions for referral system improvement (table 5).

DISCUSSION

A family health care facility provides basic health care for individual, families, groups and community at large. This basic health care is care directed at health promotion, diseases prevention, prompt detection and treatment of minor injuries/ailments. Once health problem is afar the authority of family health care, referral is to be applied.

It was known that adequate knowledge of referral system by health care workers will help in ensuring effective and efficient use of resources for better outcomes to the patients.¹⁵ In the current study, it was found that most family physicians had good knowledge of referral system. This is like previous

studies in Baghdad¹⁴, and Nigeria.^{6,16,17,18,19} The possible explanation is that the majority of physicians were family medicine specialists and worked in accredited facilities which affected their knowledge about the referral system. However, that result contradicts previous studies in Nigeria¹⁵⁻¹⁹ as could be explained by variations between socio-economic status of participants, medical curricula provided to them and availability of elements about the referral system.

The present study showed that one fifth of physicians selected patient request as a reason for referral. Similar results were observed in Nigeria¹⁷ and Baghdad.¹⁴ This perspective may in the long run contribute to the bypassing of lower levels of health care and the resultant increased turnout of self-referrals in tertiary health-care facilities; means overstretching of their services and facilities.^{20,21}

The present study showed that knowledge of referral was not associated with sex and residence of physicians. This is in agreement with a previous study in Nigeria¹⁵ and California.²²

Another finding of the current study is that physicians with less than 15 years of experience had higher knowledge than others. This is in line with previous study in California.²² This may be explained by the novelty of the family medicine specialty in Egypt and that most doctors with less experience are family medicine specialists and residents who worked in accredited family medicine units.

The current study found that trained physicians about referral had more knowledge with no statistically significant difference between family physicians and general practitioners. A previous study conducted in United States of America (USA) which showed that training program increases the knowledge of family medicine residents.²³ This could also be explained by the fact that the majority of the trained physicians in the current study were specialized family physicians working in accredited family medicine units.

The current study showed that family physicians working in an accredited facility had good knowledge and practice of the referral system compared to general practitioners. Similarly, a previous study in Denmark which showed that accreditation had enhanced knowledge sharing or upgraded competencies.²⁴ The possible explanation is that family health care specialists are more

familiar with the principles of family medicine and the concepts of the referral system and their application, and they work in an accredited institution that provides them with continuing medical education and knowledge exchange.

Moreover, the present study revealed that most physicians had good practice about the referral system. This is consistent with previous studies in Baghdad,¹⁴ and Nigeria¹⁶ as may be explained that most physicians had good knowledge. However, other findings from Nigeria^{6,15} and Tanzania²⁵ contradict such result which showed that there was no relation between the knowledge and practice.

The present study reported that all our physicians use referral form and wrote down the information in it. This is similar to earlier studies conducted in Saudi Arabia²⁶, Egypt¹³ and Baghdad¹⁴ that showed that the referral letter is the main cornerstone for the referral process, and it is the only means of communication between general practitioners and specialists. Such result contradicts the findings by a Nigerian study which showed that only one fifth of its participants were aware of the referral form.¹⁷

The current study showed that all our doctors explain to the patient why that his condition not required going to the hospital when requesting a referral. This is in harmony with the Iraqi study¹⁴ but contradicts that from the Nigerian study²⁷ which found that patients were referred without explanation or forced to accept referral by other means.

It is believed that practice of referral is affected by the knowledge of family physicians.¹⁵ In the current study, it was noted that most of our doctors who had good knowledge of the referral had a good practice compared to their counterparts who had less knowledge. This is in line with previous Nigerian studies.^{6,15,18}

The current study showed that majority of family physicians suggested that development of referral guidelines is a solution for improvement of referral system. This is like previous study conducted in Iran which developed strategic plans, guidelines, and supportive rules for their referral systems.²⁸

Furthermore, the current study showed that most physicians suggested that medical education reform is a solution to improve the referral system. This agrees with the Iranian study²⁸ which showed that the promotion of medical education is a key factor in improvement of the referral system.

The present study found that most physicians suggested that payment system reform including financial support and use of the reward and punishment system should be a way to improve the referral system. This is in agreement with previous Iranian studies.^{28,29}

Finally, the current study revealed a solution to improve the referral system through doctors, which was a culture- building, including continuous training, provision of resources and establishment of centers for confidence building. This is consistent to previous studies in Iran²⁸ and USA³⁰ which stressed the necessity for enough resources to provide services and develop confidence.

Strengths and limitations:

The strength of the study is that it is the first Egyptian study to assess the knowledge and practice about the referral system in family health facilities in Mansoura through a validated tool. However, the small sample size prevents generalization to all family medicine physicians at the national level. Second, cross-sectional studies cannot account for long-term referral system knowledge and practice changes. Third, the lack of in-depth qualitative study on referral system understanding and use.

CONCLUSIONS

Good knowledge and practice about the referral system were showed by physicians working in family health facilities in Mansoura, Egypt. Continuous efforts should be moved toward increasing training programs, facility accreditation and medical education. Referral system reform is important for improvement of referral system in Egypt.

Ethical Approval: The proposal was approved by the Institutional Research Board (IRB), Faculty of Medicine—Mansoura University (Reference number R.21.08.1426). Informed consent was obtained from all physicians who participated in the study after ensuring confidentiality.

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REFERENCES

1. Organization WH. High-value referrals: learning from challenges and opportunities of the COVID-19 pandemic: concept paper. Copenhagen: WHO Regional Office for Europe 2023. (last accessed 25 May 2023). Available from: <https://www.who.int/europe/publications/i/item/WHO-EURO-2023-7452-47219-69202>
2. Tangcharoensathien V, Patcharanarumol W, Ir P, Aljunid SM, Mukti AG, Akkhavong K, et al. Health-financing reforms in southeast Asia: challenges in achieving universal coverage. *The Lancet* 2011; 377(9768):863-873.
3. Ciatelli, Associates Inc. (CAI), National Coalition of STD Directors (NCSDD), and Centers for Disease Control (CDC). Developing a Referral System for Sexual Health Services: An Implementation Kit for Education Agencies 2015. [Available from: <http://www.connectionsforstudentsuccess.org/index.php/>. (last accessed 25 September 2023).
4. Alkhazrajy LA. Quality of Primary Care Center Referral Letters and Feedback Reports among Sample of PHCCs in Baghdad/Al-Rusafa Health Directorate During2015. *KCMJ* 2017; 13(1):1-7.
5. Khayyati F, Motlagh ME, Kabir M, Kazemeini H. The role of family physician in case finding, referral, and insurance coverage in the rural areas. *Iran J Public Health* 2011; 40(3):136.
6. Oluseye O, Kehinde D, Akingbade O, Ogunlade O, Onyebigwa O, Oluwatosin O. Knowledge and utilization of referral system among health care workers in selected primary health care centres in Oyo state, Nigeria. *J Prim Care Community Health* 2019; 31(1):67-75.
7. Ministry of health and population. Guide of referral system for workers in primary health care. 1998. p. 1-24.
8. Roland M, Bartholomew J, Morrell D, McDermott A, Paul E. Understanding hospital referral rates: a user's guide. *Br Med J* 1990; 301(6743):98-102.

9. Soliman SSA, Hopayian K. Egypt: on the brink of universal family medicine. *Br J Gen Pract* 2019; 69(679):82-82.
10. Anwar W. Family medicine and implementation of Universal Health Insurance Law in Egypt. *Egypt J Fam Med* 2018; 2:1-3.
11. Kamau KJ, Osuga BO, Njuguna S. Challenges facing implementation of referral system for quality health care services in Kiambu county, Kenya. *Health Syst Policy Res* 2017; 4:1.
12. Vatankhah S, khalesi N, Ebadi Fard Azar F, Ferdosi M, Ayoobian A. Study of payment methods to Doctors in the referral system in selected countries and suggestions for Iranian social security organization- Direct medical service provision. *Jhosp* 2012;11(2):77-86.
13. Farahat T, Al-Kot M, Aldemerdash M. Current situation of the referral system in family practice in Shebein El-Koum District, Menoufia Governorate, Egypt. *Menoufia Med J* 2015; 28(2):360.
14. Talal S, Aldeen LD. Knowledge and practice of primary health care physicians about referral system in Baghdad. *IRAQI J COMMUNITY MED* 2020; 33(1):25.
15. Asuke S, Ibrahim MS, Sabitu K, Asuke AU, Igbaver II, Joseph S. A comparison of referrals among primary health-care workers in urban and rural local government areas in North-Western Nigeria. *J Med Trop* 2016; 18(2):93.
16. Otovwe A, Baba A. Knowledge of referral and feedback system among health workers in Billiri Local Government Area of Gombe State, Nigeria. *European j pharm* 2016;3(11):111-115.
17. Omole VN, Mora AT, Yunusa IU, Audu O, Jatau AI, Gobir AA. Knowledge, attitude, and perception of the referral system among tertiary health-care workers in Kaduna metropolis, Nigeria. *Int J Med Sci Public Health* 2017; 6:1481-8.
18. Afolaranmi TO, Hassan ZI, Filibus DI, Al-Mansur UA, Lagi LA, Kumbak FD, et al. Referral system: an assessment of primary health care centres in Plateau state, north central Nigeria. *World j res rev* 2018;6(1):262704.
19. Abodunrin O, Akande T, Osagbemi G. Awareness and perception toward referral in health care: a study of adult residents in Ilorin, Nigeria. *Ann Afr Med* 2010;9(3).
20. Akande T. Referral system in Nigeria: study of a tertiary health facility. *Ann Afr Med* 2004;3:130- 3.
21. Anekoson JI. A Comparative analysis of health indicators of Nigeria and Rwanda: A Nigerian volunteer's perspective. *Am J Public Health Res* 2013;1(7):177-182.
22. Kogan AC, Brumley R, Wilber K, Enguidanos S. Physician factors that influence patient referrals to end-of-life care. *Am J Manag Care* 2012;18(11):e416-22.
23. Rosenthal MS, Werner MJ, Dubin NH. The effect of a literacy training program on family medicine residents. *FAMILY MEDICINE-KANSAS CITY-* 2004;36(8):582-587.
24. Kousgaard MB, Thorsen T, Due TD. Experiences of accreditation impact in general practice—a qualitative study among general practitioners and their staff. *BMC Fam Pract* 2019;20(1):1-13.
25. Font F, Quinto L, Masanja H, Nathan R, Ascaso C, Menendez C, et al. Paediatric referrals in rural Tanzania: the Kilombero District Study—a case series. *BMC Int Health Hum Rights* 2002;2(1):1-6.
26. AlGhamdi OM, Al-Malki BM, Nahhas AE, Al-Malki AD. Rate of referral from primary health care to secondary health care among governmental hospitals in Taif governorate, KSA. *Int J Med Sci Public Health* 2015; 4(10):1457-1463.
27. Bossyns P, Van Lerberghe W. The weakest link: competence and prestige as constraints to referral by isolated nurses in rural Niger. *Hum Resour Health* 2004; 2(1):1. doi:10.1186/1478-4491-2-1
28. Naseriesl M, Janati A, Amini A, Adham D. Referral system in rural Iran: improvement proposals. *Cad Saude Publica* 2018; 34(3):e00198516.
29. Majdzadeh R, Baradaran Seyed Z. How to implement clinical practice guidelines in iran. *Iran Red Crescent Med J* 2013; 15(11):e9702. doi:10.5812/ircmj.970.
30. In: Jamison DT, Breman JG, Measham AR, Alleyne G, Claeson M, Evans DB, et al., editors. *Disease Control Priorities in Developing Countries*. The International Bank for Reconstruction and Development / The World Bank Oxford University Press Copyright © 2006, The International Bank for Reconstruction and Development/The World Bank Group.; 2006.

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