

**DURATION OF HOSPITAL STAY AND ADMISSION OUTCOME OF NON COMMUNICABLE DISEASE ADMISSION IN THE MEDICAL WARDS OF UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL, NIGERIA.****\*Dr. Alikor C. A. and Dr. Nwafor C. E.**

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**ABSTRACT**

**Background:** Non-communicable diseases (NCDs) are becoming the leading causes of morbidity and mortality worldwide with greatest impact on the poor countries of Africa of which Nigeria is central. Mortality from NCDs is projected to occur largest in Africa by 2020. Factors such as sex, age, diagnosis, co-morbidities, social-economic factors and duration of hospital stay have been shown to affect mortality among hospitalised patients. The importance of morbidity and mortality data as it influences policy making and public health status of a nation cannot be overemphasised. This study aims to determine the duration of hospital stay, outcome and mortality of NCD admissions in the medical wards of the University of Port Harcourt Teaching Hospital (UPTH). **Methods:** A four year retrospective review of admissions of NCDs into the medical wards between January 2013 and December 2016 was carried out. Admission, discharge/death registers of patients were used. **Results:** 694 patients with age range 17 to 105 years were studied. 61.3% of subjects were  $\geq 50$  years with 52.7% been females and 47.3% males. A quarter (25.8%) was on admission for  $< 7$  days; 36.3% for  $< 2$  weeks;  $< 10\%$  of subjects stayed  $>$ one month. 120 subjects (17.6%) died while 76.5% and 5.3% were discharged and signed against medical advice respectively. 58% of deaths occurred within the first week of admission and  $> 80\%$  occurred  $<$  two weeks (0.001). Death highest among females than males (0.04). Increasing frequency of death with increasing age ( $< 0.001$ ). Cardiovascular disorders accounted for 50.9% of deaths. **Conclusion:** This study showed that duration of hospital stay is related with admission outcome with most deaths occurring early on admission. Public health enlightenment, improved manpower and healthcare facilities are key to reducing deaths on the medical wards.

**KEYWORDS:** Hospital stay, admission outcome, mortality, Non-communicable disease.**INTRODUCTION**

It has been stated that non-communicable diseases (NCDs) are the leading cause of medical admission including mortality in the developed countries, while in developing countries like Nigeria, communicable diseases (CDs), take the lead<sup>[1,2]</sup> This trend is expected to change in sub-Saharan Africa by the year 2020 due to increased rate of adoption of western life style with NCDs especially cardiovascular diseases becoming an increasing contributor to morbidity, hospital admission and mortality even in developing nations.<sup>[3,4]</sup> Several variables such as age, sex, diagnosis, pattern of morbidities, socioeconomic variables, and duration of hospital stay have been shown to affect admission outcome.<sup>[2,5]</sup> Also implicated in this is the poor health-care seeking behavior prevalently common in the sub-Saharan Africa which may result in patients presenting in advanced stages of diseases thereby increasing mortality.<sup>[6]</sup> which agrees with the postulation that late referrals to the tertiary institution may have been attributed to the high mortality rates in early admission.<sup>[2]</sup>

A connection has been strongly established by different studies between the duration of hospital stay and admission outcomes especially mortality. Garko *et al* in their work on the duration of hospital stay and mortality in the medical wards of Ahmadu Bello University Teaching Hospital in Zaria, Nigeria reported that most deaths (65%) occurred by the fifth day of admission.<sup>[2]</sup> The work done by Elias Ali and Mirkuzie Woldie in Ethiopia corroborated this relationship between duration of hospital admission and admission outcome.<sup>[1]</sup>

University of Port Harcourt Teaching Hospital (UPTH) is located in the Nigerian Niger Delta region where it serves as a major referral centre in Port Harcourt and other nearby states. It was observed that many patients, who die in the hospital often present in advanced stage, do not carry out investigations early and are referred from other hospitals with some coming from alternative medicine caregivers. We therefore seek to determine the duration of hospital stay and admission outcome of NCDs admissions in the medical ward of UPTH.

**MATERIALS AND METHOD**

This was a retrospective cross sectional study involving all patients admitted for non communicable diseases to the medical ward of UPTH between January 2013 and December 2016. Six hundred and ninety four (694) patients case folders aged 17 to 105 years were analysed for provisional and confirmed diagnosis, reason for admission, admission date, discharge date, death date and Signed Against Medical Advice (SAMA) date. Data were entered into statistical package for the social sciences (SPSS) version 17.0 (Chicago Illinois, USA) and analyses obtained. No patient informed consent was necessary for this study.

The Medical Wards are in the main hospital complex and has 104 bed spaces equally distributed into the male and female medical wards. Main source of admission into the wards are the accident and emergency unit and medical outpatient department.

**RESULTS**

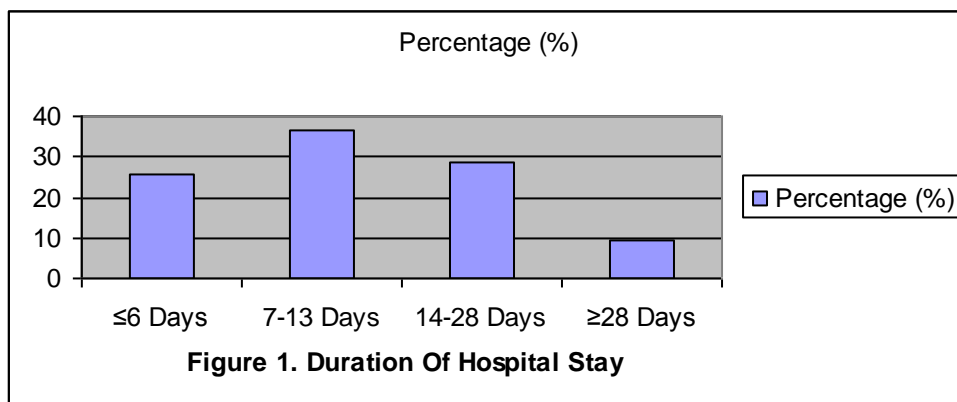
A total of 694 patients with age ranging from 17 to 105 were studied. Three hundred and twenty eight (328)

(47.3%) were males while 366 (52.7%) were females, with a ratio of 1:1.01 respectively. Middle aged patients aged 50-59 years were more frequently admitted (22.4%).

**Table 1: Age Range of Study Subjects.**

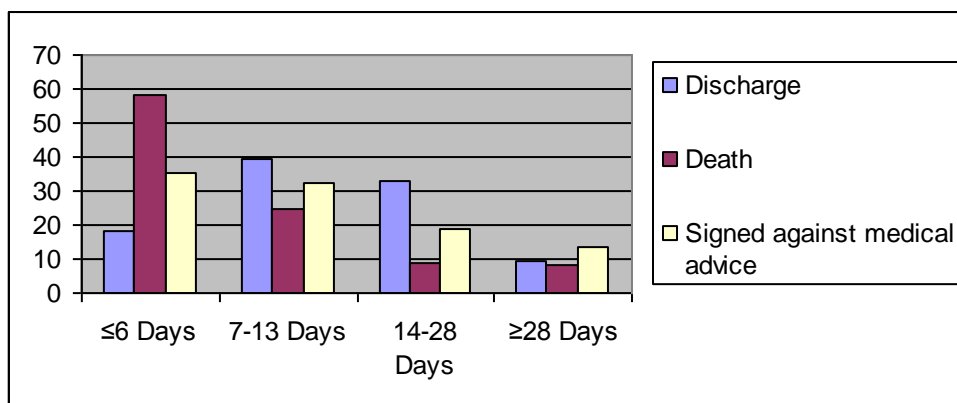
Age (Years)	Percentage (%)
≤30	8.3
30-39	13.4
40-49	17.2
50-59	22.4
60-69	2.7
≥70	17.2

One hundred and seventy nine (179) patients (25.8%) were admitted for less than 7 days, 252 (36.3%) patients stayed for less than 2 weeks, 194 (28.4%) stayed between 2-4 weeks, while 9.5% of patients stayed for more than one month.



One hundred and twenty two patient (122) (17.6%) died, 531 (76.5%) were discharged, 37 (5.3%) patients signed

against medical advice, while the outcome of 4 (0.6%) patients could not be determined.



**Figure 2: Admission Outcome By Duration of Stay.**

Of the 122 subjects who died, death occurred within the first one week in 58.2%, while more than 80% of death occurred within two weeks (0.001). Death was highest

among females (52.9%) than males (47.1%) and was seen with increasing age, although age more than 60

years was more associated. Cardiovascular disorder accounted for the highest cause of death (50.9%).

**Table 2: Admission Outcome.**

Outcome	Number	Percentage
Discharged	531	76.5
Death	122	17.6
Signed against medical advice	37	5.4
Others	3	0.5

**Table 3: Age and mortality outcome.**

Age (years)	Mortality	P-value
≤30	5.8	<0.001
30-39	11.6	
40-49	19.1	
50-59	18.5	
60-69	22.5	
≥70	22.5	

## DISCUSSIONS

Irrespective of the reasons for NCD hospital admission, several variables such as age, sex, diagnosis, pattern of morbidities, socioeconomic variables, and duration of hospital stay have been shown to affect admission outcome especially mortality.<sup>[2]</sup> Other important factor interconnected with mortality have been found to include the access block effect a situation where patients admitted into the hospital wards remain in the emergency department (ED) for more than eight hours because they do not gain access to appropriate hospital inpatient beds.<sup>[7,8]</sup>

This study showed that about a quarter of the total patients were admitted for less than seven days with most patient staying in admission for less than one month which is similar to the findings by other researchers.<sup>[9,10]</sup> This study further demonstrated that about 18 % of the total patient admitted died with over 75% discharged which are in tandem with the results as shown by other workers.<sup>[11,12,13]</sup>

A connection has been strongly established by different studies between the duration of hospital stay and admission outcomes especially mortality. Our study revealed that 58.2% of death occurred in the first one week of admission with more than 80% of death occurring within two weeks of admission similar to the work of Garko *et al* on the duration of hospital stay and mortality in the medical wards of Ahmadu Bello University Teaching Hospital in Zaria, Nigeria where they reported 65% of deaths occurring by the fifth day of admission.<sup>[2]</sup> The work done by Elias Ali and Mirkuzie Woldie in Ethiopia similarly corroborated the findings of our study on the relationship between duration of hospital admission and mortality having reported 53% of death in less than one week of admission and more than 75% occurring within two weeks of admission.<sup>[1]</sup>

Several factors such as poor health-seeking behavior, late presentation, out-of pocket spending, poverty may be associated with a higher death rate in the first week of admission in sub-Saharan Africa where our study was done. Additionally, in developing countries with poor economy and absence of state funded health care, relatives may tend to limit their extent of spending scarce resources in providing health care for the elderly whose burial expenses may equally be demanding.<sup>[14]</sup> In our centre, it is observed that majority of our patients present very late; even when they present on time, may not have the fund to provide materials for interventions.

The study also showed that death was highest among persons aged 60 years or more and more amongst females in contrast to the work by Omoleke in Gambia where it was reported that for NCDs, males die more, with females having higher morbidity and hospitalization.<sup>[15]</sup> Most common cause of death in this study was cardiovascular in origin (50.9%) as also reported by other studies studies.<sup>[2,4]</sup>

## CONCLUSION

This study has shown that factors such as short duration of hospital stay, age more than 60 years, female gender and cardiovascular diseases are linked with increased death. Therefore, public health enlightenment, improved manpower and health care facilities are key to reducing deaths on the medical wards.

## ACKNOWLEDGEMENT

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