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Paolo Roma[1], Edoardo Monaco[2]†, Claudio Prestigiacomo[2], Marco Innamorati[3], Martina De Mattia[1], Stefano Ferracuti[1]

Psychopathological characteristics of adjustment disorder among outpatients with and without work related stress

Sapienza University - Rome, Italy, School of Medicine and Psychology; Sant'Andrea Hospital, Rome
[1] NESMOS Department (Neurosciences, Mental Health, and Sensory Organs)
[2] Medical Surgical Sciences Translational Medicine Department; Occupational Medicine
[3] Università Europea di Roma

ABSTRACT. Study's objective is to assess psychopathological profiles in outpatients with a diagnosis of Adjustment Disorder (AD) who had positive evaluations of work related stress (AD-W) versus those exposed to other stressful life events (AD-O). The participants were 70 outpatients with AD-W, compared to 71 outpatients with AD-O, admitted at the Unit of Psychiatry and Occupational Medicine, Sant'Andrea Hospital, Rome. Patients completed the Hamilton Rating Scale for Depression (HRSD), the Hamilton Anxiety Rating Scale (HAM-A), the Minnesota Multiphasic Personality Inventory - 2 (MMPI-2), and the Rorschach test. The emerged data underline that patients with AD-W scored significantly higher than patients with AD-O in the MMPI-2 scales D, Pd, Pa, FAM, and in the Rorschach anxiety scale (Sum Y). Finally patients with AD-W showed greater levels of psychopathology compared to patients with AD-O. Further studies assessing the harm associated with stress might allow a better understanding of the diagnosis and therapeutic implications of AD.

Key words: *Adjustment Disorder, work related stress, Rorschach, MMPI-2.*

RIASSUNTO. Lo studio si propone di valutare i profili psicopatologici in pazienti ambulatoriali con una diagnosi di Disturbo dell'Adattamento (AD), che risultano positivi alla valutazione dello stress occupazionale (AD-W), rispetto a coloro che hanno vissuto altri eventi di vita stressanti (AD-O). I partecipanti erano 70 pazienti ambulatoriali con AD-W, paragonati a 71 pazienti ambulatoriali con AD-O, afferenti all'Unità di Psichiatria e di Medicina del Lavoro dell'Ospedale Sant'Andrea di Roma. Ai pazienti sono state somministrate la Hamilton Rating Scale for Depression (HRSD), la Hamilton Anxiety Rating Scale (HAM-A), il Minnesota Multiphasic Personality Inventory - 2 (MMPI-2) ed il Test di Rorschach. I dati emersi evidenziano che i pazienti con AD-W ottengono punteggi significativamente più alti rispetto ai pazienti con AD-O nelle scale *D*, *Pd*, *Pa*, *FAM*, dell'MMPI-2 e nella scala dell'ansia (*Sum Y*) del Test di Rorschach. Infine pazienti con AD-W mostrano più alti livelli di psicopatologia, rispetto ai pazienti con AD-O. Ulteriori studi riferiscono che il danno associato allo stress permetterebbe di comprendere meglio la diagnosi e le implicazioni terapeutiche del AD.

Parole chiave: Disturbo dell'Adattamento, stress occupazionale, Rorschach, MMPI-2.

Introduction

The European Agency for Safety and Health at Work says that the problem of work-related stress is far reaching: today more than one in four workers suffer from work-related stress and a percentage between 50% and 60% of all lost working days is related to the effects of stress.

The evaluation of risk of work-related stress has become compulsory with the Legislative Decree no. 81/2008, Article 28.

According to the Interconfederal Agreement concluded on 9 June 2008, the methodology to quantify the level of stress as described in the Circular of the Ministry of Labour on 18 November 2010, consists of two phases: a preliminary phase to detect the objective and verifiable indicators and if problems arise, a second phase that involves the evaluation of subjective perception of workers compared to the same factors, through questionnaires, focus groups, semi-structured interviews.

These psychosocial risks were defined as "those aspects of work design and the organisation and management of work, and their social and environmental contexts, which have the potential for causing psychosocial or physical harm" (1).

However the Legislative Decree 81/08, doesn't specifically deal with bullying in the workplace, but this can be considered a manifestation of the discomfort associated with psychosocial risks. In assessing the risk of work-related stress, we take into account aspects of work (content or context) that can represent elements of attack to one or more persons as abusive acts, or they can represent a fertile ground for his development. Similarly the presence of cases of mobbing in a firm should be considered as sentinel event, indicator will then, of possible work-related stress. Inside the Hospital Sant'Andrea it's present a working group dedicated to the diagnosis of diseases and work-related to stress and bullying constituted by the Occupational Medicine Unit, the Unit of Psychiatry and the Unit of Internal Medicine, which identified the following diagnostic path:

– A specialist examination in Occupational Medicine: for each patient is drawn up a medical record with the accurate collection of family anamnesis, social, phys-

iological, pathological next (with particular attention to psychosomatic diseases related to occupational stress), pathologies remote and working. With the working anamnesis is specifically requested to the patient to define the time of onset, duration and type of episodes "hostile" and any unusual problems in relations with the employer and / or colleagues.

Afterwards it is performed a physical examination to identify any pathologies of organ related to complaints of the patient.

In consideration of the difficulties to verify the correlation among the related vexatious actions and the pathologies observed, is essential that the patient at the time of the visit provides objective documentation of the working facts and all related pathologies.

– A psychiatric specialist examination:
consisting of an interview to identify any psychiatric disorders and in the administering of the MMPI-2 (Minnesota Multiphasic Personality Inventory - 2).
– A specialist examination in internal medicine:
for the evaluation of intercurrent systemic diseases (particularly with regard to endocrine disorders and stress-related).
– A blood test:
in both sexes to measure out the baseline at 8 o'clock in the morning: ACTH, cortisol, DHEA-S, GH, IGF-1, Prl, FSH, LH, TSH, testosterone and in women also the estradiol and androstenedione.

The final act is a certification of detection of disorders associated to work-related stress and / or compatibility with bullying released when you believe you can correlate the psychic pathology diagnosed as adjustment disorder, anxiety disorder or depressive disorder, post-traumatic stress, working with incidents reported and documented.

Adjustment disorder (AD) is a psychiatric disorder included in both the ICD-10 (2) and the DSM-IV-TR (3). The AD is a maladaptive reaction to identifiable psychosocial stressors or to changes in life circumstances with the development of clinically significant emotional or behavioural symptoms, as well as significant impairment in social or occupational functioning. Compared to other psychiatric disorders, AD is a marginal or transitional illness category, typically associated with less severe anxiety and depression symptoms, a lower level of social impairment, a reasonably good short-term prognosis, and a tendency to spontaneous remission (4; 5; 6; 7; 8). Nevertheless, there is a high association between AD and suicidal behaviour (9; 10; 11; 12). The diagnosis of AD is widely used in psychiatric consultation services perhaps because is a non-stigmatizing label. Estimated incidence is from 5 to 22% (13; 14; 15); the prevalence ranges from 11% to 18% in primary care and from 10% to 35% in consultation liaison psychiatry (5).

An extreme type of social stressor is psychological harassment at the workplace, which is commonly known as work related stress or bullying. Work related stress is associated with psychological distress and a poor psychological and physical health (16). In most cases, individuals who have experienced work related stress that are admitted to a psychiatric department are diagnosed with AD (17; 18). It was also found that individuals with AD exposed to work related stress have a specific psychopathological and personality pattern (17; 19; 20). According to Leymann (21) the condition of work related stress is associated with severe social, psychological, and psychosomatic difficulties with potential fatal consequences.

It is possible that different stressors could produce different psychological profiles in AD patients. In depression, Keller et al. (22) and Kendler et al. (23) found different psychopathological patterns related to different categories of adverse life events. We hypothesized differences in the psychopathological characteristics between patients with AD who had a verified history of psychological harassment at the workplace (AD-W group) and patients who had AD due to other life-stressors (e.g. medical condition, death of loved ones, divorce, etc.), (AD-O group). Such a comparison might be important in the assessment of harm associated with stress and it might allow a better understanding of the diagnosis and its clinical therapeutic implications.

Methods

Participants

Participants were 70 outpatients AD-W who had positive forensic evaluation of work related stress (37 men and 33 women; age: $M = 48.69$, $SD = 8.51$, *range* 29-64 years) compared to 71 controls with AD-O (33 men and 38 women; age: $M = 48.66$; $SD = 9.57$, *range*: 25-67 years). They were consecutively admitted from February 2009 to April 2010 at the Unit of Psychiatry, Sant'Andrea Hospital, Rome.

General inclusion criteria were a DSM-IV diagnosis of a Adjustment Disorder with anxiety and depressive symptoms, which lasted at least 12 month (DSM-IV-TR code: F43.22), a total number of responses at the Rorschach test of 13 or higher (minimal criteria for the application of the Exner's Rorschach Comprehensive System [CS]; 24), T-scores at the validity scales of the MMPI-2 (*VRIN, TRIN, L, F* and *K*) not higher than 75 points, and scores not higher than 31 points at the cannot-say scale of the MMPI-2. Exclusion criteria were any condition affecting the ability to complete the assessment, including the denial of informed consent, major disorders of the CNS (for example, dementia), and other DSM-IV-TR Axis I and II disorders, before and after work related stress was ascertained. Specific inclusion criteria in work related stress group (AD-W patient) were white collar employment and a court ruling verified history of psychological harassment at the workplace lasting at least 12 months among individuals in the same workplace for at least 5 years. Specific inclusion criteria in no work related stress group (AD-O) were AD lasted at least 12 month not due to working problems. All patients accepted to participate in the study voluntarily, without payment, and gave their informed consent to the research. The study protocol was approved by the local Institutional Review Board (IRB) in January 2009.

Procedures

Psychiatric diagnoses were made by a senior psychiatrist, blind to the results of the psychometric assessment, using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; 25). Another expert psychiatrist, blind to other results and blind to the aim of this study, submitted the Hamilton Rating Scale for Depression (HRSD; 26) and the Hamilton Anxiety Rating Scale (HAMA; 27) to all participants. A clinical psychologist, blind to other results and blind to the aim of the study, submitted the Minnesota Multiphasic Personality Inventory-2 (MMPI-2; 28) and the Rorschach test, according to the Exner's Comprehensive System (24).

Measures

The HRSD (26; 29) is a 17-item scale that employs different scoring procedures, with nine items scored on a 5-point likert-scale (0 [*absent*] -4 [*severe*]), and the other eight items on a 3-point scale (0 [*absent*] -2 [*severe*]). This measure requires clinicians to consider the frequency and intensity of various symptoms over the past week and to assign a rating value for each item. A higher score represents an increase in symptom severity. The measure has acceptable psychometric properties (30).

The HAMA (27) is a 14-item rating scale, that evaluates the physical, psychological and behavioral aspects of anxiety. This measure requires clinicians to consider the frequency and intensity of various symptoms over the past week and to assign a rating value to each item. A higher score represents higher symptom severity. Shear et al. (31) have reported high interrater and test-retest reliability. Also internal consistency estimates (α= .92) are excellent (32).

The MMPI-2 (28) is a self-report questionnaire that consists of 567 items that require a true or false response. A number of studies have reported the psychometric properties of the MMPI-2 (33; 34). In this study, we selected the following MMPI-2 clinical scales that are directly related to anxiety and depression symptoms, irritation, and working problems: *Hs* (Hypochondriasis), *D* (Depression), *Hy* (Hysteria), *Pd* (Psychopathic Deviance), *Pa* (Paranoia), *Pt* (Psychasthenia), *WRK* (Work Interference), *FAM* (Family Conflict).

The Rorschach Test consists of 10 inkblots (5 in black and white and 5 containing colors). The most commonly used system (35) for administering, scoring, and interpreting Rorschach responses is the CS (24; 36). The CS scoring of the responses constitutes the basis for the Structural Summary (24). In this study, we used the three shading determinants (*SumT, SumV, SumY*), the acromatic color (*SumC'*) and the depression index (*DEPI*), all variables related to anxiety, depression symptoms, emotional disarray, and irritable affect. Beyond the common element, the following are the characteristics of each variable of Rorschach test that we decided to analyze (definitions from Exner; 24). *SumT* (Sum of texture response) refers to the need for closeness. *SumV* (Sum of vista response) signals the presence of discomfort and possibly even pain produced by a kind of ruminative introspection which is focusing on perceived features of the self. *SumY* (Sum of diffuse shading) is associated with feelings that are prompted by a sense of helplessness or inability to make responses. *SumC'* (Sum of achromatic color) suggests emotional distress, feelings of depression, and reduction in emotional expressiveness; the number of C' responses derives from several affective disturbances, depressive feelings, discomfort and tension. *DEPI* (Depression Index) is a measure of depression composed by a variety of affective, cognitive, and interpersonal variables. It suggests a state of emotional disarray to interpersonal relationships.

To estimate interrater-reliability, 40 Rorschach protocols were chosen randomly and rescored independently by a licensed psychologist who was blind to the original Rorschach scores, as well as to patients' diagnoses. Interrater-correlations were: *SumT* = .84; *SumV* = .78; *SumY* = .74; *SumC'* = .84. All these variables ranked from good to excellent interrater-correlations, according to guidelines by Cicchetti (37). These results were consistent with methodologically appropriate IRR reported by Meyer et al. (38).

Statistical analyses

T-tests for dimensional variables, chi-squared tests (χ^2), and one-way Fisher exact tests (for 2 x 2 contingency tables) were used to test bivariate differences among groups. Significance level were corrected by the Bonferroni procedure for multi-testing. General linear model multivariate analysis was used to test the significance of the sex by work related stress status interaction effect. As a measure of significance of the effect, we reported the Pillai's trace index. We also reported effect size statistics (Cohen's *d* and partial eta squared). All analyses were performed with the statistical package for the social sciences SPSS 13.0.

Results

Personality dimensions in AD patients with work related stress (AD-W) versus patient with other stressful life events (AD-O)

Comparisons between groups AD-W and AD-O are listed in Table I. Groups did not differ for sociodemographic characteristics (age, marital status and school attainment), and severity of depression (HRSD; $t_{139} = 1.67$; $p = .10$) and anxiety (HAMA; $t_{139} = -1.48$; $p = .14$). Eighty-seven percent of patients with positive forensic evaluation of work related stress and 90% of controls had HRSD scores of 15 or higher, indicating moderate to severe depression. Eighty-seven percent of patients with positive forensic evaluation of work related stress and 86% of controls had HAMA scores of 18 or higher, indicating moderate to severe anxiety. Patients with positive forensic evaluation of work related stress and controls showed differences on 6 variables. Compared to AD-O group, AD-W patients had: higher mean scores on the MMPI-2 *D* ($t_{139} = -3.63$; $p < .001$), *Pd* ($t_{139} = -4.53$; $p < .001$), *Pa* ($t_{139} = -5.00$; $p < .001$), *FAM* ($t_{139} = -5.07$; $p < .001$), and Rorschach *SumY* ($t_{139} = -3.23$; $p < .01$); lower scores on the Rorschach *SumT* ($t_{139} = 5.65$; $p < .001$). Moreover, the effect sizes were all moderate to large (Cohen's *d* range for significant variables: .55 to .96), with the greater effect size in the Rorschach ($d = .96$), and the MMPI-2 *FAM* ($d = .85$) and *Pa* ($d = -.85$).

Table I. ***Sociodemographic and psychological characteristics of patients with Adjustment Disorder with mobbing (AD-M) vs. Adjustment Disorder associated with other life events stressors (AD-O)***

Variables	AD-M *M* (*DS*)	AD-O *M* (*DS*)	*t* test (*DF* = 139)	*p-value*	Cohen *d*
Age	48.69 (8.51)	48.66 (9.57)	- 0.02	.99	
School attainment 12 years or less	30.0%	26.8%		.41*	
Marital Status			$\chi^2_{DF=2}$= 0.10	.95	
Single	11.4%	12.7%			
Married	68.6%	69.0%			
Divorced or widowed	20.0%	18.3%			
HRDS	18.84 (3.81)	19.90 (3.73)	1.67	.10	
HAMA	21.84 (3.81)	20.90 (3.73)	-1.48	.14	
HS	75.66 (11.79)	74.23 (14.58)	-0.64	.52	
D	**75.60 (10.35)**	**68.87 (11.61)**	**-3.63**	**.001**	**-.62**
HY	71.89 (12.94)	68.68 (14.77)	-1.37	.17	
PD	**68.26 (10.52)**	**60.34 (10.25)**	**-4.53**	**.001**	**-.77**
PT	66.07 (11.57)	62.28 (14.58)	-1.71	.09	
PA	**69.49 (12.07)**	**61.04 (7.42)**	**-5.00**	**.001**	**-.85**
WRK	65.14 (11.71)	60.17 (13.34)	-2.35	.05	
FAM	**62.31 (7.43)**	**55.20 (9.16)**	**-5.07**	**.001**	**.85**
SumT	**1.73 (0.74)**	**2.41 (0.69)**	**5.65**	**.001**	**.96**
SumV	0.21 (0.63)	0.41 (0.75)	1.66	.10	
SumY	**2.93 (1.8)**	**2.01 (1.55)**	**- 3.23**	**.002**	**-.55**
SumC′	1.97 (1.57)	2.00 (2.02)	0.09	.93	
DEPI	3.67 (1.02)	3.99 (1.24)	1.65	.10	

* One-way Fisher exact test; Bonferroni correction for multiple test: 0.10/18=0.006

Acronyms: HRDS: Hamilton rating scale for depression; HAMA: Hamilton anxiety scale; *Hs*: Hypochondriasis; *D*: Depression; *Hy*: Hysteria; *Pd*: Psychopathic Deviance; *Pa*: Paranoia; *Pt*: Psychasthenia:; *WRK*: Work Interference; *FAM*: Family conflicts; *SumT*: Sum of texture response; *SumV*: Sum of vista response; *SumY*: Sum of diffuse shading; *SumC′*: Sum of achromatic color; *DEPI*: Depression index.

Multivariate model

To test whether there was a significant second order interaction effect between sex and cause of admission (patients who had positive forensic evaluations of work related stress vs. others), we performed a generalize linear model multivariate analysis with variables that were significant at the bivariate analyses. At linear model multivariate analysis, dependent variables (MMPI-2 *D, PD, PA, FAM,* and Rorschach *SumT* and *SumY*) were correlated to work related stress status and gender as fixed factors (Table II). Pillai's Trace of 0.73 ($F_{21;399}$ = 6.09; $p < .001$) indicated that the second order interaction effect between sex and reason for admission contributed to the model, explaining 24% of the variability of the data (*Partial Eta Squared* = 0.24). Groups differ on all dimensions, despite the effects were from weak to moderate (*Partial Eta Squared range [Adjusted]*: .09 [.07] to .23 [.22]). Particularly, men with AD-W had higher scores on the MMPI-2 *D*, *Pd*, and *FAM*, and on the Rorschach *SumY* than other groups. AD-W patients, regardless of their gender, had higher scores on the MMPI-2 *Pa* than AD-O.

Discussion

The present study investigated psychopathological patterns of patients with Adjustment Disorder (AD) who had positive evaluation of work related stress (AD-W) versus patients with AD due to other stressful life events (AD-O). The groups showed similar symptom severity for anxiety and depression according to psychiatrist evaluation (HRSD and HAMA rating scales). In psychodiagnostic evaluation through personality tests AD-W patients compared to AD-O showed: (a) greater depressive symptoms with feelings of inadequacy and worthlessness, and psychomotor retardation; (b) greater levels of irritability and diminished tolerance to frustration when faced with interpersonal conflicts; (c) greater hostility and interpersonal suspiciousness with possible misconstructions of social situations; (d) greater conflicts within the family environment; (e) greater anxiety levels with feelings of powerlessness and helplessness; (f) emotional withdrawal with diminished need for emotional intimacy. In AD-W group men had higher symptoms respect to women.

Therefore, psychopathological characteristics such as lacking hope for the future, dissatisfaction with one's life status and situation, social withdrawal, feelings of guilt and self-criticism, relational difficulties, anger, impulsivity, low tolerance to frustration, ideas of reference, suspiciousness, feelings of persecution, moral self-righteousness, rigidity, and the use of projection as primary defense mechanism, were associated with patients who had positive forensic evaluations of work related stress. Therefore, the AD-W group (and especially the men) appears to be characterized by a different and more intense emotional distress.

Table II. *General linear model multivariate analysis by gender and diagnosis for MMPI-2 and Rorschach measures*

Variables	Mobbing status	Sex	*M*	*SD*	*F*	*p* <	Partial Eta Squared (Adjusted Eta Squared)
D	AD-O	Women	70.44	11.55	7.94	0.001	0.15 (0.13)
		Men	66.73	11.54			
	AD-M	Women	71.82	9.59			
		Men	78.97	9.93			
PD	AD-O	Women	59.61	7.28	13.96	0.001	0.23 (0.22)
		Men	61.33	13.37			
	AD-M	Women	62.94	4.46			
		Men	73.00	12.05			
PA	AD-O	Women	61.98	7.65	8.60	0.001	0.16 (0.14)
		Men	59.77	7.01			
	AD-M	Women	69.27	9.35			
		Men	69.68	14.19			
Fam	AD-O	Women	70.44	11.55	10.32	0.001	0.18 (0.17)
		Men	66.73	11.54			
	AD-M	Women	71.82	9.59			
		Men	78.97	9.93			
SumT	AD-O	Women	2.54	0.71	12.19	0.001	0.21 (0.19)
		Men	2.23	0.63			
	AD-M	Women	1.82	0.64			
		Men	1.65	0.82			
SumY	AD-O	Women	2.05	1.72	5.25	0.01	0.10 (0.08)
		Men	1.97	1.33			
	AD-M	Women	2.45	1.73			
		Men	3.35	1.78			

Multivariate test: Pillai's Trace=0.73; F(DF=21;399)=6.09; p<0.001; Partial Eta Squared=0.24
Acronyms: AD-M: Adjustment Disorder with mobbing; AD-O: Adjustment Disorder associated with other life events stressors; *SumT*: sum of texture response; *SumY*: sum of diffuse shading; *Hs*: Hypochondriasis; *D*: Depression; *Pd*: Psychopathic Deviance; *Pa*: Paranoia; *FAM*: Family conflicts.

The increase of negative affectivity and of feelings of loneliness confirms the results of Hansen et al. (39) who found that those who were exposed to work related stress showed higher physiological stress responses, higher depression, higher negative affectivity, and helplessness than other patients with adjustment disorder due to other stressful life events.

Overall, the results suggest that the subjects with different stress factors may have different types of psychopathological patterns. Based on our findings, AD related to psychological harassment at the workplace is associated to a specific psychopathological profile, which differs from an AD caused by other stressors. This is somewhat similar to what was found by Keller et al. (22), where different patterns of depressive symptoms were associated to specific categories of adverse life events. Our results might be useful to clinicians who wish to develop a specific treatment strategy for patient with AD related to different categories of adverse life events.

The limits of the present study are mainly related to the use of a relatively small sample. It would be useful to deepen the study by classifying patients affected by work related stress according to the reinforcement sensitivity theory, following the instructions proposed by van der Linden (40). It would also be useful to analyze the psychological profile of AD by comparing groups according to other specific life stress events (ie: AD related to bereavement or AD related to medical condition).

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Corrispondenza: *Paolo Roma, NESMOS Department (Neurosciences, Mental Health and Sensory Organs), Sapienza University - Rome, Sant'Andrea Hospital, Via di Grottarossa, 1035-1039, 00189 Rome, Italy, Tel: +39 0633775675. Fax: +39 0633775342, E-mail: paolo.roma@uniroma1.it*