



# The Burnout Assessment Tool in Ecuador and Brazil

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## REPUBLIC OF ECUADOR

Capital: Quito

Total área: 233.561 Km<sup>2</sup>

Official Language: Spanish

Population (2021): 17.715.822

GDP (per capita): U\$ 11.701

HDI - 2019: 0,759 (86th)



## REPUBLIC OF BRAZIL

Capital: Brasília

Total área: 8.515.767 Km<sup>2</sup>

Official Language: Portuguese

Population (2021): 210.174.215

GDP (per capita): U\$ 15.642

HDI - 2019: 0,765 (84th)

# Brazilian Participants

- BAT-23
  - 2, 223 (**75% women**) with mean age 37,7 years ( $SD = 11,4$  years)
  - **54% Health professionals** and 46% other professions (e.g., white collars, blue collars)
  - All participants responded to the scale before the COVID-19 pandemic
  
- BAT-12
  - 4,162 (**72% women**) with mean age 37,7 years ( $SD = 11,4$  years)
  - **72% Health professionals** and 28% other professions (e.g., white collars, blue collars)
  - Responded to the scale before the COVID-19 pandemic and 45% responded during the pandemic

Vazquez, A.C.S.; Freitas, C. P. P., Schaufeli, W. B., De Witte, H. and Hutz, C.S. Evidence of validity of the Brazilian Burnout Assessment Tool (BAT-Brazil 23 and BAT-Brazil 12). Manuscript submitted.

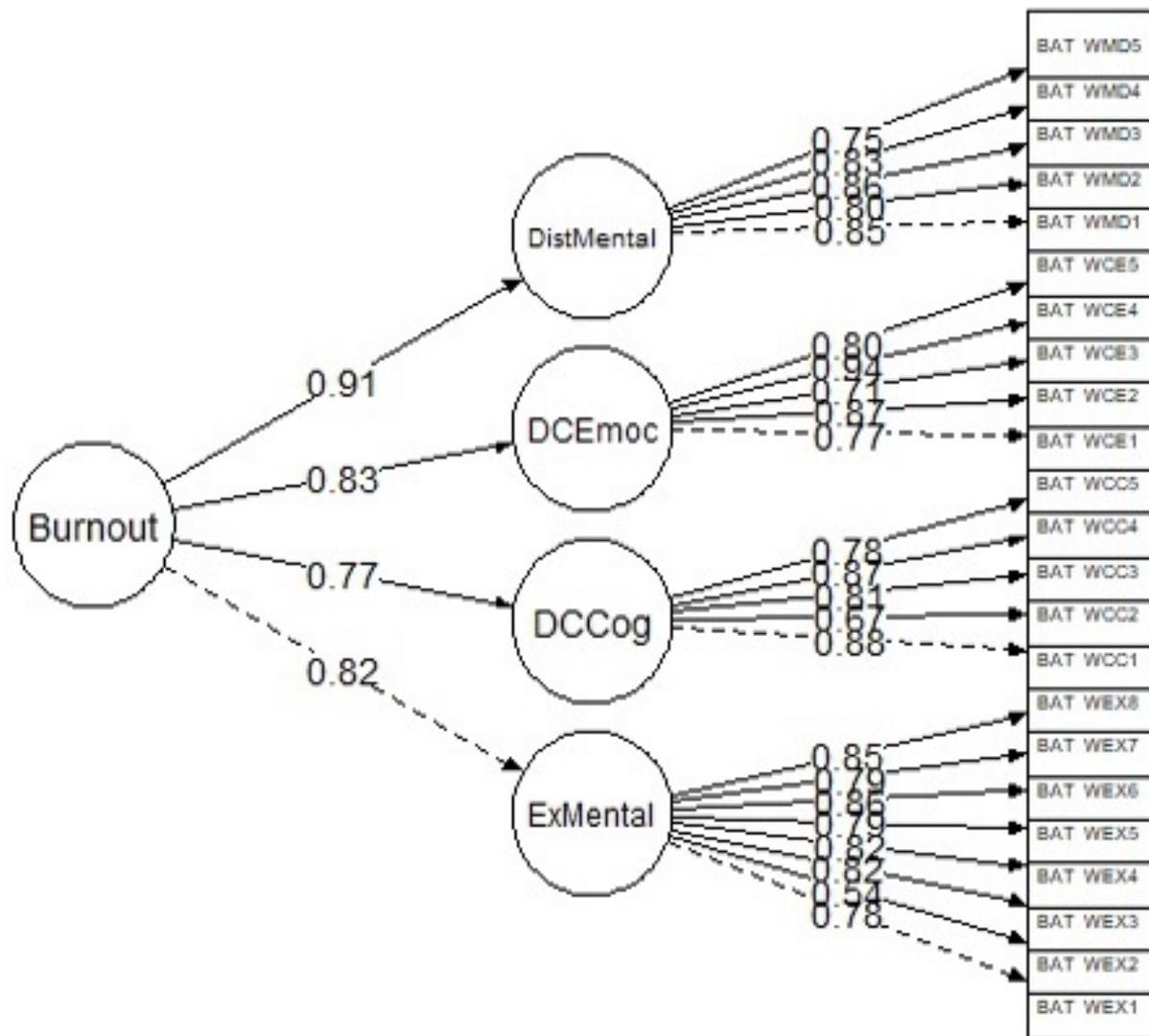
# Ecuador Participants

- BAT-23 and BAT-12
  - 7,943 (**73% women**) with mean age 34 years ( $SD = 6,8$  years)
  - **70% Military forces** and 30% civil workers (e.g., white collars, blue collars)
  - All participants responded the scale during the COVID-19 pandemic

Vinueza-Solórzano, A. M; Portalanza-Chavarría, C. A.; Freitas, C. P P; Schaufeli, W. B; De Witte, H.; Hutz, C. S; Vazquez, A. C. S. (2021). The Ecuadorian Version of the Burnout Assessment Tool (BAT): Adaptation and Validation. *Int J Environ Res Public Health* ; 18(13) 07.

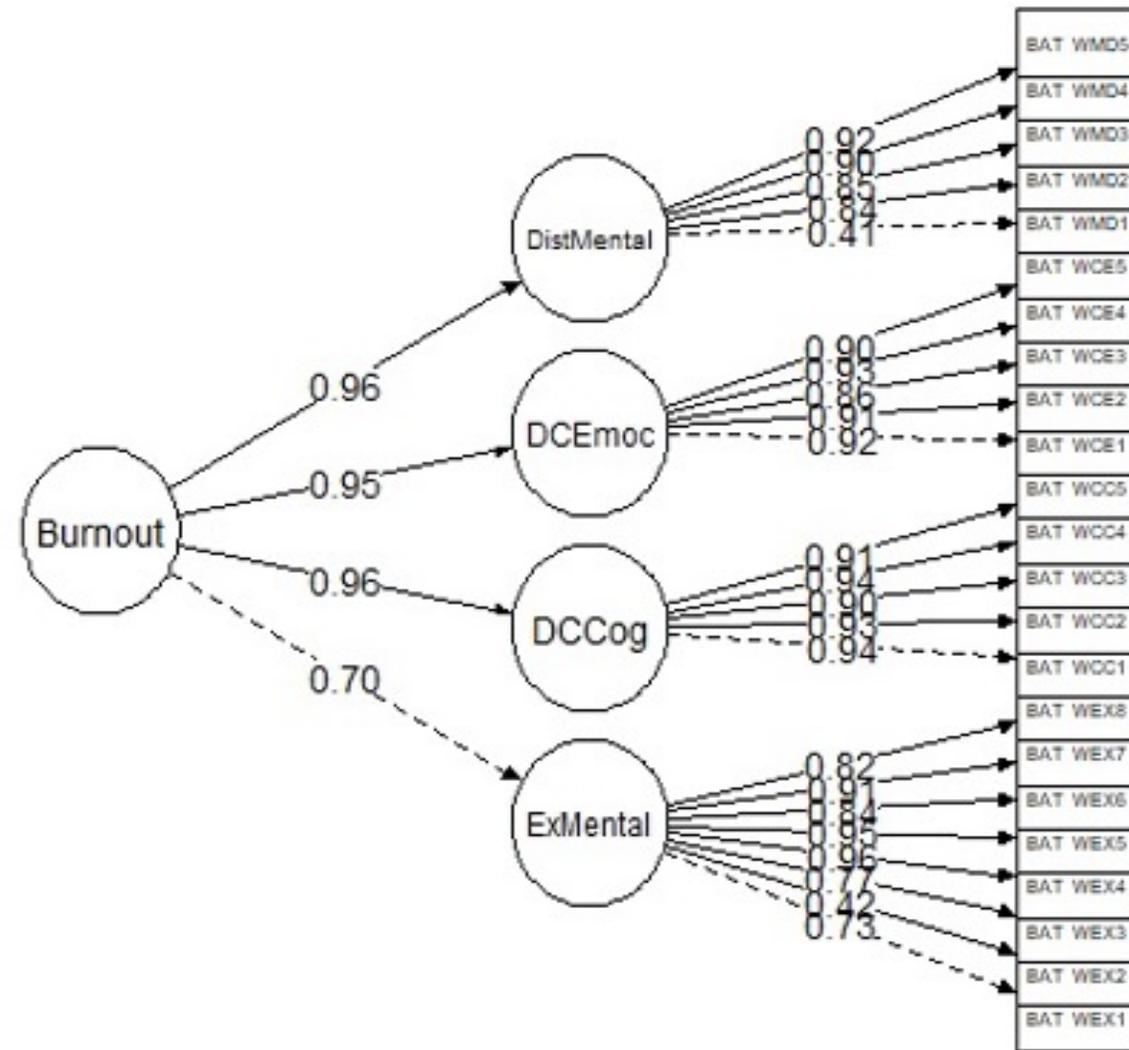
# Other Scales

- UWES – 9 (Vazquez et al., 2015; Schaufeli et al., 2006):
- Job Demand Resource Questionnaire (Schaufeli, 2015)
  - Brazil: Job demands, Work Overload, Role Conflict, Interpersonal Conflicts, Role Clarity, Support of the Team and Job Control
  - Ecuador: Job demands, Social Resources, team and supervisor support, job control, role clarity and pace of change.
- Only Brazilian sample: Life Satisfaction Scale (Hutz et al., 2014)
- Only Ecuadorian sample: Dispositional Hope Scale (Snyder, 1991)

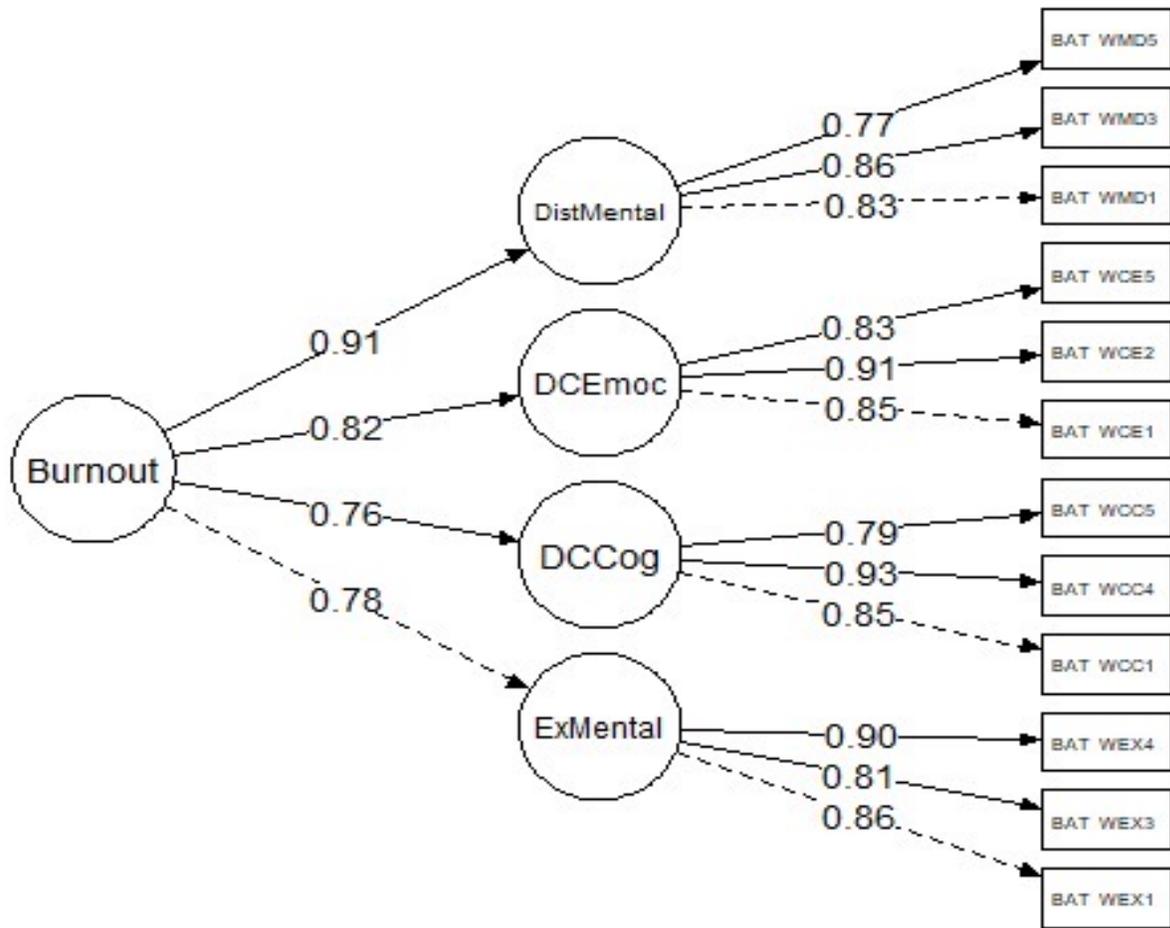


**BRAZIL:**  $X^2 (gl) = 4624.3 (226)$ ,  
 CFI = .93, TLI = .92,  
 RMSEA (90 CI) = .073 (.070 - .77)

### BAT-23

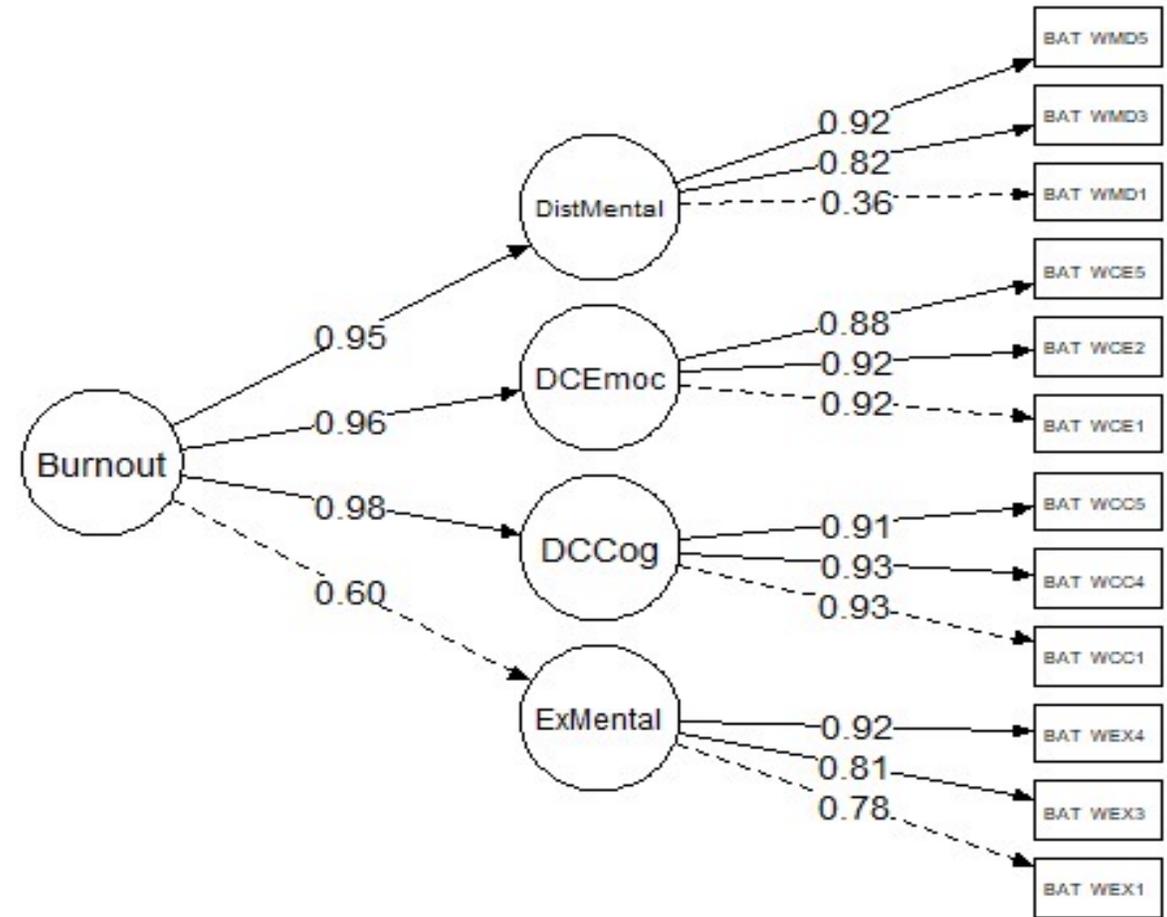


**ECUADOR:**  $X^2 (gl) = 22855.1 (226)$ ,  
 CFI = .58, TLI = .95,  
 RMSEA (90 CI) = .073 (.070 - .77)



**BRAZIL:**  $\chi^2 (gl) = 1128.7 (50)$ ,  
 CFI = .98, TLI = .98,  
 RMSEA (90 CI) = .073 (.070 - .77)

## BAT-12



**ECUADOR:**  $\chi^2 (gl) = 3929.1 (50)$ ,  
 CFI = .98, TLI = .97,  
 RMSEA (90 CI) = .099 (.097 - .10)

	BAT-23						BAT-12					
	Brazil			Equador			Brazil			Equador		
	$\alpha$	$\theta$	C.R.									
Burnout	.94	.94	.94	.94	.94	.94	.91	.91	.90	.87	.86	.93
Exhaustion	.90	.91	.77	.90	.90	.93	.86	.86	.90	.84	.84	.88
Mental Distance	.84	.84	.86	.71	.71	.87	.80	.81	.89	.52	.53	.74
Cognitive Impairment	.86	.86	.84	.91	.91	.67	.85	.85	.88	.86	.86	.55
Emotional Impairment	.87	.87	.96	.88	.88	.93	.87	.87	.86	.82	.88	.90

# BAT-Brazil

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. B		.81**	.84**	.83**	.82**	.24**	.51**	.40**	-.45**	-.35**	-.37**	-.74**	-.50**
2. Ex	.90**		.53**	.57**	.55**	.40**	.51**	.39**	-.30**	-.37**	-.30**	-.51**	-.30**
3. MD	.84**	.64**		.58**	.53**	-.04	.37**	.39**	-.44**	-.34**	-.41**	-.83**	-.57**
4. EI	.83**	.65**	.59**		.59**	.18*	.40**	.26**	-.32**	-.20**	-.16*	-.54**	-.37**
5. CI	.81**	.62**	.65**	.61**		.26**	.42**	.33**	-.40**	-.30**	-.28**	-.56**	-.39**
6. WO	.23**	.33**	-.05	.24**	.17*		.45**	.23**	-.06	-.15*	-.01	.10	.13
7. RCon	.51**	.51**	.37**	.41**	.41**	.45**		.55**	-.35**	-.38**	-.24**	-.36**	-.15*
8. InC	.42**	.42**	.36**	.25**	.37**	.23**	.55**		-.48**	-.61**	-.33**	-.38**	-.17*
9. RClA	-.45**	-.37**	-.46**	-.33**	-.37**	-.06	-.35**	-.48**		.43**	.38**	.51**	.36**
10. ST	-.35**	-.35**	-.31**	-.18*	-.31**	-.15*	-.38**	-.61**	.43**		.31**	.38**	.15*
11. JC	-.36**	-.34**	-.43**	-.18*	-.27**	-.01	-.24**	-.33**	.38**	.31**		.45**	.34**
12. UWES	-.75**	-.60**	-.82**	-.57**	-.57**	.10	-.36**	-.38**	.51**	.38**	.45**		.68**
13. SL	-.52**	-.41**	-.58**	-.40**	-.41**	.13	-.15*	-.17*	.36**	.15*	.34**	.68**	

# BAT-Ecuador

	1	2	3	4	5	6	7	8	9	10
1. Burnout		.88**	.83**	.83**	.83**	.31**	-.48**	-.37**	-.55**	-.35**
2. EX	.88**		.62**	.58**	.57**	.36**	-.39**	-.37**	-.50**	-.25**
3. MD	.83**	.62**		.63**	.63**	.21**	-.41**	-.30**	-.48**	-.30**
4. CI	.83**	.58**	.63**		.75**	.18**	-.42**	-.28**	-.51**	-.36**
5. EI	.83**	.57**	.63**	.75**		.20**	-.41**	-.25**	-.48**	-.33**
6. Job Demands	.32**	.38**	.21**	.18**	.22**		-.06**	-.09**	-.05**	-.01
7. Social Resources	-.48**	-.39**	-.41**	-.42**	-.41**	-.06**		.62**	.57**	.38**
8. Job Content	-.37**	-.37**	-.30**	-.28**	-.25**	-.09**	.62**		.46**	.24**
9. UWES	-.58**	-.50**	-.48**	-.51**	-.48**	-.05**	.57**	.46**		.47**
10. Hope	-.35**	-.25**	-.30**	-.36**	-.33**	-.01	.38**	.24**	.47**	

BAT-23	Country Measurement Invariance	CFI	DCFI	RMSEA (90 C.I.)	DRMSEA
	Unconstrained Model	.982	-	.093 (.090 -0.095)	-
	Threshold Invariance	.976	.006	.094 (.092 -0.096)	.001
	Metric Invariance	.965	.006	.081 (.079 -0.083)	.005
	Scalar Invariance	.940	.011	.108 (.106 -0.110)	.027
BAT-12	Country Measurement Invariance	CFI	DCFI	RMSEA (90 C.I.)	DRMSEA
	Unconstrained Model	.982	-	.096 (.094 - .096)	-
	Threshold Invariance	.969	.013	.109 (.107 - .111)	.013
	Metric Invariance	.960	.009	.119 (.117 - .121)	.010
	Scalar Invariance	.960	.0	.119 (.117 - .121)	.0
	Uniqueness Invariance	.960	.0	.119 (.117 - .121)	.0

Same hierarchical structure in Brazil and Ecuador, no invariance  
**BAT 12: Invariance between Brazil and Ecuador during the COVID pandemic (n=8816)**

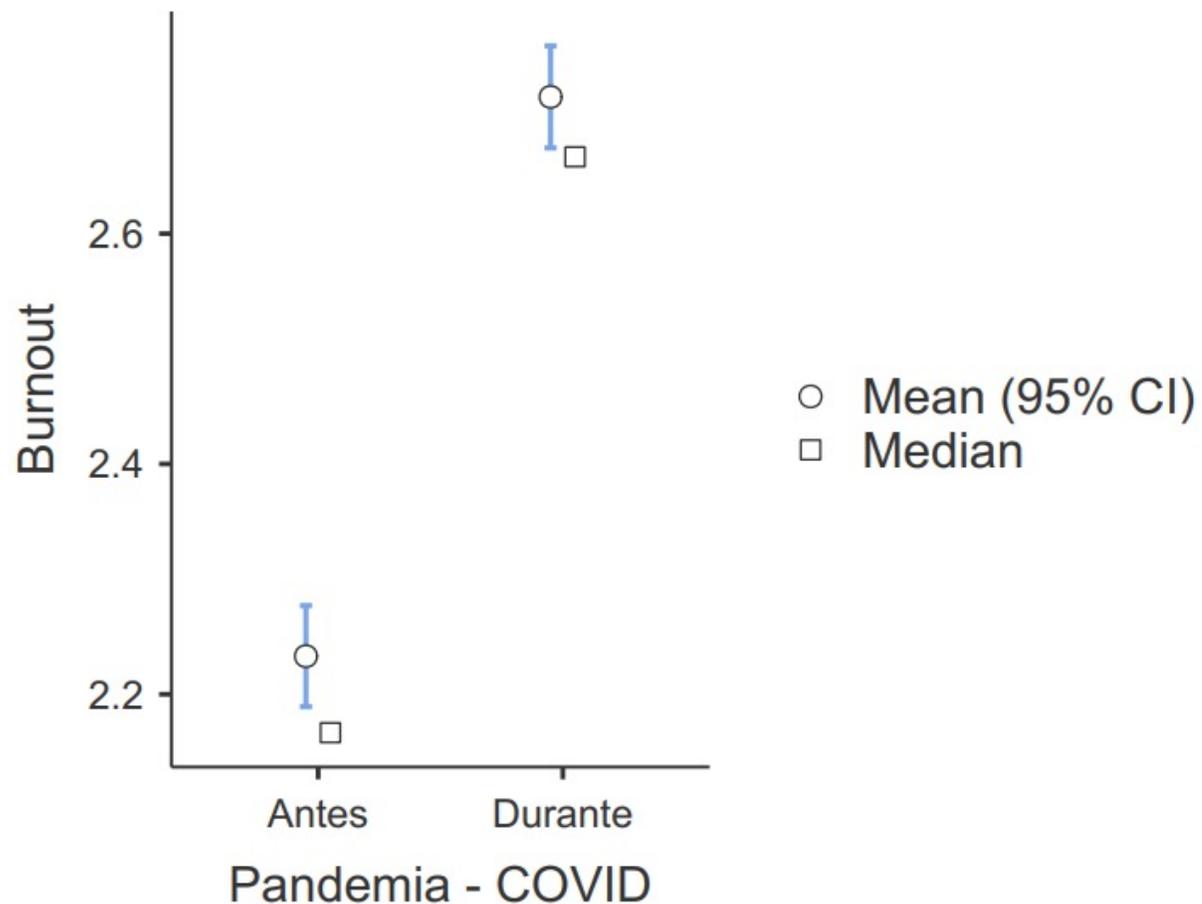
Ecuadorian workers - BAT-23, during COVID pandemic (n=7943)  
Brazilian sample - BAT-23 before and during COVID pandemic (n = 4162)

	Brazil	Ecuador	T test	Cohens' d
	M (SD)	M (SD)	t (df)	
Burnout	2.8 (.8)	1.9 (.7)	52.3* (3073)	1.2
Exhaustion	3.6 (.9)	2.5 (.9)	44.1* (3073)	1.1
Mental Distance	2.7 (1.0)	2.0 (.8)	49.6* (3073)	1.2
Cognitive Impairment	2.4 (.9)	1.5 (.8)	51* (3073)	1.2
Emotional Impairment	2.5 (.9)	1.6 (.8)	50.1* (3073)	1.2

BAT12 (n=12107): **Brazilian workers showed higher levels of burnout than the Ecuadorian workers**

# Brazil

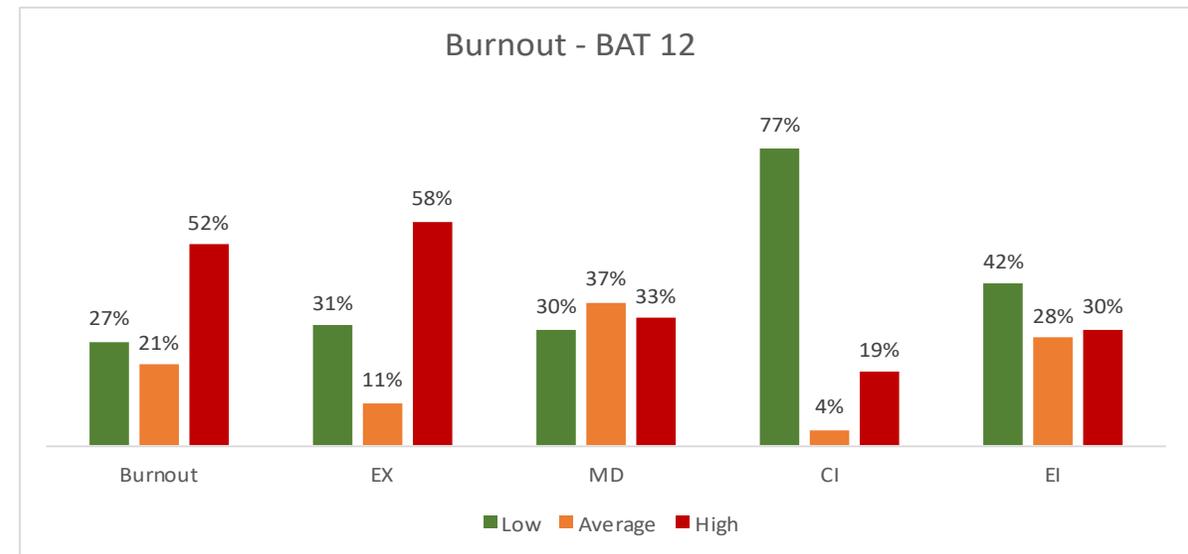
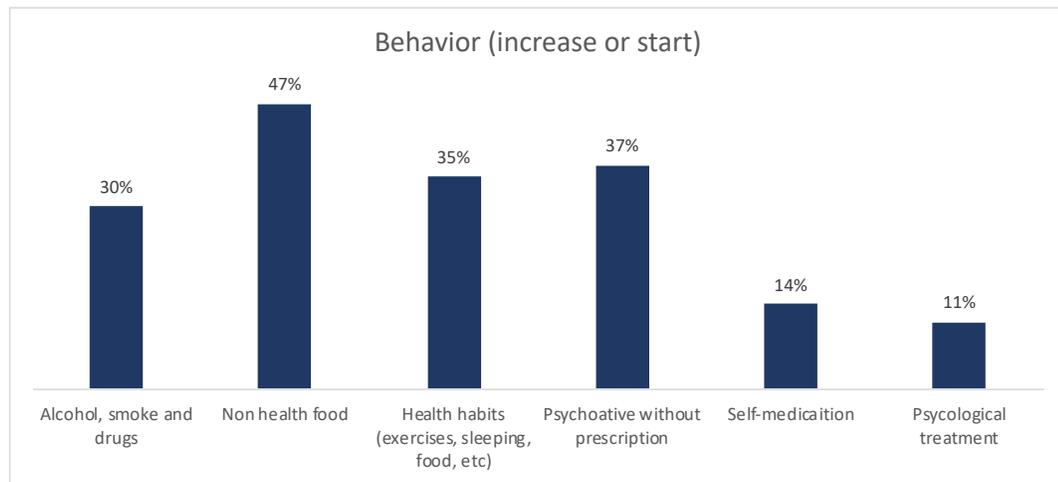
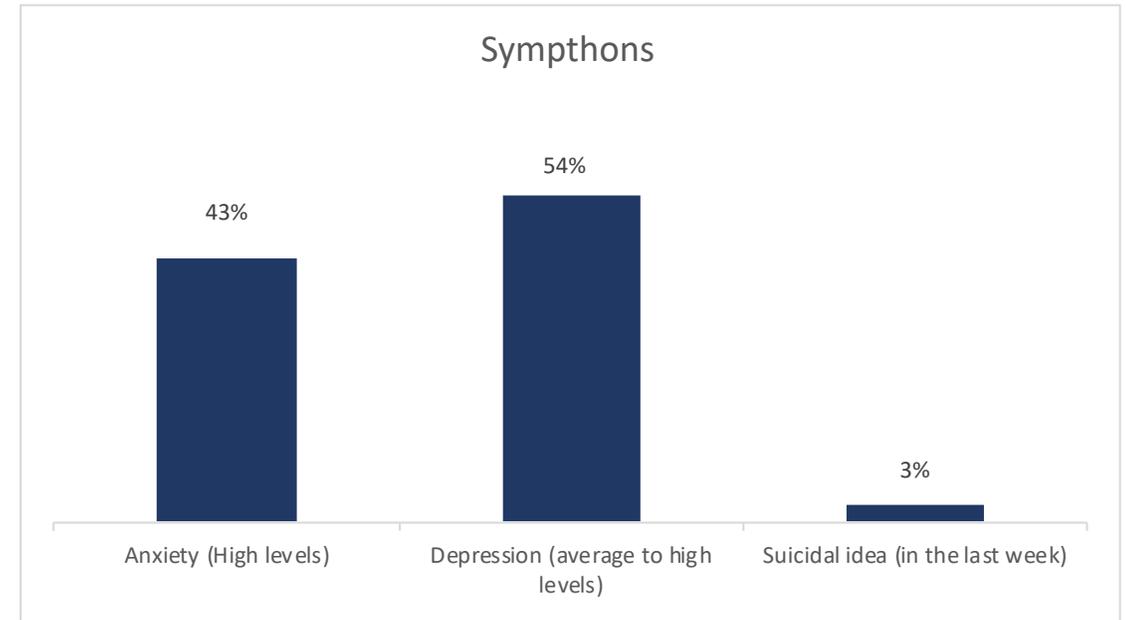
- Health workers in the pandemic present higher levels of *burnout* ( $M = 2,7$ ,  $DP = 0,6$ ), than those who were working before the pandemic ( $M = 2,2$ ,  $DP = 0,7$ )
  - $Z = 2670$ ,  $p < 0,001$ ,  $d = 0,70$



	Before	During	t test	Cohens' d
	M (SD)	M (SD)	t (df)	
Burnout	2.2 (.6)	2.8 (.8)	- 16.3* (755)	.8
Exhaustion	3.1 (.8)	3.6 (.9)	- 11.6* (755)	.6
Mental Distance	1.8 (.8)	2.7 (1.0)	- 17.5* (755)	.8
Cognitive Impairment	1.8 (.8)	2.4 (.9)	-15.8* (755)	.8
Emotional Impairment	2.1 (.7)	2.5 (.9)	- 9.9* (755)	.5

**BAT 12: Brazilian Health workers during the COVID pandemic showed higher levels of burnout**

Invariance between Brazilian Health workers before and during COVID pandemic 9



Brazilian Health workers in the pandemic (n=1798)

# ECUADOR

BAT 23	Army	Civil workers	T test	Cohens' d	BAT 12	Army	Civil workers	T test	Cohens' d
	M (SD)	M (SD)	t (df)			M (SD)	M (SD)	t (df)	
Burnout	2.0 (.7)	1.8 (.6)	5.4* (5265)	.1	Burnout	2.0 (.7)	1.8 (.6)	4.9* (5212)	.1
EX	2.6 (.8)	2.2 (.8)	17 * (5265)	.4	EX	2.6 (.9)	2.3 (.9)	14.4* (5212)	.3
MD	2.0 (.8)	1.7 (.7)	5.9* (5265)	.1	MD	2.1 (.8)	1.9 (.8)	4.7* (5212)	.1
CI	1.6 (.8)	1.5 (.6)	4.0* (5265)	.1	CI	1.6 (.8)	1.4 (.6)	4.6* (5212)	.1
EI	1.6 (.8)	1.5 (.6)	4.2* (5265)	.1	EI	1.6 (.8)	1.5 (.6)	4.6* (5212)	.1

Effect sizes of small magnitudes for burnout and its dimensions

BAT-23	Army and Civil workers	CFI	DCFI	RMSEA (90 C.I.)	DRMSEA
	Measurement Invariance				
	Unconstrained Model	.956	-	.116 (.115 - .118)	-
	Threshold Invariance	.953	.011	.112 (.111 - .114)	.005
	Metric Invariance	.955	.02	.108 (.107 - .109)	.004
	Scalar Invariance	.955	.0	.108 (.107 - .109)	.0
	Uniqueness Invariance	.955	.0	.108 (.107 - .109)	.0
BAT-12	Army and Civil workers	CFI	DCFI	RMSEA (90 C.I.)	DRMSEA
	Measurement Invariance				
	Unconstrained Model	.984	-	.072 (.094 - .097)	-
	Threshold Invariance	.979	.005	.098 (.095 - .100)	.026
	Metric Invariance	.977	.002	.097 (.095 - .099)	.001
	Scalar Invariance	.977	.0	.097 (.095 - .099)	.0
	Uniqueness Invariance	.977	.0	.097 (.095 - .099)	.0

Invariance between Ecuadorian Army and Civil workers

# Main findings

- Hierarchical structure of BAT, reliable instrument in Brazil and Ecuador
- Relations with external variables as expected
  - Positive associations with levels of demands and interpersonal conflicts
  - Negative relations with personal and work resources
- Brazilian workers present higher levels of burnout and its dimension than Ecuadorian workers
- Levels of burnout and its dimensions were higher among health workers in the pandemic
- Ecuadorian Army and civil workers present significant differences, but were small size

# Final comments

Despite the cultural similarities shared between Brazil and Ecuador as two Latin American countries, the results showed that the pattern of burnout relationships and its dimensions with work overload, job resources and dispositional hope present differences in their density and dynamics.

Work overload and mental distance played different roles in the impact on the burnout dimensions. The findings demonstrate the importance of tailoring interventions to prevent burnout to the work context.

In LA, we are working on

BAT Colombia: prof. Merlin Patricia Hinestroza (UFCSPA - Universidad del Rosario)

BAT Argentina: Candela Sánchez, Marco entre UFCSPA y Universidad del Gran Rosario)

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Thank you!

