Level and Determinants of Knowledge of Kinshasa City Practitioners on Colorectal Cancer

Dieudonné SandukuKisile[1], Yolande Voumbo Mavoungou Matoumanou[4], Christophe MambueniThamba[5], Thierry Dada Sasa[1], Hervé Alex Tukadila Kabangi[5,6], Aliocha Nkodila Natuhoyila[5,6], Benjamin Longo Mbenza[1,2,3,4]

[1]Université de Kinshasa, Faculté de Médecine-RD Congo
[2]Walter Sisulu University, MTHATHA, South Africa
[3]Université Président Joseph KASA-VUBU, RD CONGO
[4]Université Marien NGOUABI, Brazzaville, République du Congo
[5]Lomo University of research, Kinshasa, Democratic republic of Congo
[6]Centre Medical Cite des Aveugles, Mont Ngafula, DR Congo

Corresponding Author: Aliocha Nkodila Natuhoyila

ABSTRACT

Context and objective: The delayed standing out of consultations is sinking colorectal cancer (CRC) prognosis in Kinshasa. The objective was to evaluate the level and the knowledge signs of CRC surgeons (professionals) of Kinshasa.

Methods: A descriptive and cross-sectional study was conducted from March 15th to April 30th, 2017 thanks to structured, standardized questionnaire and selfmanaged around the Surgeons knowledges on CRC.

Results: Out of 609 interviewed surgeons (professionals), 84,9% were recognized for lowest level of knowledge on the CRC. After correction of variables of confusion (Health zones and professionals qualification), by using multivariate analysis by binary logistic regression, only the care structure (hospital center, specialized hospital versus university clinics in Kinshasa) and geography (urban environment, urban-rural environment) were identified as the important, independent,andsignificantfactorsofthelowestlevelofknowledgeonCRC.

Conclusion: The level of surgeons (professionals) knowledge of Kinshasa on CRC is low, following the absence of good clinical governance, continuous training, supervision and tools for a global care of a CRC in DRC.

Keywords: Colorectal cancer, Knowledge of professionals (Surgeons), Kinshasa-DRC

INTRODUCTION

The epidemiology of colorectal cancer (CRC) is a public health problem in wealthy countries. [1-5] The predominance of men, [6,7] heredity, nutritional and environmental factors [8] are implicated in the genesis of CCR.

Unlike data from countries in Eastern Europe, South America, Southeast Asia, and Africa, [4,5,8,9] clinical impression [10,11] in the Democratic Republic of Congo (DRC) highlights an increasing frequency of the CCR. The transition from the traditional diet to a Western type diet low in fiber, physical inactivity, obesity, alcoholism and smoking are factors that can explain this resurgence of the CCR in this less industrialized country. Indeed, the absence of a CCR screening policy, the ignorance of the population about this disease and the poverty of the DRC could justify the emergence of the CCR at the Cliniques Universitaires des Kinshasa (CUK).

In view of the often late referrals from patients in specialized settings, [12] questions about the practitioners' real

knowledge of CRC are becoming more and more legitimate. In addition, there is no data available on the knowledge, attitudes and practice of practitioners in the city of Kinshasa province (VPK) on the CCR.

The vacuum of scientific publications relating to the knowledge of the doctors and the audit of the health system of the VPK on the JRC, justified the initiation of this study.

Thus, the objective of this study was to assess the level and the determinants of the knowledge of practitioners of health facilities of the VPK / DRC on the CCR.

MATERIAL / PRACTITIONERS AND METHODS

Nature of the study, participants and framework of the study

It was a descriptive and transversal study, conducted from March 15 to April 30, 2017, with practitioners working in hospitals of the VPK, capital of the DRC.

Sampling

The diagram in Figure 1 schematizes the sampling steps: Eligible health zones (HZ), referral hospitals by strata of zones, hospitals providing part of the specialized care, and participants. Among the set of HZ 13,12, and 10 zones belonged respectively to the strata of the WEST, the stratum of the CENTER and the strata of the EAST.

All participants, practitioners from each selected hospital and present between 9:00 a.m. and 4:00 p.m., and from Monday to Friday, made up the exhaustive sample of this study. Eight investigators, all doctors, were trained to collect the data for this study.

In a simple random fashion, of the remaining HZs per stratum, one was drawn per stratum for the Kintambo (West), Kingabwa (Center) and Kingasani (East) pretest.

By simple random drawing, three private hospitals were selected from each ZS according to the following criteria:
• geographic accessibility;
• have at least 4 service practitioners per day.

Thus, for the entire study, $((5 \times 3) + 4) + (3 \times 15) =$ practitioners from 64 hospitals were surveyed. The study respondents were clinical doctors working in the selected hospitals who agreed to freely respond to the survey questionnaire.

Choice Of Clinicians

At each structure, a systematic selection was made to select the practitioners. In each structure, the list of practitioners (N) was established in alphabetical order, the ni was drawn according to the prorates of each structure to reach the minimum size of 203 practitioners per stratum, ie $3 \times 203 = 609$ practitioners.

Inclusion and exclusion criteria

Included in the study was any practitioner working in the selected hospital who agreed to freely respond to the questionnaire.

Was excluded, any practitioner on professional training or any practitioner who refused to answer the questionnaire.

Collection of data

The data were collected using a structured, standardized and self-administered questionnaire, previously pre-tested, given to consenting practitioners.

Data in the form of information included: demographic data (age and sex), professional data (qualification, duration of medical practice, nature, location of establishment and HZ belonging to the practitioner's assignment hospital), possible existence of an oncology unit in the hospital and training in digestive oncology on the job).

Data collection techniques

For the hospital-level survey, data were collected by directed interview, using a questionnaire in French.

Appreciation of knowledge of practitioners on the management of colorectal cancer

To assess the knowledge of practitioners on the management of CRC according to the Anglo-Saxon acceptance in relation to the definition, risk factors, protective factors, development, assessment of extension, therapeutic means and patient monitoring, a rating of 0 to 13, resulting from the addition

of the various elements of each section was used. Thus, knowledge was judged according to different points (scores) categorized by codes: code = 1 = low-poor level of knowledge / fairly good answer, against code = 2 = good-excellent level.
- weak-poor response, when the summation of scores did not reach 50%;
- good-excellent answer, when the summation of scores was greater than or equal to 50%.

Statistical analysis

Qualitative variables were presented in the form of frequencies and proportions. Quantitative (continuous) variables were summarized as means and standard deviation. The proportions were compared between groups according to the Chi-square test. Student's t-test and ANOVA were used to compare means between two groups and between at least three groups, respectively. Logistic regression was used to determine the multivariate associations between the independent determinants and the risk of low-poor level of knowledge on the CCR (odds ratio = odds ratio adjusted for confounding variables with 95% confidence interval = 95% CI). The p value <0.05 was considered as a threshold of statistical significance.

The study was approved by the ethics committee of the School of Public Health at the University of Kinshasa, DRC. Each participant gave written, free and informed consent to participate in the survey. And all the stages of this study were carried out according to the Declaration of Helsinki.
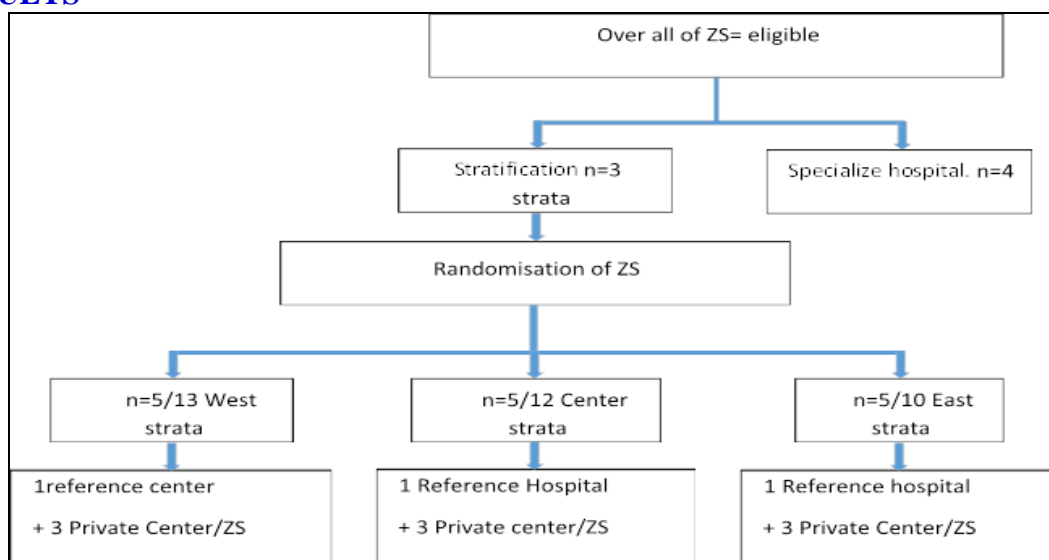
RESULTS

Figure 1.Health strata of Kinshasa

A total of 609 practitioners were interviewed with 73.4% male (n = 447) and 26.6% female (n = 162), the sex ratio being 3 Men: 1 Woman. The average age of the practitioners was 37.3 ± 7.6 years (minimum = 26 years and maximum = 72 years, median = 36 years). Among all practitioners, 84.9% (n = 517) were recognized as having a low-mediocre level of knowledge defined by the summation of all the interest scores.

Table 1 summarizes the mean, median, standard deviation, minimum and maximum values of each score related to knowledge on the CCR. The mean values of the ages and the times of practice were similar (p> 0.05) between practitioners with low-mediocre knowledge of the CCR (age = 37.5 ± 8 years and exercise time = 7.1 ± 7 years) and practitioners with good-excellent knowledge of CCR (age = 36.6 ± 5.2 years and exercise time = 8.2 ± 8.3 years).

Table 1. Distribution of the values of the scores relating to knowledge of the CCR in the study population

Scores	Averages	SD	Median	Minimum	Maximum
Definition	6,7	0,6	7	4	8
Clinical	1,5	0,5	1	1	2
Rectal bleeding	1,9	1,1	1	1	4
Risk factors	21,1	2,9	22	13	26
Preventive habits	12,8	1,6	13	8	16
Hemoccult	1,7	0,5	2	1	2
Diagnostic examinations	2,6	0,6	2	2	4
Assessment of extension	6	1,2	6	4	8
Supported	7,3	0,9	7	5	10
Followed	2,6	0,7	2	2	4
Organs of choice for metastases	2,8	0,7	3	2	4

Table 2 shows the univariate associations between sex, structure of care, membership of the health network, geography of the health zones according to the level of urbanization, on-the-job training in digestive oncology, the qualification of practitioners, the distribution of the ZS in strata, and the low-mediocre level of knowledge on the CCR.

Table 2. Univariate associations between the variables of interest and the low- poor level of knowledge on CCR in the study population

Variables	Faible-médiocre des connaissances sur leCCR % (n)	p
Sex		0.706
Male	84.6 (378/447)	
Female	85.8 (139/162)	
Structures		<0.001
Hospital Center	9.3 (137/138)	
Specialized hospital	82.9 (353/426)	
CUK	60 (27/45)	
Membership		
Private partebershios	83.9 (397/473)	
Private	92.3 (48/52)	
Confessional	85.7 (72/84)	
Geography		<0.001
Urban	88.4 (397/449)	
Urban-rural	75 (120/160)	
On-the-job training in oncology		0.199
Yes	95 (19/20)	
No	84.6 (498/589)	
Qualification		<0.001
Specialist Doctor	87.9 (29/33)	
General Doctor	86.8 (455/524)	
Doctor in specialization	63.5 (33/52)	

The fact of sex, belonging and on-the-job training in digestive oncology was indifferent (p> 0.05) on the level of practitioners' knowledge of CRC. On the other hand, the hospital center structure, the urban environment, the specialist doctor, and the western stratum HZs conferred a significant univariate risk of low-mediocre level of knowledge on CRC. After adjustment for the confounding variables including the stratum of the HZs and the qualification of the practitioners using multivariate analysis by binary logistic regression, only the structure of care and the geography were identified as the important, independent and very significant determinants of low- poor level of knowledge about the CCR (Table 3).

In fact, compared to the CUK, the hospitals conferred a multivariate risk of low-mediocre level of knowledge on the CCR multiplied by 62 times while the specialized hospitals conferred a multivariate risk of low-mediocre level of knowledge on the CCR multiplied by 5 And compared to the urban-rural environment, the urban environment conferred a multivariate risk of low- poor level of knowledge on the CCR multiplied by 3. Thus, the stepwise retrograde strategy (Stepwise Backward) confirmed a very robust multivariate model to the third

iteration (Chi square = 75.025; p <0.0001) according to equation Y (dependent variable = low knowledge).

Table 3. Independent determinants of low-poor knowledge on the CCR of the study population

Independent variables	B	ES	Wald	aOR (95% CI)	P
Structures					
Hospital Center	4.881	1.056	21.352	62 (17-105)	<0.001
Specialized hospital	1.644	0.355	21.430	5.2 (2.6-10.4)	
CUK			1	1	
Géography					
Urban	1.190	0.262	20.639	3.3 (2-5.5)	<0.001
urban- rural			1	1	
Constants	-0.784	0.401	3.816		0.05

DISCUSSION

This study wanted to estimate the extent of the low-mediocre level of knowledge of VPK practitioners on the CCR and thus carry out an audit of the health system of this capital city of the DRC, in order to formulate some recommendations for decision-makers.

Its potential univariate determinants, significant, confounding variables, and very significant independent determinants have also been identified.

The knowledge of VPK practitioners about CRC was low-poor in 85% of the doctors surveyed, partly justified by the extent of the infectious, parasitic and metabolic pathologies treated daily in this city. In fact, infectious and parasitic pathologies, especially those with epidemic potential, benefit from budgetary support from international partners in terms of staff training and management, in response to the insufficient financial resources allocated to the health sector by the authorities. in the DRC. For the CCR, there is no screening program or support of any kind, despite its increasing hospital frequency and its poor prognosis.

Overall, the health system is rather extroverted. The majority of the practitioners (73.4% -86% of the participants) were male, employed by the Congolese state, practicing in urban areas and general practitioners. Studies on the factors involved in CRC screening highlight the role of general practitioners as key players in success. [13] The quality of training of these practitioners depends on prevention and early detection of CRC,

[14,15] a guarantee of success in terms of management and prognosis. [16] The low-mediocre level of knowledge of the practitioners of this study could explain the delay in the referral of patients, in the diagnosis and the poor prognosis of this cancer in VPK.

There was therefore a significant univariate association between the hospital center structure, the urban environment, the specialist doctor, the western stratum HZs and the low-mediocre level of knowledge on the CCR. By avoiding the confounding variables including the HZ stratum and the qualification of the practitioners using the multivariate model by binary logistic regression, only the Primary level hospital center, the specialized secondary level hospital, and the urban exercise were recognized as a determining and significant barrier to the implementation and success of the national training program for practitioners in the DRC.

This descriptive approach highlights the marginalization of female practitioners and those practicing in an urban-rural environment. Indeed, the living and working conditions of doctors in an urban-rural environment have since deteriorated. They are identical to those of doctors in rural areas. The bush bonus formerly granted to rural practitioners as a motivation is no longer valid. The difficult working conditions and the lack of equipment characteristic of these environments partly explain the concentration of doctors in urban areas. Other reasons for the low proportion of doctors in urban-rural areas are to be found on the lucrative side. The

cost of health care is low in rural and urban-rural areas. The enthusiasm of doctors to practice in urban areas is real. Their recruitment in denominational and private hospitals in this environment is limited. The assignments of doctors in the state sector do not reduce the pressure of job seekers. They do not take into account the real needs of hospitals for medical personnel.

The doctors surveyed had an average professional experience of 7.2 ± 7.1 years. None had received on-the-job training in digestive oncology. This fact could also explain the low-mediocre knowledge level of the practitioners of this series on CRC and the late referrals of patients. According to a survey carried out in the United States of America among 1072 general practitioners, the lack of training and experience is among the main obstacles to this care. [13] A study carried out in Tunisia on the place of general practitioners in the care of cancer patients reports a rate of 23% of doctors having undergone training in oncology on the job out of a total of 215 surveyed doctors. [17]

With the advent of digestive endoscopy, westernization of lifestyle and an aging population, the CCR is topical in VPK. [10]

Practitioners in the state sector ignore the warning signs of the CCR, explains the health route of this category of patients in search of recovery. Practitioners in denominational and privatehospitals, equipped, betterselected and motivated, know the factors associated with optimal management of CRC.

In addition to Western-style care structures, there are informal care centers and so-called revival churches in the VPK which offer healing services and rites to patients. [11] The recruitment of doctors in public hospitals in the DRC in general and in Kinshasa in particular is, to our knowledge, random. It does not take into account the standards laid down by the World Health Organization (WHO) [18] and does not rest on any basis of competitiveness. The direct consequences of this situation are the lack of quality health care provided to the target population and the plethora of practitioners in these public hospitals.

Public health implications and prospects

The results of this study will establish the practitioner's responsibility in the delay in diagnosing the CCR in Kinshasa. The practitioner must become a key player in the promotion of primary health care in the DRC, especially since many patients do not consult him as a first line. The Congolese practitioner will ensure within the basic communities, the primary prevention of diseases, the secondary prevention, and will refer towards the higher levels of the pyramid of the care of the country, pathologies which require a specialized management. The survival of oncology patients is closely dependent on the quality of the training and the curriculum of the health actors. In healthcare administration, VPK practitioners will use the knowledge acquired during the academic course. On-the-job training will be desired. Participation in colloquia and seminars which is not currently binding should be for good practice.

This work, which aims to be an audit of the VPK health system, addresses doctors' knowledge of CRC as a reference. Educating the population, improving their economic level and taking charge of health care through mutual health insurance companies could reduce patient evasion in favor of formal circuits of care.

This survey of VPK practitioners calls for reflections on the training of the Congolese doctor (DRC), his retraining during employment, and the method of his recruitment in healthcare structures. The Ministry of Public Health, which is the design authority for the country's health policy (DRC), should integrate the fight against cancer in its program like infectious and parasitic pathologies, and make it a subject of advocacy with the Congolese government and international partners. The ultimate objective is the mobilization of

substantial resources for the health of the population.

Limitation of the study

This study had weak points:

- the fact of not having taken into account the Faculties of Medicine of origin of the doctors surveyed;
- doctors from unsuccessful health facilities wanted to participate in the investigation after having heard about it;
- some of the doctors interviewed wanted to obtain the answer to the survey questionnaire immediately after the interview;
- the doctors in specialization and the specialists included in the study had been dismissed without taking into account their area of specialization.

CONCLUSION

The knowledge of VPK practitioners about CCR is weak. Strengthening their capacity through on-the-job training in oncology in general and CRC in particular could contribute to improving the prognosis of CRC through screening strategies and holistic patient management. The health of the population should be at the center of the actions of decision-makers by the promotion of quality assurance measures for health care, the pooling of health care and the motivation of health personnel in urban-rural and rural areas of the DRC.

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