

Knowledge, Attitudes, and Practices of Midwives Regarding Obstetric Fistulas in Brazzaville

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Abstract

Objective: Analyze the knowledge, attitudes, and practices of midwives regarding obstetric fistulas in Brazzaville. **Population and Methods:** Analytical CAP study, conducted from May 10 to September 10, 2024 (04 months), non-probabilistically including midwives on duty in birthing units and outpatient clinics with at least 12 months of practice. Study variables were related to socio-professional characteristics, knowledge, attitudes and practices. **Results:** Two hundred midwives were interviewed. They had an average age of 36.5 ± 9.1 , with a secondary level of education (58.5%), and had been practising for more than 5 years (52.5%). They had sufficient knowledge (73%), harmful ignorance in 13.7% of cases, with different levels of certainty; appropriate attitudes (94.5%), and poor practices (55.5%). Length of practice influenced knowledge ($P = 0.001$). Knowledge influenced attitudes ($P = 0.001$). Knowledge and attitudes influenced practice ($P < 0.05$). Midwives with insufficient knowledge were 03 times more likely to have poor practices (OR = 2.80; CI [1.47 - 5.38]; $P = 0.001$). **Conclusion:** Midwives' skills-based approach to obstetric fistula training would help improve their practices.

Keywords

Obstetric Fistula, Midwifery, Knowledge, Attitudes, Practices, Brazzaville

1. Introduction

Obstetric fistula is the presence of a connection either between a woman's genital tract and her urinary system (vesico-vaginal) or between the genital tract and the rectum (recto-vaginal fistula) due to untreated obstructive labor, precipitous de-

livery, abortive maneuver, or an iatrogenic cause (instrumental delivery, cesarean section) in the absence of appropriate obstetric care [1]-[3].

The WHO estimates that approximately 50,000 to 100,000 women develop an obstetric fistula each year, with at least 33,000 of these cases occurring in sub-Saharan Africa [4] [5]. Obstetric fistulas represent a major public health issue in developing countries. It is a true social and psychological tragedy; approximately 800 women die every day from complications related to pregnancy or childbirth worldwide. For every woman who dies from maternal-related causes, it is estimated that at least 20 suffer from maternal morbidity, one of the most severe forms being obstetric fistula [6].

The conditions conducive to the occurrence of obstetric fistulas are based on the three delays described by Maine and adopted by WHO: delay in deciding to seek care, delay in reaching a care facility once the decision is made, and finally, delay in receiving appropriate care once at the hospital [7]. All these factors can be distributed across three levels of responsibility incumbent on the individual, the community, and the health system. Several strategies are implemented to address this, with one of the main approaches being the prediction of delivery in the 8th month and precautions during childbirth, with the midwife as the key player [8]. Thus, the fight against obstetric fistulas is a major concern for midwives.

It is with this perspective that we proposed conducting a study on the Knowledge, Attitudes, and Practices (KAP) of midwives in Brazzaville by analyzing their knowledge, attitudes, and practices concerning obstetric fistulas in Brazzaville in 2024.

2. Population and Methodology

This was an analytical KAP (Knowledge, Attitudes, Practices) study conducted from May 10 to September 10, 2024 (four months), in the Gynecology and Obstetrics departments of hospitals in the city of Brazzaville, Congo. The study took place at the following locations: Brazzaville University Hospital Center, Talangai Referral Hospital, Makélékélé Base Hospital, Blanche GOMES Specialized Mother and Child Hospital, Bacongo Base Hospital, and Pierre Mobengo Central Military Hospital.

The target population consisted of all midwives who participated in childbirth activities and outpatient consultations at the hospitals selected for the study. Excluded were midwives who did not answer all the questions, those with less than 12 months of experience, and those who participated in the pre-test.

A non-probability sampling method was used, with a total sample size of $N = 200$ midwives.

The variables studied were related to:

- Socio-professional characteristics: age, hospital training, level of education, years of practice;
- Knowledge about obstetric fistulas (FO): general knowledge of midwives, knowledge of causes, preventive measures, and types of treatments for FO;

- Attitudes towards FO: reactions, actions in the event of FO, decisions in the case of obstructive labor, intentions regarding FO;
- Practices related to FO: having assisted in the care of women with FO, having assisted in FO surgery, number of identified fistula cases.

For the successful implementation of the survey, a pre-test was conducted to assess the midwives' understanding of the questionnaire. This pre-test was carried out with 20 midwives randomly selected from a health center that was not included in the study. This phase allowed for the adjustment of certain questions and the adaptation of the questionnaire to the midwives' level of comprehension.

We performed univariate and bivariate analyses using the software CS Pro 7.4 and EXCEL 2019.

We also conducted an analysis of the degree of certainty of responses using the spectrum of response qualities for Instruction 1 by Dieudonné Leclercq. This method categorizes knowledge-based questions into a spectrum where the surveyor marks the given answer and circles the degree of certainty or probability percentage among the six following options: 0%, 20%, 40%, 60%, 80%, 100%. If the respondent had no knowledge of the question, the surveyor was required to indicate a certainty level of 0%.

Attitudes were assessed using the Likert scale, employing a predefined scale with the following response options: Strongly agree - Agree - Disagree - Strongly disagree practice was considered good when it aligned with medical protocols and international recommendations aimed at preventing and treating obstetric fistulas, and poor when it did not meet these standards.

We used the Chi-square test to assess the homogeneity of the distribution of the study populations. We then obtained the odds ratio (OR), the 95% confidence interval, and conducted Fisher and Pearson tests.

3. Results

3.1. Socio-Professional Characteristics of the Midwives (Table 1)

Table 1. Socio-professional characteristics of the midwives from June 1 to September 30, 2024, in Brazzaville.

	No.	%
Hospital training		
Central Military Hospital	22	11
Makélékélé Base Hospital	85	42.5
Bacongo Base Hospital	14	7.0
Talangaï Referral Hospital	44	22.0
Specialized Hospital	35	17.5
Age groups		
<25	16	8.0
25 - 29	30	15.0

Continued

30 - 35	58	29.0
36 - 41	44	22.0
42 - 47	23	11.5
48 - 53	17	8.5
54 - 60	12	6.0
Level of education		
Secondary	117	58.5
University	83	41.5
Years of experience		
1 - 5	16	8.0
6 - 10	105	52.5
>10	79	39.5

3.2. Evaluation of the Certainty of Responses

The analysis of responses using Directive 1 of Dieudonné LECLERCQ's cognitive and metacognitive diagnostic identified the following certainties:

- Incorrect Responses (IR) = 18.2%.
- Correct Responses (CR) = 81.8%.

From the IR, we detected that:

- 13.7% of the lack of knowledge is harmful (6.0% with 100% certainty).
- 4.5% of the lack of knowledge is unusable, with 2.4% recognized ignorance.
- The recklessness index is at 67.8%.

The overall level of knowledge was sufficient for 73% of the midwives and insufficient for 27% of them.

The graphical spectrum of incorrect responses is represented in the following

Figure 1.

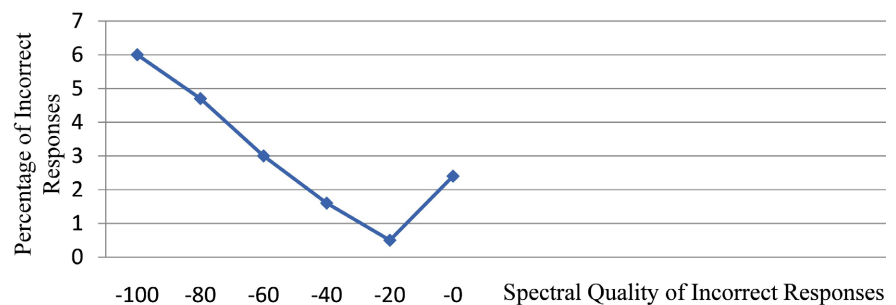


Figure 1. Distributions of the spectral qualities of incorrect responses of midwives regarding obstetric fistulas (FO).

The distribution on the hemisphere of spectral qualities of incorrect responses is steeply skewed to the left, which is serious (6% of the midwives' incorrect responses with maximum certainty of 100%).

The harmful lack of knowledge concerns the symptoms and prevention of obstetric fistulas, accounting for 38 (19%) and 61 (30.5), respectively.

From the correct responses (81.8%), we noted that:

- 70.6% of the knowledge is usable (45.9% correct with 100% certainty);
- 11.2% of the knowledge is unusable, with 9.2% recognized ignorance;
- The confidence index is at 79.2%.

3.3. Evaluation of Attitude Level

The evaluation of the intensity of approval by the midwives was adapted for almost all the questions related to attitudes. These questions are represented in **Figure 2**, **Figure 3**.

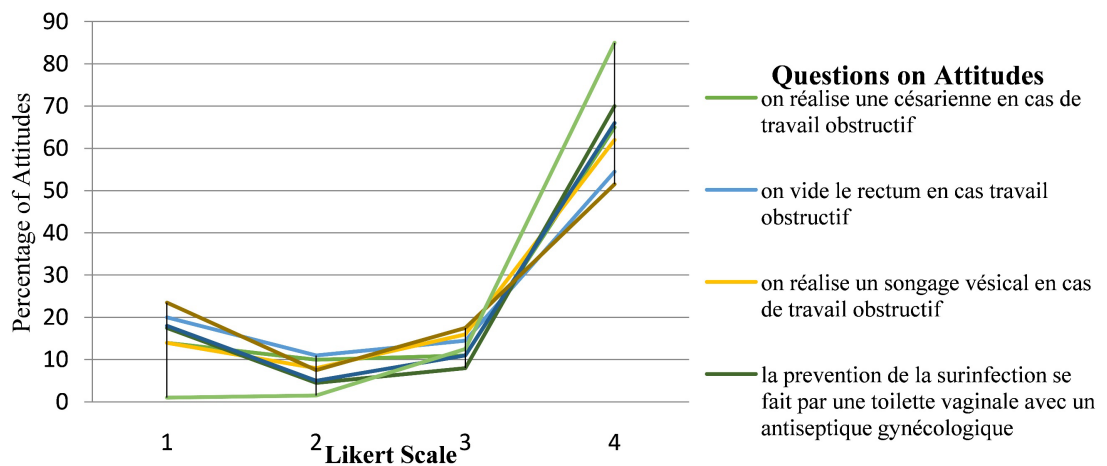


Figure 2. Adapted attitudes of midwives regarding obstetric fistulas from June 1 to September 30, 2024, in Brazzaville.

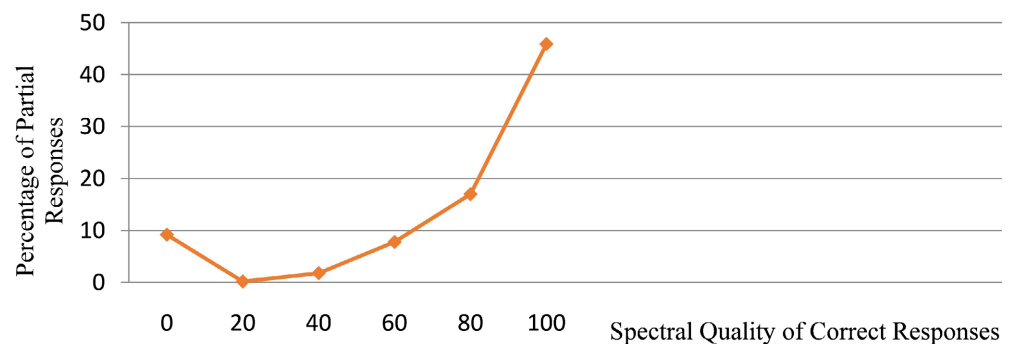


Figure 3. Distributions of the spectral qualities of correct responses of midwives regarding obstetric fistulas from June 1 to September 30, 2024, in Brazzaville.

The distribution on the hemisphere of spectral qualities of correct responses is quite steep in a J shape, which is a good thing (a large majority of the midwives' correct responses are with 100% certainty).

Questions related to the unfavorable approval intensity of midwives regarding obstetric fistulas were represented in **Figure 4**, according to the Likert scale.

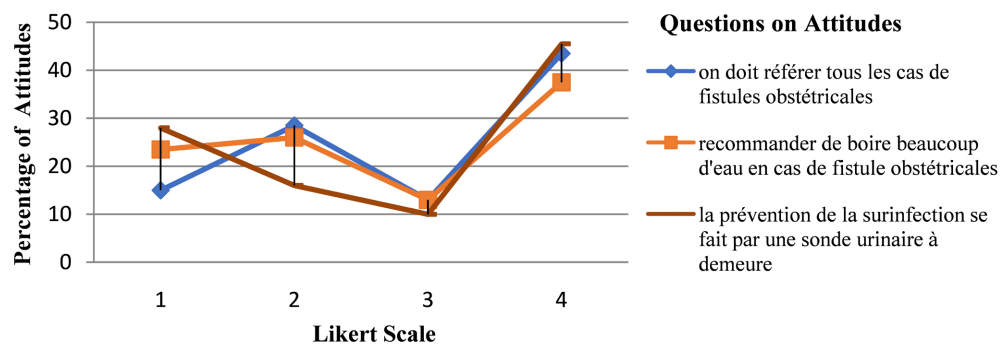


Figure 4. Inadequate attitudes of midwives regarding obstetric fistulas from June 1 to September 30, 2024, in Brazzaville.

The overall attitude was adequate in 94.5% of midwives and inadequate in the remaining 5.5% (**Table 2**).

Table 2. Practices of midwives regarding obstetric fistulas from June 1 to September 30, 2024, in Brazzaville.

Practices 6 points	No.	%
Overall level of practice		
Good	89	44.5
Poor	111	55.5
Has assisted in the care of women with obstetric fistulas	111	55.5
Has assisted in fistula surgery	56	28
Number of identified fistula cases		
≤1	111	55.5
≥2	89	44.5

4. Report on Influences

4.1. Influence of Socio-Professional Characteristics on Knowledge

Length of practice is the only socio-professional characteristic that influenced knowledge; midwives practicing for more than 5 years were twice as likely to have sufficient knowledge (**Table 3**).

Table 3. Influence of socio-professional characteristics on knowledge from June 1 to September 30, 2024, in Brazzaville.

Socio-professional characteristics	Knowledge				OR	IC (95%)	P	
	Total	Sufficient	Insufficient					
	N = 200	N = 156	N = 54					
	n	n	%	n	%			
Years of practice (years)							0.003	
1 - 5	17	8	5.5	9	16.7	6.1	[1.974 - 18.591]	0.002
6 - 10	100	68	46.6	32	59.3	2.5	[1.226 - 5.237]	0.012
>10	83	70	47.9	13	24.1	-	-	-

4.2. Influence of Knowledge and Attitudes on Practices

There was a significant link between knowledge and attitudes toward practices. Attitudes had a positive influence on practices; when midwives had adequate attitudes, the likelihood of good practices increased by 14 times. Similarly, knowledge influenced practices; midwives with insufficient knowledge were three times more likely to have poor practices (Table 4).

Table 4. Influence of knowledge and attitudes on the practices of midwives regarding obstetric fistulas from June 1 to September 30, 2024, in Brazzaville.

Performances	Practices					OR	IC (95%)	P
	Total	Good		Poor				
	N = 200	N = 178	N = 222	n	%			
	n	n	%	n	%			
Knowledge								0.001
Insufficient	54	34	38.2	20	18.2	3.1	[1.474 - 5.376]	
Sufficient	146	55	61.8	91	82.0	-	-	
Attitudes								0.001
Inadequate	11	10	11.2	1	0.9	-		
Adequate	189	79	88.8	110	99.1	14.2	[1.75 - 110.99]	

5. Discussion

In this study, we used a non-probabilistic sampling method based on the availability of respondents and the accessibility of data. While this approach allowed us to collect relevant information, it has certain limitations in terms of the representativeness of the target population.

The midwives were aged between 22 and 60 years, with an average age of 36.5 ± 9.1 . TEBEU *et al.*, in a 2019 KAP study on obstetric fistulas among healthcare professionals in Cameroon, reported an age range of 23 to 62 years with an average age of 39.2 ± 7.8 [9]. More than half of the midwives had professional experience of 10 years or less (76.5%), whereas in the study by TEBEU *et al.*, 141 providers, or 45.6%, had 1 to 9 years of experience.

The analysis of the level of certainty to identify partial knowledge showed that among the 200 midwives who had heard about obstetric fistulas and answered the questionnaire, 81.8% of responses were correct compared to 18.2% incorrect responses. Specifically, 45.9% of the knowledge was correct with 100% certainty; 70.6% was usable, 15.7% was unusable. Additionally, 13.7% of the knowledge was harmful; 6.0% was incorrect with 100% certainty; 11.6% corresponded to acknowledged ignorance.

The ideal distribution of incorrect responses should be J-shaped, which is beneficial because, all else being equal, the more the distribution of incorrect responses resembles a J-curve (shifted to the right), the better: if one must answer incorrectly, it is preferable to do so with the lowest certainty (closest to 20%) possible

[10]. In our study, the distribution of incorrect responses formed a sharply left-skewed J-curve, which is concerning because 6% of the 18.2% incorrect responses from midwives were given with maximum certainty (100%), and 15.7% of the knowledge was unusable with 13.7% being harmful. This harmful knowledge, concerning symptoms and prevention, requires corrective intervention for the concerned midwives by organizing continuous training modules on obstetric fistulas; as this situation is due to some midwives only, it is important to identify which ones.

The recklessness or average certainty accompanying incorrect responses is 67.8%, which is concerning as it is too high.

The distribution on the hemisphere of spectral qualities of correct responses ideally has its peak as far to the right as possible (J-curve, again). Here, it is quite steeply J-shaped (a large majority of the correct responses are with 100% certainty). We observe that 70.6% of the knowledge is usable, with 62.9% of confident responses (correct at 80% or 100%), of which 45.9% are perfect responses (correct with 100% certainty). We also see 9.8% uncertain responses (correct with 20% or 40% certainty) and 11.6% admitted ignorance (incorrect responses with 50%).

The confidence or average certainty accompanying correct responses is 79.2%, which is satisfactory. Confidence and recklessness are impact indices that will serve as references during the evaluation of knowledge after competency-based training strategies for midwives.

Among the 146 midwives with satisfactory knowledge, only 55/146 had good practices. Similarly, of the 189/200 midwives with adequate attitudes, only 79/189 had good practices. Knowledge and attitudes significantly influenced practices (OR = 0.35; 95% CI: [0.186 - 0.678]; $p = 0.002$; OR = 13.9; 95% CI: [1.75 - 110.99]; $p = 0.001$). In the literature, there is no data on the influence of healthcare providers' knowledge and attitudes toward obstetric fistulas on their practices. However, these negative practices justify the need for better involvement of healthcare personnel concerning obstetric fistulas.

Nevertheless, the influence of knowledge and attitudes on the practices of midwives in Brazzaville might be partly related to the fact that they are not frequently in contact with obstetric fistulas. For several decades, Congolese women have predominantly delivered in maternity wards, which is not always the case in some sub-Saharan countries where socio-cultural prejudices outweigh the use of health facilities [3] [11]-[13]. Additionally, the frequency of obstetric fistulas is relatively low, as found in a study conducted at the Brazzaville University Hospital in 2002 by Bouya and colleagues, which managed 39 cases of obstetric fistulas in the largest urology department in the country [14]. In contrast, Tegucigalpa in Mali found 1096 confirmed cases of fistulas over four years [15].

6. Conclusion

The midwives in Brazzaville are mostly young, with a secondary education level and more than 5 years of experience. Overall, they had sufficient knowledge levels

and adequate attitudes, but there were significant disparities in the certainty of their responses. Their practices were poor, influenced by both inadequate attitudes and a harmful lack of knowledge. Therefore, a training strategy based on a competency approach regarding obstetric fistulas could help improve their practices.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Tebeu, P.M. (2017) Introduction. In: Tebeu, P.M., *Techniques chirurgicales des fistules obstétricales et non obstétricales*, L'Harmattan, 19-22.
- [2] UNFPA (2008) New York: Campaign to End Fistula.
- [3] Diallo, A., Baldé, I.S., Loua, G., Diakitè, N., Baldé, O., Diallo, F.B., Diallo, I.T., Sow, A.I. and Diallo, M. (2021) Déterminants Socio-Anthropologiques de la Prévalence Élevée des Fistules Obstétricales en Guinée. *Médecine Tropicale et Santé Internationale*, **1**.
- [4] Lewis, G. and de Bernis, L. (2020) Obstetric Fistula: Guiding Principles for Clinical Management and Programme Development. WHO. http://apps.who.int/iris/bitstream/handle/10665/43343/9241593679_eng.pdf?sequence=1&isAllowed=y
- [5] Benski, A.C. (2021) Evaluation et efficacité d'une stratégie multidisciplinaire intégrée pour la prise en charge de la fistule obstétricale: Le modèle Tanguieta au Bénin. Master's Thesis, University of Geneva.
- [6] Compbell, J., Fauveau, V., Hoope-Bender, P.T., Matthews, Z. and McManus, J. (2011) La pratique de Sage-femme dans le monde en 2011. Naissances réussies, vies sauvées. Organisation des Nations Unies, 1-19.
- [7] United Nations Population Fund (UNFPA) (2012) Dispenser des soins obstétricaux d'urgence et ... UNFPA. <https://www.unfpa.org/sites/files/resource-pdf>
- [8] UNFA (2012) Quand l'accouchement nuit à la santé: La fistule obstétricale. <https://www.unfpa.org>
- [9] Tebeu, P.M., Ngameni, H., Nebardoum, D., Tseunwo, T.C., Fetse Tama, T.G. and Rochat, C.H. (2019) Connaissances, Attitudes et Pratiques des Professionnels de Santé des Districts de Santé du Koung-Khi et De la Mifi à l'Ouest-Cameroun Vis-À-Vis des Fistules Obstétricales. *Health Sciences and Diseases*, **20**, 45-51.
- [10] Houzé-Cerfon, C.H., Lauque, D. and Charpentier, S. (2016) Intégration du degré de certitude dans l'évaluation des connaissances des étudiants en médecine d'urgence. *Annales françaises de médecine d'urgence*, **6**, 389-394. <https://doi.org/10.1007/s13341-016-0685-1>
- [11] Paluku, L.J., Mufungizi, F.C., Kasereka, K.B., Mukelukulu, K.E., Kasi, A.B., Musubao, L.C., *et al.* (2024) Connaissance de la fistule obstétricale chez les femmes en âge de procréer dans la province du Nord-Kivu, République Démocratique du Congo. *Kivu Medical Journal*, **2**, 1-10. <http://www.kivumedicaljournal.com/index.php/kmj/article/view/25>
- [12] Mekeme, M.J.B., Fouda, J.C., Fouelefack, Y.F., Rikem à Messio, B.L.J., Owono Abessolo, P.F., Mekeme Yon, M.J., *et al.* (2023) Regional Variations of Obstetric Fistula Risk Factors in Cameroon: Facteurs de risque de fistule obstétricale au Cameroun

selon la zone. *Health Research in Africa*, **1**, 43-48.

<https://hsd-fmsb.org/index.php/hra/article/view/4911>

- [13] Halidou, M., Manzo, O., Lankoande, Z., Kodo, A., Adamou, H., Habou, O., Idrissa, A., Ibrahim, T., Idi, N. and Amadou, S. (2024) Fistule obstétricale: Aspects épidémiologiques, sociaux et thérapeutiques: Etude prospective de 196 patientes admises au Centre de Santé Mère-Enfant (CSME) ZINDER. *Journal ouvert d urologie*, **14**, 95-103. <https://doi.org/10.4236/oju.2024.142010>
- [14] Bouya, P.A., Itoua Nganongo, W., Lomina, D. and Iloki, L.H. (2002) Étude rétrospective de 34 fistules uro-génitales d'origine obstétricale. *Gynécologie Obstétrique & Fertilité*, **30**, 780-783. [https://doi.org/10.1016/s1297-9589\(02\)00439-3](https://doi.org/10.1016/s1297-9589(02)00439-3)
- [15] Teguede, I., Tounkara, F.K., Kouma, A., Sissoko, A., Traoré, D. and Touré, C. (2023) Épidémiologie de la fistule obstétricale au Mali: Leçons du projet "Fistula Mali". *Journal de la SAGO (Gynécologie—Obstétrique et Santé de la Reproduction)*, **24**, 45-51. <http://jsago.org/index.php/jsago/article/view/133>