

## Active Management of the Third Period of Childbirth at (AMTPC) the Reference Health Center of the Commune VI of the District of Bamako

Boubakary Guindo<sup>1\*</sup>, Mahamoudou Coulibaly<sup>2</sup>, Sema Keita<sup>3</sup>, Moctar Diaby<sup>1</sup>, Bouroulaye Diarra<sup>1</sup>, Aminata Kouma<sup>1</sup>, Alou Samake<sup>4</sup>

<sup>1</sup>Gynecology and Obstetrics Department of Pr BOCAR SIDY SALL University Hospital, Kati, Mali

<sup>2</sup>Kalabancoro Reference Health Center, Kati, Mali

<sup>3</sup>Fana Reference Health Center, Koulikoro, Mali

<sup>4</sup>Commune V Reference Health Center, Bamako, Mali

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\*Corresponding author: Boubakary Guindo

Gynecology and Obstetrics Department of Pr BOCAR SIDY SALL University Hospital, Kati, Mali

### Abstract

### Original Research Article

**Aims:** this study aimed at contributing to the improvement of the quality of the practice of the AMTPC and the prevention of the occurrence of postpartum hemorrhages that we carried out in the delivery room of the commune VI of the district of Bamako. **Patients and Methods:** This was a cross-sectional study, on 407 parturients and 30 agents in charge of assisted deliveries. **Results:** Among these birth attendants surveyed, 7 (23%) had no training in AMTPC. The number of gestures required for the correct practice of the AMTPC for a parturient was estimated at 34 divided into 5 stages, only the closing stage was correctly done (94.1%) with a score higher than normal (80%). The scores for the correct practice of the 4 other stages were insufficient: preparation (58.2%), delivery (62.4%), uterine massages (19.7%), examination of the genital canal (30%) are below the national standard (80%). **Conclusion:** The practice of the AMTPC is systematic in the delivery room of the referral health center of Commune VI. However, the quality of the AMTPC remains insufficient in the delivery room since among the five stages evaluated, only that of the fence was correctly practiced.

**Keywords:** Preparation, AMTPC, delivery, uterine massage, birth canal examination.

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## 1. INTRODUCTION

According to estimates by the World Health Organization, 529,000 women die each year worldwide from complications of pregnancy, childbirth and childbirth [1, 2]. Nearly half of these deaths occur in Sub-Saharan Africa, a region that is home to only 13.5% of the world's population and where 23.5% of global births occur [2]. With an estimated ratio of 1,000 maternal deaths per 100,000 live births, the African region with the highest maternal mortality in the world. Although there are regional variations, some countries' ratio is above 500 maternal deaths per 100,000 live births, while others have a ratio above 1,000 maternal deaths per 100,000 live births, particularly in developing countries. Sub-Saharan Africa [2].

Worldwide, approximately 80% of maternal deaths result directly from complications of pregnancy, childbirth or postpartum. Hemorrhage, especially postpartum hemorrhage is the most common cause of maternal death. Immediate postpartum hemorrhage is defined as blood loss greater than the quantity

considered physiological (<500ml) occurring during the 24 hours following childbirth [3]. It is responsible for almost 25% of all maternal deaths. Hemorrhage, especially postpartum hemorrhage, is unpredictable, sudden, and more dangerous in an anemic woman. It can lead to death in the absence of immediate and appropriate care. According to estimates, there are approximately 14 million cases of pregnancy-related haemorrhage each year, including at least 128,000 deaths [4].

In the context of high mortality and limited resources, which is that of most countries in sub-Saharan Africa, the introduction of low-cost, evidence-based practices that can prevent bleeding postpartum will significantly improve maternal and newborn survival. Active management of the third stage of labor is one of the low-cost and effective interventions for preventing postpartum hemorrhage [4]. Clinical trials conducted in developed countries have shown that unlike physiological management of the third stage of labor in which oxytocics are not used and the placenta

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is expelled by gravity and maternal effort, AMTPC significantly reduces the occurrence of postpartum hemorrhage [4]. Compared to AMTPC, physiological management is associated with a high rate of postpartum hemorrhage and severe postpartum hemorrhage, increased need for blood transfusion, increased need for administration of utero tonic as therapeutic and to a long duration of the third period of childbirth. The Cochrane systematic review of these trials recommended AMTPC for all women due to deliver a child in a hospital [4].

The AMTPC consists of a range of interventions aimed at facilitating the expulsion of the placenta by increasing uterine contractions, and preventing postpartum hemorrhage by avoiding uterine atony.

Its usual components are:

- Administration of utero tonic;
- Controlled cord traction;
- Massage of the uterus after the expulsion of the placenta.

This AMTPC definition is adopted by FIGO, ICM and WHO. Note, however, that this definition, adopted by FIGO, ICM and WHO, differs somewhat from that used in the original protocol of the Hinchingsbrooke [4] and Bristol [5] clinical trials. Indeed, the original protocol of these two clinical trials included immediate clamping of the cord but did not include massage of the uterus. Similarly, the ICM/FIGO joint statement [6] and the document entitled “*Management of Complications of Pregnancy and childbirth*” published by the WHO in 2002 does not mention the immediate clamping of the cord either [7].

In view of the results based on the scientific evidence of the effectiveness of this practice, the ICM and the FIGO, through their joint declaration of November 2003, recommended that the AMTPC be offered to all women “as a means of reducing incidence of postpartum hemorrhage due to uterine atony” [6]. The inclusion of AMTPC in the WHO manual titled “*Management of Complications in Pregnancy and Childbirth*” [7] also demonstrates international recognition of this practice as an acceptable standard of care.

Despite the effectiveness of AMTPC, evidence for its use is still scarce. The evaluation of certain projects promoting this practice most often tends to be limited only to the number of providers trained and the percentage of providers having reached the acceptable level of performance after training. Apart from

anecdotal information, the use of this practice is somewhat better described in the research report published by the Global Network for Perinatal and Reproductive Health [8]. In fact, the data from the study of 15 reference obstetrical university structures in developed and developing countries indicate a clear variation in the use of the practice of the AMTPC both within the same hospital structure and between hospital structures. Overall, only 25% of births observed involved the practice of the AMTPC. This study also revealed that the three components of the technique were consistently applied in only one hospital (Dublin) [8]. Moreover, great variations were noted in the use of its various components. For example, prophylactic oxytocin use varied from 0% to 100%; the practice of controlled cord traction varied from 13% to 100% and finally the number of women who received additional doses of oxytocin during the third stage of labor varied from 5% to 100%. These results suggest that the correct use of AMTPC is still low. Similarly, in the places where it is practiced, the definition varies not only within the same country but also between countries [9].

## 2. METHODOLOGY

### a. Type of study:

Our study was cross-sectional and descriptive with an evaluative aim.

### b. Study period:

Our study took place from January 01, 2016 to March 31, 2016, corresponding to three (3) months.

### c. Study population:

#### ➤ Primary targets

Were the women admitted during labor who gave birth vaginally at the maternity ward of the obstetrics gynecology department of the Commune VI Reference Health Center during the study period.

#### ➤ Secondary targets

Were represented by the agents in charge of deliveries at the maternity ward of the obstetrics gynecology department of the Reference Health Center of Commune VI during the study period.

## 3. RESULTS

Our study focused on 407 parturients and 30 agents responsible for childbirth. The results are presented by specific objective after description of the sample.

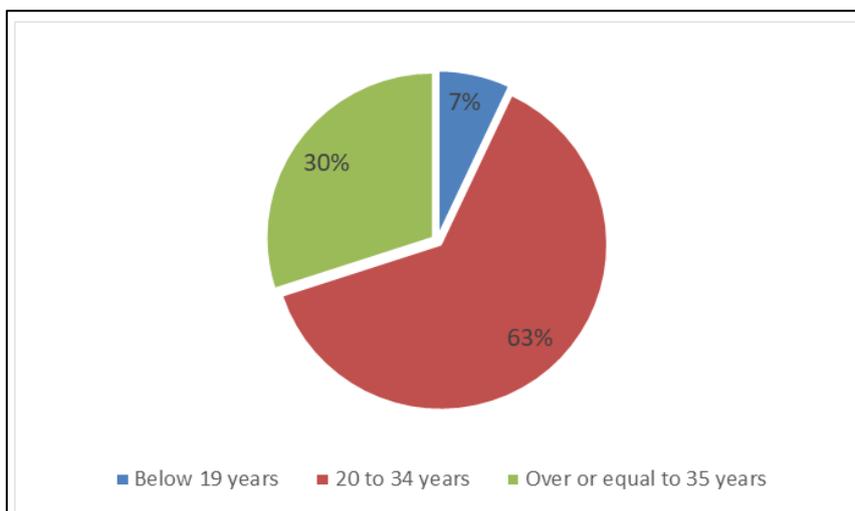
## 4. Sample Description

### 4.1. Qualification of service providers

**Table I: Qualification of service providers**

Professional categories	n	%
Midwives	12	40.0
Thesis year students	8	26.7
Obstetrician nurses	6	20.0
Obstetrician gynecologists and Residents	4	13.3
Total	30	100.0

Midwives were more represented in our study series with 40%.



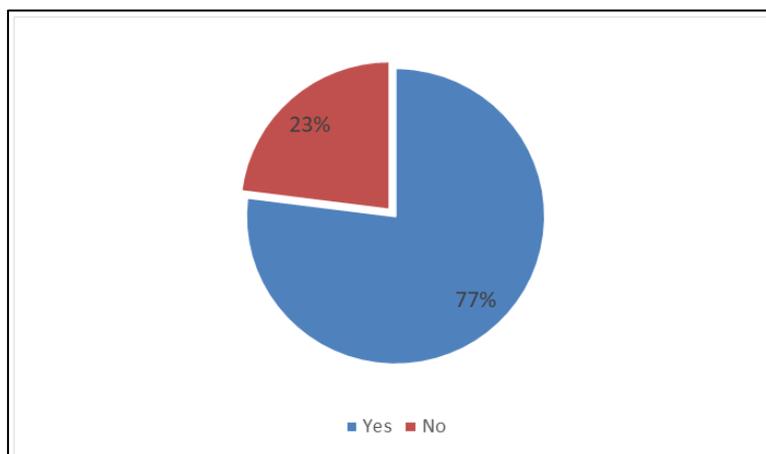
**Figure 1: Distribution of providers in charge of assisted deliveries according to age groups**

Average age of providers in charge of assisted deliveries = 33 years

Extreme ages of birth attendants = 19 to 55 years old

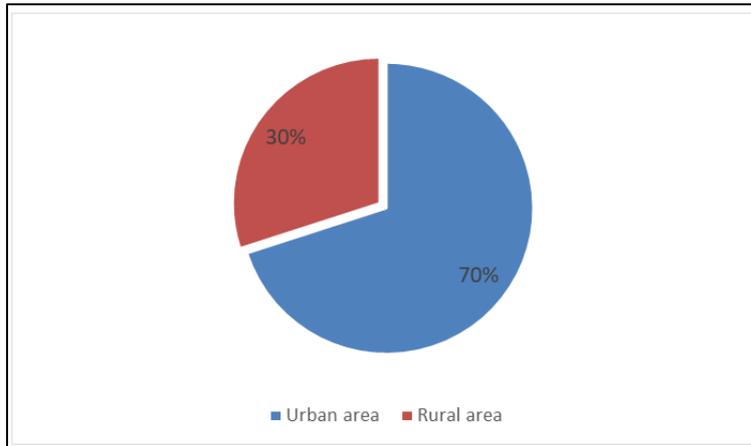
**Table II: Breakdown of service providers according to the number of years of practice in the profession**

Number of years of exercise	Effective	Frequency
1 to 4 years old	16	53.3
5 to 9 years old	09	30.0
≥10 years	05	16.7
Total	30	100.0
Mean	10	33.3
Standard deviation	5.6	18.5
Extremes	[5; 16]	[16.7; 53.3]



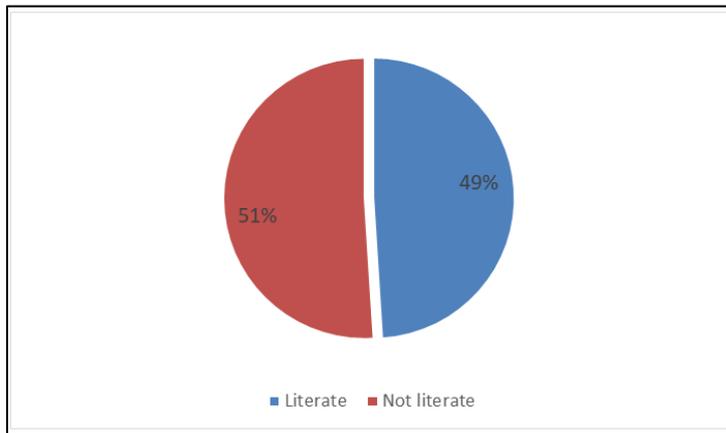
**Figure 2: Distribution of service providers who have received training in AMTPC**

In our study, 23% of our service providers did not receive training in the GATPA, they were made up of new employees assigned to the service and interns.



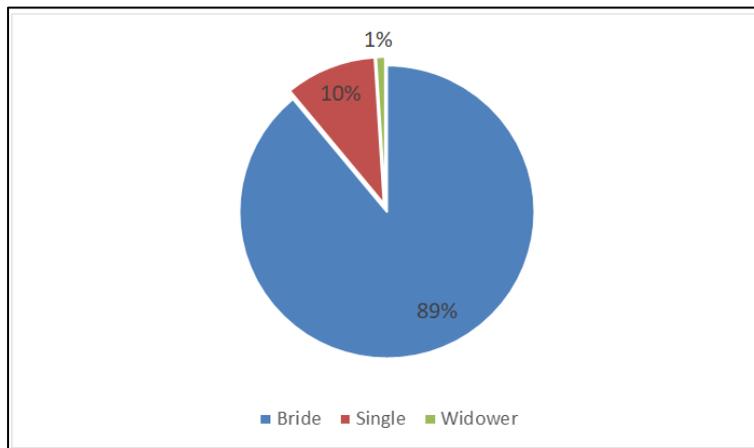
**Figure 3: Breakdown of parturients according to area of origin**

In our study, 30% of our parturients came from rural areas and were referred by the health structures of their locality.



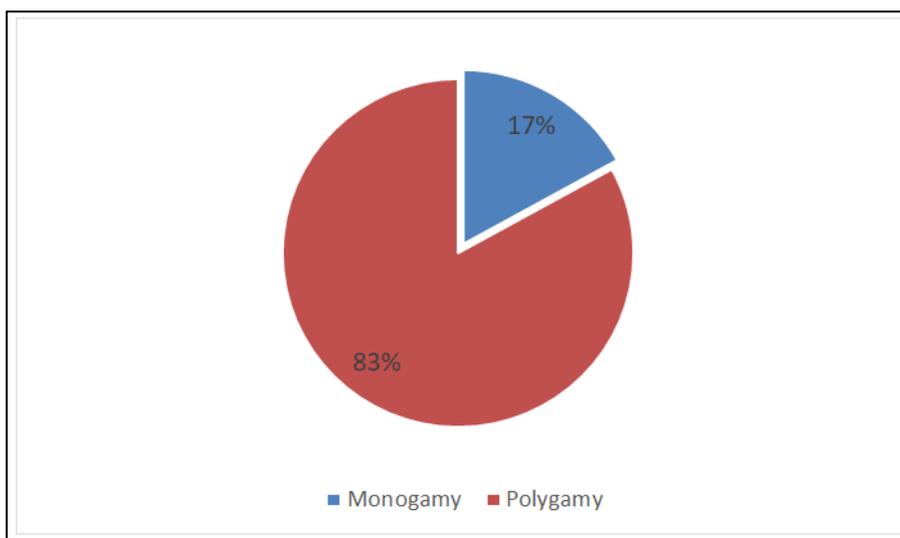
**Figure 4: Distribution of parturients according to the educational status**

In our study most of our questioned parturients are illiterate.



**Figure 5: Distribution of parturients according to marital status**

In our series 89% of our parturients were married.



**Figure 6: Distribution of parturients according to matrimonial status**

**5. Evaluation of the practice of the ATPMT**

**5.1. Frequency of the practice of the ATPMT**

Our study revealed that the practice of the GATPA is systematic in the delivery room at the reference center of the commune VI of Bamako.

**5.2. First step: preparation of the parturient**

**Table III: Distribution of mastery of gestures in the preparation phase of parturients**

Gestures Classification	Information (1st <sup>gesture</sup> )		Listen (2nd <sup>move</sup> )		Support Psychological (3rd <sup>gesture</sup> )		Laying of bedpan (4th <sup>gesture</sup> )	
	not	%	not	%	not	%	not	%
Controlled gestures	278	68.3	206	50.6	244	60.0	352	86.5
Uncontrolled gestures	83	20.4	176	42.3	156	38.3	46	11.3
Gestures not made	46	11.3	29	07.1	07	01.70	09	2.2
<b>Total</b>	<b>407</b>	<b>100</b>	<b>407</b>	<b>100</b>	<b>407</b>	<b>100</b>	<b>407</b>	<b>100</b>

**Table IV: Mastery of the gestures of the preparation stage and the quality of the practice**

Controlled gestures	Del	%	Quality of practice		Incorrect practice or not done
			E	%	
No gesture	12	02.9	170	41.8	Correct practice
1 <sup>st</sup> gesture	71	17.4			
2nd move -	87	21.4			
3rd gesture -	96	23.6	237	58.2	Correct practice
4th move -	141	34.6			
<b>Total</b>	<b>407</b>	<b>100.0</b>			

One = Inform the woman and her companion about what is going to be done and encourage them to ask questions.

TWO=Listen to what the woman and her companion have to say

THREE= Give psychological support and reassurance

FOUR=Place a container (bedpan) or a clean container if a sterile container is not available.

NB: This figure of 58.2% of correct practice is lower than the standard which is 80%.

**Table V: Mastery of the gestures of the delivery stage and the quality of the practice**

GESTURES	Clear	%	Quality of practice	Clear	%
None	0	0.0	153	37.60	Incorrect practice or not done
1 <sup>st</sup> gesture -	2	0.5			
2 <sup>nd</sup> gesture -	4	1.0			
3 <sup>rd</sup> gesture -	4	1.0			

<b>4th move -</b>	5	1.2	254	62.40	Correct practice
<b>5th move -</b>	26	6.4			
<b>6th move -</b>	42	10.3			
<b>7th move -</b>	70	17.2			
<b>8th gesture -</b>	90	22.1			
<b>9th gesture -</b>	86	21.1			
<b>10th gesture -</b>	48	11.8			
<b>11th gestures -</b>	30	7.4			
<b>Total</b>	407	100.0			

This step called delivery of the placenta will be said to be perfect in our parturients if at least 8 gestures out of the 11 are well done in a parturient.

In our study series, only 4 gestures are correct, i.e. 62.40%.

**Table VI: Classification of the frequency of the practice of gestures during the uterine massage phase**

	<b>1st gesture -</b>		<b>2nd gesture -</b>		<b>3rd gesture -</b>		<b>4th gesture -</b>	
<b>Gestures classification</b>	Immediate uterine massage		Self massage by wife		Uterine massage/15min		Continuous check of the uterine globe	
<b>Controlled gestures</b>	284	69.8	129	31.7	98	24.1	106	26.0
<b>Uncontrolled gestures</b>	92	22.6	119	29.2	209	51.3	197	48.4
<b>Gestures not made</b>	31	7.6	159	39.1	100	24.6	104	25.6
<b>Total</b>	407	100.0	407	100.0	407	100.0	407	100.0

Uterine massage every 15 min and continuous checking of the uterine globe were not mastered by providers.

**Table VII: Mastery of the gestures of the uterine massage stage and quality of the practice**

Gestures	Clear %		Quality of practice		
			E	%	Incorrect practice or not done
None	52	12.8	327	80.3	Incorrect practice or not done
1st gesture -	161	39.6			
2nd gesture -	114	28.0			
3rd gesture -	42	10.3	80	19.7	Correct practice
4th gesture -	38	9.3			
<b>Total</b>	407	100.0			

This third step called uterine massage will be said perfectly in parturients if at least 3 gestures out of the 4 are well done.

NB: This figure of 19.7% correct practice of uterine massage in our series is far from the national norm.

**Table VIII: Mastery of the gestures of the stage of the examination of the genital canal and the quality of the practice**

<b>Mastery gestures</b>	<b>Del</b>	<b>%</b>	<b>E</b>	<b>%</b>	<b>Quality of practice</b>
None	3	0.7	285	70.0	Incorrect practice
1st gesture -	7	1.7			
2nd move -	57	14.0			
3rd gesture -	115	28.2			
4th gesture -	103	25.3			
5th gesture -	112	27.5	122	30.0	Correct practice
6th gesture -	10	2.5			
<b>Total</b>	407	100.0			

This 30% figure is lower than the national standard. This stage called the examination of the

genital canal will be said to be perfectly done if at least 5 gestures 6 are done well.

**Table IX: Mastery of the gestures of the study of the quality of practice**

Mastery gestures	Del	%	Quality of practice		
			E	%	Incorrect practice or not done
None	0	0.0	24	5.9	
1st gesture -	0	0.0			
2nd gesture -	0	0.0			
3rd gesture -	0	0.0			
4th move -	10	2.5			
5th move -	0	0.0			
6th gesture -	14	3.4			
7th move -	42	10.3	383	94.1	Correct practice
8th move -	75	18.4			
9th gesture -	266	65.4			
Total	407	100.0			

This stage, called the closure of the AMTPC, is said to be perfect in a parturient if at least 7 gestures out of the 9 are well done.

**NB: Our study of 94.1% correct practice is well above the national standard which is 80%.**

**Table X: AMTPC Practice Summary**

Steps	Correct practice	Incorrect practice
Preparation	No	Yes
Delivery of the placenta	No	Yes
Uterine massage	No	Yes
Birth canal examination	No	Yes
Fence	Yes	No
Score yes or no	1/5	4/5

**Our study conducted at the CSREF CVI in Bamako shows us that of the 5 steps taught, only the 5th<sup>step</sup>, called closure, was correct.**

## 6. DISCUSSION

### To. Epidemiology

Our study focused on 407 parturients and 30 agents in charge of assisted deliveries.

The study revealed that the practice of the GATPA is systematic in the delivery room at the Commune VI Reference Health Center and that of the 5 stages of the practice of the GATPA, only one stage (closing) was correctly performed, practiced (94.1%) in accordance with national standards. National standard set at 80% good practice.

Among the 30 agents interviewed, 23 (77%) had received training in ATPSM and the other 7 (23%) had not received training in ATPSM.

### b. Characteristics of parturients:

#### The age of the parturients:

The age group between 20 and 34 was the most represented with a rate of 63.0%.

The average age of our parturients was 27 years with extremes ranging from 14 to 48 years.

### The area of origin of the parturients:

In our study, 70.0% of parturients came from an urban area.

### Socio-professional categories of parturients:

Housekeepers were the most represented with a rate of 59.7%.

### Level of education of parturients:

Uneducated parturients represented 51% of the sample.

### Marital status of parturients:

In our series, 89% of our parturients were married. This can be explained by the fact that conception before marriage is poorly accepted in our traditional society. 1% of our parturients had just lost their husbands.

### c. Stages/tasks in the active management of the third stage of labour:

#### The stages of the AMTPC:

- **Stage of the preparation of the woman:** In the stage of preparation, the practice of the AMTPC was correct in 58.2% of the cases. This study is similar to a study carried out at CSRéf CV in 2011 (59.8% of cases). A

Senegalese study on the AMTPC and SENN situation in 2006 with providers all trained on this subject [24], found correct practice of this step at 56%.

- **Stage delivery of the placenta:** For the stage of delivery, the practice of the AMTPC was correct in 62.4%. A study carried out at CSRéf CV in 2011 found 54.2% of cases. A national survey carried out in Benin in 2006 on the practice of the AMTPC [25] found 62.2% of correct practice in the pilot sites. As for the Senegalese study, it reported 83% correct delivery practice [24].
- **Uterine massage stage:** It was correct only in 19.7% of cases in our series against 21.7% in the CSRéf CV study, 34.8% in the Beninese study and 66% in the Senegalese study. However, this figure of 19.7% is far below the national standard.
- **Birth canal examination stage:** The practice was correct in only 30% of cases.

This means that future trainings should focus on the first four steps (preparation, delivery, uterine massage and examination of the birth canal).

- Only the closing stage had a correct practice score of 94.1% for a national standard of 80%.

#### d. Training in AMTPC:

In our study, 77% of staff had received training in AMTPC since each year at least one training in AMTPC is organized in the department. The 23% who had not received the training were newly assigned personnel in the department. This staff mobility must be taken into account in the development of future training agendas. A study carried out at CSRéf CV had found 66% of trained staff against 34% and had also found the same reasons for the non-training of staff. A national survey carried out in Benin [25] reported 62.2% of personnel trained in GLATP in the pilot sites.

## CONCLUSION

The practice of the AMTPC is systematic in the delivery room of the referral health center of Commune VI.

However, the quality of the AMTPC remains insufficient in the delivery room since among the five stages evaluated, only that of the fence was correctly practiced.

**Conflicts of interest:** none.

**Author Contribution:** All authors contributed to the writing of the article.

## REFERENCES

1. Hogerzeil, H. V., Hans, V., Walker, Goeje G. J. A., World Health Organization (WHO). (1993).

Stability of injectable oxytocics in tropical climates: Results of field surveys and stimulation studies on ergometrine, methylergometrine, and oxytocin. EDM Research Series, No 8. 50p.

2. World Health Organization, Regional Office for Africa (WHO/AFRO). Roadmap: The African Union is committed to combating maternal mortality. Regional Reproductive Health Bulletin; 2004, No. 2. Brazzaville: WHO/AFRO.
3. Lansac, J., & Body, G. (1988). Childbirth practice. Paris: SIMEP SA.
4. Rogers, J., Wood, J., McCandlish, R., Ayers, S., Truesdale, A., & Elbourne, D. (1998). Active versus Expectant Management of Third Stage of Labour: The Hinchingsbrooke Randomized Controlled Trial. *Lancet*, 351, 693–699.
5. Prendiville, W. J., Harding, J. E., Elbourne, D. R., & Stirrat, G. M. (1988). The Bristol third stage trial: active versus physiological management of third stage of labour. *British Medical Journal*, 297(6659), 1295-1300.
6. ICM and FIGO. Joint Statement: Management of the Third Stage of Labor to Prevent Postpartum Haemorrhage. Washington: ICM/FIGO. 2003.
7. WHO. (2002). Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Physicians. Geneva: WHO.
8. Festin, M. R., Lumbiganon, P., Tolosa, J. E., Finney, K. A., Ba-Thike, K., Chipato, T., ... & Daly, S. (2003). International survey on variations in practice of the management of the third stage of labour. *Bulletin of the World Health Organization*, 81(4), 286-291.
9. Prendiville, W. J., Harding, J. E., Elbourne, D. R., & McDonald's, S. (2001). Active versus Expectant Management in the Third Stage of Labor (Cochrane review). The Cochrane Library.
10. Ministry of Economy and Health of Mali. (2006). National Directorate of Statistics and Information Technology (DNSI). Mali 2006 Dermatographic and Health Survey (EDSMIV). Calverton; Maryland; US.
11. Initiative: for the prevention of postpartum hemorrhage – PATH February 10, 2007.
12. Merger, R., Levy, J., & Melchior, J. (1999). *Precis of obstetrics 6th edition* Masson 1999.
13. Annide. Hemorrhage of deliverance. Medical thesis, Cotonou. 2003 No. 35.
14. Mac Donald, S., Prendiville, W. J., & Elbourne, D. R. (1996). Prophylactic syntometrine versus oxytocin for delivery of the placenta (Cochrane Review), in the Cochrane Library. issue 4. Update Software: Oxford.
15. SOGC Journal (SOC OBSTET GYNECOL CAN). (2000). Prevention and management of postpartum hemorrhage, 22(4), 282-294.
16. SOGC Journal (SOC OBSTET GYNECOL CAN). (2003). Management of the 3rd<sup>stage</sup> of labor to prevent postpartum haemorrhage November 2003 n°136.

17. Anonymous. (2003). Provide quality care during labor. Postpartum Hemorrhage Prevention Initiative Ministry of Health/PRIMEII Bamako.
18. Bamigboye, A., Merrell, D. A., Hofmeyr, G. J., & Mitchell, R. (1998). Randomized comparison of rectal misoprostol with syntometrine for management of third stage of labor. *Acta Obstet Gynecol Scand*, 77, 178-181.
19. Irons, D. W., Sriskandabalan, P., & Bullough, C. H. W. (1994). A simple alternative to parenteral oxytocics for the third stage of labor. *International Journal of Gynecology & Obstetrics*, 46(1), 15-18.
20. Khan, G. Q., John, I. S., Wani, S., Doherty, T., & Sibai, B. M. (1997). Controlled cord traction versus minimal technical intervention in delivery of the placenta: A randomized controlled trial. *Am J Obst and Gynecol*, 177(4), 770-774.
21. Mac Donald, S. J., Prendiville, W. J., & Blaire, E. (1993). Randomized controlled trial of oxytocin alone versus oxytocin and ergometrin in active management of third stage of labor. *BMJ*, 307(6913), 1167-1171.
22. Bullough, C. H., Msuku, R. S., Karonde, I. (1989). Early suckling and postpartum haemorrhage: controlled trial in deliveries by traditional birth attendants. *Lancet*, 2 (8662), 522-525.
23. Sangaré, G. (2011). Immediate postpartum haemorrhages due to uterine atony at the reference health center of commune V in the district of Bamako: prevention and treatment. Medical thesis, FMPOS, Bamako, 113p.
24. The Senegalese study on the GATPA and SENN situation (elementary newborn care) in 2006 with the service providers all trained on this subject.
25. Study of the active management of the third stage of childbirth in health facilities: Results of a national survey carried out in Benin, 2006.
26. Konaté, O. (2013). Study of the practice of active management of the third stage of childbirth (GATPA) at the reference center of commune V in the district of Bamako. Medical thesis, FMOS, Bamako, 97p.