



Original Contribution

**PSYCHOSOCIAL FACTORS ASSOCIATED WITH CHRONIC DISEASE
SELF-EFFICACY IN PATIENTS WITH RHEUMATIC DISEASES**

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ABSTRACT

Self-efficacy is central to the management of chronic disease. **Purpose:** The purpose of the study is to identify the influence of optimism, general self-efficacy and perceived social support on self-efficacy for managing chronic disease in patients with rheumatic diseases. **Methods:** A cross-sectional design was used. 113 rheumatic disease patients completed instruments related to chronic disease self-efficacy, general self-efficacy, optimism and negative expectancies, perceived social support and demographic/clinical variables. **Results:** Optimism, general self-efficacy and perceived social support significantly and positively influence chronic disease self-efficacy. Behavioral, cognitive and affective mechanism of these factors influence on self-efficacy is discussed. Newly diagnosed patients perceived lower competence to manage symptoms and particular the pain. **Conclusions:** Chronic-disease self-efficacy is influenced by personal (optimism, general self-efficacy) and social factors (supportive social environment) but not by clinical and demographic factors.

Key words: chronic disease self-efficacy, rheumatic diseases

INTRODUCTION

Chronic disease self-efficacy refers to the subjective assessment of the resources and abilities of patients to organize and implement activities to control the disease (1). In addition to self-regulation of illness behavior, self-efficacy influences on cognitive and emotional processes, motivation and physiological condition (1). In patients with chronic diseases it is significantly associated with positive illness perception (2-4). Patients with higher self-efficacy perceived lighter symptoms and consequences of the disease, disease as more controllable by own behavior and treatment, understand better illness and experience less distress (5).

In patients with rheumatic diseases self-efficacy significantly affect the assessment of severity of symptoms and the degree of physical impairment. Low self-efficacy is significantly related to the perception of more intensive pain, stiffness, fatigue and especially with severely impaired functional capacity (6-8). Self-efficacy predicted somatic and mental health. Brekke et al. (2001) found that initially measured higher self-efficacy in 815 patients

with rheumatoid arthritis predict the perception of less pain, mild disability, less distress and better physical functioning after 2 years when control demographic and initial health status factors (9). In addition, patients with low perceived efficacy assessed more negatively current and future health status as well (6). Chronic disease self-efficacy determines the degree of stressful impact of the disease and the level of distress in patients with rheumatoid arthritis. Patients with high self-efficacy perceive the disease as less restrictive to physical and mental functioning and tend to experience less distress (10).

Besides the somatic and mental health self-efficacy is a significant factor for the implementation of adaptive strategies for self-regulation of illness behavior. It predicts treatment adherence and it is associated with the tendency of patients to take better self-care (11, 12). All these data confirm that self-efficacy is a factor associated with better health and psychosocial adaptation to illness. As a dynamic system of beliefs, chronic disease self-efficacy is formed by personal and social factors. The aim of this study was to determine the influence of optimism, general self-efficacy and social support on the perceived competence of patients with rheumatic diseases to manage illness.

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MATERIALS AND METHODS

Participants:

Patients who provided informed consent were involved in the study. 113 patients with rheumatic diseases participated in the study: 76 patients with ankylosing spondylitis and 37 patients with rheumatoid arthritis, age 25-80 (Mean=48.9, SD=13.04), 53 male and 60 female.

Methods:

1. Optimism and Negative expectancies Inventory (13)
2. General Self-Efficacy scale (14)
3. Self-Efficacy Chronic Disease Scales - Stanford Patient Education Research (15)
4. Perceived social support scale – MOS:SSSI (16)

Statistical methods used: Kolmogorov-Smirnov test for normality; ANOVA, Nonparametric Mann-Whitney and Kruskal

Wallis test, Cronbach's alpha coefficient of reliability for the items in questionnaire. P value of less than 0.05 was considered as significant. All statistical analyses were performed with IBM SPSS Statistics 19 software.

RESULTS AND DISCUSSION

Statistical analysis by Mann-Whitney test found significant differences in perceived self-efficacy for managing disease depending on the level of general self-efficacy. General efficacy refers to stable beliefs about personal ability to cope with difficult and new situations. Patients who perceived themselves as more capable to cope with difficulties in general perceived themselves as more capable to manage the disease, except the ability to maintain physical activity, get information about the disease from public sources and communicate with physicians (**Table 1**).

Table 1. Differences in chronic disease self efficacy means depending on the level of general self-efficacy

Chronic disease self-efficacy components	Mann-Whitney U	Exact. Sig.
Maintain psysical activities	U=128.5	P=0.13
Get information about disease	U=161.5	P=0.55
Get help from community	U=105.5	P=0.02
Communicate with physician	U=155.5	P=0.45
Manage illness in general	U=50	P=0.0001
Manage daily activities	U=93.5	P=0.011
Participate in social activities	U=78	P=0.002
Manage symptoms	U=88	P=0.007
Manage depression	U=65.5	P=0.001

The result can be explained by a coherent and hierarchical structure of the cognitive system. According to cognitive theory, specific beliefs are subordinate to generalized. People transform information from a specific past experience into cognitive schemes and patterns that affect cognitive processing. So general self-efficacy influences information processing in a particular situation determinates its emotional impact and the way the information is organized and maintained for future use (17).

Optimism is a significant factor for the formation of a higher self-efficacy about communicating with doctors (U=74,500; P=0.015), managing disease (U= 33; P=0.0001), symptoms (U=53; P= 0.002) and depression (U=34; P= 0.0001), as well as participating in social activities (U= 60; P= 0.004). The relationship between optimism and chronic disease self-efficacy can be explained

by behavioral, cognitive and affective mechanisms of influence of generalized expectations on disease adaptation. In literature there is evidence that optimists have a more active illness behavior, experience less distress and tend to cognitively reconstruct negative thoughts about the disease and symptoms (18). They form a positive illness perception (5, 19, 20, 21). Generalized positive expectations are interrelated with the ability to set goals, action, maintain motivation and use of problem-focused coping (22, 23). Active behavior increases the likelihood of achieving positive results, which reinforces the beliefs of personal efficacy by reference to the successful past experiences. For its part, the implementation of more effective strategies to tackle the problem and positive expectations about its results in the future are associated with lower levels of stress and positive well-being (24). Besides behavioral and affective mechanisms optimistic attitude towards the event or life in

general, is a significant factor for cognitive adaptation to stressful situation (25). Generalized expectations are associated with automatic information processing and preferences to information stimuli (26). Optimists prefer to focus their attention on stimuli associated with prosperity, while pessimists- mainly with stimuli related to threats. Preferences in the process of information processing influence emotional reactions, beliefs about the situation and behavior. Optimism is associated with a positive assessment of the current human-

environment interaction and can enhance self-assessment of coping abilities (27).

We found statistically significant differences in chronic disease self-efficacy depending on the level of social support (Table 2). Patients who perceived their social environment as more supportive are more confident in personal ability to obtain help from community, to communicate with physicians, to manage daily activities, symptoms and distress and participate in social life.

Table 2. Differences in chronic disease self-efficacy means depending on the level of social support

Chronic disease self-efficacy components	Mann-Whitney U	Exact. Sig.
Maintain psysical activities	U=92	P=0.28
Get information about disease	U=71	P=0.05
Get help from community	U=13.5	P=0.0001
Communicate with physician	U=41	P=0.001
Manage illness in general	U=29.5	P=0.0001
Manage daily activities	U=70	P=0.05
Participate in social activities	U=46	P=0.003
Manage symptoms	U=66.5	P=0.033
Manage depression	U=48	P=0.004

Other authors also found that social support reinforces the beliefs about more effective disease management. For example social support moderately positive and significantly correlates with chronic disease self-efficacy in patients with rheumatoid arthritis. Patients who perceived social group as more supportive evaluate the disease as less stressful and themselves as more competent to manage it (10). These results are established independently of diagnosis. For example, social support is positively associated with higher self-efficacy in patients with chronic obstructive pulmonary disease (28) and predicts its level (29). Xiuzhen and Fei (2016) found by multiple linear regression analysis that perceived social support, combined with the general self-efficacy and the level of depression, significantly predict chronic disease self-efficacy and explain 29% of its variance in 159 patients with chronic heart failure (29).

Efficacy beliefs are product of cognitive efficacy information processing from successful past experience, observing the successful role model, verbal persuasion from sources of social influence and the physiological and emotional states (1). Social support can increase the self-efficacy beliefs by verbal persuasion about capabilities for

disease control or encouragement to implement new strategies for effective health care. Social environment reduces anxiety and physiological reactions to stress and support the adaptation to stressful event by providing resources (30).

The analysis found no differences in self-efficacy, depending on the diagnosis, number of hospitalizations, hospitalization at the time of the study, gender, age and education level of the patients. Illness duration significantly influence on perceived competence to manage symptoms (chi Square = 10.305, P = 0.03) and particular the pain. Patients diagnosed from a year ago perceive themselves as less capable to manage symptoms and perceive pain as more uncontrollable in comparison with patients with longer illness duration. That competence increases with illness duration probably due to the fact that patients learn to apply different strategies to cope with the pain. Petkova et al (2010) in a study of 48 patients with cancer also found that younger patients with shorter illness duration perceive pain as more intense and uncontrollable compared with these with longer illness duration (31).

The manifestations of acute pain which becomes chronic is the main and distressing symptom of rheumatic diseases. Pain can be

described by multidimensional model with sensory, cognitive and affective component (32). The cognitive dimension refers to the way patients think about their pain, evaluate its intensity, consequences and personal meaning and their expectations of personal efficacy to deal with it. In patients with chronic pain, competence of managing pain predicts its intensity (33, 34). Patients who perceived as more capable to control the pain, experienced less distress and associated disease with milder symptoms (35-39). Perceived pain control may partially affect physical dysfunctions, treatment outcomes, coping with pain and adaptation to diseases. It follows that cognitive-behavioral interventions may be appropriate for enhancing the beliefs and skills to manage symptoms in patients with rheumatic diseases especially in the first year of illness duration.

CONCLUSIONS

1. Chronic-disease self-efficacy is influenced by personal and social factors instead of diagnosis and demographic characteristics of patients.
2. Optimism, general self-efficacy and supportive social environment are protective psychosocial factors that increase chronic disease self-efficacy.
3. Medical specialists should pay attention to perceived self-efficacy for managing symptoms (pain control) in order to facilitate adaptation to disease in newly diagnosed patients with rheumatic diseases.

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