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Pediatric discharge against medical advice: experience from a Nigerian secondary healthcare institution

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Abstract

Background: Often, discharge of children against medical advice has a negative effect on the well-being of the patient. To determine the prevalence of discharge against medical advice (DAMA) among hospitalized children and examine the reasons given by parents/guardians for such discharges.

Methods: A retrospective 2-year medical records audit of children aged one day to 15 years discharged against medical advice was carried out in a pediatric unit of a secondary health-care facility.

Results: The overall prevalence of DAMA was 6.3% while the prevalence among neonates was 7.5%, p>0.05. Sixty-two (56.4%) of all cases were less than 12 months old with neonates accounting for 40 (64.5%) of the 62. The prevalence of DAMA was 2.8 times higher in male neonates compared to female neonates. Thirty two (9.9%) of 322 male neonates compared to 8 (3.7%) of female neonates were DAMA; Odd ratio, OR=2.8; 95% Confidence Interval, CI= 1.26, 6.20). Majority (65.4%) of the signatories to the discharge documents were the child's fathers. In only 5.5% of cases were the child's mothers the signatories. Rate of re-admission was 13.6%. The commonest reason for DAMA in both neonates and older children was financial constraints. Parental disagreement with planned treatment and/or investigations ranked second in the case of neonates.

Conclusions: DAMA is a common social pediatric health problem, especially among infants and has multifactorial etiology. Socioeconomic factors, parental misjudgment of improvement and disagreement with treatment plan were found to have a significant bearing to its occurrence.

Keywords: Children, Discharge against medical advice (DAMA), Hospital fees.

Introduction

The discharge of hospitalized children against medical advice is a serious public health issue. This phenomenon involves termination of hospitalization, rejection of expert medical opinion/treatment, signing of a discharge document and leaving the hospital with the child [1-3]. The health care-seeking behavior of parents' influences the outcome of illnesses in their children [4] Parental non-compliance with health-care recommendations for their children is a manifestation of child neglect [5]. Discharge of hospitalized children against medical advice constitutes an obstacle to adequate and effective health-care delivery to these children and have the potential of increasing not only child mortality rate, but also, the frequency of long-term sequel [6]. Such discharges are also known to be distressing to the physician and other health-care professionals involved in the care of these children [7].

The prevalence of DAMA which has been reported among hospitalized children varies from 1.2% to 31.7%, depending on the population studied [8-11]. Although DAMA occurs both in developed and developing countries, the reasons may differ [12-15]. Various studies have shown that financial constraints is a major determinant of DAMA in Nigeria [9-11]. Over the years, hospital

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fees payable by parents has continually been adjusted upwards in all Nigerian health-care institutions. This situation involves lack of effective health-insurance coverage in the country. Akande et al [16] reported that parents have a lot of difficulties paying for their children's medical treatment in Nigeria. From the foregoing, one may surmise that the prevalence of DAMA may even be higher today.

The present study sought to determine the prevalence of pediatric DAMA and examine the reasons given by the parents/ guardians for such discharges. Knowledge of the factors leading to DAMA could help health-care administrators in formulating policies aimed at minimizing its frequency, thereby improving health-care delivery to these children.

Methods

This retrospective study was conducted at St Phenomena Catholic Hospital (SPCH), Benin City. It is a secondary health care facility located at the centre of Benin City, the Edo State capital. The children's ward has a capacity for 28 beds and the neonatal ward has a capacity for 15 beds. The study population included patients admitted into both wards. The study protocol was approved by the hospital authority.

The admission registry and case-notes of all children aged between one day and 15 years admitted into the hospital from 1st January, 2009 to 31st December, 2010 were examined and the relevant information extracted. The pediatric out-patient clinic attendance was included. Extracted information consists of duration of hospital stay, tribe, place of residence, age, sex, main diagnosis, signatories to the discharge documents and the outcome of the admission. Also the education, occupation and religion of the parents were extracted from the case-notes. The total numbers of pediatric out-patient attendees as well as admissions were obtained. The principal reason for admission of the child was accepted as the main diagnosis as determined by the Consultant Pediatrician. The case-notes were well kept and easy to retrieve from the records section. Data obtained were analyzed according to sex, age, main diagnosis and reasons for discharge against medical advice (DAMA). The social class of the parents was determined using the classification suggested by Ogunlesi et al [17]. This was analyzed via combining the highest educational attainment, occupation and income of the parents (based on the mean income of each educational qualification and occupation). In this Social Classification System, classes I and II represent high social class, class III represents middle social class while classes IV and V represent low social class.

Upon request of a parent for DAMA the most senior doctor or nurse on duty discussed the need and importance of continuing hospitalization with the person(s). If they insisted on going ahead with the discharge, they were asked to sign the discharge document, and then pay the outstanding hospital bills before leaving the hospital with their child. In the present study, a child was considered a case of DAMA upon signing the hospital's standard discharging form by the parents or guardian. This acknowledged and stated that he/she discharged his/her child and left the hospital with the child. Statistical analysis involved calculation of percentages, ratios, means, odd ratios and confidence intervals. Z-test was used in ascertaining the significance of differences in proportions with p value set at <0.05.

Results

During the two-year period covered by this review, a total of 10,376 children (aged between one day and 15 years) were seen in the various units of the hospital. Of this number, 1,746 (16.8%) were admitted into the children's wards. They consisted of 536 neonates [322 (60.1%) males and 214 (39.9%) females; M/F=1.5] and 1210 children (neonates excluded) [646 (53.4%) males and 564 (46.6%) females; M/F= 1.1] The overall male-to-female ratio was 1.2.

Out of the 1,746 admitted cases, 110 (6.3%) consisting of 60 (54.5%) males and 50 (45.5%] females were DAMA (Odd ratio,

Table 1. Prevalence of DAMA according to age and sex.

Age groups	Sex of children admitted					
	Male		Female		Both sexes	
	No Admitted	DAMA No(%)	No Admitted	DAMA No(%)	No Admitted	DAMA No(%)
Below 1 month	322	32(9.9)	214	8(3.7)	536	40(7.5)
1 ≤12 months	194	10(5.2)	168	12(7.7)	362	22(6.4)
1 – 4 years	316	13(4.1)	281	21(7.5)	597	34(5.7)
5 – 9 years	90	3(3.3)	65	6(9.2)	155	9(5.8)
≥10 years	53	2(3.8)	43	3(7.0)	96	5(5.2)

Table 2. Reasons given by parents for pediatric DAMA.

Neonates n= 40 Reasons for DAMA	No of DAMA	% of DAMA
Financial constraints	14	32.5
Parental disagreement with planned treatment/investigation	9	22.5
Slow rate of improvement	7	17.5
Naming ceremony	4	10.0
No reason declared	6	15.0
Older children (neonates excluded) n = 70		
Financial constraints	27	38.6
Parental misjudgment of improvement.	19	27.1
Failure to consult child's father before hospital admission.	6	8.6
Slow rate of improvement.	5	7.1
Desire by parents to transfer patient to a prayer house/ traditional healer.	5	7.1
Nobody to care for other children at home.	3	4.3
Parents disagree with planned treatment or investigation.	2	2.8
No reason declared	3	4.3

OR = 0.96; 95% Confidence Interval, CI = 0.65, 1.42). Among the DAMAs, sixty two (56.4%) were infants while 40 out of the 62 (64.5%) were neonates. Among the neonates, the prevalence of DAMA was 2.8 fold higher in males compared to females. Respectively, out of 322 and 214 admitted male and female neonates 32 (9.9%) compared to 8 (3.7%) were DAMA (OR = 2.8; 95% CI = 1.26, 6.20). The prevalence of DAMA was 7.5% among neonates compared to 5.8% among other age groups combined; Z-statistic= 1.29 $p>0.05$ (Table 1). The mean duration of hospital stay in children DAMA was 4.9 ± 3.8 (95% CI = 4.19, 5.61) consecutive days. Religion, place of residence and ethnicity did not influence the incidence of DAMA. The distribution of the social class of the parents whose children were DAMA is shown in Fig. 1. Majority of the discharge documents were signed by the children's fathers (Fig. 2).

Out of the 110 children DAMA, 15(13.6%) were re-admitted 24 to 48 hours later, because parents noticed deterioration in clinical condition of the child. None of the re-admitted cases was a neonate. Parents of six neonates (1.1% of the 536 total neonatal admissions) threatened to leave and signed the discharge document but ultimately remained.

As shown in Table 2, the most common reason given by parents for DAMA was financial constraints. Among the neonates, parental disagreement with planned treatment and/or investigations ranked second. Other reasons are shown in rank order in Table 2. Malaria with severe anemia and neonatal jaundice were the most frequent diagnoses in children (neonates excluded) and neonates respectively (Table 3). The number of children admitted per month and their

Table 3. Main diagnosis in pediatric DAMA.

Neonates main diagnosis	Total no of admission	Total no of DAMA	Percent of DAMA
Neonatal jaundice	78	16	20.5
Sepsis	173	10	5.8
Birth asphyxia	111	6	5.4
Low birth weight	161	7	4.3
Others	13	1	7.7
Total	536	40	7.5
Older children (neonates excluded)			
Uncomplicated malaria	547	14	2.6
Malaria with severe anaemia	186	23	12.4
Cerebral malaria	24	1	4.2
Gastroenteritis	207	21	10.1
Pneumonia	110	5	4.5
Anaemia (excluding SCA)	45	1	2.2
Measles	45	2	4.4
Febrile convulsion	46	3	6.5
Total	1210	70	5.8

discharge diagnoses remained relatively stable throughout the period covered by this review.

Discussion

The overall prevalence rate (6.3%) of discharge against medical advice (DAMA) found in this study compared favorably with 5.3% reported from Taleghani Hospital in Tehran, Iran [18]. On the other hand, the prevalence rate in the present study was five folds higher than the figure reported seven years ago from the teaching hospital in Lagos, Nigeria, [9] suggesting an increased prevalence rate of DAMA. This may be accounted by the continuous increased hospital fees payable by the parents over the years. The findings in both the present and previous studies [10,19] supported that financial constraints was the major reason cited for DAMA. Indeed, Akande et al, [16] showed that parents have difficulty paying for the medical treatment of their children in Nigeria. Thus, that is, emphasizing the crucial role that financial costs to parents plays in determining their health care-seeking behavior.

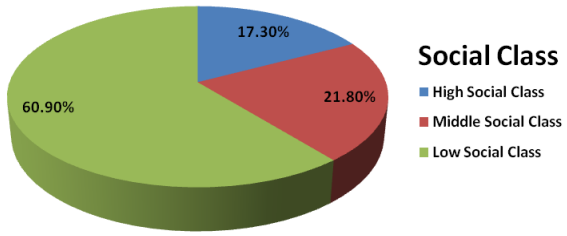

Fig. 1. Social class distribution of parents.

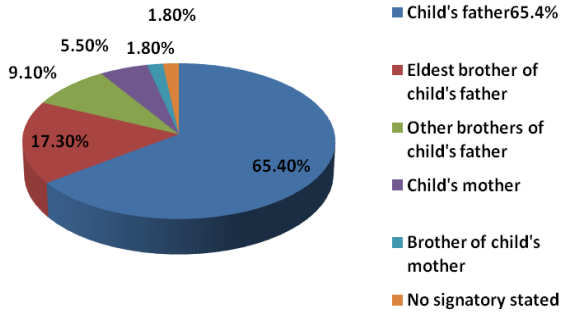

Fig. 2. Distribution of signatories to the discharge document.

The present study showed that the prevalence of DAMA varied with the age of the study population. It was most prevalent among infants (age less than 12 months), particularly among neonates. Data from other studies showed similar finding [9,10,15]. This may be accounted by the tendency for longer hospital stay in neonates, especially among preterm infants. It is also possible that the desire to take the newborn home for naming ceremony may have contributed to the higher prevalence observed among the neonates compared to

the older age groups. In fact naming ceremony was the reason given by parents in 10% of neonatal cases in this series. This situation is worrisome in that it has a great potential to hinder progress in attainment of the Millennium Development Goal number four (MDG 4) [20]. In sharp contrast, in Missouri, United States a 5-year retrospective medical records review showed that pediatric patients at risk of DAMA were older than 15 years [13]. The reason for this difference is not clear.

In the present study, there was a significant difference in prevalence of DAMA in relation to gender. Among male neonates, the risk of DAMA was 2.8 folds compared to female neonates. When all the age groups were combined, DAMA was still commoner among males. Similar male preponderance has also been reported from Iran [18]. This is surprising given the prime position occupied by male children in our society because parents perceive them as a means of social security for the future.

In consonance with other Nigerian studies [10,19] the principal reason cited by parents for DAMA was financial constraints. It implies that the ability or inability of parents to pay for their children's medical treatment plays the most important role in determining what treatment actions parents will take. In this regard, it might be a reflection of the general poverty in our society. In contrast, a study from Iran revealed that financial constraints ranked low among the reasons provided by parents for DAMA [18]. This is a finding which the authors attributed to availability of health insurance coverage for these parents. Indeed, in that study nearly all cases of DAMA in which the parents cited financial constraints, they lacked health insurance cover. In this regard, greater attention and commitment should be paid to strategies for implementation of the current National Health Insurance Scheme (NHIS) in Nigeria, whose major objective is protecting families from huge medical bills [21,22].

The common admission diagnoses of these patients suggested that most had serious, life-threatening illnesses and they left the hospital prior to receiving adequate treatment as evidenced by their high rate of re-admission. The high re-admission rate may be explained by the false parental judgment of improvement in this and other studies.8-10 In addition, based on the hospital policy, they do not refuse re-admission.

In the present study, the consent of the child's father was not sought in some cases before hospitalization of the child as a result of interspousal discord/separation. A study in Ilesha, Nigeria reported similar finding [23]. This is in conformity with what obtains in most traditional African communities where the father is the sole custodian of his family's resources and decides whether or not the family can bear the cost of the child's treatment [24]. This situation was further reflected in the signatories to the discharge document reported in this and previous studies [19].

One limitation of the present study was its retrospective nature that did not allow patient and outcome follow-up of non-completed treatment after leaving the hospital. It was also not possible to follow if the patients were admitted in other hospitals after leaving SPCH because the study was retrospective and was not designed to capture such data.

In conclusion, DAMA is common in pediatric practice in our society with the highest prevalence among infants; particularly among male neonates. Socioeconomic factors play a major role in its occurrence.

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