Negative Outcomes Of The Chronic Disease: People With Rheumatism In Estonia
V Laidmäe, T Tulva

Citation

Abstract
Objective: The aim of the study is to analyse the characteristics of economic situation and coping with everyday life of one of the risk groups of the Estonian society – patients with chronic rheumatoid arthritis.
Methods: The study is based on the materials of the survey “Chronic Rheumatic Patients 2006” (the questionnaire was carried out in 808 patients diagnosed with rheumatoid arthritis).
Results: The illness has considerably influenced the ability to work of 37% of the respondents. The Two-Way Anova method allows us to claim that satisfaction with life is most of all affected by economic situation, which limits the possibilities of buying medication and food as well as by psychological stress.
Conclusion: The respondents note the insufficient information about the nature of the illness, options of obtaining assistive devices, effect of medication, rehabilitation, etc. More attention has to be paid to the initial period of the development of the illness.

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INTRODUCTION
In Estonia as well as in many other countries there is a general overview of the health of the population based on a national survey (1,2,3,4). Therefore it is the time to look at the population risk groups. Rheumatism is the most frequent illness diagnosed in population. For example, in the United Kingdom more than 12% of the population aged 65 years and over are affected with rheumatoid arthritis (5). In Finland, the age adjusted incidence of rheumatoid arthritis in the adult population was 31.7/100,000 (6). Projecting to the year 2020, an estimated 18.2% of Americans will be affected by arthritic disorders, equivalent to 60 million people (7). The spread of these illnesses will increase in the coming years for several reasons. First, the trends in demographic changes indicate that the proportion of older people in population is constantly growing (8). Secondly, ageing is accompanied by chronic diseases, including musculoskeletal disorders (9).

Because of these tendencies, treatment of chronic rheumatic disorders will become an economic burden for the society in the upcoming years. Many researchers have dealt with the topic “economic burden of rheumatoid arthritis” (7, 9, 10). The cost of the treatment of various diseases has been studied. An estimate of the direct and indirect costs of musculoskeletal disorders in Canada showed that they accounted for 10.4% of all health costs and ranked fourth after cardiovascular disease, injuries and cancer (9).

Besides the direct and indirect costs, researchers have also referred to the psychosocial aspect, which means that the quality of life and social coping of rheumatic patients and their families considerably decreases (10). According to researchers, musculoskeletal disorders are associated with a poorer quality of life, expressed by such symptoms as bodily pain and impairments in physical functioning, than, for instance, cardiovascular conditions, chronic respiratory diseases and gastrointestinal conditions (11, 12).

The works of Gabriel and colleagues have revealed that many people with rheumatoid arthritis have had to change their profession, reduce work hours or stop working entirely due to their illness (13). Patients with rheumatoid arthritis are afraid of the future, the most common concern being a complete loss of independence (14).

TENDENCIES IN ESTONIA
The number of new cases of musculoskeletal disorders in
Estonia has more than tripled during the last 13 years (13). The spread of rheumatoid illnesses is also facilitated by demographic changes in Estonia. On the one hand, Estonia is one of the most rapidly ageing countries in Europe (14). On the other hand, it has been claimed that the future society in Estonia has a face of old and single women (16). Studies have revealed, however, that chronic diseases, including musculoskeletal disorders, occur somewhat more often in elderly women (6, 7, 17).

The dramatic economic and social changes that have accompanied the years of transition in Estonia, have affected the life of people by introducing poverty and inequality of income (18). This allows us to assume that the problems of treating musculoskeletal illnesses will become a real challenge in Estonia.

STUDY MATERIAL AND METHODS OF RESEARCH

The aim of the current article is to analyse the characteristics of health of long term patients with rheumatoid arthritis in Estonia, the accessibility of the treatment they need, their coping with the illness and everyday life.

The article relies on the materials of the national survey “Socio-economic coping of people with rheumatism in Estonia” carried out between 2005 and 2006. In the process of the survey people suffering from chronic rheumatoid illnesses were interviewed in health centres and hospitals in various regions of Estonia. As a method of collecting data an anonymous questionnaire was applied. The respondents were chosen according to the diagnoses made by doctors. 808 filled in questionnaires were returned.

THE DESCRIPTION OF THE SAMPLE

In the sample of respondents women prevail and chronic illness is more characteristic of retirement age than younger years. Every third of our respondents works, including 8% of those who are in retirement age but continue working. The majority of the respondents have a long history of rheumatoid disorders (have suffered from the illness for at least 5 to 10 years and every second respondent for more than 10 years). On the basis of the language spoken, the majority of the respondents are members of the majority population (i.e. Estonians) living in towns. The level of education of the group of patients with rheumatism corresponds to the average educational structure of the population.
Figure 2

Table 2: Variables used in the study

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with health - scale (1-5)</td>
<td>1= completely not satisfied \n2= completely satisfied \n3= completely satisfied</td>
</tr>
<tr>
<td>Life satisfaction (1-5)</td>
<td>1= completely not satisfied \n2= completely satisfied \n3= completely satisfied</td>
</tr>
<tr>
<td>Duration of rheumatic disease (1-3)</td>
<td>1= 10 and more years, 2=6-9 years, 3=5 to 5 years</td>
</tr>
<tr>
<td>Monthly income in EUR (average 4690)</td>
<td>1= below average, 2= average, 3= above average</td>
</tr>
<tr>
<td>The share of housing expenses in income (1-3)</td>
<td>1=0.00%, 2=5-49%, 3=1-25%</td>
</tr>
<tr>
<td>Level of economic stress or subjective assessment of economic coping (1-5)</td>
<td>1= wont enough money to buy daily food \n2= material resources restrict only larger spending</td>
</tr>
<tr>
<td>Things given up due to economic reasons</td>
<td>1=frequently, 2=sometimes, 3=never</td>
</tr>
<tr>
<td>Opportunity to get an appointment with a specialist (1-5)</td>
<td>1= very bad \n2=very good \n3= very good</td>
</tr>
<tr>
<td>Financial resources for buying medication (1-5)</td>
<td>1= very poor \n2= very good \n3= very good</td>
</tr>
<tr>
<td>Accessibility of rehabilitation (1-5)</td>
<td>1= very poor \n2= very good \n3= very good</td>
</tr>
<tr>
<td>Financial resources for receiving rehabilitation (1-5)</td>
<td>1= very poor \n2= very good \n3= very good</td>
</tr>
<tr>
<td>Chronic disease has reduced the ability to work and study (1-5)</td>
<td>1= very much \n2= somewhat \n3= not at all</td>
</tr>
<tr>
<td>Frequency of health complaints (headache, cross-fatigue, sleep disorders, depression, abdominal pain, digestive problems, irradiation, dizziness, heart complaints) (1-5)</td>
<td>1= almost every day \n2= every other day \n3= not occurred</td>
</tr>
<tr>
<td>Level of psychological stress - how frequently it is perceived that things are beyond one's coping ability (1-5)</td>
<td>1= almost every day \n2= every other day \n3= not occurred</td>
</tr>
<tr>
<td>Danger of losing the job (1-5)</td>
<td>1= the problem is very sharp \n2= not sharp</td>
</tr>
</tbody>
</table>

For a more detailed explanation of variables and scales see the article.

For explaining the factors influencing life satisfaction two-way Anova procedure has been applied.

RESULTS

WHAT ARE THE CAUSES FOR DIFFICULTIES COPING WITH LIFE OF PATIENTS WITH CHRONIC RHEUMATISM?

We interpret coping with life as a state of well-being and are interested in the reasons preventing our respondents' well-being. The feeling of well-being can be measured by means of several indicators. A Finnish sociologist Erik Allardt (19) has distinguished between three components of the notion of well-being: living standard (Having), social relations (Loving) and physical condition (Being).

Below we are going to analyse two aspects of the three – economic situation and health.

DESCRIPTIVE ANALYSIS

LIVING STANDARD

Many studies have proved there is a link between health and economic situation (18, 20, 21). The primary income of people with rheumatism is constituted by pension for elderly people and for younger respondents who still work, by salary. Disabled people receive social benefits from the state when they have additional expenses related to their disability, for example, when they need assistive devices, care, rehabilitation or they have expenses related to transport, work or learning. The families of disabled people have an equal right with everybody else to apply for subsistence benefit when the income of the family after having paid housing expenses is less than the subsistence level. The average monthly income of the majority of patients with rheumatism remains considerably below the statistical average of Estonia.

However, it should be taken into account that in spite of a little income a person may not feel rejected or deprived of conditions considered necessary in the society. Having set ourselves an aim to observe whether people with rheumatism have problems of coping with everyday life and with accessibility of treatment, let us first look at the proportion of housing expenses to income. After all, a person’s coping depends to a great deal on how much money is left for meeting their needs after having paid housing expenses. Table 3 demonstrates how much goes on housing in case of various incomes. The correlation coefficient between these two indicators is high; the probability of occurrence is also significant (r=0.45, p=.000). We can see that 69% of people with lower than average income spend a large proportion of their income on housing, i.e. 49% to 80%. Among people with an above average income the respective proportion is only 10%. Apparently it is a serious problem for people with lower income to make ends meet, to buy food, clothes, medication, etc. after having paid housing expenses. 23% of the respondents receive subsistence benefit.

Figure 3

Table 3: The proportion of housing expenses depending on income, %

<table>
<thead>
<tr>
<th>The share of housing expenses in income</th>
<th>Rheumatic patients’ income (average 4690 EUR)</th>
<th>Above average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below average</td>
<td>Average</td>
</tr>
<tr>
<td>1-25%</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>26-49%</td>
<td>21</td>
<td>44</td>
</tr>
<tr>
<td>49-80%</td>
<td>65</td>
<td>85</td>
</tr>
<tr>
<td>Total, %</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: "Chronic Rheumatic Patients 2006"
to cover the cost of food, clothes and rent, people often feel
tired, depressed and hopeless and that makes them
vulnerable to illnesses (22).

Table 4 shows that every second respondent with a below
average income reports poor economic coping because their
income goes on food and housing or there is even not
enough money for daily food, and only 13% of respondents
claim that they can afford buying this and that or that
material resources restrict them only when they plan larger
spending. In case of an above average income the situation is
opposite – 55% of respondents report that their economic
coping is good, and only 8% say it is poor. The correlation
coefficient between the indicators is also high: r=0.37, p=.000.

Figure 4

Table 4: The level of economic stress depending on income, %

<table>
<thead>
<tr>
<th>The level of economic stress</th>
<th>Rheumatic patients' income (average 4690 EEK)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Below average</td>
</tr>
<tr>
<td>Material resources restrict me only when I plan larger spending</td>
<td>4</td>
</tr>
<tr>
<td>I can afford buying this and that</td>
<td>9</td>
</tr>
<tr>
<td>Besides food I can afford to buy only the most urgent things (clother, footwear, etc.)</td>
<td>30</td>
</tr>
<tr>
<td>Income goes on food and housing expenses</td>
<td>50</td>
</tr>
<tr>
<td>There is not enough money to buy daily food</td>
<td>7</td>
</tr>
<tr>
<td>Total %</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: “Chronic Rheumatic Patients 2006”

On average, 29% of respondents report poor economic
coping. According to them, their whole income goes on food
and housing or there is even not enough for food. It may be
presupposed that strong economic stress affects most varied
aspects of patients with rheumatism. An overview of
concrete restrictions they have had to impose is given in
Table 5, which reflects respondents' answers to the question:
“What have you had to give up due to economic reasons
within last 12 months?” The selection of responses provided:
often, sometimes, never. Below we are going to provide a
concentrated comparison of the responses often and
sometimes.

Figure 5

Table 5: Various things/activities chronic rheumatic patients have given up within last year due to economic reasons (frequently or sometimes), %

<table>
<thead>
<tr>
<th>Given up in last 12 months frequently or sometimes</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying some necessary foodstuffs</td>
<td>60</td>
</tr>
<tr>
<td>Going to the theatre and cinema</td>
<td>73</td>
</tr>
<tr>
<td>Buying books, subscribing to newspapers and magazines</td>
<td>80</td>
</tr>
<tr>
<td>Receiving guests</td>
<td>63</td>
</tr>
<tr>
<td>Visiting relatives/friends</td>
<td>76</td>
</tr>
<tr>
<td>Buying medication</td>
<td>59</td>
</tr>
</tbody>
</table>

Source: “Chronic Rheumatic Patients 2006”

The percentages of restrictions by people with rheumatism are
high in all areas listed in Table 5. The data confirm that
due to economic reasons the respondents have problems
even with meeting the needs of daily life, e.g. eating what
they would like to eat. Even worse than that is the fact that
more than a half of the respondents for whom receiving
medication is vital have had to give up medication often or
sometimes. Since every fifth patient with chronic rheumatoid
arthritis reports loneliness as an essential difficulty of
personal life, it would be especially necessary for them to
socialise with friends and acquaintances. Unfortunately they
have sometimes had to give up receiving friends or visiting
relatives and friends due to economic reasons. There are also
material limitations to pursuing their cultural interests, since
many of them have had to give up going to the theatre and
cinema, buying books and subscribing to newspapers and
magazines.

Figure 6

Table 6: Assessment of accessibility of treatment (good, average, poor), %

<table>
<thead>
<tr>
<th>The area assessed</th>
<th>Poor</th>
<th>Average</th>
<th>Good</th>
<th>Total, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>An opportunity to get an appointment with a specialist</td>
<td>23</td>
<td>37</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Financial resources for buying medication</td>
<td>40</td>
<td>44</td>
<td>16</td>
<td>100</td>
</tr>
<tr>
<td>Accessibility of rehabilitation</td>
<td>55</td>
<td>30</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>Material resources for receiving rehabilitation</td>
<td>65</td>
<td>25</td>
<td>10</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: “Chronic Rheumatic Patients 2006”

But these are not the only restrictions. Besides medication
people with rheumatism also need rehabilitation and
assistive devices, which cost a lot. The assessments of the
accessibility of treatment are relatively critical (see Table 6).
40% of the respondents consider the opportunity to get an
appointment with a specialist good whereas only 15%
consider the accessibility of rehabilitation good. But if it
comes to the real opportunities where money also plays a
role, the accessibility of treatment is often considered poor.
Thus 40% of the respondents assess their financial recourses
available for buying medication as poor. There are especially
many of those who lack funds for rehabilitation.
In order to give an all-inclusive picture of the data provided above, we are going to see how different indicators influence the development of economic stress. The strength of the influence is expressed by means of correlation coefficients. It is possible to conclude from Table 7 that subjective assessment of a respondent's economic coping is essentially influenced by the fact whether due to economic reasons they have had to give up food, medication and rehabilitation or not. Economic stress increases considerably when due to economic reasons it is not possible to socialise with friends, either visit or receive them. Although it is not of vital importance, it still appears that for granting a person's self-esteem and good feeling, pursuing cultural interests is important. The absence of all the mentioned opportunities brings about an essential increase in economic stress. As expected, stress is also higher when a large part of income is spent on housing.

**PHYSICAL HEALTH**

Let us first find out how satisfied chronic rheumatic patients generally are with their state of health. We will describe the level of satisfaction on a scale with two divisions: on the one hand those who are satisfied – here we have assembled the responses completely satisfied and generally satisfied and on the other hand, those not satisfied whose responses are generally not satisfied and completely not satisfied. (The response hard to tell has not been included in the analysis).

A great difference occurs – there are 29% of those satisfied with their health among chronic rheumatic patients, which is a several times lower proportion than the average of the population (see 3). In order to better characterise their state of health, we asked respondents to note the occurrence of some health problems, i.e. how frequently they had recently experienced headaches, (over)fatigue, sleep disorders, depression, digestive problems, irritation, heart complaints, etc. We are going to observe the cases now where certain complaints occurred 1 to 2 times a week or more often.

The frequency of all health disorders listed in Table 8 is very high in patients with rheumatism. It appears that 60% of the patients with chronic rheumatoid arthritis suffer from frequent sleeping disorders and (over)fatigue. Many of them also experience headaches and heart complaints. Almost every third respondent complains about irritation, depression and digestive problems.

Studies have revealed that physical pain is an essential factor disturbing everyday life and work of people with rheumatism (17, 24, 25). The data of our survey also shows that as the most frequent problems aggravating everyday activities and work of people with rheumatism 58% of respondents mention pain. Besides that 31% have noted the limited mobility of the affected joints, 15% the lack of assistive devices, 7% that they do not know where to go for assistance, etc.

Respondents suffer from a serious lack of information concerning the ways of coping as well as the possibilities of improving their health condition. The lack of information is also reflected by the data related to the question “For what reasons have you not been able to obtain assistive devices you need?” The most frequent reasons given are economic (64%). Economic situation is undoubtedly the most weighty reason but very difficult to change since it requires substantial resources from the society. At the same time, an equally important factor that can be dealt with more rapidly is providing people with information about the opportunities of receiving treatment they need. For example, our survey
revealed that according to every fourth respondent, the reason why they have not been able to obtain assistive devices they need is the absence of information about assistive devices. 8% of respondents have added that there is no information about the places providing assistive devices.

Chronic diseases may occur in a milder form so that people get used to the accompanying health problems and if they do not afflict too much, people learn to live with them. At the same time a chronic illness may be so serious that it affects coping with work, which has been reflected by the responses to the question “Has your chronic disease affected your ability to work or study?” The situation of patients with chronic rheumatism is very serious in this respect – it appears that independent of the age of respondents, even when they are as young as 18 to 24, it has affected the work of 37% of them very much. Another 40% can also be added who respond – has affected to some extent.

The connection between coping with life and physical health is also demonstrated by the fact that although life causes problems to many Estonian people, the psychological level of stress depends greatly on how intensive the disease is. In our study the high level of stress was reflected when the respondents frequently perceived that things were beyond their coping ability. The proportion of stressed people grows by degrees:

- 9% of those without any chronic diseases claim that things are beyond their coping ability,
- 13% of population on average select this response (see 23),
- most of the respondents giving this answer (32%) are among patients with chronic rheumatism.

Thus it appears that beside the reduced capacity for work and various health complaints, chronic diseases, especially chronic rheumatism, are also accompanied by the development of severe stress, a feeling of not coping with life.

**Figure 9**

Table 9: Factors influencing satisfaction with health (poor-good), correlation coefficients, R

<table>
<thead>
<tr>
<th>Factors</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache(frequently)</td>
<td>.370</td>
</tr>
<tr>
<td>Fatigue (frequently)</td>
<td>.434</td>
</tr>
<tr>
<td>Sleep disorders(frequently)</td>
<td>.309</td>
</tr>
<tr>
<td>Depression(frequently)</td>
<td>.372</td>
</tr>
<tr>
<td>Abdominal pain (frequently)</td>
<td>.359</td>
</tr>
<tr>
<td>Irritation (frequently)</td>
<td>.259</td>
</tr>
<tr>
<td>Dizziness (frequently)</td>
<td>.394</td>
</tr>
<tr>
<td>Heart complaints (frequently)</td>
<td>.436</td>
</tr>
<tr>
<td>Things are beyond my coping ability (frequently)</td>
<td>.418</td>
</tr>
<tr>
<td>Long absences from work or schools because of health problems (more than a month)</td>
<td>.422</td>
</tr>
<tr>
<td>The disease has decreased the ability to work or study (to a great extent)</td>
<td>.631</td>
</tr>
</tbody>
</table>

*Source: Chronic Rheumatic Patients 2006*

In order to present an overview of the factors affecting health, we are going to analyses what health problems mostly cause dissatisfaction with the state of health. For that we use correlation indicators presented in Table 9. We can see that all the indicators listed have an important role in shaping the assessment of satisfaction. Health assessments have worsened when the disease has decreased the ability to work or study or when because of health problems the respondent has had to be absent from work (school) for an extended period, or the respondent has frequently experienced fatigue, heart complaints, depression and the feeling that things in life are beyond their coping ability.

**TWO-WAY ANOVA**

Satisfaction with life generally expresses a person’s coping with life and reflects their subjective assessments of their life in general. Although a thought has been expressed that variation in the factors of subjective well-being is not always in keeping with variation in objective factors, studies have revealed the connection of many characteristics, such as satisfaction with working and family life with life satisfaction (26, 27).

Below we try to find out what factors have the strongest effect on changes in assessments of life satisfaction by applying the two-way Anova procedure.

Looking at the interaction between life satisfaction and socio-demographic factors (gender, age, place of residence and education) it appears that the education factor has the greatest effect (F = 11.028, p<.001). The reason obviously is the specific feature of our sample – a selection of patients
with chronic rheumatism is sufficiently homogeneous because, compared to population on average, the proportion of women and elderly people is higher. There are 85% of women and 66% of people aged 55 years and over. Therefore it is explainable why assessments of life satisfaction are relatively similar in these groups. The division by education of our sample, however, does not go to an extreme (see Table 1). That is why our respondents display a tendency similar to other surveys – more educated respondents are on average more satisfied with their life ($\alpha$).

We think that due to the specific feature of our sample the block of socio-demographic variables explain 6% of the variation in life satisfaction.

The mean assessment of life satisfaction on a 5-point scale is 3.34, which indicates that a large proportion of the respondents are satisfied with their life. In our sample women, people below 45 years of age and respondents with higher education are more satisfied with life. Taking all the three variables under observation, it appears that most satisfied with their life are women with higher education between 46 and 55 years of age (4.08) and least satisfied are more than 70 years old men with secondary or secondary specialised education (2.80).

Next we will have a look at two areas. First, the effect various health characteristics have on life satisfaction. We will involve in the analysis the factors characterising state of health, which in correlation analysis strongly correlated with health satisfaction – 1) stress level, i.e. the feeling that everything is beyond respondents' coping ability, 2) whether the chronic disease has affected the ability to work or learn, 3) long periods of illness in recent year, 4) fatigue and 5) depression.

- It appears that stress level alone explains 20% of the variation in life satisfaction ($F = 43.258, p=.000$).
- Including in the model both stress level ($F = 25.562, p=.000$) and long periods of illness in recent year ($F = 1.414, p-no sig.$) explains 31% of the variation in life satisfaction.
- Other health complaints are also important – depression ($F = 27.514, p=.000$) explains 14% and fatigue ($F = 16.804, p=.000$) 9% of the variation in life satisfaction.
- Assembling the factors – the feeling that everything is beyond respondents' coping ability ($F = 5.357, p<.006$), depression ($F = 3.931, p=.022$), the disease has affected respondent's ability to work ($F = 3.164, p=.04$) and long periods of illness in recent year ($F = .180, p-no sig.$) – into one model, shows that their joint effect explains already 61% of the variation in life satisfaction.

- Since economic situation of chronic rheumatic patients is relatively difficult, we will secondly have a look at how the factors characterising economic coping of the respondents explain variation in life satisfaction. We have selected the following factors for the analysis: 1) insufficient financial resources for buying medication, 2) respondents have given up receiving guests for financial reasons and 3) respondents have had to limit buying necessary foodstuffs.

It becomes essential whether everyday needs are met.

- For example, when the financial resources needed for buying medication are insufficient ($F = 31.971, p=.000$), it explains 13% of the variation in life satisfaction and when in recent year there have been frequent situations where respondents have not been able to buy desired foodstuffs ($F = 44.456, p=.000$), it explains already 21% of the variation in life satisfaction.
- Looking at the interaction of these two factors (buying foodstuffs x buying medication) the joint effect on life satisfaction increases even more (26%).
- When we assemble into one model buying medicine ($F = 6.346, p<.002$) and buying foodstuffs ($F = 4.498, p<.012$), and add the circumstance that due to economic reasons it is not possible to receive guests ($F = .003, p-no sig.$), the complex of these factors explains 28% of the variation in life satisfaction.

Thus among the factors used in our research both factors of the state of health (61%) and economic situation (28%) have a relatively great effect on variation in life satisfaction. The more essential among health factors are depression ($F = 27.514, p=.000$) and stress level ($F = 43.258, p=.000$). From the economic point of view life satisfaction mostly depends on whether due to financial reasons it is possible to buy the
desired foodstuffs (F = 44.456, p=.000).

In order to carry out a more exhaustive analysis, we considered it necessary to introduce one more aspect. Namely, we tried to find out whether the length of the disease causes differences in life satisfaction. We viewed the length of the disease in three groups: 1) the respondent has had a rheumatic disease for less than 5 years, 2) 6 to 9 years and 3) 10 or more years.

We presumed that in the groups where the disease had lasted for less than 10 years or more than 10 years, health assessments and economic situations would vary significantly. We thought that the longer respondents had suffered from a chronic rheumatic disease, the more other health disorders they had, which in turn had added to the development of stress and tension. We also expected that a long-term rheumatic disease had affected economic situation of the respondents, since it was not always possible to go to work or work full time due to the illness. The real picture was somewhat different.

- The results show that health assessments (the level of psychological stress, depression and decrease in the ability to work due to health condition) had significant effect on variation in life satisfaction in the group of respondents having had a rheumatic disease for less than 5 years as well as for 6 to 9 years (52-54%). The factor that is especially significant is that health condition does not allow working with full strength any more (F = 11.274, p=.000). Thus our respondents consider health factors especially important for coping with life since they are responsible for the ability to participate and be successful in the family, work and social life.

- The effect of economic factors (respondents are not able to buy foodstuffs and medication due to financial reasons) on variation in life satisfaction is also higher in the group of those having had rheumatism for 6 to 9 years (40%) than in the group of respondents with more than 10 years' history of rheumatism (27%). For example, the effect of food buying is F = 16.603, p=.000. In the group with the longest history of the disease the opportunity of buying medication has the most significant effect on life satisfaction (F = 5.876, p<.004).

There is one more dimension related to the length of illness – whether the respondents work or not and whether they perceive the danger of losing their job. Other studies have revealed that the likelihood of losing the job is very high even because of milder and shorter-term forms of the disease. In Edward Yelin and his colleagues’ survey, a third of the respondents whose illness had lasted for less than 5 years before the study and had not caused deformation of joints, still perceived the likelihood of losing their job, which gives evidence that even an easier form of rheumatoid arthritis may be an essential reason for incapacity for work (\( \sigma \)). Our study also revealed that in the group of respondents who had been ill for less than 5 years in both cases having a job or not (F = 7.687, p<.006) and the fear of losing the job (F = 8.885, p=.000) have a relatively significant effect on life satisfaction (15%). In the group where respondents have had rheumatism for 6 to 9 years the combination of variables (working x fear of losing a job) explains 12% of the variation in life satisfaction. The greatest role is played by whether the respondent works or not (F = 6.839, p<.010). In the group of respondents with rheumatism for more than 10 years the fear of losing their job factor has only some effect (F = 2.906, p=.057) and the working factor has no effect (p-no sig.), which is also reflected by a relatively little ability to explain variation in life satisfaction (8%).

Thus we may conclude that the state of health and economic situation factors have significant effect on life satisfaction even when a respondent has had a rheumatic disease for some years only. Yet it is extremely difficult to adapt to and cope with the deteriorating health, economic hardships and duties at work when a respondent has been ill with rheumatism for 6 to 9 years. In the group of respondents who have suffered from rheumatism for more than 10 years life satisfaction mostly depends on the state of health and whether the economic situation allows buying medication.

**DISCUSSION**

Many indicators show that our people’s health is the worst in the European Union and our population decrease the fastest, yet we have the highest level of risk behaviour (\( \sigma \)). The tendencies in social development – a sharp increase in the proportion of elderly people, especially among women, and an increase in the number of chronic rheumatic patients accompanying the aging of population – indicate that in the years to come the treatment problems of patients with rheumatism will become a serious challenge for the Estonian society. It should be a responsibility of the society to help its less able members to cope with life.
Proceeding from that need, a national survey involving patients with rheumatism (808 respondents) was carried out in Estonia in 2005 to 2006, which reflected the shortcomings in rheumatic patients' coping with life. Similarly to other studies (1, 2, 3), our research also revealed as a reason for poor coping of patients with rheumatism their low income and the fact that every third respondent spends more than a half of their income on housing. That is why they lack funds even for buying necessary foodstuffs and pursuing their favourite hobbies, cultural interests, etc. The fact that financial situation has hindered treatment of the disease because patients cannot afford buying vital medication and assistive devices or receive rehabilitation is especially regrettable. Opportunities for rehabilitation are relatively poor in Estonia, since prices of the services offered are too high for Estonian people. That is why the share of foreigners is much higher (65% to 75%) than that of Estonian residents (25% to 35%) in health establishments offering those services (4).

Treating chronic diseases is an economic burden not only for the health care system of the country but even more so for an individual. Therefore it is important for people with rheumatism to have an opportunity to have a manageable job. However, in Estonia the unemployment rate in people with a disability or disease that limits their capacity for work is 22.2%. This indicator is significantly higher than the unemployment rate in work age population (15 to 64 years of age) in Estonia – 10.5% (5). The fact that unemployment rate of disabled people is more than twice as high as the average, indicates that finding suitable work is very difficult for them. Finding a job is often difficult for people with rheumatism because their disease has discernibly reduced their ability to work and study. Independent of their age the disease on average disturbs 37% of respondents' work very much, and in ages 46 to 55 the respective proportion is even 46%. A comparison of people with various disabilities (physical, coronary, mental, visual and hearing disability, allergy, diabetes, etc.) reveals that rheumatic diseases have an especially detrimental effect on people's health. In a survey of people with chronic diseases and disabilities 62% of the respondents assessed their health as good or satisfactory (6), whereas only 29% of rheumatic patients were completely or mostly satisfied with their health.

Besides the capability for work, coping with life is also influenced by circumstances related to the nature of the disease – pain, limited movement of joints, limited mobility. General health situation is also worsened by the effect a rheumatic disease has on mood and emotions, since patients suffer from depression, irritation, fatigue, sleep disorders and the feeling of not coping with life. Similar results have also been revealed by other studies, where respondents have described emotions related to their illness – the feeling of anger, disappointment, depression or irritation. These feelings are often caused by tiredness, pain and inability to cope with the most essential activities (7).

In addition to good material situation, concrete assistance in daily coping and counselling (both by psychologists and family members), respondents consider an essential resource of social coping the availability of information about how to generally cope with their life and address health related issues. Every fourth respondent gives as a reason for not having been able to obtain an assistive device the lack of information about the availability of such device as well as where to obtain it. Shortcomings are also reflected by the fact that respondents refer to the need to get more information about services, benefits, healthy eating and, especially frequently, opportunities of rehabilitation.

Two-way Anova procedure allows us to see that the most significant role in life satisfaction is played by health factors, especially when poor health has reduced the ability to work and caused depression, fatigue, irritation and psychological stress, since the respondents perceive that it is hard for them to cope with their life. We expected that economic and health problems influence life satisfaction significantly when the disease has lasted for a long time. However, according to our study these factors already arise when people have suffered from the illness for less than 5 years. We consider the result, which also coincides with the data from other researchers, thought provoking – the fear for and also the likelihood of losing the job has a significant effect on life satisfaction even when the disease has lasted for several years (8).

People who have suffered from rheumatism for 6 to 9 years have especially numerous problems because in spite of their wish to lead a full life their state of health prevents them from participating in daily life and work with necessary activeness. There are many up to 45 years old people (24%) among these respondents who, while working full time, perceive that their health does not allow them to work with full energy or they have to start looking for a job matching their health status. In these two groups a significant role in coping with life is played by health factors, since successful participation in the family, work and social life directly depends on them.
The ability of economic factors (financial resources do not allow buying food or medication) to explain variations in life satisfaction are also higher in the group of respondents having had rheumatism for less than 10 years than in the group of people suffering from the disease for more than 10 years. In the group of patients having had rheumatism for more than 10 years the effect of health and work related factors is less significant. We can claim that at younger age needs of life and interests are wider – to socialise with friends, go to the theatre, buy books, meet the needs of the family, especially when there are children in the family, etc. At the same time elderly people are more conservative, their needs have decreased and their social circle has narrowed due to old age and little mobility. They complain less and put up with less and therefore their life satisfaction is not so much affected when one or another need is not met, although, as it appeared, there is one factor that has a considerably strong influence. In this group the possibility of buying medication has an especially significant effect on life satisfaction.

In conclusion, the study shows that health and mood of people with chronic rheumatoid arthritis are considerably affected since the beginning of the disease. Pain accompanying the illness, but even more depression and the feeling of not coping with life significantly hinder coping with life and decrease self-esteem. The factors promoting a better health are financial possibilities for buying medication, receiving rehabilitation, etc. A negative aspect concerning Estonia frequently pointed out by respondents is the lack of information about the nature of the disease, the need for treatment, the opportunities of obtaining assistive devices and the effect of medication. According to the respondents, in order to improve the situation, an essential improvement has to take place in offering working opportunities adapted to the needs of the disease, professional retraining and quality of social services. They also emphasise the role of the state, because in order to solve the problems of disabled people in many cases legislative basis, state aid and financial support are needed.

Taking into account the health problems of our respondents, the decrease in the quality of their life due to economic limitations and negative emotions related to the disease, which all magnify the general human concerns, we expected them to rate their life satisfaction as low. However, the respondents are relatively satisfied with their life (on a 5-point scale the average rating was 3.34). Life satisfaction is higher in younger respondents with higher education and in women. Thus, although the level of psychological stress is high and the respondents suffer from pain, fatigue and depression, they take the situation calmly and have accepted that they are ill. They do everything possible to recover but at the same time take their life as it is and try not to worry for the future.

CONCLUSION

Many articles have been written about the medical aspect of rheumatology treatment. Less attention, especially in Estonia, has been paid to the everyday life of rheumatology patients. It is important that social scientists are involved in describing the situation of society's risk group.

The study shows that the treatment of chronic rheumatic diseases is not just a medical issue. Sensible political decisions and patients' awareness are equally important. It appears that the patients do not always know their legal rights and the society doesn't know what the rheumatic patients and their families must put up with just to manage with their everyday life, what is the life quality like and what are the patients missing due to their illness.

All this data helps to provide well-timed complex treatment for rheumatic patients and passing the necessary laws.

Key Messages:

1. More attention has to be paid to the initial period of the illness. Adapting to new situation and the disease is most difficult at this time.

2. It appears that 60% of the patients with chronic rheumatoid arthritis suffer from frequent sleeping disorders, fatigue; every third claim that things are beyond their coping ability.

3. A negative aspect concerning Estonia is the lack of information about the nature of the disease, the effect of medication, etc.

4. In the group with the longest history of the disease (more than 10 years) the opportunity of buying medication has the most significant effect on wellbeing.

5. Extra attention has to be paid to strategy that enables rheumatology patients to continue working. People need activities that provide purpose in life and essence to their efforts.
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References

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