



The Global Spine Care Initiative: a narrative review of psychological and social issues in back pain in low- and middle-income communities

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Abstract

Purpose The purpose of this review was to describe psychological and social factors associated with low back pain that could be applied in spine care programs in medically underserved areas and low- and middle-income countries.

Methods We performed a narrative review of cohort, cross-sectional, qualitative and mixed methods studies investigating adults with low back pain using Medline and PubMed were searched from January 2000 to June 2015. Eligible studies had at least one of the following outcomes: psychological, social, psychosocial, or cultural/ethnicity factors. Studies met the following criteria: (1) English language, (2) published in peer-reviewed journal, (3) adults with spinal disorders, (4) included treatment, symptom management or prevention.

Results Out of 58 studies, 29 were included in this review. There are few studies that have evaluated psychological and social factors associated with back pain in low- and middle-income communities, therefore, adapting recommendations from other regions may be needed until further studies can be achieved.

Conclusion Psychological and social factors are important components to addressing low back pain and health care providers play an important role in empowering patients to take control of their spinal health outcomes. Patients should be included in negotiating their spinal treatment and establishing treatment goals through careful listening, reassurance, and information providing by the health care provider. Instruments need to be developed for people with low literacy in medically underserved areas and low- and middle-income countries, especially where psychological and social factors may be difficult to detect and are poorly addressed.

Graphical abstract These slides can be retrieved under Electronic Supplementary Material.

Key points

1. Psychological and social factors can act as barriers to recovery and their risks are increased when more than one is present.
2. Psychological and social factors are important components to addressing low back pain and healthcare providers play an important role in empowering patients to take control of their spinal health outcomes.
3. Patients should be included in negotiating their spinal treatment and establishing treatment goals through careful listening, reassurance, and information-providing by the healthcare provider.

Summary Table of Flags Associated with Back Pain

Flag of Risk	Description	Examples
Yellow	obvious psychological risk factors related to back pain that are considered normal but unhelpful	pain behaviors, emotional responses
Orange	psychological factors may be related to musculoskeletal symptoms but that are considered abnormal	posttraumatic stress disorder, major depression
Blue	social and environmental/workplace perceptions	stressful environment
Black	factors related to the nature of the work environment	heavy work without being allowed to modify, influence from healthcare providers, family or legislative issues

Take Home Messages

1. Patient-healthcare provider encounters present an opportunity to address:
 1. psychological and social factors,
 2. beliefs and possible maladaptive representations of pain,
 3. treatment taking into account cultural background and economic pressure faced by the patient and the healthcare system.
2. Psychological and social factors may be difficult to detect because of a lack of instruments or available instruments are not "culture-free."
3. Various questionnaires are widely-used in high-income communities, but need to be validated in low- and middle-income or underserved communities.

Keywords Spine · Psychology · Somatosensory disorders · Communication barriers · Psychosomatic medicine · Physician-patient relations

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Extended author information available on the last page of the article

Introduction

For most of the twentieth century, spinal pain was assumed to be like other diseases in that symptoms were related to documentable spinal pathology [1–3]. This assumption implied that pain and disability were related directly to pathology severity [4, 5] and that interventions directed at the pathology would result in resolution of pain and disability. Toward the end of the century, research showed that changes noted on imaging and other diagnostic tests were not necessarily correlated with the degree of symptoms and disability [6, 7]. A growing body of research has shown that social and psychological factors contribute to spine pain and disability [8].

The relationship among chronic pain, psychological, and social factors may be addressed using a biopsychosocial perspective of pain [9, 10]. This perspective requires a comprehensive conceptualization of pain, including sensory, affective, and cognitive dimensions, shifting the framework from biomedical pain relief to a biopsychosocial model [11, 12]. The somatic basis of pain is included in the biopsychosocial model, whether or not the cause is identified. When pain becomes chronic, non-physical factors become increasingly important and the interaction between psychological, social, and physical traits must be considered in concert.

People who have musculoskeletal disorders may have psychological and social risk factors for developing persistent pain and long-term disability [13–16]. The concept of psychosocial “flags” were first introduced in the 1990s and have evolved over time [16, 17]. “Yellow flags” are obvious psychological risk factors related to back pain that are considered normal but unhelpful (e.g., pain behaviors, emotional responses). Psychological risk factors include an individual’s emotional, cognitive and behavioral responses to pain and the ability to distinguish between pain and disability [15]. Factors include: (1) depression, catastrophizing, anxiety, and stress, (2) beliefs and attitudes about back pain, (3) function, coping abilities, and (4) anticipation that passive treatments instead of active participation will help. Psychological factors have been conceptualized as maladaptive psychological responses to pain [15] including maladaptive pain coping behaviors, anxiety, and depression as salient risk factors for the development of persistent back pain [15, 18]. “Orange flags” are those psychological factors may be related to musculoskeletal symptoms but that are considered abnormal (e.g., post-traumatic stress disorder, major depression). “Blue flags” are social and environmental/workplace perceptions (e.g., stressful environment) and “black flags” are factors related to the nature of the work environment (e.g., heavy work without being allowed to modify, influence from health

care providers, family or legislative issues). Thus, social risk factors [19, 20] in general include the individual’s perception of the social environment, including: poor work satisfaction, unsupportive work environment, work stress, and compensation issues [13–15].

Psychological and social factors can act as barriers to recovery and their risks are increased when more than one is present [13, 15, 18, 21–25]. Each of the “flags” influences a patient’s response to care, and therefore, may need different assessment and interventions. Thus, it is essential that clinicians are able to differentiate one flag from another.

Identifying these factors may help clinicians identify which patients are more at risk of developing persistent pain and disability. These factors may inform decision-making and treatment outcomes [26] and are predictors of outcomes of clinical interventions. Addressing some factors through various cognitive/behavioral interventions has the potential to reduce disability associated with spine pain [27–30].

World Spine Care [31] developed an initiative, the Global Spine Care Initiative (GSCI), which includes biopsychosocial concepts in the model of care, thus incorporates psychological and social factors. The goals of this narrative review were to: (1) provide an overview of psychological and social factors related to low back pain, (2) list the psychological and social factors that may influence common interventions, and (3) describe assessments and interventions for psychological and social factors that could be considered in a care pathway for underserved communities.

Methodology

Eligibility criteria

Population

Adults with low back pain (LBP) because most of the psychological literature is focused on LBP as emblematic of non-specific pain spinal disorders.

Outcomes

Studies included at least one of the following outcomes: psychological, social, psychosocial, or cultural/ethnicity factors.

Study characteristics

Inclusion criteria: (1) English, (2) published in a peer-review journal, (3) adults with non-specific LBP, (4) treatment, symptom management or prevention, and (5) cohort, cross-sectional, qualitative and mixed method studies.

Exclusion criteria: (1) letters, editorials, commentaries, unpublished manuscripts, dissertations, government reports, conference proceedings, meeting abstracts, lectures and addresses, and consensus development statements, (2) studies investigating non-adults, and (3) studies involving other pain problems as a comparative (e.g., fibromyalgia, rheumatoid arthritis, and headache).

Information sources

In consultation with a health sciences librarian, we conducted a literature search of MEDLINE and PubMed from January 2000 to June 2015. Our search included the terms: spinal pain; psychosocial aspects; LBP/psychology; and low- and middle-income communities. We searched the Cochrane Database and PubMed for reports using the following terms: “LBP”, “non-specific”, “psychological OR social OR psychosocial OR cultural/ethnicity factors”, “clinical expression OR outcomes”, and “treatment OR management OR prevention”. After obtaining papers of interest, we searched the reference lists of articles found in our search and selected those we deemed relevant (i.e., those that met our inclusion criteria and included our search terms or closely related terms (e.g., emerging countries) but which were not retrieved in the first search).

Results

Study selection

The literature search retrieved 58 articles. Titles and abstracts were independently screened for relevance. Relevant articles were re-screened in full text. Twenty-nine articles were deemed relevant for this study. Of the 29 not included, 6 addressed children and adolescents; 6 investigated back pain with other types of pain; 6 did not include a clear investigation of psychological, social, or psychosocial factors, and 11 were not available or had only an abstract available.

Study characteristics

Studies included were: 10 cross-sectional studies; seven qualitative studies, and two mixed methods; six cohort studies and seven reviews. Some studies addressed general issues related to culture and health rather than with specific outcomes. Geographic representations included: 13 in Africa (Ethiopia, Botswana, Nigeria); 3 in South Eastern Asia; 8 involved underserved groups (Australian Aboriginal people, African Americans with lower socioeconomic status); and 5 included general aspects related to psychosocial aspects and back pain in low- and middle-income communities.

Summary of findings

Two reviews described the role of psychosocial factors in spine care [15, 32]. Individual, psychological, social or occupational prognostic risk factors have been reported in various studies [33, 34]. These studies were primarily conducted in higher-income settings and investigated the transition of patients from having acute to chronic non-specific LBP. Psychological factors included stress, anxiety, distress, depressive mood, somatization, cognitive functioning, and pain behaviors. Commonly reported social and occupational factors include physical workload, monotonous work, job dissatisfaction, low job control, and low social support in the workplace [33–37].

A literature review on the prognosis of LBP that was based on studies of higher-income settings suggested that higher levels of anxiety, depression, obsessive–compulsive behaviors, and somatisation are associated with longer duration of symptoms [33]. Evidence from low- and middle-income communities was consistent with data from higher-income settings. For example, a qualitative study on beliefs regarding the cause of LBP in Iranian women showed that most women indicated that their LBP resulted from stress, cultural and social expectations regarding selflessness, and managing their household [38]. It was suggested that the lack of social support contributed to their stress and their LBP [38].

Several studies raised awareness about the role psychosocial factors play in the development of LBP in low- and middle-income communities. Cross-sectional studies of coal mine workers in Indonesia showed that individuals exposed to the combination of high physical and occupational exposures (i.e., high effort, low reward, social support, job satisfaction, work stress) were most likely to report LBP and reduced work activities [39–41]. Employers may lack awareness of the influence of psychosocial factors at work and that managing these through prevention strategies may reduce the burden of pain and disability in their workforce. This burden may be further accentuated by suboptimal working conditions and an acute lack of awareness of ergonomics issues, education and training program [42].

The changing nature of work in these workers’ communities complicates the ability of employers and employees to gain a positive influence on work contracts, job insecurity, work pace, working hours, and wages. Cross-sectional studies of South African manganese industry workers found a strong association between fear-avoidance, catastrophizing, low family support, poor workplace support, and LBP [43–45]. However, very few cases of LBP were recorded in the company’s injury statistics and the authors noted that cultural ethos among manual laborers (i.e., not complaining and concerns for job security) could be responsible for the under-reporting [43, 44].

In higher-income settings, evidence generally suggests an association between lower degree of education and risk of LBP. However, some studies in low- and middle-income communities suggest that workers with higher degrees of education may not be protected from back pain [46]. For example, LBP prevalence is higher among school teachers in Botswana, in teachers with high psychosocial job demands, job insecurity, job dissatisfaction, and low supervisor support [47]. Beyen et al. reported similar findings in Ethiopia, where teachers who were stressed or had low job satisfaction were more likely to report LBP [48]. A cross-sectional study of nurses in Nigeria and Ethiopia provided comparable findings with poor back care ergonomics, duty stress, and unavailability of lifting equipment, which were significantly associated with LBP prevalence [49]. However, LBP was associated with a little sickness leave. A similar finding emerged in office workers in Nigeria who had annual prevalence rates comparable with those reported in studies from more industrialized countries but low sickness absence rates due to LBP [50]. As in higher-income settings, lower-income communities have risk factors, such as lower socioeconomic status, litigation status, hostile work environment, long work hours, or job insecurity, which may also be associated with low back pain [51–55]. A factor such as job insecurity may vary from country to country depending on the available unemployment benefits [56]. However, pain is not the only concern. It is important to consider the impact of work participation and function restoration in the recovery process [53].

The role of health care providers in addressing psychological and social factors

Guidelines emphasize early management of non-specific LBP at the primary care level [57, 58]. Guidelines focus on reassurance, advice to stay active, and early return to work. Unfortunately, an estimated 90% of patients referred to community health centres reported receiving only pain medication with only rare referral to physiotherapists or chiropractors, education, or advice to stay active. The authors stress the importance of including psychological and social factors in patient education [59, 60]. The importance of the content of patient education by health care practitioners is described in studies of Aboriginal Australians [61, 62]. Communication by health care providers resulted in negative beliefs, including a belief that pain has an anatomical/structural cause and increased pessimism in future outlook. These negative beliefs seemed to originate from interactions with health care practitioners and may be grounded in radiological findings. Furthermore, these beliefs seemed to be long lasting and resistant to change, thus suggesting that disabling LBP may be partly iatrogenic [61, 62]. These studies indicate that strategies to improve beliefs about LBP

should target both patients and health care professionals alike [63, 64]. Health care professional triage patients to the appropriate care, which minimizes complications and costs. Successful triage improves the chances that the right treatment is provided to the right patient at the right time [65]. Triage should be performed based on established medical, psychological, and workplace risk factors and include the biopsychosocial dimensions of pain and disability.

Patient–health care provider relationship as a cornerstone to address psychological and social factors

Health care providers should deliver effective interventions that include reassurance, advice along the continuum of care, guidance from pain and dysfunction to improved function and wellness for all presentations including those who are acute and those who are in chronic pain with disability. Patient–health care provider interactions differ based on individual and practitioner cultural or ethnic backgrounds or societal beliefs. Different cultures result in different beliefs about health, illness, and communication. Beliefs and language barriers may challenge practitioners in delivering high quality care to patients [66]. When conversing, patients and providers who share similar backgrounds may be attuned to verbal and non-verbal indications that suggest misunderstanding and thus would allow for clarification. When practitioners do not recognize these signs, they might incorrectly assume that there is a mutual understanding, which limits further discussion [67]. This is problematic because “Effective doctor–patient communication [...] positively correlates with the development of a strong therapeutic bond, adherence to therapy, understanding of treatment risks, reduced patient anxiety, patient satisfaction and reduced risk of medical mishaps or malpractice claims. Miscommunication can have adverse consequences, including misdiagnosis, procedures being carried out without informed consent, poor adherence to treatment and persistent health-damaging behaviors” [68]. As well, barriers to communication with Aboriginal people include: communication content, communicative absence, and use of medical jargon [63].

The patient–health care provider encounter presents an opportunity to: (1) discuss psychosocial factors, (2) investigate beliefs and possible maladaptive representations of pain, and (3) negotiate treatment taking into account cultural background as well as the possible economic pressure faced by the patient and the health care system. The importance of management of LBP at the primary care level as well as the crucial role of health care practitioners in educating and advising patients both on the cognitive and behavioral levels has been pointed out previously [57, 58]. Reassurance is a first-line intervention [69] and includes verbal and nonverbal communication [70]. To be effective, reassurance should: (1)

show empathy and confidence, (2) recognize and address distress cues, (3) be warm and friendly, (4) include reassurance with explanation of symptoms and exclusion of serious disease if appropriate, (5) negotiate treatment options, (6) include goals, prognosis and treatment expectations, (7) discuss possible obstacles, and (8) ensure that the patient understands [70]. These approaches are included in the recommendations found in the Back Book [71] and the Whiplash Book [72, 73]. Cognitive reassurance aims to increase knowledge and understanding, strengthen the patient's sense of control, and change beliefs [70]. Therefore, reassurance, relationship building, including the patients feeling they are taken seriously, receiving indications of concern have to be emphasized [74]. In addition, patient empowerment towards self-management through explicit information and explanations addressing the patient's concerns, is to be used to contribute to help them understand and cope with pain [74].

Discussion

Psychological and social factors are important for the development and prognosis of spinal pain and disability. These factors also influence a person's decision to seek health care, demand extensive investigation, consider themselves disabled, stop working, file for disability, or file a legal claim [13–15, 51–55]. However, such options are not available everywhere. These behaviors may amplify the effect of psychological risk factors by reinforcing pain symptoms. It is, therefore, crucial that clinicians assess patients with spine pain and disability for commonly associated psychological and social factors [75]. When psychosocial risk factors have been identified, each issue should be addressed with an appropriate intervention. These may include: education, patient reassurance, advice to stay active, early return to activity, as well as cognitive behavioral therapy and multidisciplinary rehabilitation where available [15, 18, 24, 25, 28, 29, 32–35, 53, 57, 71, 76].

Instruments to investigate psychological and social factors

Psychological and social factors may be difficult to detect because of a lack of instruments or the instruments are not “culture-free”. Patients' explanatory models and perceptions of illness and well-being vary widely across societies [77]. Definitions of what is expected from the treatment, what care providers anticipate for coping with pain, and what can be labeled as (mal)adaptive coping will also differ across cultures. Primary care providers need to be educated in the socio-cultural background of their patients and should be able to provide the most effective therapist–patient communication, competent

practice and clinical adherence. While many guidelines recommend that health care providers screen for psychological and social risk factors, no validated questions have been proposed. Open-ended questions aimed at screening for depression, catastrophizing, anxiety and stress, function, coping abilities, and patient expectations are recommended [75].

In high-income communities, various questionnaires have been validated. Examples include: the Patient Health Questionnaire (PHQ) for depression [78, 79]; pain, enjoyment of life and general activity (PEG) for impact of pain on function [80], Fear Avoidance Beliefs Questionnaire (FABQ) for avoidance beliefs regarding work and general activity [81, 82], STarTBack to address fear avoidance, catastrophizing, and other risk factors for chronicity [83], and the Core Outcome Measures Index (COMI) including pain, back and leg, symptom-specific function, generic well-being, social disability and work disability, along with satisfaction with treatment [84, 85] (see Table 1 in Supplemental File for links to examples of these instruments). While these tools are widely used, they have not been validated in underserved communities. Before implementation, they require ‘cross-cultural adaptation’ (i.e., adapt language and cultural issues to prepare a questionnaire for use in another setting) [86]. This process aims at maximizing “semantic, idiomatic, experiential, and conceptual equivalence between the source and target questionnaires” [87]. Thus, there is then a need for further evaluation using the new cross-culturally adapted instrument [88, 89].

Because of the lack of validated instruments for underserved communities, we must consider clinical practice within the framework of cultural competence. Napier proposes a list of questions to establish cultural and societal context: “‘What do you call this problem?’; ‘What do you believe is the cause of this problem?’’ What course do you expect this problem to take?’’ How serious is it?’; ‘What do you think this problem does inside your body?’; ‘How does this problem affect your body and your mind?’ What do you most fear about this problem?’; ‘What do you most fear about the treatment?’” [77]. These aspects consider psychological and social factors [15, 75], patients' explanatory models and beliefs, depression, catastrophizing, anxiety and stress, function and interference of spine problems with daily activities, coping and control over pain, and expectations about treatment [75] (see Online Resource Appendix for a clinical vignette). Introducing open-ended questions regarding psychological and social factors in the course of the consultation may not prove particularly demanding or conflicting. However, assessing the patient's responses may present some difficulties for people with limited health care training or familiarity with psychosocial factors.

Psychological and social flag assessment

Assessment for psychological and social flags (see summary Table 2 in supplemental file) should be done at the first visit and screened again at 4 and 6 weeks if the patient has not recovered from back pain [13, 14]. Early identification and modification of ‘maladaptive’ thoughts and behaviors helps prevent the transition from acute to chronic pain and should be addressed as early as possible [75]. Factors pertaining to the work environment (e.g., blue and black flags) also need to be considered [19, 20]. The social and working environment (e.g., unemployment rate, quality of the welfare system) raise important concerns and need to be included in patient management [90, 91]. Psychological and social predictors of chronic disability should be assessed while taking a patient’s history [15, 92]). The European guidelines for acute and for chronic LBP recommend that psychosocial factors such as work-related factors, psychological distress, patient expectations, and extreme symptoms should be assessed at the first primary care visit to identify patients at risk of developing chronic disability [93, 94]. Reviews of clinical guidelines emphasize that clinicians should recognize psychological and social risk factors for chronicity and manage acute LBP patients with early and gradual activation and avoidance of bed rest [57, 60]. For chronic LBP, recommended psychosocial interventions include cognitive behavioral therapies [57]. However, clinician-guided cognitive-behavioral therapies, mindfulness therapy, or multidisciplinary treatments are not readily available in all areas. An approach to be considered in these situations is “psychologically informed practice”. This approach could be a ‘middle way’ between narrowly focused standard physical therapy practice based on biomedical principles and the more cognitive behavioral-oriented approaches originally developed for the treatment of mental illness [95]. The psychologically informed practice approach aims at preventing pain-related activity limitations. Emotional factors, such as anxiety, depression, or anger, that are possibly associated with patients’ beliefs, are addressed as potential obstacles to recovery as they may influence behavioral responses. Such a practice method builds on the professional expertise of care providers, while integrating specific and orderly attention to psychological and social factors.

Health care provider role

Health care providers have an important role in recommending adequate work restrictions and participation. Considered in a wider context, primary care involves all providers delivering the first-line interventions that most often include physicians, traditional healers and nurses, physical therapists, and other health care providers. Health care providers can contribute to prevent activity and work disability by reassuring patients

that activities can be resumed safely, even if pain is still present [53]. Therefore, clinicians need to understand the work context in relation to the capacity and beliefs of the patients [53]. It is important that health care providers are trained and have a strong understanding of psychological and social issues and their impact on patient acceptance and response to care. For example, the Australian Musculoskeletal Education Collaboration training programs incorporate these competencies within their framework [96, 97]. As noted above, a psychologically informed practice approach aiming at preventing pain-related activity limitations, and building on the professional expertise of care providers [95], may be of particular interest. Listening, reassurance, and information from the physician are important in patient satisfaction and help meet patients’ perceived needs [98]. These needs include the reduction of emotional uncertainty in a situation of stress and vulnerability [99, 100]. In such situations, the clinician should investigate further including patient’s perceptions, reaction pain and its consequences. Symptoms may influence patients’ perceptions of what might be wrong and their reaction to pain. Therefore, symptom awareness and understanding influence expectations and satisfaction and contribute to meaningful and acceptable outcomes [32].

Recommendations

When a patient presents with acute LBP, health care providers should: (1) screen for psychosocial flags, (2) investigate and discuss irrational or maladaptive beliefs and (3) reassure and educate patients. In the acute phase, one goal is to prevent chronicity, thus should include careful evaluation [75]. Other treatment goals during the acute phase include: (1) improve function, (2) modify psychological and social barriers once maladaptive psychological responses to pain have been targeted, and (3) multidisciplinary rehabilitation including psychological therapy if available [65]. Patients with chronic pain may benefit from multidisciplinary biopsychosocial rehabilitation that aims to improve back-related physical dysfunction, address psychological issues, and targets social- and work-related behaviors. However, the prescription of multidisciplinary biopsychosocial rehabilitation should be informed by the availability of necessary resources [76]. The resources, however, to provide these services are not available in most settings. What is required is appropriate triage and evaluation of available tools and treatments in each setting.

Strengths and limitations

To the best of our knowledge, this is the first focused review on psychological and social issues in low back pain in the context of low- and middle-income communities. While

these issues have received a great deal of attention in industrialized countries since the emergence of the biopsychosocial model of pain and illness, literature is scarce on these issues in low- and middle-income communities. Limitations include that this was not a systematic review of the literature. All languages and other search engines were not explored, thus some relevant studies may have been missed. Papers were not reviewed for bias or quality. The focus of the review was on low back pain, thus other spine-related issues including other spine regions, functional limitations and spine disorders were not included in this review.

Conclusion

Health care providers have the potential to empower patients to take control of their health outcomes by making them aware of biopsychosocial relationships with their spine pain and disability. Therefore, the patients need to be engaged in establishing treatment goals and negotiating their treatment. Developing psychosocial assessment instruments specifically for groups with low literacy is of clear interest in the context of medically underserved areas and low- and middle-income countries where psychological and social factors may be difficult to detect. As a consequence, these psychological and social factors may also be poorly taken care of in these locations. If we are to use the instruments we know best, these instruments will require proper cross-cultural validations, taking into account the diverse contexts considered by the GSCI. Such developments would contribute to the identification of psychological, social or environmental risk factors in these contexts. We know little about these risk factors and even less on how they may be organized into significant clusters in other cultures. This development may in turn help devising meaningful interventions allowing to prevent pain-related activity limitations and disability.

Compliance with ethical standards

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