

## Coping with chronic pain

Elin Dysvik<sup>a,\*</sup>, Gerd Karin Natvig<sup>b</sup>, Ole-Johan Eikeland<sup>c</sup>,  
Torill Christine Lindstrøm<sup>d</sup>

<sup>a</sup>*School of Health and Social Work Education, Stavanger University College, P.O. Box 8002, N-4068 Stavanger, Norway*

<sup>b</sup>*Department of Public Health and Primary Health Care, University of Bergen, Kalfarveien 31, N-5018 Bergen, Norway*

<sup>c</sup>*Eikeland Research and Teaching, Litle Milde 45, N-5259 Bergen, Norway*

<sup>d</sup>*Department of Psychosocial Psychology, University of Bergen, Cristiesgt. 12, N-5015 Bergen, Norway*

Received 16 March 2004; received in revised form 4 June 2004; accepted 10 June 2004

### Abstract

Many models of pain give coping an important role in understanding adaptation to chronic pain. Among these, Lazarus and Folkman's cognitive-phenomenological model of stress and coping provides a theoretical framework to conceptualise stress phenomena and coping strategies related to chronic pain. Chronic pain often necessitates new coping skills. An understanding of the concept of coping and how the patients cope is therefore crucial for the success of rehabilitation. The current study examined how coping, as measured by the Ways of Coping Checklist, was related to medical variables, depression measured by the Short Zung depression rating scale, and Rosenberg's self-esteem scale. The study sample consisted of 88 people who were recruited for a multidisciplinary pain management programme. Data were collected as part of a routine pre-treatment evaluation. Results indicated that the most predominant stressors were related to familylife and social activities. We also recognised on the one hand, appraising pain as a challenge was predictive of problem-focused coping, while on the other hand, appraising pain as a threat, experiencing depression, and reduced self-esteem were predictive of emotion-focused coping. Clinical implications of these results in nursing are discussed.

© 2004 Elsevier Ltd. All rights reserved.

*Keywords:* Coping; Chronic pain; Depression; Self-esteem

### 1. Introduction

Chronic pain may be defined as "pain that has lasted 6 months or longer, is ongoing, is due to non-life threatening causes, has not responded to currently available treatment methods, and may continue for the remainder of the patient's life" (Dunajcik, 1999, p. 471). Furthermore, chronic pain is recognised as a multi-

dimensional phenomenon incorporating physical and psychosocial variables (Gatchel, 1999). This condition has been related to poor adaptation including depression, which often accompanies low self-esteem. Chronic pain patients use a variety of strategies to cope with these problems (Jensen et al., 1991; Boothby et al., 1999). Differences in coping strategies have been hypothesised to explain some of the variation in adaptation among this group of patients (Lazarus and Folkman, 1984). Lazarus and Folkman's stress and coping theory (1984) outline several important factors involved in the coping process guiding this study. These

\*Corresponding author. Tel.: +47-5183-4197; fax: +47-5183-4150.

E-mail address: [elin.dysvik@hs.his.no](mailto:elin.dysvik@hs.his.no) (E. Dysvik).

are the person's stress experience, evaluation of resources (appraisal) and his or her thoughts and behaviour to manage the demands (coping).

## 2. Theoretical framework

Lazarus and Folkman (1984, p.19) define psychological stress as "a particular relationship between the person and the environment that is appraised by the person as exceeding his or her resources and endangering well-being". People with chronic pain must deal with more than just the daily stress caused by their pain. In addition to their medical problems, associations have been reported between chronic pain and psychological problems such as depression (Fishbain et al., 1997; Brown et al., 2002) and low self-esteem (Williams and Thorn, 1989; Davis, 2000). The pain-related problems described above may be appraised as exceeding the person's resources (Lazarus and Folkman, 1984), and contribute to the stress of a person with chronic pain. In the broadest sense, coping among the participants in this study means coping with these multiple stressors (Boothby et al., 1999).

Cognitive appraisal determines the meaning of the person–environment relationship and the person's emotional response to chronic pain (Lazarus and Folkman, 1984). When the pain-related stressors are appraised as exceeding the person's resources, well-being is threatened. Appraising stress as a threat refers to the potential for harm or loss and produces a negative emotional response, which is closely related to vulnerability. On the other hand, appraising stress as a challenge is a positive response, which focuses on growth and mastery (Lazarus and Folkman, 1984). Pain patients often have negative and maladaptive appraisals about the situation and their own ability to control pain, and thus tend to appraise their pain as a threat (Turk and Flor, 1999) and rely on emotion-focused coping (Smith and Wallston, 1992). As depression also tends to influence appraisal, depressed people may appraise threat more easily in demanding encounters. However, results have demonstrated that cognitive restructuring by encouraging more realistic appraisals may reduce depression among chronic pain patients (Boothby et al., 1999). Furthermore, appraising stress as a challenge is seen to play a crucial role in reducing threat and enhancing self-esteem as well as problem solving (Bednar and Peterson, 1995).

Since the 1960s there has been a growing recognition that while stress is an inevitable aspect of human life, it is coping that is essential for adaptation. Although definitions of coping have varied across time, the conceptualisation most often used in nursing research is the one proposed by Lazarus and Folkman (1984). They define coping as "constantly changing cognitive

and behavioural efforts to manage specific external or internal demands that are appraised as exceeding the resources of the person" (Lazarus and Folkman, 1984, p.141). Their coping concept is process-oriented rather than trait-oriented as it reflects the idea that coping efforts change according to situations and with time. Coping serves two overriding functions. Emotion-focused coping (EFC) is considered as attempts to control or minimise emotional distress caused by pain when a situation is appraised as if nothing can be done. Problem-focused coping (PFC), on the other hand, refers to situations that are appraised to be amenable to change. The efforts are directed at defining the problem and choosing between alternative solutions. According to Lazarus (1999) both forms of coping occur in nearly all stressful encounters. However, with respect to chronic pain, problem-focused strategies should presumably reduce stress and result in greater well-being in situations that are amenable to change, whereas emotion-focused strategies should give a more positive result in situations considered as unchangeable (Lazarus, 1999).

Lazarus (1999) discusses the relation between coping and health and states that whether the coping strategies will have health promoting consequences or not, depends on the special situation in which they are applied. However, some conclusions can be drawn from research that have related coping to physical and psychological well-being following stressful encounters. Reviews concerning chronic pain have shown that active coping (e.g., problem-focused coping) tended to be associated with better physical and psychological functioning, whereas the use of passive coping (e.g., emotion-focused coping) was associated with poor physical and psychological functioning (Jensen et al., 1991; Boothby et al., 1999). Furthermore, patients who used emotion-focused coping had more difficulty adapting to chronic disease than those who used problem-focused strategies (Bombardier et al., 1990; Maes et al., 1996). Associations have also been reported between depression and emotion-focused coping strategies in chronic pain (Weickgenant et al., 1993; de Ridder and Schreurs, 2001; Endler et al., 2003). In addition, individuals with high self-esteem seem to rely more on problem-focused coping (Terry, 1994) and are less depressed (Bednar and Peterson, 1997; Mruk, 1999).

As coping and appraisal are considered important mediating variables between the person–environment relationship and adaptation, the findings suggest the importance of targeting these variables to increase knowledge of the choices chronic pain patients make in stressful encounters. Since coping in chronic pain is also related to depression and reduced self-esteem, these factors are recommended as a routine procedure in clinical assessment (Lisanti, 1989; DeGood, 2000).

### 3. Method

#### 3.1. Aims of the study

Based on coping theory and previous research, the aims of this study were to:

- (1) examine the main stressors among people suffering from chronic pain;
- (2) examine the role of medical variables such as pain intensity, pain duration; and psychological variables such as appraisals, depression and self-esteem in the prediction of coping among people suffering from chronic pain;
- (3) discuss the importance of assessing coping in the context of rehabilitation.

#### 3.2. Recruitment procedure

The study sample consisted of 88 outpatients with chronic pain, who were consecutive referrals to a multidisciplinary pain management programme based on a group approach. Data were collected as the first part of a routine pre-treatment evaluation. Although this was not a random sample, it was considered to represent the different counties in Norway as the Norwegian society is a rather homogeneous society. The subjects met the following inclusion criteria:

- Aged between 18 and 67.
- Chronic non-malignant pain lasting for more than 6 months.
- Medical investigation and/or treatment completed prior to referral.
- Motivation to participate in an active rehabilitation programme.
- No ongoing litigation due to their pain problem.

Exclusion criteria:

- Affected by major mental disorders.
- Affected by major medical conditions requiring treatment.

Prior to inclusion, all patients had undergone a medical evaluation. They also met for a clinical interview with one of the group leaders from the multidisciplinary pain management programme, who presented the programme and outlined the expectations and obligations. Additionally, written instructions were delivered. It was emphasised that voluntary participation was required and that the participants could leave the programme at any time. Confidentiality was guaranteed and a written consent form was obtained at inclusion. The study was approved by the Regional Ethical Committee and The Data Inspectorate, and was conducted in accordance with the Helsinki Declaration.

#### 3.3. Characteristics of participants

Sociodemographic and medical data for the patients are described in Table 1.

#### 3.4. Measures

The Ways of Coping Checklist (WCCL) is a measure to operationalise and quantify coping and determine the relation between stress, appraisal, coping strategies and adaptation. It is derived from Lazarus and Folkman's transactional model of stress and coping (1984) and a revised scale (WCCL-R) (Vitaliano et al., 1985) consisting of 42 items was administered. WCCL-R consists of one scale labelled Problem-focused coping (PFC), three scales of Emotion-focused coping (EFC) labelled Wishful thinking (WT), Self-blame (SB) and Avoidance (A) and one scale labelled Social support (SS). The respondents were asked to respond to these coping items on a 4-point Likert scale with respect to the major

Table 1  
Sociodemographic and medical data ( $N=88$ )

	<i>N</i>	%	Mean
Age			46 (range: 22–66)
<i>Sex</i>			
Female	73	83	
Male	15	17	
<i>Marital status</i>			
Married/cohabitant	67	76	
Widow/single	21	24	
<i>Education</i>			
Compulsory school	27	31	
Upper secondary school	34	39	
College/University	27	30	
<i>Working status</i>			
Full/part-time	18	20	
Retraining	21	24	
Disability/retired	28	32	
Sick leave/not at work	21	24	
<i>Pain</i>			
Duration <sup>a</sup>		22 (of total life)	10 (range: 1–46)
Intensity			67 (range: 19–100)
<i>Pain diagnosis</i>			
Musculoskeletal	50	57	
Headaches	14	16	
Pelvic/visceral	12	13	
Neuropathic pain	6	7	
Whiplash	6	7	

<sup>a</sup>Average time since pain diagnosis.

stressor last week. High scores indicate more use of the actual coping strategy. Two primary appraisal items determined the meaning of the stressor in terms of threat and challenge (Vitaliano et al., 1987). In this study internal consistency (Cronbach's alpha) of WCCL-R suggests that this instrument possessed satisfactory reliability estimates (PFC=0.83, EFC=0.83, SS=0.85).

Short Zung depression rating scale (ZDS). The ZDS scale (Tucker et al., 1987) has 10 items assessing the severity of psychological and physiological manifestations of depressive symptomatology. Respondents describe how frequently they experience each symptom on a 4-point Likert scale ranging from "seldom or never" to "most of the time". The instrument has proved to be a useful brief screening test for depression and changes in mood. ZDS is standardised according to Tucker et al. (1987), and the standardised index identifies depressed persons by those obtaining scores above 70. In this group 35% scored above this limit. The scale had a Cronbach's alpha reliability coefficient of 0.85.

Rosenberg self-esteem scale (RSES). Self-esteem as measured by the RSES (Rosenberg, 1965) consists of a 10 statements on a 4-point Likert scale and refers to an individual's thoughts and feelings with reference to self as an object. The translation process involved three phases: translation, back-translation and consensual (Frank-Stromborg and Olsen, 1997). The RSES has the advantage of easy administration and satisfactory scalability. The scale provides a single scale score of self-esteem with higher scores indicating poorer self-esteem. Cronbach's alpha reliability coefficient was 0.85.

The Visual analogue scales (VAS) (Huskisson, 1983) is a 100 mm line that was used to measure pain intensity. One end is defined as "no pain" and the other as "severe pain". The patient is asked to mark the line at a point corresponding to the present severity of the pain experience. Particular advantages of the VAS are its sensitivity, simplicity, reproducibility and universality (Huskisson, 1983).

Pain duration was measured by one single item asking for the year of diagnosis related to their pain problem.

### 3.5. Statistical analyses

Descriptive statistics were performed to gain knowledge of the characteristics of the sample. Raw scores were calculated for each of the sub-scales in WCCL-R and the different dimensions capturing EFC were combined according to current recommendations (Vitaliano et al., 1990). Pearson bivariate correlation coefficients were performed between the independent variables (sociodemographic variables, medical variables, appraisal variables, depression and self-esteem) used in the regression analyses. Lastly, hierarchical

regression analyses, predicting PFC and EFC from sociodemographic variables, medical variables, appraisal, depression and self-esteem were performed in four steps. Multicollinearity was not considered a problem in these analyses as the highest VIF indicated 2.4 (emotion-focused coping) and 2.3 (problem-focused coping) and the tolerance estimates showed acceptable levels (i.e., above 0.42). The statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS), version 10.

## 4. Results

### 4.1. Descriptive analyses

The respondents' major stressors last week, as measured by WCCL-R, were related to their own health (38%), to family or social situation (53%) or work/studies (9%).

### 4.2. Correlation analyses

The correlations were characterised as modest to high, showing that challenge appraisal was negatively correlated with pain duration ( $r = -0.22$ ,  $p < 0.05$ ). Depression was significantly correlated with pain intensity ( $r = 0.27$ ,  $p < 0.05$ ) and threat appraisal ( $r = 0.46$ ,  $p < 0.05$ ). Lastly, self-esteem was positively correlated with threat appraisals ( $r = 0.35$ ,  $p < 0.05$ ) and depression ( $r = 0.69$ ,  $p < 0.05$ ). The results are presented in Table 2.

### 4.3. Hierarchical regression analyses

Hierarchical regression analyses, predicting PFC and EFC from pain intensity, pain duration, appraisal, depression and self-esteem are presented in Tables 3a and b. The analyses were performed in four steps, first by entering sociodemographic variables, then medical variables, following appraisal variables. Lastly, depression and self-esteem were entered in the equation. However, none of the variables produced significant effects on the two dependent variables in the two first steps. In step three, the change in the coefficients of determination was significant concerning both PFC (total  $R^2 = 0.23$ ) and EFC (total  $R^2 = 0.49$ ). Adding the variables in step four increased the coefficient of determination to 0.60 in the analysis of EFC, while no significant contributions are seen in PFC at this step. After the last step, challenge appraisal was the only variable significantly associated with PFC, while the measure of threat appraisal, depression and self-esteem gave significant contribution to EFC.

Table 2  
Pearson bivariate correlation coefficients between independent variables used in the regression analyses ( $N=88$ )

	1	2	3	4	5	6	7	8	9	10
1. Age	—									
2. Education	-0.16	—								
3. Gender	0.14	0.16	—							
4. Marital status	-0.05	0.09	-0.11	—						
5. Pain intensity	0.19	-0.10	-0.05	-0.13	—					
6. Pain duration	-0.03	0.25 <sup>a</sup>	0.20	0.02	-0.18	—				
7. Threat	-0.08	-0.00	-0.06	-0.04	0.16	0.07	—			
8. Challenge	0.05	0.07	-0.14	-0.10	0.13	-0.22 <sup>a</sup>	0.07	—		
9. Depression	1.10	-0.06	0.08	-0.32 <sup>a</sup>	0.27 <sup>a</sup>	-0.12	0.46 <sup>a</sup>	0.02	—	
10. Self-esteem	0.07	0.07	0.22	-0.25 <sup>a</sup>	0.04	0.01	0.35 <sup>a</sup>	-0.15	0.69 <sup>a</sup>	—

<sup>a</sup> $p < 0.05$  (two-tailed). Pain duration = % of life with a pain diagnosis.

Table 3  
Regression analyses

(a) of problem-focused coping (OLS, method enter) in four steps

	Total $R^2$	$R^2$ change	$F/p <$	$b$	Beta	$p <$
<i>Step 1: Sociodemographic variables</i>	0.015	0.015	0.31/ns			
Age				-0.00	-0.04	0.75
Education (0 = low)				0.08	0.08	0.49
Gender (0 = male)				-0.01	-0.01	0.94
Marital status (0 = single/wid.)				0.11	0.09	0.40
<i>Step 2: Medical variables</i>	0.078	0.063	2.77/ns			
Pain intensity (VAS)				0.00	0.18	0.12
Pain duration (% of life)				-0.00	-0.08	0.44
<i>Step 3: Appraisal variables</i>	0.230	0.152	7.80/.01			
Threat				0.02	0.06	0.63
Challenge				0.18	0.44	0.001
<i>Step 4: Self-esteem and depression</i>	0.254	0.024	1.24/ns			
Depression				-0.01	-0.16	0.32
Self-esteem				0.02	0.22	0.13
Constant				-0.08	—	0.86

(b) of emotion-focused coping (OLS, method enter) in four steps

	Total $R^2$	$R^2$ change	$F/p <$	$b$	Beta	$p <$
<i>Step 1: Socio demographic variables</i>	0.051	0.051	0.12/ns			
Age				-0.00	-0.01	0.93
Education (0 = low)				-0.05	-0.05	0.55
Gender (0 = male)				0.18	0.15	0.08
Marital status (0 = single/wid.)				-0.00	-0.00	0.99
<i>Step 2: Medical variables</i>	0.088	0.037	1.63/ns			
Pain intensity (VAS)				0.00	0.00	0.99
Pain duration (% of life)				0.03	0.06	0.50
<i>Step 3: Appraisal variables</i>	0.494	0.406	31.7/.001			
Threat				0.16	0.46	0.001
Challenge				0.05	0.12	0.13
<i>Step 4: Self-esteem and depression</i>	0.600	0.106	10.4/.001			
Depression				0.01	0.23	0.05
Self-esteem				0.02	0.21	0.05
Constant				-0.59	—	0.08

Note. All regression coefficients (unstandardised ( $b$ ) and standardised (Beta)) after step four. Two-tailed level of significance ( $p$ ). Multiple  $R^2$ ;  $F$ -values of change in  $R^2$  at each step.

## 5. Discussion

In this study Lazarus and Folkman's stress and coping model (1984) was applied to the field of chronic pain to reveal patterns of appraisals and coping in stressful encounters. In addition to the burden of chronic pain, several stressors, which interrupt daily life in different ways, are reported (Turner et al., 1987). Our results indicate that only 38% of the sample identified their main stressor to be related to their own health, whereas 53% related their main stressor to family life and social activities. Possibly, the stressors selected among the participants occurred because WCCL-R focuses on the main stressor last week and therefore incorporate other stressors besides pain (Lazarus and Folkman, 1984). Furthermore, phenomena such as coping and pain tend to have multiple determinants (Polit, 1996). Other explanations could be that medical factors initiating the pain problem play a minor role over time and several psychosocial problems become the primary stressors and the patient's main concern (Turner et al., 1987). Our results suggest the importance of examining non-pain stressors in chronic pain, which have implications for rehabilitation.

Although correlations between the use of coping strategies and measures of pain experience have been reported in the literature (Jensen et al., 1991), no relationship was found in this study. However, this study has found that an appraisal of a stressful encounter as a challenge was related to problem-focused coping, whereas the experience of a stressful situation as a threat was related to emotion-focused coping. The differentiation between the two main types of appraisals serves the perspective that challenge appraisals tend to be superior to threat appraisals in chronic pain patients (Lazarus and Folkman, 1984). Thus, our results emphasise that two possible situational meanings is related to the stressful situation, which have an influence on coping. As reported, living with pain represents several stressors related to the social life of the participants. These stressors are often considered a threat to well-being and have negative emotional consequences (Smith and Wallston, 1992). Conversely, evaluating the situation as a challenge tends to produce a positive affect and the mobilisation of available resources among the participants (Smith and Wallston, 1992).

It follows that the main goal in rehabilitation must be to convert appraisals of threat realistically to appraisals of challenge, as this seems to stimulate active participation and problem-solving. Appraisal training is suggested, which focuses on learning how to distinguish between global and specific stressful situations as well as unchangeable and changeable aspects (Folkman et al., 1991). Other important strategies to cope successfully with threat are suggested, such as personal responsibility

and willingness to face personal issues realistically (Bednar and Peterson, 1995). Furthermore, success in rehabilitation is said to depend on appraising the situation in a new way and seeking a good fit between appraisal and coping (Folkman et al., 1991). To improve our understanding of coping with chronic pain, appraisals of stressful situations should be given more careful consideration in the coping process (de Ridder and Schreurs, 2001).

Different stressors appraised by people with chronic pain influence coping in different ways. Participants scoring high on depression in this study tended to use more emotion-focused coping. This result is not surprising as depression is primarily an emotional disorder and will increase the likelihood to engage in more emotion-related strategies. In support of this, depression has been positively correlated with emotion-focused strategies (Weickgenant et al., 1993; de Ridder and Schreurs, 2001; Endler et al., 2003) and reduced self-esteem (Mruk, 1999; Davis, 2000), which reflect the fact that many of the stressful encounters are considered negatively and not amenable to change. Such a coping pattern could also be related to a decrease in problem-focused coping among the participants in this study, which may further complicate effective rehabilitation. Our results are consistent with previous research and the theoretical differentiation between the two main types of coping, and provide a perspective for emotion-focused strategies to be more related to dysfunction (Jensen et al., 1991; Boothby et al., 1999) and difficulty in adaptation (Maes et al., 1996). On the other hand, problem-focused coping is considered to be superior in chronic pain patients and refers to active participation and problem solving in rehabilitation (Jensen et al., 1991; Boothby et al., 1999) and less depression (Endler et al., 2003). In light of our findings, the provision of information and counselling are suggested to help the patients consider depression as a common state in chronic pain and that emotions and behaviour constantly influence pain as well as coping. Teaching relaxation training has demonstrated appropriateness in reducing emotional stress and pain and is suggested as additional treatment (Hawthorn and Redmond, 1998; Davis, 2000). Additionally, offering training in cognitive restructuring has been shown to be effective for decreasing depression and improving problem-focused coping (Boothby et al., 1999). However, a key factor in coping effectiveness is to choose strategies, which fit the possibilities in the situation and positively change the person–environment relationship for the better (Folkman et al., 1991; Lazarus, 1999).

The patients in our study who reflected low self-esteem tended to engage more in emotion-focused coping. Although the adaptive utility of any specific form of coping is context specific, we propose that such a result is attributed to the fact that low levels of

self-esteem is likely to predispose feelings of vulnerability. Furthermore, less capacity for problem-solving as well as desire to participate in rehabilitation may be present. In contrast, other findings reflect that people with high self-esteem rely more on problem-focused coping (Terry, 1994), are less depressed, and have shown a more positive adjustment (Bednar and Peterson, 1995; Mruk, 1999). Self-esteem is considered an important personal resource for coping (Lazarus and Folkman, 1984) and good starting point when trying to improve coping (de Ridder and Schreurs, 2001). Therefore, self-esteem enhancement programmes should be offered, which include the idea that a positive self-esteem promotes more effective coping. Group approaches are commonly described as beneficial as they focus on problem-solving and social factors affecting self-esteem, such as positive feedback and acceptance (Mruk, 1999). Additionally, personal responsibility of self-care needs and balancing self-esteem with a health alteration should be included to obtain optimal adaptation (Miller, 2000).

### 5.1. *The role of the nurse in pain management*

Medical treatment for chronic pain is often unsatisfactory (Dunajcik, 1999). For health care professionals, finding a treatment for people with chronic pain is seen as a challenge because these patients do not fit the traditional cause and cure model of medicine. There is a general consensus that biomedical factors contribute only modestly to disability (Turk and Flor, 1999). Consequently, this allows for identification of the various psychosocial factors influencing chronic pain and coping. The multidimensional nature of chronic pain means that it is unlikely that pharmacological interventions are appropriate in all situations (Hawthorn and Redmond, 1998). Unfortunately, the patients may have poor understanding about self-management skills (Dunajcik, 1999), and may need help in finding appropriate ways of coping in painful situations. According to Dunajcik (1999) a rehabilitative focus with active patient participation and a multidisciplinary team approach is needed where professional nurses are significant members. Several therapies commonly used within such approaches are directly within the domain of nursing, such as education, cognitive restructuring, relaxation and distraction (Hawthorn and Redmond, 1998; Davis, 2000). Even though nurses draw on psychological and behavioural medical views, clinical nursing practice offers a caring perspective on chronic pain and coping that is distinctively different from these disciplines. Especially, the holistic perspective and focusing on problem solving, communication and self-management are said to play a vital role in pain care (Hawthorn and Redmond, 1998; Davis, 2000). According to Hawthorn and Redmond (1998, p. 120) “the goal

of care with chronic pain is to minimise pain and then to rehabilitate patients to achieve optimal functioning within the constraints imposed by their pain.”

### 5.2. *Study limitation*

Some comments regarding methodological problems should be made. There are many unanswered questions regarding how to conceptualise and measure coping. As a consequence, research on coping with chronic pain is characterised by heterogeneity of concepts and instruments, using composite as well as individual measures, making comparisons difficult (Jensen et al., 1991; Boothby et al., 1999; DeGood, 2000). Furthermore, fundamental issues remain about how stress and coping affect health outcomes (Lazarus, 1999) and identifying adaptive emotion-focused strategies in chronic pain (Lazarus, 1999; Stanton and Franz, 1999). Although this study examined the relationships between psychological variables and coping strategies, the theory (Lazarus and Folkman, 1984) posits dynamic and reciprocal relationships among these variables that change over time. Longitudinal research is needed to examine these relationships more closely. Due to the recruiting method, the generality of these findings to patients seeking treatment at a rehabilitation unit is unclear. This study also had a limited number of participants, although the results seem representative since the participants represented various rural and urban areas and the population the sample is drawn from is rather homogeneous. Lastly, limitations are also related to the exclusive reliance on the patients' self-reports. Taken together, several methodological challenges are present and should be further explored.

## 6. Conclusion

In conclusion, the present study provides some insight into the process of coping with chronic pain. We recognise that the most predominant stressors were related to familylife and social activities. The results also suggest that the process of coping with chronic pain is complex, and that coping may be more related to psychological factors than pain indicators and socio-demographic variables. Two coping patterns appeared in this study. On the one hand, challenge appraisals predicted the use of problem-focused coping, which focus on growth and mastery. On the other hand, threat appraisal, depression and self-esteem were the prominent predictors of emotion-focused coping, which may hinder active rehabilitation. To facilitate optimal adaptation to chronic pain, nurses must achieve an understanding of the type of pain related stressors, how they are appraised and the coping strategies used in the encounter. These results suggest that rehabilitation

programmes should employ cognitive restructuring techniques to realistically encourage challenge appraisals and problem-focused coping as well as reduce depression and a feeling of low self-esteem, if these are present. Additionally, the holistic perspective and focusing on communication, self-management and relaxation are said to play a vital role in pain care (Hawthorn and Redmond, 1998; Davis, 2000). As chronic pain is described as a multidimensional phenomenon, medical treatment for chronic pain is often unsatisfactory (Gatchel, 1999). Consequently, it seems important to identify the psychological factors influencing coping. Thus, in the absence of a cure or total pain relief for this group, reducing levels of stress and promoting optimal coping must be a major goal of rehabilitation. However, a longitudinal design is needed to consider successful coping among this group of chronic pain patients.

### Acknowledgements

This study was supported by grants from Rogaland Central Hospital, Division of Rehabilitation and Stavanger University College. We will thank Torbjørn Aarsland, manager at Hjertelaget Research Foundation, for setting up the database. We will also thank Dr. Rosenberg's widow giving permission to use the Rosenberg self-esteem scale.

### References

- Bednar, R.L., Peterson, S.R., 1995. *Self-esteem, Paradoxes and Innovations in Clinical Theory and Practice*, second edition. American Psychological Association, Washington, DC.
- Bombardier, C.H., D'Amico, C., Jordan, J.S., 1990. The relationship of appraisal and coping to chronic illness adjustment. *Behavior Research and Therapy* 28, 297–304.
- Boothby, J.L., Thorn, B.E., Stroud, M.W., Jensen, M.P., 1999. Coping with pain. In: Gatchel, R.J., Turk, D.C. (Eds.), *Psychosocial Factors in Pain. Critical Perspectives*. The Guilford Press, New York, pp. 343–359.
- Brown, S.C., Glass, J.M., Park, D.C., 2002. The relationship of pain and depression to cognitive function in rheumatoid arthritis patients. *Pain* 96, 279–284.
- Davis, B.D., 2000. *Caring for People in Pain*. Routledge, London.
- DeGood, D.E., 2000. Relationship of pain-coping strategies to adjustment and functioning. In: Gatchel, R.J., Weisberg, J.N. (Eds.), *Personality Characteristics of Patients with Pain*. American Psychological Association, Washington, DC, pp. 129–164.
- de Ridder, D., Schreurs, K., 2001. Developing interventions for chronically ill patients: is coping a helpful concept?. *Clinical Psychology Review* 21, 205–240.
- Dunajcik, L., 1999. Chronic nonmalignant pain. In: McCaffery, M., Pasero, C. (Eds.), *Pain: Clinical Manual*, second edition. Mosby, St. Louis, pp. 467–521.
- Endler, N.S., Corace, K.M., Summerfeldt, L.J., Johnson, J.M., Rothbart, P., 2003. Coping with chronic pain. *Personality and Individual Differences* 34, 323–346.
- Fishbain, D.A., Cutler, R., Rosomoff, H.L., Rosomoff, R.S., 1997. Chronic pain-associated depression: antecedent or consequence of chronic pain? a review. *The Clinical Journal of Pain* 13, 116–137.
- Folkman, S., Chesney, M., McKusick, L., Ironson, G., Johnson, D.S., Coates, T.J., 1991. Translating coping theory into an intervention. In: Eckenrode, J. (Ed.), *The Social Context of Coping*. Plenum Press, New York, pp. 239–260.
- Frank-Stromborg, M., Olsen, S.J., 1997. *Instruments for Clinical Health-care Research*, second edition. Jones and Bartlett Publishers, London.
- Gatchel, R.J., 1999. Perspectives on pain: a historical overview. In: Gatchel, R.J., Turk, D.C. (Eds.), *Psychosocial Factors in Pain. Critical Perspectives*. The Guilford Press, New York, pp. 3–17.
- Hawthorn, J., Redmond, K., 1998. *Pain, Causes and Management*. Blackwell Science, London.
- Huskisson, E.C., 1983. Visual analogue scales. In: Melzack, R. (Ed.), *Pain Measurement and Assessment*. Raven Press, New York, pp. 33–37.
- Jensen, M.P., Turner, J.A., Romano, J.M., Karoly, P., 1991. Review article. Coping with chronic pain: a critical review of the literature. *Pain* 47, 249–283.
- Lazarus, R.S., 1999. *Stress and Emotion, A New Synthesis*. Springer, London.
- Lazarus, R.S., Folkman, S., 1984. *Stress, Appraisal and Coping*. Springer, New York.
- Lisanti, P.A., 1989. Perceived body space and self-esteem in adult males with and without chronic low back pain. *Orthopaedic Nursing* 8, 49–56.
- Maes, S., Leventhal, H., de Ridder, D.T.D., 1996. Coping with chronic diseases. In: Zeidner, M., Endler, N.S. (Eds.), *Handbook of Coping. Theory, Research, Applications*. Wiley, New York, pp. 221–251.
- Miller, J.F., 2000. Enhancing self-esteem. In: Miller, J.F. (Ed.), *Coping with Chronic Illness Overcoming Powerlessness*, third edition. F.A. Davis Company, Philadelphia, pp. 505–521.
- Mruk, C.J., 1999. *Self-Esteem: Research, Theory, and Practice*, second edition. Springer, New York.
- Polit, D.F., 1996. *Data Analysis & Statistics for Nursing Research*. Appleton & Lange, Stamford.
- Rosenberg, M., 1965. *Society and the Adolescent Self-image*. Princeton University Press, New Jersey.
- Smith, C.A., Wallston, K.A., 1992. Adaptation in patients with chronic rheumatoid arthritis: application of a general model. *Health Psychology* 11, 151–162.
- Stanton, A.L., Franz, R., 1999. Focusing on emotion: an adaptive coping strategy?. In: Snyder, C.R. (Ed.), *Coping. The psychology of what works*. Oxford University Press, New York, pp. 90–118.
- Terry, D.J., 1994. Determinants of coping: the role of stable and situational factors. *Journal of Personality and Social Psychology* 66, 895–910.

- Tucker, M.A., Ogle, S.J., Davison, J.G., Eilenberg, M.D., 1987. Validation of a brief screening test for depression in the elderly. *Age and Ageing* 16, 139–144.
- Turk, D.C., Flor, H., 1999. Chronic pain: a biobehavioral perspective. In: Gatchel, R.J., Turk, D.C. (Eds.), *Psychosocial Factors in Pain. Critical Perspectives*. The Guilford Press, New York, pp. 18–34.
- Turner, J.A., Clancy, S., Vitaliano, P.P., 1987. Relationships of stress, appraisal and coping, to chronic low back pain. *Behavior Research Therapy* 25, 281–288.
- Vitaliano, P.P., Russo, J., Carr, J.E., Maiuro, R.D., Becker, J., 1985. The Ways of Coping Checklist: revision and psychometric properties. *Multivariate Behavioral Research* 20, 3–26.
- Vitaliano, P.P., Russo, J., Maiuro, R.D., 1987. Locus of control, type of stressor, and appraisal within a cognitive-phenomenological model of stress. *Journal of Research in Personality* 21, 224–237.
- Vitaliano, P.P., DeWolfe, D.J., Maiuro, R.D., Russo, J., Katon, W., 1990. Appraised changeability of a stressor as a modifier of the relationship between coping and depression: a test of the hypothesis of fit. *Journal of Personality and Social Psychology* 59, 582–592.
- Weickgenant, A.L., Slater, M.A., Patterson, T.L., Atkinson, J.H., Grant, I., Garfin, S.R., 1993. Coping activities in chronic low back pain: relationship with depression. *Pain* 53, 95–103.
- Williams, D.A., Thorn, B.E., 1989. An empirical assessment of pain beliefs. *Pain* 36, 351–358.