Central African Journal of Public Health
2021; 7(6): 261-268
http://www.sciencepublishinggroup.com/j/cajph
doi: 10.11648/j.cajph.20210706.13
ISSN: 2575-5773 (Print); ISSN: 2575-5781 (Online)

Knowledge, Attitude and Practices on Primary Preventive Measures of Cardiovascular Diseases: A Cross-sectional Study in Dschang, West Cameroon

Bérénice Déliane Walaghue Dzalle[1, 2, *], Charles Kouam Kouam[3], Miranda Baame Lukong Esong[2, 4], Jean Thierry Ebogo Belobo[5], Geoges Romeo Bonsou Fozin[2], Pierre Watcho[2]

[1]Nutrition, Food Safety and Food Research Center (IMPM/ MINRESI), Yaounde, Cameroon

[2]Faculty of Science and Medicine, University of Dschang, Dschang, Cameroon

[3]Bafoussam Regional Hospital, Bafoussam, Cameroon

[4]National institute of Human Research (HIHR) CLEAN-Air (Africa) Global Health Research Group (GHRG), Mbalmayo, Cameroon

[5]Medical Research Center (IMPM/MINRESI), Yaounde, Cameroon

Email address:

berenice.walaghue@yahoo.fr (B. D. W. Dzalle)

[*]Corresponding author

To cite this article:

Bérénice Déliane Walaghue Dzalle, Charles Kouam Kouam, Miranda Baame Lukong Esong, Jean Thierry Ebogo Belobo, Geoges Romeo Bonsou Fozin, Pierre Watcho. Knowledge, Attitude and Practices on Primary Preventive Measures of Cardiovascular Diseases: A Cross-sectional Study in Dschang, West Cameroon. *Central African Journal of Public Health.* Vol. 7, No. 6, 2021, pp. 261-268.
doi: 10.11648/j.cajph.20210706.13

Received: September 22, 2021; **Accepted**: November 23, 2021; **Published**: December 2, 2021

Abstract: Background: Cardiovascular disease (CVD) is a group of disorders affecting the heart and blood vessels. They are the first cause of death in the world. 80% of these diseases occur in developing countries where the progression is noted, due to insufficient preventive measures for the most part. In Cameroon, CVD is on the increase and is the second leading cause of death in the adult population. Methods: The objective of this study was to assess the level of education of the populations of rural health areas of the Dschang Health District (DHD) on the prevention of CVD. A descriptive cross-sectional study was conducted within DHD, West Cameroon. The data was collected with help of a questionnaire administered face to face to the participants (672 people) and analyzed with the use of Epi info software. Results: In this study, 672 people were interviewed (62% female). The age varied between 18 and 97 years, with an average age of 38±18 years. Most of the population (88%) knew of the existence of CVD, but the majority (86.4%) had a low level of knowledge of preventive methods (less than three prevention methods). The best-known preventive method was eating less salt (16.2%) and the least known, controlling blood lipids (0.2%). Regarding prevention attitudes, 66.7% of the participants had never expressed a desire for information on CVD before the survey. Half of the population had (50%) had a low level of practice, the most common prevention method was regular physical activity (75%) and the least practiced was lipid control (0.4%). Conclusion: These results show that participants had poor knowledge, inappropriate attitudes and poor practices about CVD prevention; hence the need to establish an awareness program focused on cardiovascular risk factors, prevention methods and CVD screening in this population.

Keywords: Cardiovascular Diseases, Prevention, Knowledge, Attitudes, Practice

1. Introduction

Cardiovascular disease (CVD) is a group of disorders affecting the heart and blood vessels. The main CVD are cerebrovascular accidents, ischemic heart disease and heart failure [1]. They are the leading cause of death in the world. Each year, they cause more than 17.3 million deaths worldwide, with more than 30% of all deaths combined and 48% of all deaths attributable to non-communicable diseases [2-4]. Over a billion adults worldwide are overweight and at least 300 million of them are obese. In addition, 10.5 million people die from hypertension (hypertension) each year, 177

million people have diabetes, and two-thirds of them live in developing countries. In short, about 75% of CVD are associated with modifiable risk factors [5, 6]. This is a major public health problem.

WHO launched a global non-communicable disease action plan in 2013, which aims to reduce the number of premature deaths from non-communicable diseases by 25% by 2025 through nine voluntary global targets. Two of them relate to the fight against CVD (the sixth and the eighth target). These strategies advocate a total risk approach for early detection, effective management and above all education of populations with a view to preventing CVD. However, CVD is on the rise in Africa despite the strategies set by WHO. Indeed, they were responsible for 8.15% of deaths in 1990, 9.2% in 2000 and 23.25% in 2015 [7]. The spread of CVD in developing countries is attributed to insufficient preventive measures.

In Cameroon, CVD is on the increase; the risk factors progress over time. Thus, the prevalence of diabetes rose from 1% in 1994 to 6% in 2003 and 10% in 2016. That of arterial hypertension rose from 13% in 1994 to 24% in 2003 and 30% in 2016. CVD account for the largest share of hospital admissions for non-communicable diseases (64.3%) [8]. According to the WHO, most cardiovascular diseases can be prevented by addressing behavioral risk factors. In fact, prevention of CVD requires knowledge of prevention strategies as well as appropriate attitude and practices [9, 10]. Thus, it is of utmost importance to assess the level of education of populations in the prevention of CVD. No study to our knowledge has been carried out in this direction in rural areas in Cameroon, hence the need to carry out this study.

2. Methods

2.1. Study Outline and Sampling

This was a descriptive cross-sectional study carried out in the Dschang Health District (DHD), from April to June 2018. The DHD is a cosmopolitan district with an estimated population of 221,037 inhabitants in 2018. It has 22 health areas with rural and urban health areas. This study was carried out in rural health areas. All people aged 18 and over, living in a rural health area for at least a year and consenting to participate in the study were included. The pre-test of questionnaire has been carried out and the sample size of 672 participants was calculated from the following statistical formula: $N=Z^2_{1-\alpha/2}\ P\ (1-P)/d^2$ [11]. The cluster factor has been taken into account.

2.2. Data Collection and Analysis

Subjects were informed of the objectives and activities of the study. A questionnaire consisting of four parts (social demographic characteristics, knowledge of populations, attitude and practices) was administered only to those who consented. The data was taken anonymously to ensure confidentiality. Data analysis was done using Epi info version 7.6.6.2 and the significance level was set at 0.05.

We considered for knowledge and practices:
Good level=at least five methods of preventing CVD
Medium level=three to four prevention methods
Low level=less than three prevention methods

2.3. Ethicals Considerations and Obtaining Administrative Authorities

The study protocol was submitted to the Regional Public Health Delegation of West region of Cameroon, to the Head of the District Health Service for authorization of a field trip and to the Cameroon National Ethics Committee, to obtain ethical clearance. All these administrative and ethical authorities have been obtained.

3. Results

3.1. Sociodemographic Characteristics of the Participants

In this study, 672 respondents were interviewed. Data on the socio-demographic characteristics of the participants are presented in Table 1.

Table 1. *Distribution of respondents according to socio-demographic characteristics.*

Sociodemographic data	Number of participants	Frequency (%)
Age range		
18-47 years	464	69
48-77 years	188	28
78 and over	20	3
Total	672	100
Sex		
Male	257	38
Female	415	62
Total	672	100
Level of study		
No	6	1
Primary	282	42
Secondary	356	53
Superior	28	4
Total	672	100
Profession		

Sociodemographic data	Number of participants	Frequency (%)
Housewife	18	3
Builder	27	4
Farmer	274	41
Dressmaker	8	1
Driver	19	3
Student	21	3
Nurse	5	1
Student	178	26
Hairdresser	14	2
Trader	51	8
Teacher	16	2
Others	41	6
Total	672	100

3.2. Participants' Knowledge of CVD Prevention

More than half of the participants have heard of CVD (88%) as shown in Table 2.

Table 2. *Distribution of participants based on knowledge of the existence of CVD.*

Knowledge of the existence of CVD	Number of participants	Frequency (%)
YES	591	88
NO	81	12
Total	672	100

A significant association was noted (P <0.05) between level of education and knowledge of the existence of CVD. There was also a significant association between participants' knowledge of the existence of these diseases and profession. The distribution of participants' knowledge of the existence of CVD according to socio-demographic characteristics is presented in Table 3.

Table 3. *Distribution of participants' knowledge of the existence of CVD according to socio-demographic characteristics.*

Knowledge of the existence of CVD			
Sociodémographic data	**Yes**	**No**	**P value**
Age range			
18-47 years	412	52	
48-77 years	165	23	0.5224
78 and over	14	6	
Total	591	81	
Sex			
Male	223	34	0.5324
Female	368	47	
Total	591	81	
Level of study			
No	5	1	
Primary	235	47	0.0034
Secondary	323	33	
Superior	28	0	
Total	591	81	
Profession			
Household	14	4	
Builder	16	11	
Nurse	5	0	
Student	21	0	
Teacher	12	4	
Pupils	172	6	0.0012
Farmer	260	14	
Dressmaker	4	4	
Trader	39	12	
Hairdresser	5	9	
Driver	8	11	
Others	35	6	
Total	591	81	

Table 4 shows the distribution of participants according to their sources of information on the existence of CVD. It emerges

that out of 591 respondents who have already heard of CVD, most of the participants (34.5%) presented the hospital as a source of information and the radio was less represented (0.2%).

Table 4. *Distribution of participants according to sources of information on the existence of CVD.*

Sources of information	Number of participants	Frequency
Friends	61	10.3
Hospital	204	34.5
Pharmacy	1	0.2
Television	69	11.7
Herry	6	1
Radio	1	0.2
Internet	7	1.2
Partner	6	1
Parents	51	8.6
School	185	31.3
Total	591	100

Information on participant's knowledge by methods of CVD prevention is presented in Table 5. The best-known prevention method was eating less salt (16.2%) and the least known, controlling blood lipids (0.2%).

Table 5. *Distribution of participants according to knowledge by method of prevention of CVD.*

Prevention method	Number of participants	Frequency
blood sugar control	15	2.2
blood pressure control	22	3.3
BMI control	15	2.2
Avoid cube abuse	54	8
Avoid salt abuse	109	16.2
Avoid excess fat	87	13
lipid control	1	0.2
Avoid the abuse of sugar	55	8.2
Misperceptions	20	3
Regular sport	98	14.6
No smoking	43	6.4
Eat fruit/legume	15	2.2
Avoid alcohol abuse	67	10
I do not know	71	10.5
Total	672	100

Only 3% of the participants had a good level of knowledge (knowledge of at least five methods of preventing CVD) as shown in Table 6.

Table 6. *Distribution of participants according to the level of knowledge on CVD prevention.*

Level of knowledge of participants	Number of participants	Frequency (%)
Poor knowledge	581	86.4
Average knowledge	71	10.6
Good knowledge	20	3
Total	672	100

No association ($P<0.05$) was noted between the socio-demographic characteristics and the level of knowledge of the participants, as shown in Table 7.

Table 7. *Distribution of the participants' knowledge levels on CVD prevention according to socio-demographic characteristics.*

Level of participants Knowledge of CVD prevention				
Sociodémographic data	**Good**	**Average**	**Poor**	**P value**
Age range				
18-47 years	19	50	395	
48-77 years	0	20	168	0.0099
78 and over	1	1	18	
Total	20	71	581	
Sex				
Male	11	29	217	0.2336
Feminine	9	42	364	
Total	20	71	581	
Level of study				

Level of participants Knowledge of CVD prevention				
Sociodémographic data	**Good**	**Average**	**Poor**	**P value**
No	0	1	5	0.1791
Primary	6	22	254	
Secondary	13	42	301	
Superior	1	6	21	
Total	20	71	581	
Profession				0.0096
Household	1	0	17	
Builder	0	3	24	
Farmer	1	2	2	
Dressmaker	0	2	19	
Driver	1	7	8	
Student	5	14	159	
nurse	7	30	237	
Student	0	2	6	
Hairdresser	2	3	46	
Trader	0	1	13	
Teacher	1	2	16	
Others	2	5	34	
Total	20	71	581	

3.3. Attitude of Participants Towards CVD Prevention

Most of the participants (66.7%) had never sought information on CVD before the survey, as shown in Table 8.

Table 8. *Presentation of participants' responses to previous desire for CVD information.*

Desire to have information on CVD prevention before the survey	Number of participants	Frequency (%)
YES	224	33.3
NO	448	66.7
Total	672	100

Table 9 shows the distribution of participants based on their knowledge of the importance of CVD prevention. It shows that 73.4% of participants in this study believe that CVD should be prevented.

Table 9. *Distribution of participants according to their knowledge of the importance of preventing CVD.*

Should we prevent CVD?	Number of participants	Frequency (%)
I do not know	145	21.6
No	34	5
Yes	493	73.4
Total	672	100

3.4. Practices of the Populations in Terms of CVD Prevention

Information on the participants' practices on controlling their BMI, blood sugar, blood pressure and blood lipid levels is presented in Figure 1.

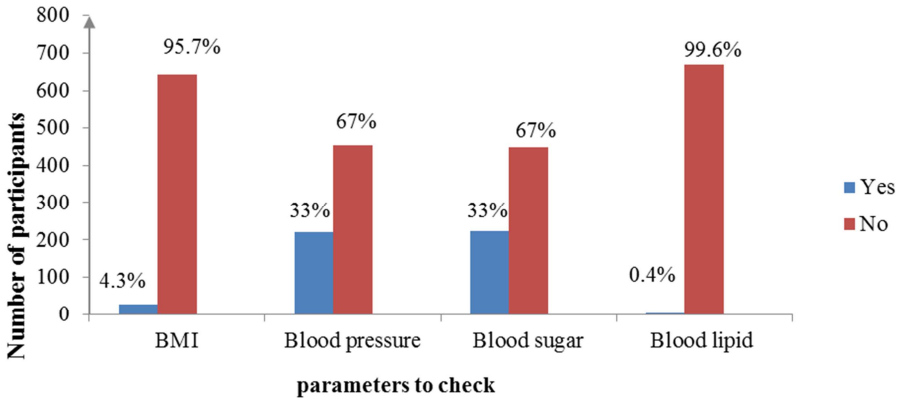

Figure 1. *Distribution of participants according to their practice on controlling BMI, blood pressure, blood sugar and lipid levels in the body.*

Information on the participants' practice in terms of physical activities and food hygiene is presented in Table 10.

Table 10. *Distribution of participants according to physical activity practices and food hygiene.*

Participant practices	Number of participants	Frequency (%)
Salt consumption		
Less than 5 gram / day	111	16.5
5 and more	496	73.8
I do not know	65	9.7
Total	672	100
Physical activities		
1-2 times / week	122	18.2
3 times and more	505	75.1
No physical activity	45	6.7
Total	672	100
Fruit /vegetable consumption		
Less than 5 servings / day	632	94
5 and more	15	2.2
Not at all	25	3.8
Total	672	100
beer consumption		
1 / day	61	9
2-3 / day	32	5
4 and more	15	2
Rarely	349	52
Not at all	215	32
total	672	100
Fermented raffia wine		
0.5-1l / day	6	1
1.5 and more	95	14
Rarely	235	35
Not at all	336	50
Total	672	100
Sugar consumption		
Less than 26 Grams / day	431	64.1
26 grams and more	20	3
31 and more	20	3
I do not know	4	0.5
Not at all	197	29.4
Total	672	100
Cube consumption		
0.25 cubes / day	255	38
0.26 -1 cubes	250	37.2
1.5 and more	56	8.3
I do not know	59	8.7
Opportunity	3	0.5
Not at all	49	7.3
Total	672	100
Oil consumption		
Less than 0.5 L / week	154	23
0.5 and more	462	68.7
I do not know	56	8.3
Total	672	100
tobacco consumption		
sometimes	58	8.6
Not at all	614	91.4
Total	672	100

Half of the participants (50%) had a low level of CVD prevention practices as shown in Figure 2.

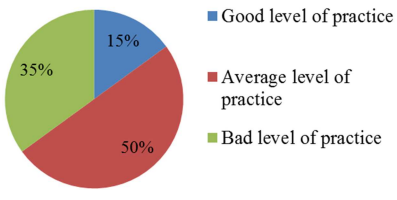

Figure 2. *Distribution of participants according to their levels of CVD prevention practices.*

4. Discussion

This study found that 88% of participants had heard of CVD before. This result can be explained by the relatively high level of education of the respondents (52% had a secondary level). Indeed, a significant association was recorded between the knowledge of the existence of CVD and the level of study of the participants. Similar results were obtained by Djibo [12] in Bamako, who associated the high level of knowledge of respondents regarding the existence of

CVD (99.1%) to the fact that they were students. The results of this study showed that participants had a low level of knowledge about CVD prevention (86.4%). The results found by Kamdem and collaborators in Douala, Cameroon on the knowledge of cardiovascular risk factors and prevention attitudes, indicated that 26.7% of respondents had a low level of knowledge [13]. This difference can be explained by the fact that this author's study was conducted in urban areas where the population has more access to the media and is generally more educated. The best-known prevention method was consuming less salt (16.2%). This result differs from that of Kamdem and collaborators who rather referred to the practice of physical activities as the best known prevention method (59.2%). Added to a high level of information, the existence of numerous groups and sports centers in the urban area could justify this difference.

Although consuming less salt was the best-known prevention method, 73.8% of participants in the present study consumed excess salt; this is explained by the fact that these participants ignore the daily proportions recommended by WHO. The present study revealed that few participants (2.2%) consumed fruits and / or vegetables in sufficient quantity (at least five portions of fruits and / or vegetables per day). This low rate can be explained by the participants' ignorance of the daily proportions recommended by the WHO. This is similar to the work carried out in China by Huaidong and collaborators, where only 9.4% of respondents consumed the fruits in sufficient quantity [14]. Few of the participants knew (0.2%) about the control of blood lipid levels in this study. This can be explained by the absence of the monitoring of lipid levels in integrated health centers. These results are different from those found by Kamdem and collaborators which showed that 66% of participants considered that excess cholesterol in the blood can promote CVD [13]. This difference can be explained once again by the fact that the work of Kamden and collaborators was carried out in urban areas where health facilities have the adequate technical platform for the quantification of blood lipids. The practice of physical activities was the most common prevention method (75.1%) in this study. This is because most of the participants (41%) were cultivators. This is similar to Atallah's research in the European population on the knowledge of populations on health, beliefs and practices in terms of cardiovascular prevention, which also revealed that the most practiced prevention method was physical activities (56%). Few of respondents (8.6%) consumed tobacco in this study. These results are similar to those found by Attalah [15] as well as Beaney and collaborators with respectively 11.7% and 11.6% of participants consuming tobacco. The present study revealed that few participants consumed beer frequently (2%). This is similar to the results found by Beaney which shows that only 7.5% of the population consumed it on a regular basis [6]. Only 15% of participants implemented CVD prevention practices. This can be explained by the low level of knowledge of participants in CVD prevention. This is similar to the study carried out by Perrin in Bas-Rhin [16] which showed that the population had poor practices in the prevention of CVD, where only 25% of the subjects questioned implemented preventive measures.

5. Conclusion

At the end of this work, it emerges that the best known prevention method against CVD was to consume less salt, but it was less practiced. Most of the participants had not expressed an interest in knowing the information about CVD before this study. Although they practiced physical activities on a regular basis, the respondents did not objectively apply CVD prevention methods. In short, the populations that were the subject of the present study in the Dschang Health District had little knowledge, poor attitudes and insufficient practices in CVD prevention. These results demonstrate that it is of utmost importance to educate the population on the prevention of cardiovascular diseases, including awareness of diet and lifestyle.

Abbreviations

CVD: Cardiovascular disease
DHD: Dschang Health District
WHO: World Health Organization

Funding

The study was funded by the principal investigator, WALAGHUE DZALLE Bérénice Déliane

Ethical Approval and Consent to Participate

This study was submitted and evaluated by the Cameroon National Committee on Human Health Research Ethics. Prior to this assessment, the authorizations were obtained from the local health and traditional authorities of DHD. Only those who consented to participate in this study were interviewed and data collection was done anonymously. The verbal informed consent of each participant was obtained as approved by the National Ethics Committee.

Competing Interests

The authors declare that they have no competing interests.

Acknowledgements

The authors extend thanks to all: The administrative and traditional authorities for the authorizations which made it possible to carry out this study; People who have consented to participate in this study for their collaboration.

References

[1] Yessito C., Houehanou N. (2015). Epidémiologie des facteurs de risque cardiovasculaires en population tropicale, cas du Benin. Médecine humaine et pathologie. *Thèse pour soutenue obtention d'un Doctorat de Médecine à Université de Limoges*. p. 236.

[2] Touze J. (2007). Les maladies cardiovasculaires et transition épidémiologique dans le monde tropical. *Médecine tropicale*. 67, p. 541-542.

[3] Perk J., Backer G., Gohlke H. (2012). European Guidelines on cardiovascular Prevention in Clinical Practice. the Fifth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease. *European Journal of Preventive Cardiology*. P. 585–667.

[4] Kalchman C., (2016). Importance de la sensibilisation au risque cardiovasculaire et de l'évaluation des facteurs de risque en entreprise. *Thèse pour le diplôme d'état de docteur en médecine à l'Université Paris Descartes*. P. 110.

[5] Panche M., Ngoufack J., Kona A., M., Kingue S. (2015). Place et profil évolutif des maladies cardiovasculaires en milieu hospitalier Nord Camerounais: Cas de l'hôpital de Ngaoundéré. *Health Sci. Dis*: 16 (1). P. 1-7.

[6] Beaney T., Schutte A., Maciej T., Cono A., Burell L., Castillo R., et al (2017). May measurement Month: an analysis of blood pressure screening results worldwide. *The lancet*. P. 8.

[7] WHO (2017). Rapport sur la sante dans le monde; obésité, hypertension, hypercholestérolémie, alcool et tabac: action de l'OMS. *http://www. WHO.int/whr/media-entre/factseet3/fr*.

[8] WHO (2015). World Health Statistics 2015. *WHO*. Available at: http://www.who.int/gho/publications/world_health_statistics/2015/.

[9] Pearson, T. (1999). Cardiovascular disease in developing countries: myths, realities, and practice. *The European Journal of General Practice*. 12 (4), p. 148-155.

[10] Mansouri L. (2012). Connaissances et perceptions de la notion de facteurs de risque cardio- vasculaire chez les patients en médecine générale. *Thèse d'état de Docteur en Médecine de l'Uuniversité Paris Didero*. P: 10-100.

[11] Lwanga S. K., Lemeshow S. (1991). Détermination de la taille d'un échantillon dans les études sanometriques. *World Heath organisation*. P. 62.

[12] Djibo R. (2015). Connaissances, attitudes et pratiques comportementales liés aux Facteurs de risque cardio-vasculaires des étudiants à la FMOS et à la FAPH. *Thèse Présentée et soutenue publiquement pour l'obtention du diplôme de médecine à université des sciences, des techniques et des technologies de Bamako*. P: 33-74.

[13] Kamdem F., F. A. Djomou, Hamadou B., Suzanne N., Ahmadou M., Christian B., J. Djaya, C. Kenmegne, S. Kingue (2018). Connaissance des Facteurs de Risque Cardiovasculaires et Attitudes de Prévention par la Population du District de Santé de Deido-Cameroun. *The journal of medecine and health*. 19 (1) p. 36-47.

[14] Huaidong D., Liming L., Derrick B., Yu G., Timothy J., Zheng B., P. Sherliker, Haiyan G., Yiping C., D. Phil., L. Yang, Junshi C., Shanqing W., Ranran D., Hua S., Rory C., Richard P., et Zhengming C. (2016). Fresh Fruit Consumption and Major Cardiovascular Disease in China. *New England Journal of Medicine. 374: 1332-43*. p. 12.

[15] Atallah V. (2009). Connaissances sur la santé, croyances et pratiques en terme de prévention cardiovasculaire dans la population Européenne. *Thèse de Doctorat présentée et soutenue publiquement à la Faculté de Médecine Hyacinthe BASTARAUD des Antilles et de la Guyane*. P 1-49.

[16] Perrin, Arveiler, Sartori, Simon, Schlienger. (1999). Niveau de connaissance des facteurs de risque cardiovasculaires dans la population adulte du Bas-Rhin. *Revue MédInt*. P. 183.