

Community knowledge, attitudes and practices in relation to tuberculosis in Cameroon

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SUMMARY

SETTING: With 15 080 new cases in 2013, Cameroon is a country with high tuberculosis (TB) incidence and prevalence. Understanding the community's knowledge, attitude and practice (KAP) about TB is key to TB control in such endemic settings.

OBJECTIVES: To assess TB-related KAP in Cameroon by describing the sociodemographics of respondents, to identify barriers to seeking care and to explore attitudes and experiences of stigma and discrimination related to TB in communities.

DESIGN: We conducted a cross-sectional descriptive study using structured questionnaires to assess and compare TB KAP in the entire territory.

RESULTS: The results showed that Cameroonians have insufficient understanding of TB, numerous erroneous health assumptions and beliefs concerning TB, and erroneous information about the symptoms and mode of transmission of the disease.

CONCLUSION: Negative attitudes and poor practices are obstacles to elimination and control efforts. The National Tuberculosis Control Programme should generate more effective strategies to reach the populations, paying particular attention to rural populations.

KEY WORDS: KAP; tuberculosis; Cameroon; community; knowledge, attitudes and practices

THE WORLD HEALTH ORGANIZATION (WHO) global tuberculosis reports describe tuberculosis (TB) as one of world's most fatal communicable diseases.¹ The 2014 report estimated that in that year approximately 9.0 million individuals contracted TB, while 1.5 million deaths were attributed to this disease worldwide.¹

With 15 080 new cases in 2013,² Cameroon is a country with high TB incidence and prevalence. As reported to the WHO in 2010, TB case detection and incidence rates were estimated to be respectively 69% and 182 cases per 100 000 population.² As in other sub-Saharan countries, the TB burden in human immunodeficiency virus (HIV) infected individuals continues to increase, and the prevalence of pulmonary TB in HIV-infected individuals is significantly higher than in the general population.³ In 2013, an estimated incidence rate of 87 cases/100 000 was reported for TB-HIV co-infection, and 2.6% of all newly diagnosed patients had multidrug-resistant TB (MDR-TB), i.e., they were resistant to at least isoniazid and rifampicin, the two most powerful first-line anti-tuberculosis drugs.⁴ In light of this dismal epidemiological situation, the National TB

Control Programme (NTCP) may need to accelerate its efforts to meet the post-2015 Sustainable Development Goals.⁵

The NTCP currently has a number of strategic goals for TB control,² including 1) intensification of TB screening and increasing the treatment success rate to 87% by 2019, 2) increasing HIV testing uptake to 95% among TB patients, 3) detecting 85% of MDR-TB cases among the target population, and 4) ensuring that at least 85% of the population have satisfactory knowledge about TB by 2019.

Understanding a community's knowledge, attitude and practices (KAP) is key to TB control. Results from KAP surveys provide insight into the community's knowledge about TB, what people think about persons with TB or about the health system's response to TB, and what they actually do with regard to seeking care or taking other actions related to TB. Based on KAP data, the NTCP may be able to design evidence-based community interventions aimed at increasing the TB case detection rate and treatment adherence, and thereby reduce mortality due to TB.

To our knowledge, no KAP survey has previously been conducted in Cameroon. However, similar

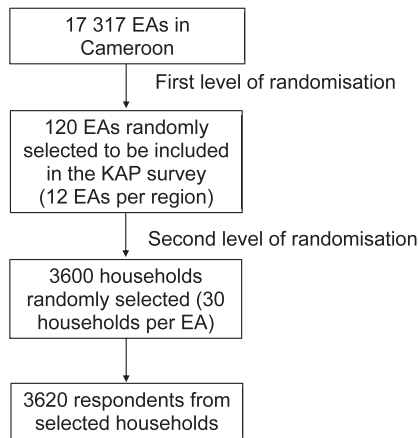


Figure Selection of survey respondents. EA = enumeration area; KAP = knowledge, attitudes and practices.

studies have been conducted in other African countries such as Ethiopia, Tanzania and neighbouring Nigeria.^{6–8} In Nigeria, it was found that although 86% of the study population had heard of pulmonary TB, 55.1% had poor minimal knowledge about the disease, and attitudes towards TB seemed to hinder social interaction with individuals with TB disease.⁸ Similar results were found in other parts of Africa. For example, in a study conducted in Ethiopia, only 3.3% of the studied population knew that TB is caused by bacteria.⁶

The present study aimed to assess TB-related KAP in all 10 regions of Cameroon, describe the sociodemographics of respondents, identify barriers to seeking care and explore attitudes and experiences of stigma and discrimination related to TB among the general public.

METHODS

Study area and population

Cameroon is a sub-Saharan African country with a surface area of 475 440 km² and a population estimated in 2010 at 19 406 100, comprising 9 599 224 males (49.5%) and 9 806 876 females (50.5%).⁹ Cameroon is geographically diverse, with five regions in the southern forests (Centre, East, Littoral, South and South-West), two in the highlands of the west (West and the North-West), and three in Sudano-Sahel in the north (Adamaoua, North and Far North).¹⁰ Douala, the most populous city in Cameroon, with 1 913 977 inhabitants, is in the Littoral region, while Yaoundé, the political capital in the centre, is the second largest city, with 1 881 876 inhabitants.⁹ The 10 regions of Cameroon can be ranked from most to least urban (% urbanisation rate) as follows: Littoral (96%), Centre (75%), West (49%), South-West (48%), East (42%), North-West (42%), Adamaoua (40%), South (39%), North (27%) and Far-North (24%).⁹ All regions have major

towns, but the two major cities are Douala and Yaoundé.

The KAP survey questionnaire was administered nationwide in all 10 regions of the country. The inclusion criteria were male and female persons aged ≥ 15 years who provided signed informed consent. Those aged < 15 years and those who did not provide consent were excluded.

Study design and sampling

This descriptive cross-sectional study was conducted in 2012. A minimum sample size of 3620 respondents was calculated using Bonita et al.'s formula, with 86.6% as the expected level of good knowledge about TB,⁸ and assuming 95% confidence, 5% precision, 1.5 design effect and 20% non-response rate.¹¹

As shown in the Figure, our sampling frame consisted of 17 317 enumeration areas (EAs) as designated in the 2010 national census.¹⁰ For prevalence studies, a minimum of 30 households per EA is recommended.¹² In each region, a minimum of 12 EAs were selected. The study sample was stratified at two levels, where 12 EAs were first randomly selected in each region using the formula appropriate for a descriptive study;^{11,13} at least 30 households were then randomly selected in every selected EA using the WHO recommended Expanded Programme on Immunisation (EPI) survey method, which involves choosing a central point in the EA and randomly selecting a direction by spinning a pencil from that central point, counting the numbers of households in that direction to the end of the cluster and selecting the first household to be surveyed at random.¹⁴ Subsequent households were selected by choosing the next house to the right, until the required number of households had been included in the survey from each EA. A household is defined in this study as a group of persons living together, sharing the same meals at least three times a week and/or sleeping under the same roof.¹⁵ A total of 3620 respondents from 3600 households were interviewed.

In a selected household, English or French questionnaires were administered to the first person and anyone else interested in responding, as long as the inclusion criteria were met. If there were no respondents present in a selected household or if consent was withheld, the surveyors continued to the next household until the required sample size was met.

Data collection and statistical analysis

The questionnaire was adapted from a template questionnaire validated by the STOP TB Partnership and recommended by the WHO.¹⁶ The questionnaire consisted of 36 closed multiple choice questionnaires seeking information on sociodemographic characteristics (5 questions), general health-seeking behaviour

Table 1 Health care-seeking behaviour and sources of information

	<i>n</i> (%)
Where do you go when you are sick?	
Public health facilities	2642 (73.0)
Private health facilities	461 (12.7)
Traditional healer	61 (1.7)
Health GIC	85 (2.3)
Health facilities managed by an NGO or a church	35 (1.0)
Self-medication	311 (8.6)
Other	25 (0.7)
Reasons for not going to public health facilities	
Long distance	216 (22.1)
Poor reception from staff	360 (36.9)
Lack of staff	46 (4.7)
Lack of drugs	44 (4.5)
Lack of equipment	48 (4.9)
Acquired habits	101 (10.4)
Lack of means	273 (28.0)
Main sources of information	
Newspaper and magazines	52 (1.4)
Radio	1109 (30.6)
Television	1245 (34.4)
Billboards	7 (0.2)
Booklet and poster	33 (0.9)
Health workers	784 (21.7)
Family/friends/neighbour	237 (6.6)
Religious leader/teacher	70 (1.9)
Internet	23 (0.6)
Other	56 (1.6)

NGO = non-governmental organisation.

(4 questions), TB knowledge and awareness (9 questions), TB attitudes (9 questions), stigma (5 questions), and TB awareness and sources of TB information (2 questions). We pre-tested the structured questionnaire in a small sample of 15 households. Thirty trained surveyors (three per region) administered the questionnaire in each household.

The collected data were double-entered using Epi Info™, v. 7.0.9.34 (Centers for Disease Control and Prevention, Atlanta, GA, USA). The data entered were exported into SPSS, version 20 (Statistical Package for the Social Sciences, Armonk, NY, USA) for statistical analysis. χ^2 test and odds ratios (ORs) were used to examine associations, with the level of significance set at $P < 0.05$.

Ethical considerations

The study protocol was approved by the National Ethics Committee for Human Health Research (NECHHR), a government institution at the Ministry of Public Health in Yaoundé, Cameroon. The informed consent process was implemented before any survey procedures were initiated. Information was given in both oral and written form, and respondents or their legal representatives were given ample opportunity to inquire about details of the survey. Respondents were informed about the aims of the survey, confidentiality, benefits and possible risks as well as whom to contact for answers to any questions relating to the research project. Respondents were informed that their participation was

voluntary and that they were free to withdraw from the survey for any reason at any time, without penalty or loss of benefits (if entitled to any benefits prior to survey participation) to which they are otherwise entitled. A copy of the signed consent form was given to every respondent and the original was maintained with the survey records.

RESULTS

A total of 3663 households were approached for the survey; 21 were empty when the survey team visited; in 18, no one meeting the study inclusion criteria was available; and the inhabitants of two households declined to participate in the survey.

Sociodemographic characteristics of study respondents

A total of 3620 study respondents (47.3% males) were interviewed between 10 and 21 July 2012. Sociodemographic characteristics are shown in Appendix Table A.1.* The majority of the study respondents (61.4%) were aged between 15 and 34 years. The mean age in men and women was respectively 34 and 31 years. The majority (66.7%) lived in rural areas, and 3191 (88%) had at least primary level education (Appendix Table A.1).

General health-seeking behaviour

Table 1 summarises general health-seeking behaviour. The majority of the study respondents (73%) said they went to public health facilities when they were ill, while 12.7% sought care in the private sector. When ill, 8.6% resorted to self-medication, 1.7% went to traditional healers and 1.0% attended health facilities managed by a church or a non-governmental organisation. The reasons for not attending a public health facility included unwelcoming reception by health care staff (36.9%), lack of financial means (28.0%) and distance from home (22.1%)(Table 1).

Sources of information for general health

The main sources of health information identified were television and radio (respectively 34.4% and 30.6%); 21.7% of the study respondents said that they received health information from health workers. A small number of study respondents obtained health information from the internet (0.6%) or from newspapers and magazines (1.4%) (Table 1).

Knowledge about risk groups, signs, mode of transmission and treatment of TB

Information on the knowledge about risk groups, signs, mode of transmission and treatment of TB in

* The appendix is available in the online version of this article, at <http://www.ingentaconnect.com/content/iatld/ijtld/2016/00000020/00000009/art00015>

Table 2 Respondents' knowledge about risk groups, signs, mode of transmission and treatment of TB

	<i>n</i> (%)
People at risk of infection by TB	
Everybody	3229 (89.2)
Poor people	212 (5.9)
People living with HIV/AIDS	474 (13.1)
Smokers	840 (23.2)
Alcoholics	582 (16.1)
Malnourished children	77 (2.1)
Prisoners	167 (4.6)
Signs of TB	
Cough for ≥ 2 weeks	1358 (37.5)
Cough with blood	1678 (46.4)
Severe headaches	236 (6.5)
Nausea	157 (4.3)
Weight loss	1237 (35.8)
Fever that lasts >7 days	81 (2.2)
Chest pain	711 (19.6)
Lack of breath	316 (8.7)
Fatigue	553 (15.3)
Night sweats	182 (5.0)
Mode of TB transmission	
Through salutations	278 (7.7)
Through air when someone with TB coughs	2424 (67.0)
When we eat on the same plate	1102 (30.4)
Through contact with common objects	822 (22.7)
Don't know	427 (11.8)
Treatment of TB	
Herbal medicine	193 (5.7)
Traditional healer	192 (5.6)
Prayer	105 (3.1)
Specific medicine	3222 (94.5)
Buy medicine at the pharmacy	200 (5.9)
Don't know	70 (2.1)

TB = tuberculosis; HIV = human immunodeficiency virus; AIDS = acquired immune-deficiency syndrome.

respondents is summarised in Table 2. The majority of the study respondents (89.2%) knew that everybody is at risk for TB regardless of sex, age and nature of place of residence (rural or urban). They also acknowledged that smokers (23.2%), people living with HIV/AIDS (acquired immune-deficiency syndrome) (13.1%) and those with high alcohol consumption (16.1%) were most at risk for TB.

Symptoms such as cough with blood (46.3%), cough for ≥ 2 weeks (37.6%) and weight loss (35.8%) were correctly identified by respondents (Table 2). Regarding the mode of TB transmission, 66.9% correctly identified contamination through air and 30.4% thought that TB could be transmitted through eating from the same plate. The mode of transmission was unknown in 11.8% of the respondents. The majority of the respondents (94.5%) correctly answered that TB was treated with specific medicines (Table 2); this response was associated neither with sex (OR 0.99, 95% confidence interval [CI] 0.81–1.23) nor place of residence (OR 0.96, 95%CI 0.77–1.2) (Appendix Table A.2).

Attitude towards TB

Table 3 summarises study respondents' fears regarding TB, their feelings towards TB-infected individuals

and how TB patients are treated by their communities. The majority of the respondents (65.9%) admitted to being afraid of getting infected with TB. There was no significant association between the fear of infection and being female (OR 0.93, 95%CI 0.81–1.07) (Appendix Table A.3) or living in rural areas (OR 0.96, 95%CI 0.83–1.11) (Appendix Table A.3). The majority of the study respondents (88.5%) answered that they would go to a health facility if they heard that they were infected with TB (Table 3).

Stigmatisation

Most of the study respondents (75.06%) said that they were willing to help people with TB (Appendix Table A.3). This willingness was significantly associated with being female (OR 1.26, 95%CI 1.09–1.46), but was not associated with place of residence (rural vs. urban) (OR 1, 95%CI 0.85–1.17) (Appendix Table A.3). However, people living in the Centre, East and South regions were less likely to help people with TB (Appendix Table A.3).

We found that 84.6% of respondents would assist relatives infected with TB (Table 3). People living in the Centre, East and South regions as well as people aged >55 years were less likely to help TB-infected relatives (Appendix Table A.4). Similarly, the majority of the study respondents (71.5%) said that people with TB were supported by the community (Table 3).

DISCUSSION

We found that radio and television played an important role in TB-related health education. However, knowledge of TB signs and symptoms in the community was poor. A third of the respondents were not aware that TB is transmitted through air, while 11% did not know how TB is transmitted at all. In a TB-endemic country such as Cameroon, mediocre knowledge of TB signs and symptoms could fuel disease transmission in the community. Without knowledge about TB signs, affected individuals may not seek diagnosis and care and are more likely to transmit the disease to their relatives and neighbours.

In a recent systematic review of published scientific literature, it was revealed that the TB and HIV epidemics in Cameroon were the best described of all Central African countries.³ Given, however, that the amount of research being conducted on these diseases in Cameroon is far from optimal, understanding Cameroonians' KAP about TB provides further evidence for the control of this disease in the community. The present study brought to light existing knowledge gaps, cultural beliefs and behavioural patterns that may facilitate the design of TB control interventions in Cameroon.

Some aspects of our study population demographics mirrored that of the country, as shown by the 2010 census.¹⁰ In our study, females accounted for 53% of

the sample compared to 50.5% of the country's female population. There was a slight discrepancy in terms of the distribution of the rural population. In our study, the rural population accounted for 66.7% as opposed to 48% for the entire country. The largest age group in our study comprised individuals aged 15–34 years (64%), while only about a third (35%) of the country's population belongs to this age group. It is possible that individuals in this age group are more likely to be willing to participate in surveys or research projects such as this.

Generally, the majority of our survey respondents were willing to seek health care from public or private health facilities. Only a small proportion (1.7%) indicated that they would visit a traditional healer when ill. In similar studies conducted in sub-Saharan Africa, a greater proportion of individuals sought care from traditional healers.^{6,7} In Ethiopia, for example, 46% of interviewed individuals relied on traditional healers for anti-tuberculosis treatment.⁶ Another study in Tanzania noted that traditional healers were the main source of health care in Massai communities.⁷

The majority of our study population knew the main signs and symptoms of TB. Cough lasting ≥ 2 weeks and cough with blood (haemoptysis) were mostly correctly identified as the principal symptoms of TB. These results are in line with data from another sub-Saharan African study, where 70.1% of study respondents retained these two symptoms as the main signs of TB.⁶ As in other previous studies,⁶ smoking, HIV/AIDS and alcohol consumption were known to be risk factors for TB in this survey.

Gender seemed to be linked with some aspects of TB knowledge, such as a cough lasting ≥ 2 weeks being a sign of TB. This result may be expected, as women are usually more likely to be in charge of caring for relatives with TB. In a study conducted in Nigeria, more women than men were aware of TB symptoms.⁸

The majority of our study respondents said that transmission occurred through the air when in proximity to a coughing individuals with TB. However, in the survey population, a large number of respondents also mistakenly indicated that eating from the same plate and contact with objects used by TB patients were modes of TB transmission. Such erroneous beliefs tend to encourage stigmatisation of TB patients in the community, and these alarming gaps in knowledge and attitudes necessitate urgent action from the NTCP in terms of specifically targeting these areas for interventions aimed at changing behaviour.

Television and radio were identified as the main sources of information about TB. A large number of the study respondents also mentioned that they received health information from health workers,

Table 3 Respondents' attitude towards TB

	n (%)
Fear of TB	
Be infected	2387 (65.9)
Incurable illness	150 (4.1)
Expensive treatment	131 (3.6)
Treatment too long and complicated	425 (11.2)
Other	376 (10.4)
Not worried	151 (4.2)
How would you behave if you were told that you had TB?	
Fear	872 (24.1)
I would go to a health facility	3202 (88.5)
Shame	109 (3)
Sadness	311 (8.6)
Despair	135 (3.7)
How would you behave if you heard that one of your relatives had TB?	
I would not help	556 (15.4)
I would help	3064 (84.6)
Which declaration best describes your feelings towards people with TB?	
Will to help	2700 (75.1)
Compassion	585 (16.3)
Might infect me	260 (7.2)
No feelings	52 (1.5)
How are people with TB treated in your community?	
Rejection	1001 (28.5)
Support	2515 (71.5)

TB = tuberculosis.

which is in line with findings in the study from Nigeria.⁸

As in other countries severely affected by TB, the number of 'missed' cases significantly hampers efforts at TB control in Cameroon. In a study on factors associated with patient delays in TB screening in Cameroon, 27 of 82 TB patients cited 'thought illness was harmless and would resolve spontaneously' as the reason for the delay in seeking health care after showing signs of TB.¹⁷ This type of attitude demonstrates the dangers of having little or inadequate knowledge about TB in the community. Although our study shows that most of the population surveyed was fairly knowledgeable about TB and that, for the most part, their attitudes and practices seem suitable, the NCTP should intensify its attempts to reach the community with more effective and convincing strategies for advocacy, communication and social mobilisation.

A study limitation was the relatively young study population, which does not reflect the country's population distribution. Furthermore, using a test score for the survey where correct answers are tabulated could have been beneficial for our study. In a study conducted on TB KAP study conducted in Nigeria, responses were added together for each respondent to generate a knowledge score ranging from a minimum of 0 to a maximum of 35.⁸ Scoring would have further helped in comparing our results to

the data of studies such as the one conducted in Nigeria.⁸

CONCLUSION

In this first study of KAP regarding TB in Cameroon, it was evident that Cameroonians' knowledge about symptoms and mode of transmission of the disease is often erroneous. Negative attitudes and poor practices regarding the disease are obstacles to the NTCP's TB elimination and control efforts. This government has a responsibility for advocacy, communication and social mobilisation to reach the community to attain the objectives listed in their 2015–2019 strategic plan. Particular attention needs to be paid to rural populations, among whom the need to improve KAP about TB is even more urgent.

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Conflicts of interest: none declared.

References

- World Health Organization. Global tuberculosis report, 2014. WHO/HTM/TB/2014.08. Geneva, Switzerland: WHO, 2014.
- Cameroon National Tuberculosis Control Programme. Plan stratégique de lutte contre la tuberculose au Cameroun 2015–2019. Yaoundé, Cameroon: NTCP, 2015. http://www.pnlt.cm/index.php/documentation/plan-strategique-national/doc_download/18-plan-strategique-national-tuberculose-cameroun. [French] Accessed May 2016.
- Janssen S, Huson M A, Belard S, et al. TB and HIV in the Central African region: current knowledge and knowledge gaps. *Infection* 2014; 42: 281–294.
- World Health Organization. Cameroon Tuberculosis Profile, 2015. Geneva, Switzerland: WHO, 2015. https://extranet.who.int/sree/Reports?op=Replet&name=/WHO_HQ_Reports/G2/PROD/EXT/TBCountryProfile&ISO2=CM&outtype=html. Accessed May 2016
- United Nations. Sustainable Development Goals. New York NY, USA: UN. <https://sustainabledevelopment.un.org/sdgs>. Accessed June 2016.
- Bati J, Legesse M, Medhin G. Community's knowledge, attitudes and practices about tuberculosis in Itang Special District, Gambella Region, South Western Ethiopia. *BMC Public Health* 2013; 13: 734.
- Haasnoot P J, Boeting T E, Kuney M O, van R J. Knowledge, attitudes, and practice of tuberculosis among Maasai in Simanjiro district, Tanzania. *Am J Trop Med Hyg* 2010; 3: 902–905.
- Tobin E A, Okojie P W, Isah E C. Community knowledge and attitude to pulmonary tuberculosis in rural Edo state, Nigeria. *Ann Afr Med* 2013; 12: 148–154.
- Republic of Cameroon. Etat et structures de la population indicateurs démographiques. Yaoundé, Cameroon: Bureau Central des Recensements et des Etudes de Population, 2010. [French]
- Republic of Cameroon. La population du Cameroun en 2010. Yaoundé, Cameroon: Republic of Cameroon, 2010. http://www.statistics-cameroon.org/downloads/La_population_du_Cameroun_2010.pdf. Accessed May 2016 [French]
- Bonita R, Beaglehole R, Kjellstrom T. Basic epidemiology. Geneva, Switzerland: World Health Organization, 2006. http://apps.who.int/iris/bitstream/10665/43541/1/9241547073_eng.pdf. Accessed May 2016.
- Deitchler M, Deconinck H, Bergeron G. Precision, time, and cost: a comparison of three sampling designs in an emergency setting. *Emerg Themes Epidemiol* 2008; 5: 6.
- Beaglehole R, Bonita R, Robinson E, Kjellstrom T. The development and evaluation of basic epidemiology. *Med Educ* 1992; 26: 482–487.
- Henderson R H, Sundaresan T. Cluster sampling to assess immunization coverage: a review of experience with a simplified sampling method. *Bull World Health Organ* 1982; 60 : 253–260.
- Kriel A, Randall S, Coast E, de Clercq B. From design to practice: how can large-scale household surveys better represent the complexities of the social units under investigation? *African Population Studies* 2014; 28: 1309–1323.
- World Health Organization. Advocacy, communication and social mobilization for TB control: a guide to developing knowledge, attitude and practice surveys. WHO/HTM/STB/2008.46. Geneva, Switzerland: WHO, 2008.
- Cambanis A, Ramsay A, Yassin M A, Cuevas L E. Duration and associated factors of patient delay during tuberculosis screening in rural Cameroon. *Trop Med Int Health* 2007; 12: 1309–1314.

APPENDIX

Table A.1 Sociodemographic characteristics of the study respondents

	Males <i>n</i> (%)	Females <i>n</i> (%)	Total <i>n</i> (%)
Age groups, years			
≤24	456 (27)	626 (33)	1082 (29.9)
25–34	503 (29)	636 (33)	1139 (31.5)
35–44	363 (21)	348 (18)	711 (19.7)
45–54	225 (13)	184 (10)	409 (11.3)
≥55	165 (10)	110 (6)	275 (7.6)
Age, mean, years	34	31	
Regions			
Adamaoua	214 (12)	146 (8)	360 (9.9)
Centre	203 (12)	159 (8)	362 (10.0)
East	121 (7)	240 (13)	361 (10.0)
Far-North	211 (12)	155 (8)	366 (10.1)
Littoral	150 (9)	210 (11)	360 (9.9)
West	119 (7)	244 (13)	363 (10.0)
North	185 (11)	177 (9)	362 (10.0)
North-West	132 (8)	228 (12)	360 (9.9)
South	193 (11)	173 (9)	366 (10.1)
South-West	185 (11)	175 (9)	360 (9.9)
Place of residence			
Urban	556 (32)	648 (34)	1204 (33.3)
Rural	1157 (68)	1259 (66)	2416 (66.7)
Education			
Illiterate	165 (10)	264 (14)	429 (11.9)
Primary school	371 (22)	467 (24)	838 (23.1)
Secondary school before form 5*	504 (29)	574 (30)	1078 (29.8)
Secondary school after form 5*	434 (25)	437 (23)	871 (24.1)
University	239 (14)	165 (9)	404 (11.2)
Do you have an income-generating activity?			
No	718 (42)	1192 (63)	1910 (52.8)
Yes	995 (58)	715 (37)	1710 (47.2)

* Age 15 years.

Table A.2 Sociodemographic characteristics associated with knowledge about risk groups, transmission and mode of treatment of tuberculosis

	Everybody is at risk OR (95%CI)	Knowledge about mode of transmission through cough OR (95%CI)	Knowledge about treatment with a specific drug OR (95%CI)
Region			
Adamaoua	13.09 (6.70–25.58)	2.65 (1.94–3.63)	3.87 (2.44–6.13)
Centre	5.04 (3.16–8.05)	2.52 (1.85–3.44)	1.68 (1.16–2.44)
East	2.17 (1.50–3.16)	1.38 (1.02–1.86)	2.52 (1.67–3.79)
Far North	6.15 (3.73–10.11)	2.52 (1.84–3.44)	3.17 (2.06–4.88)
Littoral	10.85 (5.83–20.17)	1.53 (1.13–2.06)	5.07 (3.06–8.38)
West	5.06 (3.17–8.07)	1.26 (0.94–1.69)	1.96 (1.34–2.89)
North	2.45 (1.67–3.59)	5.23 (3.66–7.46)	11 (5.63–21.67)
North-West	1	1.3 (0.97–1.74)	1.61 (1.11–2.32)
South	1.61 (1.13–2.28)	1	7.34 (4.15–13)
South-West	4.11 (2.65–6.39)	1.91 (1.41–2.58)	1
Place of residence			
Urban	1	1	1
Rural	0.92 (0.74–1.16)	1.03 (0.89–1.19)	0.96 (0.77–1.2)
Sex			
Male	1	1	1
Female	0.92 (0.75–1.13)	0.89 (0.78–1.03)	0.99 (0.81–1.23)
Age categories, years			
≤24	1.13 (0.77–1.67)	8.98 (7.31–11.03)	0.95 (0.64–1.41)
25–34	1.66 (1.12–2.48)	12.98 (10.54–15.99)	1.38 (0.92–2.04)
35–44	1.62 (1.06–2.49)	11.76 (9.36–14.77)	1.6 (1.04–2.49)
45–54	1.08 (0.69–1.69)	12.89 (9.85–16.86)	1.39 (0.86–2.24)
≥55	1	1	1

OR = odds ratio; CI = confidence interval.

Table A.3 Sociodemographic characteristics associated with attitudes towards tuberculosis

	Fear of being infected OR (95%CI)	Attitude towards going to a health facility if sick with TB OR (95%CI)	Willingness to help TB patients OR (95%CI)
Region			
Adamaoua	11.32 (8.00–16.03)	10.51 (6.17–17.92)	2.03 (1.49–2.76)
Centre	8.25 (5.90–11.52)	1	2.28 (1.67–3.12)
East	4.71 (3.42–6.49)	5.55 (3.62–8.5)	1.83 (1.35,2.48)
Far North	10.2 (7.26–14.38)	3.45 (2.38–5.01)	1
Littoral	14.7 (10.22–21.1)	7.63 (4.75–12.27)	5.28 (3.66–7.62)
West	4.25 (3.08–5.84)	2.58 (1.82–3.66)	3.65 (2.61–5.12)
North	12.6 (8.85–17.92)	46 (17.00–128.00)	1.93 (1.42–2.63)
North-West	1	6.43 (4.10–10.10)	8.93 (5.83–13.68)
South	6.72 (4.84–9.31)	5.84 (3.79–8.99)	1.82 (1.34–2.46)
South-West	6.01 (4.34–8.32)	3.02 (2.10–4.34)	2.71 (1.97–3.73)
Place of residence			
Urban	1	1	1
Rural	0.96 (0.83–1.11)	0.88 (0.71–1.1)	1 (0.85–1.17)
Sex			
Male	1	1	1
Female	0.93 (0.81–1.07)	0.98 (0.80–1.2)	1.26 (1.09–1.46)
Age categories, years			
≤24	1.3 (0.99–1.71)	1.31 (0.91–1.88)	0.64 (0.46–0.88)
25–34	1.07 (0.82–1.41)	1.97 (1.35–2.87)	0.7 (0.51–0.96)
35–44	1.22 (0.91–1.63)	1.54 (1.04–2.29)	0.89 (0.63–1.25)
45–54	1.08 (0.86–2.24)	1.47 (0.95–2.28)	0.91 (0.62–1.32)
≥55	1	1	1

OR = odds ratio; CI = confidence interval.

Table A.4 Sociodemographic characteristics associated with respondents' attitude if they heard a relative had tuberculosis

	Would refuse help n (%)	Would help n (%)	Total (%)
Regions			
Adamaoua	87 (2.4)	273 (7.5)	360 (9.9)
Centre	95 (2.6)	267 (7.4)	362 (10.0)
East	110 (3.0)	251 (6.9)	361 (10.0)
Far North	34 (0.9)	332 (9.2)	366 (10.1)
Littoral	36 (1.0)	324 (9.0)	360 (9.9)
West	10 (0.3)	353 (9.8)	363 (10.0)
North	22 (0.6)	340 (9.4)	362 (10.0)
North-West	15 (0.4)	345 (9.5)	360 (9.9)
South	102 (2.8)	264 (7.3)	366 (10.1)
South-West	45 (1.2)	315 (8.7)	360 (9.9)
Total	556 (15.4)	3064 (84.6)	3620 (100)
Place of residence			
Urban	172 (4.8)	1032 (28.5)	1204 (33.3)
Rural	384 (10.6)	2032 (56.1)	2416 (66.7)
Total	556 (15.4)	3064 (84.6)	3620 (100)
Sex			
Male	294 (8.1)	1419 (39.2)	1713 (47.3)
Female	262 (7.2)	1645 (45.4)	1907 (52.7)
Total	556 (15.4)	3064 (84.6)	3620 (100)
Age categories, years			
≤24	191 (5.3)	891 (24.6)	1082 (29.9)
25–34	171 (4.7)	968 (16.6)	1139 (31.5)
35–44	110 (3.0)	601 (10.0)	711 (19.7)
45–54	47 (1.3)	362 (6.6)	409 (11.3)
≥55	37 (1.0)	238 (6.6)	275 (7.6)
Total	556 (15.4)	3060 (84.6)	3616 (100)

RESUME

CONTEXTE : Avec 15 080 nouveaux cas en 2013, le Cameroun est un pays à forte incidence et prévalence de tuberculose (TB). Comprendre les connaissances, attitudes et pratiques (KAP) de la communauté est capitale dans la lutte contre la TB dans cet environnement endémique.

OBJECTIF : Evaluer les KAP vis-à-vis de la TB au Cameroun afin de décrire les caractéristiques sociodémographiques des répondants, d'identifier les obstacles aux recours aux soins et d'explorer les attitudes et expériences de la stigmatisation et la discrimination liées à la TB dans la communauté.

MÉTHODE : Nous avons mené une étude descriptive transversale à l'aide de questionnaires structurés pour évaluer et comparer les KAP liées à la TB dans l'ensemble du territoire.

RÉSULTATS : Les résultats ont montré que les Camerounais ont une compréhension insuffisante concernant la TB, de nombreuses hypothèses et croyances de santé erronées concernant la TB, et en outre, un certain nombre de Camerounais ont des informations erronées sur la maladie en termes de symptômes et mode de transmission.

CONCLUSION : Les attitudes néfastes et mauvaises pratiques constituent des obstacles à l'élimination et aux efforts de lutte contre la TB. Il y a un besoin urgent pour le Programme National de Lutte contre la Tuberculose d'élaborer des stratégies plus efficaces pour atteindre les populations et aussi à accorder une attention particulière aux populations rurales.

RESUMEN

MARCO DE REFERENCIA: El Camerún es un país con alta incidencia y alta prevalencia de tuberculosis (TB), donde se observaron 15 080 casos nuevos en el 2013. La comprensión de los conocimientos, las actitudes y las prácticas (KAP) en materia de TB de la comunidad son factores primordiales en el control de la enfermedad en estos contextos endémicos.

OBJETIVOS: Evaluar los KAP en materia de TB en el Camerún, mediante la descripción de las características sociodemográficas de las personas que respondieron al cuestionario, con el propósito de detectar las barreras a la búsqueda de atención de salud y analizar las actitudes y las experiencias con los estigmas y la discriminación por causa de la TB en las comunidades.

MÉTODOS: Se llevó a cabo un estudio descriptivo transversal mediante cuestionarios estructurados

destinados a evaluar y comparar los KAP en materia de TB en todo el territorio nacional.

RESULTADOS: Los resultados de la encuesta pusieron de relieve una deficiencia de conocimientos sobre la TB de los cameruneses. Se detectaron numerosas suposiciones y creencias erróneas. Además, la población alberga informaciones inexactas sobre los síntomas de la enfermedad y su modo de transmisión.

CONCLUSIÓN: Las actitudes perjudiciales y las prácticas deficientes constituyen obstáculos a las iniciativas de eliminación y control de la TB. Es urgente que el Programa Nacional de Control de la Tuberculosis elabore estrategias más eficaces, encaminadas a llegar a las poblaciones, con un interés especial en las poblaciones rurales.
