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Full Length Research Paper

Neonatal discharges against medical advice at a tertiary center in Bayelsa state: impact of policy changes over a 10-year period

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Discharge against medical advice among neonates is worrisome as there have been no substantial changes in neonatal mortality in Nigeria in the last decade. This study was carried out to determine the trend of discharge against medical advice among neonates in southern Nigeria and the impact of policy changes over a ten-year period. This retrospective study was carried out among neonates at the Special Care Baby Unit of the Niger Delta University Teaching Hospital, Bayelsa State. Relevant information was obtained and analyzed. The prevalence of neonatal discharge against medical advice was 3.97%, with a mean age of 4.81±5.33 days and a male to female ratio of 1.4:1. It declined from 1.82% in 2009 to 0.85% in 2011 and rose sharply to 9.37% in 2013. A50% fees waiver in 2015 had no impact, while a health insurance scheme in 2017 saw a decline to 3.52%. Neonatal sepsis was the most common diagnosis. Most [43 (56.2%)] discharges against medical advice occurred within six days of admission. Forty-three (58.90%) parents were in the low socioeconomic class and none had health insurance. A lack of finance was the major reason in 74% of neonates and in 76.7% of cases fathers were the main signatories. The prevalence of discharge against medical advice among neonates over the 10-year period remained high, with financial constraint being the main reason and sepsis the most common diagnosis. Universal health insurance will impact positively on itsprevalence and improve child health.

Keywords: Neonates, Discharge against medical advice, Ten years, Health Insurance and fees waiver

List of Abbreviations

BHIS: Bayelsa State Health Insurance Scheme; DAMA: Discharge Against Medical Advice; NDUTH: Niger Delta University Teaching Hospital; SCBU: Special Care Baby Unit

INTRODUCTION

Discharge against medical advice (DAMA) in the paediatric population is especially worrisome as children lack autonomy, more so in the neonatal age group who are the most vulnerable. (Ibekwe et al., 2009; National population commission Nigeria, 2019). Paediatricians deal with DAMA and its untoward outcomes in the neonatal population which include increased risk of complications, readmissions with longer hospital stay, greater financial and healthcare burden and death (Opara

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and Eke, 2010; Onankpa et al., 2014; Ikefuna and Emodi, 2002). DAMA prevalence in the neonatal population is quite high, ranging from 1.7% to 11.2% in regional studies to as low as 1.6% in studies from other regions of the world (Onankpa et al., 2014; Onyiriuka, 2011; Abdullahi, 2017; Aliyu and lawal, 2017; Al-Turkistani, 2013). At the Niger Delta University Teaching Hospital (NDUTH), paediatric DAMA prevalence was 7.5% over a two-year period (June 2011 to May 2013), with neonates making up 35.8% of the cases (Duru et al., 2014).

Various interventions have been put in place by the government and healthcare facilities to mitigate factors that can contribute to neonatal morbidity and mortality, including a reduction in DAMA prevalence. Most neonatal deaths are due to preventable causes, however, there have not been any substantial changes in neonatal mortality in the last decade; 40 and 39 deaths per 1,000 live births in 2008 and 2018 respectively (National population commission Nigeria, 2019). Since the last study on DAMA in the NDUTH(Duru et al., 2014), various changes have taken place, including the introduction of a 50% waiver for laboratory/radiologic investigations for all children in 2015 and the state government's introduction of the Bayelsa State Health Insurance Scheme (BHIS) for civil servants. The major contributory factor in paediatric DAMA (36.7%) in NDUTH was financial constraints and so the above interventions by the hospital and government were expected to bring about a positive impact in DAMA (Duru et al., 2014).It is based on this premise that this study was conceived to determine the impact, if any, of these factors on the trend of neonatal DAMA in NDUTH with respect to its prevalence, contributing factors and patient characteristics among others. This will aid in the actualization of the Sustainable Development Goal three, as Nigeria aims to achieve its neonatal mortality goal by 2030 (Federal Ministry of Health. Nigeria Every Newborn Action Plan, 2016).

The aim of this study was to find out the prevalence and trend of neonatal DAMA at the Special Care Baby Unit (SCBU) of the NDUTH, Bayelsa state, over a 10-year period from 2009 to 2018. It also aims to determine the reasons for DAMA and identify the impact, if any, of the partial hospital fees waiver and the state's health insurance scheme on the prevalence of neonatal DAMA.

MATERIALS AND METHODS

This was a ten-year retrospective analysis of all neonates who were DAMA at the NDUTH between January 2009 and December 2018. The total number of neonates admitted into the SCBU in the study period was retrieved from the records of the department of Paediatrics. All neonates who DAMA were identified and their folder numbers and subsequently their case notes retrieved from the medical records department of the hospital. Information retrieved and analyzed were; the age (in days) at admission, sex, working diagnosis, duration of hospital stay before DAMA and the reasons for DAMA, the parents' social class using the Oyedeji (1985) social classification system and their health insurance status. Data analysis was done using SPSS version 20 and results were presented as frequency tables and percentages.

RESULTS

A total of 1,840 neonates were admitted into the SCBU of the NDUTH over the 10-year period from January 2009 to December 2018. Seventy-three, comprising 3.97% of total admissions, were DAMA. There were 42 males (58%) and 31 females (42%), with a male to female ratio of 1.4: 1. Their mean age was 4.81±5.33 days. Only two (2.74%) of those that were DAMA had been admitted in hospital previously.

There was a decline in DAMA prevalence from 2009 – 2011, 1.82% down to 0.85%. A sharp rise was seen thereafter, from 7.48% in 2012 to 9.37% in 2013. Following the introduction of a 50% waiver for investigations in 2015, it rose from 3.18% to 6.80% in 2016. Following the introduction of the state health insurance scheme in 2017, DAMA prevalence declined to 3.52%, thereafter in 2018 it increased to 5.40%.

Table 1. DAMA trend by year

Year	Total admissions	Total DAMA	% DAMA
2009	165	3	1.82
2010	214	3	1.40
2011	236	2	0.85
2012	254	19	7.48
2013	128	12	9.37
2014	249	6	2.41
2015	157	5	3.18
2016	147	10	6.80
2017	142	5	3.52
2018	148	8	5.40
Total	**1840**	**73**	**3.97**

Table 2 shows the various diagnoses of newborns that were DAMA. Neonatal sepsis, neonatal jaundice and perinatal asphyxia were the most common diagnoses comprising 39 (53.4%), 26 (35.6%) and 18(24.7%) respectively. Four (5.5%) had pneumonia while 1 (1.4%) had meningitis.

Table 2. Diagnosis in those that DAMA

Diagnosis*	Number	%
Sepsis	39	53.4
Jaundice	26	35.6
Perinatal asphyxia	18	24.7
Prematurity	6	8.2
Congenital anomaly	5	6.8
Pneumonia	4	5.5
Meningitis	1	1.4
Others#	5	6.8

*some of the patients had more than one diagnosis
#others include: birth trauma, Posterior urethral valve, fracture

The mean duration of hospital stay was 5.86±3.9 days. Seven (9.6%) DAMA occurred less than 24hrs after admission, majority [43 (56.2%)] of DAMA occurred in the first 6 days of admission and only 3 (4.1%) occurred after two weeks of admission. [Table 3]. Forty-three (58.90%) of them had parents in the low socioeconomic class followed by 28 (38.4%) and 2 (2.7%) with parents in the middle and upper socioeconomic classes respectively.

Table 3. DAMA by duration of hospital stay and parental social class

Duration of stay	Number	%
<1 day	7	9.6
1 day - < 1 week	36	49.3
1 - < 2 weeks	27	37.0
≥ 2 weeks	3	4.1
Total	**73**	**100**
Social class	**Number**	**%**
Upper	2	2.7
Middle	28	38.4
Lower	43	58.9
Total	**73**	**100**
Health insurance	**Number**	**%**
Yes	0	0
No	73	100

The commonest reason for DAMA was lack of funds in 54 (74.0%) followed by child's perceived improvement in 9 (12.3%), while 2 (2.7%) were DAMA due to prolonged hospital stay. The father was the main signatory to the discharge document in 56 (76.7%) cases. There were no third-party signatories.

Table 4. Reason for DAMA and signatories to the discharge document

Reason	Number	%
Lack of funds	54	74.0
Perceived improvement	9	12.3
Long hospital stay	2	2.7
Family issues	1	1.4
Others *	7	9.6
Total	73	100
Signatory	**Number**	**%**
Father	56	76.7
Mother	17	23.3
Total	73	100

*Others include dissatisfaction with medical care, perception that the cause of the illness is spiritual, long distance from home and risk of loss of job due to time away.

Eighteen (24.7%) of the newborns who were DAMA had no siblings while 14 (19.2%) and 12 (16.4%) had two siblings and one sibling respectively. Only 6 (8.2%) of them had more than 5 siblings while 2 (2.7%) had 5 siblings. [Table 5]. Majority [45(61.6%)] of mothers had secondary level of education, followed by 16 (21.9%) with primary and 5 (6.8%) with tertiary level of education respectively. Information was unavailable for 7 (9.6%) patients.

Table 5. DAMA by number of siblings and mothers' level of education

Siblings	Number	%
0	18	24.7
1	12	16.4
2	14	19.2
3	6	8.2
4	4	5.5
5	2	2.7
>5	6	8.2
Missing information	11	15.1
Total	73	100
Mother's level of education	**Number**	**%**
Primary	16	21.9
Secondary	45	61.6
Tertiary	5	6.8
Missing information	7	9.6
Total	73	100

DISCUSSION

The prevalence of neonatal DAMA of 3.97% from this study was similar to findings in other parts of Nigeria (Opara and Eke, 2010; Aliyu and lawal, 2017; Ike and Oyetunde, 2015). In contrast however, Al-Turkistani, 2013 and Onankpa et al., 2014 had lower prevalence rates of 1.7% and 1.6% respectively, while other studies among neonates in Africa and Asia had much higher rates ranging from 7.5% to 25.4% (Onyiriuka, 2011; Abdullahi, 2017; Pokhrel and Bhurtel, 2020; Devpura et al., 2016). Though Al-Turkistani (2013)studied neonates over a period of 10 years like the index study, his study was carried out in Saudi Arabia where healthcare is free for all citizens. Onankpa et al (2014) on the other hand, studied neonates in northern Nigeria, where differences in ethnicity and sociocultural factors may be contributory.

The most common diagnosis among neonates that were DAMA over the study period in this present study was neonatal sepsis, followed by neonatal jaundice and perinatal asphyxia, similar to findings in other studies worldwide (Opara and Eke, 2010; Onankpa et al., 2014; Al-Turkistani, 2013; Pokhrel and Bhurtel, 2020). This is expected as sepsis is the leading cause of neonatal morbidity and mortality (Federal Ministry of Health. Nigeria Every Newborn Action Plan, 2016). Only 8.2% of the neonates who were DAMA in the index study were premature. This might be because the parents would more likely be easily convinced about the need for specialist care for a “small” preterm than for a “big” and “healthy-looking” term baby (Opara and Eke, 2010; Al-Turkistani, 2013).

Most DAMA occurred within the first week of admission. This finding is in keeping with other studies worldwide (Opara and Eke, 2010; Abdullahi, 2017; Pokhrel and Bhurtel, 2020; Joel-Medewase, 2014). This might be because mothers who delivered vaginally and even mothers who delivered via Caesarean section would have been discharged and most families would desire to go home at this time. The least number of DAMA were after two weeks, though not surprising as most newborns who survived past the first week will most likely have recovered and be discharged by that time. There were two (2.74%) readmissions in this study, while one other newborn who came back for readmission was more than 28 days old at the time and so was admitted into the children’s ward. Findings from other studies show a readmission rate of 1.7% (Opara and Eke, 2010; Onankpa et al., 2014). The reasons for these low readmission rates are not apparent and raises more questions concerning the outcome in these patients following DAMA. This emphasizes the need for follow up of newborns even after DAMA.

More than half of the parents were in the low socioeconomic class in this present study, similar to other studies in developing countries (Opara and Eke, 2010; Onankpa et al., 2014; Abdullahi, 2017; Aliyu and lawal, 2017; Pokhrel and Bhurtel, 2020). This contrasts with findings by Joel-Medewase et al., 2014 where mostfamilies who discharged their children against medical advice belonged to the upper social class. This is not surprising as Joel-Medewase et al., 2014 carried out their study in a private hospital in Nigeria, which most low-income earners cannot afford. None of the neonates in this index study had any form of health insurance, similar to findings by Nduet al., 2016 in Nigeria. This is probably because parents are unlikely to discharge their children and wards against medical advice when they are not paying “out of pocket” (Taghizadieh et al., 2016).

Lack of funds was the major reason for DAMA among the neonates over the 10-year period of this study. This is in keeping with findings from many other studies (Opara and Eke, 2010; Onankpa et al., 2014; Abdullahi, 2017; Aliyu and lawal, 2017; Pokhrel and Bhurtel, 2020).This is unlike the findings by Joel-Medewaseet al., 2014and Al-Turkistani 2013, where the major reason was the neonates being well enough to be discharged and being domiciled in other regions respectively. The findings of low socioeconomic class and lack of health insurance are in keeping with the major reason for DAMA in this study. The introduction of a 50% waiver for all investigations by the hospital in 2015 did not affect the prevalence of DAMA in the SCBU as Civil Servants in the state were owed salary for six months at about the same time, coupled with a lack of universal health coverage in the state (We owe LG workers nine-month salary, not 16 – Bayelsa govt, 2016). Following the introduction of the state health insurance scheme in 2017, DAMA prevalence declined to 3.52%, thereafter in 2018 it increased to 5.40%, though it cannot be attributed to the BHIS as none of the patients who DAMA were enrollees. Nigeria’s economic recession of 2016 and subsequent upward review of the costs of hospital services in 2016may be contributory (Gabriel et al., 2016).

The father was the signatory to the discharge document in majority of the DAMA cases, which is in keeping with findings from other studies (Opara and Eke, 2010; Onankpa et al., 2014; Abdullahi, 2017; Al-Turkistani, 2013). This is not surprising as Nigeria’s sociocultural values and practices are largely patriarchal (Nwokocha, 2007). Also, most families of the DAMA patients had at most two other children and most of the mothers had secondary education, followed by primary education. This is important because neonatal mortality declines with increasing maternal education, and also increases with increasing number of siblings (National population commission Nigeria, 2019). However, findings from this study reveals an important fact that maternal education alone, without the financial capability to pay for medical services especially in centers where majority of patients do out of pocket payments, will not have the desired impact in the prevention of DAMA in neonates.

CONCLUSION

The prevalence of DAMA among neonates in the NDUTH is high with financial constraint being the reason in the majority. Universal health insurance availability and affordability will impact positively on neonatal DAMA prevalence and boost child health indices, as this study has pointed out the persistence of financial constraint which remained unchanged over the 10-year period.

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