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Narrative Review

Older and Better: A Narrative Review of Successful Aging and Adaptation to Pain in Late Life

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"Invariably, the self-assessed QoL was far better than I, as a physician, would have anticipated from the diseases and disabilities that you reported." -Ben Eiseman, MD, based on a survey of his octogenarian Yale University classmates.

Background: Chronic pain control is a high priority for the elderly; it is one of the most frequently encountered medical problems in this group. Chronic pain affects 60%-75% of people aged 65 years and older. Chronic pain's prevalence is even higher in those living in assisted living or nursing homes. Based on epidemiological data, the prevalence of chronic pain is directly proportional to age and is especially so in women. At least one in 3 patients over age 65 report significant ongoing pain that is often inadequately treated. Despite this high prevalence of chronic pain in older persons, aging research sheds light on how this suffering may be reduced. Healthy aging is not an oxymoron. Successful aging and adaptation to chronic pain involve similar medical, temperamental, behavioral, and cultural factors. Older patients with chronic pain face well-documented cultural bias, fear, and clinical pessimism; but adaptive coping is a realistic expectation.

Objectives: This narrative review aims to summarize the available literature on strategies used by older persons to optimize adaptation to late-life pain.

Study Design: This is a narrative review of a PubMed literature search 1947 to March 4, 2024.

Methods: A PubMed literature search covering years 1947 to March 4, 2024 was performed using permutations of the search terms pain, chronic pain, persistent pain, aging, elderly, and coping. Relevant articles were also obtained from careful review of the references in articles identified in the search.

Results: I summarized the available literature on strategies used by older persons to optimize adaptation to late-life pain. There are distinct differences between older persons and younger persons in the strategies they use to cope with chronic pain. Furthermore, I identified significant overlap between strategies and actions used by older persons to cope with pain and those strategies and actions used to successfully adapt to the aging process; these commonalities demonstrate a linkage of these adjustment processes and have clinical utility. Also presented are 2 cases that demonstrate the relevance of these factors for treating elderly patients with chronic pain.

Limitations: The literature search was limited to PubMed, which excluded psychology databases.

Conclusions: Chronic pain is common in the elderly and is not adequately treated. Data indicate that older persons can benefit from guidance toward distinct attitudes and actions they can employ to cope with persistent pain. Epidemiologic and aging literature describe attitudes and behaviors that facilitate health and wellbeing during aging. Data from gerontology and from research on chronic pain in elderly patients converge upon factors that are common to better adaptation to both aging and late-life pain. I describe these common factors, which I categorize as treatment-factors, traits, attitudes, and actions. Two cases are presented to demonstrate these concepts.

Key words: Chronic pain, elderly, aging, coping, coping strategies, late-life pain

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Ben Eiseman is quoted from his paper describing results of a survey sent to octogenarian classmates (1). He was surprised to discover them enjoying life more than he expected. He was even more surprised by the lack of association between their disease and disability burdens and their reported quality of life. Eiseman wrote his thoughtful paper at age 86, confirming his finding that late life can be productive and gratifying. Eiseman reported that the highest priorities for maintaining quality of life in his cohort are prevention and control of pain and disability.

Chronic pain control is indeed a high priority in the elderly; it is one of the most frequently encountered medical problems in this group. It affects 60%-75% of people aged 65 years and older. Chronic pain's prevalence is even higher in those living in assisted living or nursing homes (2,3). According to Tsang, et al (3), epidemiological data shows that pain prevalence is directly proportional to age, and is especially so in women. At least one in 3 patients over age 65 report significant ongoing pain that is often inadequately treated (4,5).

Moreover, the United States will soon see a significant increase in its older population. In 2050, those 65 years old and older are projected to be 83.7 million, approximately twice its number in 2012 (6). Despite this high pain prevalence in older persons, aging research sheds light on how this may be reduced. Healthy aging is not an oxymoron. Counterintuitive findings from studies in gerontology, epidemiology, and pain medicine challenge our expectations for our aging patients with pain and can productively inform their treatment (7).

Successful aging and adaptation to chronic pain involve similar medical, temperamental, behavioral, and cultural factors (Fig. 1). Contrary to stereotypes suggesting that progressive demoralization with aging is normal, psychological adjustment often improves after middle age if positive predisposing attitudes, traits, and mindsets are present or can be developed (Table 1). These findings persist across cultures, and adjustment is often maintained even as physical health decreases.

While middle-aged patients with chronic pain often fear a future of ever-intensifying pain, their pain may stabilize or even improve. Data from larger samples corroborate this, indicating that only 25% of those over 65 years old describe their pain as "severe," but the data also indicate that pain intensity may be at its peak between the ages of 45-65 years (8). Pain levels, other physical symptoms, and evidence of objective disease do not correlate with the degree of wellbeing as we age (9,10).

In a study of Portuguese urban community-dwelling residents over 65 years old, those aged 65-79 years had statistically less physical frailty than those aged 80 years or older (11). There was, however, no difference in pain scores or psychological or social frailty measures between these groups, indicating that increased age and physical frailty do not automatically lead to increased pain and psychological or social suffering. At the same time, pain levels in both groups determined 5.8% of the variance in frailty, so pain treatment is a high priority in individuals 65 years and older (11,12).

Older patients with chronic pain face well-documented cultural bias, fear, and clinical pessimism; but adaptive coping is a realistic expectation (13). These findings preclude complacency regarding poor quality of life in older patients who have pain.

Objectives

My objective was to examine the identified literature for key factors associated with optimal adaptation to aging and chronic pain.

Study Design

This is a narrative review of a PubMed literature search from 1947 to March 4, 2024.

Methods

A PubMed literature search covering from 1947 to March 4, 2024 was performed using permutations of the search terms pain, chronic pain, persistent pain, aging, elderly, and coping. Results included in this review include peer-reviewed controlled trials, prospective cohort studies, epidemiological surveys, and reviews. A second tier of resources was developed from a review of citations in the articles located during the primary search. I examined the identified literature for key factors associated with optimal adaptation to aging and chronic pain.

Results

My review of current data and expert opinion led to identifying 4 key factors in late life central to successful aging and effective coping with chronic pain. I describe these 4 factors below. The fourth factor, use of mature coping methods, is presented in 5 subsections, each devoted to a core coping method.

Four Key Factors

I. Treatment of Major Depression

Depression is common in chronic pain, with

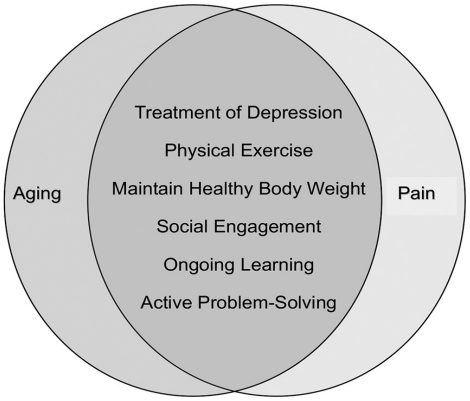

Fig. 1. *Some shared positive factors favoring adaptation to chronic pain and aging.*

Table 1. *Key adaptation factors in aging and pain.*

Optimism
An attutude measured
Reactions to negative information and focus on positive data and maximizing living each moment
Resilience
A trait, a reaction, and a coping style
Maintenance of healthy, stable levels of psychological functioning with stress (e.g., physical illness and associated functional limitations)
Acceptance
A mindset borne of widom
Comfort with self, one's past experiences, and a realistic, self-appraisal of current status

prevalence varying widely among studies, most often between 10% and 70%, depending on sample characteristics (gender, pain severity, level of disability, pain location), sample type (population-based, specialty clinic, primary care), and study design (14,15). Even without pain, major depression's prevalence in the elderly is high (16,17).

When pain and depression coexist, the 2 become tightly linked, such that worsening of one exacerbates symptoms and hinders treatment of the other. Two previous studies suggests that the relationship between catastrophizing, pain, and pain-related disability, to be discussed below, may be mediated by factors such as anxiety and depression (18,19). In the elderly depression can be challenging to recognize and treat. Geriatric depression may co-occur with dementia, with only the dementia being diagnosed (17).

Elderly patients are also less likely than younger patients to interpret their distress as depression (20). Once diagnosed, elderly patients may poorly tolerate antidepressant side effects such as sedation, constipation, orthostatic hypotension, and hyponatremia (21,22). Elderly patients with depression require lower antidepressant doses than younger patients; in severe cases, they may benefit from electroconvulsive therapy. Whatever treatment is used, relapse rates in depression are higher in the elderly. Often prescribing half the usual starting dose of antidepressant medications is adequate in the elderly, whether used for depression or neuropathic pain. Tricyclic antidepressants (TCAs) and selective norepinephrine reuptake inhibitors (SNRIs) are both antidepressants used to treat neuorpathic pain. At the same time, titration to an effective dose may not be fully accomplished due to excessive prescriber caution (23).

Recognition and treatment of geriatric depression is central to successful aging and critical to effective control of pain in elderly patients (24). In a study on persons with neuropathic pain with a mean age over 50 years, the aforementioned catastrophizing was associated with poor pain relief and greater likelihood of pharmacotherapy discontinuation, greater reported disability, and decreased quality of life (25). Identifying coping strategies of older persons with pain, e.g., catastrophizing, can help identify patients with persistent anxiety and/or depression (26).

II. Maintaining Meaningful Activity

A problematic way older persons cope with chronic pain is by limiting activity for fear of worsening their pain (27) and/or falling or otherwise causing further injury (28,29). Activity limitation can be beneficial for pain related to acute inflammation (e.g., a ligament sprain), but in chronic pain conditions decreased mobility portends loss of function and increased disability (30). This loss of function decreases social engagement and meaningful activities important for successful aging generally; it is especially critical for elderly people with persistent pain, whose risk of isolation is increased (31). Additional harmful consequences of reduced physical activity include weight gain, obesity (32), and documented exacerbation of pain, particularly in the knees, hips, and low back (33,34). A more recent study showed that those with depressive symptoms are more likely to use passive coping strategies as a coping response, while active coping strategies are the most likely coping strategy to affect physical function (35).

III. Preserving Social Networks

The elderly must cope with lost relationships (36) and reorganize their social networks (36,37). Balancing the reduced overall social contacts, data suggest that emotional wellbeing of the aging person depends more on the quality of friendships than quantity (37,38). Some data show emphasis on quality over quantity of social contacts is directly proportional to age (39). As persons age, they may intentionally reduce their number of friends in part to avoid wasting limited energy on relationships not judged as close and emotionally meaningful (40,41). This process of whittling down total friends does not affect the number of close friends, which remains constant (39). This process of "downsizing" is most evident from early to middle adulthood (40). Close friends are maintained when possible, however, many elderly patients have decreased capacity and means for regular connections with a social network and may be isolated (42).

It is critical for older people with chronic pain to maintain close relationships that survive the attrition of aging. The deliberate focus on quality reflects how sustaining these relationships are. Elderly patients with chronic pain especially benefit from such support (43), showing improved clinical outcomes with maintenance of satisfying social networks (44,45).

IV. Mature Coping Strategies

Older adults use "adaptive" coping mechanisms with greater frequency than those who are younger (46-48). They also utilize mechanisms from a smaller repertoire of coping mechanisms, but their utilization of these strategies is often more efficacious than those with a larger repertoire (46,49). Older adults also tend to use the same effective, well-practiced coping mechanism for stressors across multiple life domains (50). Some data suggest that older persons use adaptive actions (e.g., resting and pacing during activity) more consistently and frequently. They use these less reactively, as often as daily, and independent of current pain intensity. Those who are younger increase their use of adaptive actions reactively, once pain flares up (51).

Specific Adaptive Coping Mechanisms

In the following subsections, I describe 5 effective coping strategies used by older patients. Once aware of these strategies, clinicians can identify, introduce, and reinforce them to improve treatment outcomes in aging and chronic pain.

i. Placing Illness in a Broader Context

Elderly individuals often respond resourcefully and resiliently to their pain. They have the broad life perspective to respond rather than react. They more carefully interpret their physical symptoms and contextualize them with their age and global health. Realistic beliefs and attitudes about health and disability, often found in the elderly, decrease pain perception. Unrealistic expectations and despairing attitudes, on the other hand, may undermine effective coping and overall treatment effectiveness. When the latter are present, guiding these patients toward helpful reframing can enhance clinical outcomes. Social networks and peers also help positively shape perspectives on health, symptoms, and aging (52,53).

ii. Viewing One's Pain Within Personal and Peer Illness Contexts

By juxtaposing their pain against their own and their peers' other medical problems, the elderly can scale down pain's salience in mental life. Compared to medical problems judged as having a higher priority, pain focus can decrease (54). For example, a 75-year-old patient with New York Heart Association Class III heart failure who has shortness of breath when performing activities of daily living might not find neuropathic pain as serious as his debilitating dyspnea. Juxtaposing one's pain with the debilitations of peers with greater illness burdens similarly helps (55,56). For example, a patient with persistent pain from disfiguring rheumatoid arthritis may compare her plight with that of a friend who is a lower-limb amputee with brittle diabetes mellitus and frequent infections.

iii. Normalizing Illness and Chronic Pain

Aging patients with chronic pain also adapt by seeing past society's denial and preconceptions about the aging experience (57,58). They effectively normalize pain, even pain that affects functional ability, as part of the expected aging process. For example, 87% of those in a community sample concurred that increasing aches and pains are to be expected as we age (19).

The construal of pain as normative for one's age may serve as a psychological buffer for the aging person and may mitigate the suffering associated with pain and its functional impairments (59-61). Normalizing pain to an extreme, however, becomes denial and can be problematic, leading to avoiding necessary medical attention.

Stoicism, controlling verbal and nonverbal expres-

sion of distress, is also different from adaptive normalizing and like denial can lead to inadequate medical care. There are different degrees of stoicism in the elderly associated with ethnicity, culture, access to care, and experience (20). As a result, the prevalence of dysfunctional stoicism varies among studies. In one study (19) 40% of older patients stated that an increase in pain was to be expected with aging. They judged their pain as "definitely true" or real, and were ambivalent about seeking care. Discussing pain with a physician, for example, was judged "very" or "somewhat" important by 94% of this group (19). Other studies find older persons underreport pain to avoid the clinic with greater frequency than younger persons. Because of this, families and caregivers need to be vigilant to prevent unnecessary suffering (4,62,63).

iv. Increased Tolerance for Uncertainty

Experience teaches us that few aspects of life are static or certain. Acknowledging uncertainty is an additional cognitive-attitudinal adaptation that can increase pain coping (64). This awareness reduces distress when diagnoses and recommended treatments must change. Currently, tentative diagnoses and trial-and-error treatment plans represent unavoidable uncertainties in state-of-the-art clinical pain medicine.

v. Emotional Coping Strategies

Increased use of passive (ruminative) and active (socially engaged) emotion-focused coping can develop with aging. Patterns of using cognitive coping strategies is more variable. Watkins, et al (65) found middle- and older-aged adults with rheumatoid arthritis were statistically more likely to catastrophize and engage in passive prayer/hoping efforts than in younger adults Younger adults used more coping self-statements with mild pain, but when rheumatoid arthritis pain became severe, both groups shifted toward catastrophizing and praying/hoping, so pain intensity and age may interact in determining coping style (65).

Comorbid depression and feelings of hopelessness also alter coping style and level of function (65). Negative thoughts and catastrophizing by older adults can lead to decreased physical functioning (66). One study (67) found that younger patients were twice as likely as older patients to employ cognitive coping strategies for pain (e.g., imagery, self-talk, re-framing). When older adults with joint pain maintain higher perceived self-efficacy, they have improved physical functioning (65). Some reports identify religious involvement as the most frequently reported coping strategy used by older patients (68,69). While prayer eclipsing active coping activities can be problematic, increased active spiritual engagement and involvement with an organized religious community can be adaptive.

Multiple factors including age, pain intensity, and context likely affect coping style and the use of hope and prayer, leading to a diversity of findings. In a community sample of 280 persons with chronic pain, both problem-focused and emotion-focused coping strategies increased with age (70). In a Canadian study (71), older persons used both problem-focused (distancing, self-control) and emotion-focused (seeking social support and positive appraisal) actions, termed "planful problem solving," to deal with functional limitations and medical problems. In patients referred to a tertiary multidisciplinary pain program, on the other hand, investigators found no statistically significant correlation between age and coping strategies used for pain (48,72).

Limitations

I chose a narrative review approach because my aim was to highlight useful clinical concepts and encourage their qualitative understanding. A quantitative summary of data across studies would not serve my goal of identifying, describing, and operationalizing factors critical to pain coping and optimal aging. Since these factors span behavioral, clinical, and social domains, and studies on pain in the elderly vary widely in design and methods, I believed meta-analysis would not be an ideal tool for my purposes even though it would have more rigor. The literature search was also limited to PubMed, which left out some important psychology databases that address the behavioral, clinical, and social domains of pain in more detail.

Conclusions

Treatment Implications

Pain in older individuals is still not adequately assessed, diagnosed, or treated (73). Some barriers to treatment are unrelated to the processes of aging, coping, or adaptation reviewed here. These include significant acquired cognitive, perceptual, and communication impairments (74,75). Highly stoic subcultures, including many immigrant ethnicities, men, and alexithymic individuals (high trait stoicism) are at risk of under-treatment of pain and mood symptoms (3,61,62,75). Only moderate stoicism has been correlat-

ed with lower emotional distress relative to pain severity (75). Increased awareness of identified key factors in the elderly related to pain perception, pain interpretations, attitudes, and coping styles can inform clinician-patient communication and improve treatment (77). I believe successful aging and successful adaptation to pain in late life share many characteristics, so that helping patients age well and treating their pain effectively go hand-in-hand, improving wellbeing.

Factors critical to optimal aging may be compromised in the pain context, including distinguishing comorbid depression from chronic pain (78) and treating it, maintaining physical activity and healthy body weight, social engagement, and community involvement (10,79). Chronic pain also provides opportunities for ongoing learning and active problem-solving, including task pacing, a responsive vs reactive mind set, and growing acceptance of uncertainty.

Counterintuitive findings presented here include the potential for many elderly patients in pain, compared to younger patients, to accept pain more easily, more actively cope, use well-practiced strategies, rely on fewer but more valued relationships, better accept uncertainties of their disease course and care, and except for extreme cases, show psychological wellbeing. The last is often shown to be independent of pain disease burdens. These findings should encourage clinicians to approach elderly patients in pain with more optimism and insight.

Case Studies

Case 1: Failed Adaptation to Aging and Chronic Pain

JS is a 73-year-old married woman with more than 20 years of diffuse body pain. She is diagnosed with fibromyalgia. She became sedentary, steadily gained weight, and is now morbidly obese and wheelchair-bound. Her current medication regimen includes methadone, tramadol, clonazepam, lidocaine patches, and topical diclofenac gel. She reports poorly quantified, vague benefit from this regimen. She frequently misses appointments because she depends on her husband to drive her, and his work schedule changes.

She laments isolation and lack of productivity, and feels guilt about burdens she places on her husband. She misses her only child and her grandchildren, who live 2 hours away. She rarely sees them. She has declined referrals for home physical and occupational therapy because she is embarrassed that she cannot keep her home as clean as she used to. Her only source of support is her husband, who looks increasingly fatigued and annoyed with her.

Case 1 Commentary

JS demonstrates poor adaptation to aging and pain. There is an imbalance between her physical and psychological aging. She has become increasingly physically debilitated, yet resists rehabilitative referrals and interventions. She has not developed any mitigating active coping strategies, primarily focusing on medications.

She exemplifies the vulnerability of older persons to maladaptive pain coping by restricting activity. Physical activity reductions are detrimental to her efforts to control body weight and maintain general health, creating ideal conditions for increased pain and further functional losses. She idealizes her younger self and as a result feels psychologically victimized by her pain and by aging. She clings to a younger image of herself struggling in an older woman's body, leaving her feeling as though she has no control over her circumstances and ambivalent about the value of recommended therapies. This ambivalence prevents meaningful behavior change and is a source of frustration for her clinicians and her husband. She has not right-sized her social network and she has become isolated. Since it is difficult to travel, she doesn't travel at all rather than decreasing travel to well-planned visits to people most important to her.

Since referral for pain treatment, she has resisted simplifying her medication regimen. She has talked about wishing she were younger and feeling cheated by aging and illness. She is neat, but has stopped wearing a wig and heavy makeup to look younger. She has made plans to visit her daughter, but did not follow through. She did allow her daughter to visit her home. She is fearful she will hurt more after physical therapy and remains wheelchair bound. She is willing to think about home occupational therapy.

Case 2: Successful Adaptation to Aging and Chronic Pain

SJ is a 77-year-old married man with polymyalgia rheumatica, atrial fibrillation, and deteriorating function. Over the past 18 months he has increasingly reported low mood, low energy, difficulty concentrating, poor appetite resulting in a 15-pound weight loss, and interrupted sleep. He feels guilty about being physically unable to keep pace with his wife, leading them

to decline social invitations. Memory lapses cause him to feel "stupid" and contribute to his irritability. He has intense anxiety in the morning, lasting a few hours, at times becoming so severe that he has dry heaves until it passes. He reports despairing moods triggered by joint pain, muscle pain, and associated difficulties with function, including his recent transition from cane to walker. Cognitive deficits are reflected in his score of 20/30 on the Montreal Cognitive Assessment.

SJ was started on bupropion 7 months ago (current dose 225 mg daily) by his primary care doctor, so far without benefit. The physician has also prescribed trazodone 100 mg and zolpidem 5 mg at bedtime. For insomnia unresponsive to these, he can take prescribed diazepam 5 mg. He has been prescribed varying doses of prednisone and warfarin for the past 4 years.

After referral for pain treatment, SJ is diagnosed with major depressive disorder likely complicated by vascular dementia. He is started on mirtazapine 30 mg at bedtime. Bupropion, trazodone, diazepam, and zolpidem are discontinued. Within 2 weeks he is sleeping better at night, eating and regaining lost weight, and no longer waking up with severe morning anxiety. He reports less pain and feels hopeful and physically stronger. In physical therapy he returns to a cane. A month later he is taking a course at a community college and planning an international trip with his wife. He and his wife accept social invitations, but only for daytime events or early dinners since SJ tires and has increased pain by early evening.

Case 2 Commentary

SJ had major depressive disorder with anxiety in the context of stage-of-life changes, physical debilitation, and cognitive decline. He was on an ineffective polypharmacy regimen that put him at risk for falls, injury, and confusion. His mood fluctuated in parallel to his level of pain and perceived disability. Chronic steroid treatment may also have affect his mood.

Mirtazapine was chosen to target his symptoms of insomnia, poor appetite, and gastrointestinal disturbance. He shows resilience once his mood and anxiety symptoms are treated. With a more optimistic outlook, he makes progress accepting and accommodating his chronic medical problems. He is problem-solving more effectively, planning realistically, and pacing himself.

Final Thoughts

Positive adaptation to pain in the elderly involves realistic attitudes and beliefs, maintaining social engagement with focus on meaningful relationships and social networks, contextual reframing and normalization of the pain experience, active problem solving, pacing of activity, tolerance of uncertainty, and use of an evolved repertoire of coping strategies patients have learned reliably work for them.

Parallels between successful aging and successful pain coping include diagnosis and treatment of depression, continued physical activity, maintaining healthy body weight, ongoing learning, active problem solving, and social engagement. We operationalize these parallel findings as attitudes and actions clinicians should evaluate and encourage in treatment planning.

Emotional adjustment often improves after middle age across cultures, even if physical health decreases. Age-related brain changes may improve emotional regulation and facilitate adjustment. Similarly, pain perception may be better modulated and less intense later in life, resulting in decreasing pain prevalence and intensity after age 65. Pain coping in the elderly and adjustment to aging both show independence from objective disease and symptom levels, emphasizing the importance of behavioral, social, and attitudinal factors (10,80). A study in a geriatric, chronically ill Dutch population (81) suggests attitudinal factors are more important than high income in health adaptation. Neither aging nor chronic pain are antithetical to improving patients' quality of life (80). Long-term outcomes can be good for elderly patients with pain, and clinicians should approach these patients with an eye toward adaptive factors and with realistic therapeutic optimism (3,9,71,73-75).

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