

## Health and Disability

# A comparison of coping strategies in patients with fibromyalgia, chronic neuropathic pain, and pain-free controls

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Baastrup S., Schultz R., Brødsgaard I., Moore R., Jensen T. S., Vase Toft L., Bach F. W., Rosenberg R. & Gormsen L. (2016). A comparison of coping strategies in patients with fibromyalgia, chronic neuropathic pain, and pain-free controls. *Scandinavian Journal of Psychology*.

Patients suffering from chronic pain may benefit from learning adaptive coping strategies. Consensus on efficient strategies for this group of patients is, however, lacking, and previous studies have shown inconsistent results. The present study has examined coping strategies in two distinctly different groups of chronic pain patients and a group of healthy controls. Thirty neuropathic pain (NP) patients, 28 fibromyalgia (FM) patients, and 26 pain-free healthy controls completed the Coping Strategy Questionnaire (CSQ-48/27) and rated their daily pain. The results showed that FM and NP patients did not cope differently with pain. The only difference between the groups was that FM patients felt more in control of their pain than NP patients. Both patient groups used more maladaptive/passive coping strategies, but surprisingly also more adaptive/active coping strategies than healthy controls. However, FM patients with high levels of passive strategies felt less in control than FM patients with low levels of passive strategies. This was not seen in NP patients. An important implication for clinical practice is therefore that passive coping strategies should be restructured into active ones, especially for FM patients. Otherwise, the same psychological treatment model can be applied to both groups since they use similar coping styles.

**Key words:** Coping strategies, CSQ, chronic pain, fibromyalgia, neuropathic pain, psychopathology.

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## INTRODUCTION

Coping successfully with chronic pain may significantly improve the quality of life for patients. Although widely studied, consensus on the most efficient coping strategies in chronic pain patients is, however, still lacking and diverse results exist (Angst, Brioschi, Main, Lehmann & Aeschlimann, 2006; Kraaijaat & Evers, 2003; Sim & Madden, 2008). The diversity may be due to different methods, theories, and concepts of measuring coping and to comparisons of heterogeneous patient groups. Therefore, more research of validated coping strategies in different pain populations is needed.

Coping can be categorized as either active or passive coping (Brown & Nicassio, 1987). Active coping is defined as the patient's attempt to deal with the pain by using his/her internal resources either to control the pain or to function in spite of the pain. Passive coping is characterized as helplessness or in terms of strategies that relinquish control of the pain to other external resources. Active coping is generally associated with more adaptive adjustment (Brown & Nicassio, 1987; Nicholas, Wilson & Goyen, 1992).

This classification has been the one most widely used in the chronic pain literature (Jensen, Turner, Romano & Karoly, 1991; Jensen, Turner & Romano, 2001; Keefe, Crismon, Urban &

Williams, 1990; Ramirez-Maestre, Esteve & Lopez, 2008; Tan, Teo, Anderson & Jensen, 2011). However, other theories exist. Folkman and Lazarus (1980) classify coping according to the focus of the strategies, using the concept "problem- and emotion-focused coping strategies" (Lazarus & Folkman, 1984). Some propose that the two theories tend to validate similar results, especially in evaluations of maladaptive coping (Zeidner & Saklofske, 1996). On this background, the validated Coping Strategy Questionnaire (CSQ), which includes both active and passive coping strategies and perceived efficacy of the used coping strategies, is used.

Two distinctly different groups of chronic pain patients: patients with fibromyalgia (FM) and patients with neuropathic pain (NP) are used in this study. NP arises as a direct consequence of a lesion or disease affecting the somatosensory system (Treede *et al.*, 2008) and is characterized by localized hypersensitivity within the territory of the damaged nervous system (Rasmussen, Sindrup, Jensen & Bach, 2004; Witting, Svensson & Jensen, 2003). FM patients share certain features with NP patients such as hypersensitivity to external stimuli and spontaneous pain. Their hypersensitivity is, however, generalized and not confined to a specific neuroanatomically defined body part (Gormsen, Bach, Rosenberg & Jensen, 2012). The etiology of FM is still medically unexplained (Arnold, Lu, Crofford *et al.*,

2004; Arnold, Rosen, Pritchett 2005; Bennett, 2005; McLean & Clauw, 2005; Usui, Doi, Nishioka *et al.*, 2006). It is, however, hypothesized that there is a dysfunction in the descending inhibitory pathways mediated by serotonin and noradrenaline in the spinal cord and brain (Gormsen, *et al.*, 2012). An argument for this is that FM patients show significantly more mental distress including depression and anxiety than NP patients and healthy controls, both by self-rating and by a professional rating. Furthermore, an association between pain and mental symptoms was only found in the FM group despite similar pain intensities (Gormsen, Rosenberg, Bach & Jensen, 2010).

It is therefore hypothesized in this study that FM patients cope less actively with pain than NP patients and healthy controls due to a more generalized condition involving serotonin and noradrenaline in the brain and spinal cord and therefore have less control of their pain.

The aim of this study is to identify possible differences in coping style between the groups as well as in their experiences of being in control of pain and their ability to reduce pain using the CSQ.

## METHODS

### *Subjects and study design*

**Patients.** NP patients aged 18–75 years and meeting the diagnostic criteria of NP (Rasmussen *et al.*, 2004) were recruited at the Neuropathic Pain Clinic at Aarhus University Hospital, Denmark. FM patients aged 18–75 years were recruited via advertisements in the public media. Before the inclusion, the FM diagnosis was verified by the study physician (LG) according to the 1990 Criteria of the American College of Rheumatology (Wolfe, Smythe, Yunus *et al.*, 1990). Inclusion criteria: daily pain  $\geq 6$  months, mean weekly pain score  $\geq 4$  on an eleven-point Likert scale; ability to stop treatments of antidepressants (TCAs, SSRIs, SNRIs, MAOIs, or others), anti-epileptics (gabapentin, pregabalin, carbamazepine, or others), and analgesics at least 2 weeks before participation. Paracetamol (maximum 4 g per day) and aspirin (75 mg per day) were, however, permitted. Exclusion criteria: previous stroke, Alzheimer's disease, ischemic pain, Raynaud's phenomenon, previous diagnosis of mania, bipolar disorder, psychosis, severe agitation, imminent delirium, current suicide risk, and alcohol or drug dependence according to ICD-10.

**Healthy controls.** A group of healthy age-matched controls were invited to serve as controls through posters at the hospital and the university. Inclusion criteria were no pain and no medical or psychiatric diagnosis. Exclusion criteria were apparent signs of clinical depression or anxiety and treatments with analgesic, monoaminergic, and antiepileptic drugs.

### *Study design*

The data were collected in connection with an experimental study (Gormsen *et al.*, 2010, 2012). All patients were asked to complete the CSQ and to rate their present spontaneous pain. Healthy control persons were instructed as follows: "Think of a specific situation where you experienced severe pain for more than one day (not including childbirth). In that situation, describe to what extent you have the following thoughts and feelings when you experienced pain."

**Coping Strategy Questionnaire.** The CSQ is a self-rating scale with 48 items. The CSQ-48 (Rosenstiel & Keefe, 1983) is the most widely used measure of pain coping among clinicians and researchers (Hastie, Riley & Fillingim, 2004). First validated in a population with chronic low back

pain (Keefe, Crisson, Urban & Williams, 1990), the CSQ has since been validated in various other patient populations, including patients with arthritic pain, fibromyalgia, joint replacement, sickle cell disease, juvenile arthritis pain, and multiple other conditions plus different ethnicities (Abbott, 2010; Hastie *et al.*, 2004; Keefe, Rumble, Scipio, Giordano & Perri, 2004). Investigators have also demonstrated the utility of the CSQ in predicting pain-related disability, perceived control over, and adaptation to pain treatment outcome and depression (Hastie *et al.*, 2004). CSQ-48 intends to measure the extent to which patients with pain use seven different cognitive coping techniques classified as "diverting attention," "reinterpreting pain sensations," "coping self-statements," "ignoring sensations," "increasing activity level," "praying-hoping," and "catastrophizing," along with two activity-focused techniques, including "increasing activity level" and "increasing pain behaviors" (Rosenstiel & Keefe, 1983). In the late 1990s, researchers obtained a more stable factor structure of the CSQ by eliminating items with inadequate or redundant factor loadings. This resulted in a revised instrument, the CSQ-R, in which the number of original CSQ items was reduced from 48 to 27 items, that is, elimination for factor strength. However, the CSQ-27 has not been widely used despite its improved strength (Riley & Robinson, 1997; Riley, Robinson & Geisser, 1999).

A Danish version of the original English CSQ-48 was used in this study (Moore & Brødsgaard, 1999). We originally chose to use the CSQ-48, but later reanalyzed the data using the 27-item CSQ. Furthermore, to examine to what extent the subjects made use of active and passive coping strategies, the seven subgroups implied in the CSQ-48 were categorized as either passive or active in accordance with the studies by Snow-Turek, Norris and Tan (1996) on chronic pain patients. The coping strategies "diverting attention," "reinterpreting pain," "coping self-statements," "ignoring pain sensations," and "increasing activity level" were characterized as active, whereas "catastrophizing" and "praying or hoping" were categorized as passive. Furthermore, the two questions about "controlling pain" and "decreasing pain" were categorized as perceived efficacy of the used coping strategies.

**Daily pain measure.** Pain at the time of assessment was evaluated using a numeric rating scale (NRS) ranging from 0 to 10, with 0 being "no pain" and 10 being the "worst possible pain" (Melzack, Katz & Wall, 1994).

### *Statistical analyses*

Data did not follow normal distributions and were analyzed by means of the Kruskal-Wallis Rank Test. If the result of the test was significant on a 0.05 level, a rank sum test between the groups was done. This method of analysis includes age. Pain scores were compared between patient groups with a *t*-test. It was not possible to gender-match the participants. A stratified version of the rank sum test was, therefore, done in regard to gender. Correlations were calculated within each group with Spearman's test and results over the cutoff point 0.5 are mentioned and discussed. The number of patients in the study was estimated on the basis of earlier studies done on coping strategies, e.g., (Walker, Keegan, Gardner, Sullivan, Katon & Bernstein, 1997). To insure valid data, 26–30 patients were recruited for each group. If power is calculated from the internet-based statistical program R (balanced one-way analysis of variance power calculation) on the subscales of the CSQ, a result shows power over 98% and is therefore sufficient to do the study with the named statistics.

### *Ethical issues and approval*

The study was carried out according to the Helsinki Declaration II and approved by the Ethics Committee for the County of Aarhus, Aarhus, Denmark (No. 20060084), and the Danish Data Protection Agency, Copenhagen, Denmark (No. 2006-41-6795). The study was performed in accordance with the International Conference on Harmonization of Good Clinical Practice guidelines. Informed consent was obtained from all participants.

Table 1. Summary of clinical characteristics

	Patients with neuropathic pain	Patients with fibromyalgia	Healthy controls
Age (mean, SD)*	51.8 (13.1)	48.3 (10.2)	45 (13.7)
Gender	14 F, 16 M	26 F, 2 M	21 F, 5 M
Ongoing Pain NRS** (median, percentile)	5 (5–7)	6 (5–5.6)	< 4
Paracetamol max 4 g/day (no.)	N = 2	N = 1	N = 1
Aspirin 75 mg/day (no.)	N = 3	N = 0	N = 0
Caucasian (%)	100	100	100
Married (%)	87	86	68

Notes: \*No significant differences between groups. \*\*No significant differences between patients.

## RESULTS

### Subjects and treatment

Thirty NP patients (14 females), 28 FM patients (26 females), and 26 controls (21 females) were included. There was no significant difference in age ( $p = 0.0711$ ) between the three groups, or on the ongoing pain (NRS) between the patient groups (Table 1). In Table 1, it is also stated that one or two participants in each group used paracetamol (maximum 4 g per day) and that three NP patients used a cardioprotective dose of aspirin (75 mg per day). This medication was permitted according to the inclusion criteria. The primary diagnosis in the NP group was nerve injury following surgery ( $n = 20$ ). Further diagnoses were nerve compression ( $n = 4$ ), traumatic nerve injury ( $n = 2$ ), neuropathy ( $n = 3$ ), and neurinoma ( $n = 1$ ) at the time of referral to the study. However, at the time of study examination, only one patient had not had surgery (e.g. the nerve compression and neurinoma was operated on,  $n = 5$ ) or a traumatic lesion to the nerve (e.g. the neuropathy turned out to be on traumatic basis,  $n = 2$ ). This patient had sensory mononeuropathy. Diagnoses at study examination were injury following surgery ( $n = 25$ ), traumatic nerve injury ( $n = 4$ ), and mononeuropathy ( $n = 1$ ).

### Coping strategies

**FM versus NP Patients.** FM and NP patients did not have significantly different scores on the seven coping strategies (“diverting attention,” “reinterpreting pain,” “coping self-statements,” “ignoring pain sensations,” “increasing activity level,” “catastrophizing” and “praying or hoping”) (Fig. 1 and Table 2). A gender-stratified analysis showed no significant difference due to gender.

**Pain patients versus healthy controls.** In general, FM and NP patients more frequently used coping strategies than controls, both active (“diverting attention,” “reinterpreting pain,” “coping self-statements,” “ignoring pain sensations,” and “increasing activity level”) ( $p = 0.019$  and  $0.039$ , respectively) and passive (“catastrophizing” and “praying or hoping”) coping strategies ( $p < 0.001$ ). Both FM and NP patients used “reinterpreting pain” (median 1.2/1.3 versus 0.2,  $p \leq 0.04$ ), “coping self-statements” (median 3.8/3.8 versus 2.8,  $p \leq 0.04$ ), “praying or hoping”

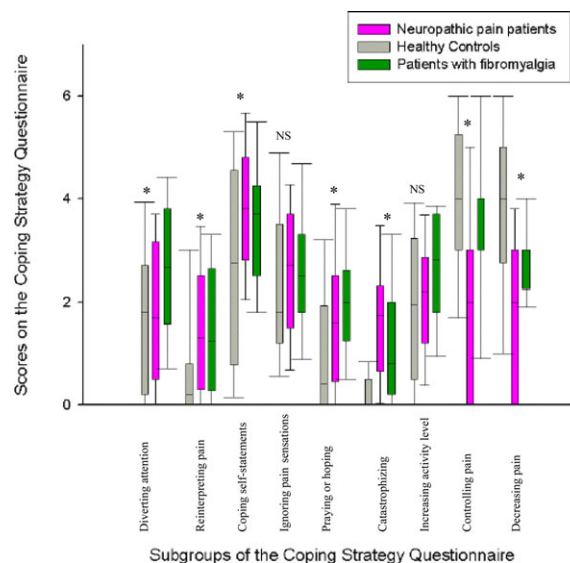


Fig. 1. Coping Strategy Questionnaire.

(median 2.1/1.7 versus 0.4,  $p \leq 0.04$ ), and “catastrophizing” (median 1.2/1.8 versus 0.0,  $p < 0.001$ ) significantly more than healthy controls (Fig. 1 and Table 2). The coping strategies “ignoring pain sensations” and “increasing activity” were used at the same level in all three groups. With respect to “diverting attention,” NP patients did not have significantly different ratings than controls, whereas FM patients did (median 2.8 versus 1.8,  $p < 0.02$ ). A gender-stratified analysis showed no significant differences in all subgroups on all strategies.

### Perceived effectiveness of the coping strategies

**FM versus NP patients.** FM patients believed that they had more control of their pain than NP patients (median 3.0 versus 2.0,  $p < 0.001$ ). They also rated themselves as being significantly more able to decrease pain than NP patients (median 3.0 versus 2.0,  $p < 0.001$ ). A gender-stratified analysis showed no significant difference between FM and NP patients and between patients and controls.

**Pain patients versus healthy controls.** Both FM and NP patients believed that they were less able to control their pain (median 3.0/2.0 versus 4.0,  $p = 0.023$  and  $p < 0.001$ , respectively) than healthy controls, and they were less confident of being able to decrease their pain (median 3.0/2.0 versus 4.0,  $p = 0.004$  and  $p = 0.028$ , respectively) compared with healthy controls. A gender-stratified analysis showed no significant difference.

### Associations between coping strategies and pain

There were no strong associations ( $< 0.50$ ) between the subgroups of the seven coping strategies, the two measures of control, the active/passive strategies, and pain (NRS) within each group of participants. However, a negative association ( $-0.7263$ ) was seen in FM patients between perceived effectiveness of the coping strategies in controlling pain and catastrophizing. Furthermore, a negative association ( $-0.5767$ ) was seen in FM patients between

Table 2. Comparison of the three groups on CSQ

Groups / Factors	1. Neuropathic		2. Controls		3. Fibromyalgia		p-value
	Median	Percentiles	Median	Percentiles	Median	Percentiles	
Diverting attention (active)	1.8	0.5–3.2	1.8	0.2–2.7	2.8	1.7–3.8	$p = 0.046^a$
Reinterpreting pain (active)	1.3	0.5–2.5	0.2	0.0–0.8	1.2	0.3–2.3	$p = 0.011^b$
Coping self-statements (active)	3.8	3.2–4.8	2.8	0.8–4.5	3.8	2.5–4.3	$p = 0.043^c$
Ignoring pain sensations (active)	2.7	1.7–3.7	1.8	1.2–3.5	2.5	1.8–3.3	NS
Praying or hoping (passive)	1.7	0.8–2.5	0.4	0.0–1.8	2.1	1.3–2.6	$p = 0.014^d$
Catastrophizing (passive)	1.8	1.0–2.3	0.0	0.0–0.5	1.2	0.2–2.0	$p < 0.001^e$
Increasing activity (active)	2.2	1.5–2.8	1.9	0.5–3.2	2.8	1.8–3.7	NS
Controlling pain (efficacy)	2.0	0.0–3.0	4.0	3.0–5.0	3.0	3.0–4.0	$p < 0.001^f$
Decreasing pain (efficacy)	2.0	0.0–3.0	4.0	3.0–5.0	3.0	2.0–3.0	$p < 0.001^g$

Notes: NS = not significant. Rank Sum Tests: <sup>a</sup>(1–2:  $p < 0.01$ , 1–3: NS, 2–3:  $p < 0.01$ ), <sup>b</sup>(1–2:  $p < 0.01$ , 1–3: NS, 2–3:  $p < 0.01$ ), <sup>c</sup>(1–2:  $p = 0.019$ , 1–3: NS, 2–3: NS), <sup>d</sup>(1–2: NS, 1–3: NS, 2–3:  $p = 0.004$ ), <sup>e</sup>(1–2:  $p < 0.001$ , 1–3: NS, 2–3:  $p < 0.001$ ), <sup>f</sup>(1–2:  $p < 0.001$ , 1–3:  $p = 0.023$ , 2–3: NS), <sup>g</sup>(1–2:  $p < 0.001$ , 1–3:  $p = 0.004$ , 2–3:  $p = 0.019$ ). Subgroups of CSQ: active = active coping strategies; passive = passive coping strategies; efficacy = perceived efficacy of the used coping strategies.

the use of passive coping strategies and perceived effectiveness of the coping strategies.

#### Comparisons between the CSQ-27 and CSQ-48

**FM versus NP patients.** Substantial differences were noted on the coping strategy “diverting attention” when comparing the chronic pain patients. When using the CSQ-27, a significant difference between FM and NP patients was seen, with FM patients having the highest scores. This has not been a significant finding before. It is of interest that the CSQ-27 and the CSQ-48 corresponded as regards catastrophizing, reinterpreting pain sensations, coping self-statements, and ignoring sensations. A gender-stratified analysis showed no significant difference when the results of both the CSQ-27 and the CSQ-48 were analyzed.

**Pain patients versus healthy controls.** The conclusions on both scales (except for “ignoring sensations” where no difference was found) are that both FM and NP patients had significantly higher scores than controls. However, when comparing pain patients with controls on the CSQ-27 instead of the CSQ-48, some differences were seen. On the CSQ-27, no significant differences were seen between the three groups (NP, FM, and controls) on “praying-hoping” and activity level. In contrast, there were significant differences on the CSQ-48 between FM and controls on these strategies. A gender-stratified analysis showed no significant difference on either the CSQ-27 or the CSQ-48.

## DISCUSSION

One of the aims of this study was to examine how two groups of chronic pain patients coped with their pain. The results failed to statistically distinguish between FM and NP patients’ ways of coping with pain. Interestingly, FM patients appeared to think that their strategies were more effective in controlling and reducing pain than NP patients. Offhand, it seems contradictory that patients with FM felt a higher effectiveness of coping strategies and more in control of their pain considering that no significant difference in the use of strategies was seen between the two

patient groups and, in addition, that there were no significant differences in pain levels (Table 1).

An explanation could be the different types of pain in the two patient groups. NP patients often describe their pain as shooting and boring and FM patients as taut and gruelling (Gormsen *et al.*, 2010). The first type of pain may be more difficult to control than the last. The background for the different qualities of pain is probably due to the neurobiological differences of the pain conditions, with FM being more generalized than NP, thus involving widespread disturbances in the monoamines in the brain and spinal cord. In contrast to our hypothesis, our results suggest that FM patients are able to exercise control of their pain, maybe because of and not despite the generalized character of the condition that involves a high cortical level.

Another possible explanation is that NP patients were recruited from a neuropathic pain clinic, to which they had been referred because of insufficient pain management, whereas FM patients were recruited through advertisements in the public media due to the lack of an outpatient clinic for FM patients in the area. Some of the FM patients might therefore be better functioning than the NP patients. However, we might also have recruited the most severely affected FM patients because no other treatment option was available for this group in the area at the time of inclusion.

The results also revealed that the FM patients with low catastrophizing/passive coping scores felt more in control of their pain than the FM patients who scored high on catastrophizing/passive coping. This seems to agree with the literature. Passive coping strategies including catastrophizing are predictive variables of dysfunction, maladaptive behavior, chronicity of pain, and an increase in psychopathology, e.g., depression and anxiety, while the opposite is true for active coping strategies (Boothby, Thorn, Stroud & Jensen, 1999; Broome, Bates, Lillis & McGahee, 1990; Brown & Nicassio, 1987; Edwards, Smith & Haythornthwaite, 2004; Holmes & Stevenson, 1990; Härkäpää, Järviöskö, Mellin, Hurri & Luoma, 1991; Nolen-Hoeksema, 2004; Smith & Wallston, 1992; Snow-Turek *et al.*, 1996; Sullivan & D’Eon, 1990; Walker *et al.*, 1997). Adding complexity to the field, Haythornthwaite (2005) showed that the passive strategy “catastrophizing” in the early phases of a pain condition could be an adaptive strategy. All patients in this study have had pain for



more than 6 months; therefore a positive effect of catastrophizing is less likely. The association between effectiveness and catastrophizing/passive coping strategies seems important in the FM group, but not in the NP group. This may be due to the more generalized character of changes in the brain and spinal cord of FM compared to NP.

Patients with FM and NP reported a wider use of both active and passive coping strategies than healthy controls. This is interesting because one might think that chronic pain patients did not use active coping strategies at all or at least less active strategies than healthy controls. However, this may not be so surprising since chronic pain patients had ongoing pain, whereas controls had to recall an earlier experienced pain episode. Studies on long-term memory consistently show that memories of unpleasant events or stimuli fade significantly faster than pleasant memories (Matlin, 2005). This means that controls may have difficulty remembering pain-related situations quite accurately compared with chronic pain patients. It is, however, impossible to conclude that all controls have bad memory. Furthermore, it is difficult to determine if different pain experiences (including bad memory) activate different coping styles or if different coping styles give rise to different pain experiences. In other studies, cold pressor pain stimuli have been used to trigger pain (Hirsh, George, Bialosky & Robinson, 2008; Sullivan & D'Eon, 1990). However, in this study we wanted to study chronic pain and not acute pain. On this point, the results in the patient groups were comparable.

When the strength of the CSQ-48 was improved by using the CSQ-27, the results in general corresponded. However, neither the CSQ-48 nor the CSQ-27 may cover all active or passive coping strategies possible, although the format of this well-reported questionnaire provides a valid indicator of the more subtle cognitive aspects of coping.

In this study patients with FM did not cope in a significantly different way from NP patients, although FM patients seemed to be in more control of their pain. However, both patient groups showed signs of maladaptive coping responses compared with healthy controls even though they also used more adaptive/active coping strategies. In relation to clinical practice, the results from this study indicate that both groups, especially FM patients, could benefit from psychological treatment that aims to restructure passive coping strategies into active ones. The results also suggest that the same psychological treatment model can be used for both FM and NP patients because their coping styles are comparable to a wide extent.

#### *Strengths and limitations of the study*

The strengths of study are that a validated coping strategies scale is used in neurobiologically different pain populations that are relatively well described and that a control group was included. However, the study clearly has limitations. The use of different recruitment criteria for the different study groups is a limitation of the study and has already been discussed. Furthermore, gender differences in our patient groups, with most women in the FM group, could also influence the results. A systematic review from 2015 investigating over 7,000 articles (El-Shormilisy, Stron & Meredith, 2015) suggested that women in pain are more likely to use coping strategies considered to be maladaptive, thus leading

to poorer functioning, whereas men tend to engage in coping strategies considered to be adaptive, thus leading to better functioning. This made our results even more surprising because we found that FM patients (most women) had better pain control, which could indicate better functioning. Our surprising results and the fact that our gender-stratified analysis did not find significant gender differences provides an argument against a strong gender confounder in our study.

The fact that there was no difference between FM and NP patients in their coping style and the relatively small sample sizes of the individual groups may indicate type II errors. This means that our study may fail to detect a difference. Furthermore, a type I error could also be present. However, when power is calculated on our sample size from the internet-based statistical program R (balanced one-way analysis of variance power calculation) on the subscales of the CSQ, a power over 98% is found. This provides an argument in favor of our results.

It is stated in Table 1 that one or two participants in each group used paracetamol (maximum 4 g per day) and that three NP patients used a cardioprotective dose of aspirin (75 mg per day). Even though acetylsalicylic acid is known to influence pain thresholds (Pini, Sandrini, & Vitale, 1994), it has only been shown with much higher doses (400 mg/kg). Furthermore, it has been shown that paracetamol in intravenous doses of 2 g but not 1 g has an effect on pain (Juhl, Norholt, Tonnesen, Hiesse-Prevost & Jensen, 2006). It is therefore not likely that these two medications will interact with the results.

#### CONCLUSIONS

Chronic pain patients with FM and NP use the same coping strategies as defined within the CSQ measure, although patients with FM seem to have more confidence in their ability to control and reduce their pain. Significant differences were detected between chronic pain patients and pain-free healthy controls. Pain patients used more maladaptive/passive coping strategies than controls, but surprisingly also more adaptive/active coping strategies. However, even though the FM patients felt more in control of their pain than NP patients, measured as the perceived efficacy of coping strategies, the FM patients with high levels of passive strategies felt less in control than FM patients with low levels of passive strategies. This was not seen in NP patients. An important implication for treatment strategies is therefore that passive coping strategies should be restructured into active ones, especially for FM patients.

The authors would like to thank Helle O. Andersen, Ingrid Gejel, William Hiep Minh Pham, Christina-Elise Klastrup, Mikael Skov Nielsen, and Niels Trolle Andersen for their assistance. This study was supported by grants from Aarhus Universitetshospitals Forskningsinitiativ, ANT-Fonden, Aase og Ejner Danielsens Fond, Familien Hede Nilsens Fond, Eli Lilly's Psykiatriske Forskningsfond, Krista og Viggo Petersens Fond and Overlæge, dr.med. Alfred Helsted og Hustru dr.med. Eli Møllers Legat.

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Received 1 February 2016, accepted 6 July 2016