Original Research Article

Determinants of the use of the flowchart by registered nurses in the Kasa-Vubu Health Zone in Kinshasa, Democratic Republic of Congo

Abstract

The purpose of this work was to identify the most important factors that contribute to the low use of the flowchart by registered nurses in the Kasa-Vubu Health Zone. Verify the existence of a relationship between these factors studied and the socio-demographic characteristics of the respondents. To this end, 105 RNs and their assistants were interviewed according to the pre-established questionnaire during the period from May to June 2017. The analysis showed that 60% of the respondents were under 40 years of age, 50.5% of the respondents were married, 80% of the respondents had more than 5 years of service and 89.5% had a graduate degree. In addition, 59.0% were performing nurses. In addition, there is a statistically significant association between the use of the flowchart and motivation (p=0.014), the importance given by RNs and performers in the therapeutic management of patients (p=0.001). Also, there is a statistically significant association between the systematic use of the flowchart and the education level during patient management (p=0.000). Finally, there is an association between the systematic use of the flowchart and the importance given to facilitating and/or detrimental factors (p=0.001).

In conclusion, socio-demographic factors, in this case seniority, education level and professional activity, factors related to the importance given to harmful/facilitating factors and motivational factors significantly influence the systematic use of the flowchart in the therapeutic management of patients in the Health zone of Kasa-vubu.

Keywords: Flowchart, Health Zone, Kasa-Vubu, Kinshasa.

1. Introduction

The "flowchart" concept is a tool that governs the organization of curative care at the Health Centre (HC) level, encompassing the following elements: reception, consultation, administration of care and laboratory [1]. It defines as a tool for Registered Nurses (RNs) to provide quality care on time and, if necessary, to refer for continuity of care as soon as possible.

The lack of use of the flowchart by RNs is responsible for the exacerbation of cases of morbidity and mortality in the various segments of the population, particularly pregnant women and children under five years of age. Moreover, in the Democratic Republic of the Congo (DRC), the poor quality of care, particularly in clinical cases due to the lack of use of the flowchart, exposes patients to serious or even fatal organic consequences.

The shortage of nurses in the services is part of a context where the development of the profession is expanding rapidly with the advent of specialized nurse practitioners (SPIs) and the redefinition of the roles conferred by the law 90. This requires increasing the quality and efficiency of health care and services. Among the information and communication technologies (ICTs) applied to the health field, the electronic health record is considered as the cornerstone for integrating a set of information useful for patient follow-up, including emergency data, immunization, medication, imaging and laboratory tests [2]. A study conducted in Cameroon states that the flowchart is a decision-making and vocational training tool. A good technique for handling flowcharts, observed in 10/16 nurses, is associated with their systematic initial use and with the standardization of care. Inadequate reading skills of dichotomous trees hindering their application in diagnostic decision-making. Retrospective analysis of 800 treatments recorded in the CS consultation registers shows an average rate of 75% of treatment standardization that varies from 52 to

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98% depending on the CS. Three quarters of non-standardized treatments are ineffective and/or inefficient [3].

Currently, as part of the decentralized management of primary health care (PHC), they are acquiring renewed interest as tools for rationalizing and standardizing care. Thus, these two concepts are part of the new health policy in Sub-Saharan Africa: rationalization is a condition for the implementation of the Bamako initiative, contributing to the financing of health services, i.e. the payment of care (medicines by the population requires the provision of affordable quality care) and the standardization of care in all health districts in an integrated health district contributes to equity of care and allows rational management of care and medicines throughout the district [4].

To reduce mortality and morbidity in the DRC, the minimum quality services defined in the Minimum Package of Activities (MAP) should be provided to the population of the health area. In addition, among these services are the benefit services that facilitate the management of morbid phenomena that occur there.
In this problem, Kinshasa's RNs operate under very specific conditions, neglecting what would facilitate their work in caring for patients, and this constitutes an unprecedented benchmark.

In view of the above, two questions arise:
- What are the main determinants of the use of the flowchart by RNs, their assistants and health zone of Kinshasa executors?
- Is there a relationship between these determinants and the socio-demographic characteristics of the study population?

This analytical study was conducted in order to identify the most important factors that would contribute to the low use of the flowchart by health zone of Kasa-vubu RNs in Kinshasa Province City.

2. MATERIALS AND METHODS

2.1 Study area and type of study

The survey was carried out in the health facilities of the health zone of Kasa-vubu offering preventive, curative and promotional services. This study was analytical with a correlational estimate that aims to explore the relationships between variables related to intention and seeks to determine whether the variables involved are factually associated.

2.2. Data collection

Data collection was carried out during the period from May to June 2017. To do this, the population of this study concerns RNs, their assistants and performers using the flowchart during the clinical consultation within their respective CSs, all CSs in the said ZS being included.

The sampling of the study is non-probability for convenience. The sample size was established on the basis of the number of participants per predictor variable in order to meet the statistical power in a multiple regression analysis. XLSTAT2015 software was used to calculate the sample size. However, for the parameters entered (with α=0.05), an expected effect size of 0.13; a total of 4 independent variables and a power of 0.90. Thus, the sample size required for this study was 105 RNs and their assistants from ZSK were interviewed according to the pre-established questionnaire.

The data were collected using an interview guide. A Likert-type scale with seven answer choices was used in the design of the items. The structured interview method for collecting information from subjects. Descriptive analyses (frequency and percentage) were conducted to describe the sample profile.

Correlational analysis using the Pearson Chi-square test, the confidence interval of the Odds-ratio was performed between the different variables of the study to determine the factors that explain the use of the flowchart in diagnosis and treatment of patients.

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2.3. Data analysis

The data analysis was performed using SPSS version 20 software. Probability values less than 0.05 were considered statistically significant.

3. RESULTS AND DISCUSSION

3.1. Socio-demographic characteristics

The socio-demographic characteristics of respondents of the current study is presented in the following table

Table 1. Socio-demographic characteristics of respondents

Caractéristiques	n=105	%
Age		
Less than 40 years	63	60
40 years and more	42	40
Total	**105**	**100**
Marital status		
Married	53	50,5
Single	52	49,5
Total	**105**	**100**
Seniority		
Less than 5 years	21	20
More than 5 years	84	80
Total	**105**	**100**
Level of education		
High school	11	10,5
University	94	89,5
Total	**105**	**100**
Professionnal activity		
Registered nurse	21	20
Assistant registered nurse	22	21
Executing nurse	62	59,0
Total	**105**	**100**

In total, 60% of the respondents were under 40 years of age while more than 50.5% of the subjects surveyed were married, while 80% of the respondents had more than 5 years of service. In addition, 89.5% of the respondents had a degree. Finally, 59.0% were executing nurses, 21% were assistant RNs and 21% were RNs.

3.2. Use of the flowchart compared to the affective component

The table below shows the use of the flowchart in relation with the affective component.

Table 2 : Use of the flowchart in relation with the affective component

Affective component	Use of flowchart		OR	$IC_{95\%}$ (OR)		χ^2	dl	p	Decision
	Low use	Systematic use							
	n(%)	n(%)		Lim<	Lim>				
High affective level	14 (41,2)	35 (49,3)	0,720	0,315	1,645	0,609	1	0,435	NS
Low affective level	20 (58,8)	36 (50,7)							
Total	**34 (100)**	**71(100)**							

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Legend : ( ) **: number of Registered Nurses, Assistant Registered Nurses and / or Performers who have used the flowchart**

Only 58.8% RNs and performers reported having a low affective level to use the flowchart during their clinical consultation for better patient management. In addition, the bivariate analysis between the affective component and the use of the flowchart showed that there is a statistically insignificant association (p=0.435), the affective component: OR= 0.72[0.3-1.6]. However, there was no association between the use of the flowchart and the affective component.

3.3. Use of the flowchart compared to the motivation

The use of flowchart in relation to the motivation is presented in the table below.

Table 3 : Use of the flowchart in relation to the motivation

Motivation	**Use of the flowchart**		**n=105**	χ^2	**dl**	**p**	**Decision**
	Low use	Systematic use					
	n(%)	n(%)	N(%)				
Moderate	1(2,9)	7(9,9)	8(7,6)	8,554	2	0,014	*
Average	17(50)	16 (22,5)	33(31,4)				
High	16(47,1)	48(67,6)	64(61)				
Total	**34(100)**	**71(100)**	**105(100)**				

Legend :***Significant, ( ) : number of RNs and executing motivated to use the flowchart.**

The RNs and executing group was statistically different. For this, a stratification according to the motivation of therapeutic management was necessary because 50% of the respondents had an average hesitant motivation on the use of the flowchart in the management of patients compared to only 47.1 who had a high motivational spirit in the systematic use of the flowchart during the management of patients.

In addition, the bivariate analysis between the use of the flowchart and motivation showed that there is a statistically significant association between the use of the flowchart and motivation (p=0.014 and one ddl=2). Thus, there is an association between the use of the flowchart and motivation.

3.4. Use of the flowchart in relation with the efficiency of treatment

Table 4 shows the use of the flowchart in relation with the efficiency of treatment.

Table 4 : Use of the flowchart compared to the efficiency of treatment

Efficiency	**Use of the flowchart**		**OR**	**$IC_{95\%}$ (OR)**		χ^2	**dl**	**p**	**Decision**
	Low use	Systematic use							
	n(%)	n(%)		Lim<	Lim>				
Low efficiency	13(38)	31(43,7)	0,799	0,346	1,842	0,278	1	0,598	NS
High efficiency	21(61,8)	40(56,3)							
Total	**34(100)**	**71(100)**							

Légende : ( ) : number of Registered Nurses, Assistant Registered Nurses and/or Executors who have used the flowchart.

As a result of this study, 61.8% RNs and executing nurses reported using the flowchart for reasons of effectiveness in the therapeutic management of patients. Indeed, the bivariate analysis between the use of the flowchart and the efficacy of the therapeutic management obtained showed that there is a

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statistically insignificant association (p=0.598), efficacy: OR = 0.79[0.3-1.8]. However, there was no association between the use of the flowchart and the effectiveness of patient management.

3.5. Use of the flowchart compared to the importance given to facilitating or detrimental factors

The use of the flowchart compared to the importance given to facilitating or detrimental factors is presented in the table below.

Table 5 : Use of the flowchart compared to the importance given to facilitating or detrimental factors

Importance given to facilitating or detrimental factors	Use of the flowchart		OR	$IC_{95\%}$ (OR)		χ^2	dl	p	Decision
	Low use	Systematic use							
	n(%)	n(%)		Lim<	Lim>				
Less important	5(14,7)	35(49,3)	0,177	0,062	0,510	11,66	1	0,001	***
More important	29(85,3)	36(50,7)							
Total	34(100)	71(100)							

Legend : ***Significant, ****highly significant**
( ) : number of registered and performing nurses who were motivated to use the flowchart

For factors concerning the importance derived from the use of the flowchart, this analysis revealed a statistically very significant association between the importance given to factors that hinder and facilitate and the use of the flowchart in the therapeutic management of patients. Nevertheless, 85% of respondents consider the use of the flowchart in the medical care of patients to be too important.

To this end, the bivariate analysis between the systematic use of the flowchart and the importance given to facilitating and/or harmful factors showed that there is a statistically very significant association (p=0.001), the importance given to facilitating and/or harmful factors : OR=0.1[0.06-0.5] and a ddl=1. Thus, there is an association between the systematic use of the flowchart and the importance given by ITs and performers in the therapeutic management of patients.

3.6. Use of the flowchart in relation to socio-demographic characteristics

The Use of the flowchart in relation to socio-demographic characteristics is given in the table below.

Table 6. Distribution of respondents according to the use of the flowchart in relation to socio-demographic characteristics

Characteristics	Use of the flowchart		χ^2	p
	Low use	Systematic use		
	n (%)	n (%)		
Seniority				
Less than 5 years	11 (32,4)	10 (14,1)	4,795	0,029
More than 5 years	23 (67,6)	61 (85,9)		
Total	34 (100)	71 (100)		
Level of education				
High school	11 (32,4)	0 (0)	25,66	0,000
University	23 (67,6)	71 (100)		
Total	34 (100)	71 (100)		
Occupational activity				
RN	3 (8,8)	18 (25,4)	18,18	0,000
ARN	1 (2,9)	21 (29,6)		

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EN	30 (88,2)	32 (45,1)
Total	34 (100)	71 (100)

Legend : RN : Registered nurse, ARN : Assistant registered nurse, EN : Executing nurse

For factors concerning the systematic use of the flowchart, this analysis revealed a statistically significant association of the systematic use of the flowchart with the majority of characteristics, namely: level of education, occupational activity and seniority.

As for the factor such as the level of education in the systematic use of the flowchart, it stipulates that the more we have studied, the more we use the flowchart in the management of patients with 67.6% of respondents. This analysis revealed a statistically very significant association between study level and systematic use of the flowchart during patient management (p=0.000), study level: OR= 4.0[2.8-5.8] and a dl=1.

Moreover, the determinants of the systematic use of the flowchart in relation to the occupational activity, it shows that the performing nurses systematically use the flowchart during the therapeutic management of patients at 88.2% against 8.8% of the ITs who benefit from it during their consultation. Thus, the bivariate analysis between the systematic use of the flowchart and the exercise of one's professional activity showed that there is a statistically very significant association (p=029), seniority in the profession: OR = 0.1[1.0-7.7] and a ddl=2. Thus, there is an association between the systematic use of the flowchart and the professional activity exercised by nurses in the health zones during the therapeutic management of patients.

In addition to factors concerning educational level in the systematic use of the flowchart and seniority in the profession, it appears that nurses with 5 years or more in the profession find it more important to use the flowchart during therapeutic management at 67.6%.

However, the bivariate analysis between systematic use of the flowchart and seniority in the profession showed that there is a statistically significant association (p=0.001), the importance given to facilitating and/or detrimental factors: OR = 2.9[1.0-0.5] and a ddl=1. Hence, there is an association between the systematic use of the flowchart and the importance given by ITs and performers in the therapeutic management of patients.

3.7 Discussion

This study showed that 60% of the 105 respondents were under 40 years of age compared to 40% between 40 and over. This may be explained by the fact that retirement in our country is too difficult, but also the succession process is not customary.

In addition, 50.5% of the respondents were married and 80% had more than 5 years of service and 89.5% of the respondents had a degree compared to 10.5% who only had a secondary school diploma (A2). Several studies have shown the effect of education level on the provision of quality care because the more you have studied, the more material and expertise you have in patient care. The results of this study differ from those found in Morocco by Aoufi H. in 2012, which stated that 87.5% were without professions, 60.3% were illiterate and 74.3% were physically active (mild, moderate or high), 15.4% were former smokers and 3 patients consumed alcohol. In addition, 46.3% of patients had a history of diabetes in the family[5].

Then, 59.0% of the respondents were performing nurses, 21% were assistant ITs and 21% were ITs. These results are consistent with those found by Kanika M., 63.8% of whom had A1 education, compared to 11.6% who had a Bachelor's degree. Finally, the remaining 21.7% of respondents had an A2 level of education and 2.9% were A3. As for professional experience and seniority in service, those between 5-10 years of age were 30.4% compared to 60.9% who were 11 years of age or older. In addition, 69.6% and 39.1% respectively had more work experience and seniority in the service[6].

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Among the 105 respondents, only 58.8% of IT and performers reported having a low emotional level to use the flowchart. It has been established that 41.2% of registered and performing nurses working in the above-mentioned health zone at a high emotional level use the flowchart during their clinical consultation for better patient management. In addition, the bivariate analysis between the affective component and the use of the flowchart showed that there is a statistically insignificant association: p=0.435, the affective component: OR = 0.72[0.3-1.6]. However, there was no association between the use of the flowchart and the affective component. In addition, these results differ from a study conducted in Morocco by Lamchahab.,F. et al. (2011). [7]

Of the factors influencing knowledge of the risks of diabetic foot, 40% were illiterate. This partly explains the poor compliance with hygiene-dietary rules. On the other hand, the present results are perfectly in line with those found in the United States, which have not shown an association between the level of education and the diabetic foot (p= 0.1) Denis.J., Contandriopoulos, A. (2001). [8].

The results mentioned above reveal that 50% of respondents have a moderately hesitant motivation to use the flowchart in patient management. This can be explained by the lack of knowledge about the importance of this tool in medical management compared to only 47.1% who have a high motivational spirit in the systematic use of the flowchart during patient management.

In addition, the bivariate analysis between the use of the flowchart and motivation showed that there is a statistically significant association between the use of the flowchart and motivation, p=0.014) and a ddl=. Thus, there is an association between the use of the flowchart and motivation. According to the Quebec study on the determinants of intent of intensive care nurses in applying physical restraints to patients mechanically ventilated by Parenteau..,M. (2011) points out that, in descending order, nurses consider restraints to be a prudent (6.52 ± 0.71), useful (6.25 ± 0.90), advantageous (6.17 ± 0.98), reassuring (6.17 ± 0.94), respectful (4.14 ± 1.25) and rewarding (3.81 ± 1.13) intervention. In addition, some increase in averages in the perception of control versus motivation was related to the accumulation of years of experience[9].

Among 105 respondents, 61.8% IT and performers reported using the flowchart for reasons of effectiveness of therapeutic management of patients compared to 38% who expressed low effectiveness of therapeutic outcome by using the flowchart for best management. In a study conducted by Haegeman, F. (1994) shows that the eleven nurses who left school have an average compliance score of 80% compared to an average score of 63% for the other five nurses. [3]. Indeed, the bivariate analysis between the use of the flowchart and the efficacy of the therapeutic management obtained showed that there is a statistically insignificant association (p=0.598), efficacy: OR = 0.79[0.3-1.8]. However, there was no association between the use of the flowchart and the effectiveness of patient management. The same source suggests that there was a negative correlation between the number of previous professional years without a flowchart and the standardization of treatments. This is demonstrated with a linear regression coefficient r=0.61. In conclusion, this study suggests that nurses who have worked longer without a flowchart apply it less well.

For factors concerning the importance derived from the use of the flowchart, this analysis revealed a statistically very significant association between the importance given to harmful and/or facilitating factors and the use of the flowchart in the therapeutic management of patients. Nevertheless, 85% of respondents find the use of the flowchart too important in the medical management of patients compared to only 14.7% who find the use of the flowchart as a tool in patient management less useful. To this end, the bivariate analysis between the systematic use of the flowchart and the importance given to facilitating and/or harmful factors showed that there is a statistically very significant association (p= 0.001), the importance given to facilitating and/or harmful factors: OR = 0.1[0.06-0.5] and a ddl=1. Thus, there is an association between the systematic use of the flowchart and the importance given by ITs and performers in the therapeutic management of patients. These results corroborate Haegeman's closes...F. (Op. cit.) which stipulates that a positive association observed between the standardization of treatments and the proper handling of flowcharts: the ten nurses who handle them well prescribe on average 84% compliant treatments and the other six on average 60% (Kruskal-wallis test with two groups; p-value <0.01). Indeed, the same association was found with a systematic initial use of flow charts: the eleven nurses who

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reported having used them initially for each patient prescribe on average 83% of compliant treatments and the other five on average 58% (Kruskal-wallis test with two groups; p <0.01)[3]. For factors related to the level of study in the systematic use of the flowchart, it appears that the more we have studied, the more we use the flowchart in the management of patients by 67.6% of our respondents. This analysis revealed a statistically very significant association between study level and systematic use of the flowchart during patient management: p-value = 0.000, study level: OR = 4.0[2.8-5.8] and a ddl that is equal to 1. Moreover, these results contradict those found by Haegeman F. (1994), whose eleven nurses leaving school have an average compliance score of 80% compared to an average score of 63% for the other five nurses (Kruskal-wallis test; p<0.05). Thus, these nurses also handle flowcharts (reading, interpretation) better (X2, exact Fisher, p<0.01) [3].

Moreover, the determinants of the systematic use of the flowchart in relation to the professional activity, it shows that the nurses performing the flowchart systematically use it during the therapeutic management of patients at 88.2% against 8.8% of the ITs who benefit from it during their consultation. Thus, the bivariate analysis between the systematic use of the flowchart and the exercise of one's professional activity showed that there is a statistically very significant association (p=029), seniority in the profession: OR = 0.1[1.0-7.7] and a ddl=2. Thus, there is an association between the systematic use of the flowchart and the professional activity exercised by nurses in CSs during the therapeutic management of patients. These results can also be interpreted in the light of previous studies, despite the different objectives, Essex (1975) finds, under optimal conditions, a concordance of more than 95% between diagnostic and therapeutic conduct guided by the flowchart [10].

In addition to the factors concerning the level of education in the systematic use of the flowchart and seniority in the profession, it appears that nurses with 5 years or more in the profession find it more important to use the flowchart during therapeutic management at 67.6% compared to only 32.4% for nurses with less than 5 years' professional experience. In addition, the bivariate analysis between systematic use of the flowchart and seniority in the profession showed that there is a statistically significant association (p=0.001), the importance given to facilitating and/or damaging factors: OR = 2.9[1.0-0.5] and a ddl=1. Thus, there is an association between the systematic use of the flowchart and the level of education of nurse consultants. Our results meet those of Fontaine (1987) cited by Haegeman, and F. (1994) reveals that the three graduate nurses in the population of his study are less adept at handling flowcharts (X2, Fisher exact, p<0.03); the degree of compliance of their treatments is comparable to that of registered nurses[3].

By the results proven by Daveloose, P. (1976) contradict our results by illustrating that nurses leaving school have an average compliance score of 80% compared to an average score of 63% for the other five nurses (Kruskal-wallis test; p<0.05). In addition, these nurses handle the flowchart more efficiently: (reading and interpretation) with one (X2, exact Fisher, p<0.01)[11].

4. CONCLUSION

At the end of this study on the determinants of the use of the flowchart by CS ITs and their assistants in the health zone of Kasa-vubu, 105 respondents were interviewed at the CS level.

At the end of various analyses carried out, at a risk of 5%, we confirm the alternative hypothesis that socio-demographic factors: seniority, level of education and professional activity, as well as factors relating to the importance given, harmful/facilitating factors and motivational factors significantly influence the systematic use of the flowchart in the therapeutic management of patients.

According to the bivariate analysis, the variables where the association with the systematic use of the flowchart when managing patients in the CS of the ZSK was statistically significant for some and very significant for others:

- Socio-demographic factors: seniority, level of education and professional activity;
- Factors related to the importance given to factors that hinder and facilitate the use of the flowchart as a tool for the therapeutic management of patients: minor and major importance;

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- The motivational factors leading to the systematic use of the flowchart in patient management: moderate, medium and high would allow the systematic use of the flowchart as a tool for patient management during medical consultation.

Some nurses did not experience the effectiveness of using the flowchart as a patient management tool, and others argued that the emotional component did not have the best impact by systematically using the flowchart in the private and public sectors, but there was no association between the proven effectiveness of the flowchart in patient management, the emotional component and the systematic use of the flowchart as a recourse tool during medical consultation in the health centre.

This study is far from exhaustive because it did not cover all aspects of the use of the flowchart at the CS level. However, it has identified determinants that favour the low use of the flowchart by ZSK ITs and is drawing attention from decision-makers for improvement.

REFERENCES

[1]. Ministère de la santé congolais., (Minisanté., 2011). Ordinogramme des soins au center de santé. Direction de développement des soins de santé primaires. Instructions for the use of ordinogramme.

[2]. Fountain., D. (1992). Infirmier, comment traiter votre malade. harmattan: simani.

[3]. Haegeman, F., Ledecq, L., Wyffels, A., Damak, K., (1994). Evaluation of the use of diagnostic / trachement equipment in the center of Nord-Cameroun. Service département de la santé publique du diamaré. Cameroun

[4]. Audibert, M. et Roodenbeke, E. (2005). Application of services of santé de premier niveau au Mali: Analyze the situation et perspectives. Région Afrique. Département du développement humain. Région Afrique. Banque mondiale.

[5]. Aoufi., H. (2012). Les facteurs de risque du pied diabétique à la province de Tétouan: Etude Cas-Témoin. Mémoire de fin d'études. Master in administration sanitaire et sante publique. Ministère de la Santé. Institut National d'Administration Sanitaire. Royaume du Maroc. En ligne. Consulter le 10/07/2017 à 20h sur le site: www.sante.gov.ma/departement/inas/index.asp

[6]. Kanika., M. (2015). Connaissances, attitudes and practices of health practitioners in the prevention of nosocomial infections in the health services of the General Hospital of Référence de N'djili. Mémoire inédit de License. ISTM / Kinshasa. DRC.

[7]. Lamchahab FZ, El Kihal AN, Khoudri AI, Chraibi A, Hassam B, Ait Ourhroui M. (2011). Factors influencing the awareness of diabetic foot risks. Annals of Physical and Rehabilitation Medicine.

[8]. Denis.J., Contandriopoulos, A. (2001). Intégration des soins, dimensions et mise en œuvre, Revue transdisciplinaire en santé, ruptures vol.8.

[9]. Adovohekpe., P. (1991). The rationalisation des soins curatifs. Etude de quelques obstacles à l'utilization des ordinogrammes au bénin. Anvers. Institut de médecine tropicale.

[10]. Essix., B, (1976). Diagnostic pathways in clinical medicine.2nd ed. Edindurgh. Chirdill. Livingstone.

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[11]. DAVELOOSE, P. (1976). Etude méthodologique de la consultation de pédiatrie. Establishment and evaluation of the diagnostic strategy used by the axillaires. Thèse de doctorat. Anvers. Institut de Médecine Tropicale.

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