

**HYPERTENSION TREATMENT PRACTICES AND ITS DETERMINANTS AMONG AMBULATORY PATIENTS:**

**A RETROSPECTIVE COHORT STUDY IN ETHIOPIA**

**Supplement Table 1 Determinants of achieving target BP (BP < 140/90) at index visit ambulatory hypertension patients (sensitivity analysis with adherence definition of MMAS ≥ 6)**

Variables	Controlled BP		Bivariable estimates OR [95% CI]	Multivariable estimate OR [95% CI]	
	No	Yes			
<b>Demographics</b>					
Age (mean, SD), year	58 (13)	56 (15)	#0.99 [0.98; 1.00]	*0.99 [0.98; 1.00]	
Gender (n, %)	Male	219 (67)	109 (33)	Ref	
	Female	331 (60)	220 (40)	#1.34 [1.00; 1.78]	1.12 [0.81; 1.55]
Hospital type (n, %)	Specialized	199 (68)	93 (32)	Ref	
	General	363 (60)	242 (40)	*1.43 [1.06; 1.92]	*1.88 [1.25; 2.81]
<b>Disease characteristics at index visit (n, %)</b>					
Renal disease	No	542 (62)	330 (38)	Reference	
	Yes	20 (80)	5 (20)	#0.41 [0.15; 1.10]	0.60 [0.20; 1.79]
Controlled BP at prior visit	No	424 (68)	199 (32)	*0.37 [0.27; 0.51]	*0.30 [0.21; 0.43]
	Yes	102 (44)	129 (56)	Ref	
<b>Antihypertensive Treatment characteristics</b>					
Duration of therapy, years (mean, SD)		6.2(6.4)	7.4 (8.3)	#1.02 [1.00; 1.04]	*1.04 [1.02; 1.06]
Adherent (MMAS ≥ 6) (n, %)	No	237 (63)	140 (37)	Ref	
	Yes	315 (62)	194 (38)	1.04 [0.79; 1.37]	1.14 [0.83; 1.56]
Revisit schedule in months (Mean,		2.2 (1.4)	2.0 (1.2)	*0.89 [0.82 ;0.97]	0.91 [0.82; 1.02]
Beta blockers (n, %)	No	472 (65)	259 (35)	Ref	
	Yes	90 (54)	76 (46)	*1.54 [1.09; 2.16]	1.45 [0.98; 2.15]
Diuretics (n, %)	No	243 (59)	168 (41)	Reference	
	Yes	319 (66)	167 (34)	*0.76 [0.58; 0.99]	*0.68 [0.50; 0.94]

Variables with #p < 0.20 or \*p < 0.05 in the bivariable model were included in this multivariable model (sensitivity analysis).

**Supplement Table 2 Prescribed antihypertensive medication(s) in the study population**

Drug prescribed per case	At Index visit (n <sup>‡</sup> = 887), %	At Prior visit (n <sup>‡</sup> = 882), %
D (Diuretics)	14.3	15.0
C (CCBs)	13.0	13.7
A (ACE inhibitors)	9.9	11.0
B (BBs)	0.8	1.4
D + C	9.4	8.6
D + A	17.0	16.6
C + A	11.5	10.2
A + B	2.6	2.4
C + B	2.4	2.7
D + B	2.0	1.5
D + C + B	1.5	1.1
D + C + A	6.1	6.1
A + C + B	3.7	3.5
D + A + B	2.7	2.5
D + A + B + C	3.2	3.7

CCBs, calcium channel blockers; ACE, Angiotensinogen Converting Enzyme; BBs; Beta Blockers

<sup>‡</sup>The table did not include rarely used medication categories. These drugs were methyldopa, losartan, hydralazine, and nitrates and in combination with others or as a monotherapy.

**Supplement Table 3 Sensitivity analyses: determinants for controlled hypertension at alternative BP target (BP < 130/80 mm Hg) for patients with DM and/or renal disease, and all other patients BP < 140/90 mm Hg)**

Variables	Controlled BP		Bivariable OR [95% CI]	Multivariable OR [95% CI]	
	No	Yes			
<b>Demographics</b>					
Age (mean, SD)	58 (13)	56 (15)	#0.99 [0.98; 1.00]	0.99 [0.98; 1.00]	
Gender (n, %)	Male	244 (74)	84 (26)	Ref	
	Female	373 (68)	178 (32)	*1.39 [1.02; 1.88]	1.30 [0.87; 1.95]
Smoking (n, %)	No	572 (69)	254 (31)	Ref	
	Yes	45 (79)	12 (21)	#0.60 [0.31; 1.16]	1.05 [0.50; 2.24]
Alcohol use (n, %)	No	354 (72)	140 (28)	Ref	
	Yes	254 (67)	124 (33)	#1.23 [0.92; 1.65]	1.54 [1.07; 2.21]
Marital status (n, %)	Single	207 (67)	104 (33)	Ref	
	Married	406 (72)	161 (28)	#0.79 [0.59; 1.06]	0.82 [0.56; 1.18]
Educational status (n, %)	College/University	123 (72)	47 (28)	Ref	
	Secondary	103 (73)	38 (27)	1.21 [0.83; 1.77]	
	Primary /not formal	381 (68)	176 (32)	0.97 [0.59; 1.59]	
Hospital type (n, %)	Specialized	217 (74)	75 (26)	Ref	
	General	412 (68)	193 (32)	1.36 [0.99; 1.85]	1.17 [0.75; 1.82]
<b>Disease characteristics (n, %)</b>					
Dyslipidemia at index visit	No	583 (69)	257(31)	Ref	
	Yes	46 (81)	11 (19)	#0.54 [0.28; 1.06]	0.47 [0.20; 1.10]
Heart Failure / MI at index visit	No	578 (70)	247 (30)	Ref	
	Yes	51 (71)	21 (29)	0.96 [0.57; 1.64]	
Controlled BP at prior visit	No	501 (77)	151 (23)	*0.25 [0.18; 0.35]	*0.25 [0.17; 0.37]
	Yes	92 (46)	110 (55)	Ref	
<b>Antihypertensive treatment characteristics</b>					
Duration of therapy years (mean, SD)		7.0 (7.3)	5.8 (6.9)	#0.98 [0.96; 1.00]	0.99 [0.97; 1.02]
Adherence (MMAS-8 ≥ 7) (n, %)	No	373 (70)	158 (29)	Ref	
	Yes	246 (69)	109 (31)	1.04 [0.78; 1.40]	
Revisit schedule in months (Mean, SD)		2.4 (2.1)	2.0 (1.2)	*0.88 [0.81; 0.97]	0.94 [0.84; 1.06]
Therapy at prior visit (n, %)	Monotherapy	240 (66)	123 (34)	Ref	
	Multidrug therapy	378 (73)	143 (27)	*0.74 [0.55; 0.99]	1.02 [0.69; 1.51]
<b>Antihypertensive medications at prior visit</b>					
ACE inhibitors (n, %)	No	274 (68)	129 (32)	Ref	
	Yes	355 (72)	139 (28)	0.83 [0.62; 1.11]	
Beta blockers (n, %)	No	511 (70)	220 (30)	Ref	
	Yes	118 (71)	48 (29)	0.95 [0.65; 1.37]	
Calcium channel blockers (n, %)	No	312 (68)	146 (32)	Ref	
	Yes	317 (72)	122 (28)	#0.82 [0.62; 1.10]	0.88 [0.59; 1.31]
Diuretics (n, %)	No	276 (67)	135 (33)	Ref	
	Yes	353 (73)	133 (27)	#0.77 [0.58; 1.03]	*0.60 [0.40; 0.90]

**Supplement Table 4 Determinants of achieving target BP (BP < 140/90) at index visit in ambulatory hypertensive patients**

Variables	Odds ratio at 95% CI	
	Bivariable estimates	Multivariable estimate
<b>Demographics</b>		
Age [year]		
< 35	Ref	
35-44	0.56 [0.27; 1.18]	0.51 [0.24; 1.10]
45-54	0.51 [0.25; 1.03]	0.53 [0.26; 1.10]
55-64	0.40 [0.20; 0.80]	0.41 [0.20; 0.83]
≥ 65	0.50 [0.25; 0.99]	0.46 [0.22; 0.93]
Gender	Male	Ref
	Female	*1.34 [1.00; 1.78]
Smoking	No	Ref
	Yes	0.89 [0.51; 1.56]
Alcohol use	No	Ref
	Yes	1.06 [0.81; 1.40]
Marital status	Single	Ref
	Married	0.87 [0.66; 1.16]
Educational status	College/University	Ref
	Secondary	1.17 [0.74; 1.86]
	Primary /not formal	1.13 [0.79; 1.61]
Hospital type	Specialized	Ref
	General	*1.43 [1.06; 1.92]
<b>Disease characteristics</b>		
Number of cardiometabolic comorbid illnesses		0.86 [0.69; 1.06]
Hypertension severity at prior visit		
Normal BP (systolic BP < 120 and diastolic BP < 80 mm Hg)		Ref
Pre-hypertensive stage (systolic BP 120-139 or diastolic BP 80-89 mm Hg)		0.83 [0.45; 1.53]
Stage I hypertension (systolic BP 140-159 or diastolic BP 90-99 mm Hg)		*0.40 [0.21; 0.72]
Stage II hypertension (systolic BP ≥ 160 or diastolic BP ≥ 100 mm Hg)		*0.25 [0.14; 0.46]
		0.80 [0.40; .62]
		*0.34 [0.17; .67]
		*0.17 [0.09; .35]
<b>Antihypertensive Treatment characteristics</b>		
Duration of therapy, years (mean, SD)		#1.02 [1.00; 1.04]
Adherent (MMAS ≥ 7)	No	Ref
	Yes	#0.79 [0.60; 1.04]
Revisit schedule in months (Mean, SD)		*0.89 [0.82 ;0.97]
Therapy at prior visit	Monotherapy	Ref
	Multidrug therapy	0.98 [0.74; 1.29]
Antihypertensive medications at prior visit		
ACE inhibitors	No	Ref
	Yes	1.13 [0.86; 1.49]
Beta blockers	No	Ref
	Yes	*1.54 [1.09; 2.16]
Calcium channel blockers	No	Ref
	Yes	1.06 [0.81 ;1.39]
Diuretics	No	Reference
	Yes	*0.76 [0.58; 0.99]
		*0.68 [0.49;0.94]

Difference with the main analysis (Table 2): Age categorical, prior BP based on severity, and comorbid illness count included.

**Supplement Table 5 Treatment intensification determinants for ambulatory hypertensive patients with uncontrolled BP at index visit**

Variables		Bivariable estimates OR [95% CI]	Multivariable estimate OR [95% CI]
<b>Demographics</b>			
Age, Year	< 35	Ref	
	35-44	1.53 [0.39; 5.99]	1.25 [0.31; 5.02]
	45-54	1.45 [0.39; 5.38]	1.08 [0.28; 4.10]
	55-64	1.95 [0.55; 6.96]	1.20 [0.33; 5.49]
	≥ 65	2.03 [0.57; 7.26]	1.49 [0.41; 2.22]
	Gender	Male	Ref
Female		#1.35 [0.88; 2.07]	1.40 [0.86; 1.29]
Smoking	No	Ref	
	Yes	0.88 [0.37; 2.07]	
Alcohol use	No	Ref	
	Yes	0.75 [0.49; 1.15]	
Marital status	Single	Ref	
	Married	0.93 [0.60; 1.43]	
Educational status	College/University	Ref	
	Secondary	1.54 [0.80; 2.97]	
	Primary /no formal education	0.95 [0.56; 1.62]	
Hospital type	Specialized	Ref	
	General	#0.68 [0.43; 1.06]	0.78 [0.48 1.29]
<b>Disease characteristics</b>			
Cardiometabolic comorbid illness at current visit		#1.15 [0.86; 1.52]	1.04 [0.74; 1.45]
Hypertension severity at prior visit			
Normal BP (systolic BP < 120 and diastolic BP < 80 mm Hg)		Ref	
Pre-hypertensive stage (systolic BP 120-139 or diastolic BP 80-89)		0.65 [0.20; 2.07]	
Stage-I hypertension (systolic BP 140-159 or diastolic BP 90-99 mm Hg)		0.93 [0.32; 2.68]	
Stage-II hypertension (systolic BP ≥ 160 or diastolic BP ≥ 100 mm Hg)		1.15 [0.40; 3.26]	
<b>Antihypertensive treatment characteristics</b>			
Duration of therapy years (mean SD)		*1.05 [1.02; 1.08]	*1.05 [1.02; 1.08]
Adherence (MMAS ≥ 7)	No	Ref	
	Yes	0.88 [0.58; 1.32]	
Therapy at prior visit	Monotherapy	Ref	
	Multidrug therapy	0.89 [0.59; 1.34]	

Difference with the main analysis (table 3): Age grouped, prior BP based on severity, and comorbid illness count included.

**Supplement Table 6 Determinants of achieving target BP (BP < 140/90) at current visit in ambulatory hypertensive patients (For patient with ≥ 6 months on antihypertensive medication).**

Variables	Odds ratio at 95% CI	
	Bivariable estimates	Multivariable estimate
<b>Demographics</b>		
Age [year]	#0.99 [0.98; 1.00]	*0.99 [0.98; 1.00]
Gender	Male Female	Ref *1.26 [0.93; 1.71]
Smoking	No Yes	Ref 0.92 [0.51; 1.66]
Alcohol use	No Yes	Ref 1.06 [0.79; 1.42]
Marital status	Single Married	Ref 0.87 [0.65; 1.18]
Educational status	College/University Secondary Primary /not formal	Ref 1.31 [0.81; 2.13] 1.14 [0.79; 1.66]
Hospital type	Specialized General	Ref *1.48 [1.08; 2.02]
Diabetes Mellitus	No Yes	Ref *2.03 [1.34; 3.06]
Dyslipidemia	No Yes	Ref 0.59 [0.18; 1.99]
Renal disease	No Yes	Ref 0.59 [0.18; 1.99]
Heart failure/ MI at	No Yes	Ref 0.59 [0.18; 1.99]
Controlled BP at prior visit	Yes No	Ref *0.30 [0.21; 0.44]
<b>Antihypertensive Treatment characteristics</b>		
Duration of therapy, years (mean, SD)		#1.02 [1.00; 1.04]
Adherent (MMAS ≥ 7)	No Yes	Ref *0.79 [0.58; 1.05]
Revisit schedule in months (Mean, SD)		*0.87 [0.79 ;0.96]
Therapy at prior visit	Monotherapy Multidrug therapy	Ref 1.01 [0.75; 1.36]
Antihypertensive medications at prior visit		
ACE inhibitors	No Yes	Ref 1.15 [0.86; 1.55]
Beta blockers	No Yes	Ref *1.52 [1.06; 2.17]
Calcium channel blockers	No Yes	Ref 1.06 [0.79 ;1.41]
Diuretics	No Yes	Reference *0.75 [0.56; 1.00]