

Original article

Psychological and psychiatric factors related to health-related quality of life after total hip replacement – preliminary report

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Abstract

Abstract. – Total hip replacement is one of the most successful orthopaedic interventions in improving considerably the patients' performance, nevertheless some patients demonstrate declined functional ability following an operation. Such condition is not a consequence of medical illness or the surgery itself but might rather be associated with mental status. The authors conduct an investigation concerning the relation between some psychological and psychiatric factors and their influence on health-related quality of life in patients after total hip replacement.

Methods. – Into the study group we included 102 subjects undergoing total hip replacement (59 female, 43 male). In all subjects we measured depression (Beck Depression Inventory – BDI), anxiety (State and Trait Anxiety Inventory – STAI), sense of coherence (SOC-29), personality traits (Eysenck Personality Inventory – EPI) and health related quality of life (SF-36).

Results. – The postoperative values of the PCS and the MCS for the whole group of patients correlated negatively with the SOC values ($p = 0.04$ and $p = 0.03$ respectively). Neuroticism (EPI) and anxiety as a trait (STAI) were also associated with postoperative performance, both in mental ($p = 0.03$ and $p = 0.008$ respectively) and physical ($p = 0.005$ and $p = 0.04$ respectively terms).

Conclusion. – Total hip replacement improves significantly the patient's health-related quality of life at 6 months after surgery, what is influenced by sense of coherence, neuroticism and anxiety as a trait. Above mentioned factors should be taken into account when rehabilitation and social readaptation processes are planned.

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1. Introduction

Osteoarthritis is one of the leading causes of pain and disability in people after 50 years of age. Total hip replacement

(THR) is one of the most successful orthopaedic interventions improving considerably the patients' performance. Nevertheless some patients demonstrate declined functional ability following the operation [25]. Such condition is not

Abbreviations: THR, total hip replacement; BDI, Beck Depression Inventory; STAI, State-Trait Anxiety Inventory; X1, level of anxiety as a state; X2, level of anxiety as a trait; SOC-29, sense of coherence questionnaire; SOC, sense of coherence; EPI, Eysenck Personality Inventory; E, extroversion subscale of Eysenck Personality Inventory; N, neuroticism subscale of Eysenck Personality Inventory; L, lie subscale of Eysenck Personality Inventory; HRQoL, health related quality of life; SF-36, health related quality of life questionnaire; BP, body pain; PF, physical functioning; RP, physical role limitation; RE, emotional role limitation; MH, mental health; SF, social functioning; VT, vitality; GH, general health; PCS, Physical Component Summary Scale; MCS, Mental Component Summary Scale.

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a consequence of medical illness or the surgery itself but might rather be associated with some psychological factors [26,28]. A successful surgical intervention is not a guarantee of a quick and effective recovery of the patient [35,38]. Some authors stress that negative effects like anxiety, depression and anger preceding the surgery could disturb the process of recovery. Such patients experience more pain and generally poorer performance [8,9,15,18]. It is important to recognise the influence of psychological state on preoperative and postoperative functional ability [11,12,22]. Increased awareness about unmet or unidentified psychiatric conditions could improve patient's surgical outcomes and may influence rehabilitation procedures and patient's health-related quality of life [6,8,23]. Health-related quality of life, or health status, is a broad concept representing individual responses to the physical, mental and social effects of illness on daily living, which influence the extent to which personal satisfaction with life circumstances can be achieved [4]. Disturbances in mental health may determinate physical health and social functioning and reduced health-related quality of life [12,16,35,36]. It is important in particular for those patients who need careful care and not only surgical operation, in order to become really relieved of suffering [28]. Such patients may be characterised with specific personality traits. In many studies authors emphasise that personality traits moderate process of disease and recovery [1,10,13,19,21,24,30,37]. This process may also be moderated by some other psychological factors like sense of coherence (SOC) [17,20]. SOC is thought to be one of the active and strong individual resources in successful prevention of physical or psychological disturbances in stressful situation [2,3]. The sense of coherence is a pervasive and enduring, yet dynamic, feeling of confidence in life which in general is comprehensible, manageable and meaningful [2,3]. The increased sense of coherence would enhance a person's ability to resist physical and mental stress – factors which become particularly important during the period before and after surgery [2,3].

The aim of the study was to assess some psychological and psychiatric factors like anxiety, depression, sense of coherence and some traits of personality and the influence of those factors upon postoperative health-related quality of life in patients undergoing total hip replacement.

Identification of these associations is supposed to allow patients and their doctors to overcome some difficulties (especially connected with mental status) in rehabilitation and social readaptation process, and in this way may improve health-related quality of life.

2. Subjects and methods

2.1. Subjects

The study comprised patients undergoing THR surgery in the District Hospital of Traumatology and Orthopaedics Surgery in Piekary Śląskie, who met the enrolment criteria and were admitted to the hospital throughout year of 2002–2004.

The following inclusion criteria were assumed:

1. unilateral total hip replacement due to primary osteoarthritis;
2. no previous hip surgery;
3. free of any psychiatric history (according to patients information and results of psychological examination before surgery);
4. compliance with the study requirements;
5. informed consent.

The research staff had identified patients meeting the eligibility criteria, who were then invited to participate. Power analysis showed that 50–60 subjects were needed, however, 189 eligible patients were asked to participate in this study in order to compensate for possible drop out. Of 189 eligible patients, 156 volunteered (84 females, 72 were males).

Questionnaires were delivered to the subjects 2 weeks before the surgery and 6 months after the operation (by mail). A total of 102 participants completed the postoperative questionnaires and mailed them to the study personnel. The final sample consisted of 102 subjects (59 females, 43 males), at the age range of 54–75 years (median age: 61 years).

3. Methods

The following Polish translations of the validated and reliable questionnaires were used to assess anxiety, depression, the sense of coherence, personality types and health-related quality of life:

1. To assess anxiety, the State-Trait Anxiety Inventory (STAI). It comprises 40 items. One half of them measure anxiety as a trait, whereas the remaining refers to anxiety as a state. Half of them (STAI-XI) measure state anxiety as transitory emotional state with subjective feelings of tension and apprehension and heightened autonomic nervous system activity, whereas the remaining (STAI-X2) consider anxiety, as a relatively stable individual trait in proneness to anxiety. For each scale the maximum score is 80 points with the minimum one of 20 [33,34].
2. To assess depression, the Beck Depression Inventory (BDI). It is commonly used – 21-item self-reported measure to assess common cognitive, affective and vegetative symptoms of depression. There are four self-evaluative statements reflecting the range of severity (0 – least severe, 3 – most severe) for each item. The scale has been well-validated and a score greater than 11 is considered to represent depressive symptoms. Score of 12–26 are indicative of mild, 27–49 moderate and 49 or greater of severe depressive symptoms [29].
3. Sense of coherence (SOC) – questionnaire was created by A. Antonovsky. It includes 29 questions, which allow evaluating the total sense of coherence and three components: comprehensibility, manageability and meaningfulness [3]. The respondents are asked to select answers on a seven-point semantic differential scale with two anchoring phrases. Low rating on the scale indicates low sense of coherence. The maximum score is 203 points

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