

A Survey of Rheumatoid Arthritis Patients Self-Efficacy

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Citation

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Abstract

This paper describes the self-efficacy of rheumatoid arthritis (RA) patients and its relationship to their disability and knowledge of their disease and its treatments. The sample was 252 RA patients, and the data were collected in August 2004 (response rate 89.0%) using self-reported questionnaires. The data were analysed using descriptive and non-parametric statistical methods. The main findings were that patient self-efficacy was strong except for pain self-efficacy when the patients needed to treat arthritis pain using methods other than pain medication. Weak patient self-efficacy correlated with a high degree of disability. The patients who considered their current and future health status poor had low pain and function self-efficacy (PSE and FSE, respectively). A high knowledge level did not correlate with strong self-efficacy. In conclusion, health care professionals (e.g. rheumatology nurses) should teach non-medical pain management techniques to RA patients who have low self-efficacy when using pain-reducing methods other than medication.

INTRODUCTION

Patient education has been recommended as a part of the routine management of rheumatoid arthritis (RA). One purpose of RA patient education is to increase patients' self-efficacy. Self-efficacy beliefs have an important role as they affect RA patient functioning (1). RA is a painful systemic autoimmune disease of unknown aetiology. Approximately 0.5–1.0% of the Caucasians in Europe and America suffer from RA, and two-thirds of all RA patients are women. The prevalence and incidence of RA increase from the age of 70 onwards. Symptoms vary from pain, stiffness and fatigue to malaise, and RA can cause functional impairment and reduced general health (2, 3, 4).

Because the symptoms can vary even daily, the patients may experience uncertainty in managing their day-to-day lives (5). Pain may cause stress in RA patients, and they may benefit from alternative pain management regimens besides medication (6, 7). Nurses, for example, can empower RA patients to make their own choices concerning their coping with the disease in their every-day lives (8). Physical disability caused by RA has been shown to be an important predictor in RA patients becoming incapable of, for example, working (9).

The self-efficacy theory developed by Bandura (10) states that the strength of belief in one's own capacity is a good predictor of motivation and behaviour. Perceived self-

efficacy is described as 'a judgement of one's capability to accomplish a certain level of performance, whereas an outcome expectation is a judgement of the likely consequence such behaviour will produce' (11). Increased self-efficacy leads to improved behaviour, motivation, thinking patterns and emotional well-being (12). Once patients have developed strong self-efficacy, they tend to generalize from one experience to another, and single failures do not influence their self-efficacy beliefs (13).

In addition, patients' cognitive mechanisms can sub-serve their pain tolerance. The more self-efficacious chronic pain patients judge themselves, the less pain they experience. Furthermore, the more self-efficacious patients' pain tolerance is higher than that of those patients whose self-efficacy is weak, because their self-management skills include cognitive pain control techniques (12).

Patient self-efficacy can be increased through performance accomplishment, modelling, re-interpretation of psychological symptoms and verbal persuasion. Evidence exists that psycho-educational group education is a good way to increase RA patient self-efficacy. The patients receive peer support with other RA patients functioning as models for patients with low self-efficacy (14, 15). In a study by Lefebvre and colleagues (7), self-efficacy was significantly related to daily ratings of pain, mood, and coping strategies. Participants, who reported higher levels of

self-efficacy for function at the time of their evaluation, also reported lower levels of joint pain (7). In the study by Barlow et al. (16), the participants' psycho-educational patient education influenced the patients' practice of physical exercise and joint protection positively and thereby decreased their arthritis pain (16). Rheumatology nurses, for example, discuss the importance of exercise and joint protection as well as self-care one-to-one with their RA patients (17). However, according to the study by Riesma et al. (18), individual patient education did not influence the RA patient self-efficacy when they were educated during a routine consultation session.

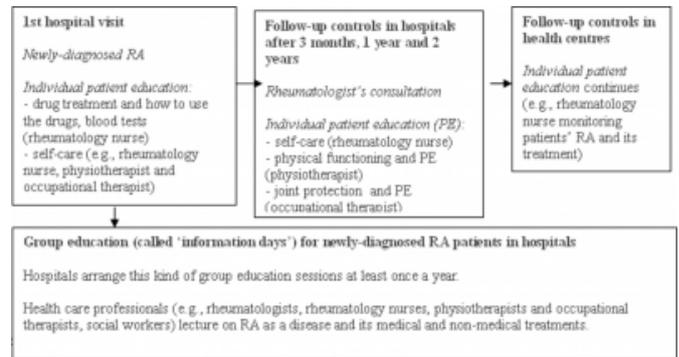
Previous studies have shown that stronger self-efficacy correlates with better health status in RA patients. Strong self-efficacy has been found to reduce the number of visits to health care professionals, and results in lower overall health care costs for both the patients and the health care system (19, 20). It has also been shown that patients with low self-efficacy attribute their failures to their own incapacity (13). Furthermore, the baseline self-efficacy has been shown to influence the future levels of self-efficacy and health status (21). However, in the study by Davis and colleagues (22), RA patient knowledge about RA and its treatments did not correlate with patient self-efficacy.

In summary, RA patients' strong self-efficacy influences their capacity to manage in their every-day lives. Previous studies have shown that psycho-educational group education increases patient self-efficacy. However, a limited number of studies are available in English about what kind of self-efficacy RA patients have, in general, without any specific patient education intervention. More research is also needed into how RA patients' knowledge of their disease and its treatments influences their self-efficacy.

In this survey, health care professionals taught RA patients as a part of the routine. In other words, health care professionals such as rheumatology nurses in public health care organizations teach RA patients routinely on one-to-one basis during their consulting hours. In addition, the patients are invited to a group education session after they have received the diagnosis. Newly-diagnosed (< 2 years) RA patients, and also those with RA active, have their follow-up controls in hospitals. Later, the control visits take place in health centers, where rheumatology or district nurses monitor the disease while it is in remission (see Figure 1).

Figure 1

Figure 1: Routine RA patient education provided in public health care organizations in Finland (,)



AIMS OF THE STUDY

The aim of this survey was to investigate RA patient self-efficacy after they had participated in routine patient education in acute hospitals (out-patient clinics) and health centres. The research questions were:

- What is the nature of RA patients' self-efficacy in general?
- What kind of relationship exists between RA patient self-efficacy and disability?
- What kind of relationship exists between RA patient self-efficacy and knowledge of RA and its treatments?

METHODS AND STUDY DESIGN

This cross-sectional survey was conducted in August 2004. The participating RA patients were volunteers, and were recruited from the rheumatology nurses' offices in the medical or rheumatology out-patient departments of 13 acute hospitals and 34 health centers located in different parts of Finland. The primary investigator asked the nurses to inform their RA patients (whom they met during their consulting hours) about the study, and to give them two consent forms if they were willing to participate. If the patients were willing to participate, they completed the forms at home and returned one of them to the nurse, keeping the other one. The only inclusion criterion was that the patient had RA as the main disease.

The consent form included information on the study and data collection, the researcher's signature and the contact details of the researcher in case further information was required. The researcher was emphasized to the respondents that participation in the study was voluntary, confidentiality was

assured, and the patient could leave the study without any explanation (²⁴ ; ²⁵ , ²⁶).

Five-hundred patients in total were asked to participate in the study. That number is approximately 60% of the RA patients that the rheumatology nurses meet in a week in these 47 hospitals and health centers. A total of 299 RA patients from 11 hospitals and 23 health centers were willing to participate in the study. Self-reported questionnaires coded on the basis of the consent forms were posted to the 299 patients in August 2004, as the research permissions were acquired from the appropriate organizations (n = 34) and from the ethical committees of the hospital districts (n = 7) in the period lasting from June 2003 to February 2004. The connections between the codes in the consent forms, the questionnaires, and the names and addresses of the participants were known only to the researcher. Forms were destroyed once they were no longer needed for the study. Two weeks were allocated for completion at home and return of the questionnaire. After one reminder, 266 patients returned the questionnaire, the response rate reaching 89.0 %. However, 14 questionnaires were excluded because the patients had a disease other than RA (n = 252).

The questionnaires sought information on arthritis-related self-efficacy, knowledge of RA and its treatments, and disability. In addition, the participants were asked to estimate their present health status, what they thought it would be in 10 years time (scale 1–4; 1 = very good, 2 = good, 3 = moderate, and 4 = very bad), and their satisfaction with their health status (scale 1–5; 1 = very satisfied, 2 = quite satisfied, 3 = not satisfied or unsatisfied, 4 = quite unsatisfied, and 5 = very unsatisfied).

Patient self-efficacy was estimated using the Arthritis Self-Efficacy Scale (ASES) that Lorig developed with colleagues in 1989 (²⁷). The ASES has 20 items divided into three subscales: (1) pain self-efficacy (later PSE; five items); (2) function self-efficacy (later FSE; nine items); and (3) other symptom self-efficacy (later OSE; e.g., fatigue, six items). The patients are required to indicate how certain they are of performing specific tasks with regard to pain, function and other symptoms. Each item is scored on a 100 mm scale, where zero (0) is 'very certain' and 100 mm 'very uncertain'. The ASES comprises items such as: 'How certain are you that you can make a large reduction in your arthritis pain by using methods other than taking extra medication?' (PSE); 'How certain are you that you can walk 30 m on flat ground in 20 seconds?' (FSE); and "How certain are you that you can do something to help yourself feel better if you are

feeling blue?" (OSE).

The level of the patients' knowledge of RA and its treatments was determined using the Patient Knowledge Questionnaire (PKQ) developed in Great Britain by Hill et al. (²⁸). The PKQ measures the correctness of a RA patient's information on RA and its treatments. The higher the score, the more correct the patient's information. For example, RA patients may believe that RA 'is inherited from the parents', even though the correct answer is, 'the cause is not known'. The PKQ contains 16 questions under four subscales: the first subscale contains four questions on general RA knowledge such as the aetiology, symptoms and blood tests that must be taken as follow-up controls. The second subscale contains four questions on non-steroidal anti-inflammatory (NSAID) and anti-rheumatic drugs, how to use them, and the side-effects of NSAIDs. The third subscale contains four questions on exercise techniques and RA, and the fourth subscale contains four questions on the most practical ways and methods to protect the joints and to conserve energy. Each question comprises 5 – 7 statements, one to three of them correct (one correct statement = one score, max score 30), also giving the choice 'Don't know'.

The patients' disability was measured using the Health Assessment Questionnaire (HAQ, ²⁹). The HAQ contains eight subscales, giving an overall disability score covering the activities of daily life such as walking, hygiene, getting up and eating. The scale ranges from 0 to 3: zero (0) indicates that the patient can perform a certain activity without any difficulty, and three (3) indicates that the patient cannot perform the activity at all. The other choices indicate that the patient has minor (1) or major (2) difficulties in performing the daily activity. The index (0 – 3) represents (1 – 8) the patient's overall disability.

The patients' arthritis pain and fatigue were measured using the Visual Analogue Scale (VAS) that is a 100 mm horizontal line where zero means no pain or fatigue and 100 means the worst pain or fatigue imaginable. The VAS has been deemed an instrument suitable for measuring RA patients' pain and fatigue (³⁰ , ³¹). Demographic information was gathered on gender, age, and disease duration. Internal consistencies were measured using Cronbach's alpha coefficients. In this study, Cronbach's alpha coefficients of the questionnaires ranged 0.76 (PKQ) – 0.96 (HAQ), indicating a satisfactory internal consistency (³²). Cronbach's alpha coefficients were 0.86 in PSE and 0.90 in FSE and OSE.

The data were analysed using descriptive and statistical methods (SPSS for Windows, Version 14.0). The statements made under PSE, FSE, and OSE (ASES) were summarized for further analysis. The normality of the demographic and dependent distributions was tested using the Kolmogorov–Smirnov test. Because the curves were strongly skewed and could not be corrected through transformations, non-parametric techniques were used. Correlations between the PSE, FSE, OSE and PKQ scores, respondents' age, disease duration, and the HAQ index were examined using Spearman's rho (32). The differences between the independent groups (ASES – health status) were analysed by the Kruskal-Wallis test, and Mann-Whitney U-test (ASES-gender) (33, 34). The results are expressed as frequencies, percentages, means, standard deviations, medians, ranges, interquartile ranges, and noted only when significant ($p < 0.05$).

RESULTS

BACKGROUND INFORMATION

The mean age of the patients was 56.1 years (SD 12.4, range 20 – 81), and their disease duration ranged from 1 to 46 years (mean 13.5, SD 11.1). Most of the patients (79%) were women. The patients' HAQ index ranged from 0 to 3 (mean 0.7, SD 0.7), the mean VAS pain was 35.8 (SD 24.9, range 0 - 95mm), and fatigue 46.1 (SD 28.6, range 0 – 99mm). The patients estimated that their present health status was moderate (3) (range 1 – 4), and would be moderate (3) also in 10 years time (range 1 – 4). The patients were quite satisfied (2) with their health status (range 1 – 5).

THE NATURE OF RA PATIENT SELF-EFFICACY IN GENERAL

The median of the RA patient PSE (sum) was 36 mm (range 0 – 98, interquartile range 32). Even though most of the patients were very certain or quite certain as to how to handle their arthritis pain, 21% of them were quite uncertain or very uncertain (see Table 1).

Figure 2

Table 1: RA patient self-efficacy (ASES, %, n = 252)

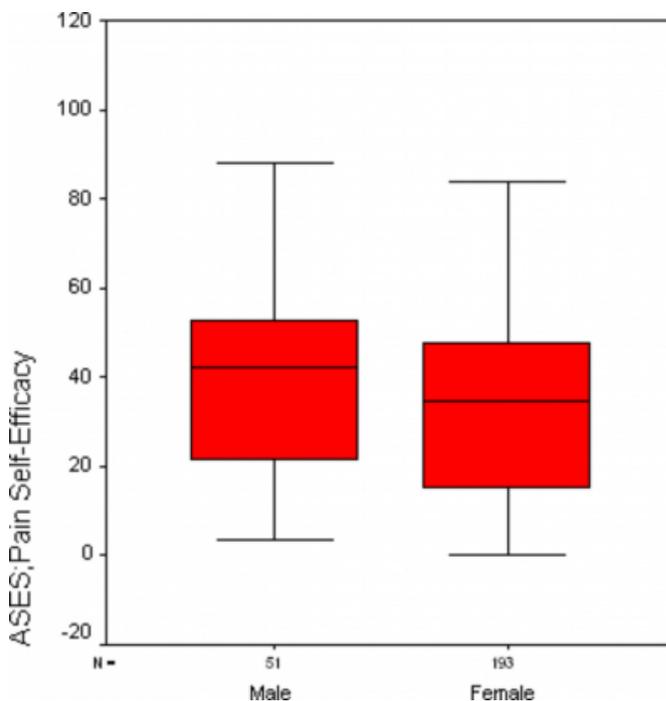
ASES	Very certain (0 – 25mm) %	Quite certain (26 -50mm) %	Quite uncertain (51 – 75mm) %	Very uncertain (76 – 100mm) %
Pain Self-Efficacy (PSE)	35	39	18	3
Function Self-Efficacy (FSE)	65	22	8	3
Other Symptoms Self-Efficacy (OSE)	50	36	8	3

The patients' uncertainty increased when they had to 'to make a small-to-moderate or large reduction in their arthritis pain by using methods other than extra medication' (median 47 mm). The patients' certainty was stronger under the other subscales, since the median FSE (sum) was 18 mm (range 0 – 89, interquartile range 27), and OSE (sum) was 25 mm (range 0 – 100, interquartile range 30). The medians of the statements under FSE ranged from 9 to 23, and under OSE from 16 to 24.

Weak linear correlations were found between the ASES and the duration of RA and age; the shorter the patients' disease duration was, the stronger PSE and FSE they had (lower scores) ($r = 0.20, p = 0.002$ and $r = 0.30, p < 0.001$, respectively). In addition, the young patients had slightly stronger FSE (lower scores) than the older patients ($r = 0.20, p = 0.002$). However, the men's PSE and OSE were weaker (higher scores) than the women's PSE ($U = 4273.5, p = 0.15$). Figure 2 shows the difference between the PSEs of the men and women (lower scores mean stronger PSE).

Figure 3

Figure 2: Relationship between the RA patients' gender and their pain self-efficacy (PSE) (n = 252)



The median of the men's PSE was 42.0 mm, whereas the women's median PSE was 34.7 mm. In addition, the men's OSE was slightly weaker than that of the women OSE ($U = 4797.0, p = 0.45$).

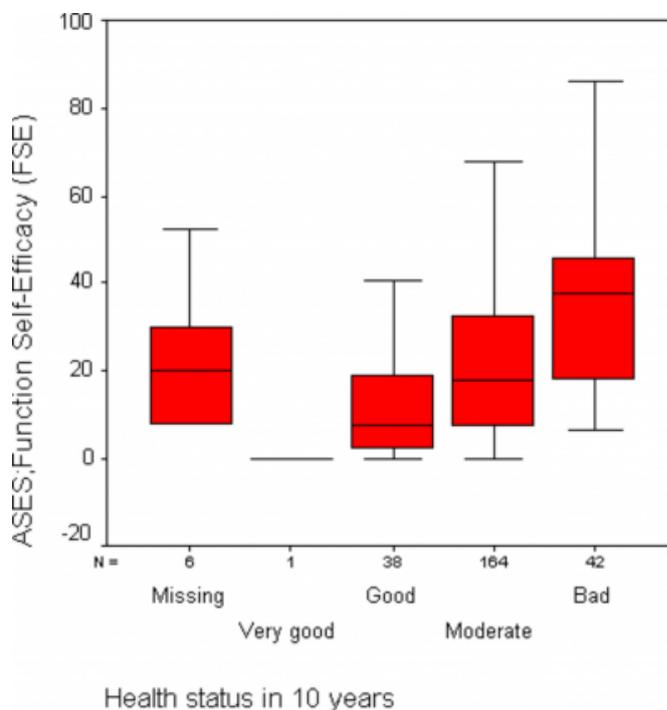
RELATION BETWEEN THE PATIENTS' SELF-EFFICACY AND DISABILITY, AND THEIR SELF-EFFICACY AND AWARENESS OF RA AND ITS TREATMENTS

The ASES correlated with the HAQ index, VAS pain and fatigue: the strongest linear correlation was between FSE and the HAQ ($r = 0.8$, $p < 0.001$). The RA patients who had good physical functioning (a lower HAQ index) also had strong FSE (lower scores). Also the HAQ index correlated with PSE ($r = 0.5$, $p < 0.001$) and OSE ($r = 0.4$, $p < 0.001$). In other words, the patients with good physical functioning had stronger PSE and OSE. Furthermore, PSE, FSE and OSE all correlated moderately with VAS pain (PSE $r = 0.5$, $p < 0.001$; FSE $r = 0.5$, $p < 0.001$; OSE $r = 0.4$, $p < 0.001$), and fatigue (PSE $r = 0.4$, $p < 0.001$; FSE $r = 0.4$, $p < 0.001$; OSE $r = 0.6$, $p < 0.001$). This means that those RA patients who did not suffer from arthritis pain or fatigue had strong PSE, FSE and OSE (low scores).

In addition, those patients who considered their health status bad (4) at the time of the study and thought it would be so in 10 years time in the future also, had weaker PSE, FSE, and OSE (high scores). For the present, the scores were PSE $\bar{x}^2(3) = 72.9$, $p < 0.001$; FSE $\bar{x}^2(3) = 70.0$, $p < 0.001$; and OSE $\bar{x}^2(3) = 57.6$, $p < 0.001$. For the future in 10 years time, the scores read PSE $\bar{x}^2(3) = 41.8$, $p < 0.001$; FSE $\bar{x}^2(3) = 37.5$, $p < 0.001$; and OSE $\bar{x}^2(3) = 31.9$, $p < 0.001$. Figure 3 shows the relationship between FSE and the health status the RA patients estimate to have in 10 years.

Figure 4

Figure 3: FSE and health status in 10 years time, estimated by the RA patients (FSE range 0 – 100, low score = strong self-efficacy) ($n = 252$)



If the patients were very dissatisfied (5) with their health status, their PSE, FSE, and OSE were weak, i.e. they scored high (PSE $\bar{x}^2(4) = 48.6$, $p < 0.001$; FSE $\bar{x}^2(4) = 41.4$, $p < 0.001$; OSE $\bar{x}^2(4) = 55.8$, $p < 0.001$).

The patients' knowledge of RA and its treatments was, on average, good. The area they had best information on was general RA knowledge (aetiology, symptoms, blood tests) (median 7, interquartile range 2, range 0–9, maximum 9), and exercise (median 5, interquartile range 2, range 0–7, maximum 7). The median knowledge level in questions on drugs was four (interquartile range 2, range 0–6, maximum 7) and the median knowledge level in questions on joint protection and energy conservation was also four (interquartile range 2, range 0–7, maximum 7). The median total score was 20 (interquartile range 6, range 2–29, maximum 30). However, the patients' good knowledge of RA and its treatments (high PKQ scores) did not correlate with strong PSE, FSE or OSE (low scores) ($r = 0.01$ to 0.05 , $p = 0.834 - 0.436$).

DISCUSSION

The purpose of this survey was to examine the RA patient self-efficacy after having been routinely taught one-to-one (by rheumatology nurses, for example) during their follow-up control visits to hospitals and health centres. In addition,

the patients each had the opportunity of participating in a group education session with the members of a multi-disciplinary team lecturing. Study findings suggest that patient self-efficacy was strong (low ASES scores), especially regarding the capability to perform the daily activities (FSE). However, the range was wide, and as much as three percent of the patients had very weak self-efficacy (high ASES scores).

The most important result, however, was that the patients' uncertainty level increased when they had to treat their arthritis pain using non-medical methods. According to previous studies, arthritis pain increases RA patients' stress and feelings of discomfort (5, 6). In addition, men had weaker self-efficacy than women both as regards pain (PSE) and other symptoms (OSE). This finding had not been shown in earlier studies. These findings are important when enhancing RA patient education methodologies. Even though pain medication can be effective, medication often has its side-effects, and the patient's tolerance to medication may increase. Thus, it is important that rheumatology nurses and other providers, such as advanced practice nurses, find out if their patients would require more information on how to use non-medical techniques to decrease arthritis pain. In addition to health care providers discussing self-care and the importance of joint protection, for example, with their RA patients, they should also encourage the patients, especially the men and elderly patients, to ask for further information (17).

The present survey showed that strong self-efficacy was strongly correlated with patient disability, as had been shown in earlier studies (19) as well. However, an important result in this study was that the patients who considered their health status poor at the time of the study and thought it would be so in the future also had weak self-efficacy regarding arthritis pain (PSE) and function (FSE). As in the study by Brekke et al. (21), weak current self-efficacy influenced perceived future self-efficacy, and patients with weak self-efficacy used health care services more than those with strong self-efficacy (19, 20, 21). Therefore, it is important that the functioning of these RA patients is improved also through strengthening their function and pain self-efficacy and not only by medical treatment.

According to study findings, the patients' knowledge levels were high, but did not correlate with the patients' self-efficacy (22). In the study by Riesma and colleagues (18), one-to-one patient education did not influence an RA

patient's self-efficacy when the patient was educated during a routine consultation session. On the other hand, group education had the advantage of other RA patients acting as important role models for the patients who did not have experience of their own (1013).

Nurses, including advanced practice nurses, play an important role in RA patient education (8), and successful patient education requires nursing care of a high level. Thus, it is important that nurses and other health care providers concentrate on teaching patients with weak self-efficacy who may need special attention and emotional support. In addition, it is important that providers use alternative teaching methods and have the opportunity of focusing on finding, together with the patient, suitable self-management methods such as how to use non-medical methods. This strategy may increase RA patients' satisfaction on their health status while decreasing their need to visits health care professionals in the future (19 20).

In this survey, all of the patients were taught routinely during the normal consulting hours, and had the opportunity of participating in a group education session with specialists lecturing. It is worth considering if this kind of patient education is sufficient for such RA patients who also need peer support or special attention from health care professionals. However, the limitation of this study was that the respondents were not randomly selected, although the response rate was very good. The volunteer respondents' self-efficacy may have been stronger and their knowledge levels higher than those of the patients who did not participate in this study. In addition, this survey did not show if the respondents had received peer support or information from non-public healthcare organizations (e.g. private rehabilitation organizations). However, these findings can be made use of when improving RA patient education methodologies.

CONCLUSION

The RA patient self-efficacy in this study was quite strong, but the range was wide. The patients' uncertainty levels increased (self-efficacy became weaker) when they had to reduce their arthritis pain using non-medical techniques. The patients' self-efficacy and disability correlated with each other. The patients' knowledge of RA and its treatments did not correlate with their self-efficacy. The practical implication is that health care professionals like rheumatology nurses should teach non-medical pain management techniques to those RA patients who have low

self-efficacy in using pain-reducing methods other than medication.

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