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Practice of midwives regarding infection control in labor rooms at public hospitals in Khartoum state

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Abstract:

Infection control and prevention (IC) in a healthcare setting requires a comprehensive, coordinated program designed to prevent and control infection or healthcare-associated infections (HAIs). The objective of the study was to investigate practices of midwives regarding infection control measures during conducting normal delivery in labor rooms. A descriptive cross sectional hospital based study design was conducted at public hospitals in Khartoum state, practical guideline check list was adopted by observation of 205 midwives during conducting normal delivery. The results of the study revealed 61.5% not used standard infection control measures for gloves, 72.7% of midwives do not wear disposable plastic aprons, 89.8% do not wear Eye protection, 82.4% not wore face mask, study revealed, 71.7% of midwives not done, Safety boxes disposed when 3/4 full. In conclusions, the results of this study revealed a need for development of appropriate policies and protocols for infection control practices in labor and also implementing midwives training on standards of infection control practices

Keywords: - evaluate, practice, midwives, infection**.**

Introduction:

Infection control and prevention (IC) in a healthcare setting requires a comprehensive, coordinated program designed to prevent and control nosocomial or healthcare-associated infections (HAIs). The Centers for Disease Control and Prevention (CDC) restricts the usage of the term nosocomial to infections acquired in hospitals, whereas HAIs refer to infections in any type of healthcare setting. The chances of infection increases, if the precautions are not taken appropriately, especially by midwives' staff who is the prime person, responsible for taking care of mothers and neonates in the Hospital. Infection control is a more substantial area of concern in Labor and delivery room because these neonates do not adapt to their surroundings immediately after they come out of the womb of mothers. In addition to this, mothers might be exposed to infection due to multiple examinations by health care providers during the process of labor, (Lemass *et al* 2013).

The urgency to make progress towards reaching the Millennium Development. Goals (MDGs) has led to the fast-tracking of strategies to improve the uptake of delivery care with skilled health professionals. However, any consequent increase in uptake of services can place an added

burden on health facilities and health personnel where resources are limited. And hence the hospital administrator/ head of hospital should provide adequate resources for effective functioning of the infection control programme. Thus worldwide escalation of the use of infection control standards will endorse quality promotion of health care which is safe for mother, newborn and health care personnel in labour unit. Globally the prevalence of infection during labor increases day by day. The WHO report estimated 358,000 maternal deaths yearly occurring due to childbirth problems and out of these up to 15% are associated with puerperal sepsis. In industrialized countries, puerperal sepsis is rare, causing 2.1% of maternal death. In Latin America and the Caribbean, its contribution of maternal mortality is 7.7%whereas in Africa and Asia, it is the second commonest cause of maternal morbidity, causing 9.7% and 11.6% of death respectively, (Benita, D.2014).

In developing countries, the overall prevalence of HCAI is (5% to 10%) of all hospitalized patients. 6.10 The impact of HCAI, includes prolonged hospital stay, increased morbidity, disability, massive additional cost for both patient and families and increased antibiotic use and increased mortality. Prevention and control of infection are essential components of clinical care in all health settings. It could be more cost effective if the health authority gives emphasis to effective control infection precautions to face the changing pattern of infection and to reduce the use of antibiotics. It is necessary for all health care workers to have proper knowledge about infectious microorganism and good understanding of infection control and evidence based practice of a quality patient focused services, (Elamin, 2010). These are essential and important factors in delivery.

Justification:

Maternal death due to sepsis is remarkably increasing in Khartoum state, it was, 60 % in 2008 and 12,2% 2009 but it reached 13,3%. However, in spite of national guidelines of infection control, which indicate, that all care providers are supposed to receive training on these guidelines, sepsis is increasing every year. No single research explores the problem or detects the gap in the labour rooms. Moreover, septicemia was reported as the fourth leading cause of death in hospitalized patients in Sudan (Annual Report, 2009).

Objectives: Assessment Practice of midwives regarding infection control in labor rooms at pubic hospital

Specific objectives:

assessment of midwives practices regarding infection control in labor rooms at pubic hospital

- To associate the selected demographic variables with mean differed level of practice on infection control in labour unit among midwives

Research methods:

A descriptive cross –sectional hospital based study design was conducted in labor rooms of 24 public hospitals at Khartoum state. The study populations comprise of all midwives who working in labor rooms, willing to participate and available during period of the convenience sampling technique was study, adopted to sample size and 205 midwives were enrolled in the study, data were standard practical check list data were analyzed by SPSS version 20 and presented in form of simple frequency tables and cross tabulation.

Ethical consideration: -Approval from Al Neelain University Ethical committee, Khartoum state ministry of health research department, and from 24 public hospitals.

- Research purpose and objective was explained to participants in clear simple word. Verbal consent was taken

Results

Table (1) Distribution of midwives according to their demographic data **(n =205):**

Items	**Demographic Variable**	**N (%)**
Age	< 20 20 – 30 31 – 40 > 40	3(1.5) 40 (19.5) 49 (23.9) 113 (55.1)
Educational level	Diploma & Bachelor	177 (86.3) 28 (13.7)
Years of experience	< 5 5 - 10 11 -15 > 15	2 (1.0) 30 (14.6) 69 (33.7) 104 (50.7)
Received training program for infection control	Yes No	120 (58.5) 85 (41.5)
Received a training course in infection control (n =120)	< 6 month 6 -12 month > 12 month	20 (16.7) 26 (15.8) 74 (61.2)
No. of training course in infection control (n =120)	Once Tow Three	61 (71.2) 37 (14.1) 22 (14.6)

Table (2): practices of midwives regarding hands hygiene in labor rooms (n =205)

Items/ Practices	**Completely done n (%)**	**Partially done n (%)**	**Not done n (%)**
Use proper technique for wash hands	54 (26.3)	21 (10.2)	130 (63.4)
Wash hand before any procedures	87 (42.4)	52 (25.4)	66 (32.2)
Wash hand after any procedures	90 (43.9)	63(30.7)	52(25.4)
Wash hand whenever hands become visibly soiled	80 (39.0)	62 (30.2)	63 (30.7)

Wash hand before and after physical contact with each client	71 (34.6)	53 (25.9)	81 (39.5)
Wash hand After handling contaminated items such as dressings, catheter	120 (58.5)	43 (21.0)	42 (20.5)
Short nails–free from rings and jewelry	107 (52.2)	37 (18.0)	61 (29.8)

Table (3): practice of midwives regarding personal protective equipment used (n = 205)

Items/ Practices	Completely done n (%)	Partially done n (%)	Not done n (%)
Gloves used for each client	163 (79.5)	14 (6.8)	28 (13.7)
Use proper technique for gloves	57 (27.8)	22 (10.7)	126(61.5)
Do not use gloves that are cracked, peeling or have tears	145 (70.7)	8 (3.9)	52 (25.4)
Disposable plastic aprons	56 (27.3)	0 (0.0)	149(72.7)
Wearing gown properly-only touch the inside surface of gloves	46 (22.4)	15 (7.3)	144(70.2)
Eye protection (eyes glass –goggles)	14 (6.8)	7 (3.4)	184(89.8)
Wearing face mask	32 (15.6)	4 (2.0)	169(82.4)

Table (4): practice of midwives related Safe disposal medical waste (N =205)

Items/ Practices	Completely done n (%)	Partially done n (%)	Not done n (%)
Safe disposal of medical waste	76 (37.1)	16 (7.8)	113 (55.1)
Safe collection and transport of medical waste	109 (53.2)	14 (6.8)	82 (40.0)
Safety boxes disposed of when 3/4 full	58 (28.3)	0 (0.0)	147 (71.7)
Proper handling of sharp needle when use	69 (33.6)	0 (0.0)	136 (66.3)
Evaluate aseptic barrier material prior to use in the labor room	72 (35.1)	0 (0.0)	133 (64.9)
Mean +SD = 10.69 ±3.51694			

Table (5) Relation between midwives' profile and practices of Midwives to implementing infection control measurement in labor rooms (n =205)

Midwives profile	Practices of Midwives about infection control						P-value
	Week		Fair		Good		
	F	%	F	%	F	%	
Age							
>20	1	33.3%	2	66.7%	0	0.0%	.352
20 – 30	7	17.5%	29	72.5%	4	10.0%	
31 – 40	4	8.2%	38	77.6%	7	14.3%	
> 40	23	20.4%	71	62.8%	19	16.8%	
Educational level							
Diploma	3	17.5%	124	70.1%	22	12.4%	
Bachelor	5	14.8%	15	55.6%	8	29.6%	.169
Years of experience							
< 5	0	0.0%	0	0.0%	2	100.0%	
5-10	7	23.3%	20	66.7%	3	10.0%	.165
11-15	11	15.9%	50	72.5%	8	11.6%	
> 15	17	16.3%	70	67.3%	17	16.3%	
Received training course							
YES	12	10.0%	82	68.3%	26	21.7%	.000*
NO	23	27.1%	58	68.2%	4	4.7%	
Training course numbers							.000*
once	27	18.5%	110	75.3%	9	6.2%	
two	6	20.7%	13	44.8%	10	34.5%	
three	2	6.7%	17	56.7%	11	36.7%	

Discussion: The study took place in Khartoum State. It covered 100 % of public hospital in labor rooms. The total number of midwives working in labor rooms were (205) care providers, the majority (55.1%) of midwives aged more than 40 years. Regarding midwives' qualification, the current study found that more than three quarter (86.3%) of them had diploma, years experiences most (50.7%) of them more than15years. This result disagrees with the study conducted in Baghdad that reported, less than half (48.5%) of the participate have diploma in nursing and (40%) of the participate have < 5 years working in nursing (Shauq, *et al*, 2014).
As a useful starting point, the provision of adequate in-service training (IST) is considered vital in developing and keeping midwives with up to date practices in the field of maternal health

care. The provision of adequate IST will go a long way to reduce maternal mortality. The clinical competencies of midwives need to be addressed through frequent IST and their curricular must have relevance in modern health care delivery practices, (Nyango et al, 2010). The present study showed that, more than (41.5%) of midwives didn't attend any training courses about infection control, These results were similar to the study conducted in Egypt by (Abdalla1,N.2015).
Regarding practices of midwives about hands hygiene in labor rooms, hand hygiene is the key measure for preventing the spread of antimicrobial resistance and reducing healthcare-associated infections (HCAIs), however healthcare workers' compliance with optimal practices remains low in most settings (Edoja et al, 2012). The current study indicates that only (34.6%) Wash hand before and after physical contact with each client. These findings are in disagree with study reported (75.5%) of participants always wash hands before and after direct contact, (Chisanga, C. 2017).

In the present study, the study found that compliance to hand hygiene recommendations before versus after handling contaminated items was (58.5%) of them. These results were similar to study conducted in Sangli by Namrata Dhanorkar etal who found that compliance to hand hygiene was (55%) after handling the baby (Dhanorkar *et al*. 2015).
Regarding personal protective equipment used among midwives practice, only 27.8% of midwives used prober technique for wearing gloves. (27.3%) of them used disposable plastic aprons, (22.4%) of midwives had worn gown properly but only 15.6% wore face mask, 6.8% of midwives Eye protection. This study deferens for previous study conducted by Kelemua Gulilat in Bahir Dar city, Ethiopia 2014 who found that 99.4% of the healthcare providers used working gown regularly and similar with (73.4%) of the respondents who used gloves for all procedures that necessitate donning glove (Dhanorkar et al 2015).
As regarding practice of midwives related safe disposal medical waste, the study revealed that less than half (37.1%) of midwives applied safe collection and transport of medical waste completely done and (35.1%) of them valuate aseptic barrier material prior to use in the labor room.
According midwives used safety boxes disposed of when 3/4were full only (28.3%) of them used completely done This study unsupported with previous found nearly two third,(64.4%)of units in each health care facilities use safety box (Dhanorkar *et al* 2015). Factors affect infection control and dimorphic Socio-demographic characteristics and practices of midwives about infection control showed a statistically significant relation between practices of midwives and practices of midwives received training course - training course numbers at (.000*and .000*) respectively.
Conclusion: Based on the findings, it can be concluded that midwives in the current study haven't good practice level regarding infection control. However, inspite of having practice about infection control, their overall practice didn't reach the good level.
Recommendations:
1-The researcher recommend the utilization of infection control standards in labor rooms
2- Conference and frequent training course about infection control should be applied for midwives participate.

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