Is medical internship emotionally deleterious? A study on burnout and personality characteristics of first-year orthopaedic interns

Seria a Residência Médica emocionalmente prejudicial? Um estudo sobre *burnout* e características de personalidade de residentes do primeiro ano de ortopedia

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Abstract

The objective of this paper was to identify the emotional difficulties through a prospective case study**.** The participants were 13 first-year male orthopaedic interns. Administration of MBI (burnout) in the 1st (=T_0), 6th (=T_1) and 12th (=T_2) months of the first year of internship; and the Rorschach Test, in T_0 and T_2. *Rorschach*: They seem to be sensitive to stress, but that does not make them cold or distant. They become more self-aware, their depressive aspects diminish and they start to express a greater need for human contact and for the establishment of cooperative relationships. *MBI*: 1) Emotional exhaustion: T_0=17.6 / T_1=28.7/ T_2 = 24.6. 2) Depersonalisation: T_0=9.6 / T_1=15.9 / T_2=15.3. 3) Personal accomplishment: T_0=31.2/ T_1= 25.2 / T_2=26.6. Situational stress increases in accordance with the intensity and pace of the training activities, although the interns do not seem to be emotionally defended. The training program does not oppress them.

Keywords: Medical internship; Mental health; Burnout; Stress; Depression.

Resumo

O objetivo deste artigo foi o de identificar dificuldades emocionais por meio de um estudo de caso prospectivo. Os participantes foram 13 residentes homens do primeiro ano de Ortopedia. Houve a administração do MBI (*burnout*) no 1 (=T0), 6 (=T1) e 12 (=T2) meses do primeiro ano de residência; Rorschach administrado em T0 and T2. Rorschach: os participantes apresentaram sensibilidade ao estresse; entretanto não se tornaram emocionalmente frios nem distantes. Os sintomas depressivos diminuíram e passaram a expressar uma necessidade maior por contato humano e relações de cooperação. MBI: 1) Exaustão emocional: T0=17,6 / T1=28,7/ T2 = 24,6; 2) Depersonalização: T0=9,6 / T1=15,9 / T2=15,3; 3) Realização profissional: T0=31,2/ T1= 25,2 / T2=26,6. O estresse situational aumentou em decorrência da intensidade e do ritmo da residencia, contudo os residentes não se apresentaram emocionalmente defendidos.

Palavras-chave: Residência médica; Saúde mental; *Burnout*; Estresse; Depressão.

INTRODUCTION

Studies have proved that residents/interns, especially in their first year, can be at risk of developing emotional disorders such as stress, depression, and burnout (Firth-Cozens, 1987; Girard, Hickam, Gordon & Robinson, 1991; Peterlini, Tiberio, Saadeh, Pereira & Martins, 2002; Prins et al., 2007; Thomas, 2004).

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Aach et al. (1988) have described a predictable sequence of seven emotional stages which tend to occur during the first year of medical residency: 1. An initial stage of euphoria and excitement associated with expectancies and with the challenges of assuming professional responsibilities (lasting about one month); 2. A period of insecurity related to a perception of limitations and difficulties concerning both medical assistance for patients and the learning process (average duration of about two months); 3. A phase of depression, the intensity of which varies depending on multiple factors, such as previous personal and family history of depression, tendency to develop depressive reactions to frustration, overwork, sleep deprivation and lack of social and institutional support; 4. During the fourth and sixth months of training, there is a period of boredom, in which the resident tends to experience a state of quiescence, undertaking his or her duties in a somewhat automatic way; 5. Another phase of depression follows, one in which routine becomes unbearable and work seems endless. This stage tends to be more intense that the earlier depressive stage, reaching its apex in the eighth month; 6. Gradually, residents tend to escape the depression period, entering into a stage of elation in which they feel capable of confronting difficulties and competent to deal with challenges. This state of elation can eventually lead to overconfidence; 7. A stage of self-trust and professional competence. At the end of the first year of training, residents tend to experience a growing state of security as they feel they have acquired skills and competences. In this stage, they usually feel capable of making decisions regarding patient treatment, and of teaching and supervising undergraduate students.

Professional inexperience and workload have been identified as factors that can contribute to the development of adaptive crises, mental disorders, and professional dysfunctions in resident doctors which can negatively influence the quality of the treatment provided to health care services users (Shanafelt, Bradley, Wipf & Back, 2002). Also, it is known that predisposition to mental disorders and personality characteristics are relevant factors in the development of mental disorders and that the medical profession tends to attract psychologically vulnerable individuals (Firth-Cozens, Cording & Ginsburg, 2003; Vaillant, Sobowale & McArthur, 1972).

Studies regarding burnout in resident doctors have produced a wide variety of results. A recent review (Prins et al., 2007) has revealed that the burnout indexes vary from 18% to 82%. In this study, the authors point out that from all the burnout research, only 1% refer to resident doctors. This is a rather surprising finding, as residents live situations that are known to be potential causes of burnout: they are young, have little professional experience and work long hours taking care of patients with serious conditions for prolonged periods of time, with high levels of responsibility.

There are few studies on burnout syndrome among physicians in Brazil. Benevides-Pereira (2002) evaluated 144 physicians of the city of Maringá, Paraná, and Lima et al. (2007) studied 120 medical residents from the teaching hospital of the Universidade Federal de Uberlândia.

To our knowledge, there is only one study on burnout and mental health of orthopaedic residents. In this study, resident burnout and psychiatric morbidity was correlated with weekly work hours; conflict between working commitments and home life; discord with faculty, nursing staff, and senior residents; debt load; and work-related stress. Protective factors included being a parent, spending time with a spouse, having a physician father, and deriving satisfaction from discussing concerns with colleagues, friends, and family (Sargent, Sotile, Sotile, Rubash & Barrack, 2004).

Faculty members of the Orthopaedics and Trauma Department have become concerned about the increased number of intern dropouts in its training program in recent years. Furthermore, some interns have been showing behaviour disturbances and professional dysfunction, as well complaining about physical and emotional fatigue. The Orthopaedics Department asked the Psychiatry Department for support (Fagnani Neto, Obara, Macedo, Citero & Nogueira-Martins, 2004; Nogueira-Martins, Fagnani Neto, Macedo, Citero & Mari, 2004; Nogueira-Martins, Stella & Nogueira, 1997). Accordingly, a study on the psychological aspects of the mental health of first year orthopaedic residents was conducted.

Objectives

To identify and compare the presence/absence of emotional difficulties such as depressives aspects, stress and burnout among interns from an Orthopaedic Residency Program.

METHODS

The design is a prospective case study.

Participants: 13 first year male orthopaedic interns with an average age of 26.

Instruments: The Rorschach Test, Comprehensive System (analysis of the DEPI and CDI indexes, and the variables D, AdjD, es, M, Sum Y), and the Maslach Burnout Inventory (MBI).

Rorschach Test

Ritzler (2004) states that the Rorschach test is a standardized personality assessment method second only to the MMPI-2 in frequency of use by professional psychologists in the United States. It has a substantial body of empirical studies supporting its validity. This empirical foundation was strengthened by the development of the Comprehensive System (Exner Jr., 2003), which involves a widely disseminated set of specific procedures and guidelines for standardized administration, reliable coding, and systematic interpretation. Although not without flaws and limitations, the Rorschach method now consists of sufficiently operationalized procedures that enable psychologists to study it more effectively, communicate its results more clearly, and apply it more broadly than ever before. The Rorschach is nowadays one of the most utilized psychological tests for research purposes. It is a test of self-expression in which individuals have no control or consciousness of the elements of their personality that are being evaluated, which allows for more accurate results, and it orients researchers to select a specific number of aspects to investigate. Following this orientation, for this study two constellations and a number of Rorschach Comprehensive System variables, that were considered best suited to the study's object were selected: the Depression Index, DEPI, composed by the variables Sum V, FD, FM+m, Sum C', MOR, and COP; the Interpersonal Deficit Index, CDI, composed by the variables EA, AdjD, D, AG and Sum T; and the isolated variables es, M, and Sum Y. The indices and variables are explained in Table 1.

It was applied in the 1st (T_0) and 12th (T_2) months because the Rorschach Test, in studies involving test and re-test, requires a longer time span between evaluations, in this case 12 months.

MBI (Maslach Burnout Inventory)

The inventory was created by Maslach and Jackson in 1978 (Maslach & Jackson, 1986) and translated and adapted for use by health care professionals in Brazil by Lautert in 1995. It is a validated, self-applicable instrument consisting of 22 questions that evaluate various aspects of emotional functioning affected by work stress. The three subscales of the MBI assess emotional exhaustion (EE), depersonalisation (DP) and personal accomplishment (PA) (Maslach & Jackson, 1986). The first two correlate with burnout while the third is inversely related to burnout. For this reason it is important to evaluate MBI as a three-dimensional construct, which means that the three subscales must be evaluated and considered together in order to keep its syndromic perspective. In this study, a 1-to-5 point likert-scale was employed according to the Brazilian adaptation of the instrument Lautert (1995), and also employed by Tamayo in 1997 (apud Carlotto & Camara, 2004). The reduction from 7 to 5 likert-scale in the Brazilian version was due to the fact that Brazilian subjects showed difficulty in answering many of the items. However, the same types of sub-scales of the original American version (Maslach & Jackson, 1986) were kept.

In the original American version, the internal consistency of the three dimensions of the inventory is satisfactory, since it shows a Cronbach alfa ranging from 0.71 (PA), 0.79 (DP) to 0.90 (EE), and test and re-test coefficients ranging from 0.60 to 0.80 in one month periods. In the Lautert (1995) version, we find 0.86 to EE, 0.69 to DP and 0.76 to PA of the Cronbach alfa.

Procedure: administration of the MBI in the 1st (=T_0), 6th (=T_1) and 12th (=T_2) months of the first year of residency; administration of the Rorschach Test in T_0 and T_2.

Both instruments were administered to all participants by the psychologist, first author. The Rorschach protocols were reviewed by the second author, and so the agreement procedure was not undertaken due to the small number of protocols.

Ethical approval: This study was approved by the Research Ethics Committee of the Universidade Federal de São Paulo (nº 1727/05), and written informed consent was obtained from it study participants.

RESULTS

Rorschach Test

All variables on table 2 were analyzed through the Wilcoxon Test and a qualitative analysis of the findings was conducted, considering the T_0 and T_2 moments: at the beginning and after a year of residency.

After a year of training, a significant statistical difference was found in MOR (p=.014), showing a change for the better in self-perception and in the initially worsened self-image. The qualitative analysis showed that six participants enhanced their self-awareness (FD), six started to express willingness to interpersonal intimacy (SumT), and five increased their interest in collaborative engagements with others (COP). As to the coping deficit index (CDI), five participants had never presented inner tension, three showed a reduction in inner tension, three maintained it, and two started manifesting it for the first time. As to the situational stress, seven participants had their level increased and four kept it higher (es, SumY). As to the Depression Index (DEPI), six never presented depressive aspects, three got over them, three maintained them, and one started manifesting them.

Table 1 – Rorschach variables: participants score in T_0 and T_2

Participants	*1*		*2*		*3*		*4*		*5*		*6*		*7*		*8*		*9*		*10*		*11*		*12*		*13*	
Time	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2	T_0	T_2
Indexes and Variables																										
DEPI	5	4	6	3	3	4	5	5	2	3	5	5	4	4	4	5	4	3	5	4	5	5	2	3	3	3
SumV	1	0	1	0	0	0	0	1	0	0	3	1	1	1	0	0	0	0	1	1	1	2	2	2	0	0
FD	0	0	1	0	0	3	3	2	2	1	3	6	3	4	0	1	2	1	3	0	2	0	3	8	0	2
FM+m	3	2	7	5	6	4	3	3	4	5	6	6	5	8	5	4	5	4	6	3	10	8	10	9	3	3
SumC’	2	5	2	2	5	4	0	3	1	3	5	1	0	0	2	3	1	2	4	1	3	0	1	0	2	1
MOR	0	0	1	0	0	0	0	0	0	0	0	0	3	2	1	0	0	0	1	0	2	1	2	1	0	0
COP	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	1	2	2	1	2
CDI	4	3	5	3	1	1	4	4	2	3	3	4	4	4	4	3	3	2	5	4	1	5	1	1	2	3
EA	4.5	4.5	6	5	11	8.5	3.5	2.0	6	6	8.5	4	9.5	4	4	3.5	4.5	5.5	3	3.5	12.5	4	11.5	13	6.5	8
AG	0	0	1	1	2	2	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0
SumT	0	0	0	0	1	2	0	0	0	0	0	1	0	1	0	1	0	1	2	0	0	2	0	0	0	0
Adj D	0	-1	-1	0	0	0	0	-2	0	-1	-1	-1	1	-1	-1	-2	0	0	-3	0	1	-2	0	1	0	1
D	0	-1	-2	-1	0	-2	0	-4	0	-1	-4	-4	1	-4	-2	-2	-1	-1	-5	0	-6	-7	-1	0	0	1
SumY	1	2	2	1	1	4	1	6	2	2	6	8	0	5	3	3	2	2	4	1	16	12	3	4	0	1
es	7	9	12	8	13	14	4	13	7	10	20	15	6	15	10	11	8	9	17	6	30	24	16	15	5	5
M	2	2	2	1	3	4	2	1	4	4	2	2	3	2	3	2	3	3	1	2	7	2	7	8	2	3

DEPI = Depression Index – combines variables to identify depressive symptoms.

Sum V = Sum of the Shading-Dimensionality Determinant – typically associated with self-critical attitudes.

FD = Form Dimension Response – related to enhanced self-awareness, proclivity for introspection.

FM+m = Animal Movement and Inanimate Movement – signifies intrusive ideation that resists conscious control. *FM* is typically associated with disconcerting awareness of needs that are not being met, and *m* indicates worrisome thoughts about being helpless to prevent other people or events from determining one's destiny.

Sum C' = Sum of Achromatic Color – related to feelings which the subject would prefer to externalize but, instead, internalizes. Typically points to feelings of sadness, gloom, unhappiness, and psychological misery.

MOR = Morbid Content – negative self-regard/self-image, can help identify personality traits perceived like damaged or injured.

COP = Cooperative Movement – an interest in collaborative engagements with others.

CDI = Coping Deficit Index – combines variables that indicate interpersonal difficulties and is related to control and stress tolerance.

EA = Experience Actual – combines some variables that might provide indications about capacities for control and/or tolerance for stress and is related to coping resources for meeting their experienced demands.

AG = Aggressive Movement – identifies an expectation that interaction in the real world is likely to be assertive or at least competitive, rather than collaborative and acquiescent. Although this kind of response often involves anger and hostility, it can also invoke struggle without rancor.

Sum T = Sum of Texture-Shading – provides indications on how the subject can relate with others with a certain degree of openness to close emotional relations.

D Score – related to stress tolerance.

Adjusted D Score – related to stress tolerance considering situational aspects.

es = Experienced Stimulation – related with the aspects of stimuli that bring distress or discomfort to people, can be understood as an index of "psychological suffering".

M = Human Movement – interpersonally empathic capacity.

Sum Y = Sum of Shading Response – stress relating feelings of paralysis, hopelessness, and emotional discomfort.

(Exner Jr., 2003; Weiner, 1998)

Table 2 – Means and the Wilcoxon analysis comparing the variables in the two time spans

Variables	*p*	*Z*	*Mean* T_0	*Mean* T_2
MOR	0.014*	-2.449	0.77	0.31
EA	0.154	-1.427	7.00	5.50
Es	0.969	-0.039	11.92	11.85
D	0.434	-0.783	-1.54	2.00
D Adj	0.433	-0.784	-0.31	-0.62
M	0.564	-0.577	3.15	2.77
FM	0.256	-1.137	3.77	3.23
m	0.951	-0.061	1.85	1.69
SumT	0.187	-1.318	0.23	0.62
SumV	0.480	-0.707	0.77	0.62
SumY	0.281	-1.079	3.15	3.92
SumC’	0.718	-0.361	2.15	1.92
FD	0.550	-0.598	1.69	2.15
COP	0.102	-1.633	0.38	0.69
CDI	0.852	-0.187	3.00	3.08
DEPI	0.763	-0.302	4.08	3.92
AG	n/a	n/a	0.38	0.38

* A significant statistical difference was found in MOR (p=.014)

Maslach Burnout Inventory (MBI):

The studied variables are qualitative, measured in ordinal scale and translated by a score. For this reason the ANOVA test was not conducted, which is the reason why the standard deviation was not calculated. Nevertheless, for informational purposes, the means were calculated.

The Friedman Test was utilized. T_1 and T_2 did not show significant differences, but they both differed significantly from T_0 to a value of $p<.001$. The same occurred in all the MBI subscales.

Table 3: Comparison between T_0, T_1 and T_2 regarding the total of answers to the MBI questionnaire in its three subscales

MBI		N=13			
Subscales	T_0	T_1	T_2	*p*	Results
Emotional exhaustion (EE)					Range of – minimum 9 and maximum 45 > 27 = high level 22 I—I 26 = moderate level < 22 = low level
Mean	17.6	29.5	24.6		
Level	moderate level	high level	moderate level	<.001	$T_0<T_1,T_2$ *
Median	17.0	29.0	25.0		
Minimum – Maximum	12-27	15-37	16-35		
Depersonalisation (DP)					Range of – minimum 5 and maximum 25 > 12 = high level 9 I—I 11 = moderate level < 9 = low level
Mean	9.7	15.9	15.3		$T_0<T_1,T_2$
Level	moderate level	high level	high level	<.001	$T_1=T_2$ *
Median	11.0	16.0	16.0		
Minimum – Maximum	5-12	11-24	10-20		
Personal Accomplishment (PA)					Range of – minimum 8 and maximum 40 >35 = high level 31 I—I34 = moderate level 0 I—I 30 = low level
Mean	31.2	25.2	26.6		$T_0<T_1,T_2$
Level	moderate level	low level	low level	<.001	$T_1=T_2$ *
Median	32.0	26.0	27.0		
Minimum – Maximum	22-36	17-31	18-35		* Friedman Test

Table 4 – MBI individual scores in T_0, T_1 e T_2 and total scores percentage

Low %	84.6	15.3	38.4	23.0	-	-	23.0	-	7.6

Participants	Emotional Exhaustion > 27 – High 22 I—I 26 – Moderate < 22 – Low			Depersonalisation > 12 – High 9 I—I 11 – Moderate < 9 – Low			Personal accomplishment > 35 – High 31 I—I 34 – Moderate 0 I—I 30 – Low Level		
	T_0	T_1	T_2	T_0	T_1	T_2	T_0	T_1	T_2
1	27	28	19	12	16	16	29	24	22
2	15	29	20	6	17	12	35	29	32
3	23	36	31	12	24	19	22	17	18
4	21	31	27	11	17	18	29	24	26
5	17	34	33	11	14	20	32	26	21
6	15	29	27	6	15	14	35	29	32
7	12	15	26	11	14	13	32	26	27
8	12	20	16	5	11	10	32	27	31
9	16	30	25	12	16	16	27	21	23
10	17	25	18	9	12	10	33	31	35
11	20	37	24	10	16	14	32	21	31
12	16	31	35	10	19	20	36	30	21
13	18	28	19	10	16	17	32	22	27
Total % Scores									
High %	7.6	76.9	38.4	23.0	92.3	84.6	30.7	92.3	61.5
Moderate %	7.6	7.6	23.0	53.8	7.6	15.3	46.1	7.6	30.7

DISCUSSION

To our knowledge this is the first research using cognitive scales (MBI) and a personality assessment, the Rorschach Test (Comprehensive System), to study emotional impact in medical residency programs. It was not therefore possible to compare the present work with others on the same subject.

To our knowledge, the only other study carried out with orthopaedic interns compared them with faculty members utilizing selected cognitive scales in transversal evaluations. It was concluded that the group of residents, when compared with the faculty members, showed higher indexes particularly with regard to burnout and psychiatric morbidity associated with overwork, financial debt and difficulty of relationship with supervisors. In the MBI, the burnout level was higher especially in the emotional exhaustion (EE) and depersonalisation (DP) subscales, and was found to be at an average level in the professional accomplishment (PA) subscale (Sargent et al., 2004). These MBI data coincide with those of the present study regarding the EE and DP subscales in the two moments of evaluation, T_1 and T_2.

In our study, the interns began their activities with a low or moderate intensity level of burnout symptoms, which increased throughout the year, reached their highest level in the 6th month (T_1) and then decreased in the 12th month (T_2), although without returning to the initial level (T_0) – , considerable levels of intensity, therefore, persist throughout the first year.

Systematic reviewing on burnout in resident doctors from various studied specialties (Prins et al., 2007) demonstrated that the causes of the syndrome are closely related to the working context. This was one of the hypotheses tested in this study - that the medical duties undertaken during the first-year residency program could unleash or aggravate emotional disorders. However, we noticed that despite the interns having shown high burnout levels in the 6th month (T_1), as well as high stress levels revealed by the findings of the Rorschach Test over the year, many positive elements emerged, which surprised us as they do not coincide with the existing literature in the field.

In the study of Lima et al. (2007), the means were: EE=27.92; DP=10.77 and PA=36.98. These results, while different from our study, showed a closeness on EE of T_1=29.5 and on DP of T_0=9.7. From its sub-sample of six orthopedic residents, 50.0% presented burnout while in ours 73.3% presented a higher level of burnout on T_1. Evaluating each dimension of Lima's study, 65.0% presented a higher level of EE (above 26) while in our study 76.9% presented a higher level on T_1; (b) 61.7% presented a higher level of DP (above 9) while in our study 100.0% presented a higher level on T_1 and T_2; (c) 30.0% presented a low level of PA (below 33) while in our study it was lower on T1=100.0% and on T2=92.3%. Therefore, our sample presented more participants with a higher level of burnout than Lima's study sample, mainly at the T1 moment. A plausible hypothesis to these differences is associated with the fact that Lima's study included residents from various specialties.

The results found on Benevides-Pereira's study are close to ours as to the subscale EE with a mean of 22.6 and ours at 24.6 on T2. However, on the subscale DP, our means were higher (T0=9.7; T1=15.9; T2=15.3) than those found on Benevides-Pereira's study (6.03). As to the RP subscale, our sample had lower results (T0=31.2, T1=25.2, T2=26.6) than Benevides-Pereira's study (41.4). This difference among the results can in part be attributed to the demographic and occupational variables such as age and level of professional experience of the studied subjects.

According to the results of the Rorschach Test, as we compare T_0 and T_1 we notice that six of the participants showed an increased interest in getting involved and bonding with other people (SumT), and five had an increment in their desire to relate and cooperate with others (COP). Therefore we notice that a great deal of the interns show, after one year of training, some characteristics that are essential to the development of medical duties. A doctor that cannot get involved or at least take others into consideration will hardly be able to feel comfortable with his work; on the other hand, this involvement requires professional distancing in order to allow for proper treatment, which does not necessarily involve lack of affection and understanding for others.

It was also possible to notice the same result in the MBI findings. In the depersonalisation subscale, the answers that had the highest scores in the three moments, but especially in the latter two, T_1 and T_2, were questions 10, "I've become more callous toward people since I took this job", and question 11, "I worry that this job is hardening me emotionally". These are enquiries on the realisation that their initial sensibility and flexibility have changed in response to the work and that the subjects have become harder and more insensitive. This realisation process reveals good judgment of the situation of the working environment and good self-perception, meaning that the interns do not "depersonalise themselves" in a negative manner.

The two questions that effectively consider a more serious and negative depersonalization attitude were the ones with the lowest scores by all subjects at all

times – questions 5, "I feel I treat some recipients as if they were impersonal objects", and 15, "I don't really care what happens to some recipients". These data confirm the absence of a negative depersonalisation, as they reveal that the residents agree that work hardens them, but does not make them distant. It is corroborated by the Rorschach test by an increase of the need for more human contact (SumT), by a better perception of themselves (FD), and by an increased interest in getting involved in collaborative relationships with others (COP).

The MBI and Rorschach findings also coincide in what refers to the presence of emotional exhaustion and the presence of situational stress, respectively. The MBI questions with the highest scores refer precisely to the physical and emotional exhaustion caused by an excessive workload, which corresponds to situational pressure as defined by the Rorschach methodology. Pointing in the same direction, the lowest scores in the professional accomplishment subscale are those of question 12, "I feel very energetic", answered as "never" or "rarely" in T1 and T2 by 11 residents, which is comparable to the situational stress found in the Rorschach test.

As for the emotional stages proposed by Girard et al. (1991) and Aach et al. (1988), the present study has observed that the initial period (T0) was characterized by a moment of anticipatory anxiety with elements more related to positive aspects from the emotional standpoint, which are derived from the expectancies about starting the program and beginning a new challenge (new experiences). The participants were more euphoric and enthusiastic and they seemed to direct their tensions to their expectancies about the unknown. They reported having heard that the activities they were about to undertake were difficult, although accessible, and shared a common feeling of being able to bear all the demands proposed by the residency program.

It is likely that the perception of lack of knowledge and experience led six of the participants to show, in the initial Rorschach test carried out in T0, morbid or denigrated feelings of worthlessness (MOR) with a tendency to self-depreciation. These feelings had disappeared or diminished after one year of training (T2), perhaps because they started to feel more confident and assertive in their working routines.

Another interesting fact revealed by the Rorschach test was that, after a year, eight interns either started to show or kept the capacity of maintaining an adequate contact with reality (M) and eight of the participants either showed an increased capacity of reflection on emotional aspects (EA) or kept it at satisfactory levels. They have proven to be "down to Earth" people, which seems to be very adequate in the field they work in since they have to be very assertive as resident orthopaedic medicine professionals.

The training seems to promote deeper introspection and reflection (FD) sufficient to recognize personal characteristics and to contribute to good psychological adjustment, with an improved consciousness on the best way to meet each one's own needs, and sensitiveness as to how each person's behaviour affects other people. This indicates that during the first year of residency, a process of maturing, both emotional and cognitive, has occurred.

Some findings, though, appear to be associated with the fact that to some interns the training and the tasks promote positive changes while to others they promote negative changes, and it seems to occur according to their personality characteristics and emotional vulnerabilities (Firth-Cozens et al., 2003; Vaillant et al., 1972). This fact can be observed in the following aspects:

– It has been observed in some interns the appearance of a more negative self-perception (SumV). This negative self-critical attitude or low self-esteem that was increased or maintained in four interns over the year seems to be linked to those subjects in which the training had a negative result.

– Six residents had already started the residency program with depressive symptoms but only three kept them, while one started to show them for the first time. According to Aach et al. (1988), depressive symptoms are more intense the higher the influence of the following factors: overwork, sleep deprivation, and lack of social and/or institutional support. This could possibly explain the maintenance of these symptoms in the aforementioned subjects, as they were exposed to such conditions.

– As to affective constriction (SumC', which happens when individuals do not express their feelings, it was noted that six of the subjects stopped showing this behaviour, while four started to show it after a year and the other three had never showed it over the researched period.

– Regarding the difficulty of control and tolerance to chronic stress (D Score), and situational stress (AdjD Score), eight of the subjects presented an intensified or sustained score in this aspect already present in T_0. On the other hand, 10 of the participants showed to have the conditions and preparation to act towards meeting the expected demands both in the moments T_0 and T_2. However, three participants showed an internal overload which generates difficulties in the concentration and lack of concentration processes (FM+m). And 10 have greatly increased or kept high the feelings of lack of control

of their own destinies, which provokes an overload of emotional discomfort (Sum Y, m).

– An increase in the score of the Coping Deficit Index (CDI) also occurred in six of the participants, which revealed growing coping difficulties also involving trouble with control and stress tolerance. All subjects showed an internal tension trigger which serves the objective of searching for psychic balance (es). However, in eight of the subjects this internal alert aspect indicating emotional overload was too high, which creates a likelihood of more impulsive and explosive behaviour. All of these factors seem to be associated with an emotional tension experienced by the majority of the participants that seems strongly linked to the intense effects of overwork and to performing the residency activities, as mentioned in the literature (Aach et al., 1988; Firth-Cozen, 1987; Firth-Cozen et al., 2003; Girard et al., 1991; Peterlini et al., 2002; Prins et al., 2007; Shanafelt et al., 2002, Thomaz, 2004; Vaillant et al., 1972).

These findings refer to stress-related issues from which it can be understood that among a significant part of the group there has occurred an intensification of aspects and symptoms associated with stress after one year. One might think (Firth-Cozen et al., 2003; Vaillant et al., 1972) that this fact is related to individual personality – more or less susceptible to stress, with more or less adaptive and coping strategy resources; or to the magnitude, intensity, frequency, duration and predictability of the stressful situation; or even to the previous experience of each individual with similar situations. It is known that there are stages in residency which are more stressful than others, in which the residents report more physical and emotional distress, which could also justify the variation. But we know that at least almost half of the group presented data which prove the intensification of stress symptoms, besides the increased difficulty of controlling and coping.

Once again psychological vulnerability plays a decisive role. Those more vulnerable suffer more and worsen their pre-existing characteristics. It was noted, however, that a considerable amount of the interns in this study have a psychic structure well suited to dealing with the demands required by the vicissitudes of the job, as well as enough emotional coping resources, and even emotional maturity, to handle the pressure during the training period.

CONCLUSION

It is generally concluded that the interns that showed previous emotional vulnerability were more inclined to present higher scores throughout the first year of residency. The training program had a negative impact on the interns whose personality characteristics include feelings of lack of control regarding fate, overwhelming emotional discomfort, and difficulty managing chronic and situational stress. On the other hand, those interns with inner personality resources such as capacity for reflection, adequate self perception, disposition for interpersonal contact and interest in collaborative relations had a more enjoyable attitude towards their training experience.

Situational stress increases according to the intensity and pace of training activities, but the interns do not seem to be emotionally defended. They appear to be sensitive to stress, but that does not make them cold or distant. They become more self-aware, their depressive symptoms diminish and they start to express a greater need for human contact and for the establishment of cooperative relationships with others. The training period does not oppress them, but instead seems to promote changes which are very important and necessary to the medical instruction.

The analysis of the results of this study need to be carried out carefully, since they refer to a convenience sample with a specific group of 13 people. Regarding the size of the sample, it is important to point out that when one studies residents prospectively, making use of instruments such as the Rorschach method – which demand time to be properly applied – the sample tends to be small. Another factor deserving attention is that these resident doctors all come from the same institution. Multicentric studies using the same methodology must be undertaken in order to produce a better understanding on the subject.

REFERENCES

Aach, R. D., Cooney, T. G., Girard, D. E., Grob, D., McCue, J. D., Page, M. I., e cols. (1988). Stress and impairment during residency training: strategies for reduction, identification, and management. Resident Services Committee, Association of Program Directors in Internal Medicine. *Annals of Internal Medicine, 109*(2), 154–161.

Benevides-Pereira A. M. T. e cols. (2002). *Burnout: quando o trabalho ameaça o bem-estar do trabalhador*. São Paulo: Casa do Psicólogo.

Borges, L. O. e cols. (2005). *Os profissionais de saúde e seu trabalho.* São Paulo: Casa do Psicólogo.

Carlotto, M. S. & Câmara S. G. (2004). Análise fatorial do Maslach burnout inventory (MBI) em uma amostra de professores de instituições particulares. *Psicologia em Estudo, 9(3),* 499-*505*.

Exner Jr., J. E. (2003). *The Rorschach: A comprehensive system:* Vol. 1. *Basic foundations and principles of interpretation* (4th ed.). Hoboken, NJ: Wiley.

Fagnani Neto, R., Obara, C. S., Macedo, P. C., Citero, V. A., & Nogueira-Martins, L. A. (2004). Clinical and demographic profile of users of a mental health system for medical residents and other health professionals undergoing training at the Universidade Federal de Sao Paulo. *Sao Paulo Medical Journal, 122*(4), 152-157.

Firth-Cozens, J. (1987). Emotional distress in junior house officers. *British Medical Journal (Clinical research ed.), 295*(6597), 533-536.

Firth-Cozens, J., Cording, H. & Ginsburg, R. (2003). Can we select health professionals who provide safer care. *Quality & Safety in Health Care, 12 Suppl 1*, i16–20.

Girard, D. E., Hickam, D. H., Gordon, G. H. & Robison, R. O. (1991). A prospective study of internal medicine residents emotions and attitudes throughout their training. *Academic Medicine, 66*(2), 111-114.

Lautert, L. (1995). *O desgaste profissional do enfermeiro.* Tese de Doutorado. Salamanca: Universidad Pontificia de Salamanca.

Lima, F. D., Buunk, A. P., Araújo, M. B. J., Chaves, J. G. M., Muniz, D. L. O. & Queiroz, L. B. (2007). Síndrome de Burnout em residentes da Universidade Federal de Uberlândia – 2004. *Revista Brasileira de Educação Médica*, *31*(2), 137-146.

Maslach, C. & Jackson, S. E. (1986). *The Maslach Burnout Inventory*. Palo Alto, CA: Consulting Psycologist Press.

Nogueira-Martins, L. A., Stella, R. C., & Nogueira, H. E. (1997). A pioneering experience in Brazil: the creation of a center for assistance and research for medical residents (NAPREME) at the Escola Paulista de Medicina, Federal University of Sao Paulo. *Sao Paulo Medical Journal, 115*(6), 1570-1574.

Nogueira-Martins, L. A., Fagnani Neto, R., Macedo, P. C., Citero, V. A. & Mari, J. J. (2004). The mental health of graduate students at the Federal University of Sao Paulo: a preliminary report. *Brazilian Journal of Medical and Biological Research, 37*(10), 1519-1524.

Peterlini, M., Tiberio, I. F., Saadeh, A., Pereira, J. C. & Martins, M. A. (2002). Anxiety and depression in the first year of medical residency training. *Medical Education, 36*(1), 66-72.

Prins, J. T., Gazendam-Donofrio, S. M., Tubben, B. J., van der Heijden, F. M., van de Wiel, H. B. & Hoekstra-Weebers, J. E. (2007). Burnout in medical residents: a review. *Medical Education, 41*(8), 788-800.

Ritzler, B. (2004). Cultural applications of the Rorschach, apperception tests, and figure drawings. Em M. J. Hilsenroth & D. L. Segal (Eds.). *Comprehensive handbook of psychological assessment:* Vol. 2. *Personality assessment* (pp. 573-585). New York: John Wiley & Sons.

Sargent, M. C., Sotile, W., Sotile, M. O., Rubash, H. & Barrack, R. L. (2004). Stress and coping among orthopaedic surgery residents and faculty. *The Journal of Bone and Joint Surgery. American Volume, 86-A*(7), 1579-1586.

Shanafelt, T. D., Bradley, K. A., Wipf, J. E. & Back, A. L. (2002). Burnout and self-reported patient care in an internal medicine residency program. *Annals of Internal Medicine, 136*(5), 358-367.

Tamayo, R. M. (1997). Relação entre a síndrome de *burnout* e os valores organizacionais no pessoal de enfermagem de dois hospitais públicos. Dissertação de Mestrado. Brasília: Universidade de Brasília – Instituto de Psicologia,.

Thomas, N. K. (2004). Resident *burnout*. *JAMA, 292*(23), 2880-2889.

Vaillant, G. E., Sobowale, N. C. & McArthur, C. (1972). Some psychologic vulnerabilities of physicians. *The New England Journal of Medicine, 287*(8), 372-375.

Weiner, I. B. (1998). *Principles of Rorschach Interpretation*. Mahwah, NJ: Lawrence Erlbaum Associates.

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