

# Understanding Midwives' Perspective on Care of Post Cesarean Section Women at the University Teaching Hospital—Women and Newborn, Lusaka

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## Abstract

**Background:** A cesarean section is a major obstetric surgical procedure performed for the purpose of delivering a live baby when vaginal delivery would put the mother and the baby at risk due to complications of pregnancy, labour and delivery. Although caesarean section is a life saving procedure, it is associated with a number of risks or problems in the postoperative period. The aim of the study was to understand the Midwives' perspective on the care of postpartum mothers who had cesarean section at the University Teaching Hospital—Women and Newborn in Lusaka District. **Methods:** A descriptive cross sectional survey was conducted at the University Teaching Hospital—Women and Newborn in Lusaka. 51 Midwives working in postnatal wards were consecutively selected to participate in the study. Data was collected using a self administered questionnaire with a 4 point Likert scale and also some closed and open ended questions. SPSS version 20 statistical package was used to analyse data, expressed as descriptive summary measures. **Results:** All the 51 Midwives were female and they scored themselves highly on a 4 point Likert scale as always performing all the immediate post-operative care on the postpartum mothers who had a caesarean section while the score was much lower during the subsequent post-operative period. Staffing levels and medical-surgical materials were found to be low and affect care of Postpartum mothers (P=0.050). The majority (94.2%) of the Midwives also indicated that C-section mothers were not given any form of written materials or standardized instructions to take home as reference material during the

Information, Education Communication sessions on discharge (P-0.001) and home/domiciliary visits to postpartum mothers who had C-sections on postpartum were not being undertaken. **Conclusion:** There was need to improve the care rendered to the postpartum women who had complicated labour and delivery including caesarean sections in order to promote good health and to prevent postpartum complications.

### Keywords

Postpartum Mothers/Women, Postnatal/Postpartum Care, Cesarean Section, Practices, Midwives

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## 1. Introduction

A caesarean section (C-Section) is a surgical procedure performed for the purpose of extracting a viable foetus through an incision in the abdominal wall and the uterus [1]. It is a major obstetric surgical procedure performed for the purpose of delivering a live baby when vaginal delivery would put the mother and the baby at risk due to complications of pregnancy, labour and delivery thereby saving lives of women and their newborns.

According to [2] complications may arise in 20 percent of women although childbirth is considered to be a normal physiological process. For some of the women with complications, they may proceed to deliver vaginally with or without instrumental assistance but for others, a c-section may be necessary to save the lives of either the baby or the mother or both. The operation can be performed either under general or epidural or spinal anaesthesia [1] [3]. The complications which may lead to a woman undergoing caesarean section (c-section) which in other terms are called indications of C-section may be classified into three and these may be: maternal, foetal and obstetrical [1] [4].

Although a caesarean section is a life saving procedure, it is associated with a number of risks or problems in the postoperative period which may also be classified as maternal and foetal. Maternal problems may include haemorrhage, post operative pain, wound infection, incisional hernias, wound gapping, puerperal sepsis among others while foetal complications may include respiratory distress syndrome, birth injuries, transient lung syndrome among others [1] [5]. These risks/problems are six times more likely to occur than in vaginal delivery and fifty times more if a caesarean is performed in an emergency than if it was elective. Often a number of days are required in the hospital to recover sufficiently to return home, about three to five days and the healing process takes longer from about six weeks than in vaginal birth [6].

It is estimated that 340,000 maternal deaths occur worldwide each year in low-income countries and 61% of these maternal deaths occur during the first six weeks after birth, and nearly half of those deaths take place during the first

week after delivery [7] [8] [9]. In the Sub-Saharan Africa including Zambia, many women do not have access to health care during early postnatal period putting them at high risk of illness and death [10] [11].

At the University Teaching Hospital—Women and Newborn, the average percentage of complicated deliveries of the total deliveries from January 2017 up to the first quarter of 2018 was 36 percent. An average of 33 percent of the total complicated cases were delivered by c-section, while an average of 3.42 percent were assisted deliveries [12] [13]. Although this seems to be too high, this is because the hospital is a referral centre and receives complicated cases from the surrounding areas and it is not representative of the national rate which is currently very low, at 4.4 percent, lower than the average Sub Saharan Africa which is at 7.9 percent and that of the World Health Organisation recommendation of between 10 to 15 percent [7] [12] [14] [15]. This is because Zambian women still experience problems in accessing skilled care during labour and delivery. Maternal mortality rate for Zambia is still unacceptably high at 398 women per 100,000 live births [14]. Other complications encountered by mothers post-operatively may include pyrexia and wound infections [16].

Bearing in mind that all women who had c-section would have under gone through a major abdominal surgery and although majority of them are strong and healthy and therefore heal remarkably quickly, it is important to be knowledgeable of the healing process, the resources and the needs of the women for them to have a successful healing process. The first 24 hours after a Caesarean section are vital to the healing process, which continues in the days, weeks and months to come [17]. Therefore, good practice of nursing and midwifery care in post C-section women is very important for healing and consequently reduction of the incidence of postpartum complications brought about by C-Section [17] [18] [19].

A study of this nature has not been conducted at the University Teaching Hospital and in Zambia. Many studies have focused on the indications and prevalence of c-sections and a few on complications but not on the care postpartum women receive after c-section.

The aim of the study was to understand the Midwives' perspective on the care of postpartum mothers who had complicated delivery with special focus on cesarean section at the University Teaching hospital—Women and Newborn from admission to the postnatal wards until their discharge from the hospital.

## 2. Materials and Methods

The study was conducted at a University Teaching Hospital—Women and Newborn (UTH-WN) in Lusaka. It is the lead institution in maternal, reproductive health and newborn care and is a centre for teaching and research in the country. The hospital also acts as a referral hospital for the surrounding districts. It has a bed capacity of 453. In 2017, the hospital recorded a total of 16,275 deliveries of which 5075 were delivered by c-section, making a 31 percent of total

c-section deliveries. Post-operatively, postpartum mothers are nursed in the four different postnatal wards for three or more days depending on the condition before they are discharged home.

The study was a descriptive quantitative cross sectional survey conducted in the four postnatal wards of the UTH-WN. The Hospital was purposively selected as a study site because it is the biggest referral hospital in the district of Lusaka and usually attends to different cases of complicated pregnancies and deliveries. All the four postnatal wards in the hospital formed sites for the study. During the month of August, 2017, a study population of 51 midwives was achieved by use of consecutive sampling technique. This entailed that all midwives who were found working in the selected sites were included in the study. The author worked hand in hand with the ward managers and periodically passed through the wards to distribute the questionnaires to midwives on duty and also to collect the completed ones which were previously distributed. That way, midwives who were previously on day off, night duty or short leave were also given an opportunity to participate in the study. There was 100 percent response rate as all the distributed questionnaires were completed and brought back.

Data were collected in August, 2017 using a self administered questionnaire, which was composed of three different sets of questions and these included a 4 point Likert scale questions (Always—3, Sometimes—2, Rarely—1 and Never—0), closed and open-ended questions. The questions aimed to assess Midwives' knowledge and practices in the care of postpartum women after cesarean sections admitted to postnatal wards from admission till discharge. The areas covered were: immediate and subsequent post-operative care, pain management, availability of resources (materials and staffing), Information, Communication and Education (IEC) and follow-up of postpartum women after discharge.

After completion of development of the data collection instrument, it was subjected for scrutiny by the supervisors who checked the questions whether they were valid enough to yield the intended responses according to the set objectives and advised on the necessary revisions to be made. This was followed by pretesting of the data collection instrument on midwives working in the postnatal ward at a General Hospital within the district of Lusaka. Pretesting of the instrument helped establish reliability of the instrument in that after analyzing the questionnaires, areas of inconsistencies were established, revised and re-tested. The revision of the questionnaires involved removing some repeated questions, those which were unclear or ambiguous and also rephrasing some questions. The revision of the questionnaire also ensured that questions were clear, concise, appropriate and consistent.

The proposal was presented at the graduate forum for expert scrutiny and input and after approval it was submitted to the Biomedical Research Ethics Committee of the University of Zambia. Having passed this stage, the proposal was later submitted to the National Research Council under the Ministry of Health and an approval was also obtained. Permission to collect data in the hos-

pitals was sought and granted by the Senior Medical Superintendents at the UTH-WN and the General Hospital. Privacy, anonymity and confidentiality for participants were maintained and participation in study was purely voluntary.

Collected data were securely kept in a locked cupboard and only accessible to the researcher. Data was entered in a computer and analysed using SPSS version 20 computer statistical package. The demographic variables (age, level of education) were summarized using descriptive summary measures and inferential statistics: expressed as mean (standard deviation) for continuous variables and percentages/proportions for categorical variables.

Chi Square tests were conducted for categorical variables. The alpha level (p-value) test tested for significance of all the results. Statistic significance at 0.05 confidence interval and 95% significance level was set.

Results were presented as frequency distribution tables. Likert scale results were summarised in frequency distribution tables with, “Always” scoring the highest mark—3, “Sometimes” scoring—2, and “Rarely” the lowest mark—1. A score of “Never” did not attract any mark—0. An average score for each category of care has also been computed on the 4 point Likert scale. The 4 point Likert scale (Always, Sometimes, Rarely and Never) indicated self assessment by midwives themselves on whether and how often they performed the caring activities in accordance with the selected variables.

The following variables assessed the different aspects of care from the time the mothers were admitted to the postnatal wards after c-section surgery until their discharge from the hospital: demographic characteristics, immediate post-operative care, subsequent post-operative care, pain management, mode of Information, Education and Communication (IEC) delivery, availability of resources (staffing and materials) and patient follow up after discharge (domiciliary/home visits).

In its uniqueness, the study afforded an opportunity to midwives working in the postnatal wards to give their unbiased perspective of the care of women who undergo c-section due to complications of labour and delivery. The women were admitted to postnatal wards from theatre until their discharge from the hospital. Many studies have proved that nurses and midwives could be relied upon to give their unbiased perspective of the care they give to patients on the wards [20] [21].

### **3. Results**

#### **3.1. Demographic Characteristics of the Respondents**

A total of 51 Nurse-Midwives participated in the study and were all (100%) females. Respondents were aged as follows: 2 (3.9%) were below 20 years, 7 (13.7%) were 20 - 29 years, 21 (41.2%) were 30 - 39 years, 10 (19.6%) were 40 - 49 years and 11 (21.6%) were 50 years and above. As regards education level, majority 34 (66.7%) had diplomas, 15 (29.2%) had certificates and only 2 (3.9%) had Bachelor's degree in nursing. In terms of designation, 34 (66.7%) were Registered

Nurse-Midwives, 14 (27.5%) were certified or enrolled midwives and 3 (3.9%) were either Nursing officers or ward in charges. Majority of the respondents 29 (56.9%) had worked for less than one year in the postnatal wards followed by 18 (35.3%) respondents who had worked between 1 - 5 years in the postnatal wards.

### **3.2. Immediate Post Operative Care of Caesarean-Section Postpartum Mothers**

To assess how often Midwives performed the immediate post operative care on the mothers in the immediate post operative period, Midwives were asked to score themselves on the 4 point Likert scale with always performing the task represented by a score of 4 as the highest score and rarely performing the task represented by a score of 1 as the lowest score. A score of zero which represented never, did not attract any score. 44 (86.3%) of the midwives scored themselves as always placing the patient in the recovery position immediately the patient was brought to the ward, 49 (96.1%) scored themselves as always conducting observations of temperature, pulse, respirations and blood pressure as required, 48 (94.1%) scored themselves as always maintaining and monitoring intravenous fluids and blood transfusion, (98.1%) as always ensuring that urinary catheter was monitored and ensured flow of urine and took care of the catheter, 40 (78.4%) always checked the incision for bleeding. The average score on the 4 point Likert scale for provision of immediate post operative care to women was 2.9 (**Table 1**).

### **3.3. Subsequent Post Operative Care of Caesarean-Section Postpartum Mothers**

To assess the subsequent post-operative care of women after c-section, Midwives were asked to score themselves on the 4 point Likert scale on the following tasks they performed on the women: 39 (76.5%) out of a total of 51 women scored themselves as always supporting with early breast feeding of the babies, 40 (78.4%) scored as always supporting the women with early ambulation, 30 (58.8%) scored themselves as always performing wound care on the c-section women, 15 (29.4%) scored themselves as always supporting the women go to the bathroom, 6 (11.9%) as always bed bathing women who were not able to do so, 9 (17.65) as always providing a big bath to mothers, 3 (5.9%) always providing oral care and 26 (51%) as always ensuring good nutrition for the women. A total average score on all items on the subsequent post-operative care on a 4 point Likert scale was 1.8 (**Table 2**).

### **3.4. Management of Pain for Caesarean-Section Postpartum Mothers**

On pain management of women after a c-section, Midwives were asked to score themselves on different ways they managed pain using a 4 point Likert scale. Out of a total of 51 respondents, 19 (37.3%) scored them as always giving opioids to

**Table 1.** Immediate post operative care of caesarean-section postpartum mothers N = 51.

	N	%	Average score	Mean	Standard deviation	P-value
<b>Place in recovery position</b>			2.8	2.84	0.418	0.687
Always	44	86.3				
Sometimes	6	11.8				
Rarely	1	2.0				
Never	0	0				
<b>Check Temp/Pulse/Resp/BP</b>			2.9	2.94	0.311	0.388
Always	49	96.1				
Sometimes	1	2.0				
Rarely	1	2.0				
Never	0	0				
<b>Monitor fluids/blood transfusion</b>			2.9	2.90	0.450	1.000
Always	48	94.1				
Sometimes	2	3.9				
Rarely	0	0				
Never	1	2.0				
<b>Maintain fluid balance chart</b>			2.8	2.84	0.418	0.687
Always	44	86.3				
Sometimes	6	11.8				
Rarely	1	2.0				
Never	0	0				
<b>Care of catheter/urine bag</b>			2.9	1.06	0.238	0.610
Always	48	94.1				
Sometimes	3	5.9				
Rarely	0					
Never	0					
<b>Check incision site</b>			2.7	2.76	0.473	0.856
Always	40	78.4				
Sometimes	10	19.6				
Rarely	1	2.0				
Never	0	0				
<b>Total Average performance</b>						
Always	229	89.8	2.9			
Sometimes	22	8.62				
Rarely	4	1.56				
Never	0	0				

**Table 2.** Subsequent post operative care of caesarean-section postpartum mothers N = 51.

	N	%	Average score	Mean	Standard deviation	P-value
<b>Support with early B/F</b>			2.6	1.37	0.799	0.085
Always	39	76.5				
Sometimes	8	15.7				
Rarely	1	2.0				
Never	3	5.9				
<b>Support with early ambulation</b>			1.9	1.27	0.607	0.793
Always	40	78.4				
Sometimes	9	17.6				
Rarely	1	2.0				
Never	1	2.0				
<b>Wound care</b>			1.9	1.49	0.644	0.881
Always	30	58.8				
Sometimes	17	33.3				
Rarely	4	7.8				
Never	0	0				
<b>Support to go to the bathroom</b>			1.9	1.78	0.577	1.000
Always	15	29.4				
Sometimes	32	62.7				
Rarely	4	7.8				
Never	0	0				
<b>Bed bath</b>			1.3	2.69	1.010	0.904
Always	6	11.8				
Sometimes	18	35.3				
Rarely	13	25.5				
Never	14	27.5				
<b>Big bath</b>			1.5	2.51	1.065	0.020
Always	9	17.6				
Sometimes	20	39.2				
Rarely	9	17.6				
Never	13	25.5				
<b>Oral care</b>			1.1	2.90	0.922	0.222
Always	3	5.9				
Sometimes	15	29.4				
Rarely	17	33.3				



**Continued**

Never	16	31.4				
<b>Nutrition</b>			2.4	1.59	0.698	0.542
Always	26	51.0				
Sometimes	21	41.2				
Rarely	3	5.9				
Never	1	2.0				
<b>Total Average Scores</b>			1.8			
Always	83	32.55				
Sometimes	82	32.15				
Rarely	43	16.86				
Never	47	18.43				

the post C-section patients to alleviate the post-operative pain. 12 (23.5%) indicated that they always reassured the mothers, (P-0.046), 13 (25.5%) always administered opioids before patient recovered from effects of anesthesia (P-0.022), 12 (23.5%) scored themselves as always employing relaxation or diversion technique to relieve pain (P = 0.010). 38 (74.5%) respondents indicated that they administered opioids immediately after the patient recovered from effects of anaesthesia, 21 (41.2%) indicated that they would always give opioids when the patient complained of pain, 43 (84.3%) indicated that they would always follow Doctors orders, 39 (76.5%) indicated that they always administer opioids in the acute stage and then switch to non-opioids as pain lessens and 39 (76.5%) scored themselves as always telling the mothers that pain was normal following c-section (P-0.049). The total average score on pain management was 2.2 on a 4 point Likert scale. The most common opioids used after surgery was pethidine (**Table 3**).

### 3.5. How Information Education Communication Delivered to Postpartum Mothers on Discharge

As regards IEC to the postpartum mothers following C-section, respondents were asked to score themselves on the different ways they delivered the ICE to postpartum mothers on discharge from the hospital. Out of a total of 51 (100%) respondents, 42 (82.4%) indicated that IEC was given to the mothers verbally on one to one, 38 (74.5%) indicated that IEC was given verbally in a group. As to whether the midwives wrote some IEC on a piece of paper for the women to take home, majority 47 (92%) indicated that it was not written on a piece of paper and 48 (94.2%) also indicated that there were no standardized written instructions or IEC given to the mother to take home with her as reference materials (P-0.050) (**Table 4**).

### 3.6. Availability of Staff for Care of Postpartum Women

The respondents were asked questions in relation to staffing for the care of

**Table 3.** Management of pain for caesarean-section postpartum mothers N = 51.

	N	%	Average score	SD	Mean	Df	P-value
<b>Admin opioids</b>			1.8	1.155	2.16	2	0.608
Always	19	37.3					
Sometimes	16	31.4					
Rarely	5	9.8					
Never	11	21.6					
<b>Relaxation/diversional tech</b>			1.7	1.031	2.27	3	0.010
Always	12	23.5					
Sometimes	20	39.2					
Rarely	12	23.5					
Never	7	13.7					
<b>Reassure mother</b>			2.5	0.674	1.47	3	0.046
Always	31	60.8					
Sometimes	17	33.3					
Rarely	2	3.9					
Never	1	2.0					
<b>Admin opioids before recovery</b>			1.4	1.084	2.54	3	.022
Always	13	25.5					
Sometimes	14	27.5					
Rarely	6	11.8					
Never	18	35.2					
<b>Admin opioids immediately after recovery</b>			2.6	0.987	2.49	2	0.171
Always	38	74.5					
Sometimes	7	13.7					
Rarely	6	11.8					
Never	0	0					
<b>Admin opioids when patient complains of pain</b>			1.9	0.909	1.88	3	0.398
Always	21	41.2					
Sometimes	18	35.3					
Rarely	9	17.6					
Never	3	5.9					
<b>Admin opioids as ordered by Dr</b>			2.8	.530	1.20	2	.305
Always	43	84.3					
Sometimes	7	13.7					
Rarely	1	2.0					
Never	0	0					

Continued

<b>Admin opioids in acute then switch</b>		2.4	1.619	1.46	3	0.685
Always	39	76.5				
Sometimes	9	17.6				
Rarely	2	3.9				
Never	1	0				
<b>Tell mother pain is normal after C/S</b>		2.2	1.084	2.24	3	0.049
Always	27	52.9				
Sometimes	12	23.5				
Rarely	5	9.8				
Never	7	13.7				
<b>Total average scores</b>		2.2				
Always	243	52.94				
Sometimes	120	26.14				
Rarely	48	10.50				
Never	48	10.50				

**Table 4.** How Information Education Communication was delivered to postpartum mothers on discharge N = 51.

	N-51	%	SD	Mean	Df	P-value
<b>Whether IEC is given to PPM on discharge as per Dr's orders</b>			0.497	1.41	1	0.080
Yes	30	58.8				
No	21	41.2				
<b>Whether IEC is given to PPM on discharge verbally one to one</b>			0.385	1.18	1	0.401
Yes	42	82.4				
No	9	17.6				
<b>Whether IEC is given to PPM on discharge verbally as a group</b>			0.440	1.25	2	0.530
Yes	38	74.5				
No	13	25.5				
<b>Whether IEC is given to PPM on discharge by writing on a piece of paper</b>			0.272	1.92	2	0.862
Yes	4	7.8				
No	47	92.2				
<b>Whether IEC is given to mothers on discharge by giving standardised written instructions</b>			0.238	1.94	1	0.050
Yes	3	5.9				
No	48	94.1				

post-partum women following c-section. On the average number of staff on duty at each shift, 27 (52.9%) out of a total 51 (100%) respondents indicated that the average number of staff at each shift on the ward was 3 - 4 while 23 (45.1%) indicated 1 - 2 staff at each shift (P=0.077). On whether the number of staff on duty affected care of post-partum women after c-section, 46 (92.4%) out of a total of 51 (100%) indicated that the number of staff on duty affected care (P=0.001). Respondents were further asked on how many of them had undergone any training in postnatal care since leaving formal school. 28 (54.9%) out of 51 (100%) had additional training in postnatal care after leaving formal school and all 51 (100%) the respondents indicated that they would benefit from a fresher course in postnatal care (**Table 5**).

### 3.7. Availability of Materials for Care of Postpartum Women

Respondents were asked some questions on the availability of materials on the ward for the care of postpartum women who had c-section. 47 (92.2%) out of a total of 51 (100%) respondents indicated that they did not have adequate materials for provision of care to the postpartum women who had c-section. Respondents were also asked whether they had asked the mothers or their families to bring or buy any materials for use on the woman while in the hospital, 44 (86.3%) indicated that they had done so (P = 0.085) and 45 (88.2%) indicated that not all mothers or families would manage to bring all the materials they were asked to bring or buy. 33 (64.7%) respondents indicated that they would improvise in the care of postpartum women with c-section if the family failed to

**Table 5.** Availability of staff for care of postpartum women N = 51.

	N	%	SD	Mean	Df	P-value
<b>Average number of staff on duty at each shift</b>			1.57	0.539	2	0.077
1 - 2	23	45.1				
3 - 4	27	52.9				
5 - 6	1	2.0				
<b>Does the number of staff affect care of PPM</b>			1.10	0.300	1	0.001
Yes	46	90.2				
No	5	9.8				
<b>If midwives had received any additional training in PNC after leaving school</b>			1.45	0.503	1	0.979
Yes	28	54.9				
No	23	45.1				
<b>If Midwife would benefit from a refresher course in PNC</b>				1.00	0.000	
Yes	51	100.0				
No	0	0				

bring the requested materials and 3 (5.9%) mentioned that they would delay the discharge of the postpartum women ( $P = 0.094$ ). 14 (27.5%) out of 51 (100%) respondents indicated that they had at some point failed to offer care due to none availability of materials (Table 6).

### 3.8. Home/Domiciliary Visits for Postpartum Mothers with Complicated Deliveries

Respondents were asked whether follow-up of postpartum women who had complicated labour and delivery including c-section after discharge in their homes was being conducted. Almost all 50 (98%) out of 51 (100%) indicated that postpartum women with complicated delivery including c-section were not followed up in their homes after discharge to check on their condition. Only 19 (37.3%) out of 50 (100%) had recommended the postpartum women mainly to visit their nearest local clinic or the maternal child health department in the same hospital in case of any problems (Table 7).

## 4. Discussion

Postnatal care should be delivered in the most appropriate setting, whether that is in hospital or in the woman's home, it is imperative that the care provided is

**Table 6.** Availability of materials for care of postpartum women  $N = 51$ .

	N	%	Mean	SD	Df	P-value
<b>Do you have adequate materials for provision of care</b>			1.92	0.272	1	0.862
Yes	4	7.8				
No	47	92.2				
<b>If mother/family asked to bring/buy any materials for use</b>			1.14	0.348	2	0.085
Yes	44	86.3				
No	7	13.7				
<b>Do all mothers manage to bring all materials requested</b>			2.04	0.344	2	0.197
Yes	2	3.9				
No	45	88.2				
<b>What is done if mothers do not manage to bring material requested</b>			1.69	1.191	2	0.094
Improvise	33	64.7				
Hospital provides	10	19.6				
Delay their discharge	3	5.9				
<b>If any time HCP failed to offer service due to no m/s supplies</b>			1.73	0.203	1	0.437
Yes	14	27.5				
No	37	72.5				

**Table 7.** Home/domiciliary visits for postpartum mothers with complicated labour and deliveries (CLD) N = 51.

	N	%	Mean	Standard deviation	DF	P-value
<b>If PPM with complicated labour and delivery are followed up in their homes to check their condition after discharge</b>			1.98	0.140	1	0.596
Yes	1	2.0				
No	50	98.0				
<b>If Midwife has ever made a domiciliary visit for PPM with complicated labour and delivery</b>			1.98	0.140	2	0.613
Yes	1	2.0				
No	50	98.0				
<b>If Midwife has ever recommended a PPM with complicated labour and delivery for a Dom visit to any dept (N = 50)</b>			1.65	0.522	3	0.437
Yes	19	37.3				
No	31	60.8				

of the highest standard and meets the needs of the individual [22]. The study focused on care of the postpartum women who undergo c-sections and admitted in the postnatal wards up to discharge from the hospital. In the study, midwives, being the respondents assessed themselves on the care they give to postpartum women.

The demographic characteristics have indicated that the midwifery profession is still very much female oriented as all the respondents were female. This situation may not just be peculiar to UTH or Zambia alone as many studies have found similar results. The numbers of male nurse world over are much fewer than those of the females. In the United Kingdom, Men make up 10.6 percent of the total nursing work force and only 0.4 percent are midwives, whereas in Iceland and China men only make up 1 percent [23] [24]. The situation may be different in Italy, Israel, Kenya and Saudi Arabia where the percentages of male nurses range from 20 to 32 percent of the total nursing workforce. Studies in Jamaica and Uganda have also indicated similar findings though it has also been acknowledged that there is some marginal increase in the numbers compared to what has been there before [24] [25] [26] [27].

#### **4.1. Post Operative Care of Caesarean Section Postpartum Mothers**

Health services should ensure women and their babies have access to safe, high-quality maternity services. Whether postnatal care is provided in hospital or in the woman's home, it is imperative that the care provided is of the highest standard and meets the needs of the individual. For women who have undergone

a caesarean section, postnatal care is important to prevent and, where necessary, treat infection and post-birth complications. This is because the risk of infection and complications from surgery are potentially dangerous, particularly in settings that lack the facilities and/or capacity to properly conduct safe surgery [17] [22].

Midwives were asked to score themselves on a 4 point Likert scale (always—3, sometimes—2, rarely—1 and never—0) on the various items which constitute immediate and subsequent post-operative care of the post partum mothers after undergoing c-section. Midwives scored themselves very high on “always” performing all immediate post-operative caring activities with an average score of 2.9 on a 4 point Likert scale. However, the scores were low on always performing subsequent post-operative caring activities with an average score of 1.7 on a 4 point Likert scale. The activities in the subsequent post-operative period are those which mothers would perform for themselves if they were in good condition to do so but given their current situation they could not and therefore relied on the health care providers as they had just undergone major abdominal surgery.

The findings of the current study are similar to those obtained by [28], where post c-section women expressed concerns that the care and assistance they received were not satisfactory as they described it to be uncaring, neglectful and disappointing because they were not assisted to perform certain activities while they were still in pain and sick. However, another study [29] revealed that mothers were satisfied with all the post operative care they received except in the information area. Another study by [30] on experiences of mothers and nursing staff on post c-section pain showed that nursing staff and mothers viewed post-operative pain differently. Nurses viewed pain in a casual way that it did not hurt as much as the mothers were displaying because pain was in levels, whereas mothers indicated that the post operative pain was so intense especially after recovery from an anaesthesia and nursing staff had a very casual way of dealing with postpartum pain. Mothers were therefore left to do certain activities by themselves even when they were in pain.

#### **4.2. Post Operative Pain Management**

High-quality pain relief is important after cesarean section to promote early recovery and optimize mothers’ ability to care for themselves and their newborns. Despite advances in postoperative pain management, postoperative pain relief and satisfaction are still inadequate in some patients because of individual variability and limitation from side effects of analgesic drugs or techniques [31].

Midwives in this study were asked to indicate how often and the different ways they managed post-operative pain for women following c-section using a 4 point Likert Scale. The different ways of pain management which were significantly associated with pain relief in the post-operative period were relaxation/diversional techniques, reassuring the mother, telling the mother that pain

was normal after a c-section and administering opioids before recovery from anaesthesia. However, though not significantly associated with pain management, 84.3 percent of Midwives indicated that they always administered opioids according to the doctor's orders, 76.5 percent always administered opioids in the acute stage and switched to lesser stronger ones later and 74.5 percent always administered opioids immediately after patient recovered from effects of anaesthesia. Studies have shown that more than 80 percent of patients who undergo surgical procedures experience acute postoperative pain and approximately 75 percent of those with postoperative pain report the severity as moderate, severe, or extreme. Evidence suggests that less than half of patients who undergo surgery report adequate postoperative pain relief [31] [32]. Inadequately controlled pain negatively affects quality of life, function, and functional recovery, the risk of post-surgical complications, and the risk of persistent postsurgical pain [31] [32]. Another study highlighted that 91 percent of c-section women required opioids with a median time to stopping the opioids of nine days. The median time for stopping all painkillers was 16 days, and pain resolved in a median of 21 days [33]. An observational study to assess the effectiveness of postoperative pain management of patients undergoing elective cesarean section found that postoperative pain management was adequate in terms of patients' safety but it was not effective according to the goal set by Joint Commission on Accreditation of uniformly low pain score of not more than 3 out of 10 both at rest and with movement. It was therefore recommended that an ideal post-cesarean analgesic regimen requires proper utilization of resources to formulate a method which is cost effective, simple to implement, and has minimal impact on staff workload [34]. There are high demands on staff to provide pain relief that is beneficial to both the women and the newborn [35].

#### **4.3. Mode of Information Education and Communication Delivery to Postpartum Women after Caesarean Section**

Women should be given appropriate and consistent written and verbal information and education relating to the postnatal period and what is to be expected of them. This enables women to make informed decisions regarding their care and the care of their baby, and can increase women's confidence and satisfaction with the care provided [36]. In the study, Midwives were asked on the different ways they delivered IEC to c-section postpartum women on discharge from the postnatal wards. The IEC given to mothers by giving a standardized written instructions was found to be significantly associated with the provision on IEC to postpartum mothers on discharge ( $P = 0.050$ ) (Table 4). The study found that majority of Midwives gave IEC to postpartum verbally either on one to one (82.4%) or as a group (74.5%).

Many women report lower levels of satisfaction with the care and support they receive during the postnatal period than at any other phase of their maternity care. Feeling listened to and well supported, and receiving timely and consistent information are important factors contributing to women's satisfaction with



their postnatal care. Providing information and education relating to the normal physiological changes associated with childbirth, breastfeeding and parenting is a key component of postnatal care that is aimed at giving women and their families the confidence to manage the care of their baby. It should be easy to understand and communicate in the woman's primary language. Women should also be given the opportunity to discuss and ask questions about the information provided by a midwife and/or doctor [23]. Where appropriate and determined by the woman, written information and education should be provided to her family and/or significant others. It is concluded that maternal health education imparted at the right time and in a simplistic manner using a simple written module can significantly reduce the burden of infant mortality [37] [38].

#### **4.4. Availability of Staff and Materials for Care of Postpartum Mothers**

Health services should ensure that health professionals employed to deliver postnatal care are appropriately qualified, credentialed and in correct ratios. A qualified and skilled workforce is imperative to the provision of safe and high-quality postnatal care that reflects current, evidence-based practices. In the study, Midwives were asked on staffing levels for care of postpartum women in the postnatal wards in order to gauge the care they provided to patients. A significant association was found between the number of staff on duty and the care provided to postpartum mothers in the postnatal wards in the UTH-NW ( $P = 0.001$ ). 52.9 percent indicated that the number of staff on duty per shift ranged between 3 - 4, while 45.1 percent indicated that the number of midwives on duty per shift ranged from 1 - 2 staff. The study further revealed that only 54.9 percent of Midwives had additional training on postnatal care since leaving their formal training as Midwives and they all expressed great interest in affording them refresher courses.

The findings of the study are very much in line with others findings elsewhere. A study on Cesarean delivery rate and staffing levels of the maternity unit found a statistically significant association between staffing levels of the maternity unit and cesarean delivery use. Independently of all other characteristics, staffing levels for obstetricians and midwives had a significant impact on the use of intrapartum and elective cesarean deliveries [39]. Furthermore, other studies have found that low staffing levels in maternity wards lead to high percentages of women being delivered by c-section as staff do not have enough time to encourage and keep on monitoring women who may be susceptible to complications. It was estimated that C-sections for first-time mothers could be reduced by about 34 percent if situations of low-staffing were avoided. This would be a very important achievement given the already overly high rates of C-sections around developed countries [39] [40] [41]. These findings are very relevant to this study because c-section patients are nursed in postnatal wards which equally have very low numbers of Midwives to offer quality post-operative care for the postpartum women.

Care for postpartum women may also be affected by problems of availability of resources such as medical equipment and materials. Midwives were asked whether they had adequate materials for use on postpartum women who had complicated deliveries including c-section women. Majority (92.2%) of Midwives indicated that they did not have adequate materials for use and 86.2% indicated that they have at times asked the mothers/families to either bring from home or buy though 88.2% also indicated that there were instances when mothers/families were not able to provide the items requested to buy or bring for their care while still admitted on the postnatal ward. However, 64.7% of the midwives indicated that they had never failed to provide the necessary care to the postpartum women because of unavailability of materials as they would always improvise but in some instances, they would delay the discharge of the women.

#### 4.5. Follow-Up of Postpartum Mothers after Discharge

The days and weeks following childbirth, the postnatal period—is a critical phase in the lives of mothers and newborn babies especially those who had complicated labour and delivery including c-section. This is because major changes occur during this period which determines the well-being of mothers and newborns. Lack of appropriate care during this period could result in significant ill health and even death. Most maternal and infant deaths occur during this time [7].

In the study, Midwives were asked whether postpartum women who had complicated deliveries including c-section were followed up in their homes after discharge from the hospital and 98 percent stated that postpartum women were not visited in their homes after discharge and 98 percent of midwives had never conducted a home visit or domiciliary visit. Midwives were further asked whether they had ever recommended any postpartum mother with complicated labour and delivery anywhere for follow up. Only 37.3% indicated that they had recommended some mothers with complicated deliveries for follow up to the Maternal and Child Health department within the hospital and to the nearest urban clinic.

It is recommended that home visits within the first seven days after discharge from the maternity hospital, and within the first three days when the newborn is classified as high risk should be undertaken. In women's care, home visits are used to know the conditions of childbirth, assess the health status of the mothers, mother-child interaction and the return of the mother's organism to pre-pregnancy conditions, verify emotional and social conditions, identify risk situations and complications to adopt the correct conduct, support breastfeeding, provide advice on self-care for the mother [7] [42]. In addition, another study revealed that providing postpartum home visit can influence postpartum depression in a positive way and could improve mothers' and infants' health [43]. Therefore, as a minimum requirement, following discharge, public health services should offer women at least one postnatal visit in the first week after delivery, which has a great impact on maternal adaptation to the new conditions,

as the most critical problems after delivery occur in the first 10 days. The study further recommended that health services should ensure that all health professionals providing postnatal home-based care should have undertaken adequate training to make decisions regarding the safety of the environment in which they are to provide care [43] [44].

## 5. Conclusion

It is apparent that midwives perform highly skilled roles in difficult circumstances, yet they find meaning and satisfaction in their work. While the findings regarding postnatal care may be perceived as gloomy in some areas, it is important to reflect on this as a judicious time for ward managers and midwives to demand for the requisites for provision of quality midwifery care to women who have had complicated deliveries including c-sections and postnatal care in general.

## Implication for Practice

The results of the study will contribute to the body of nursing and midwifery knowledge through new understanding of the familiar situation and generation of new knowledge. As many women continue to deliver by c-section, Midwives need to always endeavour to provide quality care from the time the woman comes from theatre till discharge. IEC written down in a standardized format for reference should be embraced as well as domiciliary visits.

It is also important to understand the factors that affect delivery of quality care to postpartum mothers and patients in general as service factors such as low staffing levels, inadequate materials to use and also knowledge levels of health providers so that such situations could be addressed. It is envisage that continued dissemination of this information in many relevant settings in Zambia and abroad will promote interest in possibilities for improvement in health care provision.

## Limitation of the Study

The study used respondents to rate and report their own care delivered to the postpartum mothers, it is possible that circumstances could have risen where respondents could have rated themselves high or low. This is despite the fact that several studies have proved that nurses are reliable and valid informants on the care they provide in the hospital. The study using the 4 point Likert scale only assessed how often Midwives performed the caring activities and not how well they performed the activities. It is therefore recommended that another study in which postpartum women are informants should be undertaken so that comparisons could be made on the care provided to postpartum women after a C-Section delivery.

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### Conflicts of Interest

The authors have not declared any conflict of interests.

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