Illness behavior in patients with musculoskeletal disease
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CHAPTER 1

General Introduction
Introduction

This thesis addresses human illness behavior in patients with musculoskeletal conditions. One definition of illness behavior is “the manner in which individuals monitor the structure and functions of their own bodies, interpret symptoms, take remedial action, and make use of health care facilities”¹. Many musculoskeletal symptoms are never associated with a specific pathophysiological process. In other words, many symptoms (e.g. backache) remain nonspecific or medically unexplained. A review of how human illness behavior has varied across time and cultures with respect to nonspecific symptoms clarifies why illness behavior is a worthwhile topic of study.

Humans find nonspecific diagnoses unsatisfying, and apply their intelligence to rationalize medically unexplained symptoms, creating illness constructions with often elaborate anatomical explanations. One example is the diagnosis of “spinal irritation” a popular diagnosis from the 1820s until the 1870s throughout Europe and in Northern America, and was still part of the differential diagnosis of physicians in the United States until the 1920s². Pains in any part of the body that could not be explained by the physician, were ascribed to a painful spot in the spine². The physician examined the spine to identify a painful location. This was believed to be a spot of irritation that was carried on nerves to the rest of the body². An article from the Boston Medical and Surgical Journal (now the New England Journal of Medicine), published in 1906, suggested that a spa treatment at Lago Maggiore in Switzerland could rid a patient of the irritation of the nerves and spine²,³. This is an indication of how widely the diagnosis was used and accepted in those days.

Doctors in the 19th century also faulted the uterus for causing “hysterical symptoms”, nervousness, and other medically unexplained symptoms in female patients². Irritation of the uterus was thought to explain a variety of bodily symptoms². Surgeons even operated on those patients because they believed that hysterectomy would alleviate the symptoms². Quite remarkable given the substantial risks of surgery at that time.

Other physicians supported the theory that an animal was living in the pelvis, which was the cause of nervousness². A belief of Ostpreußen, in Germany at that time, was that the uterus was actually a living animal; to be more precise: a frog.² When the “Kolke” was upset, it could cause symptoms such as peritonitis²,⁴. In modern times, such an explanation would not be taken seriously by patients, but this was also the time of physicians advocating the drawing of blood or blistering as treatments for a variety of diseases. We would now consider diagnoses such as “spinal irritation” or “upset Kolke” and “hystera” as inaccurate and the explanation of those diseases as pseudoscientific, but in the 19th century these “diagnoses” were popular². Medically unexplained symptoms are still commonplace⁵, but our understanding of them continues to evolve.

Attempts to determine why patients with the same disease had different reactions and symptoms resulted in development of the concept of illness behavior in the early 1960s⁶. Illness behavior is the way symptoms are perceived, evaluated, and acted on⁶. One patient will have a low threshold to visit a physician, whereas another patient adapts to the symptoms and might not seek attention of a health care provider at all⁶. Pilowski viewed psychiatric disorders such as hypochondriasis and conversion as “abnormal” illness behavior⁷,⁸. In these group of patients, reassurance by a physician will not alleviate symptoms or disability⁷,⁸. In addition to hypochondriasis, other reactions such as catastrophic thinking or pain anxiety are part of illness behavior. This thesis will try to elucidate the role of these factors in patients with conditions of the hand and upper extremity.
The influence of psychological factors in orthopaedic surgery

The traditional separation of mind and body is often blamed on Descartes, but seems to be the default setting of the normal human mind. Because we can imagine our thoughts as separate from our physical self, we can imagine separating from our body and living on after its demise. Because humans seem to default to this mind-body dichotomy, both patients and health providers expect all bodily dysfunctions to be reducible to a specific pathophysiology, and we tend to underestimate the affect of mood and coping strategies (interpretation of symptoms and behavior in response to them) in the human illness experience. Even though the attitude has shifted and some clinicians and patients now realize that mind and body are connected - a concept known as the biopsychological paradigm - it is still not commonplace to use this approach.

Psychological distress has a substantial effect on general health. Among patients visiting a general health practitioner, it has been estimated that over 30% might qualify for diagnosis of depression or anxiety disorders. Women have more anxiety and depression than men and also have more intense symptoms. In addition, women have more bodily symptoms than men and higher levels of somatization.

Depression is prevalent after orthopaedic trauma; the study of Crichlow and colleagues showed that 45% of the patients had depressive symptoms 3 to 12 months after a trauma; and depression correlated with disability. Another study showed that almost 20% of patients are affected by Post Traumatic Stress Disorder (PTSD) after a musculoskeletal trauma, and that PTSD, just like depression, correlates with disability. Moreover, even 7 years after a traumatic injury, patients with a history of traumatic injury had higher levels of chronic pain compared to the general population, and both depression and self-efficacy to return to their work were among the predictors for chronic pain. In patients who suffered a forearm laceration, the prevalence of psychological distress (as measured by the Impact of Events Scale) was 34%, and 39% of patients with upper extremity nerve injuries and compression had depression. In patients with hand injuries, PTSD and depression are present in about one third of individuals.

The influence of psychological factors is manifest in patients with back pain. Catastrophic thinking, which is a misinterpretation of nociception, correlates with pain and mental health as measured with the SF-36 Mental Component Summary. Disability was affected by control over pain and self-efficacy. In addition, psychosocial factors were important in the transition of acute back pain to chronic back pain. Patient activity level is another important variable; patients who were more active had better recovery after spine surgery.

Non Specific Arm Pain is associated with disproportionate pain intensity and disability and correlates with pain anxiety, heightened illness concern, and catastrophic thinking. Even in conditions with discrete objectively verifiable pathology, such as lateral epicondylitis, catastrophic thinking alone explains 60% of the variation in disability. In patients with carpal tunnel syndrome, depression and catastrophic thinking are the most important predictors of pain. After minor hand surgery, depression is the most important predictor of pain intensity and magnitude of disability. Effective coping strategies such as pain self-efficacy have a strong correlation with symptoms and disability. Depression has a similar correlation with disability in patients with carpal tunnel syndrome, Quervain tenosynovitis, lateral elbow pain, trigger finger and distal radius fracture. Depression also correlates with grip strength, a measure which is frequently used in the practice of a hand surgeon to evaluate function of the hand.
Depression and coping are considered direct psychological factors, pain is an indirect measure. Pain is an important predictor of disability. In patients with a fracture of the elbow, 36% of the variation in the disability questionnaire could be explained by pain and a model of pain with motion accounted for 45% of the variation [29].

**Measuring disability, general health and psychological factors**

In trauma, spinal disorders, and hand surgery, there is an increasing body of literature showing the importance of psychological factors in outcomes, general health and disability, and there are many questionnaires used to assess psychological factors and disability.

A questionnaire which is often used to assess disability of the upper extremity is the Disabilities of Arm, Shoulder and Hand questionnaire (DASH) [30]. The DASH questionnaire consists of 30 questions which are answered on a 5 point Likert scale. The total score is calculated and scores range between 0 (no disability) and 100 (highest disability) [30]. There is also a validated shortened version of the DASH, the QuickDASH, which contains 11 questions of the original questionnaire [30, 31]. The scoring is the same in both versions [30, 31].

The SF-36 is the most commonly used questionnaire to measure general health in studies and has two summary scores, the Mental Component Summary (mental health status) and Physical Component Summary (physical status) [32]. The score is calculated so that the standardized mean is 50, with a standard deviation of 10 [32].

When a physician would like to measure catastrophic thinking, the Pain Catastrophizing Scale, developed by Sullivan, can be utilized [33]. This questionnaire has 3 subscales; rumination, magnification and helplessness; each of those is a separate construct of catastrophizing [33]. Catastrophic thinking is correlated with depression [34], but the PCS is developed to measure a separate construct. There are 13 questions in total, where a higher score indicates more catastrophic thinking [33]. Another important aspect is coping with pain. The pain self-efficacy questionnaire (PSEQ) has been developed to measure how confident patients are to perform daily activities despite their pain [35]. This questionnaire was validated in a sample of chronic pain patients [35], but has been used in upper extremity research as well [26].

Depression is common in the general population [9], and there are many questionnaires which can be utilized to measure symptoms of depression. Two of those questionnaires are the Center of Epidemiologic Studies-Depression scale (CES-D) [36] and Patient Health Questionnaire-9 (PHQ-9) [37]. The CES-D consists of 20 questions and a higher score corresponds to more depressive symptoms [36]. The Patient Health Questionnaire-9 (PHQ-9) or its abbreviated form PHQ-2 [38, 39] consist of 9 or 2 questions; higher scores represent more depressive symptoms [37, 39].

Hypochondriasis is frequently encountered in patients with medically unexplained symptoms: the study of Speckens and colleagues reported a percentage of 19% in a group of these patients [40]. The Whiteley Index is a questionnaire developed to measure heightened illness concern, and a higher score on this scale means that the patient has an increased illness concern [41-43]. Another study showed that 19.8 percent of patients visiting a medical outpatient clinic satisfied the criteria for health anxiety [44]. The Health Anxiety Inventory (HAI), or its short form SHAI-18, can be used to measure this [45].

Pain anxiety is another reaction which can be measured with the Pain Anxiety Symptoms Score (PASS) [46]. There is a version with 40 questions and the shortened form PASS-20, with 20 questions [46, 47]. The questionnaire obtains information concerning pain anxiety through four dimensions: fear of pain, cognitive anxiety, somatic anxiety, and escape/avoidance. The higher the score on this measure, the more symptoms of pain anxiety the patient has [46, 47].
Focus of this thesis

There is evidence that psychological factors are important in orthopaedic conditions. This thesis will try to determine if psychological factors are associated with patient language, informed shared decision making, distal radius fractures, finger injuries, fractures of both bones of the forearm, completion of a questionnaire and return of questionnaires by mail. Another concern is that questionnaires that measure these factors can be too burdensome for routine use, so this thesis will also evaluate the use of shorter questionnaires.

An outline of the chapters in this thesis is given below.

Outline of Chapters

Part II: Impairment versus disability after a fracture of the distal radius

Fractures of the distal radius are a common cause of disability and pain. Function improves over time: the study of MacDermid and colleagues showed that 6 months after a distal radius fracture, 63% of the patients had minimal or no pain, which improved to 79% after a year. Warwick and colleagues found that 85% of patients had satisfactory results 10 years after a distal radius fracture. Questionnaires are useful to assess disability and this can be measured with SF-36, Patient-Rated Wrist Evaluation (PRWE) and DASH. Results after this fracture are usually good, but not every patient will recover completely and research has focused on predictors of disability.

Measures of impairment such as range of motion and grip strength don’t correlate with levels of pain and disability as well as one might expect. Karnezis and Fragkiadakis found that grip strength was correlated with disability (PRWE), but flexion and forearm rotation were not. Another study found that functional measures only contribute to 25% of the variation in the PRWE. A model comprised of workers compensation, education and prereductional radial shortening could also explain 25% of the variation. One year after a distal radius fracture, age and income were predictors of disability as measured with the Michigan Hand Questionnaire (MHQ), not radiologic outcomes or fracture type. Souer and colleagues found that 65% of the variation in disability as measured with the DASH (Disabilities of Arm, Shoulder and Hand) was predicted by pain; forearm motion only predicted 6%.

This thesis will show that there is a divide between impairment or pathophysiology and symptoms or disability, which is largely explained by psychological factors. Distal radius fracture is one paradigm for this and this will be illustrated in Part II of this thesis.

Grip strength might seem to be an objective measure of physical impairment, but there is a voluntary component. Chapter 2 tests the hypothesis that psychological factors correlate with grip strength in patients recovering from a conservatively treated fracture of the distal radius. In Chapter 3 an overview of literature is presented on factors which are important in recovery after a fracture of the distal radius. Chapter 4 investigates whether motion or psychological factors are most important in the variation of the individual questions in the DASH questionnaire. The hypothesis of Chapter 4 is that motion is the most important predictor of task-specific disability after a fracture of the distal radius.
Part III: Finger injuries and the influence of psychological factors

Patient specific factors are important considerations for predicting whether and when a patient will return to work after a finger injury. Higher levels of psychological distress, as measured with the Impact of Events Scale, compromised patients’ returns to work after general trauma. The study of Watson and colleagues showed that hand surgeons are influenced by motivation and reported pain by the patient to determine if patients are ready to go back to work, in addition to factors such as radiographic union and job demand. Psychological factors not only affect a patient’s re-entry in the workforce, but also work performance; when patients have higher depression and anxiety their work performance is weaker and they have more risk of on the job injury.

In patients with finger, thumb and hand replants, there was a negative correlation between general disability (SF-36) and depression, and after 39 months, the average DASH score was 16. A recent study found that the DASH score after phalanx fractures was between 5.8 and 11.7 18 months after operative treatment. Van Oosterom and colleagues found that there was a clear distinction between impairment and disability in patients with phalanx fractures. Previous studies indicate that there is a role for psychological factors in finger injuries, and the aim of Part III was to study the influence of psychosocial factors in patients with finger injuries. In Chapter 5, the influence of job satisfaction, burnout, pain or psychological factors on disability is investigated in patients with a finger injury. Our hypothesis is that job satisfaction and burnout are the most important predictors of disability after finger injuries. Chapter 6 concentrates on the most important predictors of disability, time off work and motion 1 month after a fingertip injury. In Chapter 6 we test the hypothesis that pain self-efficacy and symptoms of depression are the strongest predictors of disability after fingertip injuries.

Part IV: The influence of psychological factors in encounters with hand surgeons

The words used by health care providers can influence outcomes. For instance, “pain” is a much more negative word than “ache” or “discomfort.” Vranceanu and colleagues advocate that doctors should use positive wording in order to reinforce positive coping strategies. Patients in more psychological distress use words and phrases that communicate their distress to the physician. However, most of the cues are missed by the physician, so there is room for improvement. The goal of Part IV is to investigate the encounter between the surgeon and the patient. Both the interaction of the surgeon with the patient and the words used by the patient are assessed. In Chapter 7 an analysis is given concerning the specific language used by the patient and its influences on outcome measures such as pain and disability. Our hypothesis is that patient language is associated with symptoms, disability and psychological factors. Chapter 8 lists the most frequently used phrases and feelings by the patients in a phrases and feelings questionnaire and assesses the influence of those on disability. The hypothesis of Chapter 8 is that phrases and feelings correlate with arm-specific disability.

Not only the words of the health care provider are important, but also the method of encounter is also influential. For decades the paternalistic approach was common, where the doctor decided what would be best for the patient. This method yields inferior results when compared to patient-centered, or informed, shared decision approach. For this informed shared decision making, input of both surgeon and patient are necessary. Especially in the
field of surgery, the risks and benefits should be thoroughly discussed, which is what makes
shared decision making important \(^70\). Higher levels of informed shared decision making might
improve the satisfaction of the patient. But patient factors have been shown to influence
satisfaction: in patients visiting an outpatient clinic, depression and pain were associated with
less satisfaction \(^71\).

The purpose of Chapter 9 is to measure the amount of informed shared decision making
in an orthopaedic practice, and also to study the influence of informed shared decision making
and psychological factors on disability and patient satisfaction. Our hypothesis is that informed
shared decision making is a predictor of patient satisfaction.

Part V: Questionnaires to measure disability and psychological factors

There are many different questionnaires available to measure separate psychological
constructs. Some questionnaires have shorter versions, such as the PHQ-2 \(^38,\ 39\) or the PASS-
20 \(^36,\ 47\), which significantly reduce the time burden for the patients. Pain catastrophizing
\(^26,\ 33\) and health anxiety \(^23,\ 45\) are important factors in hand and upper extremity conditions, but
both questionnaires consist of numerous questions. The general goal of Part V is to study
psychological questionnaires which are used in the field of hand surgery. Chapter 10 describes
the creation of two abbreviated versions of a questionnaire to measure health anxiety (SHAI)
and catastrophic thinking (PCS). The hypothesis of Chapter 10 is that an abbreviated version
of the PCS and SHAI has a high correlation with the original questionnaires. Chapter 11 illustrates the validation of the PCS-4 and SHAI-5 questionnaires. Our hypothesis is that the
shortened PCS and SHAI can be used to measure pain catastrophizing and health anxiety.

The method of administration is influential in how to interpret scores of questionnaire.
There are several ways to administer a questionnaire: on pen and paper, a web-based approach,
through the telephone, a telephone assisted web-based approach, and by means of a touch
screen \(^72,\ 73\). A North-American study found no differences in questionnaire score when web-
based, touch screen and pen and paper administration were compared \(^73\). Other studies found
that telephone scores are higher when compared to pen and paper questionnaire administration
\(^74-77\). Chapter 12 compares scores of questionnaires in different modes of administration:
web-based form (as administered with a laptop) compared to pen and paper questionnaires.
Our hypothesis is that different administration methods yield equal questionnaire outcomes.
Chapter 13 tests the difference in scores when administered over the phone versus on pen and
paper. In Chapter 13 we test the hypothesis that questionnaires completed over the phone have
the same outcomes as pen and paper administration.

Part VI: Factors influencing return to follow-up or mailing response

A critical factor in many clinical studies is the follow-up process. Different studies have
demonstrated that there are differences in follow-up rate between patients who complete
surveys over the phone \(^76,\ 78\) and in mailing-in surveys \(^79,\ 80\). A lower percentage of follow-up
will decrease the quality of the study, but missing data is inevitable in clinical research \(^81,\ 82\).
The aim of Part VI is to find factors which predict loss of follow-up and missing data.

In Chapter 14, an analysis is given concerning the predictors of nonattendance at a follow-
up appointment after a conservatively treated distal radius fracture. Our hypothesis was that
patients that do not follow-up are the same as those that do show for a scheduled follow-up.
Failing to return a mailing with questionnaires is frequently encountered in research and the
purpose of Chapter 15 is to find determinants of returning a postal mailing follow-up. Chapter 15 tests the hypothesis that patients that return a mailing are different from those that do not return a mailing.

Questionnaires become invalid if a certain amount of questions are missing; the DASH becomes invalid if three or more questions are missing, while the QuickDASH is invalid when more than 1 question is missing\textsuperscript{30, 31}. Chapter 16 compares differences in patients that completed the DASH questionnaire and those that did not. Our hypothesis is that there are differences in demographics, depression and catastrophic thinking between patients that complete the DASH questionnaire and those that do not.

Part VII: The importance of psychological factors in the long term outcomes

Previous studies have elucidated a correlation between disability and pain in the elbow\textsuperscript{29}. The same was found in patients suffering from a fracture of both radius and ulna\textsuperscript{83}, but another study found a correlation with function and grip strength\textsuperscript{84}.

The objective of Part VII was to explore which variables determine disability in patients with a fracture of both bones of the forearm with a minimum follow-up of 10 years. The previous chapters investigated the influence of psychological factors on acute illness, Chapter 17 investigates psychological factors as determinants of disability for patients that experienced upper extremity disease long before the study. The hypothesis of Chapter 17 is that pain and psychological factors are the most important predictors of disability in the long-term follow-up after a both bones fracture.

Summary of study questions for each of the individual chapters:

Part II: Impairment versus disability after a fracture of the distal radius

Chapter 2: Determinants of Grip Strength in healthy Subjects compared to that in Patients Recovering from a Distal Radius Fracture

General aim: To compare the influence of psychological factors on grip strength in patients recovering from a distal radius fracture to healthy subjects.

Specific question: Are psychological factors predictors of grip strength in patients recovering from a fracture of the distal radius?

Chapter 3: Recovery after Fracture of the Distal Radius

General aim: To give an overview of the literature on recovery after a distal radius fracture.

Specific question: What does evidence suggest as the best regimen a health care provider can give to a patient recovering from a distal radius fracture?

Chapter 4: Correlation between Perceived Disability and Objective Physical Impairment after Distal Radius Fractures

General aim: The aim of this chapter is to determine if psychological factors or motion are the most important predictors for disability with specific tasks after a fracture of the distal radius.

Specific question: Are impaired wrist motion or psychological factors the most important predictor for specific tasks on the Disabilities of the Arm, Shoulder and Hand questionnaire?
Part III: Finger injuries and the influence of psychological factors

**Chapter 5:** The Influence of Job Satisfaction, Burnout, Pain and Workers’ Compensation Status on Disability after Finger Injuries

**General aim:** To evaluate the separate effects of job satisfaction, burnout, and secondary gain on arm-specific disability after a finger injury in a cohort of working patients.

**Specific question:** What are the most important predictors of disability after a finger injury?

**Chapter 6:** Determinants of Disability one Month after Fingertip Injuries

**General aim:** The aim of this chapter is to find predictors of disability and absence from work one month after an injury of the fingertip.

**Specific question:** Is there a correlation between psychological factors and disability after fingertip injuries?

Part IV: The influence of psychological factors in encounters with hand surgeons

**Chapter 7:** Correspondence of Patient Word Choice with Psychologic Factors in Patients with Upper Extremity Illness

**General aim:** To assess if specific phrases used by patients can inform health care providers in diseases of the upper extremity.

**Specific question:** Are specific phrases of patients associated with symptoms, disability, and psychological factors in patients with hand and arm disorders?

**Chapter 8:** The Correlation of Phrases and Feelings about Patient’s Upper Extremity Illness with Disability

**General aim:** To determine if phrases and feelings of patients have a role in mediating variation in disability.

**Specific question:** Is there a correlation between disability and the phrases questionnaire?

**Chapter 9:** Informed Shared Decision Making and Patient Satisfaction

**General aim:** To determine the amount of informed shared decision making in an orthopaedic practice, and the influence of informed shared decision making on disability and satisfaction.

**Specific question:** Is informed shared decision making a predictor of patient satisfaction?

Part V: Questionnaires to measure disability and psychological factors

**Chapter 10:** Creation of the Abbreviated Measures of the PCS and SHAI: the PCS-4 and SHAI-5

**General aim:** To create shorter versions of the Pain Catastrophizing Scale and the Health Anxiety Inventory which make evaluation of health anxiety and catastrophic thinking less time consuming.

**Specific question:** Is there a correlation between the short and long versions of the PCS and SHAI?
Chapter 11: Abbreviated Psychological Questionnaires are valid in Patients with Hand Conditions
General aim: To validate the PCS-4 and SHAI-5 questionnaires in patients with hand and upper extremity conditions.
Specific question: Is there a difference in the use of the long and short versions of the PCS-4 and SHAI-5 for prediction of disability?

Chapter 12: The Comparison of Paper- and Web-based Questionnaires in Patients with Hand and Upper Extremity Illness
General aim: The aim of this chapter is to determine if the scores are different when commonly used questionnaires to detect disability, pain and psychological factors, are administered in both paper and web-based format.
Specific question: Is there a different score of the PHQ-2, QuickDASH, PCS, SHAI and pain when questionnaires are administered in paper versus in web-format?

Chapter 13: Validation of Phone Administration of Short-Form Disability and Psychology Questionnaires
General aim: The aim of this chapter was to examine if there are differences in scores of questionnaires frequently used in arm and upper extremity illness when different administration modes are compared.
Specific question: Is there a difference in score between telephone and paper administration of the PCS-4, SHAI-5, QuickDASH, ordinal pain scale and PHQ-2?

Part VI: Factors influencing return to follow-up or mailing response

Chapter 14: Predictors of Return after Cast Removal in Patients with a Nonoperatively Treated Distal Radius Fracture
General aim: To establish whether patient demographics or psychological factors have a role in not returning to the clinic when a follow-up visit was scheduled after a distal radius fracture.
Specific question: Which variables influence return for a scheduled visit after cast removal?

Chapter 15: Factors Associated with Survey Response in a Hand Surgery Clinic
General aim: To find predictors of non-return of a mailing questionnaire.
Specific question: What are the demographics, illness, and psychological factors associated with not completing a mail survey?

Chapter 16: Factors Associated with Incomplete DASH Questionnaires
General aim: To assess if there are differences in patients that complete all questions in a questionnaire and those that do not.
Specific question: What are the predictors for not completing the DASH questionnaire?

Part VII: The importance of psychological factors in the long term outcomes

Chapter 17: Long Term Outcomes after Fractures of Both Bones of the Forearm
General aim: To determine what the levels of function and disability are in a cohort of patients that suffered from a fracture of both bones of the forearm 20 years ago.
Specific question: Are psychological factors predictors of disability after a follow-up of a minimum of 10 years after a fracture of both bones of the forearm?
Overall aim of this thesis

This PhD thesis studies the influence of psychological factors in illness behavior in different hand and upper extremity conditions encountered in the practice of a hand surgeon. The importance of the language used by the patient and the amount of shared decision making in an orthopaedic practice is investigated. This thesis focuses also on questionnaires which are administered to measure these psychological factors and to create and validate shorter questionnaires.

The overall aim is to raise awareness of 1) the importance of psychological factors as part of illness behavior in both traumatic and nontraumatic conditions of the upper extremity; 2) the importance of informed shared decision making and increase the amount of informed shared decision making in their practice; 3) word choice of the patients as an expression of emotional distress; 4) which questionnaires to use and to interpret results based on the mode of administration; 5) factors important in determining nonresponse to questionnaires or clinical follow-up, and 6) psychology evaluation to achieve better care for the patients when patients express psychological distress.
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