Quality of life among disability pensioners with musculoskeletal disorders

Studies in a geographically defined population in Sweden

Edén, Lena

2000

Document Version:
Publisher's PDF, also known as Version of record

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Studies in a geographically defined population in Sweden

2000:6

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Akademisk avhandling

som för avläggandet av filosofie doktorsexamen vid samhällsvetenskapliga fakulteten, Lunds Universitet, kommer att offentligt försvaras i Socialhögskolans hörsal, sal 28, Bredgatan 26, Lund

Lördagen den 20 maj 2000 kl 10.15

Organization
LUND UNIVERSITY

School of Social Work, Box 23
S-221 00 Lund
Sweden

Document name
DOCTORAL DISSERTATION

Date of issue
April 18, 2000

CODEN:
ISRN LUSADG/SASW – 00/1027-SE

Author

Lena Edén

Sponsoring organizations: The National Swedish Social Insurance Board (RFV), Volvo Research Foundation and Volvo Educational Foundation, The Kristianstad County Council

Title and subtitle

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Abstract

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The QL of the ERPs was lower than among controls. Poor QL was more frequent among young (<55 years) than older ERPs and among immigrant compared to Swedish ERPs. Male more often than female ERPs reported their QL to have deteriorated since the retirement. Subjective health status was strongly related to QL among ERPs, as were social network, leisure-time activities, self-image and economy. Experience of an unemployment period preceding the retirement and the view of the disability pension as the best solution were furthermore associated with good QL among ERPs. The interviews revealed that the ERPs considered family relations and health conditions the most important factors influencing their QL. Economic hardship was reported among ERPs with poor/declining QL.

The results of this study indicated that the disability pension and the conditions leading to the retirement decision influenced the QL of the ERPs. The disability pension decision as a result of an agreement involving the ERP was emphasised, as well as the importance of continuing medical treatment and rehabilitation efforts among ERPs.

Key words quality of life, life satisfaction, early retirement, disability pension, musculoskeletal disorders

Classification system and/or index terms (if any)

Supplementary bibliographical information

Language
English

ISSN and key title
0282-6143 Quality of life among disability pensioners with musculoskeletal disorders

ISBN

Recipient's notes

Number of pages 220

Price SEK 100 VAT incl.

Security classification

Distribution by (name and address) School of Social Work, Box 23, S-221 00 Lund, Sweden

QUALITY OF LIFE AMONG DISABILITY PENSIONERS WITH MUSCULOSKELETAL DISORDERS

Studies in a geographically defined population in Sweden

Lena Edén

Love while you've got
love to give.
Live while you've got
life to live.

Husk at elske
mens du tør det.
Husk at leve
mens du gør det.
Piet Hein

To my family
and the memory
of my father

CONTENTS

LIST OF PUBLICATIONS

This thesis is based on the following papers, which will be referred to in the text by their Roman numerals:

I. Edén L, Ejlertsson G, Lamberger B, Leden I, Nordbeck B, Sundgren P. Immigration and socio-economy as predictors of early retirement pensions. Scandinavian Journal of Social Medicine 1994;22:187–93

II. Edén L, Ejlertsson G, Leden I. Health and health care utilization among early retirement pensioners with musculoskeletal disorders. Scandinavian Journal of Primary Health Care 1995;13:211–6

III. Edén L, Ejlertsson G, Leden I, Nordbeck B. High rates of psychosomatic and neurotic symptoms among disability pensioners with musculoskeletal disorders. Journal of Musculoskeletal Pain, Accepted 1999.

IV. Edén L, Brokhøj T, Ejlertsson G, Leden I, Nordbeck B. Is disability pension related to quality of life? Scandinavian Journal of Social Welfare 1998; 7:300–9

V. Edén L, Ejlertsson G, Petersson J. Quality of life among early retirees. (Based on a presentation at the second International ICOH Conference on Aging and Work, Elsinore, Denmark, September 1998.) Experimental Aging Research, 1999; 25:471–5

VI. Edén L, Ejlertsson G, Petersson J. Determinants of improvement in quality of life among disability pensioners with musculoskeletal disorders. (Submitted to Experimental Aging Research.)

ABBREVIATIONS

ADL	Activities of daily living
CQL	Change in quality of life
ERP	Early retired pensioner due to disability
FQL	Future quality of life
LQL	Life-span quality of life
NI	Index of neurotic symptoms
PQL	Present quality of life
PSI	Index of psychosomatic symptoms
QL	Quality of life
RFV	The National Swedish Social Insurance Board (Riksförsäkringsverket)

ABSTRACT

The starting-point of this thesis was the high rate of disability pensioners in Sweden and the lack of knowledge about what a disability pension entails for quality of life (QL). The aim of the study was to gain knowledge about QL among disability retirees with musculoskeletal disorders (ERPs). A questionnaire was sent in 1992 to 450 ERPs in Kristianstad Municipality, Sweden, granted their disability pension 1986–1990, during the last period of what might be called the "golden age" of welfare policies in Sweden. A control group received a corresponding questionnaire, and 55 ERPs were interviewed in 1992. A second questionnaire was sent to the ERPs in 1994.

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The results of this study indicated that the disability pension and the conditions leading to the retirement decision influenced the QL of the ERPs. The disability pension decision as a result of an agreement involving the ERP was emphasised, as well as the importance of continuing medical treatment and rehabilitation efforts among ERPs.

1. INTRODUCTION

The studies presented here were initiated by a group of researchers involved in an investigation concerning the importance of rehabilitation at an early stage during sick-leave due to musculoskeletal disorders (Ejlertsson et al. 1997). In spite of successful rehabilitation efforts in several cases, the solution for some individuals was to be granted a disability pension, and the question was raised concerning what happens to the individual after such a decision. As research in this field was very sparse, there was no obvious answer, other than: let us find out!

A great number of individuals leave the labour market prior to regular old-age pension. One frequently used pathway is exit by means of a disability pension, a procedure within the social insurance system of the welfare state. Does this move mean an increase or decrease in welfare for the individual? Are the disability retirees a group of individuals who have found new possibilities to a good life or does life as a disability pensioner mean considerable medical and social strain, reducing the quality of life?

This thesis intends to add to the picture of what life as a disability pensioner entails concerning quality of life.

Two main areas are dealt with in the introduction: quality of life (QL) and disability pension. The QL-section (1.1) starts with a discussion concerning the connection between the concepts of welfare and QL. The use of the QL-concept and some efforts to define and measure QL are accounted for as well as criticism of established QL-instruments. The section comes to an end by stating the view of QL taken in this study. The next section (1.2)

includes a description of the development of the Swedish disability pension system. Since disability pensions are part of a broader social insurance system of the welfare state, some considerations on the development of social policy within the industrialised countries are given. Then, returning to the Swedish disability pension system, the way towards a disability pension is described and factors seen as important for the decision are discussed. Finally research concerning disability pension and QL is described.

1.1. QUALITY OF LIFE

1.1.1. Welfare, level of living and quality of life.

The concept quality of life (QL) is rooted in welfare research and can be used both at the societal and individual level (Naess 1989). At the societal level QL may include variables such as level of living, income distribution, suicide rates and health status in the population. On the individual level QL may refer to outer states such as a person's standard of living, work and housing conditions or inner states like happiness, well-being and life-satisfaction.

The terms welfare and quality of life have sometimes been used synonymously, and they have been used to designate different aspects of life depending on the perspective chosen (Naess 1987, Lindström 1994). Within the medical professions absence of illness, pain and mental disorders is important, sociologists speak of level of living, working conditions and social network while psychologists stress satisfaction of needs and self-esteem. Economists have stressed the Gross National Product as an

indicator of welfare on the societal level and income and purchasing power on the individual level. The politicians in a welfare state should arrive at decisions that ensure the citizen's welfare in areas like education, medical services, housing conditions etc., and periods of low ability to earn one's living are compensated by measures taken within the frame of the welfare state. Welfare is thus mainly defined in economic terms within politics.

In 1954 the United Nations published "International definition and measurements of standards and level of living" (UN 1954), and in Sweden a study (the Low Income Commission) concerning the living conditions of the general population with special focus on the low-income group was accomplished in 1968 (Johansson 1970). Within this study the level of living was accounted for in terms of different components of welfare (e.g. health status, housing conditions, educational level, employment and working conditions, economic and political resources, leisure-time and recreation). Level of living studies have subsequently been carried out by the Swedish Social Research Institute (SOFI) in 1974, 1981 and 1991, and Statistics Sweden (SCB) publishes reports describing the distribution of welfare in the Swedish society. The OECD countries published a list of "social concern" in 1973, which was revised into the OECD list of Social Indicators in 1982 (OECD 1982).

This emphasis on social indicators to describe the living conditions of the general population was criticised by Allardt (1975), who presented a broader concept of welfare. His Nordic comparative study – "Having, loving, being" – defined welfare as a state where people are able to satisfy their central needs: "Having" is needs-satisfaction through access to material resources, level of living, "loving" is about relations to other

people and "being" deals with the individual's possibility to control events influencing his/her life, i.e. relations towards society. Allardt's view of welfare introduced non-material dimensions as essential.

Swedner (1983), inspired by Allardt, developed an instrument in his "Take-Have-Give" model. People take, have and give of the welfare resources within society. He considered lists of level of living components as too narrow when describing the state of welfare in society. The lists concentrate on the objective dimensions but ignore the satisfaction the individual experiences when estimating the values of having access to resources and feelings of solidarity when giving of his/her resources to other people. These subjective dimensions are important when describing the state of welfare in society, according to Swedner.

Nordenfelt (1991a) argued in a similar way. He distinguished between welfare and well-being and considered welfare to encompass outer conditions such as environment, economy, social and cultural circumstances as well as inner physical and psychological conditions. Well-being is our emotional reactions towards our resources and how they are utilised by ourselves and others. The connection between welfare and QL has been described as two faces of the same coin (Wolvén 1990), a dichotomisation with one side including the objective welfare components of the individual, easy to observe and measure, and the other side representing the perceived satisfaction with life in general and specific conditions of life.

Naess (1987) considered level of living as a socio-economic indicator of welfare while QL is a psychological indicator of welfare. Like Swedner, she criticised that research concerning level of living had emphasised the

material and objective variables too much. The emotional experiences of the individual should be of greater importance. In other words, Naess called attention to the concept of QL when describing welfare on the individual level. Welfare could thus be seen as a broader concept encompassing both objective material conditions, easily measurable (objective welfare) and subjective sense of well-being, QL (subjective welfare) as illustrated in Figure 1.

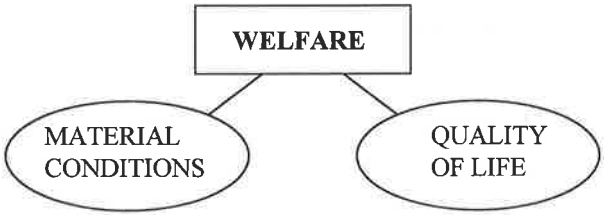


Figure 1. Welfare and quality of life.

1.1.2. Emergence of the quality of life concept

What the "good life" of human beings encompasses has been on the philosophical agenda through the last couple of millennia. Plato's view was that the "good life" meant a well-protected life where man could contemplate Truth escalated above human feelings and inclinations. Aristotle claimed, in contrast, that life without conflicts and challenges was worthless, that risk-taking concerning emotional aspects of life – like love and friendship – was a prerequisite for human well-being (Lindström 1994). Aristotle discussed furthermore human happiness from a time perspective, asking if the human "good life" applied to the present situation of the

individual or whether a lifetime perspective should be used. The question concerning what a "good life" implies is still a question of concern within philosophy (Brülde 1998).

The QL-concept of today emanates from the economic-political sphere. One of the first persons to introduce the concept was the economist Galbraith who in the late 1950s criticised the Gross National Product as the sole measure of the living standards of people and developmental degree of nations. Lyndon B. Johnson introduced the concept of QL in a speech during his campaign to be elected president in 1964: "These goals cannot be measured by the size of our bank-balance. They can only be measured in the quality of lives that our people lead" (Nordenfelt 1991b, p. 83).

The term QL was a success and efforts were taken to define and measure the QL of individuals. In the late 1970s UNESCO appointed a group of researchers from East and West to work for a joint programme on QL-research (WHOQOL Group1993). Similar efforts were made within Europe (Euro Qol Group 1990). The ambitions were to develop instruments to measure QL in ways independent of cultural origin to permit comparisons between countries.

Research concerning quality of life has had a tremendous development since the 1960s throughout the world. The earliest references found in Medline are three from the 1960s, while social sciences were more hesitant, starting with 18 references in 1986 found in the Social Science Citation Index (Figure 2).

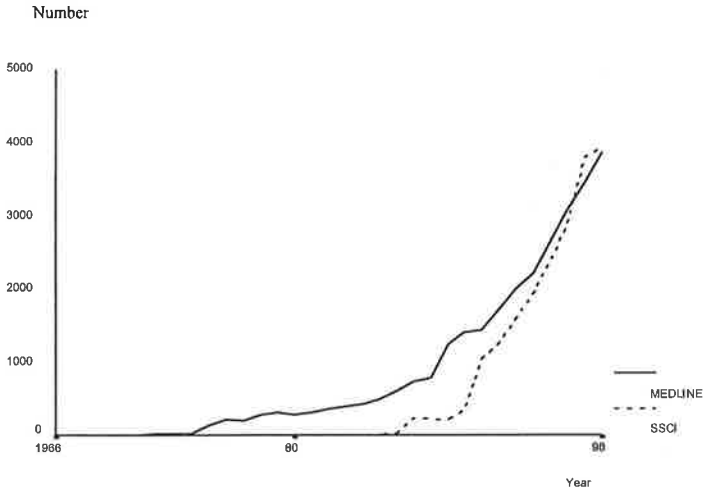


Figure 2. Number of hits for "quality of life" in Medline 1966–1998 and Social Science Citation Index (SSCI) 1980–1998.

Behind this growing interest in QL one can find dislocations of values within society, according to Tornstam (1998). When basic material needs are provided for within the majority of the population, needs at higher levels will be focused on. At the same time far fewer individuals are occupied within the immediate production of goods, a fact that might lead to a replacement of a rigorous work-ethic in favour of an ethic where questions concerning QL are allowed to dominate. Within medical research the term QL has been used as a denominator for criteria of successful treatment other than survival time (Musschenga 1997).

1.1.3. Quality of life – different views

There is still no universally accepted definition of the concept of QL. It has been described as a vague, multidimensional concept, theoretically incorporating all aspects of an individual's life (Bowling 1995a). The importance of defining QL before trying to measure it has been stressed (Meeberg 1993), as well as the risk of missing the essence of what is important when narrowing the concept in a definition (Richt 1991). This illustrates the dilemma constantly experienced by research within societal and behavioural sciences: The more interesting and sophisticated starting points, the more difficult it is to make them empirically tangible (Wolvén 1990). The only thing possible to get hold of is what I can see, while the phenomenon I am thinking of is elusive, Saussure said (1972). The questions asked and the answers given when trying to grasp the QL of an individual are there to be observed, but the QL of the individual might still be hidden. This confusion about the meaning of QL has led Wolfensberger (1994) to argue against the use of the QL-concept in disability research. But the concept survived, and QL has been a useful conceptual framework from which to consider differences between individuals.

Some try to define QL by domains listed to cover the concept, while others prefer an approach that indicates that life is to be seen as an entity. Lindström (1994, p 43) suggested the following definition of QL:

> Quality of life is the total existence of an individual, a group or a society describing the essence of existence as measured objectively and perceived subjectively by the individual, group or society.

Farquhar (1995a) suggested a taxonomy of definitions used by researchers including: global, component, focused and combined definitions. Global definitions are all-encompassing, permitting the individual to decide what components to include without necessarily defining them explicitly. In component definitions QL is broken down into dimensions which are seen as essential for a satisfactory life. In focused definitions the researcher refers to a small number of dimensions (or even only one dimension, e.g. health) important for QL. Some definitions combine these different approaches to capture QL.

The view of QL as a mixture of outer and inner circumstances was emphasised in gap-theories. Campbell et al. (1976) considered the subjective satisfaction with life as reflecting the gap between the aspiration level of the individual and the individual's perception of the actual current situation, and pointed out that aspiration levels gradually adjust to the circumstances. Naess (1989) presented gap-theory in the following way (Figure 3).

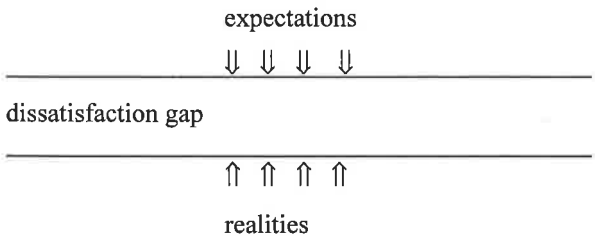


Figure 3. Gap-theory: QL as interplay between objective and subjective circumstances (Naess 1989).

According to a gap-theory it is possible for the individual to diminish the feeling of dissatisfaction and thereby enhance QL either by reducing expectations or by improving circumstances in reality. A total reduction of the gap might be seen as Plato's state of the "good life", enhanced above the endeavours of daily life. But it is not likely that it is possible to reach this state of total satisfaction, since when the gap diminishes people tend to raise their level of expectations (Naess 1989). It might furthermore be incongruent with a good QL to wipe out the dissatisfaction gap totally; life without further aims is like life without excitement and, as Aristotle argued, not congruent with the "good life".

If life satisfaction is seen as an ideal state of mind, it might be a point of balance an individual is trying to reach by means of psychological homeostasis mechanisms. Tornstam (1987) analysed these mechanisms of homeostasis among older people suffering from losses concerning e.g. contacts with former work-mates. Losses in number of contacts might lead to efforts to regain former contacts, or compensation for losses through extended activities within other fields, or changes in expectation levels and levels of importance attached to the factor lost and/or remaining factors. These homeostatic mechanisms lead to a regained sense of well-being according to Tornstam.

QL as a subjective concept is stressed by researchers concentrating on emotional and cognitive aspects such as happiness and satisfaction. Gunnars (1991) pointed out the retrospective and prospective components of QL by relating QL to the level of circumstances as perceived by the individual compared to what the individual regards as possible or ideal. Swedner (1983) similarly drew attention to the aims of life of the individual

(*individens livsbåge*) and possibilities to overcome decreases as crucial for the QL of the individual. Nordenfelt (1991a) likewise stressed the importance of considering the preferences of the individual when estimating the QL of that individual. The subjective, inner state of welfare cannot, according to Nordenfelt, be mapped out with general QL-instruments unless you are aware that the aims of life differ from person to person.

The WHOQOL group defined QL (1993, p. 153) as

> an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.

There seem to be three major approaches in QL-research: one subjective with self-reports of psychological states, one objective approach focusing on material resources and a third including both subjective and objective elements (Naess 1999). Those who favour the subjective approach consider QL to be an overriding value, an end in itself, and consider the material resources to be means to reach this goal.

1.1.4. Efforts to measure quality of life

Ever since the 1970s efforts have been made to measure the QL of individuals. By measuring QL it is defined operationally. One early effort was made in USA with the Quality of Well-Being scale (QWB) in the 1970s. It focused on limitations concerning the physical functioning of the individual combined with different symptoms and health problems and

presented an index of QL (Sullivan 1990). At the same time in Sweden an instrument to measure the QL of individuals in a general population was developed (Tibblin et al. 1990a), "The Göteborg Quality of Life Instrument" (GQL). It was rooted in the WHO definition of health and intended to give information about how the individual estimated his/her physical and mental health as well as circumstances regarding different aspects of life.

These two early QL-instruments both emanated from the medical research field. Since the concept of QL was a matter of rapidly growing interest as one important goal for successful medical treatment, conferences were arranged to reach consensus concerning what variables to include when performing studies of QL in clinical research (Sullivan 1990). In this way QL was defined as including dimensions established in advance by the researcher. Early health-related QL-instruments assessed QL as the degree of normal functioning and independence (Musschenga 1997). Two frequently used instruments were the Nottingham Health Profile (NHP) measuring subjective health status, and Sickness Impact Profile (SIP) measuring consequences in daily life of ill-health concerning physical, psychological and social activities. Soon there was an abundance of instruments developed to measure different aspects of QL, within medical research preferably health-related QL. In recent years the sf-36, short-form 36, (Nyth 1995) has been introduced as a convenient instrument within health-care research.

The WHOQOL Group (1993) focused on five broad domains: physical health, psychological health, level of independence, social relationships and environment. Within each domain different facets of quality of life were to be identified. In order to be applicable in different cultures a core module

should be used in all countries, but with varying individual facets and extra national items for different cultural settings. A sixth domain concerning spirituality, religion and personal beliefs has been added, and the work of developing the instrument is still going on (Skevington et al. 1999).

In Sweden Hörnquist (1989) developed an instrument that is adjustable to different research settings. QL is measured by self-ratings regarding satisfaction within different domains: physical, psychological, social, activity, material resources and structural conditions. Another Swedish QL-instrument was developed by Kajandi (1985), an instrument to be used within psychiatric treatment either through self-report or by ratings performed by an expert after an interview. This means that QL is established as seen from without. This technique has been further developed within health-economy, where instruments to measure Quality Adjusted Life Years (QALY) have been designed to be used when deciding which patients should gain access to the sometimes sparse resources within the health-care system (Edgar et al. 1998).

When QL is seen as a subjective phenomenon impossible to define from without, as regards what components to include, questions about global QL are used. The individual might be asked to estimate his/her overall satisfaction with life by finding his/her position on a scale from the worst possible to the best possible situation of life. These types of questions have been used in research at the Lund Gerontological Centre (Nordbeck et al. 1991, Samuelsson et al. 1997).

1.1.5. Criticism of instruments designed to measure quality of life

The way to measure QL is preferably by questionnaires. To obtain reliable information it is important to formulate the questions with clarity and furthermore that the individual who is supposed to read, understand and answer the questions possesses this verbal capacity.

Most researchers consider self-reports as the best way to achieve information about the QL of an individual. Sometimes, however, this might be impossible; e.g. concerning QL of the very young child, mentally handicapped, psychotic or severely physically injured person. If it is considered valuable to establish the QL of such an individual, some instrument like Kajandi's or a QALY instrument may be used. These ratings from without have been criticised mainly from ethical aspects. The critics (e.g. Söder 1991, Wolfensberger 1994) call attention to the risks of QL established by another person, in case the results are to be used as a basis concerning important decisions for the individual. The risk is that the QL-level is considered as standing for the value of the life of the individual, something that might lead to misuse of power.

Several instruments used to measure health-related QL concentrate on ill-health. The NHP, for example, consists of statements concerning negative conditions, and the respondent is supposed to say whether the condition is valid for him/her or not. The SIP likewise concentrates on negative aspects of everyday life. Such instruments are ratings of misery according to Hörnquist (1990) who, like other critics, is of the opinion that QL should not be equivalent to the degree of absence of wretchedness, but should focus on both negative and positive aspects of people's lives.

One important controversial question when trying to measure the QL of an individual with a QL-questionnaire is who should decide what domains to include (see e.g. Krabbe et al. 1999). The instrument chosen defines what components of life are seen as important to focus on when trying to obtain information concerning the QL of the individual. And who is to interpret the results deciding whether the QL is good or not? A high score on a QL-questionnaire might not be equivalent to a good QL from the individual's point of view, since the person might give priority to other dimensions not included in the questionnaire, as illustrated in figure 4.

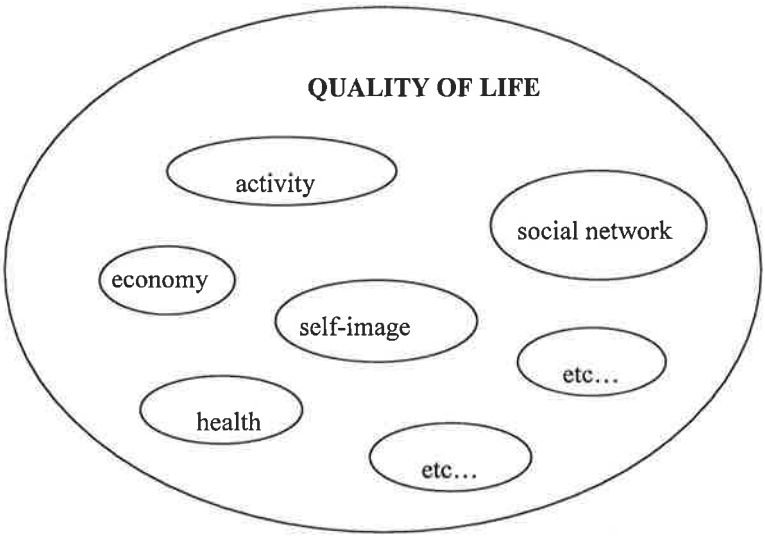


Figure 4. Quality of life seen as emotional reactions concerning different dimensions of life.

When using an existing QL-questionnaire the researcher is forced to reduce the information to dimensions covered by the instrument, although those might be seen as insufficient from the individual's perspective. The answers given to traditional questionnaires concerning QL are supposed to provide

information about a phenomenon impossible to measure directly: the QL of an individual. The specific answers are considered to measure the general phenomenon, as for example when ill-health becomes synonymous with low QL in health-related QL-instruments. The dimensions of life most important for one individual might be unimportant for another person as well as later in life for the individual answering the questions today.

1.1.6. Quality of life in this study

In the present study QL is seen as a subjective phenomenon, and defined as the individual's evaluation of his/her life contents. The time perspective concerning QL was captured by efforts to obtain information regarding the global QL today (present QL, PQL), of the entire life-time until today (LQL) and furthermore expectations concerning the future QL (FQL) and changes in QL since retirement (CQL).

Three of these aspects of QL – PQL, LQL and FQL – were defined operationally by questions previously used at the Lund Gerontological Centre (Nordbeck et al. 1991, Samuelsson et al. 1997). And the question focusing on CQL was constructed in accordance with the other questions concerning global QL. The questions used were:

"How do you feel about your life as a whole just now?" (PQL)

"How do you feel about your whole life from birth until now?" (LQL)

– both with five response categories "very good, rather good, neither good nor bad, rather bad, very bad".

"What are your thoughts about life in the future compared to life at present? Do you expect your life to become better or worse?" (FQL), with the

response categories "much better, somewhat better, unchanged, somewhat worse, much worse".

"Do you think that your life as a whole has become better or worse since you got your early retirement pension compared to the year just before this pension?" (CQL), with the response categories "much better, better, unchanged, worse, much worse".

1.2. DISABILITY PENSION

Insurance plans for disability pensions are part of the welfare systems in most western countries, aiming at economic security in the event of chronic disease or handicap. In Sweden the disability pensions are financed by the employers, but the benefit is granted and delivered by the state after a needs-assessment procedure, which means that disability pensions are part of the public social insurance system. In 2000 individuals during working age (16–64 years), with impaired working capacity by at least 25%, are entitled to receive a disability pension if the disability is caused by some chronic disease or other physical or mental disorder regarded as permanent (Socialdepartementet 1994). If the impairment is considered not to be permanent, a temporary disability pension may be granted. The rules concerning disability pension and temporary disability pension are the same, and in this manuscript the term "disability pension" will include the temporary disability pension. The policy intentions behind the use of the temporary disability pension are to prevent the individual from considering him/herself as chronically disabled and to encourage the individual to keep up the ambition to go back to work. It is suggested that the temporary disability pension should be replaced by a long-term sick-leave in January 2001 (SOU 1997:166).

Starting in January 2000, disability pensioners in Sweden are able to try to go back to work, full-time or part-time up to one year, without jeopardising their disability benefits (Socialdepartementet 1999). The individual has the right to discontinue the attempt to rejoin the workforce any time during this first year. This "resting" disability pension may be extended up to three

years, but after the first year the work ability has to be tested in order to regain the disability benefits.

1.2.1. Disability pensions in Sweden – initial stages

Sweden in the late nineteenth century was an agrarian country where the municipalities had to take care of their elderly, disabled and poor when the family failed (or was missing). Demographic changes made the burden too heavy for several municipalities, and the payments were often negligible. Rudiments of a disability pension in Sweden are to be found in legislation during the first decades of the twentieth century. The earliest Social Insurance Act in Sweden appeared in 1901 (SOU 1994:72) and dealt with compensation for loss of earnings due to accidents at work for certain specified industrial occupations; it entailed a uniform and very small payment, which meant that the worker would be eager to go back to work if possible.

Franchise reforms in Sweden led in 1911 to universal suffrage for men (for women 1921) and an increasing pressure for a better way to take care of the old and disabled. This resulted in the introduction of a universal statutory pension in 1913, which meant old-age pension from the age of 67 for every citizen and the possibility for the chronically disabled to receive a disability pension (*invalidpension*). The intentions were to reduce the poor-relief burden of the municipalities and to rescue old people and those with permanent disabilities from the humiliation the poor-relief system implied (Edebalk 1996). The pensions were partly based on compulsory payments by the workers, whose compensations were individually related to the

charges paid. If this benefit was considered insufficient, a supplementary means-tested pension, financed by public means, was available. The benefit levels were however still too meagre to solve the problems for the disabled.

A universal compulsory insurance in case of accidents at work appeared in 1916, and focused on disability instead of old-age as the cause of working incapacity in broad strata of the population. The benefit levels were considerably increased and compensated two-thirds of the loss of income (Edebalk et al. 1998).

The possibility to have a temporary disability pension was introduced in 1946, which meant that the disability did not have to be considered chronic but was thought to reduce the ability to work for a considerable time (Marklund et al. 1994). Through the 1946 Act, the needs-tested part of the old-age pension was abolished, but the disability pension was still partly selective and depended on the estimated needs/means of the individual. The universal old-age pension became earnings-related through the 1959 Act on the national supplementary pension, ATP, which also introduced the term "disability pension" (*förtidspension*) (Hetzler, Eriksson 1981).

During these initial stages the selectivity of poor-relief was gradually replaced by universal benefits. One part of the disability pension developed into a universal benefit, while a second part was means-tested and thus still selective.

1.2.2. Disability pensions in Sweden – expansions

The means-testing of the disability pension was not abolished until 1963, when the National Insurance Act (AFL 1962), which encompassed all social insurance, was passed. Early retirement due to disability appeared in the Act of 1963 as a universal civil right for those who qualified: individuals whose working capacity was permanently reduced by at least 50% due to disease, mental retardation, disablement or other bodily defect. The disability pension included the national supplementary pension (ATP) according to the merits of the individual. The aim was not a compensation for disablement, but for working incapacity (Proposition 1962) due to medical factors, so a medical assessment of the duration of the working incapacity was compulsory (SOU 1988:41). The 1963 Act thus made the disability pension a truly universal benefit: every citizen was included and the rules concerning qualifications were uniform. Poor-relief was abolished: benefit levels were acceptable, enabling individuals to provide for their living.

Individuals experiencing a prolonged sickness period had previously met with the fact that the period of sickness benefits had expired after a period of two years. The 1963 Act entailed no time limit on the sickness benefits, but introduced the possibility for the staff at the local social insurance office to initiate a disability pension. Long-term sick-leaves could now be transformed into disability pensions against the wish of the disabled (Hetzler, Eriksson 1981). But labour market policy and social policy emphasised rehabilitation efforts and tried to make use of the residual capacity to work among the disabled (Lindqvist, Marklund 1995). Work enforcement was at an early stage the aim of the welfare policy in Sweden,

trying to reduce the number of individuals living on benefits (Marklund et al. 1994).

The industrial and economic growth during the 1960s and a high rate of labour participation even among females made it possible to expand social policy commitments, but led at the same time to increasing demands of productivity and ability to adjust to new requirements by the manpower. Older workers often experienced these demands as too hard and became to an increasing degree unemployed. The Swedish Confederation of Trade Unions (LO) called attention to these conditions, and the rules concerning disability pension were changed 1970 to include a special regulation for older people – in the first place individuals aged 63 or more – saying that an old worker who was unemployed or who did not manage his/her work any more could receive a disability pension on less strict medical grounds (Socialdepartementet 1969). In 1972 the rules were changed and made it possible for older workers to obtain a disability pension without any medical examination solely due to the situation on the labour market. Older workers were defined in 1974 as those aged 60 years or more. The age to qualify for an old-age pension was lowered to 65 in 1976, a decision that reduced overnight the amount of disability retirees, since many of them became old-age pensioners instead.

A large group of abusers became disability pensioners in 1977, when heavy drug addiction was considered as a cause for early retirement. The rules concerning how to obtain a disability pension had thus changed from strictly medical reasons to more diffuse categories (Olofsson, Petersson 1994), and working incapacity was defined not only in medical but in economic terms as well (Guillemard, van Gunsteren 1991). The disability

pension was used as a tool to solve different kinds of inadequacies at work, and the needs-assessment procedure was relaxed, focusing on other dimensions than ill-health.

Wadensjö (1991) identified different pathways for an early exit from the Swedish labour force available in the late 80s:

- The health pathway with a disability pension for medical reasons.
- The work injury pathway, where the individual is compensated for all income losses.
- The unemployment pathway leading to a disability pension for older workers.
- A reduced full-time old-age pension before the age of 65 (early drawing of national pension, ranging from the age of 60).
- The part-time pathway with the possibility to make a gradual withdrawal from work. Part-time exit was available in the form of half old-age pension, partial pension or partial disability pension.

These early exit pathways revealed a "class character", with blue-collar workers mainly moving from unemployment or sick insurance to a disability pension, while white-collar workers to a larger extent used early drawing or part-time pension schemes (Olofsson, Petersson 1994).

The rate of early retired pensioners due to disability (ERPs) in the population aged 16–64 years in Sweden increased from 5.6% in 1980 to 7.6% in 1998 (Table I, Appendix). The female rate overtook the male rate in 1983 (Figure 5). In 1990 53.7% of the ERPs were women and the female rate increased to 55.7% in 1998. This is a high rate in an international perspective, and the most obvious explanation is that Swedish women

participate on the labour market to a higher extent than women in most other countries (Olson-Frick 1985).

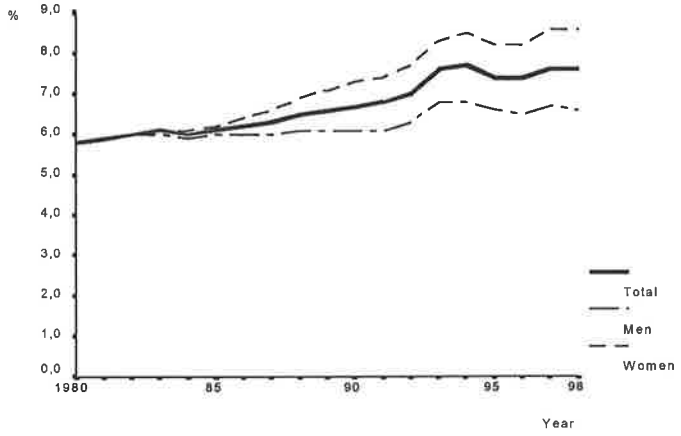


Figure 5. Rate of ERPs in the population aged 16–64 years (%) 1980–1998

1.2.3. Disability pensions in Sweden – peak and decline

The rules concerning disability pension were not modified in any major respects during the 1980s. The level of newly granted disability pensions rose from just over 45,000 in 1980 to approximately 50,500 in 1990 (Table II, Appendix). During the 1980s a compensation as work injury was granted if the disability was considered as an effect of an accident or other harmful influences at work. There had to be a probable connection between the disability and work conditions, and practice established was that no

complete burden of proof was required (SOU 1998:37). During the 1980s the level of work injuries granted increased almost ten times.

Since 1986 the female level of newly granted ERPs exceeds the male (Figure 6), but as early as the 1970s the rate of women exceeded the male rate in comparable occupations and ages (Berglind 1984).

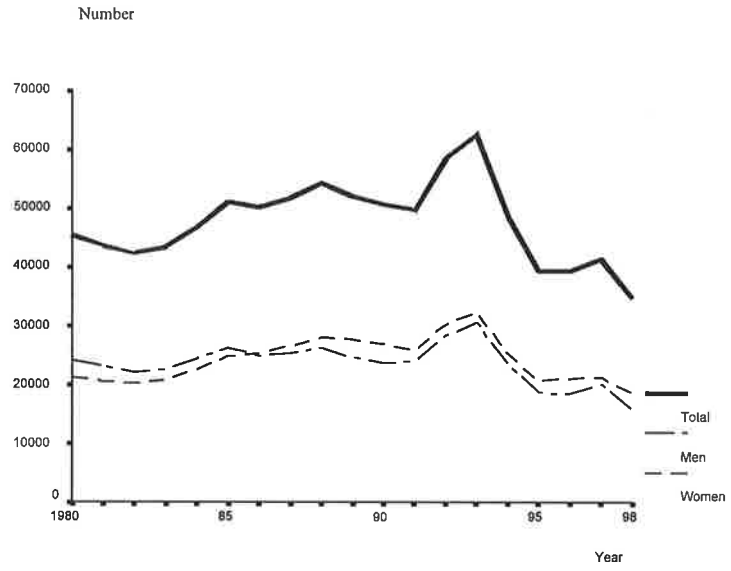


Figure 6. Newly granted ERPs 1980 – 1998

The generosity of the Swedish social insurance system reached a peak in the late 1980s. The previous expansions of the Swedish welfare system implied heavy expenses, and the necessity to reduce the costs was emphasised. Reduced benefit levels in different welfare systems were decided, starting in the early 90s (Staaf 1995), which meant that the activation principle, aiming at work for all, was accentuated. The rules concerning disability pensions

were tightening: the possibility to obtain a disability pension due to unemployment disappeared in 1991 and strictly medical reasons leading to reduced working capacity were emphasised when a disability pension was considered. In July 1993 the rules concerning disability levels were changed from at least 50% to at least 25% to receive a disability pension. The rules concerning compensations in the event of work injuries were also changed and became less generous. In 1993 the rules concerning harmful influences and the proof-burden concerning causal links between the disability and work conditions were restrained, and a *high* degree of probability was required. This change resulted in a dramatic decrease in the amount of work injuries tested and granted (RFV 1999a).

In 1993 the highest level hitherto of newly granted disability pensions was noted, with almost 62,500 (Table II, Appendix). The main reason for this peak was that the local social insurance offices increased their rehabilitation efforts, and a great number of individuals with long periods of sick-leave were considered not to be able to regain working capacity even after rehabilitation and thus became ERPs instead (Hetzler 1994a, Kindlund 1994, RFV 1999a). The drop in the number of newly granted ERPs after 1994 is explained by the reduced number of individuals on long-term sick-leave and stricter rules introduced for granting a disability pension. In 1998 the number was as low as just under 34,500 individuals. The individual who considers the possibility to leave working life in advance due to health problems, might be discouraged to apply for a disability pension when the rules and needs-assessment procedures are known to be stricter, thus perhaps adding to the number of non-take-ups.

1.2.4. Social insurance and the welfare state

Disability pension is just one of the welfare schemes within the developed welfare state. Most modern industrialised countries comprise social insurance systems that cover aspects of temporary unemployment, social assistance, parenthood and old-age pensioning in addition to ill-health, disability and work injury. Social insurance programs are looked upon as a social – rather than individual – concern, to meet a loss of income that accompanies the traditional working life career in an industrialised country. The social insurance system redistributes income horizontally over the lifetime of the individual, but since the insurance is not private, the redistribution is vertical as well. This means that those belonging to a special group (e.g. as regards unemployment insurance), or citizens in general (e.g. as regards sickness benefit) contribute economically, but only the individual who is struck has the right to utilise the benefit. The scheme is built around an element of solidarity.

The development of social insurance has been explained as an answer to problems connected to the new dominance of wage labour and the industrial revolution. Workfare is gradually becoming a cornerstone in industrialised societies, sustained by economic growth (Wilensky 1975). Referring to earlier research, Kangas (1991) points out a "social insurance programs experience", i.e. the older the social security system, the higher the spending rate. The system in fact addresses two different problems. Firstly the employer becomes more inclined to keep less productive employees within the workforce (sickness, parental leave) and is granted a legitimised way for redundancies (early pensioning). Secondly, the system tends to facilitate participation within the labour force on part of female employees especially.

A social pacifist element is of course also at hand, according to many writers. Social policy at the same time causes and prevents systemic change – reforms but not revolution (Marklund 1982).

A common explanation of the development of social policy is to describe it as a growth of social citizenship – (consecutive to civil and political citizenship). This approach describes the development of social policy in terms of increasing access to individual social rights. As Marshall stated:

> What matters is that there is a general enrichment of the concrete substance of civilised life, a general reduction of risk and insecurity, an equalisation between the more and the less fortunate at all levels – between the healthy and the sick, the employed and the unemployed, the old and the active, the bachelor and the father of a large family. Equalisation is not so much between classes as between individuals within a population which is now treated for this purpose as though it were one class. Equality of status is more important than equality of income. (Marshall 1992, p. 33)

Pierson pointed to the importance of social insurance as part of the concept of social citizenship:

> Turning to the expansion of citizenship, there is a strong correspondence (though, as we shall see, no straightforward causal link) between the coming of male universal suffrage and the earliest development of social insurance. (Pierson 1991, p. 109)

The "equality of status" that Marshall talks of becomes "public identity" (Hetzler 1994b), and social citizenship is seen to relieve the urge of reciprocity and to institutionalise expectations that become social facts

(Sunesson 1997). The compensation for work injuries might be seen as belonging to the category of indisputable rights by the citizens (Titmuss 1974), since it is a compensation rather than a pure benefit.

Through a more specific analysis of risk control and risk adjustment, Baldwin (1990) showed that risk-coalitions emerged among subgroups trying to influence the development of social insurance growth. The crucial point was described by Baldwin as:

> Reapportioning costs among risk categories more immediately than between classes, social insurance has itself defined the actors of its own development (Baldwin 1990, p. 48)

Social class as a starting point was replaced by risk groups as a starting point, although there is no clear-cut difference between social class and risk groups, as Baldwin also noted. In the tradition of Korpi and Esping-Andersen, "political power is seen as purposefully being used to modify the outcomes of the play of market forces and to shelter individuals against different kinds of social risks" (Kangas 1991 p. 6). Since extreme poverty and extreme risks are linked together in modern societies (Beck 1992), individuals belonging to any high-risk group would be treated unfavourably in a system based solely on voluntary private solutions.

In his "Three worlds of welfare capitalism" Esping-Andersen (1990) drew attention to the de-commodification of social policy. This trait of social policy "substantially emancipate[s] individuals from market dependence" (Esping-Andersen 1990 p. 22). The social insurance system was seen as the main de-commodification agent. Esping-Andersen investigated the degree

of de-commodification of different countries. The differences strongly supported his own typology of three welfare regimes. His "ideal-types" of welfare regimes were the conservative, the liberal and the socialist, each one illustrated by a country: Germany, the USA and Sweden. In Germany the market and the family dominate as providers, while welfare arrangements by the state are often selective and require a long work-career. The market is the main welfare-provider in the USA and the state intervenes only very restrictively when the market and/or family fail. The socialist, i.e. social democratic, regime in Sweden developed welfare arrangements whereby the state provides support for most stages of life. Sweden is seen as the paradigmatic example of a social democratic institutional welfare state that combines basic security equally attainable for all citizens with income security for the working population (Stephens 1996).

A contrasting view is to stress that employment is the key to most social insurance benefits. In Sweden the activation principle is emphasised to such an extent that Sweden has been characterised as a workfare instead of welfare state (Freeman et al. 1997, Sunesson et al. 1998). Social insurance is work-related to a high degree, and only when full employment prevails can the welfare system be seen as universal, encompassing all citizens.

1.2.5. The disability pension process

A frequent course of events leading to a disability pension on medical grounds is that short periods of ill-health grow into longer periods of sick-leave that finally lead to a temporary disability pension that is transformed into a disability pension (Svenning 1993). The definition of what is to be

considered as a long-term sick-leave has varied in Sweden. In the late 1980s it was the experience that when the sick-leave was approaching 30 days, it was less probable that the individual was ever going to return to work (Socialdepartementet 1994). The increasing costs of early retirements were to be reduced by efforts to keep people within the workforce. Thus it was urgent to initiate work-oriented rehabilitation at an early stage during the sick-leave. In the late 1980s about 170,000 individuals were on sick-leave for 30 days or more, a figure that in the 1990s has diminished to less than 90,000 (RFV 1999a).

In the late 1980s rehabilitation efforts were the business of several different authorities: the social insurance offices, the medical services, labour market authorities, the municipality, the National Prisons Board and the employer (SOU 1988:41). The civil servants at the local social insurance offices were to find cases suitable for work-oriented rehabilitation efforts and were responsible for making sure that adequate measures were taken when the sick-leave exceeded 90 days. The local social insurance offices, however, lacked the economic resources to accomplish the rehabilitation on their own. The importance of persistent collaboration between different rehabilitation agents has been demonstrated (Ejlertsson et al. 1997, Socialstyrelsen 1999).

Rehabilitation aiming at increased work ability has been seen as comparatively unproblematic for those with a well-defined disease with specific reduction of capacities, while individuals suffering from more diffuse symptoms such as musculoskeletal pain were more problematic (Bäckström 1992). Those with musculoskeletal problems who were subject to rehabilitation efforts tended, at least during the 1980s, to experience all

the various parts of the rehabilitation process as being in vain, ending up as disability pensioners (Krafft 1990). This combined with the fact that in the middle of the 1980s only 7% of individuals who were on long-term sick-leave – defined as ≥ 60 days – underwent work-oriented rehabilitation efforts (SOU 1997:166), indicates that the ambition to stress the activation principle was fairly moderate.

Since January 1992 the employer is responsible for the work-oriented rehabilitation aiming at restoring the work ability of the employee (SOU 1996:113). The civil servants at the local social insurance office have to co-ordinate and supervise the rehabilitation efforts in order to enable as many impaired people as possible to go back to work. The intentions are that the initiative and expenses for the work-oriented rehabilitation, when transferred to the workplaces, are to make improvements of the work environment profitable for the employers. If an employer fails to achieve the rehabilitation the social insurance takes over (RFV 1999b).

During the 1990s the unemployment rate in Sweden increased rapidly, so the rehabilitation reform of 1992 was launched in poor circumstances. A growing amount of healthy workers lost their jobs, a fact that might have affected the ambition of employers to invest in rehabilitation efforts to keep workers with reduced work ability within the workforce. However, the low rate (7%) of work-oriented rehabilitation for individuals on sick-leave for 60 days or more during the 1980s, mentioned above, increased to 20% in 1993/94 (SOU 1997:166). The results of these rehabilitation efforts were positive, according to one study (RFV 1998:3), with 70% of the persons going back to work compared to 53% among those who were not chosen for this procedure. The most important factor for successful rehabilitation

efforts is to find the individuals suitable for such arrangements (RFV 1998:5). Work-oriented efforts succeed more seldom if the individual is old, female, an immigrant, out of work, suffers from musculoskeletal disorder, is a drug addict or on sick-leave for other psychiatric reasons (RFV 1998:4). Important are furthermore if the sick-leave is total or partial and if the individual has had a sick-leave of more than 15 days prior to the sick-leave in question.

When rehabilitation efforts are in vain, the individual or an officer at the local social insurance office may apply for a disability pension. A special board at the local insurance office decides who is entitled to get a disability pension. The decision is based upon the estimated working ability and not upon the degree of impairment from a medical point of view, and the pension levels depend on the estimated loss of working capacity – 25, 50, 75 or 100%. An individual with 100% disability pension, including national supplementary pension (ATP), receives approximately 65% of the former annual income (Månsson 1997). But this compensation level is only the basic tier of economic benefits in the event of a disability pension (Edebalk et al. 1996). Most employees are entitled to negotiated pension rights that lead to a benefit level of approximately 80% of the former income (SOU 1996:113). Company-based commitments, group insurance and any private insurance may further increase the compensation level. And if the health problems are classified as emanating from a work injury, the total benefit level may amount to approximately 100%.

1.2.6. Who is granted a disability pension?

The main reason for disability pensions is diagnoses concerning musculoskeletal diseases found in chapter 13 in the International Classification of Diseases (WHO-ICD). The rate has fluctuated between approximately 1/3 and 1/2 during the last few decades (Table II, Appendix), and among newly granted disability pensions due to musculoskeletal problems in this period 52–62% were women. Two other groups of diagnoses were frequent among newly granted disability pensioners during this period – psychiatric diseases including drug addiction with 15–20% and circulatory disturbances with 10–15%. The male dominance was evident in these groups (SOU 1997:166).

The risk of becoming a disability pensioner increases with age, and among individuals aged 60–64 years 31.9% were disability pensioners in December 1998 (RFV 1999c). Other risk factors identified behind disability pensions are: immigration, low educational level, exposed social conditions, i.e. being a single male, unqualified work with unfavourable work conditions, unemployment and employment in a kind of work that is shrinking on the labour market (Marklund et al. 1994, Höög, Stattin 1994, SOU 1997:166, Stattin 1997). Some of these factors, like unfavourable work conditions, are obviously directly linked to ill-health and thereby indirectly to disability pension. Unemployment, as mentioned previously, was one of the legal reasons for becoming a disability pensioner 1972–1991. But even after this period unemployment might affect the number of disability pensions through different mechanisms (Stattin 1997); on the individual level the unemployed with health problems might be eager to apply for a disability pension in order to secure their economic support. Unemployment might

furthermore affect the health of the individual negatively. At the structural level there is no simple connection between the unemployment rate and the rate of disability pensioners within the population (Marklund 1995).

Factors of importance, when the question of disability pension might be considered, are the directives given to and the attitudes of the civil servants at the local social insurance offices (Hetzler, Eriksson 1981). Hidden structures within the organisation, where the intentions of a certain law are to be transformed into visible actions, are of vital importance for the application of the law (Hetzler 1994b). In the early 1980s the rules concerning disability pensions were applied fairly generously. The more restrictive rules introduced during the 1990s were combined with an attitude of gate-keeping at the local social insurance offices, and in 1996 the National Social Insurance Board (RFV) criticised the decisions at the local social insurance offices for being too restrictive concerning disability pensions (Wesser 1998). The attitude that an individual suffering from chronic disease or handicap had a right to be supported by means of a disability pension had been replaced by a salutogenetic perspective, where the possibilities of regaining and making use of even a reduced work ability was too dominant.

1.2.7. Forces behind variations in the rate of disability pensions

The reasons behind a disability pension have been analysed in terms of exclusion and attraction. Exclusion factors are connected to circumstances on the labour market such as work environment demands, unemployment rates and changes in labour market conditions. They are sometimes

described as push-factors that eliminate workers who fail to meet the increasing demands and desired standards at work (Guillemard, Rein 1993, Marklund 1995, Stattin 1997). Attraction factors, or pull-factors, emanate from the social security system broadening the eligibility for early retirement combined with generous economic compensations. Individual characteristics such as age, gender, social background, educational level and health status are seen as facilitating or aggravating circumstances when work ability is estimated.

A structural "political economy" perspective focuses on the interaction of different welfare programmes (Guillemard, Rein 1993) and adds a "systems model" to explain variations in the rate of early retirees (Berglind 1994, Hetzler 1994a). The different parts of the public social subsidy system may be seen as communicating vessels (Berglind 1994). When the opportunities to be on sick-leave for a long period are reduced the number of early retirements increases, and if the opportunity to become a disability pensioner is reduced compensation from the unemployment fund and – as has been revealed to be valid concerning several other parts of the social insurance system (Salonen 1997) – social assistance escalates. When the welfare state is contracting, universal rights are replaced by more selective supports (Sunesson et al. 1998). Public support for the universal basic welfare state programmes is however broad in Sweden and even increased during the crisis in the 1990s (Svallfors 1997), which counteracts radical rollbacks. Universal entitlements are known to be difficult to retract once instituted (Stephens 1996).

Policy procedures within the labour market and social policy fields could be seen to stress prevention as well as accommodation forces as regards a

reduction of work ability (Olofsson, Petersson 1994). Prevention policies support employment and follow a work-for-all strategy, while accommodation policies facilitate an early exit from working life. Prevention forces when a disability pension might be considered are legislation concerning employment security and rehabilitation. The employer has no legal right to dismiss an employee referring to ill-health, but is responsible for rehabilitation efforts aiming at continuous employment. If it is impossible for the individual to go back to his/her former job, a transfer to less demanding work might be a solution. Other possibilities to keep the individual within the workforce are reduced working hours or sheltered jobs. Accommodation policies enable the individual to leave the labour market prematurely by means of a full-time or part-time disability pension. The partial disability pension may be seen as a prevention policy measure that utilises a work ability as low as 25% today.

The push and pull dimensions behind a disability pension may be experienced by the individual as forces coercing him/her to leave the labour market prematurely (push) or forces increasing the desirability of an early exit (pull). These individual experiences could be combined with the prevention and accommodation social policy regimes, as shown in Figure 7.

		Dominant forces behind the disability pension, as experienced by the individual	
		Push	*Pull*
Social policy regime	*Prevention*	A	C
	Accommodation	B	D

Figure 7. Social policies and push and pull factors in disability pension.

The grouping in Figure 7 makes it possible to identify four outcomes for an individual suffering from long-term sickness or permanent handicap:

– In case A the individual is experiencing mainly push factors, but rehabilitation efforts are successful and lead to regained work ability and hopefully, in line with the ambition of the individual, continuous employment.

– In case B the experienced push factors are combined with accommodation policies, leading to a disability pension although the individual is not eager to leave the labour market.

– Case C means that the individual finds a disability pension attractive but that prevention activities lead to a regained work ability that makes an early exit by means of a disability pension impossible.

– In case D the attractiveness of an early exit from the individual's point of view and accommodation policies lead to a disability pension, a decision that is in accordance with the wishes of the individual.

The work-for-all strategy in the Swedish welfare policy favours prevention strategies, i.e. cases A and C, but for the individual cases A and D are the desired outcomes, while cases B and C are opposed to the wish of the individual. In reality the cases illustrated in Figure 7 are probably rather rare and mixed cases the most frequent state of things. The situation might be described as a conflict between two different civil rights within a developed welfare system (Wesser 1998). The individual has a right to return to his/her job after a sick-leave, but likewise has a right to be supported when health conditions prevent gainful work.

The disability pension could thus be considered by some as a social right, but could as well be experienced by others as a tool used to sort out

impaired individuals from a work society demanding too much from persons with reduced work ability. From the individual's point of view a disability pension might be something desirable, but it is not certain that the person who applies for the benefit receives it. But on the other hand, when it is estimated that an individual on sick-leave will not regain work ability, a disability pension might be imposed against the wish of the individual. The decision to be granted a disability pension might thus presumably affect the future quality of life of retirees in different ways. Rehabilitation efforts and decisions concerning disability pensions have to find the optimal point of balance in order to combine work-for-all ambitions on the structural level with welfare procedures favourable for the individual.

1.2.8. Disability pension and quality of life

Studies of QL among individuals suffering from different ailments are abundant. The aims are most often to compare those with a certain kind of diagnosis with some control group, or patients before and after a specified treatment. Research concerning QL among patients with musculoskeletal diagnoses is abundant. It tends mainly to concentrate on health-related QL and thus in most cases reports low QL among the different patient groups (e.g. Beaton et al. 1996, Wolfe, Hawley 1997, Schlenk et al. 1998).

But research concerning QL among individuals who receive a disability pension due to reduced work ability caused by ill-health or work injury is sparse. In Sweden two studies from the 1970s and early 1980s described the effects of a disability pension as experienced by the individual; the Tierp project (Klareskog et al. 1977) and the Degerfors study (Svenman, Larsson

1984). In the study from Tierp several ERPs reported an improved subjective health status and increased physical and social activity levels. But some ERPs reacted with a depressed state of mind, feelings of inferiority and social isolation after the retirement decision. The ERPs in the Degerfors study pointed out the positive effects of a disability pension with economic security and improved health status, even if several ERPs reported decreased self-confidence.

A couple of studies focusing on level-of-living components among ERPs have been performed in Sweden. Critics of the growth of the disability pensioning program in Sweden during the 1970s argued, according to Hedström (1987), that a disability pension meant a more vulnerable economic situation for the individual, with an increased risk of social isolation and passivity. Hedström wanted to find out whether a disability pension really entailed negative consequences for the individual. He compared results from the level-of-living studies in 1968 and 1974, and concluded that a disability pension to most individuals did not cause reductions regarding disposable income, leisure-time activities, social relations or political participation.

A study concerning health status and level of living among ERPs aged 20–44 years was performed in 1988 (Socialstyrelsen 1992). In these ages psychiatric diagnoses are the main reason behind the disability pension. These young ERPs were found to be disadvantaged not only concerning health status but also in educational level, social relations, political participation and leisure-time activities outside the dwelling place.

Welfare consequences of the Swedish disability service system were analysed in a study in the early 1990s (Hass, Jonsson 1994). The study group included individuals aged 5–85 years, but ERPs were not distinguished as a subgroup. The Swedish disability service system was found to provide a disposable income over the subsistence minimum, but welfare losses compared to the general population were found concerning people with strongly reduced working capacity and mobility disabilities. The need for a better social life was evident among the disabled.

Interviews among older Swedish workers (>55 years), who after a long-term sickness (>60 days) were granted a disability pension during the period 1990–1993 were analysed by Hetzler (1997). Three tendencies concerning individual experiences emerged: (1) ERPs considered their disability pension as a result of a situation where no other possibility was available, (2) they were glad to get away from work, and (3) extensive rehabilitation efforts had been taken to regain function capacity.

The increased rate of ERPs in Sweden during the 1980s was not an effect of decreasing health status within the population (Staaf et al. 1995). On the contrary, health status improved in the population during the period 1975–89, especially among older workers and individuals recently granted an old-age pension (Diderichsen 1992). The health status among ERPs is thus of great interest. An early retirement granted due to health problems might affect the subjective health status of the individual favourably, as was pointed out in the Tierp and Degerfors projects mentioned above (Klareskog et al. 1977, Svenman, Larsson 1984). The perceived improvement in health status accompanying a disability pension might be an effect of reduced strain and job demands (Ekerdt et al. 1983). But negative statements

concerning mental health in terms of self-confidence and depression have been frequent sequels to a disability pension (Klareskog et al. 1977, Svenman, Larsson 1984, Salokangas, Joukamaa 1991). The urge to feel you are needed might affect mental health negatively when the contacts with working life are broken. In a study concerning the relations of work and retirement to health and well-being (Herzog et al. 1991) it was proposed that persons engaged in work to a degree of their personal preference report higher levels of physical and psychological well-being.

Patterns of adjustment to early retirement due to downsizing as an effect of redundancy have been analysed. The main reason behind the disability pension is not ill-health, even if those suffering from different ailments might be put forward as candidates for retirement in the first place. In a German study (Freter et al. 1988), where workers over 58 years of age were offered a voluntary "pre-retirement", the conclusions were that the early retirement was often followed by an improvement in subjective health status, but also that many individuals had a negative feeling of not being needed. Voluntary part-time work was proposed as a solution. The importance of whether the retirement was voluntary or perceived as compulsory has been stressed as regards future satisfaction with life (McGoldrick 1989). In a voluntary early retirement scheme in Britain the matching of employment intentions of the individual at the point of decision was strongly related to future QL (Maule et al. 1996). In Sweden Isaksson (1997) found three stable patterns of adjustment to early retirement due to downsizing. One group had a positive adaptation to the early retirement, which was considered as a transition to old age. Another group found new possibilities to continue to work. The third group, which showed signs of

poor adjustment to retirement, was apparently negatively affected by a forced choice of the early retirement.

Early retirement due to a more or less voluntary decision to quit a job has been studied (Eriksson 1991), revealing feelings among blue-collar workers of having been "forced" to leave a bad work environment in order to avoid health problems. Among white-collar workers co-operation problems with superiors and dissatisfaction with how work was organised were reported as reasons to quit. Evidently the urge to live a satisfactory life did not include keeping an unpleasant job among the quitters.

Studies concerning QL among ERPs are rather old and mainly focus on the level-of-living dimensions that might be considered as means to achieve a good QL. The beneficial effects of a disability pension have been stressed, even if some retirees were subjected to a negative development. Studies on early exit due to downsizing or voluntary withdrawal may yield information about consequences of importance for the QL of an individual leaving the place of work prematurely. The importance of early retirement as a voluntary choice of the individual has been stressed.

2. AIMS OF THE STUDY

The general aim of this study was to gain knowledge about the quality of life (QL) among early retirees (ERPs) granted a disability pension due to musculoskeletal disorders.

Specific focuses have been set on:

- evaluating immigration and socio-economy as predictors of early retirement due to musculoskeletal disorders
- estimating the relationship between ill-health and QL among ERPs
- studying the subjective health status, health care utilisation and medication among ERPs
- establishing the association between psychosomatic – and neurotic – symptoms and demographic and socio-economic factors as well as diagnoses, self-image and QL among ERPs
- evaluating QL among ERPs according to demographic and socio-economic factors
- establishing domains of importance for QL among ERPs reporting improving or declining QL since retirement
- establishing the relative importance of different explanatory variables concerning QL among ERPs.

3. MATERIALS AND METHODS

3.1. Study group

This is an epidemiological study concerning the quality of life in a defined population. The study group constitutes all individuals aged 25 to 59 years granted a full-time disability pension due to musculoskeletal disorders during the period 1986–1990 in Kristianstad Municipality. Kristianstad is a municipality with approximately 70,000 inhabitants, situated in the south of Sweden. Diagnoses included were all diseases of the musculoskeletal system and connective tissues found in chapter 13 and injuries within the musculoskeletal system in chapter 17 in the ninth revision of the International Classification of Diseases (ICD-9).

In the autumn 1991 RFV identified 722 records covering the period 1986 to 1990 in Kristianstad Municipality from their register of diagnoses of ERPs. This list was scrutinised and individuals who appeared twice were found as well as individuals who were granted their full-time disability pension before 1986 or after 1990, individuals who were registered for other diagnoses than musculoskeletal disorders, individuals living outside Kristianstad Municipality when retired and individuals who had returned to work and did not have a full-time disability pension any more. ERPs who had died, emigrants, and those who were to have their old-age pension in 1992 were also excluded from the study group, which in January 1992 comprised 453 individuals. The documents at the local social insurance office were checked for these 453 individuals to validate the information.

To establish the accuracy of ERPs included in the records from RFV, 15 individuals fulfilling the inclusion criteria, three individuals a year, were identified at the local social insurance office by identifying cases from the records of the local board of social insurance. All 15 were found in the list of data from RFV. The identification of the study group may thus be considered as reliable.

The age-limit (25–59 years) was chosen to exclude individuals without experience of gainful work and those close to regular old-age pension. The ERPs were grouped into five categories according to the one or two diagnoses registered by RFV as the main reason for the disability pension (Table 1). Differences between the distributions of diagnoses among men and women were small and not significant.

The diagnoses within Group A include individuals suffering from rheumatoid arthritis and other chronic rheumatic inflammatory disorders of the joints and spine. Group B includes, in addition to individuals with back pain, those troubled by pain in neck and shoulders. Individuals belonging to group C were troubled by general pain disorders of non-inflammatory origin. Fibromyalgia was not an established diagnosis in 1986–1990. But those individuals within group C who today might have been diagnosed as fibromyalgia patients are presumably to be found within this group of diagnoses. The diagnoses belonging to group D include arthrosis and other non-inflammatory joint pains or diseases within bone or cartilage tissue. Individuals within group E were injured in different ways, leading to fractures, distorsions or crushed tissues.

Table 1. Diagnoses in connection with disability pension (%)

	MEN (n=121[a])	WOMEN (n=252[b])
GROUP OF DIAGNOSES		
Musculoskeletal system: [c]		
– solely	**71.9**	**79.8**
A only	3.3	5.9
B only	30.6	28.2
C only	13.2	23.0
D only	12.4	16.3
E only	4.1	1.2
Two of A–E	8.3	5.2
– combined with psychiatric disorder	**12.4**	**10.7**
– combined with other diagnosis	**15.7**	**9.5**
	100.0	**100.0**

[a] One man returned the questionnaire anonymously

[b] Two women returned the questionnaire anonymously

[c] **Diagnoses according to ICD-9:**

A: Chronic arthritis and other inflammatory rheumatic disorders, diagnoses number 710–712, 714, 720, 725

B: Back pain (including pain in neck and shoulders), diagnoses number 721–724

C: Fibromyalgia and other general pain disorders (non-inflammatory conditions), diagnoses number 726–729

D: Other non-inflammatory conditions (local and regional), diagnoses number 713, 715–719, 730–739

E: Injuries, diagnoses number 805–848, 880–897, 905, 922–924, 926–929

Among the ERPs 55% of the men and 48% of the women were granted compensation due to an approved work injury.

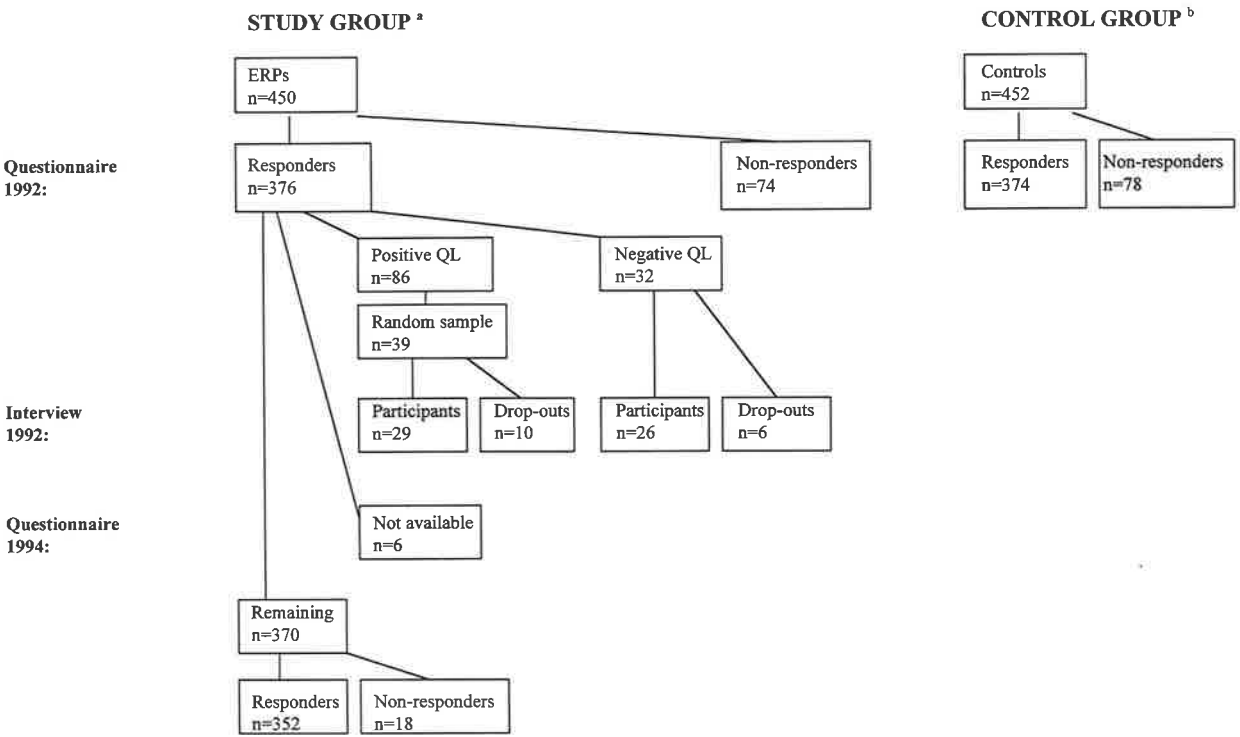
A control group, individually matched for age and gender, was picked from the population index of Kristianstad Municipality by identifying an individual listed next to the disability pensioner.

3.2. Data collection

The data collection was performed in three steps as illustrated in Figure 8. One questionnaire was distributed in January 1992 to the study group and the control group, and after two reminders 83.6% of the ERPs and 82.7% of the controls had returned the questionnaires. During spring 1992 interviews were performed with two groups of ERPs according to their answers to the questionnaires – one group (n=29) with positive and progressing QL and one group (n=26) with negative and declining QL. A second questionnaire was distributed in January 1994 to the ERPs that answered the first one. This time 95.1% of the ERPs responded. The distributions by age and gender among ERPs and controls are shown in Table 2.

Data concerning applications for work injuries and whether the initiative to apply for a disability pension was taken by the retiree or a civil servant were collected from the local social insurance office.

The study was approved by the Committee on Ethics at the Faculty of Medicine, Lund University (LU 289–91 and LU 327–93). The Swedish Data Inspection Board approved of the registration of data to make analyses by computer possible (Dnr 4258–91).



[a] The number of questionnaires sent to ERPs was 453, but persons who had gone back to work or died were excluded. The ERP group thus comprised 450 persons.
[b] The number of questionnaires sent to controls was 453, but one person had died. The control group thus comprised 452 persons.

Figure 8. Data collection

Table 2. Age in 1992 and gender of the study group and responders in the questionnaires 1992 and 1994.

	Study group		**Responders 1992**		**Responders**		**Responders 1994**	
			ERPs		**Controls**		**ERPs**[c]	
Age (years)	Men	Women	Men [b]	Women	Men	Women	Men	Women
25–44 [a]	5	28	5	23	3	25	5	21
45–49	12	32	9	25	4	29	8	24
50–54	23	56	19	49	19	48	17	47
55–59	43	89	41	73	33	76	38	68
60–64	59	103	47	84	49	88	43	81
Total	142	308	121	254	108	266	111	241

[a] The youngest ERP was 30 years old in 1992.

[b] One man responded anonymously without giving his age.

[c] Age in 1992 even among responders 1994.

The questionnaires in 1992 included approximately 40 questions covering

for ERPs and controls

- global QL in different time perspectives: present QL (PQL), life-span QL (LQL), expected future QL (FQL)
- questions from the Göteborg Quality of Life Instrument (Tibblin et al. 1990a) concerning satisfaction with home and family, dwelling, economy, work and leisure-time
- social network: quantity and quality
- change in economic situation
- health problems: ailments/handicaps, symptoms, drug consumption, health care utilisation, change in health care utilisation, subjective health status and change in subjective health status
- height and weight, smoking habits, change in smoking habits
- (previous) work, working hours, unemployment experiences
- positive self-image
- immigration, civil status, housing conditions today and five years ago, educational level

for ERPs only

- change in QL since retirement (CQL)
- change in lonesomeness since retirement
- view of disability pension as the best solution when granted and today
- ADL status, change in ADL status since retirement

The interviews in 1992 were semi-structured and entered more deeply into the QL of the ERPs, health problems and rehabilitation efforts, factors of importance for the retirement decision and consequences of this decision.

The questionnaires to the ERPs in 1994 covered principally the same areas as in 1992;

- global QL: PQL, LQL, FQL and CQL
- satisfaction with home and family, dwelling, economy, work and leisure-time
- social network: quantity and quality
- health problems: ailments/handicaps, symptoms, drug consumption, health care utilisation, subjective health status and change in subjective health status
- smoking habits, change in smoking habits
- ADL status
- positive self-image
- civil status, housing conditions today
- pension status today, pension status of spouse, view of disability pension as the best solution today
- consequences due to the disability pension: altogether and concerning health status, sense of well-being, economy, contacts with other people and meaningful activities.

The exact formulation of questions included in the study as well as the quality of data are presented in the papers.

3.3. Non-responders

Differences in participation rates among ERPs compared to controls were small and not significant for men as well as women. The participation rate among male controls was somewhat lower among the younger age groups,

but otherwise there were no significant differences according to age between responders and non-responders. To control whether the non-responders differed from responders among ERPs or controls concerning immigration, (previous) work, self-rated health, PQL and – among ERPs – CQL a non-response analysis was made. A random sample of the non-responders (n=15 among ERPs, n=17 among controls) answered the questions when contacted by telephone. The differences found were small and not significant when tested by Fisher's exact test for the comparison of two proportions.

3.4. Materials and methods: Papers I–VI

Paper I focused on immigration, civil status, dwelling conditions, educational level, (previous) work, work satisfaction and unemployment experience from the 1992 questionnaires comparing ERPs and controls. The significance of differences between proportions was tested by χ^2-test, but when the groups were small or the expected frequencies low, Fisher's exact test for the comparison of two proportions was used.

Paper II utilised data concerning diagnosis of the ERPs from RFV, and from the 1992 questionnaires (ERPs and controls): immigration, drug consumption, subjective health status, change in subjective health status, health care utilisation, change in health care utilisation and self-reported further ailments/handicaps. Methods used were the same as in paper I.

Paper III was based on a grouping of 19 symptoms among ERPs and controls in the 1992 questionnaires. A principal component analysis was

made and a psychosomatic index was identified including five symptoms (PSI) and a neurotic index including seven symptoms (NI). In this paper the diagnoses of the ERPs given by RFV were used as well as information from the 1992 questionnaires (ERPs and controls): immigration, (previous) work, positive self-image, PQL and LQL. Differences between groups concerning PSI and NI were analysed by Z-test, but for variables measured on a nominal or ordinal scale or, if the groups were small, χ^2-test and Fisher's exact test were used as in papers I and II. PSI and NI were dichotomised into low (0–2) and high (≥3) to permit multivariate analyses by means of a logistic regression model with PSI and NI respectively as the dependent variable.

Paper IV included data from the interviews in 1992 among ERPs and accounted for the answers given concerning QL. Data from the 1992 questionnaires were used (ERPs and controls): immigration, civil status, (previous) work, PQL, LQL, FQL and – among ERPs – CQL as well as the diagnoses given by RFV. Answers concerning QL in the interviews were categorised into different domains presented in paper IV. The relations between the different aspects of global QL were established by means of Spearman's rank correlation coefficient. The different measures of global QL were dichotomised as well as the dependent variables used to calculate odds ratios. When a category included no individuals, and therefore the odds ratios were impossible to calculate, Fisher's exact test was used to test the significance of differences.

Paper V was included in the report of the proceedings from a scientific conference. Explanatory variables concerning PQL were established for all variables – except the other variables concerning global QL – available for

both ERPs and controls from the questionnaires in 1992, and for ERPs the additional variables: ADL status, change in ADL status since retirement, change in lonesomeness since retirement, attitude towards the disability pension, application for work injury, diagnoses given by RFV, year of retirement and who initiated the disability pension. A logistic regression analysis was carried out with PQL as the dependent variable. Explanatory variables included were those with a significant ($p<0.05$) bivariate relation to PQL established by χ^2-test. All variables but unemployment were dichotomised in the logistic regression. Variables on an ordinal level or higher were dichotomised by using the median value to split the variable. In order to avoid too large internal drop-out the variables were analysed in groups.

Paper VI established explanatory variables of CQL among ERPs and used the same variables from the 1992 questionnaire concerning the ERPs as accounted for above (paper V). All variables – except the other variables concerning global QL – included in the 1994 questionnaire, as well as variables of relevance from the 1992 questionnaire, were used as explanatory variables concerning CQL 1994. Methods used were the same as in paper V, but now with CQL as the dependent variable. To establish the relations between subjective health status and PQL, and the relations between change in subjective health status and CQL, Spearman's rank correlation coefficient was used.

4. RESULTS AND COMMENTS

4.1. Who is granted a disability pension due to musculoskeletal disorders? (Paper I)

4.1.1. Socio-economy

Indicators of socio-economic status in this study were (previous) work and educational level. Among the ERPs 74% had been blue-collar workers – a high rate compared to the rate (39%) among controls ($p<0.001$). Only 12% among the ERPs had completed education above elementary school, while 38% among controls had completed additional schooling ($p<0.001$).

Comments

Studies on occupational status among all newly granted disability pensioners in Sweden called attention to the increased risk of a disability pension among various groups of blue-collar workers (RFV 1988, Höög, Stattin 1994). This means that individuals previously employed in occupations with arduous work environments, increasing the risk of musculoskeletal problems, are over-represented among newly granted disability pensioners. The high rate of blue-collar workers in this study was thus expected. Exposure to unfavourable work conditions among the ERPs was confirmed by the fact that 55% of the men and 48% of the women were granted a compensation for work injury.

The comparatively low educational level among the ERPs is in line with results concerning educational level among individuals on long-term

sickness (Marklund 1995). As Marklund pointed out, a high educational level often leads to less physically demanding jobs and may furthermore facilitate a transfer to a job more suitable for the individual, in the event of ill-health.

4.1.2. Immigration

Immigrants from the Nordic countries, western and north-eastern Europe, the USA, Canada, Australia and New Zealand were defined as "kindred", and immigrants from southern Europe and the rest of the world were defined as "remote". The classification was based on a distribution according to cultural origin (RFV 1990).

The rate of immigrants was significantly higher among the ERPs compared to controls (19% and 5% respectively, $p<0.001$). The majority of the immigrants granted a disability pension came from remote cultures, mainly the Mediterranean countries, and arrived in Sweden during the 1960s. The immigrant ERPs were younger than the Swedish ERPs ($p<0.001$). Although approximately 72% of the female Swedish and immigrant ERPs were married/cohabited, the domestic situation differed between the groups ($p<0.05$), mainly due to the high level of single mothers among the immigrants.

The educational level of the immigrants was higher than among Swedes among ERPs as well as controls ($p<0.05$). ERP immigrants with schooling beyond elementary level had been occupied in blue-collar work more often than the Swedish ERPs with additional schooling ($p<0.05$). The Swedish

ERPs reported higher satisfaction with their previous work than immigrant ERPs ($p<0.05$). The ERP immigrants from remote cultures worked full-time more often but with less satisfaction than other ERP immigrants ($p<0.05$).

Comments

Most immigrants on the labour market in Sweden have been found to be blue-collar workers employed in jobs with high morbidity levels (Socialstyrelsen 1991). Moreover immigrants, especially from the south of Europe, suffer more often than Swedes from musculoskeletal diseases and are granted a disability pension (Socialstyrelsen 1994 and 1997a). It was thus reasonable to find a high rate of immigrants, above all from the south of Europe, among the ERPs in this study.

Immigrants are often referred to strenuous work in Sweden, and show lower flexibility on the labour market in finding new work (Ekberg 1991). This could obviously wear out the immigrant worker faster, resulting in a comparatively early disability pension compared to Swedes. This might explain the high rate of young individuals among immigrant ERPs in this study. The high educational level among ERP immigrants combined with the high rate of blue-collar work compared to Swedish ERPs may obviously entail lower work satisfaction among immigrants, as seen in this study.

In a study from the 1980s on the occupational attainment of immigrant women in Sweden (Grossman 1984), foreign women were found to work full-time to a higher degree than Swedish women, and immigrant women from southern Europe were more economically motivated for work. This might reflect an instrumental attitude towards earning a living among female immigrants, especially from remote cultures. This view was

supported by the high rate of full-time work among female immigrant ERPs from remote compared to kindred cultures in this study. This instrumental attitude may lead to higher vulnerability regarding a disability pension.

4.2. The importance of ill-health (Papers II, III and VI)

4.2.1. Definitions

Ill-health is usually seen as including the concepts "illness", "disease" and "sickness", with illness referring to the subjective feeling of ill-health, disease being ill-health as observed by the medical professionals, and sickness being ill-health registered at the societal level (cf. Sundquist 1994, Löfvander 1997). In this study information about self-reported health status (subjective health) was elicited in the questionnaires and interviews. This information thus focused on the illness-dimension. Answers to questions about established ailments or handicaps, other than the musculoskeletal disorder, may be seen as indicators of the disease-dimension. The diagnoses made by the physicians consulted and registered as the legal grounds for the disability pension also belong to the disease-dimension. The sickness-dimension is the basis for the study group: all ERPs are registered as individuals with reduced work ability due to health problems, often with long periods of sick-leave before the retirement decision.

4.2.2. Self-reported health (Papers II and VI)

Self-reported health status was found to be a significant determinant of QL among the ERPs in this study. In Paper VI the rate of variance in PQL (present QL) explained by the association with subjective health status was shown to be in the range 30–42%. Estimated changes in health status were strongly connected to CQL (change in QL), with 26–42% of the variance in CQL explained by the association. This means that the self-rated health status of the ERPs is of great importance when studying their QL.

Subjective health status and health care utilisation were the subject of Paper II, which revealed ERPs to be less content than controls with their health condition ($p<0.001$). Only 21% of the ERPs considered their health status as good or fairly good, compared with 72% among controls, while 40% among ERPs described their health status as poor or fairly poor compared with 8% among controls. Young ERPs (<55 years) reported their health status as worse than the old ones ($p<0.05$ among men, $p<0.001$ among women).

ERPs considered their health status to have changed since retirement more often than controls comparing their health status over a five-year period ($p<0.01$ for men and $p<0.001$ for women). Male ERPs reported a deterioration in health status to a higher degree than male controls (47% compared to 31%), and female ERPs an improvement more often than female controls (24% versus 12%). Among the female ERPs a change in health status varied with age ($p<0.01$). An improvement was more often the case among the old ones (>54 years of age) compared with the young (31% versus 13%), while the young female ERPs more often than the old ones considered their health status to have deteriorated (52% compared to 33%).

Ailments other than musculoskeletal disorders were as frequent among male controls as among male ERPs. Among women, however, ERPs reported a higher prevalence of additional ailments than controls (38% and 25% respectively, $p<0.01$), mainly because 18% among the female ERPs reported cardiovascular diseases.

Comments

The low subjective health status found among ERPs is a rather natural result, considering the health problems leading to reduced work ability and early retirement. The health problems were regarded as chronic when the decision regarding the disability pension was taken. However, life as a disability pensioner entailed an improvement in health status for some ERPs, mainly female ERPs close to regular old-age pension. But several ERPs in this study, especially males and young females, reported a decrease in health status since retirement. To what degree the disability pension decision might have contributed to this is unclear. The decreasing health status may be an effect of a progressing course of the disease, and the health status might have been even worse if the individuals had not been granted a disability pension.

The connection between age and subjective health status among ERPs may be an effect of different approaches when a disability pension is considered. A young person might have to qualify for a disability pension with a more serious state of health resistant to rehabilitation efforts than an old person. An individual close to old-age pension may more often be granted a disability pension instead of being subject to extensive rehabilitation efforts trying to restore work ability.

A disability pension may, as stated previously, influence the subjective health status in a positive direction (Klareskog et al. 1977, Svenman, Larsson 1984), perhaps as an effect of reduced job demands (Ekerdt et al. 1983). This may be the case among several old female ERPs in this study whose subjective health status improved after the retirement decision. Palmore (1984), however, reported a decrease in health status among early retired men, which is in line with the findings in this study. The reported negative effects of an early retirement concerning mental health (Klareskog et al. 1977, Svenman, Larsson 1984, Salokangas, Joukamaa 1991) may be part of the explanation behind the decrease in subjective health status among male and young female ERPs.

4.2.3. **Immigration and health** (Paper II)

Self-reported health status was lower among immigrants than Swedes among female ERPs ($p<0.001$). Among the female ERPs no immigrant considered her health status as good or fairly good compared with 24% among the non-immigrants. An improvement in health status was more often the case among non-immigrant (28%) than among immigrant (2%) female ERPs ($p<0.001$). The low rate of immigrants among male controls ($n=6$) prevented meaningful comparisons among men.

Comments

It has been pointed out that many of the relationships that were found between immigration and health status might be an effect of limited economic resources among immigrants, since low socio-economic standard tends to result in poorer health (Socialstyrelsen 1994). But immigration per

se might have a negative effect on health status, since the buffering effects of the cultural identity are lost among immigrants. They may experience cultural barriers, a new language, a lack of social support, social devaluation and cultural bereavement (Löfvander 1997). In a study concerning migration and mental health, immigrants from Southern Europe or from non-European non-westernised countries were shown to run a greater risk of self-reported long-standing psychiatric illness than Swedes (Bayard-Burfield 1999). An increased vulnerability to psychological distress and physical disease has been noted among immigrants, and conclusions that ethnicity is a variable with a powerful influence on health status have been drawn (Sundquist 1994).

The low subjective health status among immigrants in this study was thus in line with what might be expected. The decreasing health status among female immigrant ERPs may be an effect of their exposed position within the Swedish society (Daun et al. 1994).

4.2.4. **Health care utilisation and drug consumption** (Paper II)

Female ERPs had consulted a physician during the previous six months more often (74%) than female controls (54%, $p<0.001$). Visits to alternative caregivers were also more frequent among female ERPs (10%) than female controls (3%, $p<0.01$). ERPs visited a physiotherapist more often than controls (16% compared to 4% among men, $p<0.01$ and 25% compared to 12% among women, $p<0.001$).

The ERPs considered their health care utilisation to have changed since retirement more often than controls over a five-year period ($p<0.001$). A reduction in health care utilisation was reported by 30% of the male ERPs and 37% of the female ERPs compared with 6% and 11% respectively among controls. Among old female ERPs 18% estimated their health care utilisation to have increased compared with 31% among young female ERPs ($p<0.05$) and 36% among old female controls ($p<0.001$).

Drug consumption was higher among ERPs than controls ($p<0.001$). Among ERPs only 19% of the men and 9% of the women did *not* use drugs regularly, compared with 50% and 55% respectively among controls. Analgesics predominated among ERPs, but among female ERPs sleeping pills also were frequently used.

Comments

The high level of health care utilisation reported among ERPs in this study was in line with findings that older people with disabilities visited a physician more often than the general population (Hass, Jonsson 1994), and that individuals reporting chronic pain consulted a physician, a physiotherapist and/or alternative care more often than individuals without persistent pain (Andersson 1998).

The reduction of health care utilisation since the retirement reported by the ERPs may be an effect of reduced demands for sick-listing. The disability pension implies that the health problems are seen as chronic, and the individual is no longer obliged to "prove" his/her ill-health. This was confirmed by a Danish study (Højstedt et al. 1999) where chronic pain patients who were granted a disability pension significantly reduced their

health care utilisation compared to the period preceding the decision. Furthermore, the chronic pain patients who applied for but were not granted a full-time disability pension maintained their level of health care utilisation after the decision.

The high rate of drug consumption, above all analgesics, among the ERPs was a rather natural finding in a group suffering from musculoskeletal disorders, with 93% reporting pain experiences during the last month (Paper III). Studies concerning use of painkillers among individuals suffering from pain disorders confirm the findings in this study (Andersson 1998).

4.2.5. **Psychosomatic and neurotic symptoms** (Paper III)

In Paper III one psychosomatic index (PSI) and one neurotic index (NI) were identified from a list of 19 symptoms in the questionnaires. The psychosomatic symptoms included somatic as well as psychological aspects, e.g. headache and abdominal pain, while NI included symptoms like dysphoria, irritability and difficulties in relaxing. A logistic regression analysis revealed PSI to be connected with LQL among ERPs and controls ($p<0.05$), and NI with PQL among ERPs ($p<0.05$).

The ERPs reported higher PSI than controls ($p<0.001$), and women scored higher than men on PSI among ERPs as well as controls ($p<0.05$ and $p<0.01$). The NI-scores were higher among ERPs compared to controls ($p<0.01$ among men, $p<0.001$ among women), and among ERPs women had higher NI than men ($p<0.01$).

Among ERPs the immigrants reported more psychosomatic symptoms than non-immigrants ($p<0.05$), as did the young ERPs compared to the old ones ($p<0.05$). There were no significant connections between PSI or NI and socio-economic status when (previous) work was used as an indicator. Individuals with a low NI level were found to have a more positive self-image than those with several neurotic symptoms ($p<0.05$), and among ERPs a positive self-image more often characterised retirees with few psychosomatic symptoms than those with several such symptoms ($p<0.05$).

ERPs in the different groups of diagnoses identified in connection with the disability pension (Table 1, section 3.1) showed no significant differences in PSI-values. Regarding NI, however, the female ERPs belonging to Group A (chronic arthritis and other inflammatory rheumatic disorders) were characterised by lower NI ($p<0.05$) and in Group C (fibromyalgia and other general pain disorders) by higher NI ($p<0.05$) than the remaining female ERPs. It was evident that female ERPs in Group A had NI (and PSI) values at the same level as their matched controls, whereas the female ERPs in Group C had higher PSI ($p<0.05$) and NI ($p<0.001$) than their matched controls.

Comments

The connection between PSI and LQL means that PSI was related to the life-history of the individual. This is in accordance with the view of somatisation as an effect of continuous psychological strain (Ursin 1995). NI was related to PQL among ERPs and thus reflecting their present state of life.

Considering the reduced health status among the ERPs it was expected that ERPs would report more symptoms – PSI as well as NI – than controls. Women are known to experience more symptoms than men (Tibblin et al. 1990b, Socialstyrelsen 1997b), and thus it was not surprising that the women included in this study had higher PSI and NI than the men. The high PSI-levels among the young and the immigrant ERPs are parallel to the findings concerning subjective health reported above.

The low NI among female ERPs suffering from chronic arthritis and other inflammatory rheumatic disorders (Group A, Table 1, section 3.1) is in line with the absence of reports concerning psychiatric symptoms among patients suffering from rheumatoid arthritis (Kelley et al. 1993, McCarty, Koopman 1993, Klippel, Dieppe 1994). The rate of inflammatory disorders among patients suffering from musculoskeletal disorders has been reported to be in the interval 10–20% (Carson 1972, Bjelle et al. 1981, Dieppe et al. 1985, Linaker et al. 1999). The low prevalence (6%) of inflammatory rheumatic disorders among the ERPs in this study could be seen as an effect of the comparatively stable psyche found in this group. This mental stability might help the individual to cope with the demands of working life in a way that makes it possible to avoid a full-time disability pension.

Although some of the symptoms included in PSI, such as general fatigue, headache and dizziness, are frequently reported among fibromyalgia patients (Olin 1999), ERPs in group C (fibromyalgia or other general pain disorders, Table 1, section 3.1) did not differ significantly from the remaining ERPs in PSI-level. But female ERPs in group C reported higher NI than the remaining ERPs. Fibromyalgia patients are often identified as suffering from psychic distress (Kelley et al. 1993, McCarty, Koopman

1993, Klippel, Dieppe 1994) even when compared to patients suffering from chronic arthritis (Schuessler, Konermann 1993, Ekselius et al. 1998). Sleeping disturbances (included in NI) are also frequent symptoms among fibromyalgia patients. The aetiology of fibromyalgia and other chronic pain disorders is not yet established (Olin 1999). It has been proposed that the development of fibromyalgia among women is due to numerous biological events occurring in response to long-term stress (Anderberg 1999). Research today is focusing on disturbances within the pain modulation of the central nervous system to explain the mechanisms behind chronic pain disorders (Lidbeck 1999). The question whether the psychic distress was part of the premorbid state of the individual or an effect of the illness must be left open in this study. Even if the fibromyalgia diagnosis today is established by international criteria and accepted by WHO (Olin 1999), fibromyalgia patients might find difficulties in proving their ill-health to themselves, to other people and even to health-care officials (Bennet 1993, Yunus, Masi 1993, Goldenberg 1994, Henriksson 1995). These diagnostic difficulties might enhance the psychic distress these patients experience. It is possible for fibromyalgia patients to reach a state where they can live a satisfactory life in spite of the pain (Gullacksen 1998), but they might need help to cope with the pain and to adjust to the new conditions of life.

4.3. Quality of life and disability pension (Papers IV, V and VI)

4.3.1. Quality of life among disability pensioners (Paper IV)

Global QL was investigated concerning present QL (PQL), life-span quality (LQL), expectations considering future QL (FQL) and, among ERPs,

change in QL since retirement (CQL). Most ERPs stated their PQL and LQL to be rather good or neither good nor bad. But the ERPs were less content than controls concerning PQL (OR=5.9) and LQL (OR=3.3), and they were more negative when estimating FQL (OR=2.9).

Gender differences in PQL, LQL and FQL were small and not significant for ERPs as well as controls. However CQL showed that the male ERPs more often than the female ERPs reported a deterioration in QL since retirement (OR=1.9). Differences according to age were found concerning PQL among female ERPs, among whom the young ones were more dissatisfied than the old ones (OR=2.3). Young ERPs, both men and women, were more discontented with their LQL than old ERPs (OR=2.6 among men, OR=3.6 among women). As regards FQL, the young compared to the old ERPs more often had negative expectations (OR=3.1 among men, OR=1.9 among women). Among controls the relation of FQL to age was the reverse, with the old ones more often reporting negative expectations ($p<0.05$ for men, OR=3.3 among women). The young female ERPs more often considered their CQL to have deteriorated than the old female ERPs (OR=2.5).

Socio-economic status in terms of kind of work was not related to any QL-aspect. Immigrants among ERPs were found to have lower PQL (OR=4.1 among men, OR=2.3 among women) and FQL (OR=4.4 among men, OR=3.4 among women) than the Swedish ERPs. The low rate of male immigrants among controls (n=6) did not permit meaningful calculations, but differences in PQL, LQL and FQL between immigrants and Swedes among female controls were small and not significant.

Comments

Research concerning global QL among disability pensioners is lacking hitherto. Most ERPs in this study estimated their PQL to be rather good or neither good nor bad. Although the ERPs were thus fairly content with their PQL, they were less content than the controls. This means the ERPs were facing more hardships, reducing their QL, compared to controls. The ERPs were less content with their LQL than controls, and young ERPs were more dissatisfied than the old ones concerning LQL as well as PQL. This might be seen as an effect of frustrated aspirations concerning a healthy working life, especially obvious among young retirees. When FQL was estimated, the ERPs were more negative than controls, and the young ERPs apparently had given up hope about the future more often than the old ERPs.

According to the gap-theoretical approach presented earlier (Figure 3, section 1.1.3), individuals who experience reductions in what might be seen as prerequisites for a good life might react either by trying to restore the domain affected or by reducing the expectations concerning the domain. The fairly good PQL among most ERPs might be seen as an effect of such an adjustment. When chronic ill-health makes it impossible to continue in paid work, and the conditions of life are thus affected permanently, most individuals find an acceptable point of balance in their lives within one to six years. It might be easier for an older individual to reduce his/her expectations, while a younger person might find it harder to accept a permanent reduction of realities, as Naess (1989) suggested. This could be part of the explanation behind differences found according to age concerning global QL among ERPs in this study. Another contribution to the differences might be a more serious state of health among young ERPs compared to the old ERPs.

The good PQL found among controls was comparable to findings in the general population in the USA (Campbell et al. 1976), Germany (Glatzer 1987), Sweden (Fugl-Meyer et al. 1991), Great Britain (Bowling 1995b) and Denmark (Ventegodt 1995). Obviously most people in a general population are satisfied with their lives. Variations found between citizens in different nations concerning their subjective well-being and overall life satisfaction have been interpreted as an effect of cultural differences in the way of answering such questions (Inglehart, Rabier 1986).

The immigrant ERPs were less content with their PQL, FQL and – among females – CQL compared to Swedish ERPs. The hardships concerning immigrant ERPs found and discussed above (section 4.2.3) – such as loss of buffering effects of the cultural identity and increased vulnerability to psychological distress and ill-health – obviously may affect global QL as well.

4.3.2. **Contents of quality of life** (Paper IV)

Domains of importance for QL among ERPs with positive and progressing QL (n=29) or with negative and declining QL (n=26) were established by means of interviews. When defining the concept of QL both groups regarded relations with family and relatives as the most important domain followed by health conditions. Thereafter the groups diverged: ERPs with positive and progressing QL mentioned the relations with other than family/relatives, while ERPs with negative and declining QL stressed economy as important. Other domains mentioned by several ERPs were:

work, activities other than work, being a contented person, respecting oneself, global matters such as peace or pollution.

The most important factor available contributing to a good QL among ERPs in both groups was family relations. Health conditions were seen as contributing to the good QL among ERPs in the group with positive QL, while ERPs in the group with negative QL mentioned their bad health status as well as economic hardship as factors of importance for their poor QL. Eight individuals in the group with positive QL said they missed nothing needed for a good QL, while three individuals in the group with negative QL did not consider themselves to have access to any domain of importance for a good QL.

Comments

When asked about factors of importance for a good QL, the ERPs with positive and progressing QL as well as ERPs with negative and declining QL mentioned relationships with family and relatives in the first place followed by health conditions. These domains correspond to findings in studies among adults (Bowling 1995b, Farquhar 1995b, Myers, Diener 1996). The connection between QL, family relations and health status is presumably a result of a complex interaction between biological, psychological and social processes during a person's lifetime (Nordbeck, Hagberg 1993).

ERPs in the group with negative QL considered economic hardship as one important factor reducing their QL. Contentment with one's financial situation has been found to be of importance for a good QL (Bowling 1995b). Although the disability service system in Sweden was found to

provide disabled people with an economic level above subsistence minimum (Hass, Jonsson 1994), some individuals might find their daily living restricted due to economic problems. In terms of gap-theory, apparently some ERPs find their economic situation below an acceptable level, thus experiencing a gap between realities and expectations incompatible with a good QL.

4.3.3. Determinants of (change in) quality of life (Papers V and VI)

In paper V significant ($p<0.05$) determinants of poor PQL 1992, defined as *not* "very" or "rather good" PQL, were established among ERPs and controls by means of logistic regression. The analyses revealed poor self-rated health, discontentment with leisure-time activities and home and family as determinants of poor PQL in both groups. Insufficient social network, seen as "no close contacts outside home" and "more lonesome since retirement" among ERPs and "loneliness" among controls, was also related to poor PQL.

Among ERPs ADL-functioning, level of NI and self-image as well as satisfaction with one's economy were found to be correlated to PQL. Having been working or having been out of work less than one year during the five years preceding the retirement decision (both compared to long-term unemployment), feeling the retirement decision as not OK when taken and being an immigrant were all furthermore found to be determinants of poor PQL among ERPs.

Paper VI focused on CQL. A logistic regression analyses revealed significant ($p<0.05$) determinants of improvement in CQL 1992 (since retirement) to be: unchanged or improved subjective health and ADL-status since retirement, satisfaction with social network in terms of close contacts outside home, and satisfaction with leisure-time activities and no difficulties in passing time.

Improvement in CQL 1992 was furthermore connected to: female gender, age >54 years, considering the disability pension to be the best solution today and having been out of work one year or more during the five years preceding the early retirement compared to no unemployment experience.

In 1994 improvements in CQL (since 1992) were found to be significantly ($p<0.05$) connected to: female gender, no application for work injury compared to approved application, unchanged or improved subjective health status since 1992, the view that health consequences due to retirement were positive and that the overall consequences of the retirement were positive.

Comments

Obviously PQL among ERPs was connected to several factors important for PQL among controls as well. Our study revealed self-rated health status, contentment with leisure-time activities and social network to be important determinants of PQL in both groups. These domains have been established as important correlates to QL in other studies (Naess 1987, Nordenfelt 1991a, Fugl-Meyer et al. 1991, Bowling 1995b, Ventegodt 1995). Among ERPs a positive self-image and satisfaction with economic situation were found to be important for PQL. Self-image has been mentioned as one of the main dimensions of QL (Naess 1987) as well as contentment with one's

economy as mentioned above (section 4.4). Ventegodt (1995) stated that the amount of material possessions is not what correlates with QL, but the individual's rating of his/her financial and material situation. The very rich individual might be as contented or discontented as the poor individual, but what matters is the gap between their realities and expectations according to gap-theory.

Immigration was confirmed to influence PQL among ERPs, when the relative importance of different variables as determinants of PQL was established. Level of neurotic symptoms and ADL-status were furthermore important correlates to PQL among ERPs. These dimensions could be seen as parts of their health problems and thus influencing PQL, but in this analysis they were crucial determinants even when controlled for health status.

The ERPs who experienced a long period (≥ 1 year) of unemployment during the five years preceding the disability pension reported better PQL and an improved CQL since retirement compared to the ERPs without unemployment experience. Harmful effects of unemployment regarding self-esteem, self-confidence and psychic stress have been demonstrated in several studies (Oswald 1995, Glorieux 1999). Life as unemployed and as an ERP is similar regarding the orientation of the individual towards meaningful activities other than paid work. Individuals suffering from musculoskeletal disorders, and with personal experiences of both unemployment and disability pension, obviously prefer life as a retiree.

ERPs who reported a negative attitude towards the disability pension decision more often considered their PQL as poor compared to those who

felt that the retirement decision was OK. And those ERPs who thought the disability pension was the best solution today were characterised by improving CQL since retirement to a higher degree than the remaining ERPs. The ERPs with a negative attitude towards the disability pension might be identified as individuals belonging to the group where the combination of accommodation policies and the feeling of being pushed out from the labour market (Case B, Figure 7, section 1.2.7) result in a life situation hard to accept for the individual. As mentioned previously, the importance of early retirement as a voluntary choice of the individual has been stressed concerning downsizing (Maule et al. 1996, Isaksson 1997), and engagement in work to a degree the individual finds suitable was proposed as a way to enhance the physical and psychological well-being of people (Herzog et al. 1991). A disability pension against the wish of the individual obviously increases the risk of poor QL. The ambition of the civil servants at the local social insurance offices ought to be to co-operate with the client, in order to reach a decision in true mutual understanding. The importance of increased sensitive and responsive procedures at the local insurance office were emphasised (cf. Wesser 1998).

The importance of changes in subjective health status was evident concerning CQL. Within health-related quality-of-life research QL is often defined in terms of health status, as mentioned previously (section 1.1.5). But this view has been considered too narrow, leaving out dimensions that might be crucial for QL. In this study the subjective health status was regarded as but one aspect of QL. However, since the direction of influence is not obvious, but presumably mutual, QL might be seen both as an independent and dependent variable in relation to health status. Ill-health and poor QL might be seen as joined in a vicious circle. The view of a

circular relationship between health and QL, however, is not universally embraced. Ventegodt (1996) for one considered poor QL as the main cause of the majority of diseases.

A functioning social network and opportunities to engage in leisure-time activities were important among the ERPs in order to enjoy an improvement in CQL since retirement. Among old-age retirees social and leisure activities were stressed as important for QL (Bernard, Phillipson 1995). Hedström (1987) concluded that a disability pension did not affect the social network or opportunities for leisure-time activities for most ERPs. But for some ERPs the chronic ill-health and the retirement may evidently entail a reduction of the social network and problems in finding a meaningful activity compensating for the loss of gainful work. The QL of these ERPs changed for the worse, and they may need support in order to improve their QL.

Number of years as a retiree showed no significant correlation to any QL-measure in this study. The strong connection between PQL and age found among female ERPs at the bivariate level (paper IV, section 4.3) became weaker and non-significant in the multivariate analysis in paper V, dealing with both men and women. However old ERPs considered their CQL to have improved since retirement more often than the young ERPs. As discussed previously (section 4.3), it might be harder for the young ERPs to accept life out of reach of the labour market.

The female ERP more often than the male ERP considered her CQL to have improved since retirement (CQL-92) and as a retiree (CQL-94). A study of gender roles among unemployed Swedes in the early 1990s (Nordenmark

1995) showed that women aged 51–60 years felt domestic work to be the basis for their self-esteem, and their identity was partly related to the profession held by their husbands. Younger women estimated their own job as more important. The identity of men was to a higher extent determined by their own job. The amount of domestic work carried out by men is known to decrease with increasing age (Nermo 1994). The traditional gender roles thus characterised Swedes aged 51–60 years in the early 1990s. For early retired as well as unemployed men this could mean that engagement in housework was considered as an inferior substitute for a paid job (Glorieux 1999). But older women granted a disability pension may appreciate the retirement as a possibility to get rid of the double responsibility of paid work and primary domestic care-giver. Since the majority of the ERPs in this study belong to the generation characterised by traditional gender roles, the differences between the male and female ERPs concerning CQL might be explained as a result of differences in their opportunities to find a meaningful substitute for the paid job they were forced to leave. The female ERPs might value domestic duties as a meaningful activity more than male ERPs do.

Gender and subjective health were the only variables related to change in QL since retirement, CQL 92, as well as at the follow-up, CQL 94. Two additional years as an ERP obviously did not influence most of the variables related to CQL 1992. The finding that the number of years since retirement had no bivariate connection to either PQL or CQL in 1992 and 1994 is in line with this result. This study thus indicates that it was the retirement itself (and the conditions leading to the retirement decision) that were of crucial importance for the change in CQL.

4.4. Comments on methods

A relatively homogeneous group of ERPs was secured, as individuals granted a disability pension due to musculoskeletal disorders were chosen as the study group. They constituted approximately 50% of all newly granted disability pensions during the time period chosen, 1986–1990. The female rate among the ERPs in this study, 67.6%, was somewhat higher than the female rate (56.8–61.5%, Appendix, Table II) among all newly granted disability pensions due to musculoskeletal disorders in Sweden during the time-period chosen. However the female rate was higher in the age group 25–59 years than among older individuals granted a disability pension in Sweden, which means that the rate of female ERPs in this study was reasonable.

The basis for this study was the one or two diagnoses registered by RFV as the main reason for the disability pension. The validity of the choice of diagnoses at RFV is however not absolute. If more than two diagnoses are available, the main reason for the disability pension may be lost. The doubtfulness behind the diagnosis chosen by the physician has furthermore been called attention to. The diagnoses chosen might differ from one physician to another, since the same actual problem might be formulated in different ways as a result of the interaction between the patient and the physician (Härdelin 1991). The difficulties and disagreement concerning the diagnosis of fibromyalgia, and degree of disability resulting from the condition, were obvious in the early 1990s (Bruusgaard et al. 1993, White et al. 1995). The medical labelling of a condition, leading to acceptance as legal grounds for benefits, might furthermore lead to "epidemic proportions" regarding the diagnosis chosen (Wolfe et al. 1995).

The diagnoses registered at RFV may thus suffer from inexactness, but nevertheless constitute a fruitful starting point for research. Individuals granted a disability pension noted as originating from musculoskeletal disorders may be considered a well-defined study group, even if some diagnoses might be uncertain. In order to secure the accuracy of the diagnoses registered at RFV, the study group was scrutinised by comparing the official diagnoses at RFV with the documents at the local social insurance office.

The ERP group in this study comprised individuals with full-time disability pension as well as full-time temporary disability pensions. A temporary disability pension is in most cases granted for a period of 1–3 years, and entails re-considerations, while a disability pension is granted more permanently. The relative uncertainty a temporary disability pension involves may influence the QL of the individual. Of the full-time temporary disability pensions that were changed in Sweden during 1989, however, 94.6% were transformed into full-time disability pensions (SOU 1996:113). Only approximately 2% of all temporary disability pensions were suspended during the same period. It has been estimated that approximately half of the few decisions concerning suspension/decrease of disability pensions (including temporary disability pensions) were initiated by the pensioner in question (Löfström 1995). Most individuals granted a temporary disability pension in the late 1980s might realistically have anticipated a transformation into a disability pension, but some might have suffered from the temporary character of the decision, while others might appreciate the possibility to go back to work included in the temporary decision.

A temporary disability pension was granted 29.0% of the ERPs (mainly the young ones) in this study. In order to examine the influence of the pension status on the global QL 1992, the connection was established among the old and the young ERPs by means of Fisher's exact test for the comparison of two proportions (Table 3).

Table 3. Global QL and disability pension status among young (<55 years) and old (≥55 years) ERPs.

		Young ERPs			**Old ERPs**		
		Pension status			**Pension status**		
		DP	**TDP**	p-value	**DP**	**TDP**	p-value
PQL	Good	19	23		111	11	
	Not good	31	55	0.340	100	17	0.229
LQL	Good	26	40		167	23	
	Not good	21	37	0.853	42	6	1.000
CQL	Improving	14	15		88	6	
	Not improving	36	64	0.281	127	23	**0.042**
FQL expectations	Positive	21	30		106	13	
	Not positive	27	48	0.580	102	15	0.691

Abbreviations: DP = Disability pension, TDP = Temporary disability pension, PQL = Present quality of life, LQL = Life-span quality of life, CQL = Change in quality of life since the retirement, FQL = Future quality of life.
Definition: Positive FQL expectations: individuals who expect their FQL to be better and those who considered their PQL to be good in combination with expectations that their FQL would be unchanged.

Obviously there was no strong relation between disability pension status and global QL in any of the age-groups. Only one significant connection was found: among old ERPs the individuals with a disability pension considered their QL to have changed for the better since retirement more often than those with a temporary disability pension. No other QL-measure was related to disability pension status, so the inclusion of temporary disability pensioners within the study group may be seen as reasonable. The study group thus contains individuals who were granted full-time (temporary) disability pension due to musculoskeletal disorders and thereby lost their contact with the labour market prematurely.

In order to estimate the significance of the findings among the ERPs, a control group, individually matched for age and gender, was randomly selected from the population of Kristianstad Municipality. The results concerning the ERPs could thereby be compared to the state among "ordinary people" in the municipality, and factors of importance among the ERPs become more obvious.

Some of the questions used in this study were of a retrospective character. Answers to questions about past times are known to suffer from memory defects and the drive towards consistency (Wärneryd 1990). This means the situation of today may influence the answers when the individual tries to reconstruct and evaluate previous conditions. This is the risk you have to take if it is not possible to carry out a longitudinal study. However, one of these retrospective questions, the one concerning former work satisfaction among ERPs in the questionnaires in 1992, was validated through external assessment of notes recorded during the pre-retirement investigations at the local insurance office. A high level of concordance was found (Paper I), and

no indications of glorifying or devaluating former circumstances at work. Re-testing, in the form of statements concerning work satisfaction in the interviews in 1992, confirmed the results of the questionnaires.

The questions concerning educational level and kind of work have previously been used in level-of-living studies, and found to be valid (Thorslund, Wärneryd 1985). The questions concerning global quality of life were constructed and tested at the Lund Gerontological Centre, as mentioned previously, and several of the domain-specific quality of life questions were from the Göteborg Quality of Life Instrument, which has been validated (Tibblin et al. 1990a).

The results obtained by this study must be understood within the contextual frame of the study. It was performed in 1992 and 1994 and its concern was the quality of life in a group of individuals granted a full-time disability pension due to musculoskeletal disorders during the last period of the "golden age" of the welfare state in Sweden, 1986 to 1990. The results may be seen as valid for ERPs in other Swedish municipalities comparable to Kristianstad during the period chosen, when it was comparatively easy to become a disability pensioner. Factors of importance for a good QL in this study are not necessarily the prerequisites for good QL among other groups/categories of disability pensioners. The results may, however, be used as a reference point for studies of other diagnoses, other parts of the country, and other time periods, as for instance during the less generous policy regimes emerging in Sweden after 1990.

5. GENERAL DISCUSSION AND CONCLUSIONS

A disability pension is one of the measures granted within the framework of the welfare state. The concern of welfare policies may be seen as including both changing the distribution of material resources within the population and enhancing the quality of life (QL) among vulnerable citizens (cf. Figure 1, section 1.1.1). The focus taken in this study was the latter one. The general aim of this study was to gain knowledge about QL among disability pensioners suffering from musculoskeletal disorders (ERPs).

Most ERPs in this study considered their QL to be fairly good, but the QL among ERPs was lower than among controls. The high rate of ERPs who were content with their QL might be seen as one effect of generous welfare policies enabling individuals with chronic health problems to leave the labour market. But the comparatively high rate of ERPs who were not content with their QL was noteworthy. Variables found to be of relevance for the QL among ERPs will suggest measures to be undertaken in order to facilitate a better QL-development.

The results in this study disclosed several factors of importance for QL among ERPs. In addition to factors common to most people, such as health condition, social network and leisure-time activities, QL among ERPs was connected to immigration, age, gender, self-image, economy, experience of unemployment and attitude towards the disability pension decision.

Subjective health status and QL were found to be closely linked, but not exchangeable. The question of cause and effect is presumably that there is a mutual influence. Decreasing subjective health leads to distress and

declining QL, which in turn has a negative effect on the subjective health status (cf. Farmer, Ferraro 1997). This vicious circle of decline between QL and subjective health may need professional support to be broken. Medical treatment and rehabilitation efforts should thus continue among ERPs. This study indicated that individuals suffering from chronic pain conditions such as fibromyalgia need extended support. The most beneficial effects of the disability pension concerning health status among individuals with musculoskeletal disorders were found among non-immigrant women close to regular old-age pension.

The need for co-operation between the civil servants at the local social insurance office and the client during the investigation preceding a disability pension decision, aiming at a mutual agreement, was emphasised by the results of this study (cf. Wesser 1998). If the individual thought the disability pension was the wrong decision, and thus felt push factors to have dominated (case B, Figure 7, section 1.2.7), the QL of the ERP was affected negatively. Research concerning early retirement due to downsizing found engagement in work to a degree suitable for the individual and an early retirement as a voluntary choice of the individual to be important for the well-being of the individual (Herzog et al. 1991, Maule et al. 1996, Isaksson 1997). Obviously this applies to a disability pension as well.

Most disability pensions are granted individuals close to old-age pension. In this study 65% of the ERPs were ≥55 years of age. The work-for-all ambition in Sweden means that it is regarded as important to strengthen the ambition even of the old individual to go back to work after a period of sick-leave. Rehabilitation efforts and favourable work conditions are thus of crucial importance, as well as a change of negative expectations within

society concerning older employees. In a review of research on the older workforce it was presumed that "older workers stay on the job while maintaining good health and a good quality of life, i.e. not just through economic restrictions which force people to work for a prolonged period of time" (Kihlbom 1999, p. 295). As mentioned above (section 1.2), the possibility to be granted a temporary disability pension will disappear in January 2001 in Sweden. This measure may result in a decrease in the number of, above all, young individuals leaving gainful work permanently. If work rehabilitation efforts are not enhanced, however, the change in legislation will just lead to an increased level of individuals on long-term sick-listing.

The new Swedish rules concerning "resting" disability pension (Socialdepartementet 1999) are an important measure not only to stimulate a return to gainful work among ERPs, but to permit meaningful activities including increasing possibilities of social contacts. Considering the importance of leisure-time activities and social network for the QL among ERPs in this study, this new possibility could be seen as a step in a desirable direction, provided that the new act is applied securing the voluntary choice of the ERP. The ERP who is discontented with the disability pension decision now has the opportunity to try to find a job, test it for a period of time, and then within one year decide whether the disability pension is the optimal alternative or not. With low unemployment rates this becomes a more realistic possibility.

The majority of ERPs, however, will presumably not put their work ability to a test on the labour market, but will look upon the disability pension as a desirable step enabling them to leave work when health conditions are

failing (Hetzler 1997). It is important for disability pensioners to compensate for the activities and social contacts lost when leaving the workplace, in order to have a good QL. According to the results of this study, some ERPs do not succeed in finding any meaningful activity or social network leading to a good QL as ERPs. In spite of the fact that there are a great number of associations connected to groups of patients suffering from specific ailments, several disability pensioners refrain from joining them. Perhaps some disability pensioners need a kind of association not emphasising the illness/disease but still not demanding too much as regards physical ability, an association welcoming all disability pensioners.

The poor QL among immigrant ERPs could be seen as a manifestation of the problematic situation of large groups of immigrants in Sweden. Among newly arrived immigrants psychiatric problems are numerous, while ill-health connected to work conditions is more frequent among labour force immigrants (Ekblad 2000). The need for actions against the unfavourable conditions among immigrants is not restricted to ERPs, but must be seen as a problem encompassing most immigrants in Sweden. Measures to be taken at the national level have been suggested (SOU 1999:137).

Palmore et al. (1984) pointed out two major theories about the effects of old-age retirement on the retirees: crisis theory and continuing theory. According to crisis theory the retirement has negative effects on the individual, since the occupational identity is lost, affecting the self-respect and life satisfaction of the retiree. The continuity theory, on the other hand, postulates that among workers whose occupational identity is not the central role, retirement becomes desirable and permits the continuation of other roles (or development of new roles) important for the self-esteem and status

of the individual. Both theories are applicable to the results in this study. The crisis theory might explain why male ERPs more often than female ERPs considered their QL to have decreased since retirement. As mentioned previously (section 4.3.3), it has been suggested that the identity of men to a high degree is determined by their job, and that older women consider domestic work and the profession held by their husband to be the basis for their self-esteem, while younger women more often emphasise their own profession (Nordenmark 1995). The differences between young and old female ERPs concerning QL indicate that the old female ERPs look upon the disability pension as a natural step preceding the old-age retirement, an opportunity to focus on the important role as a housewife (continuity theory).

The "disability paradox" has been highlighted by several researchers (cf. Albrecht, Davlieger 1999). Many individuals with severe disabilities find their QL good or even excellent, despite an undesirable daily existence as judged by external observers. According to the gap-theoretical approach the expectations of an individual tend to increase when the conditions of life improve, but decrease when the conditions are reduced permanently. If this view was taken as the guiding star of social policy, efforts to improve material conditions could be seen as unnecessary. The urge to intervene might decrease since "those who cannot have what they want must want what they can get" as Halvorsen (1994, p. 50) stated, and individuals not favoured by fortune will reach a state of contentment in due time. Researchers emphasised the ethical dilemma inherent in the possibility to make individuals satisfied despite poor external conditions (Tornstam 1987, Söder 1991, Wolfensberger 1994). It is thus urgent to continue research concerning the distribution of material resources within society. These

resources are important means by which the citizens may try to influence their lives. But welfare policy should focus on the QL-dimension as well, which is why studies like the present one ought to be more frequent. Such investigations might disclose where to take actions against conditions reducing the QL of the citizens.

6. SAMMANFATTNING PÅ SVENSKA

Livskvalitet hos förtidspensionärer med problem i rörelseorganen

I Sverige har andelen förtidspensionärer ökat under lång tid och uppgick år 1998 till 7.6% av befolkningen i arbetsför ålder (16–64 år). Den vanligaste orsaken till att en individ förtidspensioneras är reducerad arbetsförmåga till följd av problem i rörelseorganen. Kunskaperna om förtidspensionärers livskvalitet är bristfälliga. Syftet med denna studie var att studera livskvaliteten hos individer som förtidspensionerats till följd av sjukdom eller skada i rörelseorganen. Livskvalitet sågs i denna studie som ett subjektivt begrepp och definierades som individens värdering av sitt livsinnehåll. Utöver den aktuella livskvaliteten studerades livstids-kvaliteten, individens syn på sin framtida livskvalitet och upplevd förändring i livskvalitet sedan förtidspensioneringen.

Undersökningsgruppen bestod av alla i åldern 25–59 år i Kristianstad kommun, vilka under åren 1986–90 beviljats hel förtidspension/sjukbidrag p g a problem i rörelseorganen, 450 personer. Individerna i undersökningsgruppen tillhörde alltså de sista som förtidspensionerats innan den svenska välfärden skars ner på olika sätt under 1990-talet. Bland dessa förtidspensionärer och en lika stor kontrollgrupp, med samma könsfördelning och ålder, genomfördes en enkätundersökning i januari 1992. Deltagandet uppgick till 83%. Utifrån svaren i enkäterna valdes en grupp förtidspensionärer med god/förbättrad (29 st) respektive dålig/försämrad (26 st) livskvalitet ut till en intervjustudie, som genomfördes våren 1992. En andra enkätundersökning genomfördes i januari 1994 bland de förtidspensionärer som besvarat den första enkäten. Denna gång svarade 95%.

I artikel I påvisades att socioekonomi (LO-arbete, låg utbildningsnivå) och invandring var viktiga faktorer bakom en förtidspension. De flesta förtidspensionerade invandrare i denna studie kom från Sydeuropa. Bland förtidspensionärerna visade det sig att invandrarna var yngre än svenskarna, oftare hade någon form av påbyggnadsutbildning men trots det oftare hade haft något LO-arbete före pensioneringen. Invandrarna uppgav sig ha trivts sämre än svenskarna med sina tidigare arbeten. Invandrarnas utsatta position i det svenska samhället visade sig alltså i denna studie som en tidig utslagning från arbetsmarknaden genom förtidspensionering.

En viktig aspekt av förtidspensionärernas livskvalitet var det subjektiva hälsotillståndet, som fokuserades i artiklarna II och III. Förtidspensionärerna bedömde sitt hälsotillstånd som sämre än kontrollerna, och unga förtidspensionärer (under 55 år) ansåg sig ha sämre hälsa än äldre. Bland förtidspensionärerna hade hälsotillståndet hos männen ofta försämrats sedan pensioneringen, medan kvinnorna oftare rapporterade en förbättring. Bland kvinnliga förtidspensionärer hade invandrare sämre subjektiv hälsa än svenskar. Förtidspensionärer uppgav sig lida av fler psykosomatiska och neurotiska symtom än kontroller. Bland förtidspensionärer hade invandrare fler psykosomatiska symtom än svenskar, liksom unga jämfört med äldre. En hög andel psykosomatiska symtom var ofta kopplat till låg livstidskvalitet, medan neurotiska symtom oftare hängde samman med låg aktuell livskvalitet. Bland kvinnliga förtidspensionärer hade de med generaliserade smärttillstånd (mjukdelsreumatism inkluderande fibromyalgier) större antal neurotiska symtom än övriga, medan de med kronisk artrit (t ex ledgångsreumatism) och andra inflammatoriska reumatiska sjukdomar hade lägre antal neurotiska symtom än övriga kvinnliga förtidspensionärer.

Resultaten i denna studie pekar på vikten av fortsatt medicinsk behandling och rehabilitering bland förtidspensionärer med problem i rörelseorganen och behovet av ökat stöd till individer med fibromyalgier och andra generella smärttillstånd. Av förtidspensionärerna var det äldre svenska kvinnor som rapporterade de mest gynnsamma effekterna vad gäller det upplevda hälsotillståndet.

Förtidspensionärernas livskvalitet belystes i artiklarna IV, V och VI. Även om så många som 45% av förtidspensionärerna ansåg sin aktuella livskvalitet vara ganska/mycket bra, var detta en förhållandevis låg andel jämfört med kontrollgruppen, där 83% valde motsvarande beskrivningar av sin aktuella livskvalitet. Också vad gäller livstids-kvalitet och bedömning av framtida livskvalitet valde förtidspensionärerna oftare än kontrollerna negativa beskrivningar. Bland förtidspensionärerna hade invandrare sämre aktuell livskvalitet än svenskar. Manliga förtidspensionärer upplevde oftare än kvinnliga en försämrad livskvalitet sedan pensioneringen. Yngre förtidspensionärer var oftare mer missnöjda med sin livskvalitet än äldre.

Förhållanden som visade starkt samband med en god livskvalitet hos förtidspensionärerna var, förutom ett gott subjektivt hälsotillstånd, att vara nöjd med sitt sociala nätverk, sin fritidssysselsättning och sin ekonomiska situation samt att ha en positiv självbild. De förtidspensionärer, som upplevt en period av arbetslöshet under de fem år som föregick beslutet om pension, var ofta nöjda med sin livskvalitet, liksom de som ansåg att beslutet om förtidspension varit den bästa lösningen för deras egen del.

Intervjuerna visade att förtidspensionärerna ansåg att familjerelationer och det egna hälsotillståndet var de faktorer, som hade störst inflytande på deras livskvalitet. Ekonomiska problem betonades också av förtidspensionärer med dålig/försämrad livskvalitet.

Denna studie visade att en förtidspensionering – och de förhållanden som lett fram till detta beslut – påverkade individens livskvalitet. Visserligen kan den höga andelen förtidspensionärer som var nöjda med sin livskvalitet ses som en effekt av en generös välfärdspolitik, som gjort det möjligt för en individ med kroniska hälsoproblem att lämna arbetslivet. Men den relativt höga andel förtidspensionärer med dålig livskvalitet i denna studie är anmärkningsvärd. De faktorer som visat sig ha samband med förtids-pensionärernas livskvalitet kan ge uppslag till var insatser skulle kunna leda till en förbättrad livssituation även för dessa individer. Utöver behovet av fortsatta medicinska insatser, framför allt bland unga och invandrare, ger denna studie anledning att betona, att beslutet om en förtidspensionering bör tas i samförstånd mellan klient och handläggare vid Försäkringskassan. Vidare bör förtidspensionärer uppmuntras att delta i någon aktivitet, som kan ersätta förlusten av yrkesarbetet både vad gäller meningsfull sysselsättning och socialt nätverk.

7. ACKNOWLEDGEMENTS

My sincere gratitude to all who helped me during the work with this thesis. My special thanks to:

Professor Göran Ejlertsson, my supervisor at Kristianstad University, who invited me to join this research project. Right from the beginning he stimulated my curiosity, and during the years to come he encouraged me to continue, always with a sensitive ear for my views. His everlasting, wise and inspiring support made it possible for me to carry on and finally present this doctoral dissertation.

Docent Jan Petersson, my supervisor since I started my studies at the School of Social Work at Lund University, who never shared my hesitation as to whether my thesis was about social work or social medicine. His engagement included a beneficial combination of knowledge, patience and concern.

Permanent and more temporary members of the research team, who all contributed to the realisation of this study: Ido Leden, my creative co-author, always ready to share his extensive knowledge concerning musculoskeletal disorders. Bertil Nordbeck, who introduced me into quality-of-life research, and who has been a constant source of inspiration as co-author. Members of the staff at the local social insurance office, who joined the research team when necessary: Berndt Lamberger, Pär Sundgren, Erna Arhag and Britt-Marie Björklund.

All disability pensioners who made this study possible by participating, and Agneta Berg who supported with skilfully managed interviews.

Work-mates and fellow-students generating stimulating discussions at seminars in Lund and within the research group "Man–Health–Society" in Kristianstad. My former colleague Tove Brokhøj who was an enthusiastic discussion partner and my co-author during the initial stages of this work.

Ann-Christine Gullacksen who was the opponent at my final seminar (and once in the very beginning), as well as Marie Söderfeldt, Gillis Samuelsson and Bengt Scherstén who all contributed scientific criticism.

All those who helped with their knowledge within fields insufficiently familiar to me: the late Göran Linde who helped me with the factor analysis, Alan Crozier who transformed my English into readable language, the staff at the Library of Kristianstad University who helped me to find imperfectly identified references and who handled the urgency in my orders for different books during the last months with great competence and kindness.

All who made it possible for me to carry out these investigations through financial support: The National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, The Kristianstad County Council and Kristianstad University.

Finally, my family who contributed by reminding me of the need for an existence in balance between work and other dimensions important for good quality of life: my husband Tony, my children Sonja and Patrik, my grandchildren Anthony and Paul, and my father Tore.

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APPENDICES

Tables

Table I. Disability pensions in Sweden 1980–1998.

(Calculations from Statistics Sweden and the National Social Insurance Board)

	Population aged 16–64			Number			Rate (%)		
Year	Total	Men	Women	Total	Men	Women	Total	Men	Women
Jan 80	5 192 679 [a]	2 625 878 [a]	2 566 801 [a]	293 334	149 526	143 808	5.6	5.7	5.6
Jan 81	5 216 891 [a]	2 637 927 [a]	2 578 964 [a]	302 749	153 632	149 117	5.8	5.8	5.8
Jan 82	5 236 003 [a]	2 646 971 [a]	2 589 032 [a]	308 850	156 034	152 816	5.9	5.9	5.9
Jan 83	5 254 310 [a]	2 655 977 [a]	2 598 333 [a]	314 109	158 053	156 056	6.0	6.0	6.0
Jan 84	5 272 665 [a]	2 665 584 [a]	2 607 081 [a]	320 869	161 077	159 792	6.1	6.0	6.1
Dec 84	5 288 586	2 674 174	2 614 412	316 899	158 252	158 647	6.0	5.9	6.1
Dec 85	5 282 115	2 672 583	2 609 532	322 666	159 999	162 667	6.1	6.0	6.2
Dec 86	5 286 574	2 675 741	2 610 833	328 488	160 766	167 722	6.2	6.0	6.4
Dec 87	5 307 159	2 687 698	2 619 461	336 504	162 430	174 074	6.3	6.0	6.6
Dec 88	5 334 841	2 703 564	2 631 295	346 931	165 106	181 825	6.5	6.1	6.9
Dec 89	5 374 922	2 726 879	2 648 043	355 316	166 716	188 600	6.6	6.1	7.1
Dec 90	5 409 597	2 745 551	2 664 046	361 354	167 312	194 042	6.7	6.1	7.3
Dec 91	5 433 682	2 758 220	2 675 462	366 927	168 567	198 360	6.8	6.1	7.4
Dec 92	5 452 194	2 768 107	2 684 087	383 153	175 233	207 920	7.0	6.3	7.7
Dec 93	5 476 560	2 780 994	2 695 566	413 793	188 934	224 859	7.6	6.8	8.3
Dec 94	5 512 611	2 799 126	2 713 485	421 979	191 616	230 363	7.7	6.8	8.5
Dec 95	5 526 210	2 806 057	2 720 153	408 576	185 413	223 163	7.4	6.6	8.2
Dec 96	5 539 981	2 813 498	2 726 483	407 584	183 711	223 873	7.4	6.5	8.2
Dec 97	5 551 381	2 819 500	2 731 881	422 916	188 750	234 166	7.6	6.7	8.6
Dec 98	5 569 404	2 828 579	2 740 825	421 624	186 672	234 952	7.6	6.6	8.6

[a] Population on 31 December the year before

Table II. Newly granted disability pensions in Sweden 1980–1998

(Statistics from the National Social Insurance Board)

	All diagnoses				Chapter 13				
Year	Total	Men	Women	(% Women)	Total	(% of all)	Men	Women	(% Women)
1980	45 289	24 054	21 235	46.9	16 046	35.4	7 600	8 446	52.6
1981	43 615	23 061	20 554	47.1	15 215	34.9	7 227	7 988	52.5
1982	42 286	22 158	20 128	47.6	13 884	32.8	6 508	7 376	53.1
1983	43 338	22 590	20 748	47.9	13 969	32.2	6 461	7 508	53.7
1984	46 792	24 330	22 462	48.0	14 908	31.9	6 683	8 225	55.2
1985	51 009	26 243	24 766	48.6	16 665	32.7	7 230	9 435	56.6
1986	50 106	24 818	25 288	50.5	18 603	37.1	8 035	10 568	56.8
1987	51 691	25 251	26 440	51.2	21 526	41.6	8 887	12 639	58.7
1988	54 135	26 245	27 890	51.5	24 462	45.2	9 930	14 532	59.4
1989	51 991	24 475	27 516	52.9	24 724	47.6	9 701	15 023	60.8
1990	50 493	23 643	26 850	53.2	24 887	49.3	9 588	15 299	61.5
1991	49 554	23 813	25 741	51.9	24 074	48.6	9 548	14 526	60.3
1992	58 382	28 282	30 100	51.6	29 620	50.7	12 169	17 551	59.3
1993	62 465	30 405	32 060	51.3	30 248	48.4	12 656	17 592	58.2
1994	48 531	23 417	25 114	51.7	22 493	46.3	9 301	13 192	58.6
1995	39 204	18 639	20 565	52.5	17 275	44.1	7 021	10 254	59.4
1996	39 245	18 304	20 941	53.4	16 984	43.3	6 635	10 349	60.9
1997	41 198	20 032	21 166	51.4	17 809	43.2	7 627	10 182	57.2
1998	34 487	15 909	18 578	53.9	12 836	37.2	4 860	7 976	62.1

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Immigration and Socio-economy as Predictors of Early Retirement Pensions

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Scand J Soc Med 1994, 3 (187–193).

The purpose of this study, performed in a Swedish municipality, was to obtain a view of early retirement pensioners, focusing on immigration and socio-economy as predictors of early retirement pensions.

A questionnaire was sent to 453 early retirement pensioners with disorders of the musculoskeletal system. A corresponding questionnaire was sent to a randomly selected, age- and sex-matched control group of the same size. The response rate was 83%.

The study concludes that immigration and low socio-economy are predictors of early retirement pension (ERP). The rate of immigrants was 19% among the ERPs compared to 5% among the controls. The early retired immigrants were comparatively young, and some of them were overqualified for their previous jobs.

Of the ERPs 74% were blue-collar workers compared to 39% of the controls. Neither work satisfaction nor unemployment was found to predict ERP.

Key words: Social welfare, retirement, early retirement, pensions, immigration, musculoskeletal diseases, job satisfaction, questionnaires, socio-economic factors, social insurance.

INTRODUCTION

The number of early retirement pensions has increased in Sweden and in other industrialized countries during the last few decades (1, 2). In Sweden in 1990, 6.7% of the population aged 16–64 years were early retirement pensioners. Of these 53% were women. This rate is high by international standards, which has been explained by the high female participation on the labour market in Sweden (1).

In Sweden diseases of the musculoskeletal system are the most common causes of early retirement pensions, having increased from 33% to 49% in the years 1985 to 1990. Data from an international study suggested the probable main reasons for the increasing number of early retirements to be: a rising unemployment rate, better pension benefits, and in some respects a possible increased overall morbidity of the population (1). Epidemiological studies in unselected populations have shown prevalence rates as high as around 50% for chronic pain problems, with the highest prevalence for neck-shoulder pain and low-back pain (3, 4).

Several studies have shown that low job satisfaction correlates with an increased risk of back pain (5–7). It has also been shown that blue-collar workers with heavy manual work are among the most important risk groups as regards early retirement pension (8, 9).

It has been suggested that immigrants have an increased risk of early retirement pension, with great differences between immigrants of different cultural origins (10–12). A higher proportion of long-term sick-leave has been reported among certain immigrant groups (13). However, to the best of our knowledge there is a lack of international publications concerning early retirement pensions among immigrants to the Scandinavian countries.

Although a health problem may be the main reason for an early retirement pension, a Swedish study concluded that 45% of the pensioners below 60 years of age still had a considerable capacity for work (14).

Early rehabilitation efforts in patients with musculoskeletal disorders are effective in reducing long-term illness. In a Swedish study, cooperation between the local social insurance office, the primary health

Table I. *Age and sex distribution (%) of the study groups and the responders*

	Study groups		Responders	
	ERPs	Controls	ERPs	Controls
Men	(*n*=142)	(*n*=143)	(*n*=122[b])	(*n*=108)
Age 25–44	3.5	3.5	4.1	2.8
45–54	24.6	25.2	23.1	21.3
55–64[a]	71.8	71.3	72.7	75.9
Women	(*n*=308)	(*n*=309)	(*n*=254)	(*n*=266)
Age 25–44	9.1	9.1	9.1	9.4
45–54	28.6	28.5	29.1	28.9
55–64[a]	62.3	62.5	61.8	61.7

[a] The age at the ERP was 25–59 years. The questionnaire was sent out 1–6 years after ERP.

[b] One man responded the questionnaire anonymously without giving his age.

care and specialists in the hospital managed to reduce long-term sick-leave for patients in primary health care (15). It is known that inactivity is often detrimental physically and mentally. Employment and human contacts in the workplace often have positive effects for the individual. In the long term early rehabilitation efforts would probably also lead to a reduction in the number of early retirements.

Thus, ways are needed to identify, at an early stage, factors that are predictive of early retirement pension.

The aim of the study was to obtain a view of early retirement pensioners, focusing on immigration and socio-economy among factors possibly predisposing for the decision about early retirement pension. Together with an analysis of the effects of early retirement on the individual, the intention of the total project is to generate a model to prognosticate for which groups of individuals early retirement will have positive or negative effects.

SUBJECTS AND METHODS

The study comprised 453 individuals aged 25–59 years. They all lived in Kristianstad municipality in southern Sweden with almost 70 000 inhabitants, and were granted a full-time early retirement pension (ERP) during the period 1986–1990 (the ERP group).

The ERP group was limited to those who received their early retirement pension due to disorders of the musculoskeletal system. They were defined by all diagnoses in chapter 13 (diseases of the musculoskeletal system and connective tissues), and diagnoses within the musculoskeletal system in chapter 17 (injuries and poisonings), in the ninth revision of the international classification of diseases (ICD-9). They constituted about 50% of all ERPs in the studied area during the study period.

The lower age limit, 25 years, was decided in order to exclude persons who had not had an opportunity to gain experiences from working life. The upper age limit, 59 years, was justified by the desire to exclude persons whose regular old-age pension was due in five years or less. In this way the number of early retirements caused by insufficient labour supply, including those hidden behind a medical diagnosis, was minimized. In Sweden, during the period 1972–1990, insufficient labour supply was a lawful reason for ERP in the ages 60–64 years, and was also one of the most common reason for ERP in this age group.

In January 1992, a questionnaire was sent to all ERPs in the study group. A corresponding questionnaire was sent to an individually age- and sex-matched control group of the same size, randomly selected from the population in Kristianstad municipality.

The questionnaire focused on demography, physical health, including medical attendance and drug use, mental health, quality of life, social network, (previous) employment, economy, personality and daily activities. The questionnaire was tested in a pilot study (*n*=20) and adjusted before use. This paper covers part of the data collected from the questionnaire.

Of the initially selected 453 individuals, the ERP group comprised 450 ERPs. One person had died and two persons had returned to part-time work. One individual in the control group had died, so the control group comprised 452 individuals.

After two written reminders, two and four weeks after the first survey, 83.6% of the ERP group, and 82.7% of the control group had responded. The age and sex distribution of the study groups and the responders is shown in Table I. The lower participation rate in the male control group is mainly due to a lower frequency of responders in the younger age groups.

A non-response analysis was made from a random sample of the non-responders. In a telephone interview a few essential questions from the questionnaire were asked, namely about (previous) employment, immigration, subjective state of health, current quality of life, and, for the ERPs, changes in quality of life since ERP. The sample consisted of four men and eleven women from the ERP group, and six men and eleven women from the control group. The differences between the responders and the non-responders were small and not significant regarding the five variables studied.

Definitions

Immigrants were defined as those coming as settlers into Sweden, or those whose parents were both immigrants. Immigrants were further defined according to their cultural origin, in agreement with a commonly used Swedish classification (13). Defined as "kindred" were immigrants from the Nordic countries, western Europe, USA, Canada, Australia, New Zealand, and from the northern East-European countries, i.e. former Soviet Union, Poland, the former Czechoslovakia, and the former East Germany. Immigrants from southern Europe and from the rest of the world were defined as "remote".

Statistical analyses

The significance of differences between proportions was tested by χ^2 test. When the groups were small or the ex-

Table II. *Educational level and housing conditions of ERPs compared to controls (%)*

	ERPs (n=376)	Controls (n=374)	p-value
Housing conditions			
Today:			<0.001
Flat	39.2	27.4	
Other[a]	60.8	72.6	
Five years ago:			<0.001
Flat	36.7	24.7	
Other[a]	63.3	75.3	
Educational level			<0.001
Elementary school	87.7	62.3	
Intermediate school	6.1	17.5	
High school	3.7	5.4	
University	2.4	14.8	

p-value: level of significance when testing the hypothesis that there is no difference between the distribution for ERPs and controls.

[a] A few individuals lived in a block of service flats, all the others in a self-contained house.

pected frequencies were low, Fisher's exact test for the comparison of two proportions was used.

The percentages in Tables II, III and V were calculated on smaller n-values than reported due to internal non-response for the separate questions (rating from one to a few individuals per question). As far as work, working hours and work satisfaction in Table V are concerned, the internal non-response is higher in the control groups, between 4% and 21%, due to the 10.2% ERPs and 12.2% housewives among the controls.

When comparing civil status among Swedes and immigrants in the ERP group, differences in age were eliminated by direct standardization, using the total ERP group as standard population.

Data analysis was carried out using a personal computer with the statistical and epidemiological software QUEST and Epi Info, Version 5.

The study has been approved by the Committee on Ethics at the Faculty of Medicine, University of Lund (LU 289–91).

RESULTS

The early retired pensioners (ERPs) had a low socio-economic status compared to controls as far as housing conditions and educational level were concerned (p <0.001, Table II). There were differences between ERPs and controls regarding kind of work (p <0.001, Table III). In the ERP group 74%, men and women, were blue-collar workers, compared to 39% among the controls.

No differences were found as regards working hours five years ago (controls) and prior to retirement

Table III. *Kind of work for ERPs and controls (%)*

	Men		Women	
	ERPs (n=122)	Controls (n=108)	ERPs (n=254)	Controls (n=266)
Blue-collar	74.4	38.2	73.5	39.8
White-collar:				
– university schooling	3.3	14.7	2.8	20.1
– lower education	3.3	12.7	4.8	9.4
Farmer	6.6	3.9	2.4	2.4
Entrepreneur	8.3	12.7	6.0	4.7
Housewife	–	–	3.6	12.2
Other[a]	4.1	17.6	6.8	11.4

The distributions of work differ between ERPs and controls among men as well as among women (p <0.001).

[a] The control group, as a random sample of the population, includes 10.2% ERPs. When these 10.2% ERPs in the control group are excluded, the distributions of work still differ between ERPs and controls (p <0.001).

(ERPs). Among men 84% of the ERP group worked full-time compared to 91% of the controls (NS). For females the corresponding figures were 43% for both groups. Of men in the ERP group 8% had experienced a period of unemployment during the five years preceding ERP, compared to 9% of the male controls during the last five years (NS). The corresponding unemployment rates for women were 11% and 7%, respectively (NS).

Work satisfaction, described on a five-degree scale, was considered very good or fairly good by a majority among both men (ERPs 90%, controls 80%, NS) and women (ERPs 85%, controls 87%, NS).

The proportion of immigrants was 19% in the ERP group and 5% in the control group (p <0.001). The majority of immigrants in both groups came to Sweden in the sixties, and in 1980 94% of the immigrants in the ERP group and 81% in the control group had

Table IV. *Cultural origin among immigrants in the ERP and control group*

		ERPs (n=72)	Controls (n=19)
Cultural origin:	Kindred	32	15
	Remote	39	2
	No answer	1	2

The cultural origin differs between immigrants in the ERP and control group (p <0.01).

Table V. *Educational level, housing conditions and working conditions among immigrants and Swedes in the ERP and control group. Men and women (%)*

	Immigrants			Swedes		
	ERPs (n=72)	Controls (n=19)	p-value	ERPs (n=300)	Controls (n=348)	p-value
Educational level			<0.001			<0.001
Elementary school	80	(33)		90	63	
Additional school	20	(67)		10	37	
Housing conditions Today:			NS			<0.01
Flat	51	(42)		36	27	
Other	49	(58)		64	73	
Five years ago:			NS			<0.05
Flat	51	(32)		33	24	
Other	49	(68)		67	76	
Work[a]			<0.001			<0.001
Blue-collar	79	(35)		73	39	
Other	21	(65)		27	61	
Working hours[a]			NS			NS
Full-time	61	(50)		55	58	
Part-time	26	(39)		37	30	
No work	13	(11)		8	12	
Work satisfaction[a]			NS			NS
Very good	43	(20)		57	51	
Other	57	(80)		43	49	
Missing	(n=5)	(n=4)		(n=12)	(n=47)	

Figures within brackets when n < 50.
[a] ERP: prior to ERP
Control: work and work satisfaction today, working hours five years ago.

arrived. The immigrants among the ERPs more often came from remote cultures than those in the control group (p<0.01, Table IV). Most immigrants in the control group had a Nordic origin, while the Mediterranean countries predominated the ERP immigrant group.

Table VI. *Median (md) and interquartile range (IR) for age among immigrants and Swedes in the ERP and control group*

		Immigrants	Swedes	p-value
ERPs	n	72	298	
	md	53	58	<0.001
	IR	48–57	52–61	
Controls	n	19	348	
	md	55	57	NS
	IR	48–62	51–61	

p-value: level of significance when testing the hypothesis that there is no difference between immigrants and Swedes. Five ERPs and six controls have been omitted from the table due to lack of information on immigration.

The housing conditions of the immigrants did not differ among ERPs compared to controls. Among Swedes the ERPs more often lived in a flat than the controls (p <0.01, Table V).

Low educational level and blue-collar work predominated among both the immigrant and the Swedish ERPs (p <0.001, Table V).

Immigrants among early retired pensioners

In the ERP group the immigrants were younger than the Swedes (p <0.001, Table VI), a difference not found in the control group.

The women's domestic situation differed between immigrants and Swedes in the ERP group (p <0.05), even though, when standardized according to age, approximately 72% were married/cohabited in both groups. The Swedish ERP woman lived alone to a higher degree than the female ERP immigrant (22%

Table VII. *Working hours and work satisfaction prior to ERP for ERP immigrants of different cultural origin*

	Cultural origin		
	Kindred (n=32)	Remote (n=39)	p-value
Working hours			<0.05
Full-time	16	28	
Part-time	13	5	
No work	3	6	
Work satisfaction			<0.05
Very good	18	11	
Other	12	25	
Missing	2	3	

p-value: level of significance when testing the hypothesis that there is no difference between immigrants from kindred and remote cultures.

compared to 13%), while the remaining 5% and 15%, respectively, mostly were single mothers.

In the ERP group it was more common to find immigrants living in a flat than Swedes (51% and 36% respectively, $p < 0.01$), a difference originating from the housing conditions of the male immigrants.

The rate of immigrants with additional schooling was higher than among Swedes in both the ERP and control group ($p < 0.05$). In the ERP group 20% of the immigrants and 10% of the Swedes had studied beyond elementary level. The corresponding figures in the control group were 67% and 37%, respectively. This difference was sex-linked in the ERP group, where female immigrants had an educational level beyond elementary school more often than Swedish women.

ERP immigrants with additional schooling had a blue-collar work more often than their Swedish counterparts (62% compared to 29%, $p < 0.05$). Swedish ERPs were more satisfied with their work than immigrant ERPs; 57% compared to 43% declared that they were very content ($p < 0.05$).

In the ERP group the immigrants from remote cultures lived in a flat to a higher extent than kindred immigrants (64% compared to 34%, $p < 0.05$). The ERP immigrants from remote cultures worked full-time more often but with less satisfaction than other ERP immigrants ($p < 0.05$, Table VII).

DISCUSSION

Immigration

Immigrants among the early retired pensioners (ERPs), though as a group characterized by low education, more often had an educational level beyond elementary school than the Swedish ERPs. As it is known that immigrants have a considerable variation as regards educational level (10), this indicates that some of the immigrants are a positively selected group, overqualified for the work they receive in Sweden. This might be an explanation for the finding that ERP immigrants more seldom declare themselves "very content" with their previous work compared to the Swedish ERPs.

The immigrant ERPs were younger than their Swedish counterparts, a difference not found in the control group (Table VI). The comparatively early retirement of the immigrants might be seen as a consequence of their situation on the Swedish labour market. They are known to be referred to strenuous work and to be less flexible in finding new jobs (10).

The differences between female ERP immigrants and Swedes as regards civil status, with immigrants to a lesser degree living alone, can be explained as originating from cultural differences. It might imply a relatively high degree of paid work in combination with single-handed responsibility for family members and housework. This could be one important factor explaining the high degree of ERPs among immigrants.

The ERP immigrants from remote cultures worked full-time more often than immigrants from kindred cultures (Table VII). This in combination with a relatively low degree of work satisfaction among immigrants from remote cultures in our study may reflect an instrumental attitude towards work, a tendency to regard work mainly as a means of earning money. This is in line with the results from a study concerning occupational attainment of immigrant women in Sweden (15), where foreign women were found to work full-time to a higher degree than native women, and immigrant women from southern Europe to be more economically motivated for work. This might indicate a higher vulnerability with regard to ERP.

Work satisfaction

Otherwise low work satisfaction is not related to ERP in our study. On the contrary, the high degree of work satisfaction among ERPs is remarkable, with 90%

describing themselves as very or fairly content with their previous work. Other studies (6, 7) have shown low work satisfaction to be of major importance predicting back injury, and longitudinal studies from the sixties and seventies (5) point out low working commitment and job satisfaction as significant predictors of ERP. It might be that low work satisfaction leading to absence from work due to back pain seldom ends with an ERP. Another explanation might be that work is glorified when it is out of reach. However, validation of our data does not imply this.

Validity

In order to establish the validity of our data concerning work satisfaction, an independent observer rated such data, occuring as notes in the documents at the local insurance office, on 38 randomly selected ERPs from the study group. The notes were recorded during the pre-retirement investigations. Information concerning work satisfaction was found in 11 cases and confirmed the statements in the questionnaire in 10 instances.

The questions concerning educational level and kind of work have been tested earlier (17) and found to be valid.

The high rate of additional schooling stated by the immmigrants was confirmed by checking these immigrants for their knowledge of Swedish. All of them had lived in Sweden at least ten years when answering the questionnaire, and all but one had made written comments in Swedish in the questionnaire and/or were interviewed in Swedish. One immigrant received assistance in answering the questionnaire and during the interview from a relative familiar with the Swedish language and society. The immigrants with additional schooling are thus considered to have a knowledge of the Swedish language and society good enough for their answers to be regarded as reliable.

A sample of 79 ERPs were interviewed three to five months after the distribution of the questionnaire. The information about immigration and work satisfaction from the interviews was compared with the statements from the questionnaires. The information on immigration was identical in all cases. Statements concerning work satisfaction were confirmed in 91% of the cases. Of the remaining 9% only 3% had changed from one extreme to the other.

Socio-economy

Blue-collar workers were found to have a much higher risk of ERP compared with other groups. This finding confirms the result of earlier studies (8, 9). Low socio-economy as a predictor of ERP is obvious also concerning educational level and housing conditions.

Thus low socio-economic status is a predictor of ERP due to musculoskeletal disorders, in spite of efforts made to improve labour conditions. The endeavors to enhance consciousness of and to reduce dangers in working places must continue in order to prevent unequal elimination from the labour market.

Neither working hours nor unemployment predicted ERP in this study. In other studies unemployment has been seen as a predictor of ERP (1). Our study group was selected to include only ages up to 60 years. As insufficient labour supply was a lawful reason for granting ERP to people older than 60 years, this might explain the difference.

It has been shown that it is possible to reduce long-term sick-leave by a cooperation between the local insurance office and the medical care system (15). Probably some of the ERPs could have been avoided with better communication between these authorities and the blue-collar worker or immigrant with initial pain. Establishing such communications might be the first step to improving the management of patients with musculoskeletal disorders in order to prevent an early retirement.

ACKNOWLEDGEMENTS

This study was supported by grants from the National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, and the County Council of Kristianstad.

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II

Health and health care utilization among early retirement pensioners with musculoskeletal disorders

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Edén L, Ejlertsson G, Leden I. Health and health care utilization among early retirement pensioners with musculoskeletal disorders. Scand J Prim Health Care 1995;13:211–6.

Objective **– To estimate subjective health status among early retired individuals pensioned due to disorders of the musculoskeletal system.**
Design **– A survey of self-reported health status and health care utilization by means of a mailed questionnaire.**
Setting **– Early retirees (cases) and a random sample (controls) of individuals from the municipality of Kristianstad, Sweden.**
Subjects **– Cases: all individuals aged 25 – 59 years granted a full-time early retirement pension during the period 1986 – 1990 due to disorders of the musculoskeletal system (n=450). The response rate was 83.6%.**
Controls **– An age- and sex-matched sample (n=450). The response rate was 82.7%.**
Main outcome measures **– Self-reported health status and health care utilization.**
Results **– Early retirement entailed a deterioration in self-reported health status among men, all ages, and women aged 25–54 years. Female retirees aged 55–64 reported an improvement in health status since retirement. Early retired female immigrants were less satisfied with their health status than the Swedish ones. Early retirees reported higher health care utilization than controls, but with a reduction since retirement. Drug consumption was high.**
Conclusion **– The beneficial effects of early retirement were evident among old women. Men and young and middle-aged women may need support to adjust to life as a retiree. Special attention should be given to the female immigrant retiree.**

Key words: **early retirement, disability pension, health status, health care utilization, drug consumption, immigrant, questionnaire, musculoskeletal disorders.**

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Large groups of individuals younger than 65 years are for various reasons outside the labour market. Besides the fact that the unemployment rate has been comparatively high during the late 1980s and early 1990s, there are a considerable number of individuals with a disability pension – an early retirement pension – in Sweden as in other industrialized countries (1, 2). In Sweden the rate of early retirement pensioners has increased from 5.8% of the population aged 16–64 years in 1981 to 6.7% in 1990.

Epidemiological studies in unselected populations have shown prevalence rates of about 50% for chronic pain problems, dominated by pain

from the musculoskeletal system (3, 4). The proportion of diseases of the musculoskeletal system among newly granted early retirements increased from 35% in 1980 to 49% in 1990.

Studies on effects of retirement on health have chiefly dealt with retirement in general, when old age dominates over disability as the reason for retirement. The retirement has only small effects on health and well-being (5). The beneficial effects of retirement are however pointed out by those who retired for reasons of illness or disability (6), while other studies show that mental health deteriorates in early retirees even if no effects on physical health are found (7).

The somewhat divergent results concerning the effects of early retirement on health status could possibly be explained by the small numbers of early retirement pensioners studied.

It could be hypothesized that early retirement can benefit health as noxious aspects of the work environment are removed in combination with reduced demand and job strain. The retirees also get more time to comply with prescribed regimens such as rest and/or physical training. On the other hand, the lack of social acceptance when a person is not gainfully employed, and the feeling of not being needed when leaving one's place of work may accompany retirement. This could cause illness and an increased demand for health care, just as has been shown for individuals who are unemployed (8). Certain groups of early retirees could therefore be expected to experience health improvement, others health decline.

The aim of this paper, as part of a major project, was to estimate subjective health status among individuals granted an early retirement pension due to disorders of the musculoskeletal system. The intention of the major project has been described in greater detail elsewhere (9). Knowledge about the effects of early retirement is important for those in the social and medical professions, especially district physicians, dealing with patients on their way to early retirement.

Material and methods

The study was performed in Kristianstad municipality in southern Sweden, with a population of almost 70 000 inhabitants.

The study population consisted of all 450 persons aged 25–59 years who were granted a full-time early retirement pension during 1986–1990 due to disorders of the musculoskeletal system. They were defined by all diagnoses in chapter 13 (diseases of the musculoskeletal system and connective tissues), and diagnoses within the musculoskeletal system in chapter 17 (injuries and poisonings), in the ninth revision of the international classification of diseases (ICD-9). They constituted about 50% of all newly granted early retirement pensions in the studied area during the study period.

Table I. Age and sex distribution (%) of the participants in the ERP group and control group.

		ERPs	Controls
Men		(n=122[b])	(n=108)
Age	25–44	4.1	2.8
	45–54	23.1	21.3
	55–64[a]	72.7	75.9
Women		(n=254)	(n=266)
Age	25–44	9.1	9.4
	45–54	29.1	28.9
	55–64[a]	61.8	61.7

[a] The ERPs were aged 25–59 years at the time of retirement. The questionnaire was sent out 1–6 years after the retirement.

[b] One man returned the completed questionnaire anonymously without giving his age.

A questionnaire was sent in January 1992 to all early retirement pensioners (ERPs) in the study group. A corresponding questionnaire was sent to an individually age- and sex-matched control group of the same size, randomly selected from the population in Kristianstad municipality. The response rate was 83.6% in the ERP and 82.7% in the control group.

The age and sex distribution of the participants in the study and control groups is described in Table I. The study group, the questionnaire, and the non-response analysis have been described in greater detail previously (9).

Definitions and measures

The one or two diagnoses entered by the authorities as the main reasons for granting an early retirement are shown in Table II. Differences between the distributions of men and women were not significant.

Table II. Diagnoses in connection with early retirement (%).

	Men (n=121[a])	Women (n=252[b])
Group of diagnoses		
Musculoskeletal system[c]:		
– solely	71.9	79.8
A only	3.3	5.9
B only	30.6	28.2
C only	13.2	23.0
D only	12.4	16.3
E only	4.1	1.2
Two of A-E	8.3	5.2
– combined with psychiatric disorder	12.4	10.7
– combined with other diagnosis	15.7	9.5
	100	100

[a] One man returned the questionnaire anonymously
[b] Two women returned the questionnaire anonymously
[c] Diagnoses according to ICD-9:
A: Chronic arthritis and other inflammatory rheumatic disorders, diagnoses number 710–712, 714, 720, 725.
B: Back pain, diagnoses number 721–724.
C: Fibromyalgia and other general pain disorders (non-inflammatory conditions), diagnoses number 726–729.
D: Other non-inflammatory conditions (local and regional), diagnoses number 713, 715–719, 730–739.
E: Injuries, diagnoses number 805–848, 880–897, 905, 922–924, 926–929.

Self-reported health was measured by the answers to the item "How would you describe your overall health status at present?" with the five response categories "good, fairly good, neither good nor poor, fairly poor, poor". The question used was in accordance with other studies concerning self-rated health status (10).

Comparisons of pre- and post-retirement health status were made by using the item "How would you assess your health status today in comparison with the year before retirement?" The five response categories were "much better, a little better, basically the same, a little worse, much worse". In the control group "the year before retirement" was replaced by "five years ago" with the same response categories.

Health care utilization during the previous six months was asked about, as well as present drug consumption and further ailments. When comparing ERPs and controls concerning further ailments, complaints regarding the musculoskeletal system were excluded.

Changes in health care utilization since the year before retirement (ERPs), or compared with five years ago (controls), were asked about. Five response categories were used: "increased a lot, increased, unchanged, decreased, decreased a lot". In order to analyse differences according to age, retirees aged 55–64, with old-age retirement to come within the near future, were compared with the young and middle-aged ones. Individuals aged 25–54 years were designated as "young", and those aged 55–64 years as "old".

Statistical analyses

The significance of differences between proportions was tested by chi-square test. When the groups were small or the expected frequencies were low, Fisher's exact test for the comparison of two proportions was used.

Results

Self-reported health

Self-reported health showed that the ERPs were less satisfied than the controls with their present state of health ($p<0.001$, both men and women). The rates for men and women were similar. Among ERPs 21.1% described their health status as good or fairly good, compared with 72.1% among controls, while 39.5% of ERPs and 8.3% of controls considered that their health status was poor or fairly poor. Self-reported health was not related to the number of years since retirement.

The ERP group comprised 19% immigrants. Among female ERPs there were differences between immigrants and non-immigrants concerning self-reported health status ($p<0.001$), mainly explained by the fact that not one female ERP immigrant considered that her health status was good or fairly good, compared with 24% of the non-immigrant female ERPs.

Young ERPs described their health status as worse than the old ones; poor or fairly poor health status was stated by 55% of the young male ERPs and by 33% of the old ($p<0.05$). The corresponding figures for the females were 57% and 29%

Table III. Self-reported change in health status among ERPs and controls (%)

	Men		Women	
	ERPs (n=122)	Controls (n=107)	ERPs (n=253)	Controls (n=266)
Much better or little better	13.1	7.5	23.7	12.4
Basically the same	40.2	61.7	36.8	51.9
A little worse or much worse	46.7	30.8	39.5	35.7

Differences between ERPs and controls were significant for men ($p<0.01$) and women ($p<0.001$).

($p<0.001$). Differences in health status between young and old controls were small and not significant.

ERPs estimated that their health status had changed since retirement to a higher degree than the controls over a five-year period (Table III). Compared with the controls, the male ERPs mainly experienced a deterioration, and the females an improvement. An improvement was stated by 28% of the non-immigrant females, and by 2% of the immigrant females ($p<0.001$).

Among female ERPs a change in health status varied with age ($p<0.01$), with the old ones claiming an improvement to a higher degree than the young ERP women (30.6% versus 12.6%), and a deterioration more seldom (32.5% versus 51.6%).

Differences between the men in the ERP and control groups regarding ailments other than musculoskeletal disorders were small and not significant. Among the women, however, 38.0% in the ERP group and 25.0% in the control group reported further ailments ($p<0.01$). The most frequent complaints were cardiovascular diseases, reported by 17.6% of the female ERPs.

Health care utilization and drug consumption

With respect to health care utilization (Table IV), ERPs visited a physiotherapist more often than controls, and female ERPs, compared with controls, consulted a physician and alternative caregiver significantly more often. An alternative caregiver was consulted by 14.7% of young and 7.0% of old female ERPs ($p<0.05$). Otherwise the rate of health care utilization did not vary with age in ERPs or controls.

Changes in health care utilization were more prominent among ERPs than controls ($p<0.001$, both men and women). The reduction claimed by ERPs – 30.3% among men and 36.5% among women, compared with 5.7% and 11.2%, respectively, among controls – was the major factor

Table IV. Rate of individuals who called on health care during the previous six months in the ERP and control group (%).

	Men		Women	
	ERPs (n=122)	Controls (n=108)	ERPs (n=254)	Controls (n=266)
Physician	67.2	58.3	74.0	53.8***
District nurse	18.9	11.1	13.0	9.4
Physiotherapist	15.6	3.7**	25.2	12.0***
Alternative caregiver (e.g. homeopath, chiropractor)	6.6	3.7	9.8	3.0**
In-patient care (hospital)	5.0	13.1*	9.5	7.9

Significance levels when testing the hypothesis that there is no difference in the respective proportions between ERPs and controls:

* $p<0.05$
** $p<0.01$
*** $p<0.001$

Table V. Regular[a] drug consumption in the ERP and control group (%)

	Men			Women		
	ERPs (n=118)	Controls (n=105)		ERPs (n=252)	Controls (n=259)	
No drugs	18.6	49.5	***	9.1	55.2	***
Analgesics only	32.2	7.6	***	34.5	8.1	***
Other drugs	49.2	42.9		56.3	36.7	***
– combined with analgesics	36.4	4.8	***	46.4	12.7	***
– other drugs only	12.7	38.1	***	9.9	23.9	***
	100	100		100	100	

Significance level when testing the hypothesis that there is no difference in the respective proportions between ERPs and controls: *** $p<0.001$.

[a] At least a few days a week.

contributing to this difference. Among old female ERPs 18.1% stated an increased health care utilization compared with 31.2% among young female ERPs ($p<0.05$), and compared with 35.9% among old female controls ($p<0.001$).

Drug consumption was higher among ERPs than controls (Table V). The difference in use of drugs other than analgesics between female ERPs and controls (56.3% and 36.7%, respectively; $p<0.001$) was to a high degree explained by the use of sleeping pills (19.4% by ERPs, 5.4% by controls). Approximately 4% of female ERPs and controls reported regular use of tranquillizers and other psychopharmacological drugs.

Discussion

The finding that only 21% of the ERPs considered that their health status was good or fairly good, compared with 72% of the controls, could be seen as a natural effect of the disorder that led to early retirement.

The reported greater change in health status by ERPs than controls (Table III) might partly be a consequence of a perhaps progressive disorder, but might equally well be a consequence of the retirement per se. The gender difference (males often reporting deterioration, females improvement) is partly explained by the high rate of old women in the ERP group.

The view that full-time work is the normal way of life is less pronounced in men aged 55 or more than in younger men (6). Our study shows that this might be even more pronounced in women; the improving health status of old female ERPs indicates that the ERP is a relief for them. On the other hand, men and young women run a substantial risk of experiencing a deterioration in health status due to the retirement. Why this is so needs further investigation.

The fact that health status was worse among young than among old ERPs may be explained by the young person having to qualify for early retirement with a more serious state of health than a person near the limit for old-age pension.

Our study confirms that ethnicity is a risk indicator of poor health, as has been demonstrated by other studies (11). The virtual lack of stated improvement of health status by the immigrant women indicates a difference from the Swedish women in adjustment to ill-health. This is in accordance with a study concerning Greek immigrants; rehabilitation efforts for patients with long-term sick-leave were in vain, and the Greek patients responded to pain with passivity (12).

The fact that ERPs reported a higher health care utilization than controls (Table IV) is in agreement with other findings (13). Reduction of health care utilization after retirement could partly be an effect of the reduced demand for sick-listing and decreased rehabilitation efforts. The retirement might be seen as a final step after a sometimes long period of measures taken within the health care system.

The focus of our paper was self-reported health status and health care utilization. Subjective health status is a measure that is commonly used

in surveys of health and well-being. It has been shown to vary with assessments of health status made by physicians, but in addition it predicts mortality independently of health problems, physical disability and biological or life-style risk factors, and thus gives information about longevity (14).

To reduce the risk of inaccurate recall, a period as short as six months was used for questions concerning health care utilization. In addition to inaccurate recall there is a risk of biased information concerning health care utilization (15). In the letter accompanying the questionnaire the fact that no answer would reach the local insurance office was stressed to increase the veracity of data. The validity of our survey-data is confirmed by the fact that, when divided into four groups according to age, the number of controls stating an increase in health care utilization exceeds those claiming a decrease in every single group. The net effect thus showed that health care utilization increased with age, a result in accordance with other studies (16).

Early retirement is a large and growing problem in the Western World. In Sweden, for instance, 7% of the population aged 16 – 64 years were early retirees in 1992. Our study comprised all newly granted early retirement pensions due to disorders of the musculoskeletal system during a five-year period in a defined population. This fact, together with cooperation with the local social insurance office, which made it possible to identify the respondents, has given us unique possibilities to analyse the effects of an early retirement pension, and thus has revealed new aspects of this problem.

Acknowledgements

This study was supported by grants from the National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, and the Kristianstad County Council.

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Received July 1994
Accepted February 1995

III

High rates of psychosomatic and neurotic symptoms among disability pensioners with musculoskeletal disorders

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Date of submission June 11, 1999
Running head: Psychosomatic/neurotic symptoms
Key words: Disability pension, early retirement, musculoskeletal disorders, neurotic, psychosomatic

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Source of grant support: National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, Kristianstad County Council Sweden

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ABSTRACT. Objectives: To describe the occurrence of psychosomatic and neurotic symptoms among early retirees compared to a control group, and to establish the relative importance of different explanatory variables.

Methods: A questionnaire survey was performed among 450 early retired pensioners [ERPs] with musculoskeletal disorders and an age- and sex-matched control group. The response rate was 83%. By way of a factor analysis five symptoms were formed into a psychosomatic index [PSI] and seven into a neurotic index [NI].

Results: The ERPs had higher PSI and NI than controls. Immigrants among the ERPs and the controls reported more symptoms than Swedes. Women were found to have higher PSI than men and the female ERPs had higher NI than the male ERPs. The younger ERPs [<55 years] reported more symptoms than the older ones. Among female ERPs the retirees with inflammatory rheumatic disorders had lower NI, while those with fibromyalgia had higher NI than the remaining female ERPs.

Conclusions: This study points out the importance of considering psychological aspects when dealing with individuals suffering from musculoskeletal disorders. Special attention should be paid to immigrants and individuals aged <55 years when a disability pension is considered. The fibromyalgia patient might need increased therapeutic support.

KEYWORDS. Disability pension, early retirement, musculoskeletal disorders, neurotic, psychosomatic

INTRODUCTION

Musculoskeletal disorders may be influenced by both somatic and psychological factors (1-3), and sometimes partly be due to a somatization of psychosocial problems (4,5). Among patients with chronic pain the pain experience might enhance the psychic distress, thus causing a vicious circle. This might lead to difficulties concerning the diagnosis to choose, as has been shown regarding fibromyalgia. In a Norwegian study of two neighboring counties where the records of patients with varying degrees of mental problems and muscular pain were scrutinized by experts, it was suggested that the differences between the two counties with respect to the usage of the diagnoses "fibromyalgia" and "psychosomatic, depressive and unspecified neuroses" could be explained by differences in diagnostic setting by the physicians rather than real differences in morbidity pattern (6). Psychosomatic and neurotic symptoms obviously accompany musculoskeletal disorders, but it is unclear to what extent they are a cause or an effect of the disorder (2-5,7-9).

Musculoskeletal disorders are the major reason for early retirement [disability pension] in Sweden (10,11). Pain is a predominant element of the diagnoses. Psychosomatic and neurotic reactions may be part of the problems leading to early retirement (12-14), but could, of course, be an effect of the retirement as well. The medical labelling of a condition, raising the possibility of compensation, might in some cases cause, prolong or aggravate disability (15-17).

The concept "psychosomatic" has been used during the last 50 years with somewhat different implications. Researchers nowadays stress the mutual influence of psychological and somatic factors when describing psychosomatic conditions (18). In this article the concept "psychosomatic symptoms" is used for those symptoms that include both somatic and psychological aspects. Studies of neuroticism also have a long history, and the work of Eysenck 1958 (19) could be seen as a foundation-stone for recent research concerning neuroticism as a personality dimension. The American Psychological Association describes neuroticism as one of the five personality factors, characterized by e.g. "anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability" (20).

To our knowledge, there are no studies of psychosomatic and neurotic symptoms among individuals who retired early due to musculoskeletal disorders. The aim of this paper, as part of a major project, was to describe the occurrence of psychosomatic and neurotic symptoms among early retired pensioners with different diagnoses concerning musculoskeletal disorders compared to a control group. The aim was furthermore to establish the relative importance of social background [e.g. work, immigration], quality of life and self-image in relationship to psychosomatic and neurotic symptoms. The aims of the total project have been described in greater detail elsewhere (21).

MATERIALS AND METHODS

Subjects

The study group consisted of all 450 individuals aged 25-59 years, living in Kristianstad municipality in southern Sweden with about 70,000 inhabitants, granted a full-time early retirement pension during the period 1986-1990 due to disorders of the musculoskeletal system. They were defined by all diagnoses in chapter 13 [diseases of the musculoskeletal system and connective tissues], and diagnoses within the musculoskeletal system in chapter 17 [injuries and poisonings], in the ninth revision of *The International Classification of Diseases*. An individually age- and sex-matched control group was randomly selected from the population in Kristianstad municipality.

Instruments

In January 1992 a questionnaire was sent to all early retired pensioners [ERPs] in the study group, and the control group received a corresponding questionnaire. The response rate was 83.6% [N=376] in the ERP and 82.7% [N=372] in the control group. Age and sex distribution of the participants in the study group

and in the control group is described in Table 1. The participation proportion in the male control group was somewhat lower in the younger ages than in the other groups. A non-response analysis was made from a random sample of the non-responders by a telephone interview. The differences between the responders and the non-responders were small and not significant regarding any of the variables studied. The study group, the non-response analysis and the questionnaire have been described previously (21).

TABLE 1. Age and Sex Distribution [%] of the Participants among Early Retired Pensioners [ERPs] and Controls

		ERPs	Controls
Men		[N=122[b]]	[N=108]
Age[a]	25 - 44	4.1	2.8
	45 - 54	23.1	21.3
	55 - 64	72.7	75.9
Women		[N=254]	[N=266]
Age[a]	25 - 44	9.1	9.4
	45 - 54	29.1	28.9
	55 - 64	61.8	61.7

[a] The age group among ERPs at the early retirement was 25-59 years. The questionnaire was sent out 1-6 years after the retirement.
[b] One man responded to the questionnaire anonymously without giving his age.

The prevalence of 19 different symptoms was examined. The subjects were asked if the symptom had troubled them the last month and the answers were dichotomous: Yes or No. The list of symptoms used was principally the same as the one used in a population study concerning the health condition of men and women in Gothenburg, Sweden (22,23). The 19 items concerning different symptoms were grouped into five factors by means of principal components analysis using the phi-coefficient. The component items and varimax loadings are shown in Table 2. On the basis of this analysis and according to what is known to characterize psychosomatic and neurotic reactions (19,20) the seven items with high loadings on factor 1 [Table

2] were interpreted as neurotic symptoms and the five items with high loadings on factor 2 as psychosomatic symptoms. They were designated as a neurotic index [NI] respectively a psychosomatic index [PSI]. The reliability of PSI was 0.55 and of NI 0.69 when established by Kuder-Richardson [KR-20]. The agreement between PSI and NI according to Spearman's rank-order correlation was R_s=0.55.

TABLE 2. Grouping of Symptoms and Factor Loadings >|0.09|, Early Retirees and Controls

		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
	Eigenvalue	5.25	1.51	1.29	1.05	0.94
	Variance	27.7%	8.0%	6.8%	5.5%	4.9%
	SYMPTOM					
NI [a]	Dysphoria	**0.75**	0.11	0.15		
	Restlessness	**0.68**			0.15	0.13
	Irritability	**0.63**	0.18		0.13	0.17
	Anxiety	**0.63**	0.29			
	Tearfulness	**0.62**	0.14			0.12
	Difficulty in relaxing	**0.60**	0.25	0.20	0.15	
	Sleeping disturbance	**0.45**	0.31	0.29	0.13	
PSI [b]	Headache	0.15	**0.67**	0.21		
	Dizziness	0.14	**0.66**	0.16		0.13
	Exhaustion	0.20	**0.62**		0.10	
	General fatigue	0.28	**0.54**	0.27	0.15	0.15
	Abdominal pain	0.25	**0.53**	0.19		
	Myalgia/artralgia	0.12		**0.79**		0.11
	Backache	0.10	0.14	**0.73**		
	Numbness/pricking sensations	0.12	0.26	**0.63**		0.14
	Loss of weight	0.13	-0.10	0.12	**0.78**	
	Lack of appetite	0.14	0.15		**0.78**	
	Overweight	0.13		0.12	-0.18	**0.82**
	Breathlessness	0.16	0.25		0.20	**0.64**

[a] NI = neurotic symptoms
[b] PSI = psychosomatic symptoms.

In order to analyze differences according to age, retirees aged 55-64, with old-age retirement to come within the near future, were compared with the young and

middle-aged ones. Individuals aged 25-54 years were designated as "young" and those aged 55-64 years as "old".

TABLE 3. Diagnoses in Connection with Early Retirement [%]

	MEN [N=121[a]]		**WOMEN** [N=252[b]]	
GROUP OF DIAGNOSES				
Musculoskeletal system [c]:				
- solely	**71.9**		**79.8**	
A only [chronic arthritis]		3.3		5.9
B only [back pain]		30.6		28.2
C only [fibromyalgia]		13.2		23.0
D only [others]		12.4		16.3
E only [injuries]		4.1		1.2
Two of A-E		8.3		5.2
- combined with psychiatric disorder	**12.4**		**10.7**	
- combined with other diagnosis	**15.7**		**9.5**	
	100		**100**	

[a] One man responded to the questionnaire anonymously.

[b] Two women responded to the questionnaire anonymously.

[c] A: Chronic arthritis and other inflammatory rheumatic disorders, diagnoses 710-712, 714, 720, 725 in ICD-9 [N=23]
B: Backpain, diagnoses 721-724 [N=158]
C: Fibromyalgia and other general pain disorders [non-inflammatory conditions], diagnoses 726-729 [N=111]
D: Other non-inflammatory conditions [local and regional], diagnoses 713, 715-719, 730-739 [N=92]
E: Injuries chapter 17, diagnoses 805-848, 880-897, 905, 922-924, 926-929 [N=11].

To establish whether PSI or NI was related to the diagnoses leading to the early retirement, the one or two diagnoses entered by the authorities as main reasons for granting early retirement among ERPs were grouped into five categories [Table 3]. Differences between the distributions of men and women were not significant.

The ERPs in the various groups of diagnoses were compared to the remaining ERPs. The number of ERPs with injuries was too small [N=11] to permit meaningful calculations. The ERPs with the diagnoses chronic arthritis [group A, Table 3] and fibromyalgia [group C, Table 3], were furthermore compared to their control-cases. When a control-case was missing, an individual of the same sex and born the same year was picked from the control group, except in three instances when the difference in age was one year [two cases] and three years [one case].

The questionnaire included questions about immigration and [previous] work; immigrants were defined as those coming to settle in Sweden, or those whose parents were both immigrants, and work was categorized into two groups: blue collar workers and others as described in greater detail earlier (21,24). Subjective global quality of life was measured by two questions concerning present quality of life [PQL], "How do you feel about your life just now?", and life-span quality [LQL] "How do you feel about your life from birth until now?", both with five response categories "Very good, Rather good, Neither good nor bad, Rather bad, Very bad". These questions have been used previously (25,26) and their fitness for use was discussed in a paper elsewhere (27).

Positive self-image was measured in the questionnaire by the answers to the item "Here you find descriptions of some characters and conditions. Please mark the alternative you find most appropriate for yourself. I am a contented, harmonic person, I am an active person, I am an independent person, I have good self-confidence, I have a positive view of life". The response categories for each item were "Most suitable, Fairly suitable, Only partly suitable and Not at all suitable". The answers were given values from 1 [most suitable] to 4 [not at all suitable], summarized to an index [5-20] and dichotomized at the median value into high [5-10] and low [11-20] positive self-image.

When describing differences between groups concerning PSI or NI, Z-test was used. If the groups were small [N<50], or data were describing a nominal or ordinal variable, the significance of differences between proportions was tested by χ^2 test. When the expected frequencies were low, Fisher's exact test for the comparison of two proportions was used. Multivariate analyses were carried out by means of a logistic regression model including sex, age, immigration, [previous] work, PQL,

LQL and self-image as explanatory variables and with PSI and NI respectively as the dependent variable. In the logistic regression PSI and NI were dichotomized into low [0-2] and high [=3] values. The level of significance was set to 0.05 and in the tables 4-6 figures are given in bold types when $P<0.05$. All statistical tests used were two-tailed. Data analysis was carried out using Statistical Package for the Social Sciences [SPSS], version 8.0 and Epi Info, Version 5.

The study has been approved by the Committee on Ethics at the Faculty of Medicine, University of Lund [LU 289-91].

RESULTS

Among ERPs 93.4% reported to have suffered from musculoskeletal pain [backache or myalgia/artralgia] during the last month. The proportions of individuals reporting the psychosomatic and neurotic symptoms are shown in Table 4. Early retirees had higher PSI and NI [reported more psychosomatic and neurotic symptoms] than controls [Table 5]. Women scored higher on PSI than men [P=0.016 among ERPs, P=0.006 among controls], and NI was higher among female than male ERPs [P=0.007], while the NI-difference between men and women among controls was small and not significant [Table 5].

No differences in PSI were found between ERPs in the different groups of diagnoses shown in Table 3. Female ERPs with chronic arthritis had a lower NI than the remaining female ERPs [M=1.29 and M=2.52 respectively, P=0.030], and the fibromyalgia female ERPs had a higher NI than the remaining ERPs [M=2.89 and M=2.20, P=0.024]. When compared to their age- and sex-matched controls the female ERPs with chronic arthritis were found to have the same level of PSI [M=1.35 for ERPs as well as their matched controls] and NI [M=1.29 for ERPs and M=1.47 for their matched controls, NS]. The female ERPs in the fibromyalgia group were likewise compared to their age- and sex-matched controls; the ERPs were found to have higher PSI [M=2.15 compared to M=1.40 among controls, P=0.041] and NI [M=2.89 and M=1.35 respectively, P=0.000].

TABLE 4. Prevalence among Controls and Odds Ratios [95% Confidence Interval] for Suffering from the Symptoms Included in PSI [Psychosomatic Symptoms] and NI [Neurotic Symptoms] of Early Retired Pensioners [ERPs] Compared to Controls

	MEN	OR [CI] [ERPs N=122]	**WOMEN**	OR [CI] [ERPs N=254]
PSI-symptoms	Prevalence (%)	[Controls N=108]	Prevalence (%)	[Controls N=266]
Headache	22.2	1.77 [0.94-3.33]	36.1	**2.07** [1.44-2.99]
Dizziness	9.3	**3.06** [1.34-7.13]	15.4	**2.96** [1.90-4.61]
Exhaustion	9.3	1.37 [0.55-3.47]	17.3	0.84 [0.51-1.38]
General fatigue	26.9	**2.64** [1.46-4.77]	37.6	**1.97** [1.37-2.85]
Abdominal pain	17.6	**1.96** [1.00-3.87]	19.5	**1.86** [1.22-2.84]
NI-symptoms				
Dysphoria	23.1	**2.15** [1.17-3.99]	28.2	**2.24** [1.54-3.28]
Restlessness	10.2	**2.88** [1.29-6.51]	10.5	**3.30** [1.99-5.47]
Irritability	19.4	1.73 [0.90-3.36]	21.1	**1.76** [1.16-2.66]
Anxiety	9.3	2.05 [0.89-4.76]	7.5	**2.72** [1.51-4.93]
Tearfulness	6.5	1.29 [0.43-3.92]	15.0	**2.02** [1.28-3.21]
Difficulty to relax	20.4	1.22 [0.62-2.39]	24.1	**2.65** [1.79-3.93]
Sleeping disturbance	17.6	**2.64** [1.37-5.14]	22.6	**3.03** [2.04-4.50]

TABLE 5. Number of Psychosomatic Symptoms [PSI] and Neurotic Symptoms [NI] among Early Retired Pensioners [ERPs] and Controls [%]

	MEN			**WOMEN**		
	ERPs [N=122]	**Controls** [N=108]		**ERPs** [N=254]	**Controls** [N=266]	
PSI						
m	1.48	0.85		1.89	1.26	
s	1.40	1.22		1.57	1.40	
Z			4.97			4.77
P			**0.000**			**0.000**
NI						
m	1.80	1.07		2.44	1.29	
s	2.00	1.55		2.19	1.79	
Z			3.13			5.54
P			**0.002**			**0.000**

Z-scores and p-values when comparing men and women:

PSI ERPs Z = -2.40 P= **0.016** Controls Z = -2.65 P= **0.006**

NI ERPs Z = -2.71 P= **0.007** Controls Z = -1.09 P= 0.275

TABLE 6. Odds Ratios [95% Confidence Interval] for Determinants of High PSI and High NI. Results from a Logistic Regression Including Variables Concerning Background, PQL, LQL and Self-image [a]

		PSI		**NI**	
		ERPs [N=299]	**Controls** [N=326]	**ERPs** [N=299]	**Controls** [N=326]
Sex	Women	1.00	1.00	1.00	1.00
	Men	0.81[0.45-1.46]	0.57[0.27-1.19]	0.84[0.48-1.46]	0.93[0.46-1.89]
Age	Old	1.00	1.00	1.00	1.00
	Young	**2.14**[1.23-3.73]	1.48[0.80-2.73]	1.24[0.71-2.16]	1.23[0.64-2.33]
Immigration	Swede	1.00	1.00	1.00	1.00
	Immigrant	**2.09**[1.10-3.97]	0.57[0.12-2.67]	1.67[0.87-3.20]	1.46[0.42-5.07]
Work	Not blue-collar	1.00	1.00	1.00	1.00
	Blue-collar	0.68[0.37-1.25]	0.67[0.36-1.27]	0.75[0.42-1.33]	0.74[0.38-1.43]
PQL	Good	1.00	1.00	1.00	1.00
	Not good	1.23[0.67-2.25]	1.53[0.68-3.43]	**2.20**[1.31-3.70]	1.49[0.68-3.27]
LQL	Good	1.00	1.00	1.00	1.00
	Not good	**2.78**[1.57-4.92]	**3.16**[1.46-6.85]	1.44[0.78-2.65]	1.75[0.72-4.25]
Self-image	Positive	1.00	1.00	1.00	1.00
	Not positive	**2.06**[1.18-3.59]	1.48[0.76-2.88]	**3.89**[2.32-6.53]	**5.22**[2.78-9.81]

[a] Abbreviations: PSI = psychosomatic symptoms, NI = neurotic symptoms, ERP = early retired pensioner, PQL = present quality of life, LQL = life-span quality

The logistic regression [Table 6] revealed that the ERPs with a high PSI were characterized by a less positive self-image and were more often young and immigrants than ERPs with a low PSI. Among ERPs as well as controls a high PSI was coherent with a low LQL. A high NI was related to a less positive self-image and, among ERPs, a lower PQL compared to individuals with few neurotic symptoms.

DISCUSSION

Individuals granted early retirement due to disorders in the musculoskeletal system reported a higher amount of psychosomatic and neurotic symptoms than individuals in the control group. The question to what extent these symptoms were part of the disabilities leading to the early retirement and to what extent they were an effect of the retirement and a sometimes progressing disease is impossible to answer from this study. Since there is an interaction between biological, psychological and social dimensions in the health status of the individual as stressed by WHO and others (1-5,28), and thus a circular relationships between these dimensions, it is reasonable to consider the symptoms both as independent and dependent variables in relation to an early retirement.

A high PSI was connected to a low LQL, which implies that individuals who experienced different problems during their life-time to an extent that made them consider their life-time quality of life as bad also developed various psychosomatic symptoms. A high NI was on the other hand connected to a low PQL among ERPs, which means retirees with several neurotic symptoms considered their present quality of life as bad. Thus PSI was more distinctly related to the life-history of the individual while NI reflected the present state.

The individuals with high NI and ERPs with high PSI were prone to have a less positive self-image. The direction of the influence is not obvious, however; the occurrence of different symptoms might lead to a more negative self-image or a less positive self-image might influence the tendency to pay attention to different symptoms.

The differences according to age [Table 6], with the young ERPs having more psycho-somatic symptoms than the old ERPs, could be seen as an effect of the fact that it is harder for a young person to receive a disability pension, with higher demands on bad health, than for an older person who is about to receive an old-age-pension within the near future.

Among ERPs the immigrants reported more psychosomatic symptoms than Swedes [Table 6]. This could be seen as a result of a prolonged stressful situation due to the immigration; immigrants are known to be a socially vulnerable group in Sweden (29). Differences in cultural background, with other reactions towards health, disease, chronic pain and work (30), might contribute to the differences between Swedes and immigrants.

Females - both ERPs and controls - reported higher PSI than men, a result in accordance with other studies (22,31). Employed women in Sweden are known to take the main responsibility for domestic duties (32), and thus they are exposed to physical as well as psychological strain to a higher degree than men. Women are said to be aware of their inner signals of imbalance due to factors within or outside the body to a higher degree than men (18), and to use different symptoms as a communication about their psychological and social problems (33,34).

Female ERPs who retired early due to chronic arthritis and other inflammatory rheumatic disorders [group A, table 3] were found to have a low NI compared to the remaining female ERPs; in fact their NI [and PSI] were at the same level as among their matched control-cases. In a careful review of the literature relating personality factors to rheumatoid arthritis, covering over 5000 patients (35), the author concludes that emotional factors play a definite role in rheumatoid arthritis, but that the emotional factors and personality traits suggested differ from one study to another. Modern textbooks of rheumatology (36-38) do not report any personality traits or psychiatric symptoms typical of the patients suffering from rheumatoid arthritis. This is in accordance with our finding that the ERPs with chronic arthritis and other inflammatory rheumatic disorders in this study were a comparatively stable group regarding their psychic condition measured with NI and PSI. The prevalence of inflammatory disorders among patients with musculoskeletal disorders is known to be in the interval 10-20% (39-41), but in this study the

proportion of individuals with chronic arthritis and other inflammatory rheumatic disorders among ERPs with problems in the musculoskeletal system was only 6% [group A, N=23, Table 3]. The diagnoses included in group A obviously do not lead to a full-time early retirement as often as other musculoskeletal problems. This low proportion could be an effect of the stable psyche found to characterize individuals in group A, a mental strength that might help the individual to cope with the demands of working life and to avoid full-time early retirement.

Our results concerning the female ERPs in the fibromyalgia group as more neurotic than the remaining ERPs correspond to studies that describe the fibromyalgia patient as suffering from psychic distress (6,36-38). It is however impossible to establish the direction of influence concerning pain experience and neurotic symptoms in this study. The neurotic disadvantage could be part of the premorbid state of the individual and/or a result of the ill-health and the treatment offered - or not offered. Fibromyalgia patients often report difficulties in proving their illness to themselves as well as to other people, and describe how they are met with scepticism even within the health care system (42-45). The diagnostic difficulties might enhance the psychic distress these patients experience. The ERPs in group C were diagnosed at a time when this diagnosis was fairly uncertain, but the differences in psychic distress between individuals suffering from chronic arthritis and other inflammatory rheumatic disorders [group A] and those suffering from fibromyalgia and other general pain disorders [group C] are congruent with findings in other studies (46,47).

The result of the factor analysis makes sense, with clearly distinguishable factors containing items combined into logical units. Although the factor solution [Table 2] explains only 52.9% of the variance in the symptom list, and two of the factors have low Eigenvalues, the result reveals a meaningful pattern in the symptom list. The factor analysis thus could be said to have a good content validity. The reliability according to KR-20 was acceptable. When the analysis was made with the four items in factor 4 and 5 [Table 2] excluded, the same pattern in factor solution was found but with less variance explained. This study has used only factor 1 and 2 [NI and PSI], since the third factor with musculoskeletal symptoms probably would explain nothing more than the fact that the ERPs suffer from musculoskeletal

problems, and factor 4 and 5 contain only two items each, which makes them less interesting. The moderate correlation [R_s = 0.55] between PSI and NI means they reflect partly the same dimension which is not surprising; a certain connection between neurotic and psychosomatic symptoms should be expected. But it is only about 30% [R_s^2=0.30] of the variation in PSI that is explained by NI. Therefore it is reasonable to perceive PSI and NI as measures of different aspects, and the fact that they were found to be separate factors in the principal component analysis, shows as expected that they measure two different dimensions of symptoms that bother people.

Our study is population based and, therefore, permits generalized conclusions to a higher degree than more specific studies based on limited clinical samples. Our findings stress the necessity of considering psychological aspects within the health and social care systems when dealing with individuals suffering from musculoskeletal disorders. Psychosomatic and neurotic symptoms characterize the individuals who retired early due to such problems. Our suggestion is to make use of psychotherapeutic and psychosocial treatment to a higher degree and at an early stage of ill-health. The female fibromyalgia patients appeared to be a particularly vulnerable group, and special attention should be paid to immigrants and young persons when a disability pension is considered. If a disability pension is to be seen as a welfare action, aiming at welfare for the individual, measures should be taken in order to increase the quality of life for these different groups.

ACKNOWLEDGEMENTS

This study was supported by grants from the National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, and the Kristianstad County Council. Göran Linde, Gerontology Research Center, Lund, Sweden, has given valuable support for the factor analysis.

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IV

VI

Scand J Soc Welfare 1998: 7: 300–309

SOCIAL WELFARE
ISSN 0907-2055

Is disability pension related to quality of life?

Edén L, Brokhöj T, Ejlertsson G, Leden I, Nordbeck B. Is disability pension related to quality of life?
Scand J Soc Welfare 1998: 7: 300–309 © Blackwell, 1998.

The aim of this study was to investigate the quality of life (QL) among early retired pensioners (ERPs) granted a disability pension due to musculoskeletal disorders. A questionnaire was sent to 450 ERPs and to a control group of the same size living in the municipality of Kristianstad, Sweden. Interviews were performed with ERPs with positive and progressing QL (n = 29) and ERPs with negative and declining QL (n = 26). The QL among ERPs was lower than among controls. ERPs below 55 years of age and immigrant ERPs had higher odds for a low/declining QL than older and Swedish ERPs, respectively. The most important domain influencing the QL among ERPs was the relationship or lack of relationship with family and others. ERPs with low/declining QL pointed out that poor subjective health status and economic problems were crucial reasons for their low QL.

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Key words: early retirement; disability pension; quality of life; life satisfaction; musculoskeletal disorders; immigrant

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Accepted for publication September 3, 1997

Introduction

Disability pension

Individuals with reduced working capacity due to lingering health problems have the chance in the industrialized countries to receive an early retirement pension to compensate for their economic losses. In the early 1960s the determinant factors for early retirement pension in Sweden were solely medical, but a decade later – and until 1991 – the opportunities on the labour market were also considered, principally for individuals aged 60–65 years. Thus the disablement became defined not only in medical but also in socio-economic terms (Guillemard & van Gunsteren, 1991). The Swedish social policy has always been strongly work-orientated, but the work-for-all-strategy has been enforced to a greater or lesser extent during different periods (Lindqvist & Marklund, 1995).

The increasing number of early retirement pensioners (ERPs) in Sweden constitutes a challenge for social policy. The rate of ERPs has increased from 5.8% of the population aged 16–64 years in 1981 to 6.7% in 1990 and 7.6% in 1995. The increase has been similar in other industrialized countries (Guillemard, 1991; Olsson-Frick, 1985). The female proportion among Swedish ERPs increased during the 1980s from 49.3% to 53.8%. Among newly granted early retirements in Sweden the proportion of diseases related to the musculoskeletal system increased from 35% in 1980 to 49% in 1990.

The rising number of early retirements has been explained in terms of an "attraction model" with an increasingly attractive and lenient social security system, and by an "exclusion model" that emphasizes increased problems at work and on the labour market (Marklund, 1994). Whatever the reasons, one important question is to what extent a disability pension is compatible with a life with an acceptable quality. Research on this is sparse.

Quality of life

The concept of "quality of life" (QL) is elusive. There is no consensus about the meaning and thus no generally accepted definition. The term "welfare" is sometimes used synonymously with QL, but a common view is that welfare is a broader concept that includes QL (Naess, 1989).

QL sometimes refers to societal well-being and sometimes to the situations of individuals (Felce & Perry, 1995; Naess, 1989). The society-related view of QL enhances "objective" social indicators such as income level, divorce and delinquency rates, material standard, infant mortality, access to health care, etc. Level of Living Studies were performed in Sweden in 1968, 1974, 1981 and 1991 and focus on

the distribution of resources among the general population and the individual's satisfaction with these resources. These studies are used for an overall evaluation of public social policies. In a comparative Nordic study (Allardt, 1975) the "level of living" is defined in terms of material resources (objective dimensions) and the individual's satisfaction with these (subjective dimensions). A distinction between the objective, environmental factors, the "quantities of life", and the more subjective well-being, the "qualities of life", is often made (Allardt, 1975; Birren & Dieckmann, 1991; Dimenäs *et al.*, 1990). Gap theories concentrate on the dissatisfaction gap between the realities (living circumstances) of the individual and his/her expectations (Naess, 1989).

The medical professions use a large number of health-related measures of QL (Bowling, 1995), and non-disease-specific instruments are developed for use in different cultural settings (EuroQol Group, 1990; WHOQOL, 1995).

Factors of importance for QL vary for one and the same individual over the life span (Gunnars, 1991; Svensson, 1991). Research has shown that not only changes in objective sources of satisfaction but also expected changes in these sources are important for life satisfaction (Tornstam, 1987).

Since there is no generally accepted definition of QL, it is defined operationally in different studies. Farquhar (1995a) outlines a taxonomy of expert/professional definitions and suggests the following types: global, component, focused and combined definitions. Global definitions make it impossible to decide which components are included when a person evaluates his/her QL. They contain both conditions of life and the experience of life. Component definitions break down QL into different dimensions which are seen as essential for a satisfactory life. Focused definitions refer to only a small number (or one) of the dimensions of QL, for example, health-related QL. Some definitions combine these approaches.

Disability pension and QL

Research concerning health-related QL among people with different health problems is abundant. Investigations among ERPs largely give attention to "quantities of life" or "qualities of health" (Tengvald, 1989).

An investigation based on level of living surveys from 1968 and 1974 in Sweden shows that most individuals had not suffered as regards income, leisure-time activities, social relations or political participation because of early retirement (Hedström, 1987). Young ERPs, aged between 20–44, however, were less active than the ordinary population of the same age in terms of social relations and political participation (Socialstyrelsen, 1992).

It is usual today to focus on the subjective dimension of QL based on the respondent's opinion of which dimensions to include (Bowling, 1995; Farquhar, 1995b), but research into global QL among ERPs, seen as the ERP's evaluation of his/her life contents, is lacking. This study deals with subjective global QL, as assessed by the individual.

The purpose of this study, as part of a major project, was to study the global quality of life of early retirement pensioners granted a disability pension due to musculoskeletal disorders, according to gender, age, socio-economy and immigration, compared to a control group. Furthermore, we examined the importance of different domains influencing the QL in two groups of ERPs: one noting an improvement in QL since retirement and another with declining QL since retirement. The aims of the major project have been described in greater detail previously (Edén *et al.*, 1994).

Material and methods

The study was performed in Kristianstad municipality in southern Sweden, with about 70,000 inhabitants.

The study group consisted of all 450 persons aged 25–59 years granted a full-time early retirement pension during the period 1986–1990 due to disorders of the musculoskeletal system. They were defined by all diagnoses in Chapter 13 (diseases of the musculoskeletal system and connective tissues), and diagnoses within the musculoskeletal system in Chapter 17 (injuries and poisonings), in the ninth revision of the international classification of diseases (WHO: ICD-9). They constituted about 50% of all newly granted disability pensions in the studied area during the period.

A control group was picked out by choosing an individual of the same age and gender, listed next to every early retiree in the population index of Kristianstad municipality. In January 1992, a questionnaire was sent to all ERPs in the study group and a corresponding questionnaire was sent to the control group. The response rate was 83.6% in the ERP and 82.7% in the control group.

The questionnaires to the ERPs and controls included approximately 40 questions and focused on health conditions, quality of life, social network, self-image and information about immigration, work and other background variables. The study group, the questionnaire and the non-response analysis have been described previously (Edén *et al.*, 1994).

The age and sex distribution of the participants in the study group and in the control group is described in Table 1.

Table 1. Age and sex distribution (%) of the participants in the ERP group and control group

		ERPs	Controls
Men		(n=122[b])	(n=108)
Age	25–44	4.1	2.8
	45–54	23.1	21.3
	55–64[a]	72.7	75.9
Women		(n=254)	(n=266)
Age	25–44	9.1	9.4
	45–54	29.1	28.9
	55–64[a]	61.8	61.7

Notes:
a The ERPs were aged 25–59 years at the time of retirement. The questionnaire was sent out 1–6 years after the retirement.
b One man returned the completed questionnaire anonymously without giving his age.

Definitions and measures

Quality of life is here referred to as the individual's evaluation of his life contents, i.e. his global QL, and is based on self-report. This is in accordance with how several other authors define QL (e.g. Bowling, 1995; Farquhar, 1995b; Naess, 1989).

The concept of global quality of life is here dealt with from four aspects:

Present quality of life (PQL) which reflects the current life situation.
Life-span quality (LQL) which refers to the individual's whole life from birth until now.
Expected future life quality (FQL) which refers to thoughts of life and expectations about the future.
Change in quality of life since retirement (CQL) – for ERPs only.

To investigate quality of life the questionnaire dealt with the following four items, of which the first three were used for investigating global quality of life by Nordbeck (Nordbeck *et al.*, 1991; Samuelsson *et al.*, accepted 1996):

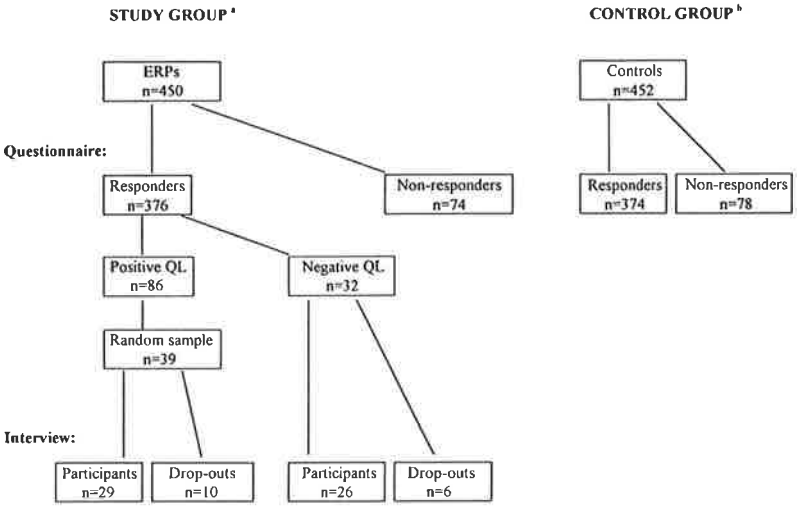
(1) How do you feel about your life as a whole just now? (PQL)
(2) How do you feel about your whole life from birth until now? (LQL)
– both with the five response categories "very good, rather good, neither good nor bad, rather bad, very bad" to each item.
(3) What are your thoughts about life in the future compared to life at present? Do you expect your life to become better or worse? (FQL)
– with the response categories "much better, somewhat better, unchanged, somewhat worse, much worse".
(4) Do you think that your life as a whole has become better or worse since you got your early retirement pension compared with the year just before this pension? (CQL)
– with the response categories "much better, better, unchanged, worse, much worse".

The questionnaire also gave information about (previous) work: blue collar, white collar, farmer, entrepreneur, housewife and other. Special attention was paid to blue-collar workers, so the material was categorized into two groups: blue-collar workers and others. Immigrants were defined as those coming to settle in Sweden, or those whose parents were both immigrants. The distributions of the one or two diagnoses entered by the authorities as the main reasons for granting an early retirement showed no differences between men and women (Edén *et al.*, 1995).

In order to analyse differences according to age, individuals aged 55–64, with old-age retirement to come in the near future, were compared with the young and the middle aged. Individuals aged 25–54 years were designated as "young" and those aged 55–64 years as "old".

To obtain deeper information about the content of QL, interviews were conducted during April–June 1992 with some of the ERPs (Figure 1). The selection of ERPs for interview was made from the result of two QL questions according to Table 2. From the group of 86 individuals with positive QL, 39 individuals were randomly chosen to be interviewed. This group was defined as Group A (Table 2, upper left-hand corner). Group B was defined as those with negative QL (Table 2, lower right-hand corner). All 32 individuals were chosen to be interviewed. Of the 32 planned interviews in group B, 26 were effected. In group A, 29 of the 39 interviews were carried out. Drop-outs (23%) were due to "not being available" (four persons), not wanting to participate (four persons), illness (three persons), being on holiday (three persons), moved too far away (one person) and difficulties with the language (one person). Since the interviews were meant to be carried out a short time after the questionnaires were returned, the efforts to reach the drop-outs were discontinued in the summer.

The interviews were carried out face to face by two trained interviewers. In the semi-structured interviews some open questions focused on the ERPs' view of quality of life: "How would you define the concept quality of life?/What things do you think are essential for good quality of life?" ... "Anything else?" When the ERPs could not find any more things to mention, they were asked "What things give your life good quality?" and "Are you missing anything needed for good quality of life?" All answers were written down



Notes:
a The number of questionnaires sent to ERPs was 453, but those who had returned to work or died were excluded from the ERP group. The ERP group thus comprised 450 individuals.
b The number of questionnaires sent to controls was 453, but one person had died. The control group thus comprised 452 individuals.

Figure 1. Collection of data among ERPs and controls 1992

immediately and possible domains were constructed by three of the authors (TB, LE and BN) after all interviews had been performed. The categorization of the answers was discussed in the group and the final categorization was made by LE.

Statistical analyses

Spearman's rank correlation coefficient was calculated to establish the relations between the different aspects of QL (Siegel, 1956).

For comparison between groups (ERPs/Controls, Men/Women, etc.) the PQL, LQL and CQL measures were dichotomized into *Bad/Worse QL* – including the response categories "Neither good nor bad", "Rather bad" and "Very bad" or "Unchanged", "Worse" and "Much worse" – and *Good/Better QL* – including "Very good" and "Rather good" or "Much better" and "Better". Since the answers about FQL must be related to the present position, PQL, one group with

Table 2. Present quality of life and change in quality of life since retirement

	Change in QL					
	Much better	Better	Unchanged	Worse	Much worse	Total
Present QL						
Very good	7	6	2	1	0	16
Good	8	62	51	27	2	150
Neither/nor	3	29	80	31	3	146
Rather bad	0	9	19	15	6	49
Very bad	0	0	1	1	7	9
Missing	1	1	1	3	0	6
Total	19	107	154	78	18	376

Notes:
Group A, ERPs with positive QL, was defined as the individuals in the upper left-hand corner
Group B, ERPs with negative QL, was defined as the individuals in the lower right-hand corner

positive expectations was defined as those who expected their FQL to be somewhat or much better and those who considered their PQL to be very good or rather good in combination with expectations that their FQL would be unchanged. A group with *negative expectations* was correspondingly defined as those who expected their FQL to be somewhat or much worse and those who considered their PQL to be rather bad or very bad in combination with expectations that their FQL would be unchanged. Individuals who expected their FQL to be unchanged and considered their PQL as neither good nor bad were thus excluded.

In this study all comparisons between ERPs and controls were made on group level. Odds ratios were calculated with 95% confidence intervals. A wide confidence interval means that the number of individuals in at least one of the categories is small, and that it is necessary to be cautious about the interpretation of the findings. If the confidence interval includes the value 1.0, there is no significant difference in the odds of having bad/worse QL between the groups compared. When a category included no individuals, Fisher's exact test for the comparison of two proportions was used to test the significance of differences.

The odds ratios concerning immigrant ERPs were standardized according to age, since the immigrant ERPs were younger than the controls (Edén *et al.*, 1994). All data analysis was carried out with the SPSS program package, version 6.0.

Results

Although most ERPs stated their *present quality of life* (PQL) as rather good or neither good nor bad, their PQL was not as good as the PQL among controls (Table 3). ERPs stated bad PQL more often than controls, OR = 5.9 (Table 4). No substantial differences in PQL according to gender among ERPs and controls were found. Young female ERPs considered their PQL as bad more often than the old female ERPs. Compared to young female controls, the young female ERPs were characterized by the fact that they lived without a husband more often (OR = 2.6, CI: 1.2–5.7), and compared to young male ERPs, the young female ERPs had less frequently worked full time before their retirement (79% compared to 50%). The immigrant ERPs, men and women, were more dissatisfied with their PQL than the Swedish ERPs (Table 4).

The *life-span quality* (LQL) was less frequently estimated as good by ERPs than by controls (tables 3 and 4). No differences in LQL between men and women among ERPs and controls were found (Table 4). Young ERPs were more discontented with their LQL than old ERPs. There were no significant differences between immigrants and Swedes concerning LQL.

The ERPs more often had negative expectations about *future quality of life* (FQL) than controls (Table 4). The differences between men and women regarding FQL were small and not significant. Negative expectations about FQL characterized the young ERPs and the old controls. The immigrant ERPs were more often negative concerning FQL than Swedish ERPs (Table 4).

Among ERPs, 41% experienced no *change in quality of life since retirement* (CQL) while 34% found their QL had improved and 25% found that QL had deteriorated (Table 3). The male ERPs more often than the female ERPs considered their CQL to have deteriorated (Table 4). The young female ERPs stated their CQL to have become worse more often than the old female ERPs, and the immigrant female ERPs more often than the Swedish ERPs (Table 4).

Neither socio-economy in terms of (previous) work among ERPs and controls (Table 4) nor diagnosis when retired were found to be related to any QL aspects.

The rank correlation coefficients (r_s values) between PQL and LQL were 0.43 for ERPs and 0.52 for controls. The r_s values between all other combinations of QL measures (PQL, LQL, FQL and CQL) were in the interval 0.01–0.37.

The ERPs in group B (individuals with negative QL) were young (OR = 3.2, CI = 1.4–7.6) and

Table 3. Present quality of life (PQL), life-span quality (LQL), expected future quality of life (FQL) among ERPs and controls and change in quality of life since retirement (CQL) among ERPs (%)

	PQL		LQL			FQL		CQL
	ERPs n=370	Contr n=371	ERPs n=365	Contr n=372		ERPs n=365	Contr n=366	ERPs n=376
Very good	4.3	31.0	13.2	28.8	Much better	0.8	2.5	5.1
Rather good	40.5	51.8	57.5	59.9	Better	11.8	13.1	28.5
Neither/nor	39.5	13.5	20.3	8.3	Unchanged	66.8	70.5	41.0
Rather bad	13.2	2.4	6.0	2.4	Worse	15.3	11.5	20.7
Very bad	2.4	1.3	3.0	0.5	Much worse	5.2	2.5	4.8
	100	100	100	100		100	100	100

Table 4. Present quality of life (PQL), life-span quality (LQL), expected future quality of life (FQL) among ERPs and controls, and change in quality of life since retirement (CQL) among ERPs, according to gender, age, (previous) work and immigration among men and women. Odds ratio (OR) for having bad/worse QL/ negative expectations, 95% confidence intervals (CI)

PQL	*OR (CI)*	*OR (CI)*	*OR (CI)*	*OR (CI)*
ERPs/controls	**5.9** (4.2–8.3)[a]			
	ERPs		*Controls*	
Gender (men/women)	1.0 (0.7–1.6)		1.1 (0.6–1.9)	
	Men	*Women*	*Men*	*Women*
Age (young/old)	1.9 (0.8–4.3)	**2.3** (1.3–3.8)	1.6 (0.5–4.7)	0.6 (0.3–1.2)
Work (blue collar/other)	1.3 (0.8–4.3)	0.6 (0.3–1.04)	0.6 (0.2–1.9)	0.6 (0.3–1.3)
Immigrant/Swede	**4.1** (1.3–13.6)	**2.3** (1.1–4.8)	[b]	0.9 (0.2–4.1)
LQL				
ERPs/controls	**3.3** (2.2–4.8)			
	ERPs		*Controls*	
Gender (men/women)	0.9 (0.5–1.6)		1.0 (0.5–2.0)	
	Men	*Women*	*Men*	*Women*
Age (young/old)	**2.6** (1.1–6.1)	**3.6** (2.1–6.4)	1.7 (0.5–6.0)	1.5 (0.7–3.2)
Work (blue collar/other)	1.1 (0.5–2.9)	0.9 (0.5–1.7)	2.5 (0.7–8.6)	1.2 (0.6–2.8)
Immigrant/Swede	2.1 (0.7–5.7)	1.8 (0.98–2.2)	[b]	1.7 (0.4–8.2)
FQL				
ERPs/controls	2.9 (2.0–4.3)			
	ERPs		*Controls*	
Gender (men/women)	1.3 (0.8–2.2)		0.9 (0.5–1.7)	
	Men	*Women*	*Men*	*Women*
Age (young/old)	**3.1** (1.2–8.0)	**1.9** (1.02–3.6)	[c]	0.3 (0.1–0.7)
Work (blue collar/other)	1.0 (0.4–2.6)	0.8 (0.4–1.5)	1.1 (0.3–3.5)	0.6 (0.3–1.3)
Immigrant/Swede	**4.4** (1.3–15.3)	**3.4** (1.5–8.0)	[b]	1.2 (0.3–5.8)
CQL				
	ERPs			
Gender (men/women)	**1.9** (1.1–3.0)			
	Men	*Women*		
Age (young/old)	2.1 (0.7–6.1)	**2.5** (1.4–4.3)		
Work (blue collar/other)	0.7 (0.3–1.9)	1.0 (0.6–1.8)		
Immigrant/Swede	0.7 (0.2–2.0)	**2.6** (1.2–5.9)		

Notes:
a Figures in bold type when significant ($p<0.05$)
b Too few male immigrants to permit meaningful calculations
c The old ones more often had negative expectations about FQL ($p<0.05$, Fisher's exact test)

immigrants (OR = 5.8, CI = 2.1–16.0) more often than ERPs in group A (individuals with positive QL). There were no significant differences according to gender or previous work between groups A and B.

Domains important for quality of life

Interviews with group A and group B showed that the groups include the same domains when defining QL (Table 5). Family relations were the most often mentioned domain when the ERPs were asked to define the concept of QL; it was mentioned by 76–77% and was the first thing mentioned by more than 40% in groups A and B. Health conditions were the second most important domain in both groups, followed by relations outside the family (group A) and economy (group B). In group B the individuals more often pointed out economy as an important domain of QL. Otherwise differences between groups A and B in these domains were small.

The most important domain that contributed to good quality in the lives of the retirees was family relations (Table 6). Answers such as "My family supports me when the pain is hard", "I am very happy

Table 5. Domains mentioned as most important for defining QL

Domain	Group A, positive		Group B, negative	
	Total (n=29)	(of which 1st mentioned)	Total (n=26)	(of which 1st mentioned)
Relations with family/relatives	22	(13)	20	(11)
Own health	13	(3)	13	(7)
Relations with other than family/relatives	10	(0)	9	(2)
Other activities than work	8	(1)	9	(0)
Contentedness	7	(4)	2	(1)
Economy	6	(1)	12	(0)
Global matters (peace, pollution, etc.)	5	(1)	6	(1)
Self-respect	4	(2)	1	(0)
Work	3	(3)	6	(3)
Other	9	(1)	5	(1)

Table 6. Domains mentioned as available to make current life good or lacking today for good QL

Domain	Group A (n=29)		Group B (n=26)	
	Available	Lacking	Available	Lacking
Relations with family/relatives	22	4	19	4
Own health	9	11	2	18
Relations with other than family/relatives	7	2	5	7
Other activities than work	9	3	6	3
Contentedness	6	0	2	0
Economy	6	0	5	7
Global matters (peace, pollution, etc.)	2	1	1	3
Self-respect	3	2	1	3
Work	2	3	0	5
Other	7	4	4	3
Nothing	0	8	3	0

with my family", were frequent. ERPs in group A more often considered their health status to contribute to their positive QL, while ERPs in group B more often said their QL was poor due to bad health (Table 6). Retirees in group B also complained about economic problems, while individuals in group A more often said they missed nothing needed for a good QL (Table 6).

Discussion

The ERPs were not as content with their present quality of life (PQL) as the controls (Table 4). The high rate of good QL (83%, Table 3) among controls corresponded to findings in the general population in the USA (Campbell *et al.*, 1976), Great Britain (Bowling, 1995), Germany (Glatzer, 1987), Denmark (Ventegodt, 1995) and Sweden (Fugl-Meyer *et al.*, 1991), and is a consistent finding in different studies, not only in the USA and Europe (Myers & Diener, 1996). This "positive aura of well-being" (Campbell *et al.*, 1976: 99) is found not only for measures of global well-being but also for specific domains of life. It seems that most people most of the time report satisfaction with most aspects of their lives.

In this context the circumstance that 55% of the ERPs did not estimate their PQL as good (Table 3) is noteworthy. Life as a retiree obviously involves more hardships than for people in general. The ERPs all have some lingering health problem – otherwise they would not have received a disability pension. The young female ERPs had lower PQL than the old ones, and – although not significant – the pattern was the same among male ERPs. In Sweden 87.0% of the men and 82.6% of the women aged 16–64 years were in the labour force in 1990, but the rates among individuals aged 55–64 years were only 75.5 and 66.3 respectively (Statistisk årsbok, 1992). Perhaps it is easier for the old ERPs, especially women, to emotionally accept, adjust to and even enjoy life as a retiree than for young ERPs with ten years or more left to an ordinary old-age pension.

Until December 1996 it was easier for an old worker to get a disability pension, while the requirements for bad health resistant to rehabilitation efforts were more stringent for young workers applying for early retirement in Sweden. It is known that health status among young ERPs is worse than among old ones, and young women run a substantial risk of experiencing a deterioration in health status after the retirement compared to old women (Edén *et al.*, 1995). This difference in health status among ERPs might explain why the old ones consider their QL to be better. But ERPs with bad QL complained not only about poor health but also about insufficient economic resources. The young female ERPs occupied

a vulnerable position: they lived without a husband more often than the young female controls, and the young female ERPs worked full time before retirement to a lesser extent than the young male ERPs. Thus their economic situation was difficult, with comparatively low economic benefits and no one to share their responsibilities with.

The expectations of a healthy working life were frustrated early in life among the young retirees. This might explain why they were less content with their life-span quality (LQL) than the old ones (Table 4). The disappointment among young ERPs was obvious concerning expected future life quality (FQL) as well, with negative expectations. The young ERPs apparently had often given up hope about the future more often than the older ones. Among controls, old people often estimated their FQL in negative terms, something that seems realistic – old age might be accompanied by progressing ailments and losses of various kinds.

Not only the young ERPs had a less favoured position than other ERPs; the immigrant ERPs likewise were less content with their PQL than the Swedish ERPs (Table 4). Immigrants among ERPs considered their self-reported health status less satisfactory than the early retired Swedes (Edén *et al.*, 1995), and their vulnerable situation as ERPs was obvious, with more negative expectations about FQL (Table 4). One explanation might be that the activity rate for women in Sweden is very high by international standards. The difference between men's and women's activity rates was smallest for Sweden in 1993 compared to other countries in Europe, North America and Latin America (United Nations, 1995; Valdes & Gomariz, 1995). The immigrant women are thus caught between the expectations from their country of origin, where the rate of female employment in the labour force is comparatively low, and the Swedish system with a high female rate and work-orientated rehabilitation efforts even for older women.

Socio-economic status in terms of (previous) work was not related to any QL measure among ERPs or controls, a result in accordance with other studies (Ventegodt, 1995).

The fact that 45% of the ERPs considered their PQL to be rather or very good (Table 3) might have different explanations. Approximately 34% estimated their QL to have changed for the better since retirement, and among them two-thirds were content with their PQL. This might be explained in terms of gap theories (Naess, 1989): people try and often succeed in decreasing the gap between realities and expectations, either by improving their living circumstances or by focusing on and valuing new domains in life when something happens (for instance, bad health, becoming out of work), and thus lower their expectations of the life domains affected. Even people with disabilities leading to an early retirement might adapt to the new circumstances and learn to appreciate aspects of life that make it possible to judge QL as positive.

An individual's subjective quality of life is apparently influenced by several, presumably interacting, factors. There is however no doubt that relationships, especially with relatives and close friends, are of crucial importance for most people. The fact that most of the ERPs considered relationships with family and relatives as the most important factor in having a good life (Table 5) is thus in accordance with studies of people in general (Bowling, 1995; Farquhar, 1995b; Myers & Diener, 1996). Research indicates relationships with other people to be a significant factor associated with disease proneness and premature mortality (Friedman *et al.*, 1995). It has been suggested that there is an interaction between biological and psychological processes and the family situation even during early childhood, which might influence the risk of disease in the adult individual (Henry, 1993). A complex interaction process during a person's lifetime between biological, psychological and social factors can be assumed to affect both the quality of life (Nordbeck & Hagberg, 1993) and the proneness to the musculoskeletal symptoms specific to this group of disability pensioners. Thus the connection between family relations, health status and quality of life is not a simple cause–effect relation. The ERPs valued their own health as the second most important factor for good QL, and relationships with other than family/relatives as third among ERPs in group A (individuals with positive QL), while ERPs in group B (with negative QL) considered economy as the third factor of importance for a good QL. Financial security was found to be of great importance for QL in a population study in Great Britain (Bowling, 1995). In Sweden the disability service system has been shown to meet the demands of disabled people (Hass & Jonsson, 1994), and ERPs as a group seem to find their economic situation acceptable or even good, but economic hardship is one important factor explaining why ERPs in group B considered their QL to be bad (Table 6).

The validity of QL measures is hard to establish since they are only indicators of the underlying, perhaps unreachable, phenomena. In questionnaires and interviews the problem of misleading answers, through lies, exaggeration or influence by the situation in which the questions are put, is obvious. The questions used in the questionnaires to measure PQL, LQL and FQL have been used previously (Nordbeck *et al.*, 1991, 1993; Samuelsson *et al.*, accepted 1996) and are the single items with the highest factor loadings to measure these QL aspects and thus items of great

value for describing global PQL, LQL and FQL. They have been chosen after pilot studies as items giving meaningful results, and have been followed by interviews that confirmed the results. This indicates that the questions have high validity when used to get information about the global QL of a person. The item measuring change in quality of life since retirement (CQL) was constructed in accordance with the other items measuring global QL.

The correlation coefficients of 0.43 and 0.52 between PQL and LQL indicate low to moderate association between the two indicators of QL. All other combinations of QL measures (PQL, LQL, FQL and CQL) showed no or only small relations ($r_s < 0.38$), so they can be considered to measure different aspects of QL.

The questions in the interviews are comparable to questions used in other studies (Bowling, 1995; Farquhar, 1995b). They have proved to be valuable when trying to encourage the person to describe his/her QL.

This study of QL among ERPs disclosed that only 45% were content with their lives. A substantial share of ERPs – especially the young ones and the immigrants – described their QL as bad. Poor QL will have negative consequences not only for the individual but for the next-of-kin and ultimately for society, when the urgent demands of the citizens have to be fulfilled. Research concerning the factors leading to differences in global QL among ERPs could offer clues about how to take action against a negative development. Our study implies that the young and the immigrant ERPs – if no solution other than a disability pension seems reasonable – might need support to adjust to life as a retiree.

Acknowledgements

This study was supported by grants from the National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, and the County Council of Kristianstad.

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V

Quality of Life Among Early Retirees

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Explanatory variables concerning poor quality of life (QL) were established among disability pensioners with musculoskeletal disorders and a control group. In both groups health status, leisure time activities, and social network were important for QL. Among the retirees immigration, employment before retirement and a negative attitude to the disability pension were related to poor QL.

In Sweden, as in many other industrialized countries, there has been an increasing number of disability pensioners (Guillemard, 1991). The rate of disability pensioners among the population aged 16–64 years in Sweden has increased from 3.7% in 1970 to a peak of 7.7% in 1994. The female economic activity rate was 77% in Sweden 1993 (United Nations, 1995), and that year 54% of the disability pensioners in Sweden were women. Disorders of the musculoskeletal system constituted 43.2% of all newly granted disability pensions in Sweden 1997, and has been the major cause of early retirement the last decade.

The disability pension is one part of the welfare system. But for the individual, welfare could be seen as more than income relief; it should involve good quality of life (QL) as well (Brulde, 1998). The aim of this paper is to describe the importance of different factors in relation to the quality of life among individuals granted early retirement due to disorders of the musculoskeletal system.

Received 15 January 1999; accepted 12 April 1999.

This study was supported by grants from the National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, and the Kristianstad County Council.

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Experimental Aging Research, 25: 471–475, 1999

0361-073X/99 $12.00 +.00

METHOD

The study population consisted of all 450 persons aged 25–59 years in Kristianstad, a municipality in southern Sweden, who were granted a full-time disability pension during 1986–1990 due to disorders of the musculoskeletal system. They constituted about 50% of all newly granted disability pensions in the area during the study period. A questionnaire was sent in January 1992 to all early retirement pensioners (ERPs) in the study group. A corresponding questionnaire was sent to an individually age- and sex-matched control group of the same size, randomly selected from the population in Kristianstad municipality. The response rate was 83.6% among ERPs and 82.7% among the controls. The female rate among the retirees was approximately twice the male (Table 1), which is not significantly different from the female rate among newly granted retirements due to musculoskeletal problems in the whole of Sweden.

The questionnaires included questions about the present global QL (Edén et al., 1998) as well as questions covering different aspects that usually are included in QL instruments, such as social network, economy, dwelling, leisure time activities, and self-image. The questionnaires furthermore included information about subjective health status, health care utilization, ADL (activities of

TABLE 1 Age and Sex Distribution (%) of the Participants in the ERP Group and the Control Group

		ERPs	Controls
Men		($n = 122^b$)	($n = 108$)
Age	25–44	4.1	2.8
	45–54	23.1	21.3
	55–64[a]	72.7	75.9
Women		($n = 254$)	($n = 266$)
Age	25–44	9.1	9.4
	45–54	29.1	28.9
	55–64[a]	61.8	61.7

[a] The ERPs were aged 25–59 years at the time of retirement. The questionnaire was sent out 1–6 years after retirement.

[b] One man returned the completed questionnaire anonymously without giving his age.

TABLE 2 Odds Ratios (OR) and 95% Confidence Intervals (CI) for Significant Determinants of Poor Quality of Life (QL) Among ERPs and Controls

	Variables		OR (CI)
ERPs	Background	Male gender[a]	1.17 (0.72–1.89)
	(n = 342)	Immigrant	2.86 (1.48–5.51)
		Early retirement not OK when decided	2.25 (1.03–4.92)
		Unemployment	
		Out of work ≥ 1 year	1.00
		Out of work < 1 year	5.44 (1.05–28.28)
		Not out of work	3.44 (1.10–10.73)
	Health-related	Self-rated health: poor	4.74 (2.52–8.92)
	(n = 299)	> 2 neurotic symptoms	2.14 (1.02–4.52)
		ADL deteriorated since retirement	2.16 (1.17–3.98)
	Social network	Home and family: not very content	2.06 (1.27–3.33)
	(n = 337)	No close contact outside home	2.56 (1.26–5.19)
		More lonesome since retirement	2.15 (1.22–3.80)
	Other QL aspects	Leisure time: not content	4.74 (2.67–8.40)
	(n = 287)	Economy: not content	2.01 (1.10–3.69)
		Self-image: not positive	2.80 (1.58–4.94)
Controls	Background	Male gender[a]	1.02 (0.56–1.86)
	(n = 370)	Disability pension[b]	2.96 (1.53–5.75)
	Health-related	Self-rated health: poor	4.55 (1.59–13.01)
	(n = 331)	Lung-disease	5.72 (1.52–21.46)
	QL aspects	Home and family: not very content	3.01 (1.01–8.97)
	(n = 280)	Loneliness	3.89 (1.48–10.23)
		Leisure time: not content	6.97 (2.65–18.30)

[a] The only variable included in the model not showing a bivariate correlation to QL.
[b] The control group, as a random sample of the population, included about 10% retirees.

daily living) level and background variables such as immigration, kind of previous work (e.g., blue-collar), unemployment, and the retirees' attitude to the disability pension. Information about the diagnosis at the time of retirement, the year of retirement, and whether the disability was considered a work injury or not was collected from the local social insurance office.

The present global QL was measured by the question: "How do you feel about your life as a whole just now?" with five response categories: "very good, rather good, neither good nor bad, rather bad, very bad." A logistic regression analysis was carried out with global QL as the dependent variable, dichotomized into the groups *good quality of life* defined as those who reported very or rather good QL and *poor quality of life* defined as the remaining ones.

Explanatory variables included in the analyses were those with a significant bivariate relation to present QL. The significance

level was set at $p < .05$. All variables but unemployment were dichotomized in the logistic regression. The variables with a significant bivariate relation to QL were analyzed in groups in order to avoid too large internal drop-out.

RESULTS

The variables significantly related to poor QL are presented in Table 2.

CONCLUSIONS

It is obvious that QL among disability pensioners to a great extent is correlated to the same factors as among the controls. A good state of health, good opportunities to indulge in some leisure time activity, and a positive social network are all parts of good QL. As regards immigration, however, the immigrant retiree has often poor QL, whereas immigration does not have any significant correlation to QL among the controls. Furthermore, the retiree who experienced a long period of unemployment before retirement often found QL as a pensioner good. Among controls unemployment showed no significance for QL.

Individuals who are forced to have a disability pension against their own wish run the risk of having low QL in the future; thus when a disability pension is considered it is important to cooperate with the client in order to avoid making a decision over the individual's head; i.e., disability pension allocation should involve a responsive procedure (Wesser, 1998). Obviously it is of great importance for the individual to continue health care and rehabilitation activities even after being awarded a disability pension. Disability pensioners should be encouraged to take an interest in some activity in order to have a good QL.

If a disability pension is to improve the state of welfare for the individual, measures should be taken to increase the quality of life of individuals who run the risk of a negative development.

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VI

DETERMINANTS OF IMPROVEMENT IN QUALITY OF LIFE AMONG DISABILITY PENSIONERS WITH MUSCULOSKELETAL DISORDERS

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Running head: Determinants of improvement in quality of life

ACKNOWLEDGEMENTS:
This study was supported by grants from the National Swedish Social Insurance Board, Volvo Research Foundation and Volvo Educational Foundation, and the Kristianstad County Council.

ABSTRACT

The aim was to find determinants of improving quality of life (QL) among disability pensioners with musculoskeletal disorders (ERPs), and to estimate the importance of subjective health for QL. Questionnaires were distributed 1-6 years after retirement and two years later among 352 ERPs. Improvement in QL since retirement was related to unchanged or improved subjective health and ADL-status, female gender, age close to statutory old-age pension, unemployment preceding retirement, the view that a disability pension is all right today and satisfaction with social network and leisure activities. Among these explanatory variables, gender and health status explained improvement in QL at the follow-up two years later. The rate of variance in change in QL explained by the association with change in health status was high. Changes in living conditions imposed by retirement, and not life as a retiree, were seen as crucial for change in QL among ERPs.

Key words: *disability pension, early retirement, musculoskeletal disorders, quality of life*

INTRODUCTION

In Sweden, as in other industrialised countries, many workers - especially older ones - leave the labour market permanently in advance of the statutory pension age. If work ability is reduced due to chronic ill-health or injury, a disability pension is considered and may be granted as a full-time or part-time benefit depending on the degree of the incapacity. The rate of early retired pensioners due to disability (ERPs) increased in the population aged 16-64 years in Sweden from 3.7% in 1970 to 7.6% in 1997. Increases in the rate of ERPs have been seen in other industrialised countries as well (Olsson-Frick 1985, Guillemard 1991, Kohli 1994) and different models to explain this increase have been developed (Guillemard, Rein 1993, Marklund 1995, Stattin 1997). According to the *pull-model*, the social security system, with increasing generosity regarding financial compensations and opportunities to retire early, is attractive for the individual. The pull-model emanates from micro-economic theory and describes the early exit as a personal, rational choice. The *push-model* focuses on the conditions of the labour market, where increasing demands eliminate workers who fail to achieve the set standards. Pull factors could be seen as emanating from positive and push factors from negative considerations (Schultz et al. 1998). *Individual factors* such as age, educational level and health status are of importance when a disability pension is considered. Some emphasise the "political economy" perspective (Guillemard, Rein 1993) and add a *systems model*, whereby variations in the rate of early retirees are explained by changes in the rules of the welfare system or the practices among civil servants at the local social insurance offices (Berglind 1994, Hetzler 1994).

The health status of the older workforce improved during the 1980s in Sweden (Diderichsen 1992) which implies that the increase in the rate of ERPs during that period must be explained by other factors than a decrease in health status in the population (Staaf et al. 1995). The paradox in the drop of the age of exit from gainful work parallel to an increase in health resources for aged people in Western Europe is also stressed by Kohli (1994). The general explanation is that access

criteria have been somewhat relaxed, i.e. the right to a pension was strengthened (Olofsson, Petersson 1995).

Changes in the rules for becoming an ERP in Sweden made the benefit available to broader layers of the population in the 1970s (e.g. through less pronounced requirements for older workers to be in ill-health to receive a disability pension). The vast majority of disability pensioners (72%) in the late 1970s did not want to go back to work, mainly due to health problems which made them consider work to be a bad alternative (Hedström 1987). A disability pension was thus increasingly seen as a social right by some individuals, while others most likely still felt they were sorted out of the labour market against their own will. This combination of entitlement and compulsion might affect the quality of life (QL) among ERPs in the same way as has been shown in a study of voluntary and involuntary early exits from the labour market (Schultz et al. 1998). In that study those who considered their retirement to be voluntary had higher life satisfaction. In a previous article (Edén et al. 1999) we have shown that individuals who were forced to have a disability pension against their own wishes run the risk of having poor QL in the future. The same was true for individuals who had been working or out of work less than one year during the five years preceding the retirement decision; a result that indicates that a disability pension is seen as a relief for the individual who recently experienced a long period of unemployment.

Other indicators of poor QL among ERPs we found (Edén et al. 1999) were: being an immigrant, having a poor self-rated health status, experiencing a deteriorating ADL-capacity, suffering from a high level of neurotic symptoms, lacking opportunities to indulge in some leisure time activity, having a poor self-image and being discontented with one's economy and social network.

Getting an objective disease diagnosis by a physician is seldom related to poor QL according to Ventegodt (1995), whereas the subjective health status is of great importance for QL in the general population (Glazer 1987, Ventegodt 1995, Bowling 1995, Farquhar 1995) as well as among ERPs in our study (Edén et al.

1998, 1999). The health status of an individual might be influenced positively (Ekerdt et al. 1983) or negatively (Salokangas et al. 1991) by a disability pension. Our study reveals that women > 54 years of age declare their subjective health status to improve after a disability pension, while younger women and men in all ages run the risk of a deterioration, and immigrants were found to have an exposed position concerning change in health status as ERPs (Edén et al. 1995).

A disability pension is part of the welfare system aiming at economic security for the individual. But a welfare approach ought to include more than economic/materialistic considerations - welfare from the individual's point of view should be considered as the possibility to be satisfied with different aspects of life, i.e. to experience good QL. In order to improve the future social security programme concerning disability pensions, knowledge about factors related to QL and change in QL among ERPs is important. Such knowledge is sparse today.

The aim of the present paper was to identify determinants of a perceived improvement in quality of life among disability pensioners suffering from musculoskeletal disorders. The aim was furthermore to estimate the importance of subjective health for the quality of life among the disability pensioners.

METHODS

The study was performed in Kristianstad municipality in southern Sweden, with about 70,000 inhabitants. The study group consisted of all 450 persons aged 25-59 years granted a full-time early retirement pension during the period 1986-1990 due to disorders of the musculoskeletal system. They were defined by all diagnoses in chapter 13 (diseases of the musculoskeletal system and connective tissues), and diagnoses within the musculoskeletal system in chapter 17 (injuries and poisonings), in the ninth revision of the international classification of diseases

(WHO:ICD-9). They constituted about 50% of all newly granted disability pensions in the studied area during the period.

In January 1992 a questionnaire was sent to all ERPs in the study group. The response rate was 83.6%. Two years later a second questionnaire was sent to all ERPs who answered the first one. The response rate was now 95.1%. The age and sex distribution of the participants in the 1994 survey is described in Table I. The study group and the non-response analysis have been described in greater detail previously (Edén et al. 1994).

Table I. Age and sex distribution among the participants in the 1994 survey (%)

	Males (n=111)	Females (n=241)
- 44 years	4.5	6.6
45 – 54 years	17.1	26.6
55 - years	78.4	66.8

The ERPs were aged 25-59 years at the time of retirement.
The questionnaire was sent out 3-8 years after retirement.

Quality of life, definition

Quality of life is here referred to as the individual's evaluation of his/her life contents, i.e. global QL, and is based on self-report. This is in accordance with how several other authors define QL (e.g. Naess 1989, Farquhar 1995, Bowling 1995). The concept of global QL is here dealt with from two aspects: present quality of life (PQL) which reflects the current life situation and change in quality of life (CQL) since retirement (1992) and since 1992 (1994). To investigate QL the questionnaires dealt with the following items of which the first was used for investigating global QL by Nordbeck (1991, Samuelsson et al. 1997):

1. "How do you feel about your life as a whole just now?" (PQL)

- with five response categories: "very good, rather good, neither good nor bad, rather bad, very bad".

2. "Do you think that your life as a whole has become better or worse since you got your early retirement pension – compared with the year just before this pension?" (CQL 1992), "Do you think that your life as a whole has become better or worse compared with two years ago?" (CQL 1994)

- with five response categories: "much better, better, unchanged, worse, much worse".

Other definitions

Immigrants were defined as those who had come to settle in Sweden, or whose parents were both immigrants. Out of work was classified according to the answers to the question "Were you out of work for any period during the five years preceding the early retirement?" with the response categories "yes one year or more, yes less than one year, no". The answers to the questions "Do you think a disability pension was the best solution for you, the day you got it?" and "Do you think a disability pension is the best solution for you today?" were dichotomised into "yes" and "doubtful + no".

Information about applications for work injury was collected from the local insurance office (no application, not granted, granted). The one or two diagnoses entered by the authorities as the main reasons for granting an early retirement were grouped into A: Chronic arthritis and other inflammatory rheumatic disorders, diagnoses 710-712, 714, 720, 725; B: Back pain, diagnoses 721-724; C: Fibromyalgia and other general pain disorders (non-inflammatory conditions), diagnoses 726-729; D: Other non-inflammatory conditions, local and regional, diagnoses 713, 715-719, 730-739; E: Injuries, diagnoses 805-848, 880-897, 905, 922-924, 926-929 (WHO:ICD-9). Individuals with a psychiatric diagnosis (290-319) combined with the musculoskeletal disorder were identified.

Subjective health status was measured by the answers to the item "How would you describe your overall health status at present?" with five response categories "good, fairly good, neither good nor poor, fairly poor, poor", and change in subjective health status with the item "How would you assess your health status today in comparison with the year before retirement" (1992) …."two years ago" (1994) with the five response categories "much better, a little better, basically the same, a little worse, much worse".

The prevalence of 19 different symptoms was examined. The respondents were asked if the symptom had troubled them in the last month. The answers were dichotomous: Yes or No. The list of symptoms used was principally the same as the one used in a population study from Gothenburg, Sweden (Tibblin et al. 1990). The number of Yes-answers was summarised for each individual, thus creating an index of symptoms, ranging from 0 to 19. One index of neurotic symptoms (NI) with seven items, range 0-7, and one index of psycho-somatic symptoms (PSI) with five items, range 0-5, were used in the study. They were created by means of a factor analysis, and have been described in detail previously (Edén et al. submitted).

Activities of Daily Living (ADL) were rated by graded questions about the ability to perform six different activities: dress, get in and out of bed, wash, leave one's home, walk 500 metres, and run/jog one kilometre. The ability was rated in six steps, from "no difficulty" to "impossible", and the answers were given values from 1 to 6. An ADL-index was calculated by summarising these values, thus ranging from 6 to 36. Change in ADL since retirement was categorised into "much better, better, unchanged, worse, much worse".

The answers to the four items "Please mark your satisfaction or dissatisfaction with your situation regarding: home and family; dwelling; economy; leisure time" were from "very satisfied" to "very dissatisfied" on a five-grade scale. The item "Do you ever feel lonesome?" had four response categories "Yes often, yes

sometimes, no seldom, no never". The same response categories were used in the item "Do you ever have difficulties in passing time?"

An index of positive self-image was based on five self-ratings: "Here you find descriptions of some characteristics and conditions. Please mark the alternative you find most appropriate for yourself: I am a contented, harmonic person; I am an active person; I am an independent person; I have good self-confidence; I have a positive view of life" with the four response categories "Most appropriate, fairly appropriate, only partly appropriate, not at all appropriate" for each item. The answers were given values from 1 (most appropriate) to 4 (not at all appropriate), summarised to an index ranging from 5 to 20. The item "I am able to influence most things that happen to me" was added to the self-image questions in the 1994 questionnaire (and treated separately).

Some other variables were unique for the 1994 questionnaire, such as if the individual was still a disability pensioner, if it would be possible to go back to work and if the spouse was working or not. A question concerning self-rated consequences of the early retirement was added in 1994 and covered six dimensions: physical health, sense of well-being, economic situation, contact with others, opportunities for meaningful leisure time activities and overall consequences, with the response categories "very positive, rather positive, neither positive nor negative, rather negative, very negative".

Statistical analyses

A chi-squared test was used to compare proportions between groups. To decide the importance of subjective health for the QL among the ERPs Spearman's correlation coefficient (r_s) was used. The coefficient of determination (r_s^2) was calculated to estimate the rate (%) of the variance in QL explained by the association with the health variable.

Multivariate analyses were carried out by means of a logistic regression model with CQL as the dependent variable dichotomised by the median value 1992 into

Improving (response categories "much better" and "better") and Unchanged or Deteriorating (remaining response categories). Explanatory variables included in the model were those with a significant bivariate relation to the dependent variable (Table II, III). The level of significance was set to 0.05. In the logistic regression analyses variables on an ordinal level or higher were dichotomised by using the median value to split the variable. The results from the logistic regression analyses were expressed as odds ratios (OR) with 95% confidence intervals (CI). Since OR is used to compute the relative risk ratio for a negative outcome, Table II and III show the OR for unchanged or deteriorating CQL.

The study was approved by the Committee on Ethics at the Faculty of Medicine, University of Lund (LU 289-91 and LU 327-93).

RESULTS

Self-rated improvement in QL since the year preceding the disability pension decision one to six years ago (CQL 1992) was significantly related to: female gender, age (individuals with less than ten years left to old-age-pension), the view that the early retirement is all right today (1992), having been out of work for some period during the five years preceding the early retirement, an unchanged or improved subjective health and ADL-status since retirement, and satisfaction with social network and leisure time activities (Table II).

A self-rated improvement in QL two years later (CQL 1994) was connected to: female gender, work injury (individuals who never applied for or whose application was not approved), unchanged or improved subjective health status since 1992, and having the view that the health consequences and overall consequences of the early retirement were positive (Table III).

Table II. Odds ratios (95% confidence intervals) for determinants of unchanged or deteriorating CQL among ERPs 1992 (n=376). Results from logistic regression modelling of variables showing a bivariate correlation to CQL

Background variables (n=347)	OR	(CI)
Gender: male	**2.05**	(1.22-3.46)
Age <55	**1.93**	(1.12-3.30)
Immigrant	1.50	(0.77-2.95)
Early retirement not ok when retired	1.52	(0.66-3.50)
Early retirement not ok today	**4.74**	(1.002-22.39)
Out of work:		
= 1 year	1.00	
< 1 year	4.83	(0.95-24.57)
not out of work	**2.86**	(1.05-7.79)
Health related variables (n=318)		
Self-rated health: bad	1.13	(0.64-2.00)
Deteriorating self-rated health	**2.32**	(1.27-4.25)
Medication	1.25	(0.44-3.53)
Medication: Analgesics	1.19	(0.52-2.76)
Health care not diminished	1.61	(0.94-2.75)
ADL deteriorating	**2.06**	(1.13-3.75)
Other variables (n=289)		
No close contact outside home	**2.57**	(1.05-6.30)
Leisure time: not content	**2.18**	(1.26-3.75)
Difficulties in passing time	**2.13**	(1.19-3.82)
Economy: not content	1.20	(0.69-2.11)
Economy deteriorating	1.68	(0.95-2.98)
Self-image not positive	0.90	(0.53-1.54)

ORs in bold when $p<0.05$

Variables not showing a bivariate relation to CQL and therefore not included in the logistic regression model were: year of retirement, educational level, kind of work before retirement, working hours, work injury, initiative to retirement, dwelling today, dwelling five years ago, other ailments than musculoskeletal disorders (cardiovascular, pulmonary, psychiatric, diabetes), number of symptoms, psycho-somatic symptoms, neurotic symptoms, ADL-status, smoker, change in smoking habits, BMI (body mass index), diagnoses at retirement (see Methods for definitions), in hospital, visit to caregivers (physician, nurse, physiotherapist, alternative care), medication (cardiovascular, pulmonary, diabetes, sleeping pills), civil status, satisfaction with home and family, number of contacts outside home, lonesomeness, change in lonesomeness since retirement, satisfaction with dwelling, satisfaction with previous job.

Table III. Odds ratios (95% confidence intervals) for determinants of unchanged or deteriorating CQL among ERPs 1994 (n=352). Variables showing a bivariate correlation to CQL.

Background variables (n=347)	OR	(CI)
Gender: male	**2.21**	(1.09-4.48)
Immigrant	2.57	(0.97-6.80)
Work injury:		
no application	1.00	
not approved	1.35	(0.63-2.90)
approved	**1.99**	(1.04-3.83)
Health related variables (n=324)		
Self-rated health: bad	1.43	(0.59-3.48)
Deteriorating self-rated health	**2.98**	(1.26-7.07)
Medication	0.88	(0.31-2.47)
Medication: analgesics	2.01	(0.85-4.73)
Health consequences due to retirement: not positive	**4.45**	(2.10-9.40)
Other variables (n=300)		
Consequences due to retirement:		
contact with others: not positive	1.73	(0.78-3.80)
economy: not positive	0.91	(0.46-1.81)
leisure time: not positive	1.44	(0.71-2.91)
overall consequences: not positive	**4.49**	(1.73-11.66)

ORs in bold when $p<0.05$

The number of years since retirement had no significant bivariate correlation to PQL or CQL in either 1992 or 1994. The correlation between CQL92 and CQL94 was $r_s=0.275$ (with a coefficient of determination, $r_s^2=0.076$).

The correlations (r_s) between PQL and subjective health status were 0.546 (1992) and 0.648 (1994). The coefficients of determination (r_s^2) were 0.298 (1992) and 0.420 (1994). Correlations (r_s) between CQL and change in subjective health status were 0.508 (1992) and 0.645 (1994) with coefficients of determination (r_s^2) 0.258 and 0.416 respectively.

DISCUSSION

The importance of subjective health status for QL was demonstrated in our study. This is in line with results from population-based studies (Glazer 1987, Ventegodt 1995, Bowling 1995, Farquhar 1995). The rate of variance in PQL explained by the association with self-rated health status was 30% in 1992 and 42% in 1994. A similar very high connection was found considering CQL and change in subjective health status. The direction of the influence is not obvious, however, but presumably mutual. A deteriorating health status will affect the QL negatively, and a low QL might entail psycho-somatic problems, thus causing a vicious circle. It is hardly surprising that individuals with health problems, e.g. ERPs, who find that their health status has improved estimate their CQL to have improved as well. Another rather natural finding is that individuals who experienced decreasing restrictions in ADL found CQL to have improved irrespective of perceived health status (Table II).

Male ERPs - compared to female ERPs - more seldom considered their CQL to have improved since retirement (Table II) and as a retiree (Table III). Gender roles are known to vary with living conditions. In Sweden there was a gender difference in the early 1990s concerning age and the importance of gainful employment and domestic work (Nordenmark 1995). Men and women aged 51-60 years showed the traditional gender roles: women considered domestic work as the basis for their self-esteem, and their identity was partly related to the professional occupation of their husbands, while the identity of men to a great extent was determined by their own job. Among younger individuals a different pattern emerged: for women their job was more important, and they appreciated the relative independence a job entailed. The amount of domestic work carried out by men decreased with increasing age. The traditional gender roles mean that for unemployed men engagement in housework is considered as a substitute for what they really want: a paid job (Glorieux 1999). Even if unemployed men have been shown to value housework higher than employed men, the urge for a paid job presumably is stronger among male than among female ERPs. In our study most

of the ERPs belong to the ages characterised by traditional gender roles. Female ERPs thus might appreciate the retirement as a relief from the double responsibility of paid work and as primary domestic care-giver. The dissatisfaction among men forced to leave the labour market might affect CQL negatively among male ERPs since they have more difficulties in finding meaningful activities which could be seen as a substitute for gainful employment.

The ERPs with less than ten years left to old-age pension more often than the younger ones considered their CQL to have improved since retirement (Table II). Paid work could be seen as purely instrumental, as something evil needed to acquire material resources, or as an activity of great positive value for the individual and society. According to the instrumental view, a disability pension should be a relief for everyone irrespective of age. But if work has values beyond the economic ones, if work is to be seen as giving the individual a feeling of fulfilling important common social obligations, that is, if the work ethic is strong, a disability pension must be harder to accept the younger you are. Our results support the latter view.

Our study shows that individuals who experienced a period of unemployment during the five years preceding the disability pension considered their CQL to have improved after the early retirement more often than individuals who were not unemployed close to the early retirement (Table II). Harmful effects of unemployment regarding self-esteem, self-confidence and psychic stress have been demonstrated in several studies (e.g. Oswald 1995, Glorieux 1999). Life as unemployed and as an ERP is similar regarding the orientation of the individual towards meaningful activities other than paid work. Individuals suffering from musculoskeletal disorders, and with personal experiences of both unemployment and disability pension, obviously find life as a pensioner better. This confirms the finding reported earlier (Edén et al. 1999) showing that PQL as a retiree was more positive among ERPs who had experienced a long period of unemployment during the five years preceding the disability pension.

The ERPs who found the disability pension to be the best solution in 1992 considered their CQL to have improved more often than ERPs who were not convinced that the retirement was justified (Table II). This finding is in line with the results reported in a study concerning voluntary early retirement schemes (Maule et al. 1996), where the most important factor influencing QL among the retirees was the matching of expectations of further work at the point of decision. If an ERP considers push factors to have had a strong influence on the decision concerning the disability pension, obviously the CQL, as well as PQL, is affected negatively.

To experience an improvement in CQL since the disability pension, the importance of a functioning social network and opportunities to indulge in leisure activities was stressed in our study (Table II). Among old-age retirees social and leisure activities are known to contribute substantially to QL (Bernard, Phillipson 1995). A disability pension does not hamper the individual's motivation to participate in leisure time activities (Hedström 1987), and among ERPs leisure activities might be stressed as a compensation for the premature loss of a work role. If health problems restrict the chance of engaging in certain leisure activities highly valued by the individual and it is hard to find any other meaningful activities, QL must be affected negatively. The daily social contacts at work terminate when the person is granted a disability pension, and ill-health might influence the potential to engage in social activities, thus reducing the social network among some of the ERPs.

Gender and subjective health were the only variables related to change in QL since retirement, CQL 92, as well as at the follow-up, CQL 94 (Table II and III). This indicates that it was the retirement itself (and the conditions leading to the retirement decision) that were of crucial importance for the change in CQL. Two years more as an ERP did not influence most of the variables related to CQL 1992. This was confirmed by the finding that the number of years since retirement did not affect PQL or CQL in either 1992 or 1994. Obviously the CQL questions measured different aspects of change in QL. Only 8% of the variance in CQL 94

was explained by the association to the CQL 92. The change in QL since retirement is thus something other than a change in QL as a disability pensioner.

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