Blood Pressure (BP) in a population of a rural area of Rwanda: preliminary data

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Objective

Arterial hypertension (HT) likely affects millions of people in Africa. Few studies have been conducted in rural settings to identify potential risk factors of HT and guide prevention strategies. The objective of our study was to perform a screening of the local population living in the rural area of the District of Nyaruguru (Rwanda) to determine the prevalence of HT.

Methods

In order to evaluate the incidence of HT, between February and July 2020, instructed health care workers measured BP at home of the inhabitants of the rural region of Nyamyumba, District of Nyaruguru (three times in a sitting position with a validated oscillometric device OMRON HEM-7322U). SBP ≥140mmHg was retained for the diagnosis of hypertension.

Results

Table 1: All study participants

	All	Normotensive	Hypertensive	P-value
N (%)	7336 (100%)	6694 (91%)	642 (9%)	
Age, years*	32 (21, 47)	32 (21, 45)	52 (35, 65)	<0.001
Males: Females, %	45 : 55	45 : 55	43 : 57	0.36
Systolic BP*, mm Hg	118 (110, 128)	117 (109, 125)	149 (144, 158)	<0.001
Diastolic BP*, mm Hg	75 (69, 81)	74 (68, 80)	89 (82, 95)	<0.001
Heart rate*, b/m	77 (68, 86)	77 (68, 86)	81 (71, 90)	<0.001
BMI*, kg/m^2	21.2 (19.5, 23.1)	21.2 (19.5, 23.1)	21.5 (19.7, 23.4)	0.028

Table 2: Females

	Normotensive	Hypertensive	P-value
N (%)	3687 (91%)	366 (9%)	
Age*, years	33 (22, 46)	58 (45, 67)	<0.001
Systolic BP*, mm Hg	115 (107, 123)	152 (144, 162)	<0.001
Diastolic BP*, mm Hg	75 (69, 81)	91 (84, 97)	<0.001
Heart rate*, b/m	79 (71, 88)	81 (71, 91)	<0.001
BMI*, kg/m^2	21.8 (20.0, 23.8)	21.6 (19.8, 23.8)	0.45

Table 3: Males

	Normotensive	Hypertensive	P-value
N (%)	3007 (92%)	276 (8%)	
Age*, years	29 (20, 42)	37 (28, 61)	<0.001
Systolic BP*, mm Hg	119 (111, 126)	147 (143,154)	<0.001
Diastolic BP*, mm Hg	73 (69, 79)	87 (80, 93)	<0.001
Heart rate*, b/m	73 (65, 83)	81 (70,89)	<0.001
BMI*, kg/m^2	20.6 (19.0, 22.2)	21.3 (19.5, 23.0)	<0.001

*Median (IQR)

Conclusions

Surprisingly, in a very rural peripheral region where the average age of the inhabitants is relatively low, about 10% of the subjects examined have high blood pressure values (SBP ≥140mmHg). Without significant differences between males and females. The age plays a more important role than BMI, particularly in females. These data confirm the need to implement also in rural areas an adequate strategy for the diagnosis and treatment of hypertension. The next step of our project will focus the control of hypertension and associated CV risk factors with the aim of providing improved CV protection.