

Does burnout affect clinical reasoning?  
An observational study among residents in general practice.

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# General problem

Does burnout modify clinical reasoning?

Theoretical frameworks :

Burnout *Maslach 1981*  
*Brenninkmeijer 2003*

Clinical reasoning *Audétat, Charlin and Pelaccia 2011*  
dual process theory,  
concepts of scripts. script concordance test (SCT)

# Specific problem and research question

Few publications on this subject (4 in 2018)

New data needed for a better understanding how BO would affect CR.

Specific research question : What are the links between burnout score and a result of script concordance test?

# Method and population

Cross sectional study

GP residents (last semester or after internship) at an evaluation session in the *Strasbourg medical faculty* (n=139)

2 assessing tools MBI-HSS+SCT

Statistical research with R system provided by the *Methods in Clinical Research Group* of the *Strasbourg university hospital* (GMRC)

# Results

1

Collected Sept.  
2017 in Strasbourg

2

128 attended the  
SCT test (139  
invited)

3

111 questionnaires  
MBI-HSS+SCT test  
(participation 86%)

4

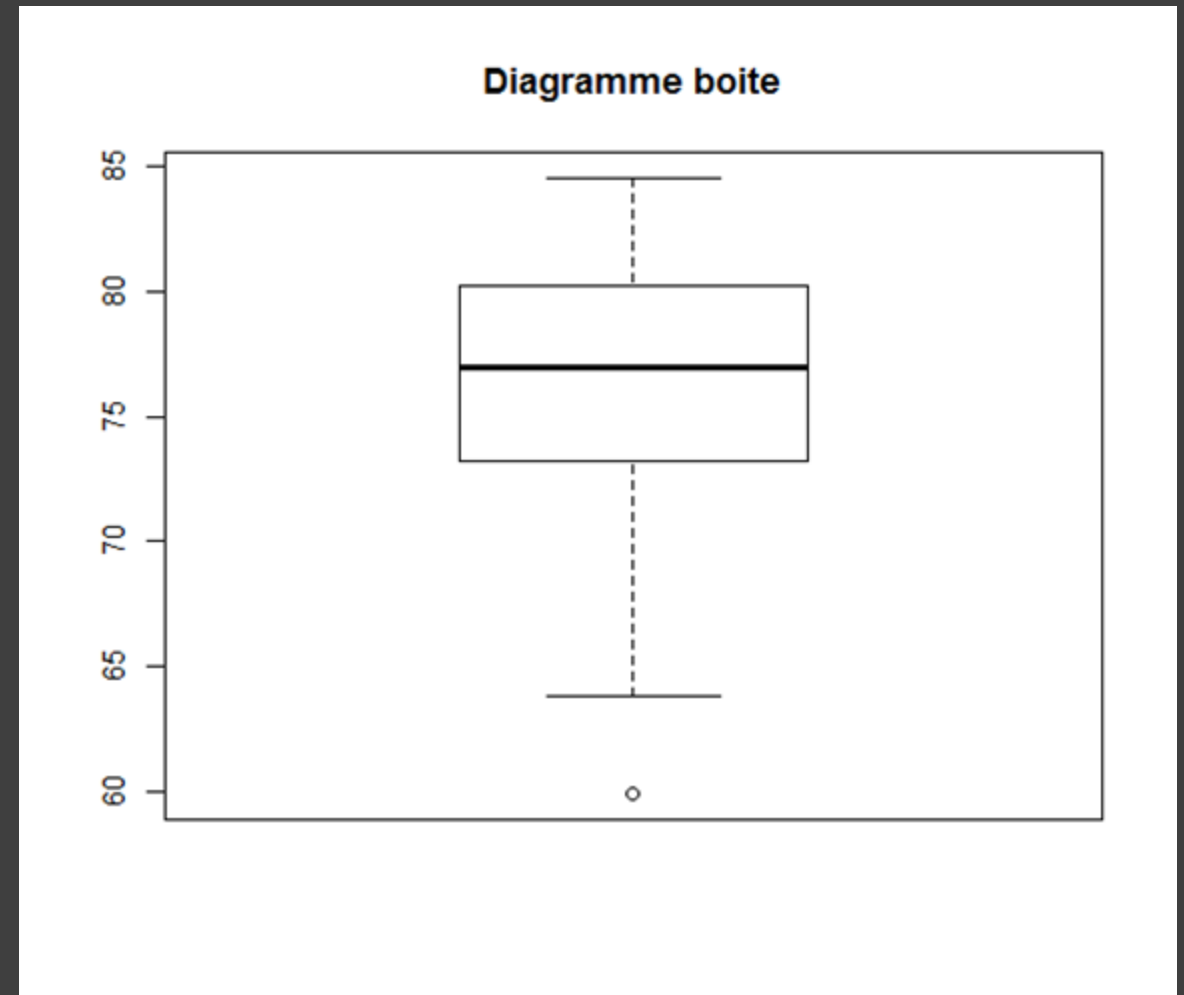
Data base  
complete Jan. 2018

# Results of Script Concordance Test

n	128
median	76.94
[Q1-Q3]	[73.27-80.22]
min	59.90
max	84.56



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# Results of Burnout

Cutoffs from the Maslach C,  
Jackson SE, Leiter MP. Maslach  
Burnout Inventory Manual. In: 3rd  
edition. Palo Alto, CA: Consulting  
Psychologists Press; 1996.

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	n(%)	
burnout	2007	2017
absent	87(53.37)	71(63.96)
light	43(26.38)	19(17.12)
medium	26(15.95)	19(17.12)
severe	7(4.29)	2(1.80)
Total	163(100.00)	111(100.00)

# Results of Burnout

Cutoffs from the exhaustion+1  
Brenninkmeijer V, VanYperen N.  
How to conduct research on  
burnout: advantages and  
disadvantages of a unidimensional  
approach in burnout research.  
Occup Environ Med. 2003 Jun  
1;60(suppl 1):i16–20.

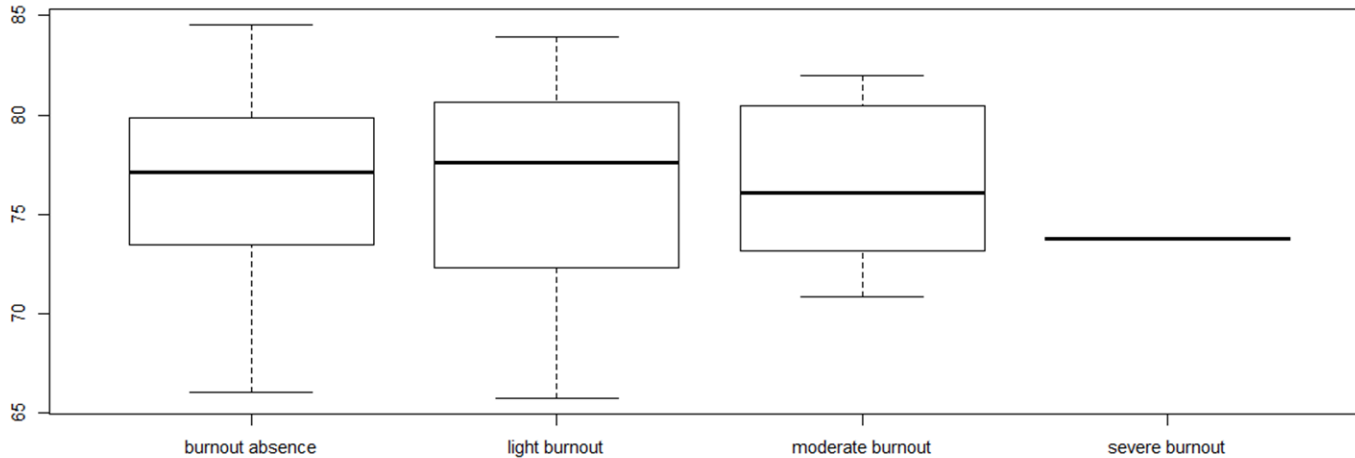


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	n(%)	
burnout	2017	2017
absent	88(79.28)	71(63.96)
+ light		19(17.12)
+ medium	23(20.72)	19(17.12)
+ severe		2(1.80)
Total	111(100.00)	111(100.00)



# Results links between BO and SCT



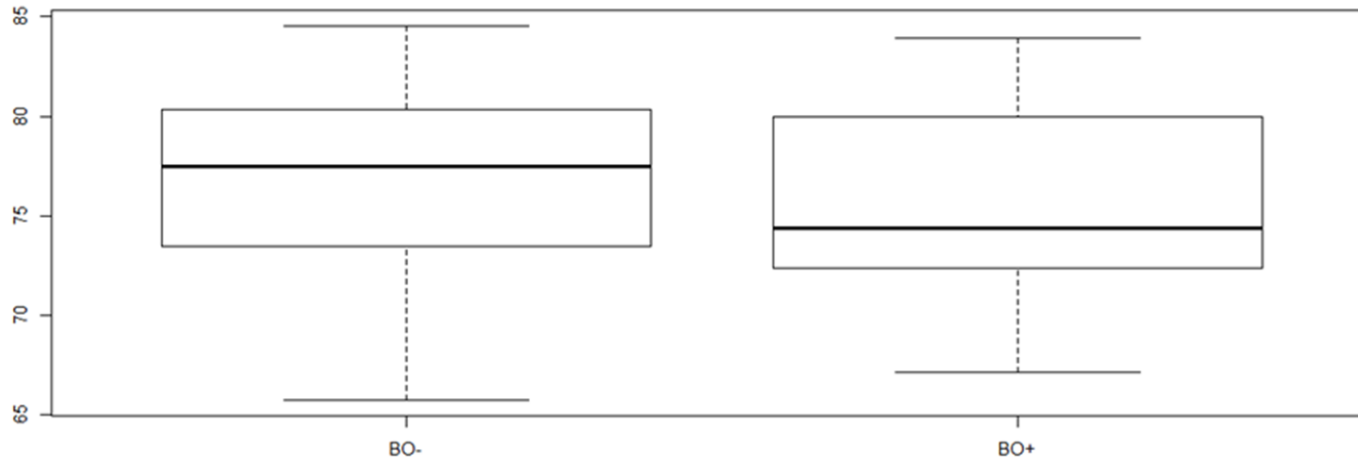
BO levels (n)	M [Q1-Q3]
Absent (71)	77.11 [73.44-79.86]
light (19)	77.62 [72.28-80.66]
Medium (19)	76.08 [73.14-80.44]
Severe (2)	73.77 [73.73-73.80]

Kruskal & Wallis test :  $p = 0.7936$

In the conditions of our study, we found no significant variation in the SCT test between the groups according to the BO level criterion.

# Results links between BO and SCT

BO (n)	M [Q1-Q3]
Absent (88)	77,48 [73,47-80,31]
Present (23)	74,40 [72.38-80.00]



Mann and Whitney test :  $p = 0.2243$

In the conditions of our study, we found no significant variation in the SCT test between the groups according to the BO level criterion.

# Discussion

In 32 first year residents, those with year-end burnout had a lower rate of medication prescription errors. Kwah et al. 2016

In 15 board certified internists and 10 resident physicians, accuracy of diagnostic and therapeutic reasoning did not differ between groups despite residents reporting significantly higher rates of sleepiness and burnout. McBee et al. 2017

In 388 paediatrics residents, depression was associated with a 3.0-fold higher rate of harmful errors, but there was **no statistically significant association** between depression and total or nonharmful errors or **between burnout and harmful, nonharmful, or total errors**. Brunsberg et al. 2019

# Discussion

No difference between the classical manual grading of burnout and the exhaustion+1 model regarding our question.

SCT explores mostly analytical processes of reasoning as BO could be more involved in non-analytical processes (« affective » part of clinical reasoning). Croskerry & Norman 2008

Questionable limits:

The authenticity of the reasoning task.

The setting of the study inside the institution.

# Perspectives

Explore the non analytical processes of clinical reasoning

Hypothesis generation,  
insight of the overall situation.  
Audetat et al. 2013

in a more authentic professional environment,  
with other tools of assessment, Objective  
Structured Clinical Examination (OSCE), direct  
observation.

Merci

