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Coping Strategies in Chronic Pain

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Abstract Patients with chronic pain need strategies to manage their pain and its impact, also known as coping. Coping is not restricted to one dimension of functioning; it involves virtually every dimension of human functioning: cognitive, affective, behavioral, and physiological. We review the literature on coping strategies for chronic pain, including concept and types of coping (eg, religious, social, psychological), as well as coping-with-pain questionnaires, studies available, other topics of interest, interventions to enhance coping with pain, and future directions in this field.

Keywords Coping behaviors · Psychological adjustment · Chronic pain · Religious coping

Introduction

Pain is a sensory and emotional unpleasant experience [1]. For some conditions, chronic pain is defined as a pain that exists beyond an expected timeframe for healing. For other conditions, it is well recognized that healing may never occur. In many cases, chronic pain is understood as persistent pain that is not amenable to routine pain control methods [1].

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Chronic pain is recognized as an important problem in the community. Recently, an epidemiological study was conducted with 3605 respondents from a representative general practice population in the United Kingdom. More than 50% of patients self-reported chronic pain, equivalent to 46.5% of the general population (the most common complaints were related with back pain and arthritis) [2]. A 4-year follow-up study carried out in Germany showed that overall prevalence of chronic pain increased from 45.5% at baseline to 53.8% at follow-up [3]. In Denmark [4], overall chronic pain prevalence of 19% was found to be 16% for men and 21% for women, and in Australia [5] chronic pain was reported by 17.1% of men and 20.0% of women.

In addition to the high prevalence of this condition, studies are showing that patients with chronic pain present with less quality of life, lower levels in general well-being scales, and higher use of health care services [6]. Similarly, the socioeconomic burden is very high. According to a European study, 61% of chronic pain sufferers were less able or unable to work outside the home, 19% had lost their job, 13% had changed jobs because of their pain, and 60% visited their doctor about their pain two to nine times in the previous 6 months [7].

Additionally, patients in pain (as compared with the general population) are more likely to suffer emotionally. Psychiatric comorbidities such as depression, anxiety, personality disorders, substance abuse, and posttraumatic stress disorders are prevalent [8].

To deal with the suffering, patients use strategies to manage their pain and its impact, also known as coping. The purpose of this paper is to review the existing literature on coping strategies for chronic pain, including concepts and types of coping, as well as coping-with-pain questionnaires, studies available, other topics of interest, interven-

tions to enhance coping with pain, and future directions in this field.

Concept of Coping

Many authors have proposed a definition of coping. Coping initially was conceptualized by Lazarus [9] as an essentially cognitive process consisting of threat and resource appraisal and the active selection of coping responses.

According to Snyder [10], coping is a response aimed at diminishing the physical, emotional, and psychological burdens associated with stressful life events, and Tunks and Bellissimo [11] defined coping as any behavior that can be observed in response to threat, regardless of its success.

According to *The Handbook of Coping*, coping with chronic pain may be defined as the thoughts and actions in which people engage in their efforts to manage pain on a daily basis. These diverse efforts include interventions as global as cognitive-behavior therapy and other self-management programs developed to help patients cope with a multitude of problems associated with pain, to specific strategies designed to manage the sensory intensity of a discrete episode of pain [12].

Some authors argue that coping is a confusing concept, often vaguely defined and poorly operationalized [13]. However, coping instruments are used broadly in the health literature [14, 15].

Types of Coping

Many classifications of coping have been proposed.

A frequently used dichotomy is "active coping" (strategies used to control pain or to function despite pain) versus "passive coping" (withdrawing and surrendering control over pain). A similar dichotomy is between "approach" versus "avoidance" coping. Approach coping describes strategies of engaging with pain or its causes, and avoidance describes strategies of engaging efforts away from pain [13].

Another way of classifying coping strategies is the distinction between "problem-focused" (involves efforts to control or change a stressor) and "emotion-focused" coping (involves efforts to manage emotional responses to a stressor) [9].

Some authors point to the definition of coping strategy as maladaptive or adaptive, depending on the individual patient and the nature and chronicity of the pain problem [12].

Coping is not restricted to one dimension; it involves virtually every dimension of human functioning: cognitive, affective, behavioral, and physiological. According to Pargament [16], "No one copes alone…It is impossible to remove the individual completely from layers of social relationships–family, organizational, institutional, community, societal, cultural" [16]. This brings some other divisions to coping, such as religious coping, social coping, and psychological coping among others.

Pain Coping Questionnaires

The empirical literature on coping with pain has developed through two different approaches: questionnaires that request patients to specify and respond to the primary stressor in their life whether or not it is pain, and questionnaires that request patients to report the manner in which they cope with chronic pain. The choice of which approach to use depends on the purpose of the assessment. Use of pain-specific coping questionnaires has the advantage of reducing response variability and is preferred when selecting cognitive or behavioral targets for chronic pain management. Use of general coping questionnaires provides the potential to elucidate whether pain patients engage in context-dependent coping efforts [12]. Table 1 shows the most-used questionnaires to evaluating pain coping [17–22].

Studies on Strategies of Coping with Pain

Several studies have been published covering coping in patients with chronic pain. We decide to divide discussion into the following topics for better understanding. Pain coping strategies can be better visualized in Table 2.

Most-Used Coping Strategies

In 2006, while evaluating older adults, Ersek et al. [23] found that the most frequently reported strategies, as assessed by the Chronic Pain Coping Inventory, were task persistence, pacing, and coping self-statements. Another study [24] analyzing patients with chronic noncancer pain showed that the most prevalent coping strategies amongst participants included analgesic medications (78%), exercise (35%), cognitive methods (37%), religious activities (21%), and activity restriction (20%).

In 2002, Reid et al. [25] found that commonly reported coping strategies used in the month before the interview included medication use (73%), exercise (33%), cognitive strategies such as distraction (31%), religious activities (18%), pacing, ie, alternating periods of activity with rest (15%), and hot/cold modalities (13%).

Table 1 Most-used questionnaires concerning coping with pain

Name	Items, *n*	Scoring	Description
The ways of coping checklist [17]	42	4-point scale (0 = not used; 3 = used a great deal)	Measures the frequency with which respondents use coping strategies (problem-focused, social-support seeking, avoidance, self-blame, and wishful thinking)
Vanderbilt pain management inventory [18]	27	5-point rating scale. Two internal scales, active and passive coping, were derived using factor analytic techniques	Analyzes the frequency with which patients engage cognitive and behavioral coping strategies when attempting to manage pain. Items include statements such as "restricting social activities," "praying for relief," and "depending on others for help with daily tasks"
The coping strategies questionnaire [19]	44	Six cognitive and two behavioral coping strategies	Assesses the extent to which respondents report engaging in six cognitive and two behavioral coping strategies when they experience pain
Coping with health injuries and problems scale [20]	32	5-point scale	Asks patients to rate how often they use some strategies in response to pain, grouped into four scales (palliative coping, instrumental coping, distraction coping, and emotional preoccupation)
The pain-related self-statement scale [21]	35	6-point scale	Gauges how often patients engage in response to pain in pain-related cognitions (eg, "It will never stop," "I can help myself")
Chronic pain coping inventory[a] [22]	70	Number of days during the past week	Asks patients to indicate the number of days during the past week he or she used the listed coping strategy to deal with pain

[a] Self-report instrument

Maladaptive Strategies of Coping with Pain

Studies have shown that passive coping strategies such as hoping, withdrawal, resting, and use of medication are associated with increasing pain, depression, disability, and poorer psychological adjustment [26, 27]. The coping strategies that were found to be maladaptive in regard to pain are discussed below.

Catastrophizing

One of the maladaptive strategies is catastrophizing, which is a cognitive process defined by negative self-statements and excessively negative beliefs about the future. It is characterized by the patient's unrealistic belief that the current situation will lead to the worst possible outcome. Some studies point to a relation between this strategy and greater disability and pain intensity [28], more depression, less quality of life, and lower exercise capacity [29].

Praying/Hoping

This strategy denotes an attitude of waiting for a miracle to happen or relying on doctors to find a cure for one's ailment. We should differentiate this kind of passive wishful thinking from active religiousness that could have positive contributions to adaptation [16].

Avoidance

Avoidance behaviors and fear-avoidance beliefs are processes and behaviors designed to reduce ongoing pain and anticipated increases in pain (ie, reduction in the frequency of physical activities that may increase pain). Studies show that avoidance behavior predicts functional disability [30] and is related to depression [31].

Social-Support Seeking

This strategy denotes seeking out relations with others that could help the patient instrumentally and emotionally. Satisfaction with one's social support is related to more intense pain and lower adjustment. The reason for this unexpected finding may be that solicitous family members may facilitate expression of pain sensations through their attention and may encourage the patient to avoid the performance of various duties, enhancing the patient's disability [21]. The same was noted in "asking for assistance" (attitude of growing dependence on other people, with a growing withdrawal from doing things for oneself).

Comforting Thinking

This strategy involves minimizing the pain and its effects (eg, "It's nothing, don't worry"). This strategy was found to be negatively correlated with adjustment [21, 32].

Table 2 Strategies of coping with pain

Coping strategy	Description	Type of strategy
Catastrophizing	Negative self-statements and excessively negative beliefs about the future	Maladaptive
Praying/hoping	Waiting for a miracle to happen or relying on doctors to find a cure for one's ailment	Maladaptive
Avoidance	Reducing ongoing pain and anticipated increases in pain	Maladaptive
Social-support seeking	Seeking out relations with others that could help the patient instrumentally and emotionally	Maladaptive
Comforting thinking	Minimizing the pain and its effects	Maladaptive
Palliative coping	Attaining palliation and comfort	Maladaptive
Sedative hypnotic medication	Increasing use of medication designed to control pain and also to relax and overcome negative emotions	Maladaptive
Passive pacing	Adapting one's level of activity to the pain	Maladaptive
Guarding	Not moving specific painful body parts	Maladaptive
Problem-focused coping	Trying to deal directly with the situational stressor by changing the stressor or oneself	Adaptive
Regular exercise	Engaging in systematic motor exercises designed to solve the physical problem that has generated the pain	Adaptive
Positive self-statement	Saying to oneself statements (eg, "My future looks bright," "I will deal with the pain")	Adaptive
Social comparison	Viewing oneself as better off than others	Adaptive
Ignoring pain	Approach of behaving as if there is no pain	Not related to adjusting
Distraction/diverting attention	Engaging in activities designed to direct one's attention away from the pain	Not related to adjusting
Reinterpreting pain	Transforming pain sensation from pain to warm feeling or shooting pain to tingling	Not related to adjusting
Keeping busy	Getting absorbed in action, particularly of the routine kind	Not related to adjusting
Self-blame	Assuming responsibility for negative events, including pain	Not related to adjusting
Religious coping	Using religious beliefs or behaviors to facilitate problem-solving to prevent or alleviate the negative emotional consequences of stressful life circumstances	Adaptive

Palliative Coping

This strategy is designed to attain palliation and comfort. Palliative coping predicts higher levels of psychological distress [33].

Sedative Hypnotic Medication

This strategy involves increasing use of medication designed to control pain and also to relax and overcome negative emotions [34].

Passive Pacing

This strategy involves adapting one's level of activity to the pain (eg, resting). Studies have shown that passive coping was strongly related to general psychological distress and depression, and active coping was associated with activity level and was inversely related to psychological distress [26].

Guarding

This strategy involves not moving specific painful body parts. Increased use of guarding in response to pain was linked with increased disability and depression [35].

Adaptive Strategies of Coping with Pain

Literature points to an association among active coping and lower levels of depression and physical disability as well as higher levels of psychological and physical functioning. The coping strategies that were found to be adaptive in regard to pain include the following:

Problem-Focused Coping

Problem-focused coping involves trying to deal directly with the situational stressor by changing the stressor or oneself (eg, reappraising the stressor or information seeking). Research with pain populations has shown that frequent use of problem-focused coping strategies is related to lower levels of psychological distress [36].

Regular Exercise

This strategy denotes engaging in systematic motor exercises designed to solve the physical problem that has generated the pain. Patients with pain who believe that they are capable of exercising regularly may be more likely to initiate and persist in a regular exercise program [27].

Exercise also has lasting benefits on the complex psychosocial sequelae of appropriate osteoarthritis-facilitating health beliefs, behaviors, pain coping, and self-management strategies [37].

Positive Self-Statement

This strategy involves saying to oneself affirming statements (eg, "My future looks bright," "I will deal with the pain"). Studies show that positive self-statements were associated negatively with pain measures [38].

Social Comparison

This strategy denotes viewing oneself as better off than others. Studies suggest that it sometimes acts as adaptive to pain [27].

Coping Strategies Not Related to Adjusting to Pain

The following coping strategies were found not to be related to adjustment to chronic pain:

Ignoring Pain

This strategy denotes an approach of behaving as if there is no pain. Some studies point to higher levels of depression [39] and others to better pain outcomes [40].

Distraction/Diverting Attention

This strategy includes use of activities designed to direct one's attention away from the pain (eg, watching TV, reading a book). It was found to be related to lower sensation of pain and sometimes to more positive mood, but not to better adjustment [21].

Reinterpreting Pain

This strategy involves cognitive mechanisms for transforming pain sensation from pain to warm feeling or shooting pain to tingling. This strategy was associated with greater perceptions of control over pain [41].

Keeping Busy

This strategy involves getting absorbed in action, particularly of the routine kind.

Self-Blame

This strategy involves assuming responsibility for negative events, including pain, and is related to depression in patients with chronic pain [42].

Other Topics of Interest

Coping or Pain Acceptance?

Research and treatment of chronic pain have tended to focus on patient coping as the primary behavioral contribution to adjustment. However, some authors are comparing the coping approach to acceptance of chronic pain. Acceptance of chronic pain has been defined as living with pain without reaction, disapproval, or attempts to reduce or avoid it [43].

In 2007, Esteve et al. [44•], evaluating 117 chronic pain patients from a clinical pain unit, found that acceptance of pain determined functional status and functional impairment. However, coping measures had a significant influence on measures of emotional distress. Similarly, in 2003 [43], 230 adults were assessed at a university pain-management center. Results showed that coping variables were relatively weakly related to acceptance of pain and relatively unreliably related to pain-adjustment variables. On the other hand, acceptance of chronic pain was associated with less pain, less disability, less depression, less pain-related anxiety, higher daily uptime, and better work status. Results from these analyses demonstrated that acceptance of pain repeatedly accounted for more variance than coping variables. The authors concluded, "It may be a good time to consider further application of acceptance-based approaches to the management of chronic pain" [43].

Religious Coping: Adaptive or Maladaptive?

There is a growing interest from scientific literature in the relationship between religion and both mental [16] and physical health [45]. Religion is a prominent force in many people's lives and religious people use their faith to give meaning and purpose to negative events that happen to them.

Religious coping was defined by Pargament [16] as "the use of religious beliefs or behaviors to facilitate problem-solving to prevent or alleviate the negative emotional consequences of stressful life circumstances."

Religious coping may be involved in the conservation or transformation of ends. Thus, religious coping methods are multidimensional. They believe stereotypical views of religion as simply a defense or a passive form of coping. However, religious coping spans the range from active to passive, problem-focused to emotion-focused, positive to negative, and cognitive behavioral to interpersonal and spiritual [46].

Recently, a meta-analysis of 49 relevant studies [47] supported that individuals who used religious coping strategies, such as benevolent religious reappraisals, col-

laborative religious coping, and seeking spiritual support, typically experienced more stress-related growth, spiritual growth, and positive affect; had higher self-esteem; and experienced less depression, anxiety, and distress. This finding lends further support to the notion that positive religious coping strategies may serve some adaptive functions.

Nevertheless, negative religious coping strategies are positively associated with negative psychological adjustment to stress. That is, individuals who reported using negative forms of religious coping experienced more depression, anxiety, and distress [47].

It seems that religious coping can represent an adaptive or a maladaptive strategy for coping, depending on its positive or negative characteristics.

Coping with Headache: Does It Matter?

Recently, the SMILE study analyzed 5417 migraine sufferers from France. Study results indicate that patients with anxiety, especially those with both anxious and depressive dimensions, exhibited higher levels of stress and functional impact on everyday life and used more maladaptive behaviors (eg, avoidance, catastrophizing) than migraine patients with neither anxious nor depressive dimensions [48].

In 1999, an experimental study [49] investigated how migraine headache sufferers and headache-free control patients differ in their appraisal and coping responses to cognitive (mental arithmetic) and physical (cold pressor) laboratory stressors. The study was completed by 52 women (26 patients with migraine headache and 26 control patients). Results indicated that migraine sufferers rated the cold pressor task as significantly more painful compared to headache-free participants. Migraine headache sufferers also reported more wishful thinking and self-criticism in managing the mental arithmetic stressor. In addition, participants with migraine reported the use of more social withdrawal and catastrophizing in managing stress and pain outside of the laboratory.

Another study conducted in 153 migraineurs [50] from a headache tertiary center found that avoidance or disengagement coping behaviors were associated with headache intensity, vomiting, and nausea, but not with other clinical characteristics such as headache frequency or sensitivities to light or noise.

Some authors point to the higher importance of coping rather than avoidance of triggers for migraineurs. According to Martin and MacLeod [51], "avoidance of headache triggers may lead to fewer headaches in the short-term. However, such avoidance could lead to more headaches in the long-term, by precluding extinction of the triggers' capacity to elicit headaches, and perhaps even by an insidious sensitization process for some triggers. A more defensible strategy is to advocate 'coping with triggers,' construing coping broadly enough to include possible avoidance but also to permit for other coping strategies involving approach/exposure. There are some situations where avoidance of triggers would seem the strategy of choice, but other situations where this would likely be counterproductive."

In summary, coping seems to be an important aspect in the lives of patients with headaches. It should be evaluated by the health professionals that deal with these patients.

Preventive Programs and Interventions to Enhance Coping with Pain

Some authors have proposed the identification of individuals at risk for chronic pain, such as amputees (phantom limb pain) and those who have had chest surgery (chest wall pain). This identification is called primary prevention. However, this type of prevention has not received deserved attention in the medical literature [12].

Secondary prevention could be implemented to alter coping strategies from avoidant to attentional. Early intervention to prevent chronicity has been recommended on the basis of the strong relationship between fear-avoidance beliefs and disability.

Recent efforts have been directed at developing programs and interventions to prevent relapse after treatment and to prevent escalation of pain during intense episodes. The cognitive behavioral approach (CBT) to pain management is designed to help patients learn to cope with much more than simply the pain problem, such as improvements in mood and social, family, and religious functioning. According to Dixon et al. [52], pain-coping skills training/CBT for pain management typically consists of three components. The first component involves providing an educational rationale (eg, the gate control theory) that helps patients better understand how their thoughts, feelings, and behaviors can influence pain, and how in turn their own efforts to manage pain can influence the pain experience. The second component involves therapist-guided training in cognitive and behavioral coping strategies such as progressive relaxation training, brief relaxation methods, goal setting, activity pacing, imagery, and strategies for altering overly negative thoughts related to pain (eg, cognitive restructuring). The third component involves extensive home practice with coping skills and learning how to apply those skills to challenging pain-related situations (eg, managing pain flares).

Pain problems of a chronic but periodic nature with a clear onset and offset (eg, migraine, dysmenorrhea, phan-

tom limb pain) are amenable to preventive measures. Through a self-management approach [53], patients with classic migraine headaches, for example, are taught to become attuned to the sensory cues (eg, visual disturbance or aura) that precede the onset of pain and to intervene on their own by engaging in active coping efforts such as relaxation, deep breathing, and removing themselves from the sources of stress.

Future Directions

We interpret our review of the literature as highlighting several considerable concerns.

First, there are many coping definitions and classifications that make it difficult to standardize the studies. Second, there are several coping instruments addressing different aspects of coping. Studies should review these instruments to make an easy and comprehensive tool. Third, although several studies addressed the epidemiological aspect of coping, few studies have focused on preventions and interventions. Thus, future researchers not only should identify this condition, but also make interventions to help the patient to find their path in the chronic pain process.

Conclusions

Patients with chronic pain need coping strategies very frequently. These strategies could be associated with good and bad outcomes, including mood, social, physical, religious, and familiar functioning. Recognizing and intervening with the coping patient is important for the health professionals that assist this kind of patient.

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