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An Assessment of Referral System Effectiveness among Health Facilities in Enugu State, Nigeria. (Tertiary, Secondary and Primary Health Facilities)

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Abstract

Background*: A good referral system serves as a link between the three levels of health care practiced in Nigeria and ensures the continuity of proper health care service delivery. The effectiveness of referral system is an important determinant of the strength of health care service delivery. This study assesses referral system effectiveness among health facilities (primary, secondary and tertiary) in the urban and rural areas using two local government areas in Enugu State.* ***Objective****: To assess referral system effectiveness among health facilities in Enugu state Nigeria.* ***Methodology****: A cross-sectional epidemiological study of the analytical type was carried out among health workers in the various levels of health facilities within two local governments in the urban and rural areas in Enugu state. Stratified sampling technique was used to select the study participants. A pretested self- administered questionnaire was used to collect data from the respondents and was analysed using SPSS version 23.* ***Results****: The mean age of the respondents was 36.26 ± 8.73(SD) years. There was a good overall knowledge and practice of referral given as 392 (95.6%) and 235 (57.3%) respectively. Majority 74(47.3%) of the respondents had a relatively good knowledge of feedback but do not practice the feedback system of referral.* ***Conclusion and Recommendations****: The level of awareness of the referral system was impressive. However, the actual referral practice was not very satisfactory due to the lack of proper feedback and poor follow up. Efforts should be made by the agencies involved towards an improvement of the referral system.*

Keywords*: Referral system, Effectiveness, Health facilities, Enugu State.*

Introduction

The referral system is an important tool to ensure effective health care delivery. The Nigerian Health System operates three levels of health care namely, the primary, secondary and tertiary levels which interact through a referral System [1,2]. This is a two- way relationship between health facilities ensuring continuity and complementation of health services. The referral system requires cooperation, coordination and exchange of information between the primary health facility and the first referral hospital during the referral and discharge of patient from the hospital[2]. Referral system is needed in the health system to maximize limited resources, avoid duplication of services, promote cooperation and complementation between primary, secondary and tertiary health facilities. Referral can be either external or internal. External referral is a referral done between one health care facility and another. External referral can be vertical or horizontal. A vertical referral is a referral from a lower to higher facility, or from a higher to lower facility. While a horizontal referral is a referral from one facility to another within the same level but different catchment[3]. For instance, a horizontal referral could be when a patient is referred from one tuberculosis treatment centre to another at the same level but probably due to proximity to patient for easier access to medication. On the other hand, an internal referral is a referral done within the same health care level and facility. For instance, in the same tertiary hospital, a patient being managed for cardiac disease by a cardiology unit could be referred to an ophthalmology unit for the index patient's eyes to be checked. Also, referral can be from public or private sectors through the physician or other health workers. Some patients present directly to the hospital (higher centres) on self-referral by-passing the lower level facilities sometimes based on perceived inadequacies on the lower level facility. The hospital is usually overwhelmed with patients which makes adequate attention difficult to achieve. The tertiary health facilities provide extensive primary and first referral care to clients' mainly in urban settlements. The primary level of care is the entry point to health care

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system and should be able to provide majority of the essential and basic health care services. The secondary level hospitals are to provide general outpatient and inpatient services accepting referrals from urban and rural PHC, while tertiary hospitals are to provide specialized services to referrals from secondary hospitals [4]. In Nigeria, many secondary and tertiary facilities are crowded with people with simple ailments that can be managed at primary health centres while health workers in many of the latter are idle[5].

There are still no adequate trainings and guidelines to carry out proper referral practice, therefore a study that assesses the effectiveness of referral system and practice by the health workers in the different levels of health care facilities in Nigeria should be carried out. Hence this study was designed to assess the referral system effectiveness among health facilities (primary, secondary and tertiary health facilities) in both urban and rural local governments in Enugu state.

Methodology

Study area

The study area is Enugu State. Enugu state was carved out of the old Anambra state in Nigeria and has a population of about 3,267,837. It covers an approximately 12,727 square kilometres. It shares boundaries with six states, boarded by Abia and Imo states in the south, flanked in the east and west by Ebonyi and Anambra states respectively and in the north by Kogi and Benue states. The state lies partly within the tropical rainforest belt to the south, its physical features and vegetation change gradually in the north eastern direction from the tropical rain forest belt to the open woodland and savannah land as it approaches its northern boundary. The native population is entirely Igbo with a sprinkling of Igala near her borders with Kogi state, other ethnic groups are however well represented in the state with a predominance of Hausa and Yoruba communities. The state is well known for its industrial centres and markets with 75% of the state agrarian. It has about 87 federal establishment. However most of the federal establishment are located at the urban or semi urban centres. Virtually no federal establishment could be found in the rural area[6].

Study design

A cross-sectional study of the analytical type was carried out among health workers in the various levels of health facilities within two local governments in the urban and rural areas in Enugu state.

Study population

The study population are health workers at different levels in the various health facilities in Enugu state. This include health workers from the primary health care facility, secondary health care facility and tertiary health care facility.

Sample size determination

The sample size was calculated using the Cochrane's formula for cross sectional measurement of proportions which states that

$n = Z^2 pq/ d^2$ where

n = minimum sample size,

Z = standard normal deviate that corresponds to 95% confidence interval = 1.96

p = 0.595

q =1- p = 1- 0.595 = 0.405

d = minimum tolerable error =0.05

Thus, $n = 1.96^2 \times 0.595 \times 0.405 / 0.05^2$

=370.291

n= 370

Also adding the 10% non-response rate, the sample size to be used will be:

10% of 370 = 0.1 x 370 = 37

370 + 37 = 407

Therefore, the sample size for the study is 407.

Sampling method

The target population for this study were health workers in the primary, secondary, and tertiary health facilities in Nkanu West and Enugu North local government areas of Enugu state. In Nkanu West local government area, there are 24 primary health centres, 1 district hospital, 1 cottage hospital, about 10 private clinics and one tertiary hospital. In Enugu North local government area, there are 14 health centres, 1 secondary health facility, about 20 private clinics and one tertiary hospital. A sample of 407 workers was selected.

Data collection

The data collection tool was a semi structured self-administered questionnaire which was designed using the standard referral guidelines of the Nigerian Federal Ministry of Health. It was divided into 5 sections.

Statistical analysis

Data generated from this study was entered into the computer for analysis and analysed using the Statistical Package for Social Sciences (SPSS) version 23 (Chicago, Ill) Data was analysed quantitatively and presented in the form of frequency tables.

Knowledge was assessed using a scoring system which was computed using 3 knowledge questions for which yes was scored 1 and No was scored 2. The possible range of scores was 3-6. Scores between 3 and 4 were categorised as Good and those above 4 as Poor.

Attitude was assessed using a scoring system which was computed using 4 attitude questions each with a 5-point Likert scale with scores ranging from 1 to 5. The possible range of scores was 4- 20. Scores between 4 and 11 were categorised as Good and those between 12 and 20 as Poor.

Practice was assessed using a scoring system which was computed using 8 practice questions for which Yes was scored 1 and No was scored 2. In other questions which had options of Frequently, Sometimes, Occasionally and Never, a possible range of scores of 1 to 4 was used. The total possible range of scores was 8 to 24. Scores between 8 and 15 were categorised as Good and those between 16 and 24 were categorised as Poor.

Association between categorical variables and the Knowledge, attitude and practice of respondents were assessed using Chi square test with statistical significance assumed at $p< 0.05$.

Results

A total of 407 copies of questionnaires were distributed and retrieved. This gives a response rate of 100%.

Table 4.1 shows the socio-demographic variables of the respondents. The mean age of the respondents was 36.26 ± 8.73(SD) years. About half of each of the respondents were male (202 / 407) or female (208/ 407) respectively, majority 63.4% (260/407) were married. Those who attained educational achievement up to tertiary and secondary level 48.5% (198) had the same and the highest educational strata. The mean year of service of the respondents was 9.89 ± 7.48 while the majority of the respondents were doctors 53.9% (219). The teaching hospital has the highest proportion 42.3% (170) as work place of the respondents.

There was no statistically significant relationship between knowledge category and age ($p= 0.943$). However there was a statistically significant association between age category and practice ($p = 19.119$)

Table 4.2 shows the knowledge level of the respondents. Most of the respondents had a good knowledge of referral, 95.6% (392). Almost all the respondents 99.8% (406) of the respondents have heard about referral. The most common source of information was health education 84.9%, followed by colleagues 23.7%, radio 14.1%, television 9.3%, and friends/family being the least being 8.0%.

Table 4.3 shows the attitude to referral practice among the respondents. Most of the respondents 91.5 % had a positive attitude towards referral practice. Almost all the respondents 97.1% (398) agreed that referral was done to patient's good, as well as majority 94.4% (387) agreed that they referred patient when necessary. On the other hand, more than half of the respondents 86.4% (354) agreed that referral made them look like they do not know their work.

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Tables 4.4 and 4.5 show the level of referral practice among the respondents. Most of the respondents 73.7% (302) refer patients from their centre to other health facilities, with the highest number (86.1%) of reason for referral being to ensure that patients receive advanced treatment and lowest number (3.6%) of reason for referral being that they do not want patient to die in their facility. About half of the respondents (50.2%) were noted to receive feedback occasionally from the referral centres that they refer their patients to while 47.3% were noted to also occasionally provide feedback to the centres that refer patients to them. 41.2 % of the respondents were noted to record the details of the patients in the referral register sometimes. While 68% of the respondents collect the details of patients such as phone numbers or address, 33.9% actually do home visitation to the patients. Majority of the respondents 65.4% do not have an ambulance at their health care facility. Meanwhile amongst the 34.6% respondents that have an ambulance, only 87.9% of the ambulances are functional and being used.

Table 4.6 shows the factors that influence referral practice among the respondents. From the table, 50.8% of the respondents were noted not have referral forms at their centres and majority 59.8% of the respondents have never received a training on referral. Most of the respondents occasionally had available at their centres, the referral slip, the referral form, the referral registers and the phone registers as was seen in their response of 36.1%, 33.4%, 31.7% and 30.2% respectively.

Discussion of findings

Majority of the respondents in this study were married and within the age group of 30-39, with the mean standard deviation being 36.26 ± 8.73(SD) years. This is in conformity with the average working age group and also comparable with a study carried out in Gombe state Nigeria[7] while it contrasts with a study done at Benin Edo state Nigeria[8]. The reason for the differences may be due to a smaller sample size used in the study. The majority of professional cadre of the respondents was mostly doctors whom were mainly from the teaching hospitals and being followed by the CHEWs who formed that of the PHC workers. This is in line with a study done in Kaduna state Nigeria[9] but however differs in terms of the cadre at the PHC level in a study done in the United State[10]. The similarity may be because in the PHC centres in Nigeria and most African countries, there is still lack of adequate professional health work force, therefore most of the health workers found there are these CHEWs with some being volunteer workers as well.

There was a good overall knowledge on referral system among the respondents. Again, majority were noted to have their main source of information as health education followed by their colleagues. This corresponds with a similar study done in South Eastern Nigeria[11] but differs from a study done in North-Western Nigeria[9] and another done in Iran[5] where there was a poor knowledge of referral among the health workers. The reason for the generally good knowledge of referral may be owing to the fact that most of the PHC and secondary health care facilities lack adequate professional health care workers and the infrastructure to handle most of the cases that presents to them, thus they are trained to refer these cases for appropriate health care services. On the other hand, there may be insufficient awareness and provisions for referral in these study areas with poor knowledge.

The overall attitude towards referral was positive as majority of the respondents had a good reason for referring the patients that needed to be referred, even though a great number of respondents which was mostly among the health workers at the PHCs still think that they will be seen as being incompetent. Proper knowledge is one factor that influences the attitude of the health care workers especially those at the lower levels of health care. A study done in the northern area of Nigeria showed a poor attitude towards referral[12].

It was noted from the study, that there was a good overall referral practice (57.3%) though just slightly above half of the respondents. Most of them had good reasons to refer and claim to refer patients to the other higher levels of health care centres, the tertiary and the secondary levels. While even among the tertiary level, they also practice the horizontal referral within the same level or facility from one specialty to another. Most of the respondents were noted to refer and also have patients being referred to them only occasionally. Similar results were obtained from a study done at Gombe state Northern Nigeria[7] and Benin state Nigeria[8] where the most of the respondents were noted to refer their patients and most of them affirmed that they do occasionally. On other hand, another study done in Kaduna state Nigeria showed a poor referral practice among health workers[9.]

There is no proper feedback or practice of the two-way referral system which would have benefited both the referring health worker, the referred health worker and even the patient alike.

A proper knowledge of the referral system and availability of the necessary elements to carry out the practice will in turn lead to a good referral practice. From this study, most of the respondents were noted not to have access to an ambulance and even amongst those that had, some were not functional. This would further impede the actualization of a good referral practice because a patient may have been referred but does not have a means of getting to the referred facility as urgently as may be necessary.

A study done in Kenya showed that the availability of necessary infrastructure and transport facilities for the transportation of patients, specimens and other parameters were not sufficient[13].

From the study, most of the respondents have never received any form of training regarding referral practice. Also, some of the factors which influence the referral practice and thereby determine its proper application or not include the referral slips, referral form, referral register, phone register was accessed and it was noted that most of the respondents do not really have proper access to these tools that will facilitate their practice of referral. This is in line with and comparable to the study done in Kenya[13] which noted the unavailability of these factors at the facilities where they are needed.

A study done in the United Kingdom also noted lack of proper communication as part of the hindrances to appropriate referral practice[14].

Conclusion

This study on referral system was carried out among health workers at the tertiary, secondary and primary levels of health care in both the urban and rural areas selected in Enugu state Nigeria to assess the effectiveness of the system. Findings have shown that while the level of awareness was impressive, the actual practice of the referral system (two-way referral system) however was not satisfactory as most of the health workers especially at primary health care level. The lack of proper feedback and poor follow up hinders effectiveness of the referral system at the various levels of health care in Nigeria. Therefore, efforts should be made by the agencies and policy makers to improve the communication and synergy of the various levels of health care.

Table 1. Socio-demographic variables

Socio-demographic variables	**Frequency**	**Percent**
Age in years		
20 – 29	91	23.0
30 – 39	177	44.7
40 - 49	100	24.4
50 – 59	36	9.1
60 – 69	6	1.5
Mean ± SD	**36.26 ± 8.731**	
Years of service		
1 -5	135	34. 7
6 – 10	128	32.9
11 -20	81	20.8
21 – 30	41	10.5
31 – 40	4	1.0
Mean ± SD	**9.89 ± 7.487**	
Sex		
Male	202	49.6
Female	208	50.4
Educational level		
No formal	2	0.5
Primary	10	2.5
Secondary	198	48.5
Tertiary	198	48.5
Marital status		

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Single	130	31.7
Married	260	63.4
Others*	20	4.9
Professional cadre		
Doctors	219	53.9
Nurses	48	11.8
Pharmacist	8	2.0
Lab scientist	19	4.7
CHEW	80	19.7
CHO	36	7.9
Place of work		
PHC	133	33.1
Private	47	11.7
District hospital	8	2.0
Gen hospital	31	7.7
CHC	13	3.2
Teaching hospital	170	42.3

Table 2. Knowledge of referral system

Heard about referrals	**Yes Freq (%)**	**No Freq (%)**
Yes	406	99.8
No	1	0.2
	Freq (%)	Freq (%)
Sources of information		
TV	38(9.3)	372(90.7)
Radio	58(14.1)	352(85.9)
Health education	348(84.9)	62(15.1)
Colleagues	97(23.7)	313(76.3)
Family/friends	33(8.0)	377(92.0)
Level of the referral system	**Freq**	**%**
Primary	28	6.9
Secondary	49	12.0
Tertiary	331	81.1
	Yes F (%)	**No F (%)**
Heard about follow up	386(94.1)	24(5.9)
Refer patients/follow up	302(73.7)	108(26.3)
Heard referral guidelines	286(69.8)	124(30.2)
Overall Knowledge		
Good	392 (95.6%)	
Poor	17 (4.1%)	

Table 3. Attitude to referral practices

Variables	**Positive f (%)**	**Negative f (%)**
Referral done to patients good	398 (97.1)	13(2.9)
Referral is beneficial to health worker	361(88.0)	48 (12.0)
Like referring when necessary	387 (94.4)	22 (5.6)

Referral made me look like I don't know my work	354 (86.4)	56(13.6)
Overall attitude		
Positive	**91.5%**	
Negative	**8.5%**	

Table 4. Referral practices

Variables	**Yes (%)**	**No (%)**
Refer patients from centre	302(73.7)	108(26.3)
Reasons for referrals		
Ensure patients gets advanced treatment	353(86.1)	57(13.9)
There are investigations we can't do	158(38.5	252(61.5)
Don't want patient to die in my facility	15(3.6)	395(96.4)
How often do you refer to other centres	**Freq**	**%**
Frequently	56	13.7
Sometimes	234	57.1
Occasionally	99	24.1
Never	21	5.1
How often are patients referred to your centre	**Freq**	**%**
Frequently	145	35.4
Sometimes	87	21.2
Occasionally	157	38.5
Never	21	5.1
How often do you get feedback after you refer	**Freq**	**%**
Frequently	32	7.8
Sometimes	82	20.0
Occasionally	206	50.2
Never	88	21.5
How often do you provide feedback		
Frequently	40	9.8
Sometimes	78	19.0
Occasionally	194	47.3
Never	98	23.9

Table 5. Referral practices (2)

How often do you record details in the referral register	**Freq**	**%**
Frequently	63	15.4
Sometimes	169	41.2
Occasionally	46	11.2
Never	132	32.2
	Yes (%)	**No (%)**
Do you collect details	282 (68.8)	128 (31.2)
Do you refer on request	241 (58.8)	169 (41.2)
Doing home visits	139 (33.9)	271 (66.1)

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Has ambulance	142 (34.6)	268 (65.4)
Functional ambulance	**Freq**	**%**
Yes	124	87.9
No	18	12.1
Overall Practice		
Good	235 (57.3)	
Poor	175 (42.7)	

Table 6. Factors that influence referral practice

	Yes (%)	**No (%)**
Do you have referral forms	200 (48.8)	206 (50.2)
Have you been trained	161 (39.3)	245 (59.8)
Availability of;	**Frequency**	**Percent (%)**
Referral Slip		
Always	60	14.6
Frequently	41	10.0
Occasionally	148	36.1
Never	147	35.9
Referral Forms		
Always	27	6.6
Frequently	15	3.7
Occasionally	137	33.4
Never	216	52.7
Referral Register		
Always	52	12.7
Frequently	30	7.3
Occasionally	130	31.7
Never	175	42.7
Phone register containing names and phone numbers		
Always	47	11.5
Frequently	39	9.5
Occasionally	124	30.2
Never	183	44.6

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