

FACING EPIDEMIC HYPERTENSION IN SUB-SAHARAN AFRICA

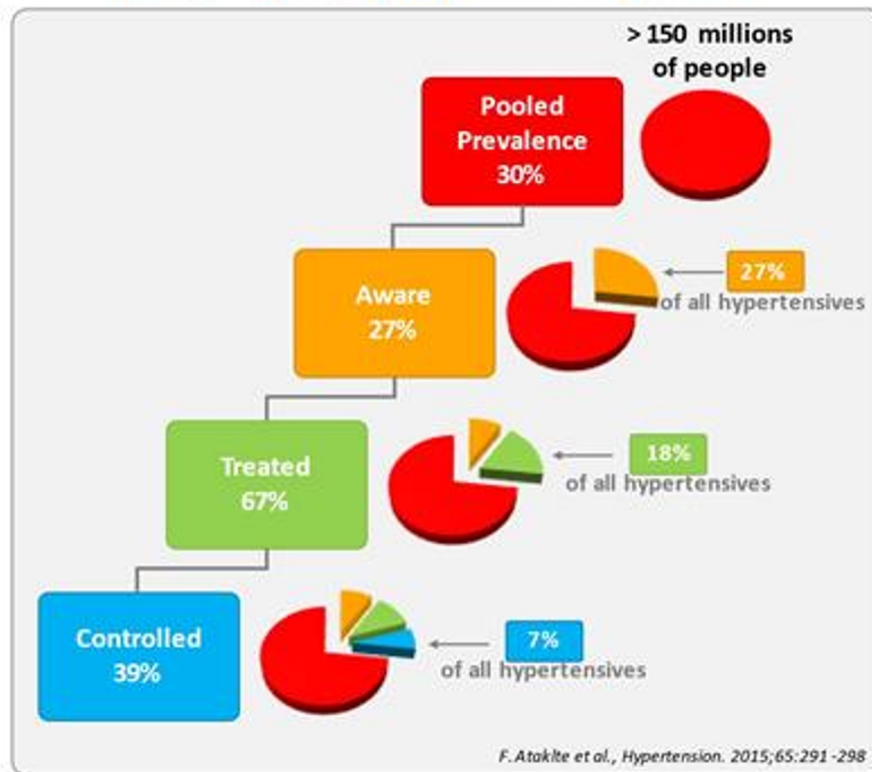
REQUIREMENTS FOR BETTER BLOOD PRESSURE AND
CARDIOVASCULAR RISK CONTROL IN A RURAL AREA OF THE
DISTRICT OF NYARUGURU, RWANDA.

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821786

Nyamyumba Hypertension
Project

A. Hypertension Burden in Africa in 2015

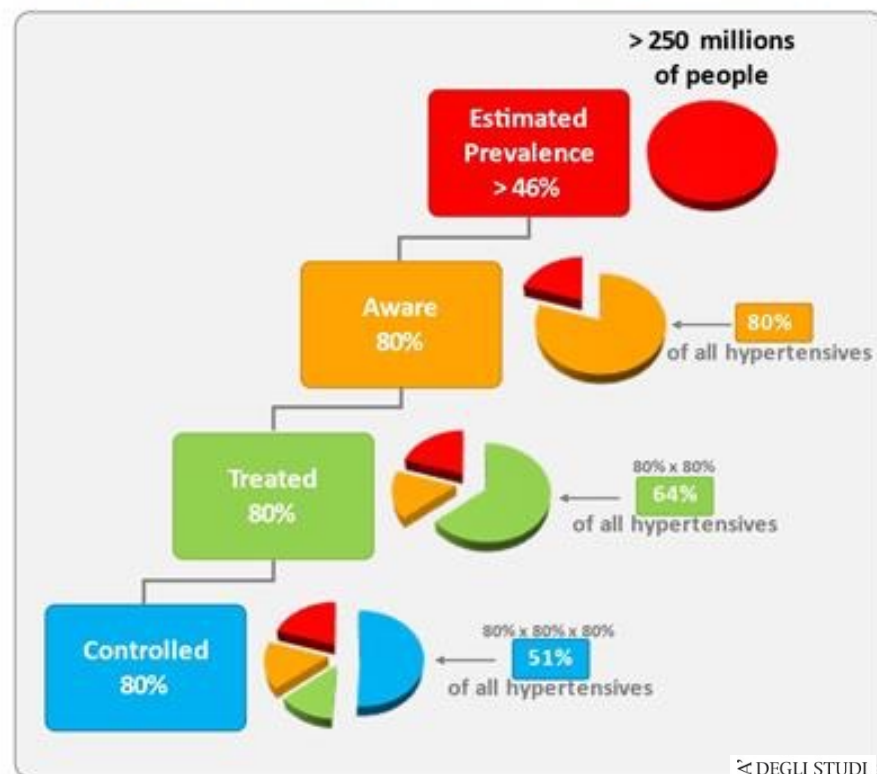


80% rules:

- ↓ Heart attack
- ↓ Stroke and recurrent strokes
- ↓ Hearth failure
- ↓ CKD and ESRD

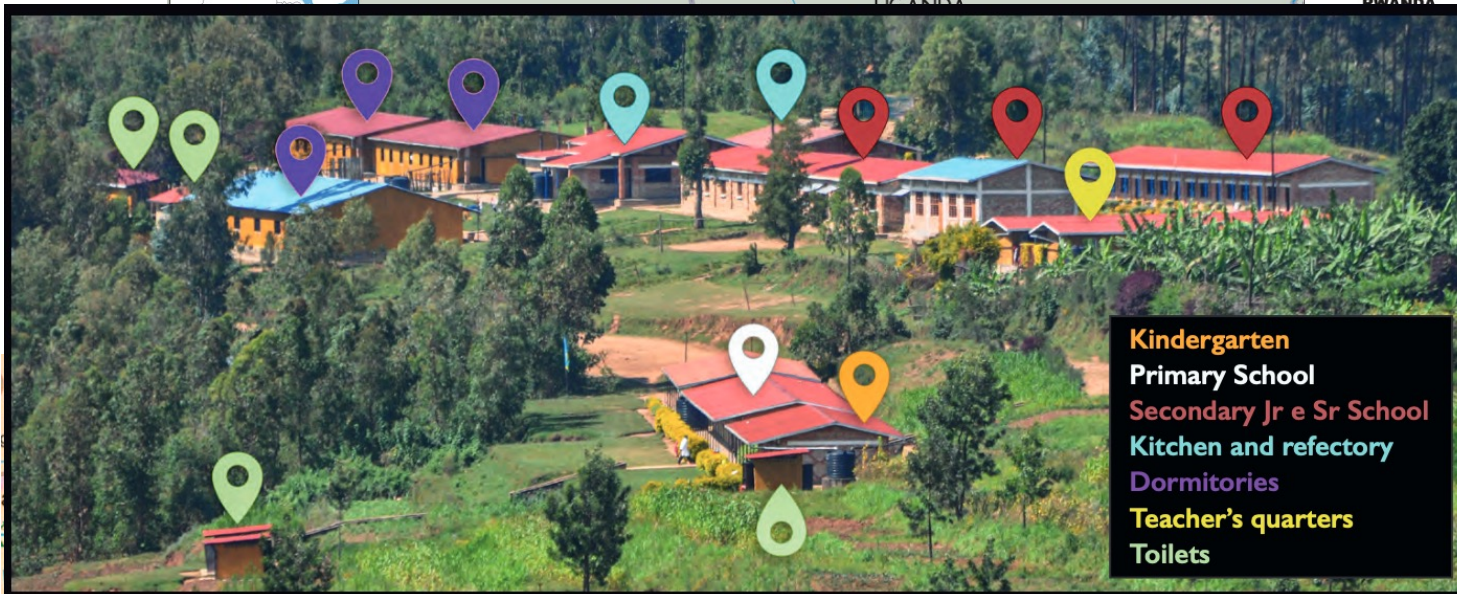


B. Hypertension Burden in Africa. Targets for 2030



Mabawa Association

Nyamyumba Hypertension Project
19/10/2022 – Monza



Dipartimento di Medicina e Chirurgia
School of Medicine and Surgery

mabawa.org

Study design



It is a cross - sectional study

-Primary end-point: detection of hypertension prevalence in a rural population in Rwanda, Sub-Saharan Africa.

-Secondary end-point:

- improving local knowledge and competence of medical and health care personnel in blood pressure management;

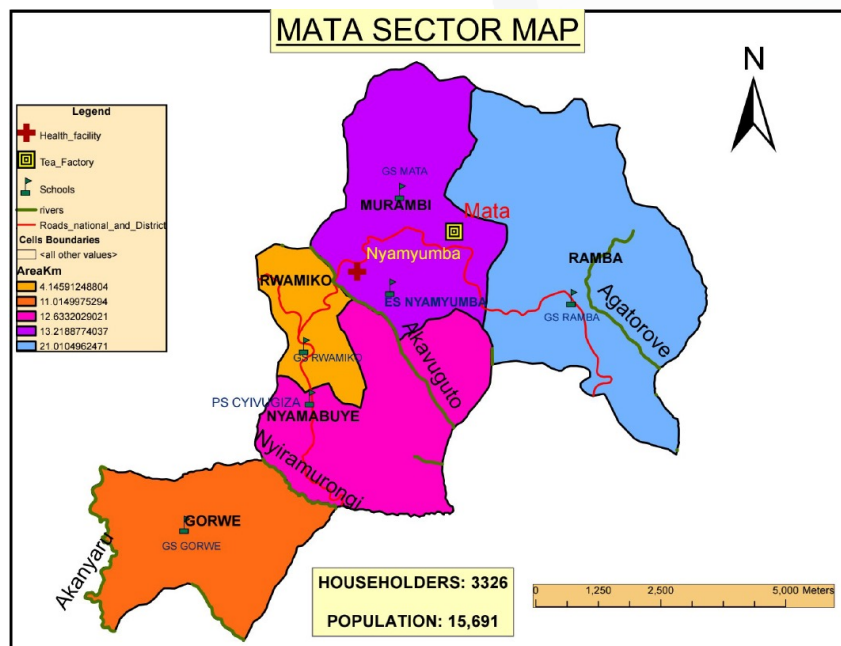
- improvement of the health infrastructure dedicated to the control of hypertensive patients (equipment and data management system);

- highlighting associated cardiovascular risk factors and raising individual awareness and commitment to healthy lifestyles and therapy.

Population and CHW



Eligible participants were considered subjects of both sexes aged ≥ 18 years living in the rural area of the District of Nyaruguru.



Mata Sector map

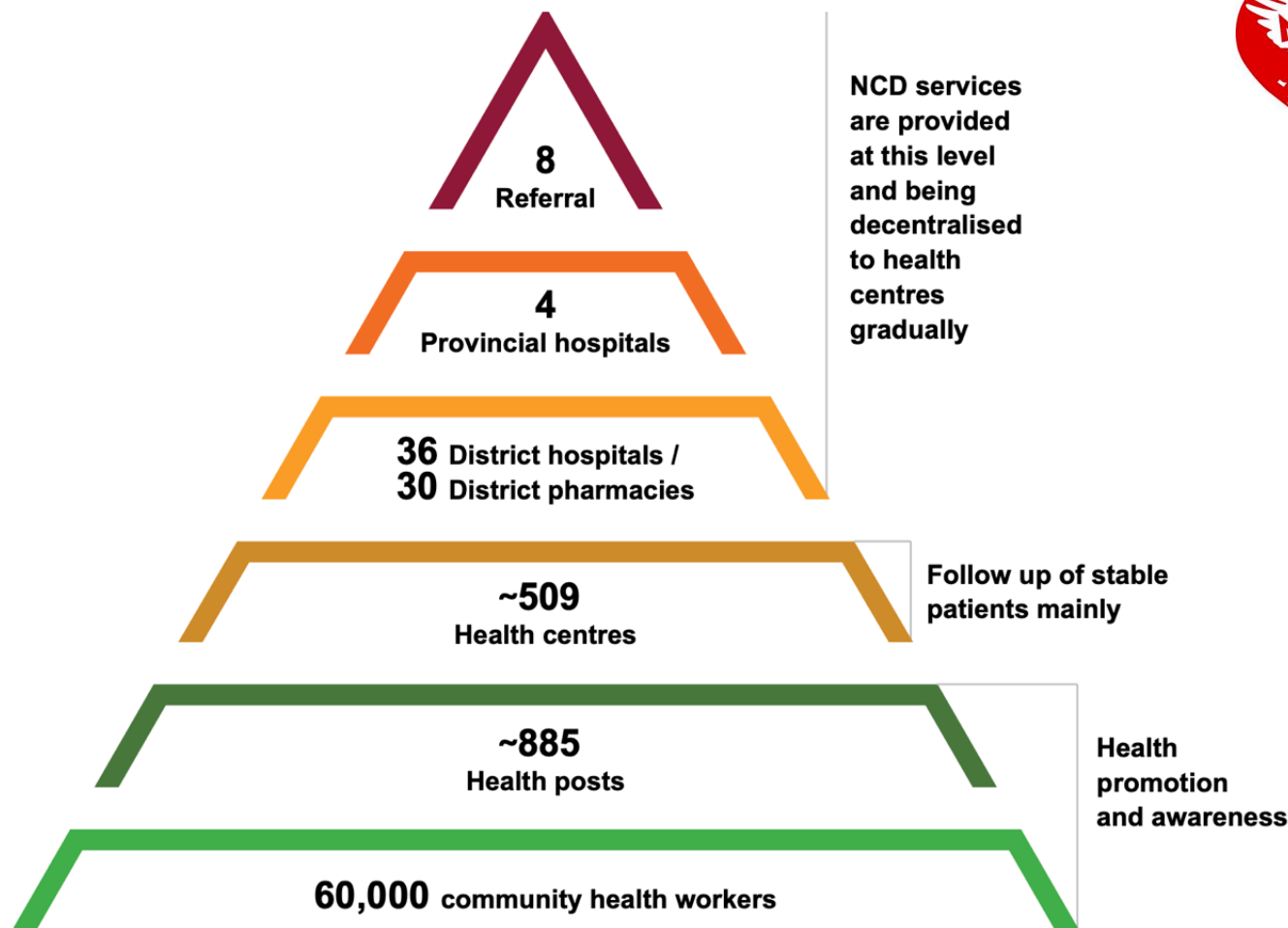


Screening in a local village

Community health care workers
screened volunteer residents in Mata
Sector between February and July 2020

Health care system

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Structure of Rwanda health care system

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Data collection



Training sessions

- BMI was expressed as weight in kilogram/height in square meters (kg/m^2)
- Participants were measured without shoes and wearing only light cloths with a centimeter tape and a common scale

- Training and education
- Validated automated oscillometric device

3 readings were taken 3–5 min apart after 3 min rest
As recommended by WHO, the average of the last two readings was calculated



OMRON M7 Intelli IT-HEM-7322T-E

Results



	All	Normotensive	Hypertensive	P-value
N	7336	6694	642	
Age, years	32 [21-47]	32 [21-45]	52 [35-65]	<0.001
Females: Males, N	4035 : 3301	3682 : 3012	353 : 289	0.999
Blood Pressure, mmHg				
Systolic	118 [110-128]	117 [109-125]	149 [144-158]	
Diastolic	75 [69-81]	74 [68-80]	89 [82-95]	
Heart rate, b/m	77 [68-86]	77 [68-86]	81 [71-90]	<0.001
Body weight, kg	56 [50-62]	56 [50-62]	56 [50-63]	0.33
Height, m	1.62 [1.56-1.68]	1.62 [1.56-1.68]	1.61 [1.56-1.68]	0.53
Body mass index				
kg/m ²	21.2 [19.5-23.1]	21.2 [19.5- 23.1]	21.5 [19.7-23.4]	0.028
≥25.0 kg/m ²	849	772	77	0.698

Clinical data in individuals with normal or increased blood pressure

F vs M



	Females	Males	p-value
N	353	289	
Age, years	58 [45-67]	37 [28-61]	<0.001
Blood Pressure, mmHg			
Systolic	152 [144-162]	147 [143-154]	<0.001
Diastolic	91 [84-97]	87 [80-93]	0.001
Heart rate, b/m	81 [71-91]	81 [70-89]	0.3932
Body mass index			
kg/m ²	21.6 [19.8-23.8]	21.3 [19.5-23.0]	0.0221
≥25.0 kg/m ²	55	22	0.0022

Characteristics of female and male individuals with hypertension

Discussion

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- HTN is prevalent in rural SSA
- Raising awareness is mandatory
- Leveraging CHW
- Planning feasible strategies

**WORLD
HYPERTENSION
DAY** Initiated by the
World Hypertension League

Measure Your Blood Pressure,
Control It, Live Longer www.whleague.org

May 17, 2022
Save the Date!



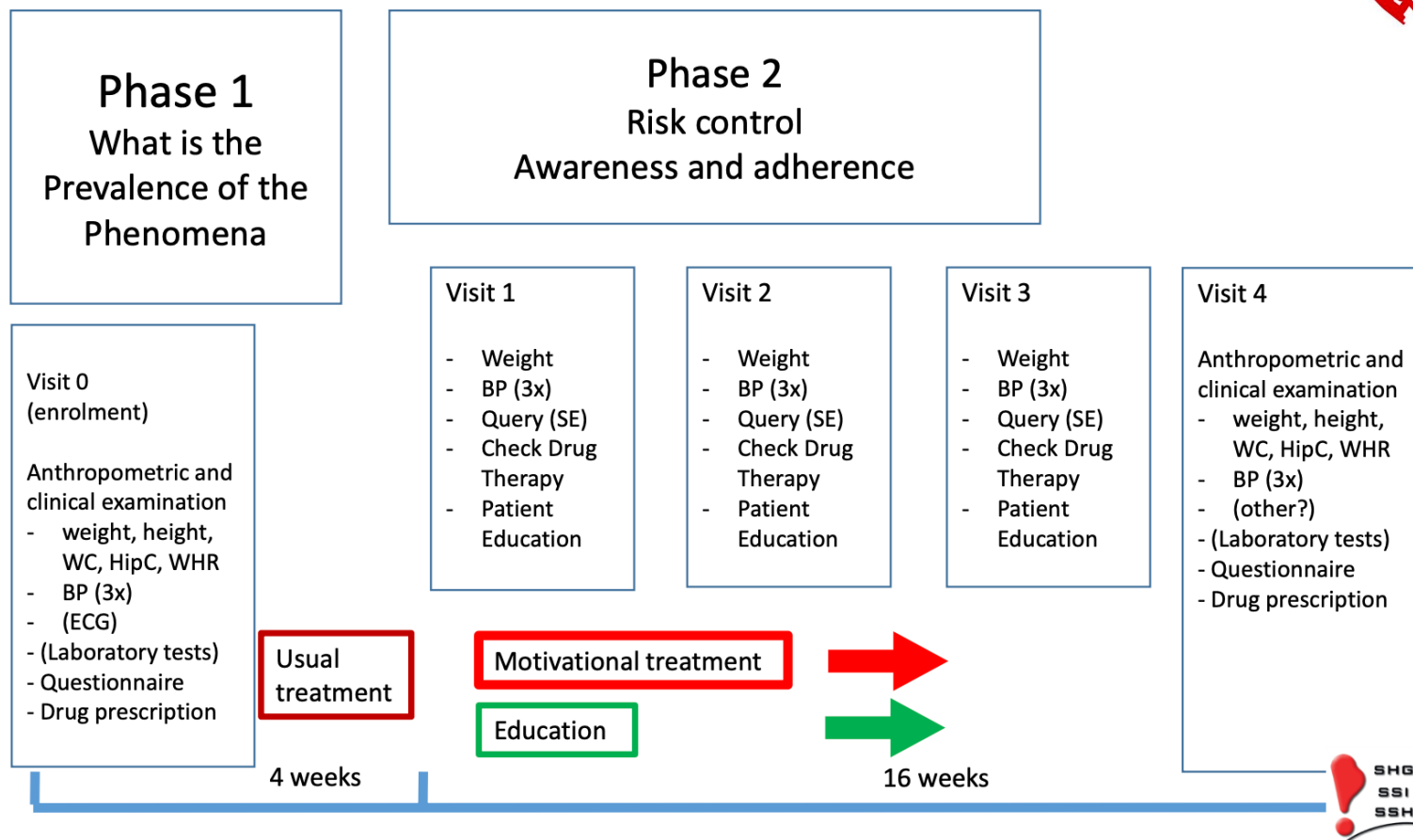
Hypertension

REVIEW

How to Improve Awareness, Treatment, and Control of Hypertension in Africa, and How to Reduce Its Consequences. A Call to Action From the World Hypertension League

Gianfranco Parati^{ID}, Daniel T. Lackland^{ID}, Norman R.C. Campbell^{ID}, Mayowa Ojo Owolabi^{ID}, Charlotte Bavuma, Hind Mamoun Beheiry, Anastase Dzudie^{ID}, Moshen Ibrahim, Wafaa El Aroussy, Sandhya Singh, Cherian V. Varghese^{ID}, Paul K. Whelton^{ID}, Xin-Hua Zhang; on behalf of the World Hypertension league

Model of treatment



By courtesy of Dr. Muggli



***Prof. Gianfranco Parati and
Dr. Patrick Ndimubanzi
(Executive Secretary - Human
Resource for Health
Secretariat – Rwanda)***

Kigali – 8th June, 2022

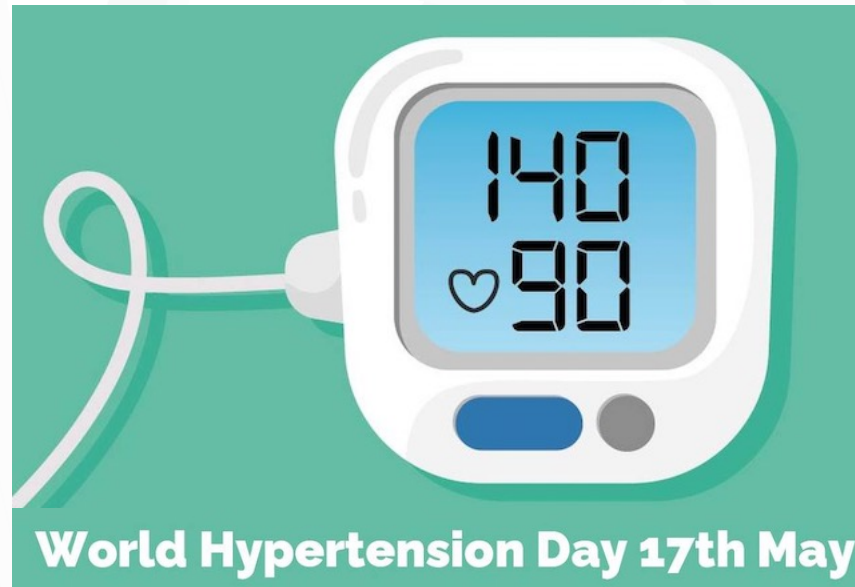
Memorandum of Understanding between
University of Milano – Bicocca and Ministry of Health of Rwanda

Conclusion

- HTN is a rapidly spreading epidemic in rural SSA
- Awareness, prevention, and detection need urgently to be implemented
- Concerted effort by governments, universities and institutions, health care providers, the private sector and all Africans is required



Hypertension is the **leading preventable killer in Africa**





Murakose chane

Thank you

for your attention!



Factor	Hypertension defined as <u>$\geq 140/90$ mm Hg</u> n=21 512 Proportion (95% CI)	Hypertension defined as <u>$\geq 130/80$ mm Hg</u> n=21 512 Proportion (95% CI)	P Value
Sex			
Male	42.2 (41.3–43.1)	58.2 (57.3–59.0)	<0.001
Female	41.8 (40.8–42.8)	60.8 (59.8–61.8)	<0.001
Age, mean \pm SD	53.0 \pm 11.2	51.1 \pm 11.7	
<40 y	22.0 (20.7–23.4)	42.9 (41.4–44.6)	<0.001
40–44	29.5 (28.0–31.1)	49.1 (47.4–50.8)	<0.001
45–49	36.2 (34.6–37.8)	54.6 (52.9–56.2)	<0.001
50–54	44.6 (43.1–46.2)	62.5 (60.9–64.0)	<0.001
55–59	51.7 (50.1–53.4)	67.3 (65.7–68.8)	<0.001
60–64	65.9 (63.6–68.2)	76.9 (74.8–78.9)	<0.001
≥ 65	75.4 (73.3–77.3)	86.3 (84.6–87.8)	<0.001

G. Parati et al., Hypertension. 2022;79:00–00.