

**THE PSYCHONEUROLOGICAL PROFILE OF
FIBROMYALGIA**

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ABSTRACT

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Fibromyalgia (FM) is a chronic pain syndrome of unknown etiology. It was previously suggested that patients with fibromyalgia were, in early life, often subjected to either psychological or physiological trauma. It is, in general, known that early life experiences and attachment to primary caregivers can influence physiological function in adult life, especially those functions related to stress vulnerability. Many studies have been performed on fibromyalgia patients but most of them investigated either psychological or physiological aspects. The purpose of this study was to investigate the psychological profile (attachment style, preferred way of thinking as well as prevalence of depression and anxiety) and physiological aspects (autonomic nervous system function and cortisol levels) simultaneously in an attempt to see whether a link exists between the two aspects and whether a specific psychoneurological profile could be discerned for fibromyalgia patients. Sixteen patients (14 females, 2 males) with fibromyalgia, and 15 age- and sex-matched controls (13 females, 2 males) were studied. Patients were diagnosed according to the American College of Rheumatology (ACR, 1990) criteria for fibromyalgia. The Patient Health Questionnaire gathered information on the patient's past health problems, operations, accidents and the prevalence of traumatic events. The Fibromyalgia Impact Questionnaire and Review of Current Symptoms Questionnaire were completed to assess the severity of the disorder. The Experiences in Close Relationships – Revised Questionnaire determined attachment styles. Hemisphere dominance (preferred way of thinking) was evaluated by the Herrmann Brain Dominance Instrument (HBDI), heart rate variability (HRV) by recording R-R intervals and calculating time and frequency domain parameters and salivary cortisol levels by ELISA.

Significant differences were seen between patients and controls for cortisol levels; the total number of symptoms; the number of adverse events in lifetime; anxiety and avoidance subscales of the ECR-R; FIQ total scores; and scores for scales within the FIQ. R-R spectral analysis revealed distinct lowered overall HRV in patients. An orthostatic test revealed a weakened shift towards sympathetic dominance upon standing. During a psychological stressor (filling out the ECR-R), the patients' autonomic nervous system failed to respond with lower HRV as with the controls. As far as the hemispheric dominance of the patients was concerned, the majority appeared to be right-brain orientated with thinking styles preferences strongly influenced by limbic functions. Preference for thinking styles influenced by right limbic structures increased during stress. A link existed between anxiety and depression and the severity of the fibromyalgia symptoms.

The results of individual psychological and physiological parameters found in this study are largely in concordance of that of other studies. Significant differences exist between the psychoneurological variables of fibromyalgia patients and healthy controls: The patient group in this study were characterised by a high prevalence adverse events, insecure attachment styles, high emotionality in the absence of rationality, multiple somatic symptoms, and altered stress-axes activity reflected in low HRV, an inability to mount an appropriate sympathetic response to acute stressors and elevated baseline cortisol levels. It can be concluded that fibromyalgia patients in the present study presented with a distinct psychoneurological profile.

Keywords: early life experiences, attachment style, hemisphere dominance, stress-axes, heart rate variability, autonomic balance, salivary cortisol level, psychoneurological profile

OPSOMMING

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Fibromialgie (FM) is 'n chroniese pynsindroom met 'n onbekende etiologie. Dit is voorgestel dat pasiënte met fibromialgie in hul kinderjare aan fisiologiese of sielkundige trauma blootgestel was. Dit is, in die algemeen, bekend dat vroeë kinderjaarervarings en gebondenheid (engels: attachment) met die primêre versorger fisiologiese funksie in volwasse lewe kan beïnvloed, veral die funksies wat te doen het met streskwesbaarheid. Talle studies is al op fibromialgie gedoen, maar die meeste van hierdie studies het óf sielkundige, óf fisiologiese aspekte ondersoek. Die doel van hierdie studie was om die sielkundige profiel (gebondenheid, denkwysse van voorkeur, en die voorkoms van depressie en angs) en fisiologiese aspekte (hartspoedvariasie, outonome balans en kortisol vlakke) gelyk te bestudeer, in 'n poging om te sien of 'n verband tussen die twee aspekte bestaan en of 'n spesifieke psigoneurologiese profiel vir die pasiënte met fibromialgie onderskei kan word.

Sestien pasiënte (14 vrouens, 2 mans) met fibromialgie, en 15 ouderdom- en geslag-ooreenstemmende kontroles (13 vrouens, 2 mans) is bestudeer. Die pasiënte is gediagnoseer volgens die 'American College of Rheumatology (ACR, 1990)' klassifikasie kriterium vir fibromialgie. Die 'Patient Health Questionnaire (PHQ)' het informasie gegee oor gesondheidsprobleme, operasies, ongelukke en traumatiese gebeurtenisse in die pasiënte se verlede. Die 'Fibromyalgia Impact Questionnaire (FIQ)' en 'Review of Current Symptoms Questionnaire' het die graad van die simptome ondersoek. Die 'Experiences in Close Relationships – Revised Questionnaire (ECR-R)' het gebondenheid bepaal. Hemisfeerdominansie (denkwysse van voorkeur) is deur die 'Herrmann Brain Dominance Instrument (HBDI)', hartspoedvarieerbaarheid (HRV) deur die opname van R-R intervalle en berekening van tyd en frekwensie parameters, en speeksel kortisolvlakke deur middel van ELISA bepaal.

Statisties betekenisvolle verskille het voorgekom tussen die pasiënte en die kontroles vir kortisolvlakke; die totale aantal simptome; die aantal traumatiese gebeurtenisse in leeftyd; angs- en vermydingskale op die ECR-R; FIQ totale lesings; en lesings vir subskale van die FIQ. Ontleding van die R-R spektrale intervalle het getoon dat die pasiënte verlaagde hartspoedvarieerbaarheid het. 'n Ortostatische toets het aangetoon dat daar 'n suboptimale verskuiwing na simpatiese oorheersing is wanneer die pasiënte ontstaan. Gedurende 'n sielkundige stressor, het die kontroles se harspoedvarieerbaarheid afgeneem, terwyl die pasiente s'n dieselfde gebly het. Wat die hemisfeer dominansie betref, is die meeste pasiënte regter-brein georiënteerd, met denkprosesse wat sterk deur limbiese funksie beïnvloed word. Die voorkeur vir denkprosesse wat deur die regter limbiese strukture beïnvloed word, neem toe gedurende spanning. Daar is 'n verband tussen angs en depressie en die graad van fibromialgie simptome.

Die resultate van die individuele sielkundige en fisiologiese parameters van hierdie studie kom grootliks ooreen met dié van ander studies. Betekenisvolle verskille bestaan tussen die psigoneurologiese veranderlikes van fibromialgie pasiënte en gesonde kontroles: Die pasiënt groep in hierdie studie was gekenmerk deur 'n hoë voorkoms van traumatiese gebeure, onseker gebondenheid, veelvoudige somatiese simptome, hoë emosionaliteit in die afwesigheid van rasionaliteit, en gewysigde stres-as aktiwiteit soos gereflekteer in lae hartspoedvarieerbaarheid, 'n onvermoë van die simpatiese senuweestelsel om gepas op 'n akute stressor te reageer, en verhoogde kortisolvlakke. In samevatting kan gesê word dat die fibromialgie pasiënte in die huidige studie 'n psigoneurologiese profiel het wat duidelik van dié van die kontroles verskil.

Sleutelwoorde: vroeë lewenservarings, gebondenheid, hemisfeerdominansie, stress-asse, hartspoedvariasie, outonome balans, speeksel kortisolvlak, psigoneurologiese profiel

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