

## SELF-ESTIMATED LIFE SITUATION IN PATIENTS ON LONG-TERM SICK LEAVE

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**Objective:** To analyse the influence of long-term sick leave on patients' life situation.

**Design and subjects:** Cross-sectional study based on 1350 individuals with a consecutive sick leave period of 12–18 months. Half were still on sick leave, half were no longer sick-listed.

**Methods:** A total of 862 participants answered a postal questionnaire including 24 questions on consequences of their sick leave on daily life. Results were analysed by gender, age and type of sick leave diagnosis. Associations between consequences and return to work were analysed by multiple logistic regression.

**Results and conclusion:** Negative effects of long-term sick leave were particularly related to leisure activities, sleep and psychological well-being. A reduced alcohol intake was more prevalent than increased consumption. Among individuals with psychiatric diagnoses the consequences were polarized, with few persons unaffected, while the effects were more unipolar and negative in other diagnostic groups. Women experienced positive consequences more often than men, attributed to relationships with children and partner, sleep and psychological well-being. Improved sleep was associated with return to work, particularly among older individuals. Negative consequences on life situation are far more common than positive consequences among patients on long-term sick leave. Benefits as well as adverse effects differ depending on diagnosis, age and gender.

**Key words:** sick leave, quality of life, lifestyle, psychosocial factors, psychiatric disease, musculoskeletal disease, sleep disorder.

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### INTRODUCTION

Sick leave is a common healthcare remedy in Sweden. The general purpose of the sick leave insurance system is to provide reasonable economic prerequisites for people whose earnings

are affected by reduced work capacity due to disease or injury. Sick leave is also meant to facilitate a recovery and regaining of work ability. Compared with other types of therapies, such as medication or surgery, which are directed with a relatively high precision towards a specific organ or impaired function, the sick leave instrument is a more general tool that may affect the individual's total life situation. Sick leave may sometimes entail unintended or unexpected physical, mental or social, negative and positive effects. Adverse effects may be particularly common for long-term sick leave. Long-term sick leave may also affect the individual's financial conditions (1, 2), which, in turn, may bring about secondary effects in terms of psychological reactions or a changed life situation. Speculations about negative consequences are common in the general debate on sick leave, but the scientific evidence is sparse (3). The few studies that have been performed within this research area indicate, however, that several types of negative consequences may occur, such as pain, reduced well-being, impaired self-image and career opportunities, isolation and inactivity (3–6). The consequences of long-term sick leave should also be dependent on the type and severity of the disease or injury in question and on the rehabilitation efforts provided. For physicians, knowledge of the possible negative consequences of sick leave, when recommending such to a patient, is of crucial importance. What types of negative "side-effects" can be expected, when might they show and how can they be counteracted?

The aim of the present study was to analyse the influences of long-term sick leave on the individual's life situation: social activities, personal relationships, lifestyle, psychological well-being, self-perception, markers of alienation and feelings of guilt. In addition, we explored to what extent such consequences were associated with the probability of returning to work.

### METHODS

The cross-sectional study was based on questionnaire data from the governmental project "Strategies for an improved occupational health". The questions on consequences of long-term sick leave on daily life were partly elaborated by an expert group at the Swedish Council on Technology Assessment in Health Care (3) and partly based on pilot interviews with individuals on long-term sick leave carried out at the National Institute for Working Life (unpublished data 2002).

#### Study groups

Two groups of study individuals were recruited from the national sickness-absence register at the National Social Insurance Board. One group comprised 675 randomly selected persons with an ongoing sick leave

Table I. Consequences of long-term sick leave on the patient's life situation

How was the following influenced by your sick leave?	Number of respondents					Prevalence (%)** of	
	Total	Men	Women	20–50 years	> 50 years	Negative effects Total	Positive effects Total
Possibility of and desire for:							
your leisure activities	821	291	530	512	309	68	9
involvement in associations/clubs	806	287	519	505	301	59	5
participation in social and family activities	819	289	530	510	309	55	6
Your relationship(s) with:							
your partner (if applicable)	686	235	451	418	268	27	15
your children (if applicable)	641	218	423	358	283	20	18
other family members	806	280	526	506	300	22	13
friends	826	283	543	514	312	29	11
Your:							
self-image (self-confidence, etc.)	812	283	529	506	306	49	10
psychological well-being	827	288	539	513	314	61	11
sleep	831	290	541	518	313	66	11
lifestyle (food habits, physical exercise, reading, etc.)	819	287	532	515	304	49	22
Your:							
smoking	476	165	310	301	175	15	16
use of alcohol	707	257	449	447	260	6	23
use of medicines*	749	258	491	463	286	18	7
Your financial situation	827	288	538	514	313	81	2

\* Other than what you may need for your disease.

\*\* Weighted by age.

with a duration of 12–18 months in April 2001. The sample was stratified by age, with 150 individuals from each of the age groups 20–29, 30–39, 40–49, 50–59 and with 75 individuals 60–65 years of age. The second group, also comprising 675 individuals was sampled from the same register. They had also had a sick leave period of 12–18 months, which was terminated within the 6 months preceding April 2001. The 2 study groups enabled us to analyse if the consequences of the sick leave were different for individuals who were still sick listed and individuals who were back in work (no longer sick listed). The individuals in both groups had on average been sick-listed for 3 years during their lifetime.

A questionnaire was posted to the home address in August–September 2001. After postal reminders and a follow-up of the non-responders by means of telephone interviews (including selected items of the questionnaire but not the questions on consequences of sick leave), 1017 persons (75%) had answered; 63% were women. In the present report, we used data from the 862 individuals with complete questionnaires, corresponding to a participation rate of 64%. The data collection was performed by Statistics Sweden.

#### Study variables

We want to emphasize that the aim was not to study the influence of sick leave on the disease in question. Rather, the focus of the study was on the negative and positive influences on daily life conditions of long-term sick leave. It is however, a delicate task to distinguish between consequences of the sick leave *per se* and consequences of the disease that caused the sick leave. The individuals were requested to focus on the influences of their sick leave as such on the different aspects of their life situation. Nevertheless, it might have been difficult to maintain a clear distinction between sick leave and disease because of their close relationship.

The 12-page questionnaire comprised questions concerning the individual's willingness to return to work and associated conditions. Many of the questions were replicated from earlier occupational questionnaires. In addition, the construction of the questions about consequences was based on literature and the results from 15 semi-structured pilot interviews (1–2 hours) with individuals on long-term sick leave. The questions relate to different activities, relationships with family

members and friends, lifestyle factors, psychological well-being and financial situation (see Table I). Five response alternatives were given, indicating that the sick leave had a very negative influence, a negative influence, no influence, a positive, or a very positive influence. In the analysis, the scale was collapsed into 3 categories: no influence, positive, or negative influence. Regarding smoking, use of alcohol and use of medicines (other than those needed for the disease in question), the response alternatives were: much reduced, reduced, unchanged, increased, and much increased. Also this scale was reduced to 3 categories: unchanged, reduced, or increased. The response categories linked to the question on financial situation corresponded to: much worsened, worsened, no difference, improved, and much improved, in the analysis collapsed into: no difference, worsened, or improved.

Some questions focusing on the individual's experience of alienation and guilt during sick leave were also created (see Table III). These items appeared as statements and the individuals responded according to four alternatives that were reduced to a dichotomy in the analyses: agree (completely, partly) or disagree (completely, partly).

The sick leave diagnoses were based on the individuals' answers to the question: "What is/was the reason for your sick leave?" The answers were classified into 10 categories (7), which were aggregated into 3 groups of diagnoses: psychiatric, musculoskeletal and other diagnoses. Psychiatric diagnoses included the burnout syndrome, depression, psychiatric disorders sometimes combined with other symptoms (pain). Musculoskeletal diagnoses included joint problems, fibromyalgia, herniated disks and other unspecified back problems, whiplash, complaints related to the neck and shoulders, arms, knees, hips, wrists, elbows, etc. The group "other diagnoses" included all remaining diagnoses, such as cardiovascular diseases (e.g. heart disease, high blood pressure), cancer, diseases of the digestive organs, hearing problems, allergy, etc.

#### Methods of analysis

In the descriptive part of the study, we analysed the prevalence of different consequences of sick leave according to gender, age and type of diagnosis. The prevalence figures were based on the 2 study groups combined (individuals on sick leave or with terminated sick leave),

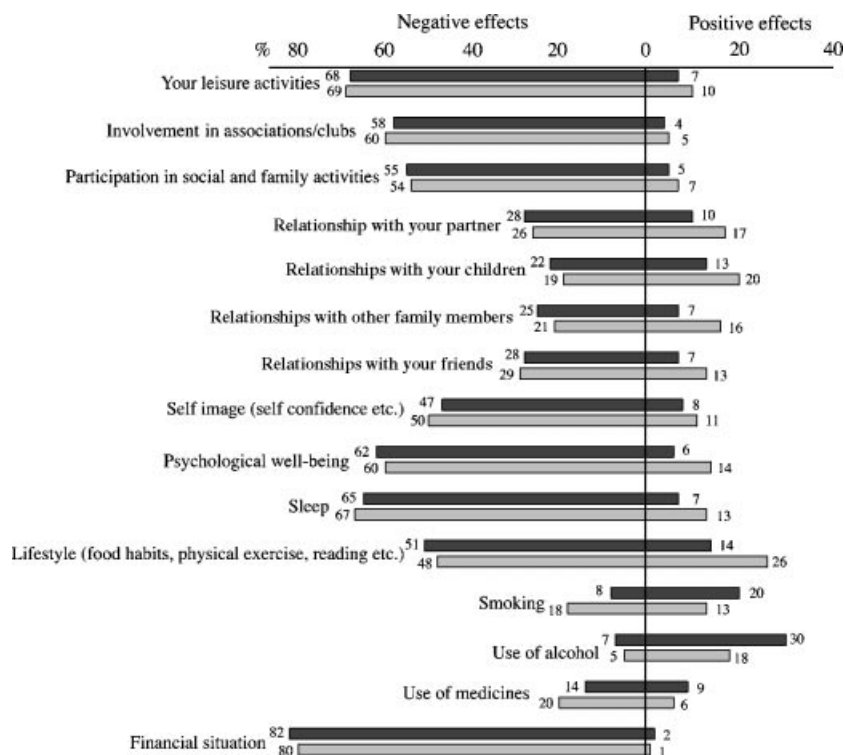


Fig. 1. Negative and positive influence of long-term sick leave on the patient’s life situation, by gender. Women (light bars); Men (dark bars).

which improved the statistical precision. The combined analyses were also justified because all individuals had a similar experience of long-term sick leave and there were few and comparatively small differences between the groups regarding the questions that were analysed. Initially we used 5 age groups, which were reduced to a dichotomy: 20–50 years and more than 50 years. The dichotomy was justified because we found no major differences between the more narrow categories below 50 years of age, neither between the categories above 50 years of age.

As our aim was to provide population estimates, we weighted the results in order to show estimates for the base population of individuals with a sick leave period of 12–18 months (weighted results, 10-year age groups). Regarding the age specific results that are given, the prevalence was weighted within the 2 broader strata 20–50 and above 50 years of age.

The differences between subgroups, i.e. men vs women, older vs younger individuals, and comparisons between the diagnostic groups were tested by chi-squared test. Differences mentioned in text were statistically significant ( $p < 0.05$ ).

We also evaluated if a positive or negative influence on life situation was associated with return to work, by means of multiple logistic regression in order to (at the same time) adjust for potential confounding. Regression analyses were also performed within specific strata in order to elucidate to what extent the associations might differ between women and men, older and younger individuals, or between sick leave diagnoses. Individuals who were still sick listed in August–September 2001 either full-time ( $n = 279$ ) or part-time ( $n = 149$ ) and individuals who were not working and granted temporary or permanent disability pension full-time or part-time ( $n = 117$ ), were classified as not being back in work. In the comparison group, classified as “back in work”, no one was sick listed; they were working full-time or part-time ( $n = 284$ ), or working with temporary or permanent disability pension ( $n = 102$ ); they were students, individuals on parental leave, or persons in workplace rehabilitation ( $n = 85$ ). The last mentioned category was judged to be closer to those who had returned to work compared with those who were still on sick leave or on disability pension without work.

The associations between positive, or negative, consequences and being back in work were estimated by odds ratios (OR), with those reporting no consequences as reference. The results were adjusted for

potential confounding according to the comments provided in text or footnotes of the tables. The statistical precision was given by 95% confidence intervals (95% CI). Similarly, we evaluated whether alienation and feelings of guilt due to the sick leave were associated with return to work. In these analyses, those who agreed to a statement were analysed with those who disagreed as reference group.

## RESULTS

### Negative influence

Most people reported that the sick leave had a negative influence on their financial situation (81%) and more than 60% reported negative effects on leisure activities, sleep and psychological well-being (Table I). Similarly, a majority reported decreased possibilities and desire for social and family activities. About every second individual experienced an impaired lifestyle (food habits, physical exercise, reading, etc.) and self-image. Regarding the relationships with the partner, children, other family and friends, 20–29% reported negative effects.

Negative consequences were in general more prevalent in men compared with women, with 2 exceptions: women increased their smoking and use of medicines (other than those needed for the disease) more often than men (Fig. 1).

Throughout, the negative effects were more common among individuals 20–50 years of age compared with older individuals (Fig. 2). The largest discrepancies were found for relationships with children and partner, other family members and friends. In addition, the question on self-perception showed age differences, negative effects were more common among those 20–50

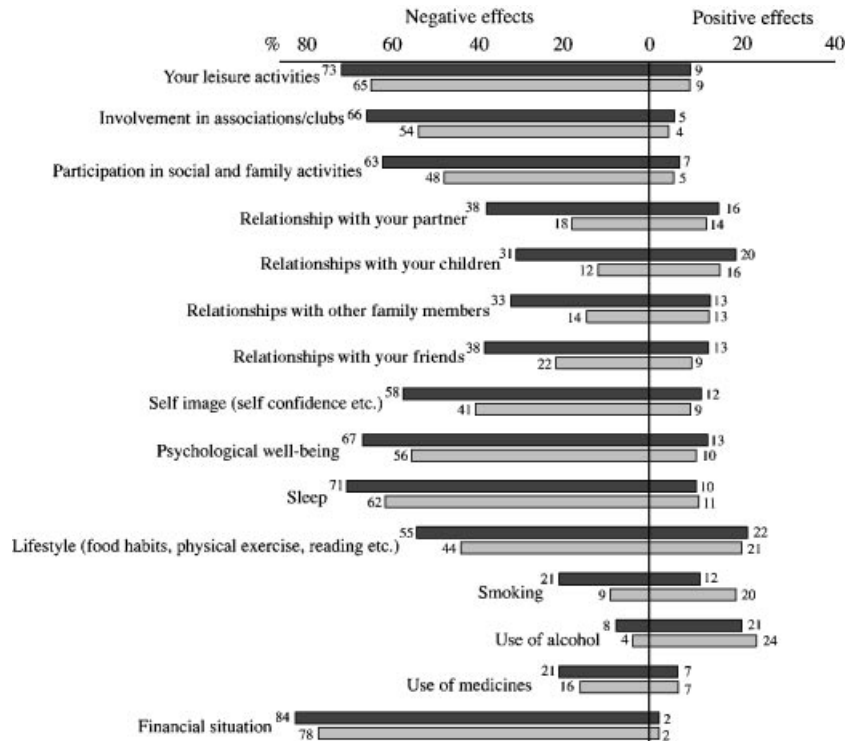


Fig. 2. Negative and positive influence of long-term sick leave on the patient's life situation, by age. Younger individuals (dark bars, 20–50 years of age); older individuals (light bars, >50 years of age).

years of age compared with older individuals. Also, other differences between the age groups were revealed (Fig. 2).

#### Positive influence

The influence of long-term sick leave on life situation was mostly negative, and in one respect only, were positive effects more common than negative. This pertained to the use of alcohol, where 6% reported an increase in use, while 23% reported a reduced intake. The highest prevalences of positive consequences were attributed to use of alcohol, lifestyle, smoking habits and relationships with children and partner (Table I).

Overall, there was a clear difference between women and men, in that women more often than men experienced positive effects (Fig. 1). This was most pronounced for lifestyle, relationships with children and partner, other family members and friends and regarding sleep and psychological well-being. In all these respects, the proportions among women were 6–10% higher than among men. Two exceptions were found, where men reported positive effects more often than women: use of alcohol and smoking; 30% among men vs 18% among women reduced their use of alcohol, 20% vs 13% decreased their smoking.

In a few cases, the positive effects were modified by age (Fig. 2); reduced smoking was mentioned more often among those above 50 years of age compared with younger individuals.

#### The influence of sick leave diagnoses

**Psychiatric diagnoses.** Individuals who were sick listed with psychiatric diagnoses differed clearly from other groups in that

they in general reported consequences of long-term sick leave more often than others. The effects were, furthermore, more polarized, i.e. both positive and negative effects were mentioned more often. For several aspects, 16–31% reported positive influences: for psychological well-being, sleep and lifestyle, relationships with the children, partner, other family members and friends, and possibilities and desire for leisure activities. Women experienced positive consequences more often than men regarding friendship relations, sleep, lifestyle, as well as psychological well-being. Men, on the other hand, showed a higher prevalence than women of decreased use of alcohol (Table II).

However, against the outcome on positive consequences stands the outcome on negative effects. The proportion of individuals reporting a negative influence was, with 1 exception, higher than the proportion of individuals perceiving positive effects. The exception pertained to alcohol, particularly in men. More than every third man classified with psychiatric disorders reported that the sick leave entailed reduced use of alcohol, while 9% reported an increased consumption. About every third women sick listed with psychiatric disorders reported that the sick leave had influenced the relationships with their children positively, but a similar proportion reported negative consequences (Table II).

**Musculoskeletal diagnoses.** Individuals with musculoskeletal disorders showed a higher prevalence compared with others regarding negative effects on the financial situation and on leisure activities.

Table II. Consequences of long-term sick leave on life situation, in men and women with different diagnoses

How was the following influenced by your sick leave?	Prevalence of negative effects (%)**						Prevalence of positive effects (%)**					
	Diagnosis						Diagnosis					
	Psychiatric		Musculo skeletal		Other		Psychiatric		Musculo skeletal		Other	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Possibility and desire for: your leisure activities involvement in associations/clubs	62	66	74	76	69	56	19	12	6	4	3	9
participation in social and family activities	66	69	57	61	56	44	4	8	5	1	5	6
Your relationship(s) with: your partner (if applicable)	65	64	49	58	47	41	9	11	5	3	5	6
your children (if applicable)	37	45	21	28	23	12	25	17	14	6	11	9
other family members	30	36	13	18	13	17	31	22	15	10	15	9
friends	30	43	15	20	20	17	24	14	11	3	9	8
Your: self-image (self-confidence, etc.)	42	48	21	23	26	17	19	7	9	4	11	9
psychological well-being	60	66	48	41	37	37	19	13	5	5	12	8
sleep	63	75	56	61	67	48	31	12	5	1	8	8
lifestyle (food habits, physical exercise, reading, etc.)	67	70	69	69	57	55	23	13	6	4	10	8
Your: smoking	49	53	49	57	46	41	36	8	22	9	17	22
use of alcohol	25	11	13	10	14	4	14	26	13	17	13	26
use of medicines*	10	9	2	5	1	9	15	37	18	24	27	38
Your financial situation	23	16	19	13	14	15	6	6	7	6	4	13
	75	84	84	83	82	76	3	0	0	1	0	7

\* Other than what you may need for your disease.

\*\* Weighted by age; underlined indicate a gender difference ( $p < 0.05$ ).

Comparatively few reported positive consequences on their life situation, and this was particularly true for leisure activities, social- and family activities. Similarly, few individuals in this group perceived positive effects regarding their relationships with children, partner, other family members and friends, sleep, lifestyle, psychological well-being and self-image (Table II). Also in this diagnostic group, it was clearly more common to report positive than negative effects on use of alcohol, in both men and women. Among women there was a comparable prevalence of negative and positive influence on the relationships with children and also on smoking (Table II). The differences between individuals sick listed with psychiatric and musculoskeletal disorders are shown in Fig. 3.

*Other diagnoses.* As expected, there were comparatively few individuals with other sick leave diagnoses. The overall outcome for these individuals was more similar to those with musculoskeletal than to those with psychiatric disorders. Reports of reduced use of alcohol were more common in this group (32%) compared with others. Furthermore, the individuals in this group reported negative consequences on sleep to a lower extent. Women experienced negative consequences on psychological well-being more often than men (Table II).

*Alienation and guilt*

About every third to every second individual had experiences of alienation and feelings of guilt as a consequence of their sick leave. The prevalence was modified by age, with those 20–50 years of age reporting alienation more often, e.g. unwillingness to meet with other people (54%) or feeling isolated from society (44%) (Table III). Those below 50 years of age also experienced guilt more often than older individuals; about every second person reported having a bad conscience for not being able to work, or being a burden to society. No major differences were found between men and women.

*Consequences of sick leave and return to work*

Those who reported positive effects on their possibility and desire to participate in different associations (sports, church, politics, etc.) showed a decreased probability of being back in work, based on small numbers (data not shown). This was mainly attributed to younger individuals, 20–50 years of age (Table IV) and to men (OR = 0.50; 95% CI 0.27–0.90).

Positive effects on sleep tended to increase the probability of being back in work; a close to 60% increase was noted in the

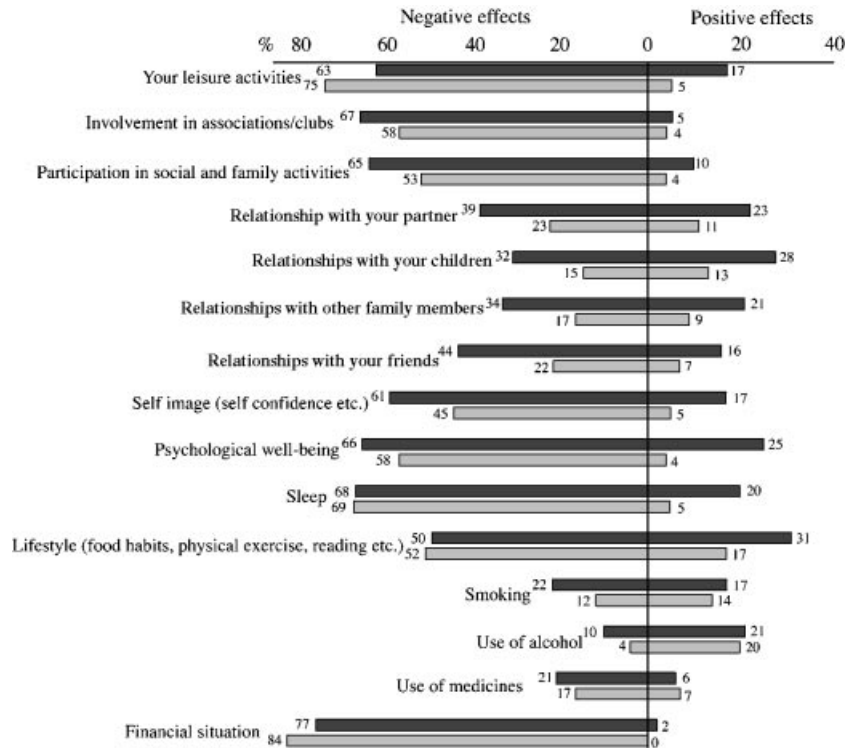


Fig. 3. Negative and positive influence of long-term sick leave on the patient’s life situation, by sick leave diagnosis. Psychiatric diagnoses (dark bars); Musculoskeletal diagnoses (light bars).

total study group. As already mentioned, a majority stated that their sleep got worse due to the sick leave. But, for the comparatively few who experienced positive effects on sleep this was associated with return to work, and in the age group over 50 years of age, this was particularly clear with an OR of 3.73 (Table IV).

In men, the probability of being back in work was reduced when the sick leave had negative effects on smoking (OR = 0.13; 95% CI 0.03–0.65) or a negative influence on the relationship with partner (OR = 0.48; 95% CI 0.25–0.95). For women, no consequences were associated with being back in work. All gender specific results were adjusted for age and type of diagnosis.

In the older age group (over 50 years of age), a clearly reduced possibility of being back in work was found when the sick leave entailed an impaired self-image, and when the sick leave entailed negative effects on participation in social and family activities (Table IV). In the younger individuals (20–50 years of age), those who increased their intake of medicines, other than those prescribed for the disease in question, showed a decreased possibility of being back in work. Furthermore, a distinction between the age groups was noted in that a positive effect on the relationships with “other family members” reduced the possibility of being back in work in the younger age group only. All age specific results were adjusted for age in 10-year intervals, gender and type of disease.

Table III. Alienation and feelings of guilt among patients on long-term sick leave

Agreement regarding the following statements:	Prevalence (%)*		
	Total	20–50 years	> 50 years
I often spent my days relaxing and recovering	73	74	73
I was active despite my sick leave	65	65	65
Being on long-term sick leave made me feel like a burden to society	37	42	33
It was hard telling people I was on long-term sick leave	46	51	43
I had a bad conscience not being able to work	45	55	37
I felt outside of society when I was on sick leave	37	44	31
I was more afraid and withdrawn when I was on sick leave	39	44	36
I felt a part of society even when I was on sick leave	53	42	61
I did not like to meet with people so much when I was on sick leave	50	54	46

\* Weighted by age; underlined indicate a difference between age groups ( $p < 0.05$ ).

Table IV. Associations between positive and negative consequences of long-term sick leave and return to work, by age group

How was the following influenced by your sick leave?	No influence	Positive consequences			Negative consequences		
	OR*	OR*	95% CI*	n**	OR*	95% CI*	n**
<i>20–50 years</i>							
Possibility and desire for:							
your leisure activities	1.00	0.53	0.25–1.10	16	0.76	0.48–1.21	151
involvement in associations/clubs	1.00	0.25	0.09–0.72	5	0.71	0.48–1.05	130
participation in social and family activities	1.00	1.05	0.50–2.21	15	1.19	0.79–1.79	136
Your relationship(s) with:							
your partner (if applicable)	1.00	0.58	0.31–1.12	19	0.91	0.59–1.41	74
your children (if applicable)	1.00	0.81	0.45–1.47	25	1.25	0.76–2.05	53
other family members	1.00	0.50	0.27–0.92	19	0.90	0.60–1.34	71
friends	1.00	0.76	0.42–1.34	24	1.00	0.68–1.48	82
Your:							
self-image (self-confidence, etc.)	1.00	0.94	0.49–1.78	23	1.05	0.69–1.58	118
psychological well-being	1.00	0.91	0.46–1.80	24	1.11	0.71–1.75	142
sleep	1.00	0.81	0.38–1.71	17	1.12	0.70–1.80	155
lifestyle (food habits, physical exercise, reading, etc.)	1.00	1.12	0.64–1.95	47	0.94	0.60–1.48	116
Your:							
smoking	1.00	1.18	0.61–2.31	21	0.58	0.31–1.08	20
use of alcohol	1.00	0.86	0.54–1.36	42	0.76	0.37–1.60	13
use of medicines***	1.00	1.28	0.64–2.59	17	0.60	0.36–0.99	26
Your financial situation	1.00	0.86	0.24–3.00	5	0.93	0.55–1.56	174
<i>&gt; 50 years</i>							
Possibility and desire for:							
your leisure activities	1.00	0.90	0.30–2.69	7	0.76	0.38–4.53	29
involvement in associations/clubs	1.00	0.75	0.15–3.74	2	0.74	0.39–1.41	25
participation in social and family activities	1.00	1.39	0.43–4.49	5	0.49	0.25–0.97	18
Your relation(s) to:							
your partner (if applicable)	1.00	2.10	0.85–5.15	10	0.72	0.27–1.91	6
your children (if applicable)	1.00	1.36	0.59–3.17	11	0.52	0.16–1.67	4
other family members	1.00	1.42	0.59–3.40	10	0.60	0.21–1.69	5
friends	1.00	1.28	0.46–3.51	7	0.83	0.38–1.83	11
Your:							
self-image (self-confidence etc.)	1.00	0.66	0.21–2.10	6	0.38	0.18–0.80	14
psychological well-being	1.00	0.99	0.32–3.02	9	0.71	0.34–1.47	26
sleep	1.00	3.73	1.38–10.06	13	0.99	0.45–2.17	26
lifestyle (food habits, physical exercise, reading etc.)	1.00	0.90	0.40–2.04	14	0.55	0.26–1.12	17
Your:							
smoking	1.00	1.21	0.42–3.48	6	1.09	0.27–4.44	3
use of alcohol	1.00	1.22	0.54–2.74	11	2.79	0.69–11.25	5
use of medicines***	1.00	1.77	0.53–5.94	4	1.09	0.44–2.71	7
Your financial situation	1.00	1.16	0.11–12.68	1	0.63	0.30–1.31	35

\* OR = odds ratio of return to work, adjusted for gender and sick leave diagnosis; CI = confidence interval; underlined indicate an association ( $p < 0.05$ ).

\*\*  $n$  = number of individuals who reported a positive/negative effect for a certain aspect and who were no longer sick listed.

\*\*\* Other than what you may need for your disease.

The analyses of alienation and guilt indicated that feelings of guilt might have an impact. For example, subjects who found it hard to tell others about their sick leave were back in work more often than those without this experience (OR = 1.42; 95% CI 1.04–1.93).

### DISCUSSION

Research into the consequences of long-term sick leave on life situation is surprisingly sparse (3), hence the present results, with few exceptions, cannot be compared with previous

findings. Negative consequences on daily life from long-term sick leave were far more common than positive ones. Besides reduced financial resources, a large number of individuals experienced negative effects related to leisure activities, sleep and psychological well-being. Benefits as well as adverse effects differed depending on gender, age and health problem, which indicates that the influence depends on the individual situation.

Women experienced positive consequences of long-term sick leave to a larger extent than men, attributable, for example, to relationships with children and partner, sleep and psychological

well-being. Younger individuals were overall more likely than older individuals to report negative consequences, particularly related to the relationships with their partner and children, and to their self-image.

For those with psychiatric diagnoses, the outcome was polarized, i.e. the prevalence of both positive and negative consequences was comparatively high, even if the latter dominated in general. We have no immediate explanation for this pattern. The polarization was most pronounced among women, because they reported positive effects more often than men. A similar polarization was not found among those with musculoskeletal disorders. In this group, the negative effects clearly dominated. For those with "other diagnoses", a specific feature was that many subjects indicated that daily life was unaffected by the sick leave.

Initially, the objective of the study was to analyse the effects of sick leave *per se*, under the assumption that the respondents would be able to make a distinction between consequences of the sick leave and of their disease. Such a distinction is somewhat problematic, however, since the 2 aspects are closely intertwined. Attempts to evaluate the distinction have been made previously (5). Subsequently, we adopted the view that the answers were attributed to the total sick leave situation, and that the particular disease sometimes affects them also. For example, more than 7 out of 10 individuals with musculoskeletal diagnoses reported negative effects on leisure activities. This result was probably affected not only by the sick leave, but also by the disease. Individuals diagnosed with psychiatric disease including depressive traits may enhance negative consequences due to a general inclination for negative responses (8). In some cases, the sick leave *per se* can have a direct effect on circumstances that are closely tied to the disease, for example protection from bullying in the work place, or supplying compulsory time for childcare or own recovery. More than every fourth women diagnosed with psychiatric disorders reported positive consequences of the sick leave on lifestyle factors (food habits, physical exercise, reading, etc.), on psychological well-being, and on the relationships with children and partner. This could, partly be due to protection from, or reduction in, detrimental work overload closely related to the disease. Some previous studies suggest that women with a high load from both paid and unpaid work, more often have recurrent sick leave or illness symptoms (9, 10). However, there is no scientific evidence that women with small children in general, have higher levels of sickness absence than those without (3). The mechanisms behind gender differences in sickness absence are complex and need more and proper attention (11).

Long-term sick leave often had a positive impact on alcohol consumption. A reduced consumption was more likely to occur than an increased consumption, regardless of gender, age and sick leave diagnosis. In men, this was the case for both alcohol consumption and smoking. More than every third man sick listed with psychiatric diseases reported a reduced intake of alcohol, more than every fourth reported reduced smoking. A lowered stress level during sick leave is a plausible explanation and of

course a high stress level as well as alcohol related problems may have been part of the sick leave diagnosis. Decreased alcohol consumption may also be due to reduced financial resources. Even if this would be a non-voluntary constraint on the individual's life, we prefer to refer to reduced use of alcohol or reduced smoking as positive consequences. The validity of data on alcohol consumption is often questioned, implying that people tend to underestimate their consumption. Since the individuals did not report on level of consumption but whether their intake had increased or decreased, it seems reasonable to believe that such data are less influenced by potential bias.

The Swedish welfare model is meant to limit negative financial consequences in case of disease or injury. Nevertheless, the vast majority pointed out a negative effect. Financial resources are means to realize different goals in life, and a changed situation may for example, influence people's lifestyle habits and social life. The respondents were not instructed to either include or disregard potential secondary effects of changed financial resources. While almost all reported negative consequences, the amount may differ and the extent to which secondary aspects were taken into account simultaneously is not known. The study participants may also exaggerate the negative consequences, in order to demonstrate their preference for raised levels of sickness allowances. In future studies, distinctions between these different aspects need to be further elaborated and explored.

The study included individuals who had had a sick leave period of 12–18 months, and it is questionable to what extent the results are applicable to those with a sick leave period of shorter or longer duration. Individuals on short-term sick leave may perceive the consequences as negligible because they are temporary, while individuals on long-term sick leave may see the changes as more permanent and far-reaching. It has been argued, that long-term sick leave may lead to adaptation to the sick leave situation and contribute to making the sick role permanent (12). Unduly short sick leave with repeated visits to the physician and recurrent sick leave periods may, on the other hand, also produce adverse effects. Recurrent short periods may demolish the recreation needed for an enduring return to work.

The most important factor for being back in work was a positive effect on sleep, particularly among those above 50 years of age. It may take time to change sleeping habits that have gone out of control, and for some individuals long-term sick leave should be beneficial. Sleep problems are part of the "burn-out syndrome", but the association between positive effects on sleep and being back in work was not restricted to individuals sick listed with psychiatric disorders. Good sleeping habits may be a useful marker of readiness to return to work, particularly in older individuals on long-term sick leave. The importance of sleep for health and well-being is well known (13) and should be acknowledged as a significant indicator of health by occupational health clinicians.

A high proportion – almost every second individual had experienced alienation and guilt. Feelings of guilt could, for



example, be explained by perceptions of leaving the colleagues or the employer in the lurch, by failure to fulfil your own demands and expectations, or by depressive feelings due to disease. The result can also be attributable to attitudes and reactions from other people (14, 15). This may include attitudes among family members, but also a general pressure within the society meaning that each individual should earn his/her living with distrust and negative behaviours towards those who are unable to do so. Among unemployed individuals who are outside working life, such as those on long-term sick leave, it is not unusual to experience guilt, shame and impaired self-esteem from such reactions and attitudes (16). In a Canadian study of full-time workers, 29% reported feelings of guilt when asked about the consequences of being absent from work (17).

Feelings of guilt and alienation were most prevalent among younger individuals (below 50 years of age). This outcome contradicts what would be expected from the general debate, where there is a tendency to judge younger individuals as being less conscious of their duties compared with older generations. Individuals finding it hard to tell others that they were on sick leave were more often found among those who were back in work. Return to work due to feelings of guilt may contribute to sickness presenteeism and possibly to recurrent sick leave.

The impact of non-participation on the results is hard to estimate. Non-participation was slightly increased among younger individuals and among men. Persons with more severe diseases and those who experienced their sick leave situation as traumatic could also be over-represented among non-participants. We want to refrain from speculations about the potential influence of the drop out and the results should be interpreted with caution considering these uncertainties. It should also be pointed out that the results might be less valid for other populations or periods of time.

The questions focused the individual's perception (in retrospect) of consequences of a sick leave period with a duration of 12–18 months. This comparatively long time period can cause recall bias of different kinds. Consequences may change over time (6) and the responses may pertain either to the initial experiences or to the most recent perceptions. Adaptation processes may occur; you may adapt to the situation and tone down the negative consequences, but you may also experience an accumulation of adverse effects. Improved methods to assess these processes are warranted.

The types of consequences considered in this study were restricted to the daily life situation. Also other effects may be highly relevant, such as consequences on the individual's future development in working life (1, 2). In a US study, absence – irrespective of cause – led to an impaired development regarding salary and career possibilities (4). Other important questions include, for example, recurring sick leave and transitions from sick leave to pre-term retirement.

This study provides new insights into the consequences of long-term sick leave based on descriptive results from cross-sectional data and may also serve as a basis for new hypotheses.

The influence of long-term sick leave on the individual's life situation is complex. Theories and methodology should be further developed and prospective studies are needed in order further to enhance knowledge about these questions.

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## REFERENCES

- Hansen J. The effect of work absence on wages and wage gaps in Sweden. *J Population Economics* 2000; 13: 45–55.
- Andrén D. Work, sickness, earnings, and early exits from the labor market. An empirical analysis using Swedish longitudinal data. Gothenburg: Gothenburg University; 2001.
- Alexanderson K, Norlund A, eds. Sickness absence – causes, consequences, and physicians' sickness certification practice. A systematic literature review by the Swedish Council in Technology Assessment in Health Care. *Scand J Public Health* 2004, (suppl 63).
- Judiesch M, Lyness K. Left behind? The impact of leaves of absence on managers' career success. *Acad Management J* 1999; 42: 641–651.
- Ockander M, Timpka T. A female lay perspective on the establishment of long-term sickness absence. *Int J Soc Welfare* 2001; 10: 74–79.
- Ockander M, Timpka T. Women's experience of long-term sickness absence: implications for rehabilitation practice and theory. *Scand J Public Health* 2002; 30: 1–6.
- Göransson S, Aronsson G, Melin B. Vilja och villkor – en studie om långtidssjukskrivnas situation. In: *Handlingsplan för ökad hälsa i arbetslivet. Bilaga 2*. Stockholm: Statens Offentliga Utredningar; 2002 (5), pp. 101–168.
- Bradley B, Mogg K. Mood and personality in recall of positive and negative information. *Behav Res Ther* 1994; 32: 137–141.
- Krantz F, Östergren P. The combined impact of domestic responsibilities and job strain on common symptoms in employed Swedish women. *Eur J Public Health* 2001; 11: 413–419.
- Voss M, Floderus B, Diderichsen F. How do job characteristics, family situation, domestic work, and life-style factors relate to sickness absence? A study based on Sweden Post. *J Occup Environ Med* 2004; 43: 1134–1143.
- Messing K, Punnett L, Bond M, Alexanderson K, Pule J, Zahm S, et al. Be the fairest of them all: challenges and recommendations for the treatment of gender in occupational health research. *Am J Ind Med* 2003; 43: 618–629.
- Chew C, May C. The benefits of back pain. *Fam Pract* 1997; 14: 461–465.
- Åkerstedt T, Nilsson P. Sleep as restitution: an introduction. *J Intern Med* 2003; 254: 6–12.
- Svensson T, Karlsson A, Nordquist C, Alexanderson K. Shame-inducing encounters. Negative emotional aspects of sick-absentees' interactions with rehabilitation agents. *J Occup Rehab* 2003; 13: 183–195.
- Klanghed U, Svensson T, Alexanderson K. Positive encounters with rehabilitation professionals reported by persons with experience of sickness absence. *Work* 2004; 22: 247–254.
- Rantakeisu U, Starrin B, C H. Financial hardship and shame: a tentative model to understand the social and health effects of unemployment. *Br J Soc Work* 1999; 29: 877–901.
- Haccoun R, Desgent C. Perceived reasons and consequences of work absence – a survey of French-speaking employees in Quebec. *Int J Psychol* 1993; 28: 97–117.