

Referral System: An Assessment of Primary Health Care Centres in Plateau State, North Central Nigeria

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Abstract – Background: An effective referral system ensures a close relationship between all levels of the health system and helps to ensure patients receive the best possible care close to home. There appears to be a weak link of referral system in chain of continuity of care across the levels of health care in Nigeria placing huge demands on secondary and tertiary levels of care for health care service provision. In view of this, this study was conducted to assess the level of practice of referral and factors influencing it among health workers in PHCs in Plateau state North central Nigeria. **Methodology:** This was a cross sectional study conducted among 228 frontline health care workers in PHCs. SPSS version 20 was used for data analysis, adjusted odds ratio as well as 95% confidence interval were used in this study with a p-value of ≤ 0.05 considered statistically significant. **Results:** The respondents' mean age was 38.0 ± 9 years with slight above half 116 (54.2%) having good understanding of the concept of referral and most 77.6% had referred at least a case within the last one month. Factors such as good understanding of the concept of referral (AOR = 6.2; 95% CI = 1.4556 – 8.7991) and availability of referral system (AOR = 8.4; 95% CI = 2.1168 – 15.5450) were predictors of the practice of referral. **Conclusion:** This study has demonstrated the level of practice of referral among cadres of health care workers at PHCs level with significant need for improvement.

Index Terms- Referral system, Primary Health Care centres, Health care workers, Plateau state

I. INTRODUCTION

Referral is a set of activities undertaken by a health provider in response to its inability to provide diagnostic and therapeutic intervention as it relates to the health care need of the patient [1]. Referral systems can be external, internal, or exist between public and private facilities or across the levels of health care geared toward promoting

continuity of care [1-3]. An effective referral system ensures a close relationship between all levels of the health system and helps to ensure patients receive the best possible care close to home [1]. There appears to be a weak link of referral system in chain of continuity of care across the levels of health care in Nigeria placing huge demands on secondary and tertiary levels of care for health care service provision [4]. This weakened implementation of referral system in Nigeria has been corroborated by finding of a survey conducted in Ilorin, north central Nigeria where only 7.1% of all consultations in a tertiary health institution were referred resulting in overwhelming demands for health care with health problems that can be handled and managed at the lower levels of health care [3], [5]. In view of this, this study was conducted to assess the level of practice of referral and factors influencing it among frontline health workers at the Primary Health Care (PHC) centres in Plateau state North central Nigeria.

II. METHODOLOGY

A. Study Area

The study was carried in Jos North Local Government Area (LGA) of Plateau State North central Nigeria. The LGA has an estimated of about population of 429,300 divided into four districts and 20 wards [6]. Jos North LGA has a total of 30 PHCs distributed across the 20 wards of the local government [6].

B. Study Population

The study population comprised of all frontline health workers in the 30 PHCs in Jos North LGA.

C. Study Design

This was a cross sectional study designed to assess the level of practice referral and factors influencing it using quantitative methods of data collection.

D. Sample Size Estimation

The sample size for this study was determined using the appropriate sample size determination formula for a cross sectional study [7]. Where n is the minimum sample size, Z is the standard normal deviate at 95% confidence interval (1.96), q is the complementary probability ($1 - p$), d is the precision of the study set at 0.05 and p is the proportion of respondents who practiced referral from a similar study (89%) [8]. This gave a minimum sample size of 175 after addition of 10% to cater for non, poor and incomplete responses.

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E. Criteria for Inclusion in the Study

All frontline healthcare workers who currently work in the PHCs and who have consented to participate were included in the study. While those on annual, study or sick leave were excluded from the study.

F. Sampling Technique

All health workers who had met the inclusion criteria and consented to participate in the study were sampled using a semi-structured interviewer administered questionnaire.

G. Data Collection

A semi structured interviewer administered questionnaires adapted from a similar study on rapid assessment of referral system comprising of four sections was used in this study [3]. Three research assistants were trained on the content and method of administration of questionnaire prior to the commencement of the study by the principal researcher. The data collection instrument was pretested in a PHC in Jos South LGA of the state. Ethical clearance was sought and obtained from Jos University Teaching Hospital Institutional Health Research Ethical Committee. Written and verbal informed consents were obtained from all the respondents with confidentiality and anonymity of their responses assured and maintained.

H. Assessment of Response

- 1) Referral system was adjudged as available when the health care facility has a list of designated catchment facilities for upward referral and availability of referral tool such as forms and registers
- 2) Understanding of referral system was adjudged as good if the respondents provided explanations or information with similar content as this: “a system that promotes transfer of responsibility of care when [9];
 - A patient is treated but with no demonstrable clinical no improvement
 - A health care worker is unsure about his/her diagnosis and would like a specialist’s opinion
 - The treatment facilities are unavailable at the primary care level
 - The illness to be treated requires referral to a higher level for inpatient specialist care
 - A patient asks for a referral to a higher-level facility.
- 3) Referral was defined and assessed as “a process in which a health worker at one level of the health system, having insufficient resources (drugs, equipment, skills) to manage a clinical condition, seeks the assistance of a better or differently resourced facility at the same or higher level to assist in, or take over the management of, the client’s case” [10].

I. Data Analysis

The data obtained were processed and analyzed using SPSS version 20 where socio-demographic characteristics of the respondents were expressed in frequency and percentage.

Mean $\pm$ standard deviation were used as summary indices for age of the respondents and median and interquartile range for the duration of practice due to skewness of the information. Adjusted odds ratios were used as point estimates in the logistic regression model while 95% confidence interval was used as the interval estimate. A probability value of less than 0.05 was considered statistically significant in this study.

III. RESULTS

The mean age of the health care workers in the study found to be 38 ± 9 years with 167 (73.2%) 31 years and above. The respondents were predominantly female accounting for 162 (71.1%) spread across different cadres such as CHO 102 (44.7%), nurse/midwife 86 (37.7%), medical officers 6 (2.6%) and CHEW 34 (14.9%) respectively. The median duration of practice as health care workers was 120 months ranging with an inter-quartile range of 60 to 216 months. See Table 1

Table 1: Demographic Characteristics of the respondents

Characteristics	Frequency	Percentage
Age Group		
≤ 30 years	61	26.8
31 years and above	167	73.2
Total	228	100.0
Mean Age	Mean $\pm$ SD 38.0 $\pm$ 9 years	
Sex		
Male	66	28.9
Female	162	71.1
Total	228	100.0
Cadre		
CHO	102	44.7
Nurse/midwife	86	37.7
Medical Office	6	2.6
CHEW	34	14.9
Total	228	100.0
Duration of practice (months)		
≤ 60	62	27.2
> 60	166	72.8
Total	228	100.0
Median Duration of practice	120 months (60 – 216 – IQR)	

CHO- Community Health Officer; CHEW-Community Health Extension Workers, IQR: Interquartile Range

Understanding of the concept of referral in course of health care service provision was assessed and revealed that 116 (54.2%) of the respondents had good understanding while majority (91.2%) affirmed the availability of referral system in their health care facility of practice. Similarly, most (77.2%) of the Primary Health Care workers in this study had referred at least one client with the last one month of this study slightly over a third (34.1%) of these referrals were done verbally. See Table 2.

Table 2: Practice of referral among the respondents

Characteristics	Frequency	Percentage
Awareness of referral system		
Yes		
No	214	93.9
Total	14	6.1
	228	100.0
Understanding of the concept of referral		
Good	116	54.2
Poor	98	45.8
Total	214	100.0
Availability of referral system in the facility		
Available	208	91.2
Not Available	20	8.8
Total	228	100.0
Referral of patient within the last one month		
Yes		
No	176	77.2
Total	52	22.8
	228	100.0
Type of referral practiced in the last referral		
Written		
Verbal	116	65.9
Total	60	34.1
	176	100.0
Ownership of referral destination		
Public		
Private	154	87.5
Total	22	12.5
	176	100.0
Level of referral		
Primary	2	1.1
Secondary	104	59.1
Tertiary	70	39.7
Total	176	100.0

Age of the respondents was found to have significant influence on the practice of referral of clients in the course of service provision as the odds of practice of referral when necessary among respondents older than 30 years of age was about 3 times the odds among those than 30 years (AOR = 2.9; 95% CI = 1.2865 – 6.7558; p = 0.011). Furthermore, respondents who practiced in the health care facilities with structure for referral system is in place had 8.4 times the odds of referring patients when need than

those whose facility of practice had no such system in place (AOR = 8.4; 95% CI = 2.1168 – 15.5450; p = 0.008). Also, respondents who demonstrated good understanding of the concept of referral had a higher odds of 6.2 times for referral than those with poor understanding of the concept of referral (AOR = 6.2; 95% CI = 1.4566 – 8.7941; p = 0.004). See Table 3.

Table 3: Multiple Logistic Regression of Predictors of referral

Factors	AOR	95% Confidence Interval	P – value
Age group (years)			
> 31 and above	2.9	1.2865 – 6.7558	0.011
≤ 30	1	-	-
Duration of practice (months)			
> 60	1.1	0.4881 – 2.6298	0.720
≤ 60	1	-	-
Availability of referral system in place			
Available	8.4	2.1168 – 15.5450	0.008
Not available	1	-	-
Understanding of the concept of referral			
Good	6.2	1.4566 – 8.7941	0.004
Poor	1	-	-
Cadre			
Medical officer	2.4	0.1789 – 4.7894	0.976
Nurse/midwife	0.4	0.2299 – 0.8404	0.014
CHEW	0.3	0.1529 – 0.9625	0.042
CHO	1	-	-
Sex			
Male	0.5	0.2781 – 1.0644	0.076
Female	1	-	-

AOR – Adjusted Odds Ratio, CHO- Community Health Officer; CHEW-Community Health Extension Workers

IV. DISCUSSION

Majority of the respondents in this study were aware of referral system with most of them had affirming the existence of referral system in their facilities of practice. Also, more than half had good understanding of the concept of referral. Furthermore, respondents with referral system in their facilities had referred at least one patient within the last one month. This is in synergy with the findings of a Nigeria study which reported high level of awareness of referral among majority of the respondents as well as practice of referral [8]. This could be attributable to the fact that referral is an integral part of primary health and as such it is imperative that primary health care provider should be abreast of this in view of the fact that this level of health care service provision is meant to attend to uncomplicated medical cases [4], [5], [8]. This study could however not access the extent of receipt of feedback from the various referrals made as well as the type of cases referred and the point in care when these referrals were initiated as all of these may be instrumental the final outcome of care.

The level of understanding of referral system observed in this study is also in line with findings of studies conducted in Enugu South-eastern Nigeria and Ghana where health workers demonstrated good knowledge of referral system while a Zimbabwean study had contrary finding [8], [11], [12]. In this study, secondary facility had the highest referral closely followed by tertiary health facilities with only a few referrals made to other PHCs which is in keeping with the findings of a similar study done in Nigeria [8]. This is clearly in line with the concept and principle of referral in health care practice.

Majority of the referrals were made to government owned facility while few were made to privately owned health facilities. This finding is corroborated with what was obtained in a study carried out Honduras [2]. This similarity could be attributable to the perceived increase cost of medical care at the private health facilities therefore compelling health care worker to prioritize publicly owned health facility for referral.

Variation exists across studies on factors influencing referral of patient the course of accessing health care. In this study, age of the health care workers, availability of referral system in the facility and understanding of the concept of referral system had significant influence on referral of patients however, factors such as difficulty in knowledge sharing to meet the receiving professional needs, overwhelming workload, absence of referral system, and knowledge of referral system among others were factors identified by other studies conducted in Honduras and Nigeria [2], [8].

V. CONCLUSION

This study has demonstrated the level of practice of referral among cadres of health care workers at PHCs level which factors such as availability of referral system and understanding of the concept of referral as important factors that can be used to structure interventions to improving the practice of referral.

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