

## Original Article

# Determinants of Discharge against Medical Advice in a Tertiary Hospital in a Semi-Urban Area of South-Western Nigeria

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## Abstract

**Introduction** Discharge against medical advice (DAMA) is a major problem in our hospitals. This study aimed at identifying the determinants of DAMA, while suggesting how to curb it.

**Methods** This was a cross sectional study conducted to all patients (779) on admission at Federal Medical Centre, Owo within 4 months. Data was collected using interviewer administered questionnaire. Data analysis was carried out using SPSS version 21. Descriptive statistics, Chi square test and logistics regression were done. Level of statistical significance was 5 %.

**Result** The median age of respondent was 27 years (range <1 - 90 years), 70.2% were 18 years and above, females were 57.9%. DAMA occurred in 7.4% of the patients. To 6.5% hospital bill was not affordable. DAMA occurred in 54(9.9%) of patients 18 years and above, 19(15.8%) of other tribes aside Yoruba, 26(4.3%) of patients with acute health condition and 14(27.5%) of patients whose hospital bill was not affordable ( $p < 0.001$ ). Determinants of DAMA were patients 18 years and above (OR: 10, 95%CI: 3.4-29,  $p < 0.001$ ), other tribes (OR: 3, 95%CI: 1.7-6,  $p < 0.001$ ), no formal education (OR:6, 95%CI: 1.5-25.3,  $p < 0.012$ ), chronic illness (OR:5, 95%CI: 3-10,  $p < 0.001$ ) and inability to afford hospital bill (OR:6, 95%CI: 2.6-12,  $p < 0.001$ ).

**Conclusion** Inability to afford hospital bill played most important role in DAMA. It is important for government at all levels to increase the budgetary allocation to health institutions to take care of emergency services at all levels of patients care. National Health Insurance Scheme (NHIS) should be pursued vigorously and all hands must be on deck to make it work.

**Key word:** Hospital, Hospital bill, Discharge against medical advice, Admission, DAMA

## Introduction

The term discharge against medical advice (DAMA) refers to those patients who demanded for and signed to obtain their discharge from the hospital contrary to the managing team's plan. (Nkanginieme and Amadi, 1995) DAMA patients usually sign a standard hospital form acknowledging that they are discharging themselves contrary to the advice of their physicians. (Hwang et. al., 2003) Discharge against medical advice can also be thought of as non-compliance with a physician's treatment. (Odu et. al., 2005)

The phenomenon is worldwide and is not limited to the developing world. (Akiode et. al., 2005, Ayed, 2009) Since patients usually come to the hospital with the trust in the ability of the medical experts to help in the management of their health problems, it is therefore assumed that whatever advice is offered regarding the treatment modalities after initial assessment by these experts will be accepted. (Ohanaka, 2002) But this is not always so as some patients may choose to discharge themselves against medical advice. This situation usually presents the health care providers with clinical, ethical and legal challenges. (Odu et. al., 2005)

Patients who leave hospital against medical advice account for 0.8% to 2.2% of discharges from medical services at various teaching and acute care hospitals in the United States. (Saitz et. al., 2000b, Weingart et. al., 1998) In other studies in Nigeria, a prevalence range of between 1.23 and 2.8 were found. (Odu et. al., 2005, Ohanaka, 2002, Ikefuna and Emodi, 2002, Alebiosu and Raimi, 2003) For psychiatric patients, the prevalence was found to be between 6% and 54%. (Chandrasena and Miller, 1998)

Discharge against medical advice is a major problem in our hospitals. For instance in Enugu, Benin, Port Harcourt and Ife, prevalence rates are 1.8, 1.94, 6.12 and 0.96 respectively. Various reasons have been given for the action by the

patients. These include financial, belief in alternative caregivers, lack of education on the part of the patients on reasons for admission, too long stay in the hospital and frustration from the health workers.

Most of the studies done so far were retrospective and relied on information from medical records, which in most cases were not adequately kept. Also the studies were restricted to either a unit or department of the hospital. This study on the other hand was prospective i.e. it involved recruiting all in-patients as they were admitted and following up clinical and ethical issues leading to eventual decision to discharge against medical advice. This study aimed at identifying the determinants of DAMA, with a view to suggesting how to curb it.

## Methods

### Study Area

The study was carried out at Federal Medical Centre, Owo, in Owo Local Government Area of Ondo State, Nigeria. Owo is located in the Northern part of Ondo State, about forty kilometres from Akure, the state capital. Federal Medical Centre, Owo, was established in 1993 by the Federal Government of Nigeria. The hospital offers services in Family Medicine, General Outpatients Care, Antenatal and Postnatal Care, Community Medicine, Surgery, Orthopaedics, Psychiatry and Internal Medicine. Apart from serving the people of Ondo State, the hospital also attends to referrals from neighboring states like Ekiti, Edo and Kogi States.

### Study design

This was a cross sectional study conducted to patients on admission. Patients who were discharged against medical advice were also seen at the point of exit from the hospital. Patients who were on admission within a period of four months and who consented in the medical, surgical, paediatrics, emergency,

obstetrics and gynaecology wards were recruited for the study. A structured interviewer-administered questionnaire was used. The questionnaire contained the socio-demographic data of the patient, questions about patient's illness and discharge against medical advice and has the following sections, sociodemographic characteristics, nature of patient's illness, knowledge about health care delivery services, experience while in the hospital and reasons for discharge against medical advice. Its validity was checked through previous studies and expert researchers. The questionnaire it was interviewer administered.

All patients that were admitted to the wards during the period of study and who gave consent participated in the study. Likewise at the time of their exit from the hospital those who requested for DAMA were further interviewed. The initial sections in the questionnaire were administered to all the patients on admission but the section on discharge against medical advice was administered only to those who were discharged against medical advice.

### **Study population**

Consenting patients on admission in the medical, surgical, paediatrics, emergency, obstetric and gynaecology wards, participated in the study. In all 779 patients gave consent and participated. There were seventeen deaths with six from medical ward, four from surgical ward and seven from paediatric ward. However, these were excluded from the study. Two patients from the emergency room did not give consent to participate in the study. The reason they gave was that they were not in the right mood to answer any question.

### **Inclusion and exclusion criteria**

All patients on admission in the medical, surgical, paediatric, emergency, obstetrics and gynaecology wards who gave their consent and were exiting the hospital alive were recruited.

The relations or parents as the case might be represented paediatric, seriously ill and unconscious patients. Patients who died (15) and those who were severely ill (2) were excluded.

### **Sample size**

The sample size formula for descriptive study was used with a prevalence of 50% since no previous study was done at the centre on DAMA. Margin of error of 5% was used. The minimum sample size for this study was 418. However, this study was done over 4 months and 779 patients were interviewed.

### **Data analysis**

Data analysis was carried out using SPSS version 21. Descriptive statistics were done. Chi square test was used for the assessment of associations between sociodemographic characteristics and DAMA. It was also used to assess the association between some other patients' related variables and DAMA. Determinants of DAMA was identified using logistics regression analysis. Variables significant in the bivariate analysis were used in the logistic regression model. Level of statistical significance was 5 %.

### **Consent and ethical clearance**

Consent was obtained from all the participating patients. Ethical approval for the study was obtained from Federal Medical Centre Owo, Health Research and Ethics Committee.

### **Result**

Table 1 shows the sociodemographic characteristics of patients admitted at Federal Medical Centre, Owo. The median age of the sample was 27 years (range <1 - 90 years). The majority 659(84.6%) were of Yoruba tribe. Other tribes were Ebira 22(2.8%), Edo 30(3.9%), Hausa 8(1.0%), Ibo 60(7.7%) Traders and artisans were 462(59.3%) of the respondents.

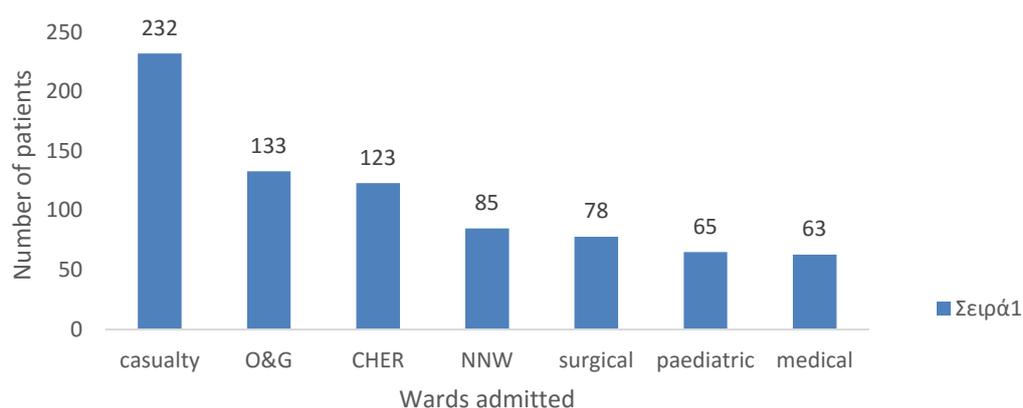
**Table 1: Sociodemographic characteristics of patients admitted at Federal Medical Centre, Owo**

<b>Characteristics</b>	<b>Frequency</b>	<b>Percent</b>
<b>Age group in years</b>		
<18	233	29.9
≥ 18	546	70.1
<b>Sex</b>		
Male	328	42.1
Female	451	57.9
<b>Tribe</b>		
Yoruba	659	84.6
*Others	120	15.4
<b>Level of Education</b>		
No formal education	188	24.1
Primary	156	20.0
Secondary	227	29.1
Post-Secondary	208	26.7
<b>Religion</b>		
Christian	657	84.3
Muslim	122	15.7
<b>Occupation</b>		
Not employed	155	19.9
Trader/Artisan	462	59.3
Professional and senior civil servants	162	20.8

\*Others Ebira 22(2.8%), Edo 30(3.9%), Hausa 8(1.0%), Ibo 60(7.7%)

**Table 2: Characteristics related to care received by patients at Federal Medical Centre, Owo**

Characteristics	Frequency	Percent
<b>Types of illness</b>		
Acute	600	77.0
Chronic	179	23.0
<b>Duration on admission</b>		
≤ 1 week	571	73.3
>1 week	208	26.7
<b>Numbers of investigations</b>		
≤ 2	394	50.6
>2	385	49.4
<b>Bill Affordable</b>		
Yes	728	93.5
No	52	6.5
<b>Advice on DAMA</b>		
Yes	673	86.4
No	106	13.6
<b>DAMA</b>		
Yes	58	7.4
No	721	92.6

**Figure 1: Number of patients and wards of admission**

**Table 3: Sociodemographic characteristics of patients and DAMA at Federal Medical Centre, Owo**

Characteristics	DAMA		Chi-square	p-value
	Yes n(%)	No n(%)		
<b>Age group in years</b>				
<18	4(1.7)	229(98.3)	15.82	<0.001
≥ 18	54(9.9)	492(90.1)		
<b>Sex</b>				
Male	27(8.2)	301(91.8)	0.508	0.476
Female	31(6.9)	420(93.1)		
<b>Tribe</b>				
Yoruba	39(5.9)	620(94.1)	14.48	<0.001
Others	19(15.8)	101(84.2)		
<b>Level of Education</b>				
No formal education	22(11.7)	166(88.3)	16.63	0.001
Primary	14(9.0)	142(91.0)		
Secondary	19(8.4)	208(91.6)		
Post-Secondary	3(1.4)	205(98.6)		
<b>Religion</b>				
Christian	47(7.2)	610(92.8)	0.518	0.472
Muslim	11(9.0)	111(91.0)		
<b>Occupation</b>				
Not employed	11(7.1)	144(92.9)	8.173	0.017
Trader/Artisan	43(9.3)	419(90.7)		
Professional and senior civil servants	4(2.5)	158(97.5)		

Table 2 shows the characteristics related to care received by patients at Federal Medical Centre, Owo. In all 600(77%) were admitted due to acute health condition. The median duration on admission was 3 days with a range of 1-90 days. The duration on admission was one week and below for 571(73.3%) of the respondents. The median number of investigation done was 2 while it ranges from 0-5. Only 52(6.5%) said the hospital bill was not

affordable to them. Most of the patient 673(86.4%) were advised on the consequences of DAMA. DAMA occurred in 58(7.4%) of the patients.

Figure 1: display the number of patients and the wards they were admitted. More than a quarter 232(29.7%) were admitted in the casualty while only 63(8%) were admitted in the medical ward. Other wards of admission were as shown in figure 1.

Table 3 shows the sociodemographic characteristics of patients and DAMA at Federal Medical Centre, Owo. Considering age group 54(9.9%) of patients 18 years and above DAMA compared to 4(1.7%) of those less than 18. This association is significant statistically,  $p < 0.001$ . Among other tribes 19(15.8%) DAMA while it occurred in only 39(5.9%) of the

Yoruba tribe  $p < 0.001$ . Among patients with no formal education 22(11.7%) DAMA while it was only 3(1.4%) of those with post-secondary education  $p = 0.001$ . Also among those not employed 11(7.1%) DAMA while it was 4(2.5%) among professional and senior civil servants.

**Table 4: Characteristics related to care received by patients and DAMA at Federal Medical Centre, Owo**

Characteristics	DAMA		Chi-square	p-value
	Yes n(%)	No n(%)		
<b>Types of illness</b>				
Acute	26(4.3)	574(95.7)	36.699	<0.001
Chronic	32(17.9)	147(82.1)		
<b>Duration on admission</b>				
≤ 1 week	52(9.1)	519(90.9)	8.566	0.003
>1 week	6(2.9)	202(97.1)		
<b>Number of investigations</b>				
≤ 2	19(4.8)	375(95.2)	7.96	0.005
>2	39(10.1)	346(89.9)		
<b>Bill Affordable</b>				
Yes	44(6.0)	684(94.0)	31.695	<0.001
No	14(27.5)	37(72.5)		
<b>Advice on DAMA</b>				
Yes	55(8.2)	618(91.8)	3.793	0.51
No	3(2.8)	103(97.2)		

**Table 5: Sociodemographic determinants of DAMA at Federal Medical Centre, Owo**

Characteristics	Odds Ratio	95% CI of Odds Ratio		p-value
		Lower	Upper	
<b>Age group in years</b>				
<18	1			
≥ 18	10	3.44	28.76	<0.001
<b>Tribe</b>				
Yoruba	1			
Others	3.18	1.7	6.0	<0.001
<b>Level of Education</b>				
No formal education	6.14	1.49	25.26	0.012
Primary	4.09	0.98	16.97	0.053
Secondary	6.15	1.6	23.47	0.008
Post-Secondary	1			
<b>Occupation</b>				
Not employed	1.79	0.518	6.176	0.357
Trader/Artisan	1.93	0.582	6.401	0.282
Professional and senior civil servants	1			

**Table 6: Hospital and patients characteristics determining DAMA at Federal Medical Centre, Owo**

Characteristics	Odds Ratio	95% CI of Odds ratio		p-value
		Lower	Upper	
<b>Types of illness</b>				
Acute	1			
Chronic	5.4	2.89	9.98	<0.001
<b>Duration on admission</b>				
≤ 1 week	6.9	2.7	17.4	<0.001
>1 week	1			
<b>Numbers of investigations</b>				
≤ 2	1			
>2	1.6	0.88	3.14	0.117
<b>Bill Affordable</b>				
Yes	1			
No	6	2.6	11.89	<0.001

Table 4 shows the characteristics related to care received by patients and DAMA at Federal Medical Centre, Owo. DAMA occurred in 32(17.9%) of patients with chronic health condition and only 26(4.3%) with acute health condition  $p<0.001$ . Among patients who spent one week and less on admission 52(9.1%) DAMA while 6(2.9%) of patients who spent more than one week DAMA  $p=0.003$ . In patients who had more than 2 investigations 39(10.1%) DAMA while, while 19(4.8%) DAMA among patients who had 2 investigations and below  $p=0.005$ . DAMA occurred in 14(27.5%) of patients whose hospital bill was not affordable compared to 55(8.2%) of those whose hospital bill was not affordable  $p<0.001$ .

Table 5 shows the sociodemographic determinants of DAMA at Federal Medical Centre, Owo. Patients 18 years and above have 10 times odds of DAMA (95%CI: 3.4-29,  $p<0.001$ ). The odds of DAMA was 3 times in other tribes (95%CI: 1.7-6,  $p<0.001$ ).

Patients with no formal education had 6 times odds of DAMA (95%CI: 1.5-25.3,  $p<0.012$ ). Also patients with secondary education had 6 times odds of DAMA (95%CI: 1.6-23,  $p<0.001$ ).

Table 6 shows the hospital and patient characteristics determining DAMA at Federal Medical Centre, Owo. Patients with chronic illness have 5 times odds of DAMA (95%CI: 3-10,  $p<0.001$ ). The odds of DAMA was 7 times in patients admitted for one week and below (95%CI: 2.7-17.4,  $p<0.001$ ). Patients who could not afford their hospital bill had 6 times odds of DAMA (95%CI: 2.6-12,  $p<0.001$ ).

### Discussion

The prevalence of DAMA was found in this study to be 7.4%. This value is very high when compared with the findings in other studies (Benin, Enugu and Ife with 1.94%, 1.8% and 0.96% respectively). (Ohanaka, 2002, Ikefuna and Emodi, 2002) This

could be explained by the interplay of various factors. First and foremost, this study involved all the departments in the hospital compared to other studies that focused on a particular department. (Weingart et. al., 1998, Ikefuna and Emodi, 2002, Akiode et. al., 2005, Ohanaka, 2002, Okoromah and Egri-Okwaji, 2004) Another reason is the strategic location of the hospital. It is located mid-way between the commercial city of Lagos and the Federal Capital Territory of Abuja. The highway that connects these cities passes just by the hospital. And since the highest frequency of DAMA occurred in the emergency department, the prevalence of DAMA is expected to be higher. The DAMA could either be because the admission was unscheduled or because they wanted to move close to their people or because they preferred another hospital. (Odu et. al., 2005, Weingart et. al., 1998, News updates, 2003)

The adult age group ( $\geq 18$  years) were found to be more prone to DAMA than in this study. The involvement of this age group may also be because some of those in this age group were workers who had to resume duty. They might not be able to stay away from duty for too long as this might cost them their job especially with the rampant problem of unemployment and lack of job security. Some of them were also students who would want to take part in one school activity or the other e.g. examination and so might not be patient enough to stay in the hospital. The age group  $<18$  years were discharged against medical advice less than any other age group probably because they belonged to the school age group (primary and post primary) that are dependent on others' decision. (Omololu et. al., 2002)

Patient of other tribes were found to seek DAMA than Yoruba tribes. This may be because the study was carried out in Yoruba land and some of the Yorubas may have relatives around who are willing to give social support. Also, the hospital is located in the Yoruba land. Apart from being the only tertiary health institution in Ondo state, the Yoruba patients were likely to have prepared for the admission and also likely to be with their people. Hausas may DAMA because they are mainly migrants; they are either cattle rearers or traders and so most of the time they were admitted as

emergency and, as has been observed in previous studies, this is associated with high rate of DAMA. (Odu et. al., 2005, Weingart et. al., 1998) The Ibos may also DAMA because they are mainly traders, who found it difficult to leave their business unattended to for too long.

The study also showed that patients with no formal education were more prone to DAMA. This is because ignorance, disease and poverty usually go together. The fact is that those with no formal education would likely belong to the low socio-economic class and be ignorant of the implication of DAMA; and also not able to afford the cost of treatment. (Saitz et. al., 2000a, Aliyu, 2002)

Inability to afford hospital bill was responsible for DAMA. This shows that some patients were financially handicap. This is in support of other studies that financial problem is a major factor in seeking DAMA. (Weingart et. al., 1998, Hwang et. al., 2003, Saitz et. al., 2000a, Aliyu, 2002) Making out of pocket payment for health care could prevent patient from getting the best from their health care providers. (Leive and Xu, 2008, Ezeoke et. al., 2012, Ilesanmi and Ige, 2013, Ilesanmi et. al., 2014) Moreover, if a patient wants to continue to stay in the hospital when there is no money to pay, the hospital may decide to withdraw the services being rendered. So instead of the patients to face the embarrassment of not being attended to and also accumulating bills e.g. bed fee, they will rather prefer to DAMA. Patients with chronic illnesses were more likely to DAMA. They are likely to require more money since the cost of hospital care increases with the length of stay on admission.

### Conclusion and Recommendations

The prevalence of DAMA in this study is high when compared with other studies. Being adult, patients being of other tribes aside Yoruba, lack of formal education, having chronic illnesses and inability to afford hospital bill were the determinants of DAMA in the study. Some of the patients who probably wanted to move close to their people should be allowed. Hence, it is recommended that referral should be offered to the patients whenever it is appropriate. Genuine attempt should be made to follow up the patient. Good record keeping and

proper documentation of every aspect of the patient's management is important. Patient should be committed to sign an undertaken if eventually he or she decides to DAMA.

One modifiable factor out of the determinant is inability to afford hospital bill. It is important for government at all levels to increase the budgetary allocation to health institutions to take care of emergency services at all levels of patients care. National Health Insurance Scheme (NHIS) being implemented by the Federal Government should be pursued vigorously and all hands must be on deck to make it work.

### Limitations of the study

The patients that sought DAMA could not be followed up to know the outcome of their action.

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