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**Working in post conflict zone is
as stressful as working home**
preliminary evidence from a multi sample PTSD screening

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1. INTRODUCTION

- Since the early 2000s, post-traumatic stress disorder (PTSD) has increasingly become part of people's consciousness around the world and this can be partially attributed to the impact of the wars in Afghanistan and Iraq.
- Individuals develop PTSD after experiencing a single or series of **traumatic events** that often involve **death, threat of death**, or **serious physical or psychological injury**, including threat to the physical integrity of oneself or others.
- Although lifetime risk for **exposure to PTE is extremely high** (60%-90%), the **prevalence of PTSD is relatively low** and approximately 9% of individuals exposed to any PTE report PTSD at some point across the lifespan (Breslau et al., 1998; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

1.1. PTSD rates of military personnel

- Reported rates varies between **1% and 60%**.
- Many factors: age, sex, time of deployment, type of mission, the outcome of mission, support after deployment.
- **The higher rates of PTSD** among people with chronic physical disabilities resulting from war-zone injuries.
- However, many veterans who have extensive combat exposure are **well adjusted and high functioning**
- Moreover, war-zone exposure can have **potentially salutary effects**. Elder and Clipp (1989) concluded that veterans with heavy combat exposure had the greatest gains in resilience and decreases in helplessness relative to less-exposed veterans.

1.2. Motivation of the study

- In the last years, mass-media became very interested to discuss this issue.
- Few years ago, Romanian Army has been accused by mass-media that do not recognise PTSD among veterans returned from war or post-war zones and this attitude was called the „NO Syndrome”.
- Few weeks ago, discussing the case of a military who committed suicide mass-media concluded that **he did it because he had PTSD, and he had PTSD because he went in Afghanistan few years ago.**
- The underlined message was that people who returned from international missions are **dangerous** (*for others or for themselves*) and institutions are not able to detect or treat them.

2. METHODS

- **Measure:**

- The military version of PTSD Checklist (PCL-4) has been used to screen for PTSD among military personnel

- **Participants:**

- 25 gendarmes returned from Afghanistan
- 225 gendarmes from 5 different zone working home in mobile units

- **Data Analysis:**

- Comparative analysis
- Bayesian Independence Samples T-Test

- **Hypothesis:**

- H0 – the differences between military working home and those returned from Afghanistan are not significant.
- H1 - the differences between military working home and those returned from Afghanistan are significant (Afghanistan > Home)

2.1. PTSD Checklist (PCL-M)

- The PCL-4 is a 17-item self-report measure reflecting DSM-IV symptoms of PTSD. It has a variety of purposes, including:
 - screening individuals for PTSD
 - aiding in diagnostic assessment of PTSD
 - monitoring change in PTSD symptoms
- The PCL can be scored to provide a **presumptive diagnosis**:
 - determine whether an individual meets DSM-IV symptom criteria as defined by at least 1 B item (items 1-5), 3 C items (items 6-12), and at least 2 D items (items 13-17).
 - determine whether the total severity score exceeds a given **normative threshold**.
 - combine methods (1) and (2) to ensure that an individual meets both the symptom pattern and severity threshold.

2.1. Suggested PCL cut-point scores

- **The goal of the assessment:** A lower cut-point is considered when screening for PTSD or when it is desirable to maximize detection of possible cases. A higher cut-point is considered when informing diagnosis or to minimize false positives.
- **The prevalence of PTSD in the target setting:** Generally, the lower the prevalence of PTSD in a given setting, the lower the optimal cut-point.

Estimated Prevalence of PTSD	Typical Setting	Suggested PCL Cut-Point Scores
15% or Below	e.g. civilian primary care, Department of Defense screening, or general population samples	30-35
16-39%	e.g. specialized medical clinics (such as TBI or pain) or VA primary care	36-44
40% or Above	e.g. VA or civilian specialty mental health clinics	45-50

3. RESULTS

3.1 Descriptive statistics for samples

Descriptive Statistics for Afghanistan sample

	Age	Experience	Missions	Months
Valid	25	23	25	25
Mean	37.08	12.74	1.84	19.48
Std. Deviation	5.62	5.02	0.94	11.86
Minimum	28.00	7.00	1.00	10.00
Maximum	48.00	23.00	5.00	60.00

Descriptive Statistics for all samples

	Job Experience					
	Brasov	Craiova	Ploiesti	Mures	Bacau	INT
Valid	51	65	33	21	52	23
Mean	11.75	13.1	12.24	13.71	13.04	12.74
Std. Deviation	5.44	5.36	4.29	6.44	6.14	5.02
Minimum	3.00	4.00	4.00	1.00	1.00	7.00
Maximum	22.00	29.00	23.00	23.00	26.00	23.00

3.2. Reliability Analysis of PCL

		95% Confidence Interval	
Research Lots	Cronbach Alpha	Lower Bound	Upper Bound
Brasov	.84	.77	.90
Craiova	.80	.72	.87
Ploiesti	.94	.90	.96
Mures	.96	.93	.98
Bacau	.95	.93	.97
Afghanistan	.78	.62	.89

3.3 PCL Results

	Mean	S.D.	% Confidence Interval for Mean		Min	Max
Afghanistan, N=25	18,84	2,90	17,64	20,04	17	27
Brasov, N=51	19,20	3,21	18,29	20,10	17	32
Craiova, N=65	19,06	2,91	18,34	19,78	17	28
Ploiesti, N=33	19,58	4,96	17,82	21,34	17	42
Mures, N=24	20,00	6,10	17,42	22,58	17	42
Bacau, N=52	22,37	8,78	17,42	24,81	17	55

Independent Samples T-Test

	t	df	p	Cohen's d	95% CI for Cohen's d	
					Lower	Upper
PCL	-1.05	248	0.29	-0.221	-0.634	0.193

Note. Student's t-test.

3.4. Test of Normality

- The entire variables have a deviation from the assumption of normality according to Shapiro–Wilk Normality Test.
- The null-hypothesis of this test is that the population is normally distributed, therefore **if the p-value is less than the .05 alpha level**, then the null hypothesis is rejected and **there is evidence that the data tested are not from a normally distributed population** (*Shapiro, Wilk, 1965*).

Samples	Shapiro-Wilk		
	<i>Statistic</i>	<i>df</i>	<i>Sig.</i>
Brasov	,728	51	,000
Craiova	,743	65	,000
Ploiesti	,575	33	,000
Mures.	,575	24	,000
Bacau	,664	52	,000
Afghanistan	,697	25	,000

3.5. Bayesian inference

- Taking into account that the scores of TLS on both samples present **significant deviation from the normal distribution**, I assumed that Bayesian inference would be more appropriate to test the difference between the two leaders.
- Bayesian inference is a method of statistical inference in which Bayes' theorem is used to update the probability for a hypothesis as more evidence or information becomes available.
- During the last years, using Bayes factors has become a **concrete and practical alternative to hypothesis testing** than using p values (Wagenmakers et.al., 2017).

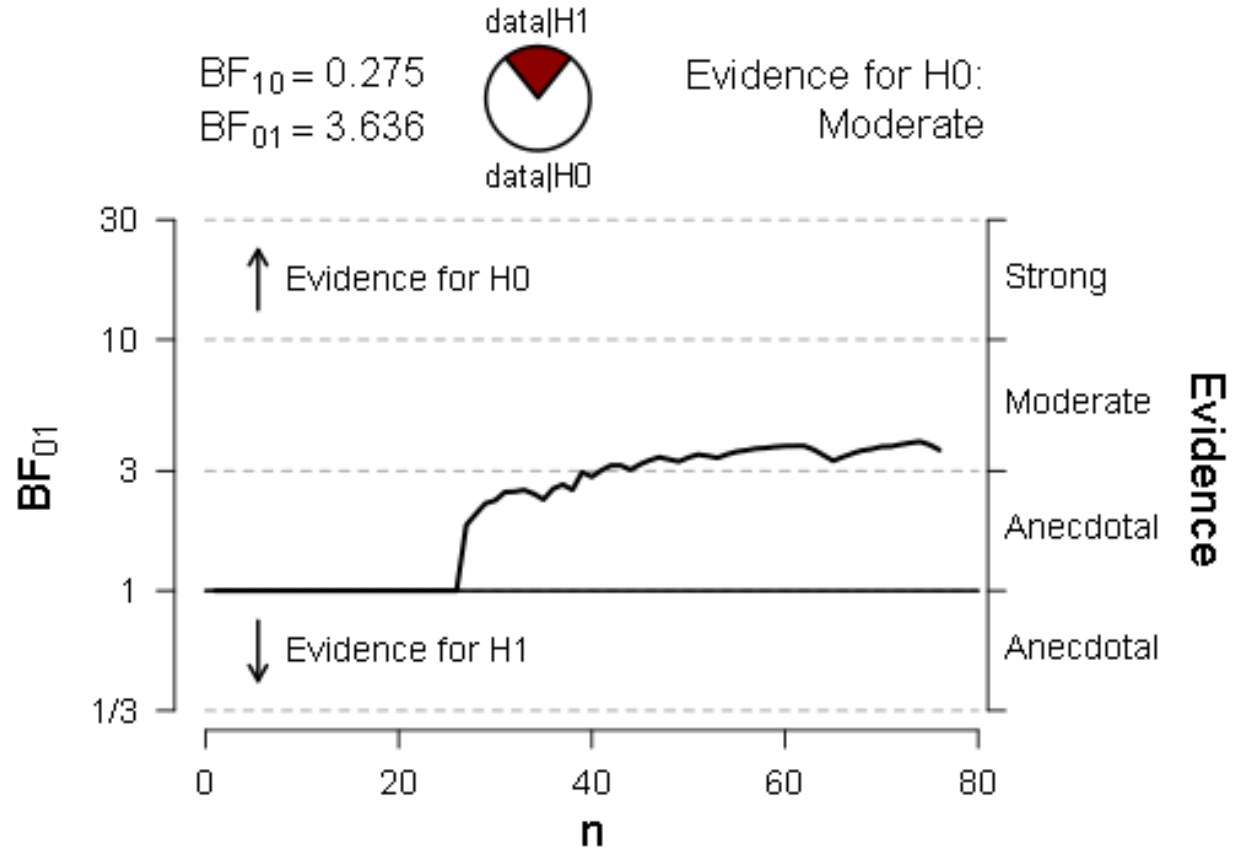
3.5. Bayesian inference

- The Bayes Factor quantifies the evidence in the data for the hypotheses under investigation. For instance,
 - if $BF_{01} = 10$, the support in the data is 10 times larger for H_0 than for H_1 .
 - if $BF_{10} = 10$, the support in the data is 10 times larger for H_1 than for H_0 .
- According to Jeffreys (1961), BF could be interpreted as substantial (0.5-1), strong (1-2) and decisive ($2 <$).
- According to guidelines presented by Kass and Raftery (1995) a Bayes Factor in the range:
 - 1–3 constitutes anecdotal evidence in favour of H_0 or H_1 ,
 - 3–20 constitutes positive evidence and
 - 20–150 strong evidence.

3.5. Bayesian Analysis of PCL Results

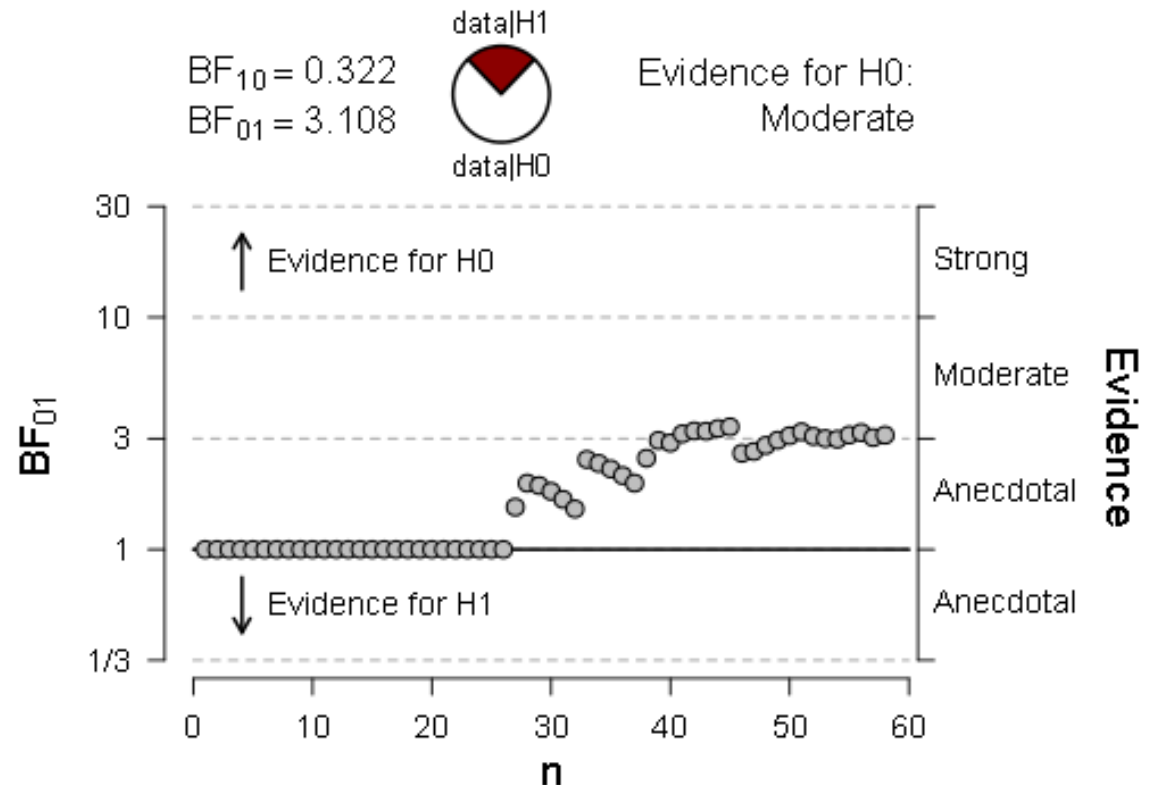
a) Afghanistan versus Mobile Unit 1

- Afghanistan : PCL=18,84
- Brasov: PCL=19,20



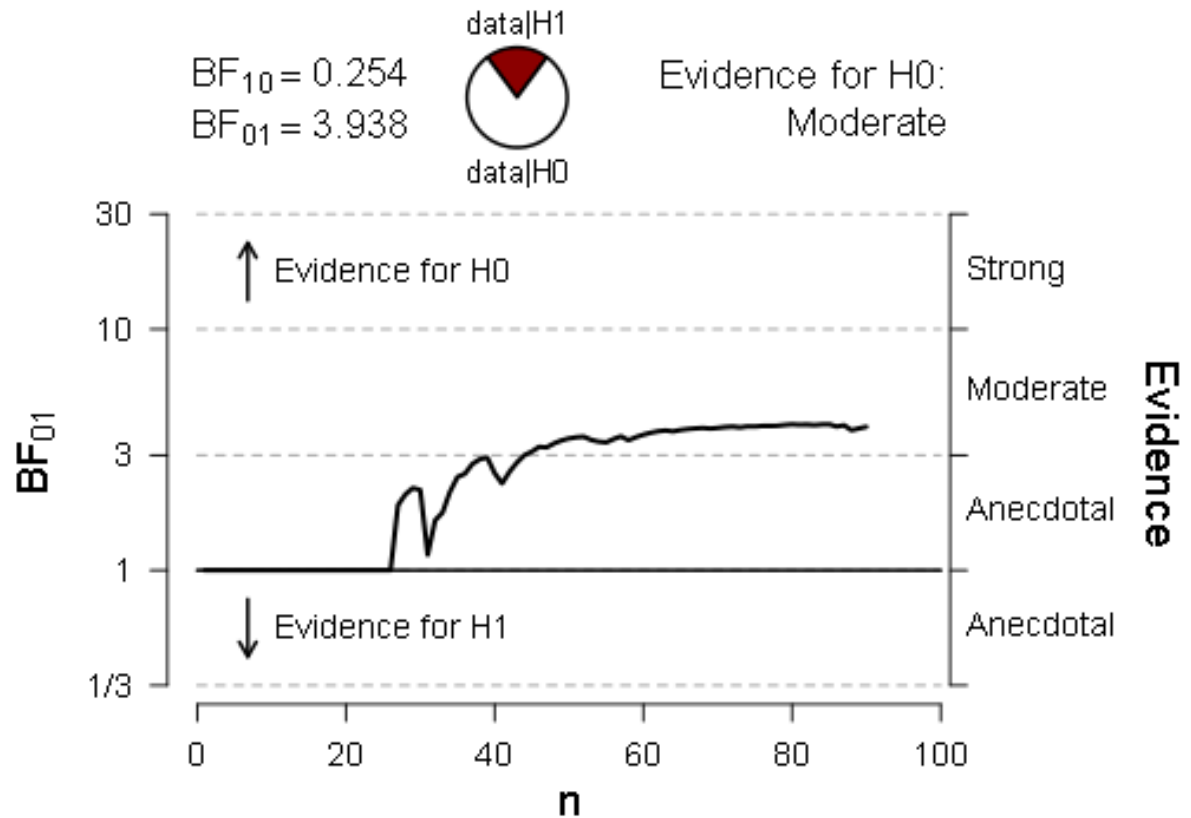
b) Afghanistan versus Mobile Unit 2

- Afghanistan : PCL=18,84
- Ploiesti: PCL=19,58



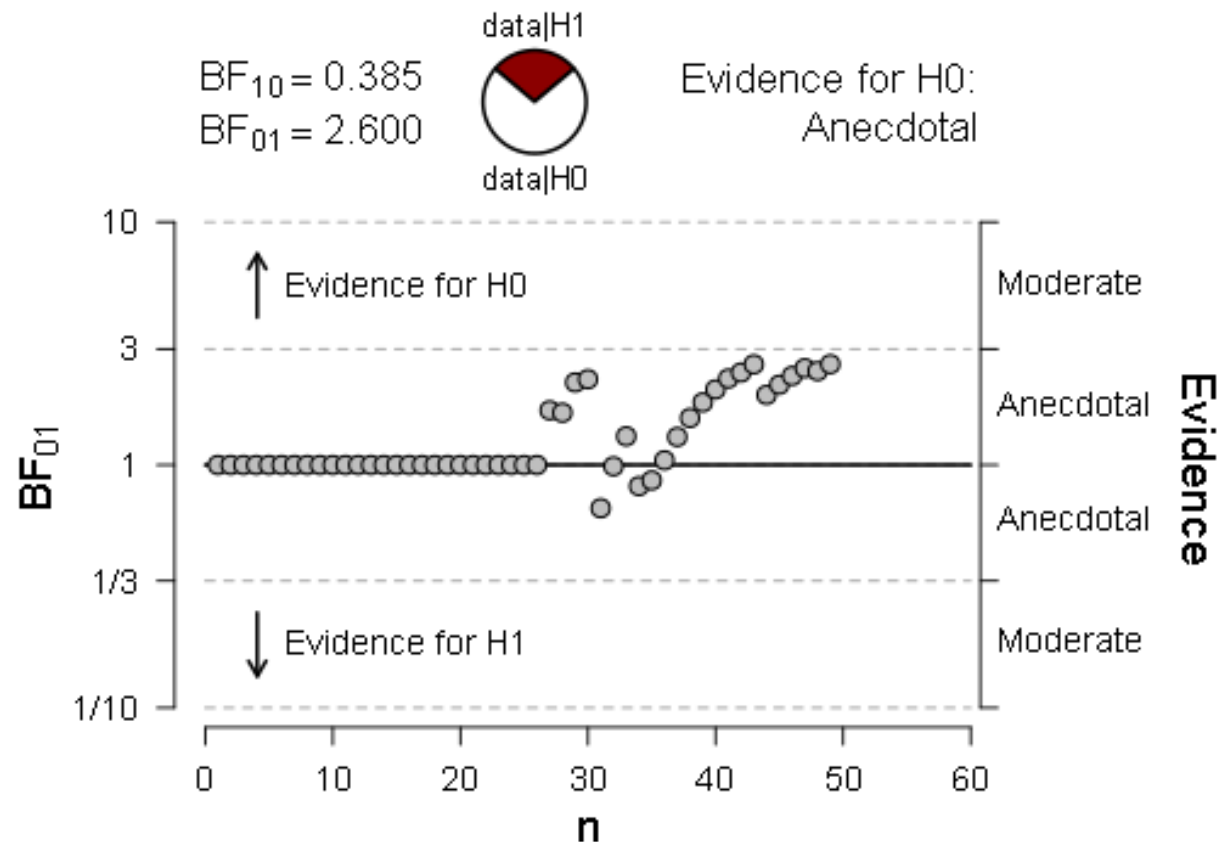
c) Afghanistan versus Mobile Unit 3

- AF Afghanistan G: PCL=18,84
- Craiova: PCL=19,06



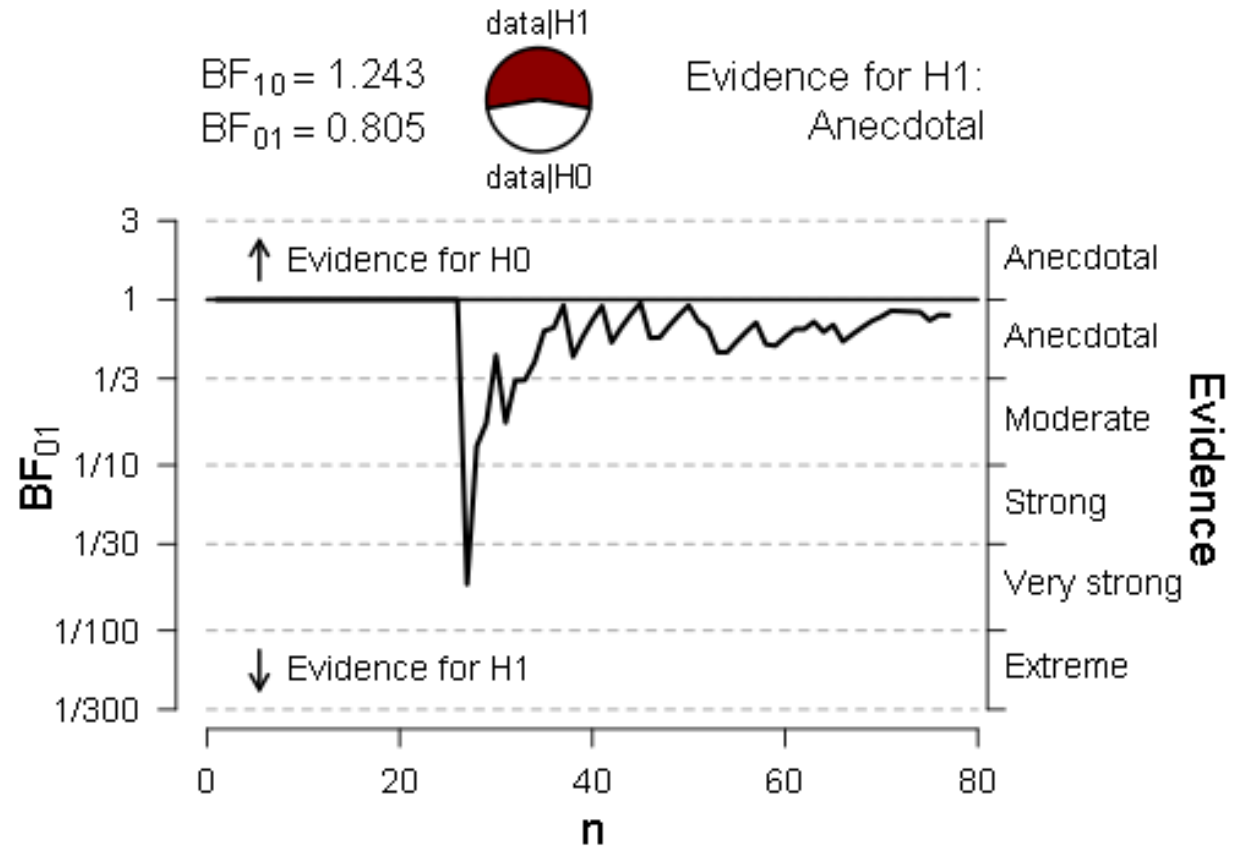
b) Afghanistan versus Mobile Unit 4

- Afghanistan : PCL=18,84
- Mures: PCL=20,00



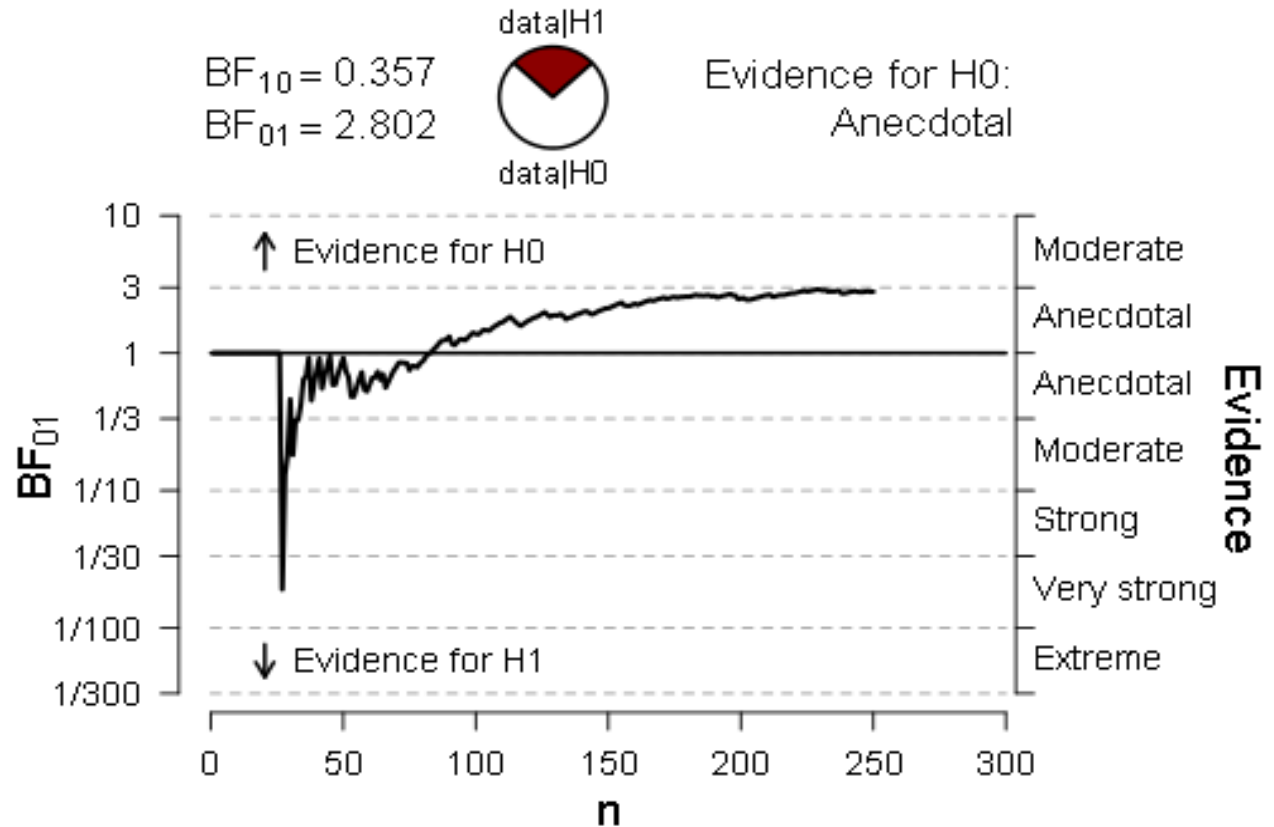
e) Afghanistan versus Mobile Unit 5

- Afghanistan: PCL=18,84
- Bacau: PCL=20,37



f) International versus National

- International N=25
- National Lot N=225



4. DISCUSSION

- The PCL means of gendarmes returned from Afghanistan are not significantly different than the PCL means of gendarmes who are working home.
- Also, there are no significant differences between different categories of military deployed in Afghanistan:
 - Male versus Female
 - Old versus Younger
 - High experience versus Low experience
 - 1 mission versus 2 missions
 - Less months versus More months

4.1. Possible explanations

- Voluntary activity.
- Long period of training (*selections, courses, exams*)
- Good salary
- Mentoring activities (*not combat zone*)
- Well treated by colleagues during the mission
- Valuable professional experience
- High potential to be promoted after deployment
- Challenging life experience

4.2. Dilemmas & Precautions

- **Missed PTSD.** The diagnosis of PTSD is often missed in primary care settings (50%). The physicians should become better prepared to recognize this disorder in their patients and initiate proper treatment or appropriate referral.
- **Partial PTSD.** Stating that a significant number of individuals who once had PTSD no longer meet diagnostic criteria, however, does **not mean that such individuals are free of symptoms.** Although recovery does occur, many individuals continue to suffer from partial PTSD. In many cases, **these residual symptoms may seriously impair marital, familial, vocational, or social functioning.**

4.2. Dilemmas & Precautions

- **Atypical Pattern of PTSD.** Longitudinal studies show that the course of PTSD is quite variable. Although some trauma survivors may become free of most or all PTSD symptoms, others may develop a persistent mental disorder marked by relapses and remissions. Between these two extremes are a number of disease patterns (***acute, delayed, chronic, and intermittent or recurrent forms of PTSD have been well documented***).
- Op den Velde et al' described three life-span developmental courses among World War II Dutch resistance fighters:
 - a subacute form that gradually becomes chronic,
 - a delayed form with onset 5 to 35 years after the end of World War II, and
 - an intermittent subtype with relapses and remissions



5. REQUESTS & QUESTIONS

- Studies about PTSD rates in your countries
- Recommendation about dealing with mass-media

THANK YOU

For additional information
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