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Knowledge and Utilization of Antishock Garment in Prevention of Pospartum Haemorrhagic Shock in Specialist Hospital Sokoto, Sokoto State Nigeria

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Abstract
Non-pneumatic anti-shock garment (NASG) is a first aid lifesaving lower body pressure device that reverses hypovolaemic shock and decreases obstetric haemorrhage thereby decreasing maternal morbidity and mortality due to post-partum haemorrhage (PPH).This study, assessed knowledge and utilization of anti-shock garment in the prevention of PPH shock among health care professionals of maternity unit of Specialist Hospital Sokoto (SHS). A descriptive cross-sectional survey design and census sampling technique were used, in which 100 questionnaires were administered for the study. Only 84(84%) returned fully completed questionnaire which was analyzed using Statistical Package for Social Science (SPSS) version 22.Results obtained showed that respondents have good knowledge of NASG, On perceived hindrance to utilization of NASG , Non availability of NASG, inexperience on the part of the health workers, lack of skilled personnel and not aware of the existence of NASG in the ward/unit poses serious hindrances. On availability of NASG, the results obtained also showed that ANC have no available NASG, Unbooked labor room, Balaraba ward, "A" ward. "B" ward, "C" ward have only one each available and functional each, while Main labor room had 2 NASG available, functional. Findings on reported utilization of NASG revealed that wards/units in SHS showed that not all PPH cases benefited from NASG during the period of study. It was concluded that health care professionals in SSH had good knowledge and utilization with serious perceived hindrances to utilization of NASG, however there was inadequacy of NASG. It is recommended that non-pneumatic anti-shock garment should be made available by management of SHS for the management of postpartum haemorrhage with workers adequately trained on its utilization.

Keywords: Anti-shock garment, Haemorrhage, Hospital, Knowledge, Non-pneumatic, Utilization.

INTRODUCTION
The world is committed toward reducing the burden of maternal mortality, this lead to the formulation of sustainable development goals (SDG) by the year 2015 which is a progress from Millennium development goals (MDG) and was adopted by 189 member states. Sustainable development goal three (SDG3) is aimed atreducing the global maternal mortality ratio to less than 70 per 100 000 live births by the year 2030 (United Nation, 2015).
Postpartum haemorrhage (PPH) is the single largest cause of maternal death worldwide accounting for one third (1/3) of all deaths (World Health Organization, 2010).In developing countries, mortality from PPH remains high and recent studies have shown that PPH causes up to 60 per cent of all maternal deaths (WHO,2015).

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Postpartum haemorrhage is a global public health problem which is the most common cause of maternal mortality, women with PPH in developing countries often present in critical condition, when treatment might be insufficient to save lives. Few studies have shown that application of non-pneumatic anti-shock garment (NASG) could improve maternal survival (UNICEF, 2015).

The health of women in Nigeria is extremely poor, and the rate of maternal mortality in our nation is among the highest in the world (WHO, UNICEF, UNFPA & World Bank, 2012) Northern Nigeria has some of the worst maternal indices in the world. While the South West and South East recorded 165 per 100,000 and 286 per 100,000 respectively, the rate is much higher in the North West and North East, which had 1,025 per 100,000 and 1549 per 100,000 respectively. Urban areas had lower rates of maternal mortality of 351 per 100,000 live births, compared to rural areas in Nigeria with recorded rates of 828 per 100,000 (UNICEF & USAID, 2010).

Globally, a woman dies every seven minutes from the PPH. These deaths can be prevented with skilled attendance, comprehensive emergency obstetric care and use of simple technology like the anti-shock garment (WHO, 2010). In 2006, the Joint Statement of the International Confederation of Midwives (ICM) and the Federation International of Gynaecology and Obstetrics (FIGO) recommended research on Anti-shock garments to reduce mortality among women suffering from postpartum haemorrhage (ICM/FIGO, 2010). The Non-pneumatic anti-shock garment (NASG) was introduced as a gadget that can be used for first aid treatment of women in postpartum shock prior to proper investigation and appropriate management of the patient (Haslegh, 2012). Studies conducted by Kolade, Oladeji, Adelani, and Lawal, (2014) In university college hospital Ibadan revealed that only 35% respondents claimed to have had opportunities to apply NASG, the rest 65% had never applied it on clients.

In view of the above, the researcher embarks on the study to assess the level of knowledge and utilization of anti-shock garment in the prevention of postpartum haemorrhagic shock among health care professionals of maternity unit of specialist hospital Sokoto. Hence the objective of this paper includes; To determine the knowledge of health care professionals on the use of anti-shock garment in the prevention of postpartum haemorrhage, to determine the availability of anti-shock garment in maternity units, to assess the utilization of anti-shock garment in the prevention of haemorrhage by health care professionals of maternity unit, to identify hindrances to utilization of anti-shock garment in maternity units.

This study when concluded will provide information on the knowledge, utilization, and availability of anti-shock garment in prevention of postpartum haemorrhage among health care professionals in maternity unit of specialist hospital Sokoto. The information can be used by the hospital management in planning for educational needs of health care professionals regarding the prevention and management of postpartum haemorrhage at specialist hospital Sokoto. The study will draw the attention of the policy makers and government on the need to provide Anti-shock garment to all the level of health care system. The study will give room for further research studies on this topic.

MATERIALS AND METHODS

Research Design

A descriptive cross-sectional survey design was used to determine the knowledge and utilization of anti-shock garment of health care professionals in prevention of PPH shock in specialist hospital Sokoto.

Study Area

The Specialist Hospital situated in Sokoto metropolis is one of the Secondary health care institution in the state. The hospital was established in 1932. Between 1983 and 1989, the Hospital served as the temporary site for the Usmanu Danfodiyo University Teaching Hospital, after which it reverted back as a health care center for the state. It became a specialist hospital in 1982. It has 15 wards with a bed capacity of 570 that provides medical services to the residents in the metropolis, those referred from the other Local Government Areas in the state, as well as patients from the Neighboring states (Kebbi and Zamfara) and country (Niger republic).The hospital is compartmentalized into several units. The major units are the accident and emergency units, trauma center complex, patient's wards, department of Nursing services, medical laboratory department, outpatient consultation unit and pharmacy department. (Shuaibu, Ibrahim, Olayinka, Atata, Oyeniyi & Shuaibu, 2017)

Ethical Consideration

Ethical clearance was obtained from health research ethical committee of specialist Hospital Sokoto with certificate number SHS/SUB133/VOL.I and Sokoto State government ministry of Health with certificate number SMH/1580/V.IV to conduct the research and the respondents voluntarily responds to questionnaire and the information were treated confidentially

Data Collection

Census sampling technique was adopted in which any midwife, Nurse/midwife, nurse and Medical doctor found on duty during the period of data collection was included in the study after receiving His/her informed consent.

The instrument for data collection was well-structured self-administered questionnaires and researcher's observation. The researcher used observation check list to determine availability and utilization of Anti-shock garment and non-participant observation was employed. One hundred questionnaires were administered for the study, the questionnaire contained three sections with 19 test items to elicits respondents information on demographic characteristic, knowledge of anti-shock garment and perceived hindrances to utilization of Anti-shock garment.

Data collected were analyzed using descriptive statistics of frequencies, percentages and mean to answer research questions using Statistical package for social sciences (SPSS) version 20.

Result

A total of 100questionnaires were distributed among Midwives, Nurses, Nurse-midwife and Medical Doctors working in maternity unit of Specialist Hospital Sokoto. Eighty four questionnaires which accounted for 84%were retrieved and valid for analyses, while 16 (16%) of the remaining questionnaire were regarded invalid because they were not returned after the administration.

Table 1: Socio-demographic Distribution of Respondents.

Variables	Frequency n=84	Percentage (%)
AGE (YEARS)		
19-24	9	10.7
25-29	22	26.2
30-34	20	23.8
35-39	13	15.5
40 and above	20	23.8
Total	84	100
GENDER		
Male	7	8.3
Female	77	91.7
Total	84	100
PROFESSION		
Midwives	28	33.3
Nurses	6	7.1
Nurse/midwives	43	51.2
Medical Doctors	7	8.3
Total	84	100
TRIBE		
Hausa/Fulani	49	58.3
Igbo	10	11.9
Yoruba	17	20.2
Others	8	9.5
Total	84	100
WARD/UNIT		
Main Labour room	17	20.2
Unbooked labour room	10	11.9
Balaraba ward	10	11.9
A ward	10	11.9
B ward	7	8.3
C ward	11	13.1
Antenatal Clinic	12	14.3
O&G Unit	7	8.3
Total	84	100
Years of working experience		
1-5 years	48	57.1
6-9 years	25	29.8
10 years above	11	13.1
Total	84	100

The socio-demographic characteristics of the respondents, comprising of age, gender, ethnicity, working experience, ward/unit, profession and years of working experience were analysed using frequency and percentage.

On age of respondents as shown in Table 1, most of the respondents (26.2%) are within the age group of 25-29 years, followed by those above the age of 40 years (23.8%). Those within the age group of 35-39 constituted 15.5% and those within the age group of 19-24 constituted 10.7%.

Based on gender, the females (91.7%) were the majority while the males were only 8.3%. On ethnicity of respondents, the majority were found to be Hausa/Fulani(58.3%), followed by Yoruba (20.2%), Igbo (11.9%) and other ethnic groups (including Nupe, Ibra, Edo and Orobo) were 9.5%.

On professional basis, the result shows that majority of the respondents were nurse/midwives(51.2%), midwives(33.3%), Medical Doctors(8.3%) and General Nurse practitioners(7.1%).

On the basis of wards/units of work of the respondents, 20.2% of the respondents were from Main labour room, followed by 14.3% from Ante-natal care,13.1% from "C" ward, 11.9% each from "A" ward, Balaraba ward and unbooked labour room and the least being from 8.3% from "B" ward and Obstetrics &Gynecology with Unit 8.4 % which constitute only medical doctors.

Respondents on years of working experience showed that majority 57.1% of the respondents had working experience of 1-5 years followed by 29.8% with 6-9 years and 13.1% with more than 10 years.

Table 2:Knowledge of Respondents on NASG

Level of knowledge of NASG	Frequency	Percentage
Poor	5	6.0
Fair	25	30.0
Good	54	64.0
Total	84	100%

Key: poor 0-2 score, fair 2-4 score and good 5-7 score.

Table 2 revealed that the majority of the respondents54 (64%)have good knowledge on NASG while 25 (30%) of the respondents had fair knowledge and 5 (6%) of the respondent had poor knowledge of NASG.

Table 3: Distribution Of Respondents based On Perceived Hindrances To Utilization Of Non-Pneumatic Anti-Shock

Items		Mean N=84	Std. Deviation	Impression
1.	Non availability of NASG	2.65	1.024	Serious threat
2.	Availability of other ways of treating PPH	3.14	0.823	Less threat
3	Effective management of PPH	3.30	0.833	Less threat
4	Inexperience on the part of the health worker	2.62	0.956	Serious threat
5	Lack of skilled personnel	2.54	1.080	Serious threat
6	Not aware of the existence of the NASG	1.99	0.925	Serious threat
	Aggregates means score	**16.24/6=2.70**	**0.94**	

From Table 3, : the results obtained; has shown that items (2 and 3) indicated that in management of PPH using NASG poses less hindrances because their means are above 2.70 which is the average while items1,4,5, and 6-indicated that all of these items posed serious hindrances because their means score are below 2.70

Table 4 Availability of Anti-shock Garment

WARDS	VARIABLES	FREQUENCY	PERCENTAGE
Antenatal clinic			
	Available & functional	--	**0**
	Available, functional & adequate	--	
	Available not functional	--	
	Not available	--	
Main labour Room			
	Available & functional	2	28.5
	Available, functional & adequate	2	
	Available not functional	---	
	Not available	---	
Unbooked labour room			
	Available & functional	1	14.3
	Available, functional & adequate	--	
	Available not functional	--	
	Not available	--	
Balaraba Ward			
	Available & functional	1	14.3
	Available, functional & adequate	--	
	Available not functional	--	
	Not available	--	
A ward			
	Available & functional	1	14.3
	Available, functional & adequate	--	
	Available not functional	--	
	Not available	--	
B ward			
	Available & functional	1	14.3
	Available, functional & adequate	--	
	Available not functional	--	
	Not available	--	
C ward			
	Available & functional	1	14.3
	Available, functional & adequate	--	
	Available not functional	--	
	Not available	--	
Total		7	100

From table 4, the results obtained showed that ANC have no available NASG. However, majority of the wards including Unbooked labour room, Balaraba ward, "A" ward. "B" ward, "C" ward have only one each available, functional but Not adequate NASG while Main labour room had 2 NASG available, functional and adequate.

Table 5: Reported Utilization of Anti-shock garment

WARDS	Utilization of NASG	Frequency	Percentage (%)
Main Labour room	PPH	12	40
	PPH WITH NASG	8	50
Unbooked labour room	PPH	6	20
	PPH WITH NASG	4	25
Balaraba ward	–	–	–
A ward	PPH	4	13.3
	PPH WITH NASG	2	12.5
B ward	PPH	8	26.7
	PPH WITH NASG	2	12.5
C ward	–	–	–
Total	PPH	30	16
	PPH WITH NASG		35

Table 5 shows that Main labour room had 12 (40%) cases of PPH with 8 that benefitted from NASG, followed by Unbooked labour room that had 6 (20%) cases of PPH with 4 that benefitted from NASG, "A" ward with PPH of 4(13.3%) cases, out of which 2 benefitted from NASG and "B" ward with PPH of 8(26.7%) cases but only 2 had NASG used on them. Others including Balaraba ward, "C" ward and ANC Had no PPH cases. The total number of NASG used within the period of six months in maternity unit was 16 (35%).

DISCUSSION

To assess the knowledge of the respondents on non-pneumatic anti-shock garment, seven objective questions were asked and each correct answer was allocated one mark. The entire questions were marked over seven and graded according to score in to good, fair, poor. A score of 0-2 was graded as poor while 3-4 was graded as fair and 5-7 was graded as Good. The findings reveals that 54 (64%) of the respondents have good knowledge on non-pneumatic anti-shock garment. This implies that majority of the respondents were knowledgeable about NASG. This is a bit related to the submission of Kolade & Oladeji (2014), who reported that majority of the respondents (96.0%) were knowledgeable about NASG, which shows that awareness about the existence of NASG was high among the respondents..

On perceived hindrances to the utilization of anti-shock garment, The result obtained has shown Non availability of NASG (86%), inexperience on the part of the health workers (with a mean score of 2.62), lack of skilled personnel (2.54) and not aware of the existence of NASG (1.99) in the ward/unit poses serious hindrances because their means score were below 2.70. this is in agreement with Ohaeri (2017) study Who revealed Perceived factors responsible for non-utilization of anti-shock garment, showed that non availability of the garment (35%) is the main hindrance, other hindrances mentioned include availability of other ways of treating PPH (0.6%), effective management of PPH (0.6%), inexperience on the part of the health worker (1.7%) lack of fund (0.6%), lack of skilled personnel (0.6%), not been aware of the existence of the garment (3.4%) while 3 (1.7%) opined that it is not convenient.

On availability of Anti-shock garment, the result obtained shows that ANC have no available NASG However, majority of the wards including Unbooked labour room, Balaraba ward, A ward. B ward, C ward have only one each available, functional but Not adequate NASG while Main labour room had 2 NASG available, functional and Not adequate. The findings were in agreement with Umar (2014), a study on availability, And Awareness of Non-Pneumatic Anti-shock Garment in Tertiary Hospitals of Northern Nigeria, which

revealed that non-pneumatic Anti-shock garment (NASG) is not available in tertiary hospitals of Northern Nigeria with an aggregate mean score of 2.32. Based on the findings which revealed inadequate NASG in maternity unit which may leads to increase maternal mortality due to PPH shock

On utilization of Anti-shock garment, The finding revealed that Main labour room had PPH cases of 12 (40%) with only 8 (50%) that benefited from NASG, followed by Unbooked labour room with PPH cases of 6 (20%) and only 4 (25%) that benefited from NASG, "A" ward with PPH cases of 4(13.3%) and only 2 (12.5%) that benefited from NASG."B" ward with PPH cases of 8(26.7%) but only 2 (12.5%) that benefited from NASG. Others including Balaraba ward, "C" ward and ANC did not receive PPH cases for the period under consideration. The total number of NASG used within the period of six month in maternity unit was 16 (35%) which is not enough. The findings are in agreement with Umar (2014) which reported that NASG is utilized in tertiary hospital of northern Nigeria. However the findings is in disagreement with Onasoga, Duke, Danide, & Jack-ide (2015), in there study tittle Assessment of Midwives Knowledge and Utilization of NASG in Reducing Complication of PPH in Selected Health Care Facilities in Bayelsa State who reported that majority (53.6%) of the respondents had never used NASG before.

Conclusion

From the findings of the present study, it was concluded that health care professionals in specialist hospital Sokoto had good knowledge and utilization with serious perceived hindrances such as Non availability of NASG, inexperience on the part of the health workers, lack of skilled personnel and not aware of the existence of NASG, also there was inadequacy of NASG.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. To sustain the current knowledge, there should be continuous education and Periodic training and retraining of health care professionals in maternity unit of specialist hospital Sokoto on Non-pneumatic anti-shock garment as a preventive measure to postpartum haemorrhagic shock.
2. As survival of the patient is the utmost goal of any health facility, the Management of specialist hospital Sokoto should ensure that NASG is adequately made available in the sub-wards of the maternity unit.
3. The hospital management should ensure inventory taking on monthly basis to ascertain availability and functionalities of available NASG.

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