Psychological recall profiling in early childhood and the development of Fibromyalgia

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RESUMO

Objectivos: Comparar doentes do sexo feminino com Fibromialgia com as suas irmãs sem Fibromialgia relativamente aos traços de temperamento na infância, avaliados retrospectivamente pelas suas mães, e relativamente aos domínios da personalidade no presente, avaliados pelas próprias.

Material e Métodos: A amostra foi composta por vinte e uma famílias, constituídas por uma doente com Fibromialgia, uma irmã sem Fibromialgia e a mãe de ambas. A versão experimental Portuguesa da *Bateria de Avaliação do Temperamento Infantil – Forma Revista* para pais foi respondida retrospectivamente pelas mães relativamente às duas filhas. A versão portuguesa do *NEO Personality Inventory – Revised* foi respondida pelas doentes com Fibromialgia e pelas suas irmãs sem Fibromialgia.

Resultados: As doentes com Fibromialgia tiveram pontuações significativamente mais elevadas do que as suas irmãs sem Fibromialgia em Neuroticismo (p=0,003) e Amabilidade (p=0,027) no *NEO Personality Inventory – Revised*. Não encontrámos diferenças estatisticamente significativas entre as doentes com Fibromialgia e as suas irmãs sem Fibromialgia relativamente aos seus traços de temperamento na infância. Também não encontrámos correlações significativas entre os traços de temperamento na infância e os domínios da personalidade no presente.

Conclusões: As doentes com Fibromialgia têm pontuações mais elevadas do que as suas irmãs sem Fibromialgia em Neuroticismo e Amabilidade. Estes resultados estão em concordância com outros estudos, apoiando a hipótese de que o Neuroticismo possa constituir um factor de vulnerabilidade para o desenvolvimento de Fibromialgia. Não nos é possível excluir que a falta de relação entre os traços de temperamento na infância e a Fibromialgia e

os domínios de personalidade actuais possa ser devida às limitações do desenho retrospectivo do estudo.

Palavras-chave: Fibromialgia, personalidade, temperamento, criança, pré-escolar.

ABSTRACT

Objectives: To compare female Fibromyalgia patients and their unaffected sisters regarding their temperamental traits in childhood, evaluated retrospectively by their mothers, and regarding their personality domains in the present, as evaluated by self-report.

Material and Methods: The population was constituted by twenty-one families, composed of a Fibromyalgia patient, one unaffected sister and the mother of both. The Portuguese experimental version of the parent form of the *Temperament Assessment Battery for children* – *Revised* was answered retrospectively by the mothers regarding her two daughters. The Portuguese version of the *NEO Personality Inventory* – *Revised* was answered by the Fibromyalgia patients and their unaffected sisters.

Results: Fibromyalgia patients scored significantly higher than their unaffected sisters in Neuroticism (p=0,003) and Agreeableness (p=0,027) in the NEO Personality Inventory – *Revised.* We did not find statistically significant differences between the Fibromyalgia patients and their unaffected sisters regarding their temperamental traits in childhood. We also found no significant correlations between the temperamental traits in childhood and the personality domains in the present.

Conclusions: Fibromyalgia patients score higher than their unaffected sisters in Neuroticism and Agreeableness. This is in agreement with several other studies, thus supporting the hypothesis that Neuroticism may constitute a vulnerability factor for the development of Fibromyalgia. It is not possible to exclude that the lack of relationship between the retrospective evaluation of temperamental traits in childhood with Fibromyalgia and current personality traits may be due to the limitations of the retrospective design of the study.

Keywords: Fibromyalgia, personality, temperament, child, preschool.

INTRODUCTION

Fibromyalgia (FM) is a rheumatic disease defined by the American College of Rheumatology ¹ by the presence of chronic widespread pain (CWP), lasting for at least three months, and pain in at least eleven out of eighteen predefined points on digital palpation with approximately 4kg.

FM is frequently associated with other symptoms, such as fatigue, stiffness, mood disorders and sleep disturbances ¹⁻³, amongst others. The disease is associated with an important negative impact on function and quality of life, which has been considered similar or greater than that attributed to Rheumatoid Arthritis ⁴.

The estimated overall prevalence of FM in adults in the United States is around 2% ⁵. The prevalence of FM is higher in women (3,4%) than in men (0,5%) and increases with age ⁵⁻⁶. In a recent study in Europe, the estimated overall prevalence of CWP was 4.7% and 2.9% of the population had simultaneously pain and fatigue ⁷.

The pathogenesis of FM is largely unknown, but several lines of evidence suggest it is probably influenced by environmental ⁸, genetic ⁹⁻¹⁰, hormonal ¹¹, psychological ¹²⁻¹⁴ and psychiatric ¹⁴⁻¹⁶ factors, amongst others.

The psychological dimensions of this disease are quite remarkable. FM patients and their first degree relatives with FM report more symptoms of psychological distress than relatives without FM ¹⁷. Compared with healthy control subjects, FM patients scored high in the temperamental dimension Harm Avoidance (a personality trait assessed by means of the *Temperament and Character Inventory*), which has been associated with several psychiatric disturbances ¹⁸. On the *NEO Personality Inventory – Revised* (NEO-PI-R), FM patients score high in Neuroticism, a measure of emotional instability and psychological maladjustment ¹⁵.

There are contradictory findings regarding the prevalence of personality disorders in FM patients ^{16, 19}.

The development and maintenance of CWP and FM have been related to a variety of psychological traits, that are present prior to the development of the disease ²⁰⁻²¹. It has, thus, been hypothesised that FM patients have psychological characteristics that make them more vulnerable to stress and somatisation and, ultimately, to the development of FM ²².

Two prospective studies have been able to identify psychosocial aspects in childhood which predict the short and long-term development of CWP: behaviour problems, hyperactivity, emotional problems and peer problems, as well as features of social maladaption and maladjustment ²³⁻²⁴. Additionally, patients with Juvenile Primary Fibromyalgia Syndrome have been described as presenting more temperament instability, including lower task orientation and higher distractibility, and more behaviour problems than control subjects ²⁵.

We formulated the hypotheses that 1) FM patients differ from their unaffected sisters regarding personality domains in adulthood as measured by the NEO-PI and 2) these differences could be anticipated by temperamental traits identifiable in childhood by their mothers.

The core aim of this project is to compare female FM patients and their unaffected sisters regarding their temperamental traits in childhood, evaluated retrospectively by their mothers. We anticipate the limitations of using recall as a research method, and, thus, we consider this study to be of an exploratory nature. We also wish to compare their personality domains at present, as evaluated by self-report, as a means to assess the validity of the childhood temperament assessment.

The purpose of this study is to provide a contribution towards the comprehension of the psychological aspects related to FM, particularly those that may constitute vulnerability factors for its development, thus offering an opportunity for primary prevention.

MATERIAL AND METHODS

1. Population

Participants were drawn from a list of 712 patients with an established diagnosis of FM from a single site (all diagnosed and followed by Prof. J.A.P. da Silva).

The following screening criteria were used for selection: female gender, age between 18 and 55 years, absence of any other chronic pain condition and residence within a radius of 100 Km from the study centre. Selected patients were contacted by phone and invited to participate if 1) they had at least one unaffected sister, 2) the mother of both was the same person, still alive and capable of participating and providing reliable information, and 3) all the family members were willing to travel to the research site and participate in the study, which involved signing an informed consent, responding to questionnaires, providing a blood sample and undergoing physical examination. Participants were reimbursed for transportation costs, but no other compensations were offered.

This study was conducted in partnership with other colleagues, as part of a project called ScanFM. Each of the investigators conducted their own study on fibromyalgia, but all data was cooperatively gathered from the same population.

The study was approved by Ethical Committee of the Faculty of Medicine of the University of Coimbra.

2. Data Collection

After receiving an explanation of the study procedures, participants signed an informed consent form. We confirmed the absence of FM criteria in the patients' sisters, as its presence was as exclusion criterion. We also investigated the presence of FM in the mothers. All participants answered a demographic questionnaire.

The FM patients and their sisters were asked to name the person who was their dominant maternal figure from two through seven years of age. In case this person wasn't the mother, the answers provided by the mother regarding her daughters' behaviour in childhood should be excluded from analysis.

3. Mini-Mental State Examination

The *Mini-Mental State Examination* (MMSE) is a questionnaire designed to evaluate cognitive impairment ²⁶, validated to the Portuguese population ²⁷.

The MMSE was answered by the mothers of the FM patients, as cognitive impairment of the mother was an exclusion criterion.

4. Temperament Assessment Battery for Children – Revised

The Temperament Assessment Battery for children – Revised (TABC-R) is a questionnaire designed to assess temperamental characteristics of children of two through seven years of age 28 .

The TABC-R was translated to Portuguese by Seabra-Santos (2006, not published), who authorized its use in this study (Annexe 1). The Portuguese experimental version of the TABC-R has not been validated, but studies with this questionnaire have found results similar to those of the American population, with an acceptable internal consistency and psychometric characteristics for most items (Almeida, M. M., Seabra-Santos, M. J. *Bateria de Avaliação do Temperamento Infantil – Forma Revista*. Psychologica, in press).

The TABC-R consists of two forms: a 37 items form for parents and a 39 items form for teachers. The items are scored using a *Likert* scale with seven points, in which 1 corresponds to "hardly ever" and 7 to "almost always".

The TABC-R was designed to assess temperamental traits, which are individual characteristics of the children: Inhibition, Negative Emotionality, Activity Level and Lack of Task Persistence. The trait Impulsivity is obtained by the sum of the last three scales and the Impulsivity Augmentation items.

The Inhibition and Impulsivity scales can be used to determine the temperamental type of the children, by matching him/her to a group of children with similar temperamental characteristics.

In this study, the Portuguese experimental version of the parent form of the TABC-R was answered retrospectively by the mothers of the FM patients. The questionnaire was adapted by presenting the subjects in the feminine gender and formulating the verbs in the past tense.

The participants were asked to remember both their daughters, the FM patient and her unaffected sister, by the time each of them was two through seven years of age, and to answer the TABC-R for both of them simultaneously in order to differentiate them, as much as possible, regarding the frequency of the behaviours enounced.

The questionnaire was presented orally by the assessor, who maintained a dialogue with the mother. In case some statement in the questionnaire wasn't understood as it was presented, it was allowed some liberty of interpretation, without the influence of the assessor, provided that the meaning of the sentence wasn't altered.

5. NEO-PI-R

The NEO-PI-R is a self-report 240 item questionnaire designed to assess personality traits of adults from 17 years of age according to the *Big Five* model ²⁹. The NEO-PI-R has been validated to the Portuguese population ³⁰.

The items, consisting of self-statements regarding behaviours and feelings, are scored using a *Likert* scale with five points, in which 1 corresponds to "strongly disagree" and 5 to "strongly agree".

The *Big Five* personality domains assessed are Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness, which provide a global perspective on the personality. Each domain is composed by six facets or traits, which are very specific characteristics of the personality.

The Portuguese version of the NEO-PI-R was answered by the FM patients and their unaffected sisters (Annexe 2). The questionnaire was sent to the participants' residence with written instructions to be answered individually (Annexe 3) and it was collected on the day of the interview.

6. Statistical analysis

We used the PASW Statistics 18 to perform the statistical analysis of the data.

We performed a Kolmogorov-Smirnov test in order to establish if the scores of the FM patients and their unaffected sisters in the temperamental traits and personality domains assessed had a normal distribution ($p \ge 0,05$).

We investigated if there were statistically significant differences (p<0,05) between the FM patients and their unaffected sisters regarding these parameters by means of the t Student test for paired samples, when the scores had normal distribution, and the Wilcoxon test for matched pairs, when they had not.

We further investigated if there was a correlation between the temperamental traits in childhood and the personality domains in the present by means of a Pearson correlation, when the variables had a normal distribution, or a Spearman correlation, when they had not.

RESULTS

1. Population

The screening criteria described reduced the potential population to 317 individuals, which were contacted by telephone. Of these, 278 were excluded for the following reasons: 121 did not have an unaffected sister, for 27 their sister lived too far away to attend, 73 were already orphans or their mother was not capable of participating and 57 were not reachable through the telephone. Of the remaining 39 families satisfying inclusion criteria, 11 declined to participate and 6 never made themselves available to attend the research centre.

Altogether, 22 families, composed of a FM patient, one unaffected sister and the mother of both, were included in the study. One patient's sister satisfied criteria for FM at the time of the interview, so that family was excluded from the study, reducing the population to 21 families. Their demographic characteristics are presented in Table I.

Of the 21 mothers, 3 (14,3%) satisfied criteria for FM, and none of them had been previously diagnosed.

The FM patients had an average age of 32,9 years (SD=12,9; range: 15-49) when the first symptoms they attributed to FM appeared, and 39,7 years (SD=10,8; range: 17-54) when the diagnosis of FM was made.

Not all FM patients and their unaffected sisters identified the mother as their maternal figure from two through seven years of age: one patient named her father, another patient named her godfather and one patient's sister, from another family, named her father. These three families were excluded from the analysis of the TABC-R.

	FM Patients	Sisters	Mothers
Age (years)			
Mean	40,9	40,1	67,6
sd	10,4	10,3	11,2
Range	18-55	19-52	45-85
Marital status			
Single	4 (19,0%)	7 (33,3%)	-
Married	17 (81,0%)	12 (57,1%)	-
Divorced	0	2 (9,5%)	-
Occupation			
Employee	14(66,7%)	14 (66,7%)	3 (14,3%)
Self employed	4 (19,0%)	1 (4,8%)	2 (9,5%)
Unemployed	2 (9,5%)	2 (9,5%)	10 (47,6%)
Student	1 (4,8%)	3 (14,3%)	0
Retired	0	0	6 (28,6%)
Unknown	0	1 (4,8%)	0
Schooling (years)			
Mean	12,6	12,0	4,1
sd	4,2	5,4	3,5
Range	5-21	4-24	0-11
School Retentions/Schooling (%)			
Mean	4%	5%	$7\%^*$
sd	7%	9%	15%*
Range	0-22%	0-33%	0-50%*

Table I – Demographical characterization of the population

^{*} Four mothers never attended school sd – standard deviation

2. MMSE

Of the 21 mothers, one obtained a score in the MMSE indicating the presence of cognitive impairment (thirteen). Another mother, despite having a normal score on the MMSE (seventeen; never attended school), was unable to understand most of the questionnaires

presented on the study, including the TABC-R. The answers provided by these two participants on the TABC-R were excluded, thus leaving sixteen families to be included in the analysis of the TABC-R.

3. TABC-R

Altogether, sixteen pairs of FM patients and their unaffected sisters were compared according to the TABC-R. The results are summarized in Table II.

		Mean difference	95% Cor Interval		
	Mean score (sd)	A-B (sd)	Differ		р
			Lower	Upper	
Inhibition A	21,81 (7,03)	-2,13 (8,77)	-6,80	2,55	0,348*
Inhibition B	23,94 (9,82)	-2,15 (0,77)	-0,80	2,33	0,540
Negative	25,56 (10,63)				
Emotionality A	25,50 (10,05)	-1,38 (14,39)	-9,04	6,29	$0,708^{*}$
Negative	26,94 (14,44)	-1,38 (14,39)	-9,04	0,29	0,708
Emotionality B	20,94 (14,44)				
Lack of Task	16,38 (5,55)				
Persistence A	10,50 (5,55)	0,38 (7,40)	-3,57	4,32	0,842*
Lack of Task	16,00 (6,52)	0,38 (7,40)	-3,37	4,52	0,042
Persistence B	10,00 (0,52)				
Impulsivity A	90,94 (20,38)	-4,25 (44,00)	-27,69	19,19	$0,705^{*}$
Impulsivity B	95,19 (33,10)	-4,23 (44,00)	-27,09	17,17	0,705
Activity Level A	22,81 (7,87)	0.25 (12.06)			0,798**
Activity Level B	23,06 (9,68)	-0,25 (12,06)	-	-	0,798

Table II – TABC-R scores for FM patients (A) and their unaffected sisters (B)

*t Student test for paired samples ** Wilcoxon test for matched pairs

sd - standard deviation

By the analysis of the data, we concluded that there are no statistically significant differences between the FM patients and their unaffected sisters regarding their temperamental traits as recalled by their mothers and measured by the TABC-R.

4. NEO-PI-R

Twenty-one FM patients and twenty-one unaffected sisters were compared according to the NEO-PI-R. The results are summarized in Table III.

			95% Co	nfidence	
	Maan agang (ad)	Mean difference	Interva	l of the	
	Mean score (sd)	A-B (sd)	Diffe	rence	р
			Lower	Upper	
Neuroticism A	119,48 (21,18)	20,81 (28,68)	7,75	33,87	0,003*
Neuroticism B	98,67 (22,11)	20,01 (20,00)	1,15	55,67	0,003
Extraversion A	103,81 (21,81)	-4,29 (23,23)	-14,86	6,29	$0,408^{*}$
Extraversion B	108,10 (15,53)	-4,29 (23,23)	-14,00	0,29	0,408
Openness A	112,29 (21,28)	4,52 (21,98)	-5,48	14,53	0,357*
Openness B	107,76 (20,33)	4,52 (21,98)	-3,40	14,33	0,337
Agreeableness A	125,86 (15,34)	7.62 (14.65)	0,95	14,29	$0,027^{*}$
Agreeableness B	118,24 (8,29)	7,62 (14,65)	0,95	14,29	0,027
Conscientiousness A	123,10 (17,05)	2 24 (20.05)			0,702**
Conscientiousness B	120,86 (16,87)	2,24 (20,05)	-	-	0,702

Table III – NEO-PI-R scores of FM patients (A) and their unaffected sisters (B)

*t Student test for paired samples

** Wilcoxon test for matched pairs

sd - standard deviation

By the analysis of the data, we concluded that there are statistically significant differences between the FM patients and their unaffected sisters regarding Neuroticism and Agreeableness, both being higher in FM patients. We found no statistically significant differences between the FM patients and their unaffected sisters regarding Extraversion, Openness and Conscientiousness.

5. Correlation between TABC-R and NEO-PI-R dimensions

We investigated if there was a correlation between the recalled temperamental traits in childhood and the personality domains at present in our population.

In order to do so, we performed a Pearson correlation for the dimensions Negative Emotionality and Neuroticism. We also performed a Spearman correlation for 1) Activity Level and Extraversion and 2) Lack of Task Persistence and Conscientiousness.

We did not find significant correlations between any of these pairs.

DISCUSSION

Temperament refers to biologically based behaviour traits expressed early in life ³¹ that are considered to be the foundation of personality. The last corresponds to a set of individual characteristics that influence the person's cognitions, motivations and behaviours.

The personality domains in adulthood are influenced by both heredity, which accounts for 41 to 61% of the variance in twins, and nonshared environmental effects $^{32-33}$.

Personality is relatively stable across life, although some variation in all its domains occurs with aging ³⁴⁻³⁵. Furthermore, both temperamental and personality traits vary with gender and culture, amongst other factors ^{28, 32, 36-37}.

There is evidence of a continuity of temperamental characteristics through childhood and a linkage between temperament in childhood and personality in adolescence and adulthood ^{28, 38-39}

Specifically, one prospective study provided evidence of a relationship between temperament, as measured by the TABC, in early and middle childhood and personality, as measured by the *NEO Five-Factor Inventory* (the short version of the NEO-PI-R) in adolescence and early adulthood. Overall, temperament in early/middle childhood accounted for 32% of the variance in personality in adolescence/early adulthood at the facet level and 34% at the domain level ³⁸.

There is general consensus that the temperamental trait Negative Emotionality is a precursor of the personality domain Neuroticism; similar relations are accepted for Activity Level/Extraversion and Lack of Task Persistence/Conscientiousness. There is no consensus regarding the temperamental precursors for Openness and Agreeableness ³⁸.

The purpose of this study is to provide a contribution towards the comprehension of the psychological aspects related to FM. By using sisters as control subjects, we intended to

reduce the confounding influence of age, gender and culture, as well as genetic and shared environmental influences upon the results.

In our study, FM patients score significantly higher than their unaffected sisters in Neuroticism (p=0,003) and Agreeableness (p=0,027).

Neuroticism represents individual differences in the tendency to experience distress ²⁹. FM patients and their first degree relatives with FM report more psychological distress than relatives without FM ¹⁷. Additionally, both FM and Neuroticism are associated with negative affections ^{15, 22, 40}, inappropriate coping responses ^{12, 22, 40} and a proneness to the development of several psychiatric disorders ^{14-16, 22, 29, 41}. These commonalities, amongst others ²², support the concept that a relationship exists between Neuroticism and FM.

This relationship might have practical implications, since Neuroticism is negatively associated with pain self-efficacy beliefs and pain control appraisals ⁴². Furthermore, Neuroticism includes a propensity to experience anxiety ²⁹, and current anxiety symptoms, as measured by the *Beck Anxiety Inventory*, correlate positively with functional impairment in FM patients ¹⁵. Thus, the patients' psychological evaluation might provide useful information regarding their functional prognosis and the probability of success of psychological intervention measures ¹².

On the other hand, Agreeableness represents a tendency of the individual to be compliant, cooperative, friendly and trusting. Agreeable people value relationships and social harmony. In extreme cases, those individuals may become dependent on others and fawning ⁴⁰.

It may seem antagonistic that individuals who are prone to experience negative affections, such as anger, embarrassment and depression, are simultaneously trusting, compassionate and willing to compromise their interests with others. One possible interpretation for this is that Agreeableness refers to personality characteristics that influence the way individuals are judged by others ⁴⁰. Thus, individuals might tend to respond to items like "I sympathize with others' feelings" according to what they consider desirable.

Another possible explanation is that FM patients use compensating strategies to deal with their vulnerabilities and difficulties, such as being helpful for others and keeping an intense activity level ²⁰. This could explain why they are easily invaded by the concerns and worries of others or, in other words, "worry about everything and everyone". This is also in agreement with the finding that most of the variance in Agreeableness is due to nonshared environmental influences, rather than heredity ³².

It is also possible that both domains, Neuroticism and Agreeableness, are actually strong in FM patients, and this emotional dissonance contributes to their internal conflict. We are not aware of any previous study suggesting a relationship between Agreeableness and FM.

It would be extremely interesting if such predisposing factors to FM could be anticipated in childhood, in time to consider preventive measures. Clinical observations by one of the supervisors suggested that this would be the case. However, we found no differences between the FM patients and their unaffected sisters regarding their temperamental traits in childhood as recalled by their mothers following the TABC-R questionnaire.

This can be interpreted as indicating that there are no actual differences in childhood temperament to be associated with later development of FM. However, such a conclusion has to be tempered by the limitations of the study, with special emphasis on its limited size and its base on recall and memory. Although we excluded from analysis one mother with detectable cognitive impairment and also those who did not represent the dominant maternal figure to both her daughters, it is forceful to recognise that memory cannot guarantee a valid account of events happened an average of 33 years earlier.

This concern is supported by the fact that we did not find significant correlations between the temperamental traits in childhood, as measured retrospectively by the TABC-R, and the personality domains at present, as measured by the NEO-PI-R. This is in disagreement with a prospective study, which provided evidence of a relationship between temperament in childhood and personality in adulthood as measured by these questionnaires ³⁸. Thus, these results probably reflect the limitations of our methodology, specifically the retrospective assessment of temperamental traits in childhood. We had clearly anticipated these limitations and considered this study to be of an exploratory nature.

The first limitation of this study is the small size of the population. For the sake of validity and intellectual honesty, we decided to adopt quite strict exclusion criteria, even if it diminished our statistical power. This is especially the case with the exclusions related to the identification of the maternal figure, whose justification is arguable.

The specific limitations of the use of the TABC-R in this study are: 1) the TABC-R has not been validated to the Portuguese population, thus conditioning the interpretation of the results regardless the conditions of its application, and 2) the TABC-R was answered retrospectively by the mothers of the FM patients based on their daughters' childhood, while the battery was originally designed to be answered regarding the behaviour of young children in the last three months.

Thus, the behaviours evaluated in the questionnaire occurred decades ago, reason why it was professedly difficult to some of the mothers to evoke those situations and to differentiate their daughters regarding the frequency of the behaviours enounced, especially when their behaviour patterns weren't extremely different. It is, therefore, possible that our negative observations are a valid reflex of the true temperament of these people at early age, but we cannot exclude recall bias due to the time elapsed and age of the mothers, despite a normal MMSE.

In order to obtain definitive clarification on this subject, a prospective study would be needed on a population constituted by triplets, with two preschooler female siblings and the mother of both, in order to formally evaluate the influence of temperamental characteristics on the development of FM. Such study would also provide a unique opportunity for the investigation of other possible vulnerability factors for the development of FM, thus offering an opportunity for primary prevention of this condition.

Additionally, the FM patients were recruited from a tertiary-care centre, and the population may not be representative of the FM patients in the community, thus limiting the generalization of the conclusions.

CONCLUSIONS

Our retrospective study was unable to demonstrate statistically significant differences between FM patients and their unaffected sisters regarding their temperamental traits in childhood, as evaluated retrospectively by their mothers using the TABC-R questionnaire. We also did not find significant correlations between the temperamental traits in childhood and the personality domains in the present. The limitations of our study do not allow a firm conclusion that there are no psychological predictors of FM in early childhood, since they may not be susceptible to detection using this exploratory retrospective evaluation.

Personality evaluation using the NEO-PI-R found that FM patients score higher than their unaffected sisters in Neuroticism and Agreeableness. This is in agreement with several other studies, thus supporting the hypothesis that Neuroticism may constitute a vulnerability factor for the development of FM. Our findings are strengthened by the use of paired samples of patients and their unaffected sisters, which diminishes the influence of demographical and social background confounders.

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ANNEXE 1

Eu, Patrícia Frias Rodrigues, aluna do Mestrado Integrado em Medicina da Faculdade de Medicina da Universidade de Coimbra, com o nº de aluna 20051407, declaro por este meio que tomei posse da BATERIA DE AVALIAÇÃO DO TEMPERAMENTO INFANTIL -FORMA REVISTA (Martin & Bridger, 1998) com tradução de Seabra-Santos, M. J. (2006) com a finalidade de utilizar esta bateria no trabalho final de 6º ano médico com vista à obtenção de grau de Mestre.

Conforme os termos acordados com a autora da tradução, que se encontra a realizar trabalhos de investigação sobre este instrumento, declaro por este meio que me comprometo a não publicar esta bateria bem como a não colocar uma cópia em anexo no trabalho final. Esta será fornecida directamente ao júri da prova em suporte informático ou papel.

Coimbra, 16 de Novembro de 2010

ANNEXE 2

Faculdade de Medicina da Universidade de Coimbra

INSTRUÇÕES DE PREENCHIMENTO	Este questionário é confidencial e para uso estritamente científico. Este questionário vai ser submetido a leitura óptica. Por favor use tinta preta ou azul evitando tocar nos cantos das	Preencha	assim assim não		XX
	caixas.		CODIFICA	ÇÃO	

Iniciais:

Data de nascimento: / /

DF-Discordo Fortemente **D-Discordo**

DAS RESPOSTAS

N-Neutro

C-Concordo

CF-Concordo Fortemente

ITEM	DF	D	N	C	CF
Não sou uma pessoa preocupada					
Gosto mesmo da maioria das pessoas que encontro					
Tenho uma imaginação muito activa					
Tendo a ser descrente ou a duvidar das boas intenções dos outros					
Sou conhecido(a) pela minha prudência e bom senso					
Muitas vezes, aborrece-me a maneira como as pessoas me tratam					
Não gosto de multidões, por isso as evito					
Não dou grande importância às coisas da arte e da beleza					
Não sou matreiro(a) nem espertalhão (espertalhona)					
Antes quero deixar as coisas em aberto que planear tudo, com antecedência					
Raramente me sinto só ou abatido(a)					
Sou dominador(a), cheio(a) de força e combativo(a)					
Sem emoções fortes, a vida não teria interesse para mim					
Algumas pessoas pensam que sou invejoso(a) e egoísta					
Tento realizar conscienciosamente todas as minhas obrigações					
Ao lidar com as outras pessoas, tenho sempre receio de ser mal sucedido(a)					
No trabalho e nos tempos livres, gosto de fazer as coisas com calma					
Sou bastante agarrado(a) às minhas próprias maneiras de proceder					
Preferia colaborar com as outras pessoas do que competir com elas					
Sou distraído(a) e pouco determinado(a)					
Raramente me deixo levar pelos meus impulsos (caprichos)					
Sinto muitas vezes uma necessidade louca de me divertir					
Muitas vezes dá-me prazer brincar com teorias e ideias abstractas					

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ITEM	DF	D	N	C	CF
Não me custa nada gabar-me das minhas capacidades e dos meus sucessos					
Sou bastante capaz de organizar o meu tempo de maneira a fazer as coisas dentro do prazo					
Sinto-me muitas vezes desamparado(a), desejando que alguém resolva os meus problemas por mim					
Para dizer verdade, nunca pulei de alegria					
Acredito que deixar os alunos ouvir pessoas com ideias discutíveis só os pode confundir e desorientar					
Os governantes deviam preocupar-se mais com os aspectos humanos					
Ao longo dos anos fiz algumas coisas bem estúpidas					
Assusto-me facilmente					
Não me dá muito prazer estar à conversa com as pessoas					
Tento sempre organizar os meus pensamentos em termos realistas, não dando asas à imaginação					
Acredito que a maioria das pessoas são, no fundo, bem intencionadas					
Não encaro os deveres cívicos, tais como votar, muito seriamente					
Não me zango facilmente					
Gosto de ter muita gente à minha volta					
Às vezes deixo-me absorver totalmente pela música que ouço					
Se for necessário, não hesito em manipular as pessoas para conseguir aquilo que quero					
Mantenho as minhas coisas limpas e em ordem					
Às vezes, sinto-me completamente inútil					
Às vezes não consigo afirmar-me tanto como devia					
Raramente sinto emoções fortes					
Tento ser delicado com todas as pessoas que encontro					
Às vezes, não sou tão seguro(a) ou digno(a) de confiança como deveria ser					
Poucas vezes, sinto-me inseguro(a) quando estou com outras pessoas					
Quando faço alguma coisa faço-a com todo o entusiamo					
Penso que é interessante aprender e cultivar novos hobbies (passatempos)					
Sei ser sarcástico(a) e cínico(a), quando necessário		~			
Tenho objectivos claros e faço por atingi-los de uma forma ordenada					
Custa-me resistir aos meus desejos					
Não gostaria de passar férias no Algarve			□.		
Acho as discussões filosóficas aborrecidas					
Prefiro não falar de mim próprio(a) e das minhas realizações					
Perco muito tempo antes de me concentrar no trabalho					
Sinto que sou capaz de resolver a maioria dos meus problemas					
Já experimentei, algumas vezes, sensações de grande alegria ou de êxtase (arrebatamento)					

ITEM	DF	D	N	C	CF
Acredito que as leis e as políticas sociais deviam mudar, de forma a reflectir as necessidades de um mundo em mudança			Π,	· □	
Sou inflexível e duro(a) nas minhas atitudes	Q				
Penso maduramente nas coisas, antes de tomar uma decisão			🖸		
Raramente me sinto amedrontado(a) ou ansioso(a)		· 🗆			
Sou conhecido(a) como uma pessoa amigável e simpática					Π.
Tenho uma grande capacidade de fantasiar				. 🗆	
Penso que a maior parte das pessoas abusa de nós, se as deixarmos					
Mantenho-me informado(a) e, geralmente tomo decisões inteligentes					
Sou conhecido(a) como uma pessoa de mau génio e irritável					
Normalmente prefiro fazer as coisas sozinho(a)					
Aborrece-me ver bailado ou dança moderna					
Mesmo que quisesse, não conseguiria enganar ninguém					
Não sou uma pessoa muito metódica (ordenada)					
Raramente estou triste ou deprimido(a)					
Já fui muitas vezes líder de grupos a que pertenci					
É importante para mim a maneira como eu vejo as coisas					
Algumas pessoas consideram-me frio(a) e calculista					
Pago as minhas dívidas a tempo e horas					
Já houve alturas em que fiquei tão envergonhado(a), que desejava meter-me num buraco					
Trabalho devagar, mas persistentemente (de forma contínua)					
Quando encontro uma maneira correcta de fazer qualquer coisa não mudo mais					
Hesito em expressar a minha raiva, mesmo quando justificada					Ú
Quando inicio um programa de modificação pessoal, deixo de o cumprir após alguns dias					
Não me é dificil resistir a tentações					
Já fiz algumas coisas só pelo gozo ou gana de as fazer					
Gosto de resolver problemas e <i>puzzles</i>					
Sou melhor do que a maioria das pessoas e tenho consciência disso					
Sou uma pessoa aplicada, conseguindo sempre realizar o meu trabalho					
Quando estou numa grande tensão sinto-me às vezes como se me estivessem a fazer em pedaços					
Não sou um(a) grande optimista					
Acredito que devemos ter em conta a autoridade religiosa quando se trata de tomar decisões respeitantes à moral					
Nunca fazemos demasiado pelos pobres e pelos velhos					
Às vezes actuo primeiro e penso depois					
Muitas vezes sinto-me tenso(a) e enervado(a)					

ITEM	DF	D	N	C	CF
Muitas pessoas veêm-me como uma pessoa um pouco fria e distante					
Não gosto de perder tempo a sonhar acordado(a)					
Penso que a maioria das pessoas com quem lido são honestas e dignas de confiança					
Sou frequentemente confrontado(a) com situações para as quais não estou totalmente preparado(a)					
Não sou considerado(a) uma pesssoa melindrosa ou irritável					
Sinto mesmo necessidade de estar com outras pessoas, quando estou sozinho(a) durante muito tempo					
Fico admirado(a) com os modelos que encontro na arte e na natureza					
Ser completamente honesto(a) é uma via inadequada para fazer negócios					
Gosto de ter as coisas no seu lugar, pois assim sei onde as encontrar					
Já senti, algumas vezes, uma sensação profunda de culpabilidade ou de ter pecado					
Normalmente, nas reuniões, deixo os outros falar					
Raramente presto atenção àquilo que sinto no momento					
Geralmente procuro ser atencioso(a) e delicado(a)					
Nos jogos de paciência, às vezes, faço batota					
Não fico muito atrapalhado(a) quando as pessoas se riem e fazem pouco de mim					
Muitas vezes sinto-me a rebentar de energia					
Frequentemente experimento comidas novas e desconhecidas					
Quando não gosto das pessoas, faço-lho saber					
Trabalho muito para conseguir o que quero					
Quando me apresentam o meu prato preferido tenho tendência a comer demasiado					
Procuro evitar filmes demasiado chocantes ou assustadores					
Às vezes perco o interesse quando as pessoas começam a falar sobre assuntos demasiado teóricos e abstractos					
Tento ser humilde					
Tenho dificuldades em me decidir a fazer o que devo					
Em casos de perigo conservo a cabeça fria					
Às vezes sinto-me a rebentar com tanta felicidade					
Penso que as ideias diferentes das nossas, sobre o que é bem ou o que é mal, das pessoas de outras sociedades, devem ter valor para elas					
Não gosto de pedintes					
Antes de agir, penso nas consequências					
Raramente me preocupo com o futuro					
Gosto muito de falar com as outras pessoas					
Dá-me gozo concentrar-me numa fantasia e explorar todas as suas possibilidades, deixando-a crescer e desenvolver-se					
Fico desconfiado(a) sempre que alguém me faz qualquer coisa agradável					



ITEM	DF	D	N	C	CF
Tenho orgulho do meu bom senso					
Fico frequentemente aborrecido(a) com as pessoas com quem tenho de lidar				□. ·	
Prefiro trabalhos que eu possa fazer sózinho(a), sem ser incomodado(a) por outras pessoas					
A poesia pouco ou nada me diz					
Detestaria ser considerado(a) um(a) hipócrito(a)	. 🗆				
Parece que nunca consigo ser organizado(a)					
Tenho a tendencia a culpabilizar-me, se alguma coisa corre mal					
Muitas vezes as outras pessoas pedem-me para as ajudar a tomar decisões					
As minhas emoções e sentimentos são muitas e variadas	· 🗆				
Não sou muito conhecido(a) pela minha generosidade					
Quando assumo um compromisso podem sempre contar que eu o cumpra					
Sinto-me, muitas vezes, inferior às outras pessoas					
Não sou tão rápido(a) e vivo(a) como outras pessoas					
Prefiro passar o tempo em ambientes que me são familiares					
Quando sou insultado(a), tento apenas perdoar e esquecer					
Não sou ambicioso(a)					
Raramente cedo aos meus impulsos				D	
Gosto de estar onde está a acção					
Gosto de resolver <i>puzzles</i> difícieis					
Fenho uma opnião muito favorável acerca de mim próprio(a)					
Quando começo um projecto, quase sempre o termino					
Sinto quase sempre dificuldade em tomar decisões					
Não me considero uma pessoa alegre					
ulgo que é mais importante ser fiel aos próprios ideiais e princípios lo que ter abertura de espírito					
As necessidades humanas devem ter sempre prioridade sobre considerações económicas					
Sou frequentemente levado(a) pelo impulso do momento					
Preocupo-me, muitas vezes, ao pensar que as coisas podem correr mal		- 🗆			
é fácil para mim sorrir e conviver com pessoas desconhecidas					
Quando vejo que estou a ser levado(a) pela imaginação, procuro oncentrar-me ocupando-me com qualquer trabalho ou actividade					
A minha primeira reacção é confiar nas pessoas					
Jão me parece que tenha sido bem sucedido(a), seja no que for					
preciso muito para me arreliarem					
refiro passar férias numa praia concorrida do que numa cabana solada nos bosques					
Certas formas de música têm um encanto infinito para mim					

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ITEM	DF	D	N	C	CF
Por vezes levo as pessoas a fazerem o que eu desejo					
Sou uma pessoa um tanto rigorosa: aprecio a ordem, em todas as coisas					
Tenho uma fraca opinião acerca de mim próprio(a)					
Prefiro tratar da minha vida a ser chefe das outras pessoas					
Poucas vezes me dou conta da influência que diferentes ambientes produzem nas pessoas					
A maioria das pessoas que conheço, gosta de mim					
Observo, rigorosamente, os princípios éticos que defendo					
Sinto-me à vontade na presença do meu patrão ou outras autoridades					
Normalmente, dou a impressão de estar sempre com pressa					
Por vezes mudo coisas em minha casa, só para experimentar a diferença					
Se alguém começa uma briga, estou sempre pronto(a) para lhe dar luta					
Esforço-me por conseguir tudo aquilo que eu puder					
Às vezes, como até me sentir mal					
Adoro as emoções da montanha russa					
Gosto pouco de me pronunciar sobre a natureza do universo e da condição humana			Ó		
Julgo que não sou melhor do que os outros, seja qual for a sua condição					
Quando um projecto se torna demasiado difícil, sinto-me inclinado(a) a começar um novo					
Consigo controlar-me bastante bem, em situações de crise					
Sou uma pessoa alegre e bem disposta					
Considero-me uma pessoa aberta e tolerante, no que respeita ao modo de vida das outras pessoas					
Penso que todos os seres humanos são dignos de respeito					
Raramente tomo decisões precipitadas					
Tenho menos receios que a maioria das pessoas					
Prendem-me aos meus amigos fortes laços afectivos					
Em criança, raramente achava piada aos jogos de faz-de-conta					
Tendo a pensar o melhor acerca das pessoas					
Sou uma pessoa muito competente					
Houve alturas em que experimentei ressentimento e amargura					
Os encontros sociais são, geralmente, aborrecidos para mim					
Às vezes, ao ler a poesia e ao olhar para uma obra de arte, sinto um arrepio ou uma onda de emoção					
Por vezes, meto medo ou lisonjeio as pessoas para as levar a fazer o que quero que elas façam					
Não tenho a obsessão da limpeza					
Às vezes, as coisas parecem-me bastante negras e desesperadas					
Nas conversas tendo a falar mais do que os outros					

ITEM	DF	D	N	C	CF
Acho fácil sentir empatia - quer dizer, sentir o que os outros sentem					
Considero-me uma pessoa caridosa					
Tento fazer as tarefas com todo o cuidado, para não ter necessidade de as fazer outra vez					
Se disser ou fizer algum mal a alguém, custa-me imenso conseguir encarar essa pessoa outra vez					
A minha vida decorre, a um ritmo rápido					
Quando estou em férias, prefiro voltar a um local genuíno e já conhecido					
Sou cabeçudo(a) e teimoso(a)					
Esforço-me por ser excelente em tudo o que faço					
Às vezes, faço as coisas de modo tão impulsivo que, mais tarde, me arrependo					
Atraem-me as cores alegres e os estilos exuberantes					
Tenho muita curiosidade intelectual					
Prefiro elogiar os outros a ser elogiado(a)					
Existem tantas pequenas coisas a fazer que, por vezes, simplesmente as ignoro					
Mesmo quando tudo parece correr mal, eu ainda consigo tomar boas decisões					
É raro utilizar palavras como fantástico ou sensacional, para descrever as minhas experiências					
Algo corre mal, se aos 25 anos as pessoas não sabem em que é que acreditam					
Tenho simpatia por pessoas com menos sorte do que eu					
Planeio, de antemão e com cuidado, as minhas viagens					
Às vezes, veêm-me à cabeça pensamentos aterradores	_ 🛛 '				
Interesso-me, pessoalmente, pelas pessoas com quem trabalho					
Teria muita dificuldade em deixar a minha imaginação vaguear, sem controlo nem orientação					
Tenho bastante fé na natureza humana					
Sou eficiente e eficaz no meu trabalho					
Mesmo os pequenos contratempos podem ser frustrantes para mim					
Gosto de festas com muita gente					
Agrada-me mais ler poesia, que dá ênfase aos sentimentos e às imagens, do que uma história com princípio, meio e fim					
Orgulho-me da minha perspicácia em lidar com as pessoas					
Gasto muito tempo à procura de coisas que coloquei fora do lugar		D			
Muitas vezes, quando as coisas não me correm bem, perco a coragem e tenho vontade de desistir					
Não considero fácil controlar as situações					
Coisas estranhas, como certos sabores ou o nome de locais distantes, podem evocar em mim fortes emoções					

15.1	- 3	38	
0		83	
1.5	104	15.	
1.25	1.1	22	

ITEM	DF	D	N	С	CF
Quando posso, deixo o que estou a fazer para ajudar os outros					
Só se estivesse mesmo doente é que eu faltava a um dia de trabalho					
Fico embaraçado(a), quando as pessoas que eu conheço fazem asneiras					
Sou uma pessoa muito activa					
Sigo sempre o mesmo caminho, quando vou a qualquer sítio					
Frequentemente, arranjo discussões com a minha família e colegas de trabalho					
Tenho o vício do trabalho					
Consigo sempre manter os meus sentimentos sob controlo					
Nos acontecimentos desportivos, gosto de fazer parte da multidão					
Tenho uma grande variedade de interesses intelectuais					
Sou uma pessoa superior					
Tenho muita auto-disciplina					
Sou bastante estável, do ponto de vista emocional					
Rio facilmente					
Penso que a nova moralidade, que consiste em tudo permitir, não é moralidade nenhuma					
Gostaria mais que me considerassem "compreensivo(a)" (inclinado(a) a perdoar) do que "justo(a)" (inclinado(a) ao rigor)					
Penso duas vezes, antes de responder a uma pergunta	D				

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ANNEXE 3

Cara colaboradora

Nós somos um grupo de estudantes do 6.º ano de Medicina, orientados pelo professor doutor José António Pereira da Silva, que pretende estudar a Fibromialgia, compreendê-la melhor e encontrar formas de ajudar as pessoas que têm essa doença.

Há indícios de que a fibromialgia possa ter a ver com a maneira de ser das pessoas, com acontecimentos da sua vida e admite-se que esses aspectos já estivessem presentes na infância.

Junto enviamos um inquérito sobre situações do seu dia-a-dia e personalidade. Este é um inquérito usado em muitos estudos pelo mundo inteiro e respondido por muitas pessoas e pretende estudar a personalidade. Não há respostas certas ou erradas.

Este inquérito é estritamente confidencial e para uso científico. Pedimos-lhe que responda sozinha e que traga o inquérito respondido quando vier ter connosco. Se tiver alguma dúvida, ajudá-la-emos nesse dia.

Transmitimos-lhe, desde já, o nosso agradecimento.