

***The Relationship Among  
Psychophysiological, Clinical and  
Psychosocial Indicators of Job Stress  
in Portuguese Health Professionals:  
Preliminary Findings***

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***SOCIO-DEMOGRAPHIC  
CHARACTERISTICS (N=60)***

- **FEMALE : 82%; MALE : 18%**
- **Mixed health professional sample: 32 NURSES;  
11 ADMINISTRATORS, 10 AUXILIARY STAFF,  
7 OTHER**
- **AVERAGE AGE: 41 years**
- **73% MARRIED**
- **NUMBER OF YEARS IN THE PROFESSION: 17  
(SD=9.5)**
- **NUMBER OF YEARS IN PLACE OF WORK: 10.9  
(SD=8.99)**

## ***GOALS***

- ***Second phase of data collection from larger study aimed at investigating the efficacy of a stress management program for health professionals (Bial Foundation Project n°41/98)***
- ***Use of psychosocial, psychophysiological and clinical outcome measures at four moments***

## ***GOALS***

- ***Phase 1 – General Stress Diagnosis***  
*Comprised a general stress diagnosis offered to the entire staff of a central hospital in the northern region of Portugal.*
- ***Phase 2 – Pre-test***  
*The subjects that reached the cut off 2/3 on GHQ12 were given the opportunity to participate in an in depth stress evaluation consisting of psychosocial, clinical and psycho-physiological measures. Half will be randomly assigned to an experimental group (stress management intervention) and the other half to a control group (wait list).*

## ***GENERAL STRESS DIAGNOSIS RESULTS***

Table 1 : Comparison of stress among different Health Professionals

Type of Health Professional	Number	% of Stress*
Physician	104	34
Nurse	312	39.7
Administrative	74	45.9
Auxiliary Staff	185	34.6
Total	705	38.8

\* Stress was measured using the GHQ-12 (Goldberg, 1992), (2/3 caseness cut-off)

## ***PRE-TEST***

### ***QUESTIONS:***

- ***1. What is the relationship between self-report and objective indicators of stress?***
- ***2. What is the relative importance of psychosocial variables in predicting self-report and objective indicators of stress?***

## ***METHODOLOGY***

- ***Psychophysiological data collected during stress protocol:***
  - ***11 events recorded (HR, BP, SCL recorded)***
    - ***Selection of stressful event at work (to recall later)***
    - ***Relaxation tape***
    - ***Recall of stress event***
    - ***Spontaneous relaxation***
    - ***Mental task***
    - ***Baseline***

## ***METHODOLOGY***

- ***Clinical data: Cortisol (morning)***
- ***Self-report data:***
  - ***Sources of stress questionnaire***
  - ***Stress responses (Brief Personal Survey, GHQ12)***
  - ***Interpersonal Behavior Survey (Aggressiveness and Assertiveness scales)***
  - ***Coping style (Ways of Coping Questionnaire)***

## ***SUB-SCALES (BPS)***

### ■ ***Stress Responses***

- *health distress (somatic complaints)*
- *pressure-overload*
- *anger-frustration*
- *anxiety*
- *depression*

## ***QUESTION 1 RESULTS***

- ***No significant correlations were found between the subjective indicators of stress (GHQ12 and BPS) and the baseline and all event measures taken during the stress protocol (HR, BP and SCL)***
- ***Exceptions:***
  - *Denial and Diastolic BP at relaxation ( $r=.36$ )*
  - *Anger and SCL for all 11 events ( $r$  range =  $-.26$  to  $-.33$ )*

## ***QUESTION 2 RESULTS***

- ***No significant psychosocial predictors (Sources of stress, interpersonal behavior, coping style) found for the clinical and psychophysiological indicators of stress :***
  - ***Cortisol levels***
  - ***Diastolic and systolic BP at baseline and at stress events***
  - ***HR at baseline and stress events***
  - ***SCL at baseline and stress events***

## ***QUESTION 2 RESULTS***

- ***No significant psychosocial predictors (Sources of stress, interpersonal behavior, coping style) found for the self-report measures of stress :***
  - ***GHQ-12***
  - ***Stress responses:***
    - ***physical symptoms***
    - ***anxiety***
    - ***anger***

## ***QUESTION 2 RESULTS***

### ■ ***Significant predictors for stress responses:***

- ***Denial***
  - *intensity of the sources of job stress in the last month (Adj.  $R^2=.055$ ;  $r=.21$ )*
  - *Interpersonal behavior ( $R^2$ Change=.16)*
  - General Aggressiveness:  $r = -.35$*
- ***Pressure/Overload***
  - *Coping Style ( $R^2$ Change=.18)*
  - Suppression Coping:  $r=.38$*
  - *Interpersonal Behavior ( $R^2$ Change=.10)*
  - General Aggressiveness:  $r=.32$*

## ***QUESTION 2 RESULTS***

### ■ ***Significant predictors for stress responses:***

- ***Depression***
  - *Intensity of sources of job stress in the last month (Adjusted  $R^2=.11$ ;  $r=.36$ )*
- ***Guilt***
  - *Suppression Coping style ( $R^2$ Change=.18;  $r=.29$ )*
- ***Loss of Control***
  - *Intensity of sources of job stress in the last month (Adjusted  $R^2=.09$ ;  $r=.33$ )*

## ***CONCLUSIONS***

- ***The lack of relationship between psychological assessments and psychophysiological measures of stress may be explained by the need to aggregate responses over multiple testing sessions (Manuck et al., 1993).***
- ***SCL measures seem to be related to self-report of anger as a stress response over multiple induced stress stimuli and may constitute a more useful stress measure for this kind of response than HR or BP (Furedy, 1993).***

## ***CONCLUSIONS***

- ***The lack of significant predictors for the objective measures may be due to interpersonal behavior and coping styles being more stable characteristics than the psychophysiological single-session measures and the need to correlate those with a pattern of measures over time.***



## ***CONCLUSIONS***

- ***Psychosocial variables were significant predictors of several self-report measures of stress, especially for denial, depression, guilt and loss of control.***
- ***The intensity of the sources of stress in the last month, suppression coping and general aggressiveness were the most important predictors and should be considered in explanatory models.***