



Prevalence and relevance of Type D personality in fibromyalgia[☆]



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ABSTRACT

Objective: Distressed (Type D) personality, combining high negative affectivity and social inhibition, is linked to poor health in various populations. Because patients with fibromyalgia experience high negative affect and show signs of social inhibition, this study aimed to examine the prevalence of Type D's components and their associations with health in an additive (worse health with both components present) or synergistic way (components amplifying each other's effects).

Method: Type D personality and physical and mental health were assessed online by 558 patients with self-reported fibromyalgia (94% women, age 47 ± 11 (21–77) years) by the Type D Scale-14 and RAND-36 Health Status Inventory.

Results: Using the standard cutscores, Type D personality was present in 56.5% of patients. Negative affectivity alone and combined with social inhibition was associated with worse mental and, more limited, physical health, but no interactive (synergistic) associations were found.

Conclusions: Type D personality in fibromyalgia exceeds prevalence estimates in general, cardiovascular and chronic pain populations. Some indication of an additive but not of a synergistic effect was found, particularly for mental health, with clearly the largest associations for negative affectivity. The high prevalence of Type D's components may have specific treatment implications.

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1. Introduction

Fibromyalgia is a chronic pain condition characterized by widespread pain, fatigue, sleep problems and cognitive difficulties [1]. There is no standard effective medical treatment for fibromyalgia; consequently, treatment is aimed primarily at improvement of well-being and functioning [2]. Research on psychological characteristics of patients with fibromyalgia and associations with well-being and functioning will provide cues on where and how to intervene, in order to decrease the disease burden and increase quality of life. Some studies have examined personality traits in fibromyalgia, showing higher levels of neuroticism and related concepts and similar or lower levels of the sociability component of extraversion in patients than in healthy controls (e.g., see Refs. [3–6]). However, this research has not led to clear

recommendations on how to improve quality of life, as no consistent associations were found with health-related quality of life [3].

Potentially, not a single personality characteristic but a specific combination of traits could impact quality of life in fibromyalgia. Type D or 'distressed' personality combines the tendencies to experience negative emotions (negative affectivity) and to inhibit the expression thereof due to fear of rejection or disapproval (social inhibition) [7]. Individuals high on both traits are vulnerable to experience chronic distress. Although originally described in the cardiovascular literature, where it has been found to predict morbidity and mortality [8,9], Type D personality may be more broadly relevant through general biological and behavioral mechanisms that might impact health, including physiological hyperreactivity, immune activation and poor health behaviors (e.g., see Refs. [10–13]). Two metaanalyses have shown Type D to be related to poor mental and physical health status in various medical [14] and general populations [12]. One study in a heterogeneous chronic pain sample – not including fibromyalgia – found a high prevalence of Type D (42.5%) and associations of Type D with depression, psychasthenia and introversion [15].

Type D personality in fibromyalgia has not yet been studied. However, patients with fibromyalgia experience relatively high levels of negative affect [16,17]. Also, although social inhibition has not been directly

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examined in fibromyalgia, patients report early victimization and interpersonal conflict [18,19] as well as frequent invalidation of their condition [20], which may lead to a lack of trust [21] and inhibited social sharing and loneliness [22,23]. Other findings may have some relevance to the Type D construct. Compared with the general population, patients with fibromyalgia experience their emotions more intensely but have greater difficulty identifying and describing their emotions (alexithymia) and more frequently use emotionally avoidant strategies (e.g., emotion suppression) [16]. Both negative affectivity and social inhibition concepts have separately been shown to be related to a poorer mental and physical health status in fibromyalgia [20,24,25]. Expression rather than inhibition of negative emotions tends to be therapeutic [26,27] but negative affect may stimulate social inhibition [16,18]. Thus, it is relevant to study whether the combined effect of negative affectivity and social inhibition is especially detrimental for patients' functioning.

It is important to note that there is debate about whether the combination of both components of Type D is key in predicting health effects, implying the presence of an interactive effect beyond each main effect (a synergistic view) or whether only separate main effect components (an additive view) best explain Type D's effects [28,29].

The aim of the current study was to examine the prevalence of Type D personality in fibromyalgia and its associations with mental and physical functioning. We hypothesized that Type D would be prevalent in fibromyalgia and that both negative affectivity and social inhibition, but especially their synergistic effect, would be related to a poorer mental and physical health.

2. Methods

2.1. Participants

As part of a large international internet study on invalidation in rheumatic diseases [30], the Type D personality questionnaire DS14 [7] was assessed in the English-language version of the internet study. A total of 558 patients with fibromyalgia completed the measure as well as demographic questions and the RAND-36 Health Status Inventory [31]. Demographic and health-related characteristics of the sample, which was mostly female (94%) and averaged 47 years of age (S.D.= 11; range: 21–77), are described in Table 1.

2.2. Procedure

The study was approved by the Medical Ethical Committee of the University Medical Center Utrecht, The Netherlands. Participants were invited for an online survey via a recruitment notice on websites of patient associations for rheumatic diseases located in various nations. The recruitment notice included information about the aim and content of the study, inclusion criteria (≥ 18 years and having a rheumatic disease), duration of participation (about 20 min) and a hyperlink to the online questionnaire. Participants could decide to participate after being informed about the study and were able to stop participation at any point if they desired.

2.3. Measures

2.3.1. Type D personality

Type D was assessed by means of the Type D Scale-14 (DS14) [7], which consists of two subscales with items scored on a 5-point Likert scale (0=false, 4=true). The 7-item negative affectivity subscale includes three facets: dysphoria (e.g., "I am often down in the dumps"), anxiety (e.g., "I often worry about something") and irritability (e.g., "I am often irritated"). The 7-item social inhibition subscale assesses the facets social discomfort (e.g., "I often feel inhibited in social interactions"), reticence (e.g., "I am a closed kind of person") and lack of social poise (reversed: "I make contact easily when meeting people").

Table 1

Demographic and health-related characteristics of patients with fibromyalgia ($n=558$).

Characteristics	
<i>Demographic</i>	
Age (years) [mean (S.D.)]	46.7 (10.6)
Female gender [n (%)]	522 (94)
With partner [n (%)]	436 (78)
Education (years) [mean (S.D.)]	14.3 (3.3)
Country of residence [n (%)]	
United Kingdom (England, Northern Ireland, Scotland and Wales)	387 (69)
United States	93 (17)
Other countries (e.g., Australia, Ireland, Canada)	56 (10)
Unknown	22 (4)
Work status [n (%)]	
Full time (>30 h a week)	104 (19)
Part time (≤ 30 h a week)	75 (13)
Not working	259 (46)
Disability pension	171 (31)
Retired	33 (6)
Homemaker	18 (3)
Student	8 (1)
Seeking employment	7 (1)
Member of patient association [n (%)]	207 (37)
<i>Health related</i>	
Source of diagnosis (self-reported) [n (%)]	
Medical specialist (e.g., rheumatologist, neurologist)	374 (67)
General medical practitioner (e.g., internist, family physician)	137 (25)
Other health professional (e.g., paramedical specialist, nurse, psychosocial health professional)	27 (5)
Someone else (e.g., acquaintance) or not formally diagnosed	20 (4)
Treatment for fibromyalgia in last 5 years (self-reported) [n (%)]	
Medical	507 (91)
Paramedical	266 (48)
Complementary or alternative medicine	216 (39)
Psychological or psychiatric	163 (29)
Dietary	93 (17)
Surgical	40 (7)
Other, unspecified treatment	74 (13)
No treatment	19 (3)
Receiving current treatment for other condition (self-reported) [n (%)]	
Psychological or psychiatric treatment	255 (46)
Back pain	179 (32)
Hypertension	91 (16)
Gastric disease (stomach ulcers or other condition)	72 (13)
Other conditions (e.g., lung disease, blood disease, diabetes, cardiac disease)	<10% per condition
None	109 (20)

To categorize patients as Type D versus non-Type D, a standard cutpoint score of 10 points or more on both scales is required [7]. The DS14 has been validated extensively not only in cardiovascular populations (e.g., see Refs. [32–34]) but also in other populations [35,36], including chronic pain (but not fibromyalgia) [15]. Internal consistency in the present sample was high (Cronbach's alpha values of .90 for negative affectivity, .91 for social inhibition and .92 for the full scale). The correlation between the two subscales was $r=.57$.

2.3.2. Health status

The RAND-36 [31] was used to assess health status. It is a widely used and well-validated health-related quality of life questionnaire. The scoring method of Hays was used to derive weighted subscale scores based on Item Response Theory and composite scores based on oblique factor analysis allowing the composite scores to be correlated, which gives a realistic representation of health factors [31]. Scale scores are normalized, with an average of 50 and a standard deviation of 10 in the general population. The RAND-36 consists of two health composites and eight subscales, on which higher scores indicate better health status.

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