The Fear Avoidance Model Disentangled: Improving the Clinical Utility of the Fear Avoidance Model

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Background: The model of fear avoidance proposes that fear of movement in back pain patients is an obstacle to recovery and leads over time to increased disability. Therefore, fear of movement should be targeted explicitly by interventions.

Aims: To review the evidence (1) for the causal components proposed by the model, and (2) about interventions that attempt to reduce fear of movement. In addition, we aim to propose alternatives and extensions to the current model in order to increase the clinical utility of the model.

Methods: A collaborative narrative review.

Results: The fear avoidance model needs to be conceptually expanded and further tested to provide adequate and appropriate clinical utility. Currently, although there is experimental support for the model, observational studies in patients show contradictory results. Interventions based on the model have not delivered convincing results, only partly due to methodological shortcomings. Some assumptions inherent in the current model need adjusting, and other factors should be incorporated to indicate subgroupings within patients high in avoidance behavior. In addition, both theoretical and methodological limitations were identified in measurements of fear and avoidance.

Conclusions: Future research should elucidate whether the proposed subgrouping of patients with avoidance behavior is helpful. Further research should focus on developing more accurate and psychometrically sound assessment tools as well as targeted interventions to improve activities and participation of patients with chronic disabling musculoskeletal pain disorders.

Key Words: fear avoidance, subgrouping, pain

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Chronic pain conditions, especially musculoskeletal conditions, impose a huge burden on society and the healthcare systems.[1,2] Despite increased understanding of the factors contributing to the development of chronic pain, there has been only a moderate improvement in the successful management thereof.[3,4] The prevalence of chronic low back pain (LBP) has remained more or less constant over the past 2 decades,[5–7] and interventions have shown at best only moderate effects in reducing pain and disability.[8] Research has recently focused on identifying subgroups of individuals at early stages of pain, who are at high risk of developing persistent problems.[9,10]

One of the key risk factors thought to lead to long-term problems is fear of movement/reinjury, resulting in avoidance behavior.[11] The most common and accepted model of this phenomenon is known as the Fear Avoidance model (FA model), which proposes that, for some patients, the catastrophic (mis)interpretation of pain leads to fear of the situations and movements associated with their pain. This fear subsequently results in avoidance of such situations and movements and, additionally, in hypervigilance through increased attention to body sensations and difficulty disengaging from such stimuli.[12–14] This avoidance behavior contributes to physical dysfunction and increased disability, which in turn can lead to depression and increase perceived levels of pain and distress. Thus, dysfunctional interpretations give rise to pain-related fear, and associated safety seeking behaviors such as avoidance/escape and hypervigilance. In contrast, the model suggests that if the injury/pain experience is perceived in a nonthreatening manner, patients will confront and deal with it adaptively, thereby leading to recovery.

The perceived significance and validity of this model for the management of musculoskeletal pain is demonstrated by the recent guidelines for the prevention of LBP that include the following: "It is recommended to perform good-quality randomized-controlled trials on the role of information oriented toward reducing fear-avoidance beliefs and improving coping strategies in the prevention of LBP."[15] The position advanced in this paper, however, is that on the basis of current evidence, it may be premature to advocate for fear reduction as a central component of interventions aimed at reducing pain and disability until a better understanding is reached of the relationship between beliefs about pain and movements, fear, and avoidance behavior.

Before reviewing the evidence we note that the majority of research has used the term "fear avoidance" to indicate (1) beliefs about damage/pain caused by movement; (2) fear of certain movements and activities (3) avoidance of such movement/activities interchangeably, but that most studies fail to measure these separately, or to explore the relationship between them. This review is set in the context of disentangling these elements, but is restricted by lack of evidence. We therefore aim to increase awareness and promote future research in this area.

FEAR AVOIDANCE AND PERFORMANCE OF ACTIVITIES: EXPERIMENTAL EVIDENCE

Experimental research in FA has broadly included 2 directions: studies of patients performing laboratory-based physical tasks or studies where pain or fear has been experimentally manipulated. In addition to measuring

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the fear associated with the belief that the action will cause pain and damage and the actual avoidance of pain, several other factors have been shown to be important. These include the patient's motivation, the emotional state of the patient, their level of pain, self-efficacy, and physical deconditioning.[16–18] Because of this, much of the experimental research that has been carried out in healthy populations lacks ecological validity, although some findings, obtained in experimental research have been replicated in clinical settings. There is evidence to suggest that naturally occurring pain differs significantly from induced pain (George and Hirsh[19]) in relation to the FA model. A recent study involving patients with shoulder pain found that measures of pain-related fear uniquely influenced sensitivity to experimental pain, whereas pain catastrophizing was significantly related to reported clinical pain intensity.[19]

Several experimental studies have demonstrated the impact of FA on pain behavior in laboratory conditions.[20–24] Other studies using physical capacity tasks such as lifting, walking, and stair climbing have shown contradictory findings with more studies showing no or only very limited influence of fear of (re)injury/movement on functional behaviour.[16,25–27] This should not, however, be interpreted as evidence refuting the FA model, as several methodological limitation may account for studies failing to demonstrate a strong relationship between measures of fear (on self-report questionnaires) and capacity measures (using behavioral observations). For example, this might be due to the fact that the self-report measure used [Tampa Scale for Kinesiophobia (TSK)] lacks sensitivity, in that it does not measure fear for specific movements or activities. It is possible, for example, for a patient to be highly fearful of a discrete set of movements and to obtain a low score on the TSK, despite demonstrating high avoidance on capacity tasks. Selection of appropriate (individual) capacity tasks is also an important factor: activities such as walking, sit to stand and stair climbing, might evoke less fear, or at least reduce avoidance, because they are constant and unavoidable activities of daily living. Future research testing specific performance in relation to fear could be improved by eliciting individual information about feared movements, and relating this specifically to movements and activities avoided by that particular person.

FEAR AVOIDANCE AS A RISK FACTOR FOR POOR PROGNOSIS

A number of investigations have been conducted addressing the relation between pain-related fears and pain outcomes. The strongest support for the FA model of persistent pain and disability has come from the results of cross-sectional studies. The results of these studies have been consistent in showing that measures of pain-related fears are significantly correlated with measures of catastrophic thinking, hypervigilance, and various pain outcomes such as depression, functional disability, and work absence (reviewed in Ref. 24).

There have been attempts to validate the FA model through structural equation modeling of cross-sectional data.[28] The FA model provided a good fit of data of 469 chronic pain patients, consisting of catastrophizing, pain-related fear, depression, perceived disability, and pain severity. The analysis indicates that catastrophizing influences depression and disability directly, besides its influence via fear of injury. Although supportive of the postulated causal path, the data cannot be interpreted as evidence for predictive relationship without a timeline, and, therefore, there is a need for prospective studies that use sensitive and reliable measurements sampled at multiple points over time.

The findings of prospective studies have provided mixed support for the FA model. Prospective research into FA as a risk factor has used different outcome factors, including self-reported disability, persistent pain, and return to work. Typically these have been measured at 12 months after the first consultation for a new episode of LBP. The evidence for FA as a causal factor for poor recovery is mixed. Some researchers have found epidemiological evidence to support the link. A study in Sweden measured FA beliefs in 141 patients with back and/or neck pain (duration < 1 y). Negative expectations, negative affect, and a belief that activity may result in (re)injury or increased pain, explained unique variance in both pain and function at 1-year follow-up.[9] Sullivan et al[29] examined predictors of work disability in a sample of 85 individuals with back or neck injuries who had initially been assessed during the subacute period of recovery. High scores on the TSK predicted work disability at 12-month follow-up, even when controlling for pain, depression, and catastrophic thinking. In the same study, Sullivan et al reported that treatment-related reductions in TSK scores were associated with improvements in walking speed. Swinkels et al[30] followed a cohort of 555 acute LBP patients presenting at a general practitioner and/or physiotherapist, during 6 months. They showed that after controlling for several other baseline characteristics including pain intensity, baseline TSK score predicted future perceived disability, and, to a lesser extent, participation.

In contrast, a systematic review of prospective cohorts of people at early stages of back pain did not support the connection between FA at early stages and disability at follow-up.[31] The review concluded that none of the studies that measured FA provided convincing evidence that FA beliefs are a risk factor for poor outcomes. Several studies reported negative findings, and studies that found a relationship between measures of FA at baseline and long-term outcome were compromised in terms of their methodology and/or analysis. The highest scoring study, by Werneke and Hart[32] found that fear of work activities significantly predicted pain intensity and (delayed) return to work in the univariate analysis, but not in the multivariate analysis. Sieben et al[33] used a sophisticated design and a time series analysis to test relationships across time between scores on TSK,[34] pain catastrophizing, and pain severity and disability in 44 patients. Their results indicate that peaks on all 3 measures occur together, but were unable to provide evidence for a causal path between the variables. Picavet et al[35] reported that scores on the TSK and on a catastrophizing instrument independently predict pain, but the analysis was limited due to uncommon choice of outcome categorization. Bekkering et al[36] used various modeling techniques to evaluate prognostic indicators for outcomes at 3 and 12 months in 500 patients referred to physiotherapy. Improvement in pain, physical function, and sick leave was considerable at 3 and further modest improvement occurred by 12 months. In terms of prognostic indicators and using a variety of models, duration of current episode and having a paid job were the only robust predictors. Neither back beliefs nor pain coping

styles—including catastrophizing were significant predictors of outcome. About 75% of patients, however, perceived they had good recovery, had significant reductions in pain, and experienced improvements in physical function and disability.

Other factors related to anxiety might play more of a role in predicting outcome. A prospective study in chronic pain patients compared the impact of 4 different measurements of trait and state fear/anxiety on functioning 3 months later.[37] The regression analysis suggested that, after controlling for pain intensity at baseline, health anxiety and anxiety sensitivity both predicted unique variance in negative affect at 3 months, whereas health anxiety alone predicted disability. Pain-related anxiety, however, failed to predict outcome, although it was significantly related to pain severity at baseline. As FA might be construed as a particular form of health anxiety, this study might not be viewed as critical of the FA model, but it raises the question of how specific to pain the focus of avoidance is in patients.

A well-conducted study of a cohort of 174 patients with an acute episode of back pain explored the contribution of FA measured at baseline to measures of pain and disability at 3, 6, and 12 months of follow-up. Regression analysis showed previous LBP history and pain intensity to be the most important predictors, and of the FA model variables, only negative affect added to this model.[38] In a recent prospective study that aimed to examine the sequential relationships proposed by the FA model, Wideman et al[39] (in press) evaluated whether early change in catastrophizing predicted late change in fear of movement, and whether these factors influenced posttreatment return to work. Relationships between variables were examined in a sample of 121 individuals with a work-related musculoskeletal injury, and high baseline catastrophizing and fear of movement scores. Although changes both in fear and in catastrophizing predicted return to work, there was no significant sequential relationship between changes in catastrophizing at early stages and changes in fear later on. The results from this study call into question the pivotal role attributed to catastrophizing in the acquisition of FA.

INTERVENTION ON FEAR AVOIDANCE

There are 2 different approaches to improve patient outcome in reference to the FA model. Research has explored: (1) whether reductions in fear predict positive outcomes (regardless of the nature of the intervention), and (2) the efficacy of interventions that specifically focus on fear reduction.

Interventions that have attempted to improve disability in chronic pain patients through use of psychological treatment (without explicit targeting of FA) have been only moderately successful.[40] Several factors have been identified explaining the limited success[4]; interventions have been unfocused and lacked a solid theoretical model; trials have been methodologically flawed and underpowered. Several cognitive-behavioral based interventions that have attempted explicitly to change FA have shown no significant improvement above control/comparison interventions.[41,42] At least in part, this seems to be due to poor delivery of psychological interventions: In Jellema et al's study, general practitioners had 3 sessions to address several factors perceived as obstacles to recovery. Treatment integrity was explored and findings indicate that the practitioners were insufficiently capable of identifying the psychosocial factors, explaining why the treatment was not more effective than usual care. In the study by Hay and colleagues no treatment integrity was reported, but the therapists were trained for 2 days only. Neither study selected patients high in measures indicating psychosocial risk (such as high scores on fear and catastrophizing), and in the absence of these risk factors, usual care appears to perform equally well as treatment that includes psychological components. In addition, both interventions recruited from primary care settings. Arguably, guideline-based interventions are sufficient at such early stages, explaining why the target interventions showed comparable results to these. Furthermore (and unfortunately) results for patients who undergo graded exposure to a feared activity, do not tend to generalize to other activities. Patients appear to learn an "exception to the rule," that is, that 1 activity is not dangerous but other activities are,[43] rather than learning to reappraise their (mis)beliefs.

More recent approaches include either stepped approaches, in which patients who do not respond to usual guideline compliant care are offered further interventions, including psychological components, or stratified approaches, in which patients are divided at baseline according to factors that are considered to constitute obstacles to recovery and are offered an intervention that matches the typology of the individuals. As this research is in early stages, we hope that this review may contribute to the decisions made about patient typology in reference to obstacles to recovery and choice of intervention.

There are a number of studies that have reported data suggesting that treatment-related reductions in fear of movement are associated with positive rehabilitation outcomes. Sullivan and Stanish[44] examined psychosocial predictors of return to work in a sample of 104 work-disabled individuals who were enrolled in a 10-week psychological intervention designed to target risk factors for pain-related disability. Analyses revealed that early-treatment reductions in fear of movement and catastrophizing were independent predictors of return to work. In 2 similar studies, Sullivan et al[45,46] reported that treatment-related reductions in fear of movement were associated with increased probability of return to work, but only in univariate analyses. In multivariate analyses, only reductions in catastrophizing emerged as a significant unique predictor of return to work.

The efficacy of focused intensive interventions, delivered by well-trained professionals explicitly targeting avoidance behavior and fear of movement requires further research, as results from small studies to date have been promising, but limited. Two focused interventions relate directly to the FA model, and therefore have a strong theoretical basis, with good face validity. These are in vivo exposure and graded activity (GA). Both treatments aim at improved functioning through reactivation. It has been argued that exposure therapy uses Pavlovian conditioning and cognitive therapeutic techniques, whereas GA uses operant learning principles.[47] Typically, both treatments include a review of pain problems and behaviors, setting of goals, educational sessions, and rehabilitation and exercise advice.

Exposure therapy includes grading of fear-eliciting behaviors, followed by systematic exposure to fear-provoking activities under supervision of the treating practitioner. In contrast, GA focuses on treatment goals in terms of

patients' most important or specific functional activities confined by their pain problem. Patients are set activities according to their perceived tolerance, and thus, progress in increments toward the set goal. In practice, both interventions provide cognitive challenges to patients in terms of their catastrophic beliefs. Exposure therapy invites patients directly to report these catastrophic fears in reference to specific movements, and includes evaluation of these beliefs after the feared movement has been carried out. GA is often less focused in reference to challenging catastrophic beliefs, but may include feedback sessions about changing cognitions over the intervention period.

To date, there are only a handful of trials exploring such interventions, and for the most part, they suffer from considerable methodological limitations. A study of chronic LBP patients randomly assigned to in vivo exposure, GA, or a wait-list condition found no differences for pain-related disability measures, but patients in the in vivo exposure condition improved significantly on measures of fear of pain/movement, FA beliefs, pain-related anxiety, and pain self-efficacy when compared with those in the GA condition, and the wait-list control condition.[48] The findings are, however, limited because of methodological flaws, including low baseline measures of disability, unconventional recruitment procedures, large drop-out rates, and lack of power due to small sample size.

A comparison of exposure with operant GA was also studied in 85 chronic LBP patients in the Netherlands in a multicenter randomized controlled trial.[47] Exposure treatment resulted in reduced pain catastrophizing and perceived harmfulness of activities, and was equally effective, as GA in improving functional disability, pain intensity, and daily activity at 6 months of follow-up. However, this study too was underpowered and suffered large drop-out rates. We also note that to date no cost-effectiveness data has been published on in vivo exposure trials. This information is particularly important, because the interventions as described are costly in terms of number of sessions and personnel involved compared with traditional cognitive behavioral therapy interventions. Other clinical trials comparing the addition of exposure to treatment-as-usual found a modest effect in improvement on function, but the exposed group consisted of only 13 people, and the drop out was high.[49] Single-case series showed better results.[50–52]

There is a growing consensus that the findings from interventions, to date, are due to suboptimal identification of FA, and to the existence of subgroups within the population of avoidant musculoskeletal patients.[4,53] There is a clear need for better identification of patients at risk, and for improving interventions by matching them better to patients' needs.[10] The emerging picture from intervention research suggests that among other factors (such as work-related and socioeconomic factors), patient characteristics influence outcome regardless of type of treatment. Some of these characteristics may be modifiable, leading to search for the identification of subgroups within pain populations, with an aim for specific matching between risk factor and treatment. To define subgroups of patients who benefit more from a particular intervention, predictors of response to treatment (effect modifiers) have to be assessed, with a priori definition and measurement of probable risk factors, and in studies of sufficient statistical power to identify statistically important effect modifiers.[54] To date, studies have done this type of analysis as a secondary (post hoc) analysis (eg, Refs. 55–57). Unfortunately, no study has so far included all the factors postulated in the FA model.

IMPROVING MEASUREMENTS

The Focus of Fear

The comprehensiveness, sensitivity, and focus of measurements could be improved. It may be useful to make a clear distinction between fear of pain, fear of reinjury, fear of movement, fear of rehabilitation-based exercises, and fear of activity (including work-related activity) during periods of pain. All of these are distinct from avoidance behavior per se, and the relationship between avoidance behavior and focus of fear may provide useful indicators for treatment. In addition, measures also seem to confuse fear with beliefs; beliefs can be held without fear, and would result in endorsement of items. It should be possible to distinguish between the belief about avoidance, (such as, for example, the belief that back pain requires rest) and fear-based avoidance.

Current measurements confuse fear of movement/normal activity with fear of exercise. The Fear Avoidance Beliefs Questionnaire (FABQ[58]) presents patients with 5 questions specific to physical activities, which are accurately labeled FA beliefs about physical activity. The second part of the questionnaire is specific to beliefs about work. There is no explicit measurement of fear of pain or general health anxiety in the FABQ, yet, the questionnaire is often used to represent broader fears, and is described as measuring "FA" generically, rather than fearful beliefs about physical activity and work (eg, Ref. 59).

The TSK[34] includes 2 subscales, the first measuring avoidance of activities, and the latter measuring beliefs reflecting fear about (re)injury.[25,60] The scale, however, includes, additionally two items specific to exercise, other items which could be said to measure general beliefs rather than personal fears (eg, "when in pain, no one should have to exercise"). Thus, such items can be endorsed without being fearful, avoidant, or indeed, being in pain. A further limitation is that it does not provide information about specific movements or activities a person fears or avoids. It is therefore possible for a patient to score low on the TSK, but still hold fearful beliefs about certain specific movements.

Finally, central to the measurement of fear of pain is the problem that acquisition of such fears through association between movement and pain can be nonconscious.[61] This means that self-report measures could both underestimate fear, which is nonconscious, and overestimate fear by confusing it with more general health beliefs. In the former case, where patients may be fearful but are unaware of their fears, explicit measures of behavioral avoidance may be useful in combination with self-report measures. Both the TSK and the FABQ are widely used, but could be improved to increase sensitivity to patients' responses and may account, at least in part for the contradictory findings described above. It would be beneficial to examine the relationship between responses to single items in these (and other) common measurements and avoidance behaviors. It would also be useful to examine the shared and unique variance between clusters of items on several measurements and how these relate to avoidant behavior, as this may suggest subgroups for appropriate interventions. We tentatively suggest a hierarchical model to conceptualize the relationship between

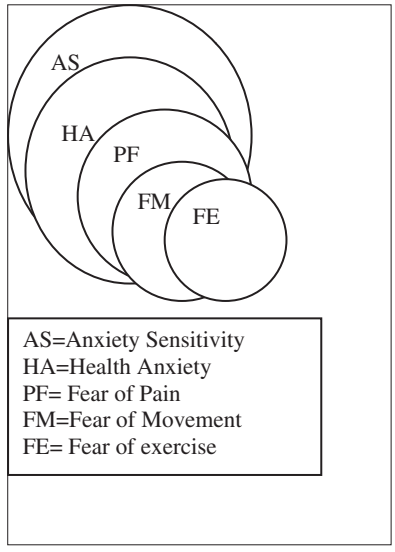

FIGURE 1. The shared and unique variance of aspects of fear and anxiety in pain patients.

different aspects of anxiety and fear in pain patients, in terms of their shared and unique variance (Fig. 1).

Another useful measure of fear of movement and activities is the Photograph Series of Daily Activities (PHODA[62]). This is an instrument to determine the perceived harmfulness of daily activities in patients with chronic LBP. It specifically focuses on the person's judgments about the harmful consequences of the movements/activities shown in each picture. More recently, a short electronic version (PHODA-SeV[63]) has been developed. This instrument consist of 40 pictures showing different activities covering lifting, bending, turning, reaching, falling, intermittent load, unexpected movement, long-lasting load in stance or sit with limited dynamics. The person has to drag each picture along a "harmfulness thermometer" ranging from 0 (not harmful at all) to 100 (extremely harmful) while imagining themselves performing the same movement, thus creating a personal hierarchy of fear related to these activities.

The PHODA-SeV has good psychometric properties (test-retest reliability, stability, factor structure and internal consistency, construct validity) and normative values are provided.[63] Future research should focus on disentangling responses to the photographs in terms of fear ("how afraid would you be to carry out this movement?"), attribution of pain ("how much pain would this movement cause you?"), and avoidance ("how often would you avoid this movement?").

Measurement of Avoidance

Research should also focus on better measurement of avoidance per se, in an attempt to identify subgroups. Several approaches have been used to date, including measuring specific movements (such as straight leg raising); common activities (such as walking, sit-to-stand); self-report of avoiding daily activities presented photographically (such as ironing); and more broad brush terms (such as sick leave from work). It would be useful to identify the patients' rationale for avoiding each of these, and how avoidance of 1 domain may impact on avoidance of another.

FUTURE DIRECTIONS

In their conclusions to a review of fear-related factors as predictors of outcome in back pain, Pincus and colleagues[31] have suggested at least 2 extensions to the current model of fear avoidance (Figs. 2A, B). The first describes avoidance-related disuse without fear and is labeled the social-beliefs approach. According to this pathway, the macrosystems and microsystems of health beliefs within the individuals' health culture, are sufficient to account for avoidance behavior without fear, especially when receiving positive reinforcement from significant others. The authors argue that emotional processing,

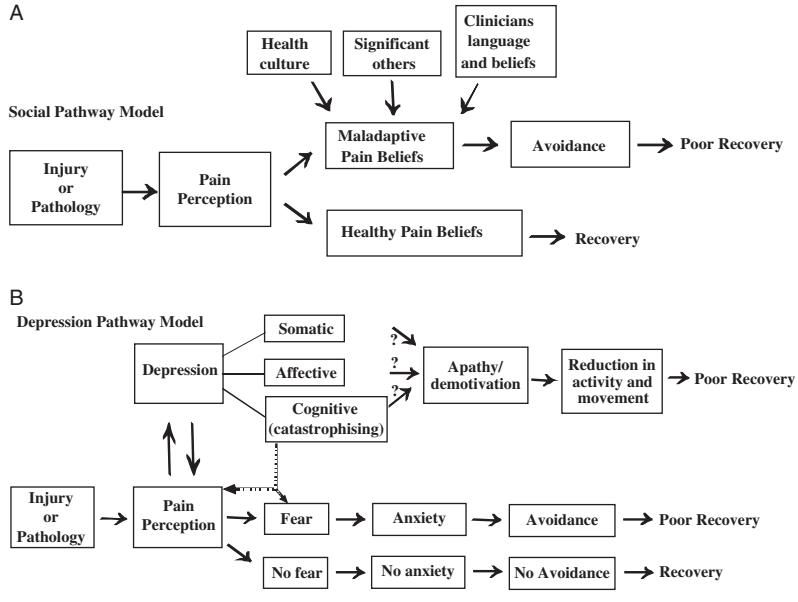

FIGURE 2. A, The social pathway model. B, Depression pathway model.

whether through fear or catastrophizing is not necessary for the outcome of reduced activity.

The second pathway describes a long-term trait-like vulnerability to negative affectivity, with the suggestion that a minority of patients with back pain have coexisting clinical depression (not necessarily as a response to pain, but as a coexisting health problem). The authors propose that such extensions of the original FA model can result in explicit predictions about patterns of avoidance. They propose that depression would result in more general reduced activity, whereas fear might be associated with particular movements and activities. There is some evidence to suggest that negative effect in combination with pain is closely related to changes in cognitive processing, so that negative information about personal health are better recalled, and ambiguous information is interpreted as being related to negative health.[64,65] Other factors have been suggested as vulnerability factors that predispose towards fear, catastrophizing and negative affect, including anxiety sensitivity[66] and neurotic negativity.[67] Such distinctions also fit in with theories about fear acquisition, and we note that the pathways of acquiring both fear and avoidance are a neglected area of research. In a seminal review of the topic, Rachman[68] proposed 3 pathways for the acquisition of fears: conditioning, vicarious exposures, and by the transmission of information and instruction, even in the absence of direct contact with the fear stimuli. Future research in fearful pain patients could explore their personal narratives and explanations for the acquisition of fear, and beliefs about movement and avoidance.

An emerging priority is therefore to identify subgroups within chronic musculoskeletal pain, to allow effective screening, referral and treatment. A logical starting point for examining subgroups is by considering the proposed models for the development of avoidant behaviors in pain patients. The traditional FA model postulates that catastrophic thought lies at the core of the fear avoidance mechanism, but we have argued that avoidant behaviors can also be acquired through social influence, modeling, and simple learning mechanisms.[31] The relationship between fear avoidance and catastrophizing is not well understood.[33] Catastrophic coping and FA are only moderately correlated, suggesting that at least some people with high FA have low or no catastrophic thinking. If this is so, it is possible that within people reporting high levels of FA there are at least 2 subgroups: 1 group in which catastrophic thoughts and beliefs are present and disabling, and the other group for whom avoidance does not include aspects of catastrophizing. In the general population, FA beliefs have been found to be equally prevalent in people with no pain as in people with mild or moderate pain,[69,70] thus providing some support for the idea that avoidant beliefs may sometimes be socially influenced, rather than always being a result of episode of pain followed by catastrophizing.

Theoretically, we therefore propose 3 tentative subgroups within patients who exhibit avoidance behaviors; (1) Affective avoiders: People who are distressed and fearful, engage in catastrophic thinking, ruminate on pain-associated experiences, and report feeling helpless and threatened by their pain. (2) Misinformed avoiders: People who hold beliefs about movement and activities leading to reinjury and further pain. These beliefs may be reinforced by family and sometimes by treating clinicians. Such patients may be high in hypervigilance, but not necessarily distressed, nor would they report low self-efficacy. (3) Learnt avoidance: Learning theory suggests avoidance behavior can be acquired without awareness simply through a Pavlovian association between making certain movements and experiencing pain. In this subset of people, there need to be neither elevated affect (fear) nor explicit beliefs about avoidance. These tentative subgroups would require a different emphasis in treatment. It is logical to suppose that affective avoiders will benefit most from exploring dysfunctional cognitions and catastrophic thinking; that misinformed avoiders will benefit most from educational aspect of management; and that learnt avoidance will be best overcome through exposure or GA. It is also probable that work-related avoidance will benefit most from interventions focused on aspects specific to the work setting. Clearly these ideas have implications for the primary outcomes selected for each intervention.

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