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Received: 12 May 2019 - Accepted: 15 May 2020 - Published: 20 Aug 2020

Keywords: Knowledge, attitude, practice, cervix cancer, midwives, Brazzaville

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Cite this article: Pierre Marie Tebeu et al. Knowledge, attitudes and practices among Brazzaville midwives on cervical cancer screening. Pan African Medical Journal. 2020;36(311). 10.11604/pamj.2020.36.311.19102

Available online at: https://www.panafrican-med-journal.com/content/article/36/311/full

Knowledge, attitudes and practices among Brazzaville midwives on cervical cancer screening

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Abstract

Introduction: cervical cancer is an illness that causes 250,000 deaths worldwide. Data on Health professional's skills is highly important for the elaboration of prevention strategies. Objective: assess the knowledge, attitudes and practices (KAP) among Brazzaville midwives on cervical cancer screening. Methods: analytical KAP Study, from May 2nd to August 10th 2018. Participants are midwives working in the Gynaecology-Obstetrics departments of six hospitals in Brazzaville (Republic of Congo). Variables were related to their socio-demographic and occupational characteristics, as well as to their knowledge, attitudes and practices. Analyses were done using the Epi Info 7.2.2.6 software. Frequencies, central trend parameters, as well as rib ratios were calculated. Pearson, Fisher and Wald statistical tests with a significance level of 5% where used. Results: the study included 114 midwives aged 43.07 (± 7.40) years. They had an unsatisfactory level of knowledge (59.64%), favourable attitudes (92.98%) and poor practices (71.05%). The factors linked with best (satisfactory) knowledge were, seniority at workplace (10-27 years) [29.31% vs. 51, 79%; OR; 2.59 (1.19 - 5.60)] and age (42-60 years) [31.81% vs. 52.08%; OR 2.32 (1.08-5.01)]. The best knowledge were related to the best practices (good) [16.18% vs. 47.83%; OR a2 = 2.95 (1.87-4.67)]; Midwives attitudes seem to not impact on their practices (p = 0.53). Conclusion: Brazzaville midwives have little knowledge and practices on cervical cancer screening. Therefore, the need of training them and equipping cervical cancer screening.

Methods

This is an analytical KAP study, from May 2nd to August 10th 2018 in the six Brazzaville public hospitals (4 basic hospitals, UHC and Pierre Mobengo Hospital). The study included the midwives working in the Gynaecology-Obstetrics Services of the six Brazzaville public hospitals. Data were collected using a pretested survey questionnaire. It was organized in four sections, the first one focussing on socio-demographic and professional data. The second section focusing on knowledge of risk factors, on the extent of cervical cancer, on visual testing of precancerous lesions, on diagnostic tests, methods of treatment of precancerous lesions, on the means of treatment, the age group involved in the systematic of precancerous lesions scr. The third section focuses on midwives' attitudes towards cervical cancer screening; and the fourth section on their practice and attitudes towards cervical screening. Data on midwives' knowledge, attitudes and practice were marked with maximum scores 22 points, 4 points and 5 points, respectively. After marking each criterion, those of knowledge, as well as those of attitudes and practices were grouped together to obtain the number of points for each of three main variables (knowledge, attitudes and
practices). The points scored made the categorisation of the knowledges, attitudes and practices into four levels. As for knowledge, they were considered very poor (0 - 5), insufficient (6 - 10), good (11 - 16), very good (17 - 22). Attitudes were categorized as follow: very negative (0 - 1), negative (2 - 3), positive (2 - 3), very positive (3 - 4). Practices were categorized as follow: very low (0 - 1), low (2 - 3), good (3 - 4) and very good (4 - 5). To assess the interaction between knowledge, attitudes and practices, the levels of knowledge, attitudes and practices were grouped in two ways each; for knowledge: unsatisfactory (0 - 10 points) and satisfactory (11 - 22 points); for attitudes: unfavourable (0 - 2 points) and favourable (3 - 4 points), and for practices: bad (0 - 3 points) and good (4 - 5 points). The data was analysed using Epi Info 7.2.2.6 software. As for the calculations carried out, in order to establish the levels of knowledge, attitudes and practices, absolute and relative frequencies as well as central trend parameters (mean, median) and dispersion (standard deviation and quartile) were calculated. As for the influence between the different variables, simple and multiple logistic regressions analysis was done and rib ratios were calculated with their confidence interval at 95%. Pearson, Fisher and Wald Statistical tests were used with a significance level of 5%.

Results

The study included a total of 114 midwives, aged 28 - 60 years with an average of 43.07 (± 7.40) years and a median age of 41 (38 - 49). The midwives average seniority at the current workplace was 11.37 ± 7.76 years (Table 1). The analysis of knowledge gave the following categorisation among the 114 respondents in four levels: very insufficient (50.88 %); insufficient (8.77 %), good (38.60 %), and very good (1.75 %). Specifically, 22.81% of respondents acknowledged early sexual intercourse as a cervical cancer risk factor (Table 2, Table 3). By grouping knowledge into two levels (satisfactory & unsatisfactory). The factors connected with a high rating of having the best (satisfactory) knowledge were, seniority at work place (10 - 27 years) [29.31% vs 51, 79%; OR: 2.59 (1.19 - 5.60) and p = 0.01] and age (42-60 years) [31.81% vs. 52.08%; OR: 2.32 (1.08 - 5.01) and p = 0.029] (Table 4). As for midwives attitudes levels, the following was recorded: very negative (2.63 %); negative (4.39 %); positive (34.21 %), very positive (58.77 %) (Table 3, Table 4, Table 5). The analysis of midwives practices reveals the following levels: very low (52.63 %); low (18.42 %); good (25.44 %), and very good (3.51 %) (Table 3). Specifically, 4.39 % of respondents reported having carried out a cervix screening (Table 6). Best practices (good) were connected to the best knowledge (satisfactory) and this finding remained unchanged after adjusting the confounding factors (age and seniority at workplace) on the level of knowledge. [16.18% vs. 47.83% ORa = 2.95 (1.87-4.67) and p = 0.001]. Attitudes had no influence on practices (p = 0.53) (Table 7).

Discussion

This study grants an overview on Brazzaville's midwife's skills on cervical cancer. However, it has some limitations, given that some midwives were unavailable when the investigation. The average age of midwives was 43.03 ± 7.40 years. Some investigations were carried out in the subject [4]. They recorded an average age lower than ours, i.e.; 36 years [4]. The findings lower than ours could be explained by the fact that, the participants of their studies included trainees and volunteers, who are generally younger than the permanent staff of our study. Analysing the knowledge; we found that: 22.81% of respondents reported early sexual intercourse as one of the cervical cancer risk factors; a low rate could be explained by the fact that the training programs for midwives do not include detailed modules on cervical cancer screening. Another possible explanation is that cervical cancer refresher courses are not carried out, in this background where there is no any national program against cervical cancer. A French study on midwifes knowledge and skills on cervical screening reported a higher rate than ours (27.4%). 27.90% of the French midwives, considered
reported having received additional training in cervical cancer screening [5]. Only 3.50% of the contributors to our study reported having participated in a cervical cancer screening training. By categorising the respondent’s knowledge into four levels, the following was recorded: insufficient, 50.88% (58/114); average at 8.77% (10/114); good at 38.60% (44/114), very good 1.75% (2/114). We could not find studies on midwives' knowledge levels on cervical cancer screening. Our findings stress on the need to train midwives on cervical cancer screening.

By categorising the respondent’s knowledge into four levels, the following was recorded: insufficient, 50.88% (58/114); average at 8.77% (10/114); good at 38.60% (44/114), very good 1.75% (2/114). We could not find studies on midwives' knowledge levels on cervical cancer screening. Our findings stress on the need to train midwives on cervical cancer screening.

The factors connected to best (satisfactory) knowledge were: seniority at the workplace (10 - 27 years), [OR: 2.59 (1.19-5 .60)]; age of midwives (42-60 years), [OR: 2.32 (1.08-5.01)]. These findings could be explained by the fact that a staff with several years of practice might have acquired good professional skills. Team working could also contribute to, as source of knowledge sharing. The analysis of the attitude shows that 98.25 % of respondents had a favourable opinion of cervical cancer screening. This finding could be explained by the fact that the midwives investigated generally considered cervical cancer a very dangerous disease. Other investigation were carried out on the same subject [6,7]. Some findings are similar to ours, i.e. 94.7% [6]. Some of them are lower than ours, 57.38% [7]. We found that 4.39% of midwives reported having carried out a cervical cancer screening. This finding could be explained by the fact that most of the hospitals in which respondents work do not have any screening units. Other studies were carried out on the same subject [6,7]. Their findings were higher than ours, ranging from 45.6% to 49.6%. These findings, which are higher than ours, could be explained by the fact that most Brazzaville basic hospitals do not have a cervical cancer screening unit, and almost all the respondents were not trained on cervical cancer screening, 95.61% (109/114).

By grouping the levels of practice in two categories, we found that 71.05% (81/114) had a poor level of practice on cervical cancer screening. We could not find studies on midwife’s levels of practice for cervical cancer screening. The poor level of practices (71.05%) suggests the need to create screening units in Brazzaville hospitals, with trained midwives. This may help to limit suffering and deaths. Midwives with better knowledge had higher possibility of having best practice [OR a = 2.95 (1.87 to 4.67) and p = 0.001]. Therefore, good practices basement leads to good knowledge. This observation is consistent with the Health Belief Model Theory, according to which people’s practices depend on their knowledge. Henceforth, the obvious need to train midwives on cervical cancer screening. Other studies have also been carried out on the influence of knowledge on health professionals practices, related to breast cancer. They showed that good knowledge leads to good practice [8].

**Conclusion**

Brazzaville midwives have little knowledge and practices on cervical cancer screening. Therefore, the need of training them and equipping cervical cancer screening.

**What is known about this topic**

- The existence of cervical cancer is known;
- The consequences of cervical cancer are also known.

**What this study adds**

- This study highlights the evaluation of knowledge, attitudes and practice of midwives on cervical cancer screening;
- It revealed that the acquisition of the best midwives on cervical cancer screening would allow good practice.

**Competing interests**

The authors declare no competing interests.

**Authors' contributions**

Tebeu Pierre Marie initiated the study and contributing in drafting the manuscript and is the
corresponding author. Antaon Jesse Saint Saba wrote the research protocol, collected data, and contributed in drafting the manuscript. Deguedbe Nerbadam, Petignant Patrick, Vassilakos Pierre, and De Beaudrap Pierre contributed in writing the manuscript, and proof read the manuscript. All the authors have read and approved the final version of the manuscript.

**Acknowledgments**

The authors express their gratitude to all the staff of CIESPAC for supervising training in Masters in Public Health; as well as to Brazzaville health professionals, whose contribution to the implementation of the project is obvious.

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| Characteristics                        | Respondents N = 114 |
|--------------------------------------|---------------------|
|                                      | N  | %       |
| **Age**                              |    |         |
| Average age (SD)                     | 43.07 ± 7.40        |
| Median age (IQR)                     | 41 (38; 49)         |
| Extreme age                          | (28, 60)            |
| **Age (group)**                      |    |         |
| 28 – 32                              | 05 | 4.39    |
| 33 – 37                              | 21 | 18.42   |
| 38 – 42                              | 40 | 35.09   |
| 43 – 47                              | 15 | 13.16   |
| 48 – 52                              | 16 | 14.04   |
| 53 – 57                              | 13 | 11.40   |
| 60                                   | 04 | 3.50    |
| **Seniority at Current Work-Place (SCP) (years)** |    |         |
| SCP average (SD)                     | 11.37 ± 7.76        |
| SCP median (IQR)                     | 10 (7;14)           |
| SCP extreme (years)                  | (2; 26)             |
| (SCP) (group)                        |    |         |
| 0 – 4                                | 20 | 17.54   |
| 5 – 9                                | 38 | 33.33   |
| 10 – 14                              | 38 | 33.33   |
| 15 – 19                              | 12 | 10.53   |
| 20 – 27                              | 06 | 5.27    |
| **Have participated in a training**  |    |         |
| Yes                                  | 04 | 3.51    |
| No                                   | 110| 96.49   |
Table 2: midwives knowledge on cervical cancer epidemiology, visual tests, and diagnostic

| Midwives knowledge on cervical cancer | Respondents N = 114 |
|--------------------------------------|---------------------|
|                                      | n   | %       |
| Cervical cancer: public health problem in the Republic of Congo (Brazzaville) |     |         |
| Yes                                  | 108 | 94.74   |
| No                                   | 06  | 5.26    |
| Ranking of cervical cancer in the Republic of Congo |     |         |
| 2³rd                                 | 32  | 28.07   |
| 3³rd                                 | 37  | 32.46   |
| I don't know                         | 45  | 39.47   |
| Cervical cancer risk factors         |     |         |
| HPV infection                        | 05  | 4.38    |
| Too early sexual intercourse         | 26  | 22.81   |
| Several sexual partners              | 39  | 34.21   |
| High parity and too early sexual intercourse | 02  | 1.75    |
| Smoking                              | 00  | 0.00    |
| Age                                  | 03  | 2.63    |
| Lack of screening                    | 00  | 0.00    |
| Immune deficiency                    | 00  | 0.00    |
| I don't know                         | 31  | 27.20   |
| Others 1                             | 08  | 7.02    |
| Visual tests for precancerous lesions detection |     |         |
| VIA and VILI                         | 17  | 14.91   |
| I don't know                         | 97  | 85.09   |
| Means of treatment for precancerous lesions |     |         |
| Cryotherapy                          | 4   | 3.51    |
| I don't know                         | 110 | 96.49   |
| Means of diagnosis for cervical cancer |     |         |
| Colposcopy                           | 29  | 25.44   |
| Uterine cervical smear               | 48  | 42.10   |
| I don't know                         | 37  | 32.46   |
| Means of treatment of cervical cancer |     |         |
| Surgery                              | 36  | 31.58   |
| Chemotherapy                         | 30  | 26.32   |
| Radiotherapy                         | 18  | 15.79   |
| Surgery and chemotherapy             | 11  | 9.65    |
| Surgery and radiotherapy             | 08  | 7.01    |
| Chemotherapy and radiotherapy        | 01  | 0.88    |
| Surgery, chemotherapy and radiotherapy | 01  | 0.88    |
| I don't know                         | 09  | 7.89    |
| Others * 1: oral contraception       |     |         |
Table 3: distribution of Brazzaville midwives surveyed by level of knowledges, attitudes and practices

| Level of knowledge, attitude and practices | Score | Respondents N = 114 |
|-------------------------------------------|-------|---------------------|
|                                           | N     | N                  | %   |
| **Level of knowledge**                    |       |                    |     |
| Very insufficient                         | 0–5   | 58                 | 50.88 |
| Insufficient                              | 6–10  | 10                 | 8.77  |
| Good                                      | 11–16 | 44                 | 38.60 |
| Very good                                 | 17–22 | 02                 | 1.75  |
| **Level of attitude**                     |       |                    |     |
| Negative                                  | 0–1   | 3                  | 2.63  |
| Few negative                              | 2     | 5                  | 4.39  |
| Positive                                  | 3     | 38                 | 34.21 |
| Very positive                             | 4     | 67                 | 58.77 |
| **Level of practice**                     |       |                    |     |
| Very weak                                 | 0–1   | 60                 | 52.63 |
| Low                                       | 1–2   | 21                 | 18.42 |
| Good                                      | 2–3   | 29                 | 25.44 |
| Very good                                 | 3–4   | 04                 | 3.51  |

Table 4: socio-demographic, professional characteristics on respondents' level of knowledge

| Characteristics     | Total | Level of knowledge |          |          |          | OR (95% CI) | P    |
|---------------------|-------|--------------------|----------|----------|----------|-------------|------|
|                     |       | Satisfactory       | Unsatisfactory |        |          |             |      |
|                     | N = 114 | % | N=46 | % | N=68 | % |             |      |
| **Age (group)**     |       |               |           |        |          |             |      |
| 28 – 41             | 66      | 57.89  | 21   | 31.82  | 45  | 68.18 | 1           |      |
| 42 – 60             | 48      | 42.11  | 25   | 52.08  | 23  | 47.92 | 2.32 (1.08 - 5.01) | 0.02 |
| **Seniority (group)** |       |               |           |        |          |             |      |
| 0 – 9               | 58      | 50.88  | 17   | 29.31  | 41  | 70.69 | 1           |      |
| 10 – 27             | 56      | 49.12  | 29   | 51.79  | 27  | 48.21 | 2.59 (1.19 - 5.60) | 0.01 |
### Table 5: Brazzaville midwives' attitudes on cervical cancer screening

| Attitudes of midwives                                      | Questioned person N = 114 |
|------------------------------------------------------------|----------------------------|
|                                                             | n  | %              |
| **Seriousness of cervical cancer**                         |    |                |
| Yes                                                        | 112| 98.25          |
| No                                                         | 02 | 1.75           |
| **Importance of screening cervical cancer**                |    |                |
| Yes                                                        | 112| 98.25          |
| No                                                         | 02 | 1.75           |
| **Purpose to talk of screening to women**                  |    |                |
| Yes                                                        | 73 | 64.04          |
| No                                                         | 41 | 35.96          |
| **Role of midwives in reducing cervical cancer morbidity and mortality** |    |                |
| Yes                                                        | 106| 92.98          |
| No                                                         | 08 | 7.02           |

### Table 6: Distribution of Brazzaville midwives' practices on the prevention of cervical cancer

| Midwives' practices                                      | Respondents N = 114 |
|----------------------------------------------------------|---------------------|
|                                                          | N  | %              |
| **Have done cervical cancer screening**                  |    |                |
| Yes                                                      | 5  | 4.39           |
| No                                                       | 109| 95.61          |
| **Test already used**                                    |    |                |
| VIA or VILI                                              | 3  | 2.63           |
| Uterine cervical smear                                   | 2  | 1.75           |
| Never used                                               | 109| 95.62          |
| **Patient screening council**                            |    |                |
| Yes                                                      | 48 | 42.11          |
| No                                                       | 66 | 57.89          |
| **Proposal cervical cancer screening**                   |    |                |
| To women aged 25 – 65                                    | 10 | 8.77           |
| To all women                                             | 25 | 21.92          |
| To women bleeding                                        | 9  | 7.89           |
| Others*                                                  | 4  | 3.50           |
| I don't know                                             | 66 | 57.89          |
| Others*: women under 25 years old                        |    |                |
### Table 7: Brazzaville midwives' level of knowledge and attitudes' impact on their of practices

| Performance | Midwives practices | Crude | adjusted |
|-------------|--------------------|-------|----------|
|             | Total              | good  | %        | Bad    | OR C CI 95% | P       | OR has 95% CI | P     |
| N = 114     | N = 33             | N = 81| %        |
| Knowledge   |                    |       |          |        |            |        |            |       |
| Satisfactory| 46                 | 22    | 47.83    | 24     | 52.17      | 4.75 (1.99 - 11.30) | 0.01  | 2.95 to (1.87 - 4.67) | 0.01 |
| Unsatisfactory| 68               | 11    | 16.18    | 57     | 83.82      | 1.00   |            |       |
| Attitudes   |                    |       |          |        |            |        |            |       |
| Positive    | 106                | 9     | 8.49     | 97     | 91.51      | 1.00   |            |       |
| Adverse     | 8                  | 1     | 12.50    | 7      | 87.50      | 1.53 (0.2 - 13.9) | 0.53  |            |       |