PAIN AS A LATE EMOTIONAL REACTION. CLINICAL RESEARCH EVALUATING THE PSYCHOSOCIAL EXPRESSION OF PAIN DISORDER IN PREOPERATIVE AND POSTOPERATIVE PERIOD

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PAIN AS A LATE EMOTIONAL REACTION - CLINICAL RESEARCH EVALUATING THE PSYCHOSOCIAL EXPRESSION OF PAIN DISORDER IN PREOPERATIVE AND POSTOPERATIVE PERIOD (Abstract) Aim: A comparative analysis of the influence of psychosocial factors on pain perception in preoperative and postoperative period in patients scheduled for abdominal surgery. Material and methods: A psychological assessment was performed in 50 patients without psychiatric history scheduled for abdominal surgery. The verbal expression of pain, intensity of anxiety, catastrophizing level, and the interpersonal relationships were assessed. Results: Surgery has a powerful effect on the perception of pain intensity. Postoperatively patients perceive significantly lower pain than in the preoperative period (p=0.001). In the postoperative period the patients mainly use emotional and evaluative verbal expressions (p=0.000 and p=0.000, respectively), have a high index of anxiety (p=0.000), adopt a higher level of coping self-statements (p=0.002), and have a higher level of perception of others (family, friends) (p=0.005). Conclusions: In patients undergoing surgery, surgery affects their psyche, triggering a series of events that can have psychological effects on pain intensity, doctor-patient relationship, postoperative complications, and shortening of recovery time. Keywords: ALGIC DISORDER, PAIN PERCEPTION, PSYCHOSOCIAL FACTORS, PREOPERATIVE PHASE, POSTOPERATIVE PERIOD

Surgery is the most fascinating and dramatic specialty of medicine, with a large emotional charge for both the surgeon and patient, often at the edge of survival. Surgical act depends not only on lucid thinking and unerringly movement of surgeon hand, but also on how the patient reacts to the surgical act, or later on how he recovers from the body changes (even if they are lifesaving) caused by surgical maneuvers. More and more studies on patients with various types of surgery show that psychical factors and psychological implications play an important role in the dynamics of doctor-patient relationship and in postoperative course (1, 2, 3, 4).

There are many opinions in favor of replacing the technicist-somatization mentality with psychosomatics, recognizing that psychological characteristics are present in most surgeries: the novelty of the situation created by the presence of lesion or dysfunction to be corrected by the surgeon (with special effects on the surgeon) and anxiety (extreme for patient, but great for surgeon) generated by the surgical risks that often target patient survival. The aim of this research was to study how psycho-
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logical factors influence the surgical act and patient mental state.

**MATERIAL AND METHODS**

**Patients.** This research was carried out in 50 inpatients scheduled for abdominal surgery, was approved by the Ethics Committee of the Iași „Dr. Iacob Czihac” Emergency Military Hospital, and was conducted in conformity to the Declaration of Helsinki.

The inpatients enrolled in this research had predominantly abdominal pain, and were scheduled for abdominal surgery. Exclusion criteria included prior abdominal surgery and psychiatric history.

**Patient examination.** All patients underwent a clinical interview: the McGill Pain Questionnaire (5), Coping Strategies Questionnaire (6), Anxiety Symptom Questionnaire (7), Pain Catastrophizing Scale (8) and West Haven-Yale Multidimensional Pain Inventory (9).

The clinical interview was designed to highlight: non-verbal indicators of pain, family history, description, evaluation, frequency and persistence of present pain, memory of pain, pain behavior, perceived attitudes of others, self-assessment of pain tolerance, types of pain therapy, indicating the body areas affected by pain so far, beliefs about pain, involvement in daily activities, family relationships, medical information about pain.

The McGill Pain Questionnaire is a self-report questionnaire that allows individuals to give their doctor a good description of the quality and intensity of pain that they are experiencing. The McGill Pain Questionnaire consists primarily of 3 major classes of word descriptors – sensory, affective and evaluative – that are used by patients to specify subjective pain experience. It also contains an intensity scale and other items to determine the properties of pain experience. The 3 major measures are: 1. pain rating index, based on two types of numerical values that can be assigned to each word descriptor, 2. number of words chosen; and 3. present pain intensity based on a 1-5 intensity scale.

The Coping Strategies Questionnaire (CSQ) consists of 50 items assessing patient self rated use of cognitive and behavioral strategies to cope with pain. It comprises six subscales for cognitive strategies (ignoring pain, reinterpretation of pain, diverting attention, coping self statements, catastrophizing, praying/hoping) and two subscales for behavioral strategies (increasing activity levels and increasing pain behaviors). Each coping strategy subscale consists of six items measured with a numerical rating scale ranging from 0 (never do that) to 6 (always do that) indicating how frequently the strategy is used to cope with pain. An additional two single item questions each with a scoring range of 0–6 are used as effectiveness ratings of control over pain and ability to decrease pain.

The Anxiety Symptom Questionnaire (LWASQ), developed to measure the level of anxiety, consists of 36 items, which include somatic, cognitive and behavioral components of anxiety: 16 somatic items (physical manifestation of anxiety), 9 behavioral items (avoidance of social situations), and 11 cognitive items (the tendency to worry and ruminate). The scale ranges from zero (never) to eight (extremely often).

The Pain Catastrophizing Scale (PCS) is a 13 item scale, with each item rated on a 5-point scale: 0 (not at all) to 4 (all the time), broken into three subscales: magnification, rumination, and helplessness. The scale was developed as a self-report measurement tool that provided a valid index of
catastrophizing in clinical and non-clinical populations, a reliable and valid measurement tool for catastrophizing. From a clinical perspective, the PCS is useful in identifying individuals that may be more susceptible to high distress responses from aversive medical procedures such as chemotherapy or surgery.

The West Haven-Yale Multidimensional Pain Inventory (WHYMPI) is designed to provide a brief, psychometrically sound, and comprehensive assessment of the important components of the chronic pain experience. The WHYMPI is a 52-item, 12-scale inventory that is divided into three parts. Part I includes five scales designed to measure important dimensions of the chronic pain experience including: 1. perceived interference of pain in vocational, social/recreational, and family/marital functioning, 2. support or concern from spouse or significant other, 3. pain severity, 4. perceived life control, and 5. affective distress. Part II assesses patients’ perceptions of the degree to which spouses or significant others display Solicitous, Distracting or Negative responses to their pain behaviors and complaints. Part III assesses patients’ report of the frequency with which they engage in four categories of common everyday activities; Household Chores, Outdoor Work, Activities Away from Home, and Social Activities. In addition to the individual scale scores, a General Activity scale score, obtained from the combination of all four activity scale scores, has been recommended for some purposes. Patient responses to WHYMPI items are given using a 7-point numeric scale.

Follow-up. Psychological evaluation of patients was performed at surgeon’s request, being focused on their behavior during surgical preparation. Postoperative assessment was done one month after surgery, the mandatory postoperative follow-up (randomized study).

Main outcome measures. The primary outcome measure was emphasizing pain perception: sensory, affective and evaluative pain experience; pain rating index; the number of words chosen; and the present pain intensity. The secondary outcome measures included determination of: anxiety levels, catastrophizing levels, coping types, and components of chronic pain experience.

Statistical analysis. The continuous variables were tested using Student’s tests (normally distributed data). The statistical analysis was performed using SPSS 13.0 statistical software.

RESULTS

Regarding the perception of pain by patients in preoperative and postoperative periods, this research did not show statistically significant gender, age and education differences in pain threshold p < 0.05.

The total index measuring patient pain after surgery was significantly lower (p=0.001) than the total index measuring patient pain before surgery. The sensory component of patient pain after surgery was significantly lower (p=0.000) than the sensory component of the patient pain prior to surgery. The affective component of patient pain after surgery was significantly higher (p=0.000) than the affective component of patient pain before surgery. The evaluative component of patient pain after surgery was significantly higher (p=0.000) than the evaluative component of patient pain before surgery. Generalized anxiety level of patients after surgery is significantly higher (p=0.000) than the level of generalized anxiety in patients prior to surgery. The generalized anxiety level of patients after surgery was significantly higher (p=0.000) than the level of
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generalized anxiety prior to surgery. The level of reactions of others (family, friends) to patient complaints of post-surgery pain was significantly higher (p=0.000) than the level of reactions of others (family, friends) to patient complaints of preoperative pain.

DISCUSSION
This research is relevant because it demonstrates how verbal expression of pain, emotional disposal, cognitions and interpersonal relationships vary by surgery time. A comparative analysis of preoperative and postoperative pain perception indicates a significantly less overall postoperative pain. This result is inconsistent with studies that claim that post-surgical pain intensity index increases (10, 11, 12). The lower intensity of the perceived post-surgery pain can be interpreted psychologically by the quasi-objective relationship between pain caused by somatic disease, surgery, perceptual environment (due to anesthesia and analgesics the patient does not experience any pain) and expectations of healing - the patient thinks he regains health.

Postoperatively patients describe less sensory pain than preoperatively. The sensory discriminative dimension reflects the somatic aspect of pain. Preoperative pain is considered an acute pain which initiates protective physiological mechanisms in response to somatic injury. Postoperatively patients do not feel threat to the body, and therefore describe less sensory pain than in the preoperative phase. Surgery produces changes in bodily sensations and mental state; pain is interpreted by the patient as having different clinical significances, as an indicator of disease or of healing, and therefore patients describe less sensory pain postoperatively than preoperatively.

Patient language is an indicator of mental state; thus post-surgery patient is dominant in affective and evaluative verbal expressions.

Postoperatively patients perceive more emotional pain than preoperatively, describing emotional pain one month after surgery indicates that patients still live under the "threat" of the disease, and that the pace of health progress, the recovery, is inconsistent with the expectations.

In postoperative period patients perceive more evaluative pain than patients in preoperative phase. Surgical act exposing the body to a traumatic situation is mind-boggling in patients with no previous surgical experience, and although accepted as necessary, it triggers attitudes, associations, thoughts, and significances about the meaning of pain, disease, and even life. In the preoperative period the patient cannot categorize and analyze the significances and consequences of surgery (13). After surgery, the information is organized, analyzed and has an effect on patient depending on the differences between preoperative and postoperative expectations. Assessment of pain perception in the preoperative and postoperative periods and of how the intensity and quality of pain is described may be indicators of post-traumatic stress disorder.

Generalized anxiety level in post-surgery patients is significantly higher, because of physical discomfort and possible functional impotence, but also because the patient recalls the dangers he went through and the fear that these, or other similar ones, will happen again.

If in the preoperative period anxiety is sometimes controlled pharmacologically or psychotherapeutically by the intervention team, the postoperative patient is a "solved problem" and, therefore, many patients return to hospital or continue clinically investigations, becoming likely to have iatrogenic stress.
The level of coping self-statements is significantly higher after than before surgery (14). Repressed fear and emotions before surgery are expressed postoperatively, and the use on this method of coping signifies the need for a patient to control pain, as coping self-statements are active coping, "everything is OK". Post-surgical patient adopts an active coping and is responsive to how "pain" will influence family relationships. This active coping has a variable degree of stability and qualitative value likely to resist or succumb to the action of psychological and traumatic factors on social and family life.

The level of reactions of others (family, friends) to patient complaints of pain after surgery is significantly higher than the level of reactions of others (family, friends) to patient complaints of pain before surgery (15, 16). Family behavioral and attitudinal reactions and support provided during post-surgery favor recovery and reintegration in the social and professional life.

**CONCLUSIONS**

Surgery affects the psyche of the patient undergoing surgery, triggering a series of events that can have psychological effects on pain intensity, doctor-patient relationship, post-surgery complications, and shortening of recovery time.

These results suggest that the integration of the psychosomatic concept in surgical practice, without denying the professionalism of the surgeon, can contribute to increased surgery success rate; good knowledge of psychological elements involved in the dynamics of surgery can be used for a successful surgical optimization.

**REFERENCES**

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IMAGING EVALUATION OF JOINTS PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

A group of researchers conducted a study that assessed the prevalence of joint involvement in patients with systemic lupus erythematosus (SLE) by means of clinical assessment, joint US and MRI and evaluated the sensitivity and specificity of physician evaluation of joint involvement. At enrolment, patients underwent a complete physical examination including a 44-joint count, and hand deformities were scored. On the day of enrolment, each patient underwent a non-dominant hand-wrist ultrasound (US) examination and a non-dominant hand-wrist MRI study without contrast injection. By physician examination hand or wrist involvement was diagnosed in 23.5%. At least one pathological finding was revealed by US examination at wrist and/or hand joints in 55%. They found a low sensitivity (46.5%) with high specificity (93.2%) of the physician assessment for the evaluation of joint involvement. The MRI imaging showed at least one erosion in 47.3% patients at the hand and in 98.9% at the wrist. The authors concluded that the physicians tend to underestimate the severity of joint involvement in SLE, the US assessment showed a high prevalence of joint and tendon involvement, and the MRI evaluation showed a high prevalence of damage, suggesting that joint involvement in SLE could be more severe than expected. (Mosca M, Tani C, Carli L et al. The role of imaging in the evaluation of joint involvement in 102 consecutive patients with systemic lupus erythematosis Autoimmun Rev. 2014 Aug 23.[Epub ahead of print]. PMI 2518324

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