



Knowledge, Attitudes and Practices of Health Care Providers on HIV / AIDS in Kisangani (DR Congo)

Issa Yakusu^{a*}, Atoba Bokele^a, Bokanga Ekelenge^b, Kambale Maliro^a,
Moustapha Moto^c, Louison Lohombo^c and Ossinga Bassandja^a

^a Department of Internal Medicine, Faculty of Medicine and Pharmacy,
University of Kisangani, Democratic Republic of Congo.

^b Department of Gynecology-obstetric, Faculty of Medicine and Pharmacy,
University of Kisangani, Democratic Republic of Congo.

^c Higher Institute of Medical Techniques of Isiro, Democratic Republic of Congo.

Authors' contributions

This work was carried out in collaboration among all authors. Author IY designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AB, BE, KM, MM and LL managed the analyses of the study. Author OB managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJRID/2022/v9i130259

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/65108>

Original Research Articles

Received 09 November 2021
Accepted 12 January 2022
Published 15 January 2022

ABSTRACT

Objective: Our objective was to determine the knowledge, attitudes and practices relating to HIV-AIDS among health care providers in general referral hospitals in the city of Kisangani.

Methods: We carried out a cross-sectional descriptive study with providers of care from HGRs in the city of Kisangani. Our respondents completed a questionnaire designed to assess knowledge, attitudes and practices regarding HIV / AIDS.

Results: Most of our respondents were female with a proportion of 52.2%, with an age between 26 to 35 years old. The results showed that approximately 75.06% of providers have an acceptable level of knowledge about the clinical manifestations of the disease, 86.7% had a positive attitude towards a Person living with HIV (PLHIV) and 78.1% demonstrated good practice.

Keywords: HIV / AIDS; health care providers; knowledge; attitudes; practices.

1. INTRODUCTION

The Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome (HIV / AIDS) pandemic has become one of the most significant public health problems in recent times [1]. Despite growing financial resources and growing political involvement, the pandemic continues to advance faster than the global response. No region of the world is spared. The pandemic remains dynamic and changes character as the virus develops new modes of transmission [2].

The World Health Organization estimates that more than 70 million people have been infected with HIV and 35 million people have died since the 1980s [3]. Globally, 38.0 million people (31.6 million-44.5 million) were living with HIV at the end of the day of 2019, of which 36.2 million (30.2 million-42.5 million) were adults [4].

Although numerous studies on the knowledge, attitudes and practices (KAP) of health care providers on HIV / AIDS can be found in the literature around the world, on the contrary there are few similar studies in Africa [5].

Since health workers are expected to provide accurate care and information on this topic to patients and their families, as well as to the general public, it is important that they have credible and accurate knowledge of the disease. This is important for optimal health care delivery because several studies have shown that the knowledge and beliefs of health professionals about HIV and AIDS are often inaccurate and their attitudes are often negative [1].

Sub-Saharan Africa is the most affected region with 25.5 million people living with HIV in 2016, or 70% of PLHIV worldwide. It also concentrates nearly two-thirds of new HIV infections: 1.16 million in total, but it is important to emphasize that they decreased by 29% between 2010 and 2016 in East and Southern Africa and 9% in West and Central Africa [6].

The Democratic Republic of the Congo is in a situation of generalized epidemic. The results of the 2013-2014 DHS show that the prevalence of HIV in the general population aged 15-49 is 1.2% and, compared to 2007 when it was expressed at 1.3%, we do not modification [7].

HIV prevalence is significantly higher among women (1.6%) than among men aged 15-69 (0.6%). This results in an infection ratio between women and men of about 2.7; in other words, there are 267 infected women for every 100 men [7].

In view of the above, we found it interesting to conduct this study because it is, therefore, essential to know the knowledge and perception of caregivers in order to understand the obstacles to HIV prevention and treatment strategies.

2. MATERIALS AND METHODS

2.1 Nature of the Study

We conducted a cross-sectional descriptive study of a normative type on the knowledge, attitude and practice of care providers in general referral hospitals in the city of Kisangani.

2.2 Framework and Study Period

Our study was conducted from 11/09/2020 to 12/13/2020 in all the general referral hospitals (GRH) of the city of Kisangani: GRH of Makiso-Kisangani, GRH of Tshopo, GRH of Mangobo, GRH of Kabondo.

They all have internal medicine, gynecology-obstetrics, pediatrics, and surgery. Apart from these services, they also have a pharmacy and a laboratory

2.3 Target Study Population

All healthcare providers working in the GRH Makiso-Kisangani, Tshopo, Mangobo, and Kabondo were our target population.

2.4 Sample Size

The sample size was defined using the formula for calculating the size for a proportion. We estimated at 20% the proportion of respondents with a high level of knowledge about HIV / AIDS, since this value is not known in the DRC or in other African countries with a similar context to ours. So, with a 5% margin of error and 5% precision, our minimum sample size should be 126 people to interview. By taking into account a non-response rate of 10%, this size was reduced to 134. The study population consisted of all the care providers from the general referral hospitals in the city of Kisangani who agreed to respond to our survey. survey questionnaire. Staff who did not consent to participate in our study were excluded from our study.

2.5 Sampling and Method of Recruitment

In our study, we used, despite a survey questionnaire, convenience sampling to assess the KAPs of care providers.

We conducted an interview using a survey sheet containing the following variables of interest: Age of the respondent, sex, profession, experience, level of knowledge, attitude and practice.

The data collected was entered and analyzed on IBM SPSS software 20. The percentage for each variable category was calculated for all categorical variables.

3. RESULTS

3.1 Sociodemographic Data of the Provider

Table 1 presents the socio-demographic characteristics of the study participants

It emerges from this Table 1 that:

Providers aged 26 to 35 are predominant with a frequency of 58 cases or 43.3%.

Female providers are predominant with a frequency of 70 cases or 52.2%.

Providers whose experience varies from two to five years are predominant with a frequency of 44 cases or 32.8%.

Nurses are the most dominant of our respondents with a frequency of 87 cases or 64.9%.

3.2 Level of Knowledge

3.2.1 Knowledge of the clinical manifestations of HIV

Table 2. illustrates the knowledge of the respondents on the clinical manifestations of HIV.

It follows from this Table 2 that weight loss is the most common symptom in HIV/AIDS disease with a frequency of 126 cases, or 94.0%, followed by diarrhea (78.4%).

3.2.2 Knowledge of respondents about the different stages of HIV / AIDS

Table 3 illustrates the knowledge of the respondents on the different stages of the disease.

This Table 3 shows that 90.0% of our respondents affirmed that AIDS according to WHO has four stages.

3.2.3 Knowledge of how HIV / AIDS is transmitted

Table 4 represents the distribution of our respondents according to knowledge of the mode of transmission of HIV.

.From this table, it appears that 95.5% of providers believe that the disease is transmitted through the blood.

3.2.4 Knowledge of the respondents on the preventive measure

Table 5 shows the providers' knowledge of preventive measures.

Table 5 shows that the use of condoms is the most effective measure of protection against HIV / AIDS with a frequency of 130 cases or 97.0% followed by abstinence with a frequency of 124 cases or 92.5 %.

3.2.5 Knowledge of providers about ARV treatment

Table 6 shows providers' knowledge of ARV treatment for HIV.

It follows from this Table 6 that:

The majority of providers are aware of ARV treatment with a frequency of 117 cases, or 87.3%; Providers confirm that it is necessary to first screen and treat with a frequency of 92 cases or 70.8% before initiating ARV treatment for the first time in HIV-positive people in the DRC; The CD4 count is the most predominant parameter for monitoring the effectiveness of ARV treatment with a frequency of 75 people, ie 57.7% monitoring the viral load (51.5%); The providers believe that the period to initiate a pregnant woman for the first time on ARV treatment is at the start of pregnancy with a frequency of 99 cases, ie 79.2%; The majority of our respondents with a frequency of 96 cases, ie 71.6, know the preferential first-line scheme in the DRC; The majority of providers with a frequency of 71 cases or 53% have already heard of the third-line preferential scheme.

Table 1. presents the socio-demographic characteristics of the study participants

Sociodemographic data	Frequency	Percentage
Age range		
≤25	1	0.7%
26 – 35	58	43.3%
36 – 45	55	41.0%
≥46	20	15%
Total	134	100.0%
Experience		
< 2	13	9.7%
2 – 5	44	32.8%
6 – 10	40	29.9%
11 – 15	27	20.1%
>15	10	7.5%
Total	134	100.0%
Gender		
Female	70	52.2%
Male	64	47.8%
Total	134	100.0%
Quality		
Male nurse	87	64.9%
General practitioner	32	23.9%
Pharmacist	11	8.2%
Consultant	4	3.0%
Total	134	100.0%

Table 2. Knowledge of the respondents on the clinical manifestations of HIV

Symptoms or signs suggestive of HIV	Frequency	Percentage
Weight loss	126	94.0%
Diarrhea	105	78.4%
Headache	100	74.6%
Fever	96	71.6%
Cough	76	56.7%

Table 3. Knowledge of respondents about the different stages of HIV / AIDS

Stage of AIDS according to WHO	Frequency	Percentage
Four stages	121	90.3%
Three stages	9	6.9%
Two stages	4	3.1%
Total	134	100.0%

Table 4. Knowledge of how HIV is transmitted

Modes of HIV transmission	Frequency	Percentage
Blood path	128	95.5%
Mother-child	119	88.8%
Sexual intercourse	118	88.1%
Others*	9	6.7%

* Others: Insect bites, cough

3.2.6 Knowledge of the DRC HIV screening algorithm

Table 7 illustrates the sources of knowledge of the respondents on the HIV screening algorithm.

We observe in this table that the majority of providers with a frequency of 95 cases or 70.9% know the algorithm for HIV screening in the DRC; And 64.4% of providers, or 85 cases, think that a 3rd first response test should be used in the event of a discrepancy between the first 2 tests.

Table 5. Knowledge of the respondents about the preventive measure

Means of HIV prevention	Frequency	Percentage
Condoms	130	97.0%
Abstinence	124	92.5%
Loyalty	121	90.3%
Voluntary screening	55	41.0%
Avoid physically contact with someone living with HIV	3	2.2%
Avoid eating with someone	1	0.7%

Table 6. Providers' knowledge of ARV treatment

	Frequency	Percentage
Knowledge of ARV treatment		
Yes	117	87.3%
No	17	12.7%
Total	134	100.0%
The period in which to initiate ARV treatment for the first time in HIV-positive people in the DRC		
We must first detect and treat	92	70.8%
CD4<350 mm ³	24	18.5%
CD4<500mm ³	22	16.9%
Appearance of opportunistic infections	13	10.0%
Others*	5	3.8%
Parameter for monitoring the effectiveness of ARV treatment		
CD4 count	75	57.7%
Viral load	67	51.5%
Occurrence of opportunistic infections	18	13.8%
Others**	1	0.8%
When to initiate a pregnant woman on ARVs		
From the start of pregnancy	99	79.2%
14 weeks	21	16.8%
20 weeks	12	9.6%
18 weeks	9	7.2%
Others***	4	3.2%
Knowledge of the first line preferential scheme in DRC		
Yes	96	71.6%
No	38	28.4%
Total	134	100.0%
Already informed of a preferential 3rd line of ARV scheme		
Yes	71	53%
No	63	47%
Total	134	100.0%

* Others: After treatment for opportunistic infections ; ** Others: patient follow-up ; *** Others: last week, start of ANC, 5 weeks, check the condition of the pregnant woman

Table 7. Knowledge of the HIV testing algorithm

	Frequency	Percentage
Knowledge of the DRC HIV screening algorithm		
Yes	95	70.9%
No	39	29.1%
Total	134	100.0%
In the event of a discrepancy between the first 2 tests		
Use a 3rd first answer	85	64.4%
Repeat the test as before	49	36.6%
Total	134	100.0%

3.2.7 Means of protection and circumstances favoring a blood exposure accident (BEA)

Table 8 presents the distribution of respondents according to the conviction of protection against an BEA.

This table illustrates that Wearing personal protective equipment (PPE): gown, gloves, etc. is the protective measure most applied by providers with a frequency of 112 cases, i.e. 85.5% followed by the immediate throwing of needles into the trash afterwards. use with a frequency of 102 cases or 77.9%; and that the majority of providers believe that skin breakage (pricking by a needle during a sample or an injection) with a frequency of 109 cases or 90.8% is the major circumstance favoring BEA.

4. ATTITUDES

4.1 Attitude of Providers Towards a PLHIV

Table 9 shows the distribution of respondents according to their attitude towards a person living with HIV.

It follows from this table that:

The large part of our respondents with a frequency of 111 cases or 86.7% opts for compassion in the face of a patient living with HIV;

83% of providers say that a serology should be requested from any patient in consultation or hospitalization.

The majority of providers with a frequency of 120 cases or 89.6% say that HIV-positive patients should not be isolated;

Healthcare providers with a frequency of 71 cases or 53% think that the serological status should not be mentioned on the test report.

5. PRACTICE

Table 10 illustrates the distribution of our respondents according to the practices carried out.

This table shows us that:

Most of the healthcare providers with a frequency of 103 or 76.9% have already detected a patient one or more times;

The majority of the screening circumstance is tuberculosis with a frequency of 70 cases or 60.3% followed by the opportunistic digestive disorder with a frequency of 59 cases or 50.9%;

The majority of providers with a frequency of 100 or 78.1% opted for the use of antiseptics with a bleach solution or, failing that, Dakin or 70% alcohol.

6. DISCUSSION

With the shock of the HIV / AIDS pandemic threatening much of the planet, healthcare providers must adapt to new integrated disease management approaches and change the current disease -specific management [8]. The only difficulty encountered in this study was linked to the voluntary refusal on the part of providers to participate in the survey.

6.1 Sociodemographic Data of Respondents

Our study shows that the predominant age group of staff surveyed is 26 to 35 years old with a proportion of 43.3%. This could be explained by the growing number of young staff. Also, they appear more accessible and available to complete the questionnaire. Our result differs from that of Chiamaka N and al. who found a predominant age range of 30 to 45 years [1].

As for gender, we find a female predominance of personnel surveyed in our series with a proportion of 52.2%. Our results are similar to a study conducted in Tanzania which found 76% of respondents to be female [8].

And this is explained by the fact that there are more nurses than doctors in our city because the training program for doctors is more rigorous and longer than that for nurses and laboratory workers [8].

6.2 Knowledge of HIV Management

According to our results, the majority of providers know the different means of HIV prevention and the three main modes of transmission to have: sexual intercourse (88.1%), transmission through the blood (95.5%) and mother-to-child transmission (88.8%). These results are similar

to those found in a study conducted in Tanzania where providers were aware of certain modes of HIV transmission such as vaginal sex (98% chose it as the mode of transmission), blood testing (95%), or from mother to child (93%) [8].

In our study, 51.5% of providers were aware that plasma viral load was the parameter for monitoring the effectiveness of ARV treatment. On the other hand, this result is in contradiction with the surveys of Bintu A. [6] in Bamako where only 28.8% of the providers affirm this. It is thus noted that despite the courses received on HIV during schooling, the lack of continuous training on HIV intended for health workers remains a handicap for proper management of HIV [3].

With regard to knowledge of ARV regimens in DRC, 71.6% of providers are aware of the preferential first-line regimen. Sangaré B. [9] reports that 62.9% of the staff do not know this pattern. 70.9% of providers know the algorithm for HIV testing in DRC. Unlike the study conducted in Mali, 75% of the staff surveyed did not know the HIV screening algorithm in Mali [6].

85.5% of respondents wear personal protective equipment against BEA. Norbert M and al. [10] reported in their study that apart from the wearing of gloves (98.4%), the systematic

wearing of masks (0%), glasses (3.20%), leggings (22.2%) and on aprons (33.3%), wearing protective equipment is still a very low measure.

About 90.0% of providers believed that a skin break would promote the favorable circumstances of a BEA. These results are almost similar to a study conducted in Bamako where 74.0% of providers think the same [6].

6.3 Attitudes and Practices of Health Care Providers towards HIV

According to the results, 86.7% of providers approved a sympathy agreement for people with AIDS. These results are similar to those found in the study conducted in Tanzania [8] where agreement with statements of sympathy towards PLHIV was widespread, ranging from 96% to 99%. Only 6% of providers do not agree with the five statements of sympathy.

Our study reveals that the majority of providers, or 61.9%, believe that a serology should be requested from any patient in consultation or hospitalization. Only 89.6% of healthcare providers say that HIV-positive patients should not be isolated. The majority of health care providers, 53%, think that the HIV status should

Table 8. Means of protection and circumstances favoring an BEA

	Frequency	Percentage
Ways to protect yourself against an accident of exposure to blood		
Wear personal protective equipment (PPE): Gown, gloves, etc.	112	85.5%
Immediately dispose of needles in the trash after use	102	77.9%
Use disposable collection needles fitted with a protective device	86	65.6%
Consider any blood product of human origin as potentially infectious	84	64.1%
Replace the needle cap after use	75	57.3%
Decontaminate soiled equipment and work surfaces with 1/10 bleach or any other suitable decontamination solution	72	55.0%
Use blood bags with needles fitted with a protective device	46	35.1%
Cover work surfaces especially in the laboratory: use absorbent paper for example	30	22.9%
Circumstances favoring an BEA		
Skin breakage (prick by a needle during a sample or an injection)	109	90.8%
Splash of blood or any body fluid soiled with blood on injured skin	56	46.7%
Splash of blood or any body fluid from the blood on the gloves	25	20.8%

Table 9. Attitudes of providers towards a PLHIV

Attitudes of providers towards a PLHIV	Frequency	Percentage
Attitude towards an HIV / AIDS patient		
Compassion	111	86.7%
Discrimination	13	10.2%
Fear	7	5.5%
Stigma	6	4.7%
Request serology from any patient in consultation or hospitalization		
Yes	83	61.9%
No	51	38.1%
Total	134	100.0%
Isolate HIV positive?		
No	120	89.6%
Yes	14	10.4%
Total	131	100.0%
Mention of the serological status on the examination report		
Yes	71	53%
Yes	63	47.0%
Total	134	100.0%

Table 10. Practice

	Frequency	Percentage
Screening a patient		
Yes	103	76.9%
No	31	23.1%
Total	134	100.0%
Circumstance of last PLWHIV screening		
Tuberculosis	70	60.3%
Digestive opportunistic	59	50.9%
Cancer	25	21.6%
Toxoplasmosis	7	6.0%
Others*	20	17.2%
Attitudes and practices in case of BEA		
Perform antisepsis with a bleach solution or, failing that, Dakin or 70% alcohol	100	78.1%
Immediately clean the wound with soap and water	69	53.9%

* Others: Severe malaria, diabetes, Zona

not be mentioned on test reports. Based on this, we find that the majority of health care providers in general hospitals in the city of Kisangani have positive attitudes towards people living with HIV and he notes that 76.9% of providers have already offered screening one patient and 60.3% report that tuberculosis was the circumstance of the screening of the last PLHIV they received. On the contrary, in a study carried out in Tamatave (Madagascar), more than 60% of those questioned declared that they had never offered an HIV screening test in their current medical practice. The main reason put forward (absence of suspects) reflects a lack of knowledge of the syndrome, its risk factors and epidemiologically linked diseases (sexually transmitted diseases and tuberculosis). Lack of knowledge therefore appears to be the main obstacle to HIV awareness and testing [11].

Only 78.1% of providers suggest that antiseptics should be performed with a bleach solution (1/10) or, failing that, dakin, 90-degree alcohol or polyvidone iodine (solution skin) for at least 5 minutes in the event of accidental exposure to blood. These results are not identical to those of a study by Chizoma M. and al. [12] in Nigeria where 81.3% wash their hands with soap and water. On the other hand in Abidjan, a survey carried out by Eholie and al. [13] showed a proportion of 86.5% of respondents stating that antiseptics should be performed with a bleach solution after BEA.

7. CONCLUSION

The DRC is facing the scourge of HIV / AIDS and its impact on development like many countries. Knowledge of caregivers about HIV care is important for adherence to antiretroviral therapy, as discussed elsewhere. Thus, promoting training and retraining providers on HIV / AIDS would be essential for good patient care.

CONSENT AND ETHICAL APPROVAL

Our study was carried out after approval by the health authorities of the province of Thsopo.

The recruitment of the respondents was voluntary and consent was granted by the respondents.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Chiamaka N, Umeh E, James E, Michael W. Knowledge, beliefs and attitudes about HIV AIDS-related issues, and the sources of knowledge among health care professionals in southern Nigeria. *J R Soc Promot Health*. Author Manuscript. Available in PMC. 2008;128(5):233–239.
2. Ariane M T. Knowledge, attitudes and behavioral practices related to STIs and HIV / AIDS of FMPOS students. Thesis, Bamako: University of Bamako, Faculty of Medicine and Odontostomatology. 2008 ;12-13.
3. Tiny M, Yohana M, Heluf M. Integrated HIV / NCD management: knowledge, attitudes and practices of health workers in Gaborone, Botswana. *Afr Health Sci*. 2019;19(3):2312-2323.
4. UNAIDS. Global HIV statistics; 2021. Available:www.unaids.org accessed on 28/01/2021.
5. Jane E, Martin R, Ariane L. Nurse Practitioner, Nurse Midwife and Physician Assistant Attitudes and Care Practices Related to Persons with HIV / AIDS. PhD, MPH, Wiley Online Library First published; 2005. Available:https://doi.org/10.1111/j.1745-7599.2000.tb00281.x. [PubMed]
6. Bintou A. Knowledge, attitudes and practices relating to HIV among health workers at the hospital, CSREF and CSCOMs in Gao city. Thesis, Bamako: University of Science, Technology and Technology of Bamako, Faculty of Pharmacy. 2017;26-27.
7. WHO, HIV / AIDS Health Theme ; 2020. Available:https://www.who.int/topics/hiv_aids/en/. Accessed on 12/22/2020
8. KAP Tanzania HIV Stigma Study Team. Evaluation of knowledge, attitudes, and practices of health care providers toward hiv-positive patients in tanzania. *Operations Research Results, USAID*; 2007.
9. Sangaré B. Knowledge, attitudes and practices relating to HIV among hospital practitioners at the Gabriel Touré CHU [thesis]. Bamako: University of Sciences, Techniques and Technologies of Bamako; 2014.
10. Norbert M, Joris L. Knowledge, attitudes and practices of health professionals regarding standard precautions in a

- hospital environment. S.F.S.P. Public Health. 2013/5 ;25:663-673.
Available:<https://www.cairn.info/revue-sante-publique-2013-5-page-663.htm>
11. Hentgen V, Jaureguiberry S, Ramiliarisoa A, Andrianantoandro V, Belec M. Knowledge, attitudes and practices of health personnel regarding HIV / AIDS in Tamatave (Madagascar). Bull Soc Pathol Exot, Manuscript n° 2236. Public Health. 2002;95(2):103-108.
 12. Chizoma MN, Adenike O. Knowledge and behavior of nurse / midwives in the prevention of vertical transmission of HIV in Owerri, Imo State, Nigeria: a cross-sectional study. BMC Nursing. 2007;6:9.
DOI:10.1186/1472-6955-6-9
Available:<http://www.biomedcentral.com/1472-6955/6/9>
 13. Eholie SP, Ehui E, Yebouet-Kouame BY. Analysis of the practices and knowledge of healthcare personnel on blood exposure accidents in Abidjan (Ivory Coast). Med Mal Inf. 2002;32:359-68.

© 2022 Yakusu et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/65108>