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HEALTH SYSTEM AND PATIENT-RELATED FACTORS AFFECTING WOMEN AFTER STILLBIRTH IN PORT HARCOURT

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Abstract: Background: Nigeria makes a substantial contribution to the global burden of stillbirths. However, data on women's experiences and care received at the time of stillbirth are limited. This study aimed to investigate the experiences and patientrelated and health system factors in women who had a stillbirth in a previous pregnancy in the past 15 years.

Methodology: This was a cross-sectional survey of 64 pregnant women, attending antenatal care in Port-Harcourt, who had stillbirth in a previous pregnancy. Consenting participants were interviewed using a predesigned and pretested questionnaire. Information on sociodemographic characteristics, pregnancy history including health-seeking behaviour in the stillbirth pregnancy, and women's experiences and appraisal of care provided by healthcare workers during the stillbirth event, were collected. Data was analysed using descriptive statistics and presented as numbers, Means and Percentages in tables.

Results: Most participants (92.2%) experienced one stillbirth. The majority (71.9%) had stillbirths at 9 months gestation. Almost all pregnancies (98.4%) were singleton, and most mothers (81.3%) reported attending antenatal care regularly. The majority of deliveries (89.1%) occurred in healthcare facilities. Post-stillbirth, 45.3% of the mothers stayed in an open postnatal ward, 56.3% saw their stillborn child, with 39.1% of them not seeing the baby at all, and only 4.69% saw and held their dead baby. Over half (56.3%) found healthcare workers supportive and satisfied with their role, but (45.3%) did not receive postnatal care or counselling. Concerning performing an autopsy, 60.9% would not have requested one.

Conclusion: Most stillbirths were term pregnancies, occurred intrapartum, and were in-facility deliveries. Delays in reporting complications and receiving care at the hospital contributed to the stillbirths. A good proportion of the women were not shown and did not hold their babies and were admitted to a standard postnatal ward following delivery, factors which are predictive of increased psychological morbidity. However, most women were satisfied with the care and support they received from healthcare workers during the delivery.

Keywords*:* Stillbirths; Patient-Related Factors; Health System Factors; Women's Experiences; Perinatal Mortality.

Introduction: A baby born with no signs of life, at or after 28 weeks of gestation, is defined as a stillbirth according to the World Health Organization.[1] About 98% of stillbirths occur in low-income and middle-income countries.[2] Available data indicate that Nigeria has the second highest rate of stillbirths in the world, after Pakistan.[3] Despite its high prevalence, there is a persisting lack of accurate data on the risk factors for stillbirths in Nigeria.[4] While hospital-record studies provide substantial insights into the nature of the problem, especially the medical factors associated with stillbirths, they are limited in their usefulness to define the non-medical or patient-related risk factors and cannot be used in designing interventions at that level. A large proportion of births (over 60%) occur outside health facilities in Nigeria, in the homes of traditional and faith-based birth attendants.[5] Unfortunately, stillbirths occurring in such settings are difficult to capture, especially when traditional norms do not allow the classification of babies that show no signs of life at birth,[4,6] and insights into what transpired at such birth can only be gotten from the women who subsequently, after such regrettable loss, often register for antenatal care and delivery in health institutions. Studies have reported the main risk factors associated with stillbirth as lack of antenatal care, poor antenatal clinic attendance, multiparty, illiteracy and late presentation of complicated labor to the facility.[7-9] Socioeconomic deprivation and domestic violence have also been associated with late stillbirths.[10] One study has reported that null parity was significantly associated with stillbirth,[11] and another reported that the risk of stillbirth in subsequent pregnancies is about 5-fold higher in women who had a stillbirth in their first pregnancy, compared to women who had a live birth. No expectant parent is prepared for the shock of a diagnosis and giving birth to a stillborn child, and the trauma of such experience is associated with increased anxiety, depression and post-traumatic stress persisting long after the event and into the subsequent pregnancy. Factors predictive of psychological morbidity after stillbirth have been reported to include: a longer duration from the diagnosis of stillbirth to the delivery of the baby, not seeing and holding the baby after delivery as desired, young maternal age, being unmarried, low level of education, a short period since after the stillbirth, and no subsequent pregnancy after the stillbirth.[15-18] The mother sharing memories of her baby, and caregivers providing social and professional support to the mother, has been shown to be associated with better mental health following a stillbirth.[18,19] However, data on experiences and care received at the time of stillbirth are limited but are required to improve the care women receive in order to reduce the psychological morbidity they are prone to. We conducted a cross-sectional survey to give better insights into the experiences of these women and elucidate the social, health system and patient-related factors among women who had stillbirths, to aid in designing interventions needed to improve the care these women receive. We therefore sought to investigate the experiences and patient & health system-related factors in women who have had stillbirths. Findings from this study will serve to provide the basis for evidence-based recommendations and interventions that may improve the care of women with stillbirth.

Methodology:

Study site/area:

This study was conducted at the antenatal clinics of the Rivers State University Teaching Hospital (RSUTH), a tertiary hospital that serves as a referral center, and the four neighboring Comprehensive Health Centers in Port Harcourt City Local Government area (Orogbum, Churchill, Potts-Johnson and Okija), all owned and funded by the Government of Rivers State. There is no intervening secondary healthcare facility in Port-Harcourt local Government area. The hospitals provide antenatal care and delivery services to women in the old Port Harcourt Township. Port-Harcourt is a state capital, a metropolitan oil-rich city, and made up of multi-ethnic and multicultural residents. Port Harcourt is predominately Christian, as is most of Southern Nigeria. Ethical approval (RSUTH/REC/2024463) was obtained from the Research and Ethics Committee of the RSUTH and endorsed by the Medical Officer for Health of the Port Harcourt City Local Government Area, before the commencement of the study. The data collectors were trained and strictly supervised on adherence to the principle of privacy & confidentiality and expressing empathy with the plight of the bereaved parent and assuring them of the benefits derivable from the study findings.

Study design and population:

A cross-sectional study was carried out. Consenting participants were interviewed using a predesigned and pretested questionnaire that required about ten minutes to complete. The study population were pregnant women aged ≥18 years, booked for antenatal care at the study areas, who have had a stillbirth delivery in a previous pregnancy within 15 years. Stillbirth in this study was taken as the death of a foetus from 28 weeks of gestation upwards, without any sign of life at birth.

Sample size determination:

The minimum sample size required for the study was calculated using the Cochran formula.

$$n = Z^2 \frac{pq(1-p)}{e^2}$$

Where: n = the desired sample size; Z = the Z score of 1.96, which corresponds to 95% confidence level,P = prevalence of stillbirth according to a study by Okonofua et al. of 3.96%.[4] q = 1-p= 1.00.0396or0.9604; and e = degree of accuracy desired of 0.05. The calculated sample size was n = 58.4. Allowing for 10% non-response, the minimum sample size adopted was 64.

Sampling Technique / Procedures:

All consecutive and consenting booked pregnant women, with a history of stillbirth, were recruited daily for the study, simultaneously from all centers, until the required sample size of 64 was attained. A period of five months (April to August 2024) was required to achieve the required number.

Data collection instrument/methods:

The women who agreed to participate and gave informed written consent were interviewed (face-to-face) using a predesigned, pretested and validated questionnaire in the English language. The standardized questionnaire was purposively designed with closed and open-ended questions. The questionnaire was pretested on four patients with stillbirth, selected purposively, and these women were excluded from the study. Necessary modifications were thereafter made to the questionnaire before the start of the study. Three of the investigators conducted all the interviews. Close supervision

and daily check-ups of the data were carried out by the principal investigator to improve the quality of the data. The participants were instructed to answer the questions using their prior stillbirth as the reference event. The questionnaire was divided into three sections. The first part solicited information on the relevant socio demographic characteristics of the women at the time of their stillbirth, including maternal age, parity, highest educational attainment, marital status, ANC booking status, occupation, place of residence and smoking/drinking habits. The second part probed the medical history and information on pregnancy, labor and delivery, including the health-seeking behavior and possible causes of delay in receiving care. The third part was designed to investigate the women's experiences at the birth facility before, during and after the stillbirth delivery, including their thoughts about the entire process and lessons learnt.

Data Analysis:

Data was extracted from the questionnaires into Microsoft Excel ® version 2019, coded and cleaned, then imported into the Statistical Package for Social Sciences (SPSS) version 20(SPSS Inc., Chicago, Illinois, USA) for analysis. Continuous variables were presented as numbers and means, while categorical data were presented as frequencies and percentages (%), and the results were displayed in tables.

Results:

There were 64 participants and Table 1 shows their socio demographic characteristics. The mean time from stillbirth to assessment was 3.89±3.17 years (range 1 – 13), with most respondents (46.88%) within 2 years. The mothers were predominantly in the age group of 25-34 years old (75.0%), with a mean maternal age of 28.53±4.51 years. The highest proportion of mothers had tertiary education (51.6%), were married (82.8%), and lived in urban areas (92.2%). Over half of the mothers (54.7%) had no previous births before the stillbirth. Their most common occupation was business (40.6%), and regarding social habits (self-admission of smoking and alcohol consumption), 81.3% reported none, while 18.8% consumed alcohol and none reported smoking cigarettes.

Table 1: Socio-demographic characteristics of the respondents (n=64).

Characteristics	Frequency	Percent (%)
Time since stillbirth (years)		
≤2	30	46.9
	19	
	15	
	∞	
	[1-13]	
3-5	29.7	
>5	23.4	
Mean ± SD	3.89±3.17	
Range		

Maternal age at stillbirth (years)		
<25	10	15.6
25-34	48	75.0
≥35	6	9.4
Mean ± SD	28.53±4.51∞	
Range	[18-39]	
Previous births before stillbirth		
35	54.7	
29		
	∞	
[0-4]		
0		
45.3		
≥1		
Mean ± SD	0.66±0.91	
Range		
Highest educational attainment	4	6.3
Primary		
27 Secondary		42.1
33 Tertiary		51.6
Marital status at stillbirth		
53 Married		82.8
7 Cohabiting		10.9
4 Single		6.3
Occupation		
26 Business		40.6
18 Civil/Public Servants		28.1
12 Housewife		18.8
8 Others		12.5
Residential area		

59 Urban	92.2
5 Rural	7.8
Social habits	
52 None	81.2
12	18.8

Alcohol
∞=Mean ± Standard Deviation

Table 2 displays the pregnancy characteristics and associated medical complications among the respondents. Most participants (92.2%) experienced one stillbirth. The majority (71.9%) had stillbirths at 9 months gestation, with a mean gestational age of 8.50±0.84 months. Almost all pregnancies (98.4%) were singleton. Most mothers (81.3%) registered and reported attending antenatal care regularly. Medical complications were reported by 35.9% of participants, with hypertension in pregnancy being the most common (65.4% of complications). Regarding foetal status, 54.7% reported the baby was alive before labour or delivery, with subsequent intrapartum death. Half of the participants (50.0%) experienced spontaneous labour, while 40.6% were induced. Among those who went into labour, 77.6% did so for less than 24 hours, with 22.4% having prolonged labour (>24 hours).

Table 2: Pregnancy characteristics and associated medical complications (n=64).

Characteristics	**Frequency**	**Percent (%)**
Number of stillbirths experienced		
1	59	92.2
2	5	7.8
How far pregnant before stillbirth (months)		
	18	28.1
<9		
46	71.9	
∞		
[7-9]		
9		
Mean ± SD	8.50±0.84	
Range		
Singleton or multiple pregnancy		
Singleton	63	98.4
Twins	1	1.6
Did you register for Antenatal Care?		

Did & attended regularly	52	81.2
Did but not regular	4	6.3
Did not register	8	12.5
Any medical complications?		
No	41	64.1
Yes	23	35.9
Type of medical complications (n=23)		
Hypertension in pregnancy	15	65.4
HIV Infection	2	8.7
Febrile illness	2	8.7
Asthma	1	4.3
Gestational Diabetes Mellitus	1	4.3
Postdate pregnancy	1	4.3
Trauma	1	4.3
Was baby alive before going into labour or delivery?		
Yes	35	54.7
No	22	34.4
Unsure	7	10.9
Did you labour?		
Spontaneous	32	50.0
Induced	26	40.6
No	6	9.4
How Long were you in labour (n=58)		
<24 hours	45	77.6
>24 hours	13	22.4

As shown in Table 3, the majority of deliveries (89.1%) occurred in healthcare facilities, with teaching hospitals being the most common (35.9%), while 10.9% were deliveries outside healthcare facilities. Vaginal delivery was the predominant mode of delivery (68.8%), followed by caesarean section (28.1%). Male stillborn (65.6%) outnumbered female babies, with most mothers (67.2%) unable to recall their stillborn's weight. Labour complications were reported by 60.9% of the participants, with premature rupture of membranes (25.7%) and abruptio placenta (20.5%) being the most frequent. Other notable complications included prolonged labour (10.3%), obstructed labour (7.7%), and postdate pregnancies (7.7%).

Table 3: Delivery outcome and labour complications among respondents (n=64).

Characteristics	Frequency	Percent (%)
Where delivery occurred		
Teaching Hospital	23	35.9

Private Clinic	12	18.7
Midwife run Maternity	11	17.2
General Hospital	6	9.4
Health Centre	5	7.8
Church	3	4.7
TBA	3	4.7
Home	1	1.6
Method of delivery		
Vaginal	44	68.8
Caesarean	18	28.1
Laparotomy (for uterine rupture)	2	3.1
Stillborn Sex		
Male	42	65.6
Female	22	34.4
Stillborn Weight (grams)		
<2500	4	6.3
2500-3999	15	23.4
≥4000	2	3.1
Can't recall	43	67.2
Any labour complication		
Yes	39	60.9
No	25	39.1
Type of labour complication (n=39)		
Premature rupture of membranes	10	25.7
Abruptio placentae	8	20.5
Prolonged labour	4	10.3
Obstructed labour	3	7.7
Postdate pregnancy	3	7.7
Breech presentation	2	5.1
Febrile illness	2	5.1
Preeclampsia	2	5.1
Previous caesarean section	2	5.1

Uterine rupture	2	5.1
Intrauterine growth restriction	1	2.6

Table 4 shows the health-seeking behaviour and causes of delays in getting care among the respondents. Of those who reported a pregnancy complication (n=34), 70.6% did so immediately. Of those that delayed reporting (n=10), 20% did not report at all while 80% waited for some time, up to a day or more; with 70% not thinking the complication was serious enough. Regarding treatment after arrival at the care Centre, 68.8% received immediate care; for those who experienced delays in receiving treatment (n=17), the primary reasons (multiple responses) were doctor was not immediately available (50%), followed by engaging in prayers for spiritual healing first (18.8%) and failure to give consent early (12.5%). Other reasons for treatment delay included lack of funds, midwife unavailability at the Maternity, and defaulting on referral.

Table 4: Health-seeking behaviour and delays in getting care (n=64).

Characteristics	Frequency	Percent (%)
How long to report complication (n=34)		
Immediately	24	70.6
Delayed reporting	10	29.4
Duration of delay before reporting (n=10)		
After a day	4	40.0
Waited for some time	4	40.0
Was not reported	2	20.0
What caused the delay in reporting (n=10)		
Did not think it was a serious	7	70.0
Family insisted on waiting	1	10.0
Nighttime of day	1	10.0
Partner not being around	1	10.0
How soon did you receive treatment after arrival at care centre		
Immediately	44	68.8
After some delay	17	26.6
What delayed receiving treatment after arrival at the care centre (n=17) (multiple responses)		
Defaulted	2	12.5
Doctor not immediately available	8	50.0

Failure to give consent early	2	12.5
Midwife not within reach	1	6.3
No Cash at hand to pay for treatment	1	6.3
Offered Prayers first	3	18.8

Regarding the women's experiences and perceptions related to stillbirth (Table 5), 39.1% of the participants suspected or had a premonition something was wrong with their baby, with 88% of them citing lack of or reduced foetal movement as the reason. Among those who subsequently contacted healthcare (n=30), 86.7% were examined and admitted to the facility. Most of the mothers 45.3% were delivered within 24 hours of confirmation of stillbirth, while 15.6% remained undelivered for more than a day. Doctors were the primary informants of stillbirth (46.9%), followed by midwives (28.1%). Over half of the mothers (54.7%) were unsatisfied with the manner the information was passed and the explanation given for the baby's death. Most participants (70.3%) reported adequate finances to cover their pregnancy care and delivery. Concerning performing an autopsy, 60.9% would not have requested one, with the main reasons being that the cause of death was not suspicious (28.2%), perceived lack of usefulness (28.2%), and it would not bring back the dead baby (25.6%).

Table 5: Women's experiences and perceptions related to stillbirth (n=64).

Characteristics	Frequency	Percent (%)
Did you have premonition or suspect something was wrong?		
No	39	60.9
Yes	25	39.1
If yes to above, how? (n=25)		
Absence or reduced foetal movement	22	88.0
Other reasons	3	12.0
Did you contact healthcare (n=30)		
Yes (examined & admitted)	26	86.7
No/waited for next checkup	3	10.0
Yes (referred but defaulted)	1	3.3
How long did it take after knowing of foetal death before delivery started?		
<24 hours	29	45.3
Did not know baby was dead	25	39.1
>24 hours	10	15.6
Who informed you of baby's death?		
Doctor	30	46.9
Midwife	18	28.1
Others	16	25.0

Were you satisfied with the manner and explanation given?		
No	35	54.7
Yes	29	45.3
How do you rate your available finances		
Adequate	45	70.3
Not Adequate	14	21.9
Fair	5	7.8
Would you have wanted an autopsy?		
No	39	60.9
Yes	25	39.1
If not (for autopsy) why? (n=39)		
Cause was not suspicious	11	28.2
Of what use	11	28.2
Won't bring baby back	10	25.6
	7	18.0
Other reasons		

Regarding post-stillbirth experiences and appraisal of healthcare workers' role (Table 6), 45.3% of the mothers stayed in postnatal wards with other mothers having livebirths, while 34.4% remained in the labour ward and were discharged from there, with only 14.1% kept in a private room in the company of their family members. Most mothers (56.2%) only saw their stillborn child, with 39.1% of them not seeing the baby at all, and only 4.7% saw and held their dead baby. Over half of the mothers (56.3%) found healthcare workers supportive and were satisfied with their role, while 28.1% had unpleasant or upsetting experiences. Most (45.3%) of the mothers did not receive postnatal care or counseling. Among the participants, 40.6% reported worrying about a repeat in future pregnancies, with 80.8% of these fearing a recurrence. Given the circumstances of their stillbirth and what they would have done differently to prevent it, 87.4% of the women opted to register and deliver to a bigger/better hospital.

Table 6: Women's experiences and appraisal after stillbirth and healthcare received (n=64)

Characteristics	Frequency	Percent (%)
Where did you stay after delivery?		
Postnatal ward (with mothers of livebirths)	29	45.3
Labour ward	22	34.4
Private room with family	9	14.1
Church room/home	4	6.2
Did you see and hold your baby?		

Saw alone	36	56.2
Not shown	25	39.1
Saw & held	3	4.7
Thoughts about role of health workers		
Supportive/satisfied	36	56.3
Unpleasant/upsetting	18	28.1
Distanced themselves/Indifferent	8	12.5
Not satisfied	2	3.1
Did you receive postnatal care & Counselling		
No &not counselled	29	45.3
Yes (counselled)	25	39.1
Yes (but not counselled)	10	15.6
Do you worry about a repeat occurrence?		
No	38	59.4
Yes	26	40.6
Why worry (n=26)		
Fear of recurrence	21	80.8
Still not certain of the cause	5	19.2
Given the circumstances what would you have done differently to prevent it?		
Register and deliver in a bigger/better hospital	56	87.4
Attend antenatal care better	4	6.3
Nothing would have made a difference	4	6.3

Discussion:

This study was conceptualized with the goal of highlighting patient-related& health system factors, and the experiences of women at stillbirth. We believe that the findings may be useful for designing appropriate care for women having stillbirth and their education on preventing contributory factors. Most of the stillbirths were term pregnancies, occurred intrapartum, and were in-facility deliveries. Delays in reporting complications and receiving care at the hospital contributed to the stillbirths. There were findings of factors predictive of psychological morbidity, but overall, most women were satisfied with the care they received during the event. The study revealed that most stillbirths occurred at the time of delivery (intrapartum). A previous study has shown that in countries with high stillbirth rates, fresh stillbirths form a larger proportion of the stillbirths. This is worrisome as it indicates that the timing and method of delivery may not have followed standard obstetric practices. or there may have

been a delayed presentation to the hospital. This observation is crucial and warrants further studies to elucidate the reasons why women suffer foetal losses more during labour and delivery. Studies have shown lack of antenatal care to be strongly associated with an increased risk of stillbirth and that the booking status was a direct correlate of educational attainment; with higher educational attainment being associated with a low stillbirth rate. It was therefore surprising that over 90% of our respondents had secondary education or more, and over 80% of them claimed to have registered for and regularly attended antenatal care. The difference in our finding of antenatal attendance may insinuate recall bias due to the time passed since the event and possibly human nature of trying to exonerate self from any blame. Labour complications were reported by about two-thirds of the participants, with premature rupture of the foetal membranes (PROM) the most common, followed by abruptio placenta, prolonged and obstructed labour, and postdate pregnancy. Premature rupture of the membranes may predispose to foetal death either through infection or by precipitating preterm delivery.On the other hand, over 65% of reported medical complications were due to hypertension. Hypertensive disorders of pregnancy have been reported by previous researchers as an important determinant of stillbirth. However, since these were reported by the women, it would not be exclusive and would be limited by the knowledge of the women, not forgetting that some stillbirth causes cannot be determined. Studies have reported non-medical contributory factors such as delays in seeking medical care and delays in receiving appropriate management as common conditions that lead to stillbirth. In this study, delay in reporting complications occurred in about a third of the respondents, with 70% of them thinking the event was not serious enough. Another third reported delay in receiving treatment at the care Centre, and although the most common reason for this was that the doctor was not immediately available, interestingly other reported reasons included first offering supplication for divine intervention and failure to consent for treatment early enough. While agreeing that a causal relationship between these reported delays and stillbirth cannot be established with this type of study, their potential role is noteworthy. The impact of delays on adverse maternal and perinatal outcomes in pregnancy has been highlighted by much earlier studies. A majority of the women in this study reported seeing their stillborn baby, though about 40% were not shown at all and only about 5% saw and held their baby. Also, most women reported being satisfied with the care and support they received from healthcare workers. A similar study reported 98% saw and 82% held their stillborn babies, with 82% being satisfied with the support from healthcare professionals previously, it was common that the mother was not given the opportunity to see her dead baby, and this still applies in many cultures. In recent times, mothers are encouraged to see, hold and dress their baby, the general opinion being that seeing and holding the stillborn facilitates healthy mourning and reduces the risk of long-term psychological morbidity;[16,28,29] while sharing memories, as well as social and professional support, improves mental health following stillbirth. Other factors predictive of psychological morbidity after stillbirth have been reported as a longtime from diagnosis to delivery (>24 hours) and being at the postnatal ward after delivery and having to deal with liveborn babies. [26] The time from diagnosis to delivery in most of our study participants was less than 24 hours, but the majority were kept in the postnatal ward after delivery

and had to deal with the cries from live births of other women. Improving this in our environment will be difficult as bed spaces are limited, most wards are congested and will not permit the privacy and company of family members that is desirable. The risk of stillbirth in subsequent pregnancy is approximately five times higher in women who had a stillbirth in their first pregnancy, compared to women who had a livebirth.[12] This study's finding agrees with the literature that stillbirths occur more in those who have not given birth previously. Unfortunately, most of them reported not receiving postnatal care and counselling, that would have equipped them to prevent future occurrences.

Limitation: There is inevitably a risk of recall bias concerning the descriptive variables due to the time passed since after the event and the human nature of trying to exonerate self from blame. However, a study has shown that the recollection of potentially traumatic events is more accurate than that of other life events. [31] The calculation of a minimum sample size, multicenter recruitment of participants, and the quality of the questionnaire can be considered as strengths of the study.

Conclusion:

Most of the stillbirths were term pregnancies, occurred intrapartum, and were in-facility deliveries. Delays in reporting complications and receiving care at the hospital contributed to the stillbirths. A good proportion of the women were not shown and did not hold their babies and were admitted to a standard postnatal ward following delivery. These factors are predictive of increased psychological morbidity. However, most women were satisfied with the care and support they received from healthcare workers during the delivery.It is therefore recommended that there should be continuous training of healthcare workers on care and counselling post stillbirths, provision of private rooms in future maternity ward construction to allow privacy and companionship of family members, and regular facility-based audits of stillbirths to identify facility delays that can be improved upon.

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