

# LIFE SATISFACTION IN 18- TO 64-YEAR-OLD SWEDES: IN RELATION TO GENDER, AGE, PARTNER AND IMMIGRANT STATUS

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**Satisfaction with life as a whole and with 10 domains of life was assessed in a nationally representative Swedish sample of 1207 women and 1326 men aged between 18 and 64 years, using a generic self-report checklist (LiSat-11), with levels of satisfaction ranging along a six-grade ordinal scale from 1 (very dissatisfied) to 6 (very satisfied). The main findings are that, with marginal exceptions, life satisfaction is gender independent, while age is systematically and positively associated with vocational and financial situations. Having no partner and being a first-generation immigrant implies for most LiSat-11 items a relatively low level of satisfaction. Factor analysis of the domain-specific items yields a gender-independent four-factor structure, which is robustly independent of different scaling reductions. Gross levels of satisfaction (dichotomized scales 1–4 vs 5–6) of seven domains were significant classifiers (odds ratio 1.7–3.9) of gross level of satisfaction with life as a whole. This investigation provides reference values for LiSat-11, which, with its ease of administration may be an adequate instrument for analysing, in terms of subjects' cognitive appraisal of emotions, aspirations–achievement gaps.**

**Key words:** life satisfaction, quality of life, epidemiology, age, gender, immigrant.

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## INTRODUCTION

This article is part I of two papers that focus descriptively on levels of self-reported satisfaction with life as a whole and with satisfaction derived from 10 domains of life, in a nationally representative Swedish sample of women and men at a vocationally active age (18–64 years) and, hence, covering the age-span for which Swedish rehabilitation medicine is mainly provided. A major objective of the present study is to provide population-based reference values. Levels of satisfaction within different domains of life are related to each other in order to determine whether generalizable conglomerations of domain-specific items can be identified. The capability of these items to classify gross level of satisfaction with life as a whole is also explored. A further aim of the investigation is to relate levels of

life satisfaction to gender, age, having or not having a steady partner relationship, being or not being a first-generation immigrant, and location of domicile (large city, town or rural area).

Some 10 years ago Veenhoven (1) stated that society is more likely to flourish with happy than with unhappy citizens, and from the perspective of rehabilitation medicine Fugl-Meyer et al. (2) have previously defined rehabilitation as a process which aims to maintain or restore the optimal level of happiness. Happiness was defined, although this definition is disputable, as satisfaction with life as a whole, (cf. 1, 3). Quality of life and life satisfaction as social indicators of the meaningfulness of life are increasingly used as measures of the outcome of medical interventions. Many different instruments or inventories have been described for evaluating the quality of life. Some instruments comprise one single item, for instance a visual analogue scale, while others are constructed as multi-item inventories, usually applying aggregated scores to characterize the level of quality of life (QoL) or life satisfaction as perceived by the respondent, but not necessarily mentioning QoL or satisfaction explicitly in the items. Such instruments imply rather than explicate what the authors mean by QoL/life satisfaction.

For just over a decade we have used a nine-item self-administered checklist (2), termed here LiSat-9, with the aim of characterizing life satisfaction—both global (one item) and domain-specific (eight items)—in different rehabilitation clientele (4). Several of the items of LiSat-9 have been found to show acceptable test–retest reliability, specificity and sensitivity (5, 6). The extent to which the LiSat checklist is valid for the population at large, however, has not to our knowledge been adequately investigated.

## METHODS AND SAMPLE

The life satisfaction checklist *LiSat-11*, which is presented in Appendix A, is an extension of LiSat-9, with the addition of two items, namely satisfaction with somatic and with psychological health. LiSat-11 was included in a survey of sexual life in Sweden 1996 (7, p. 217–232), initiated and financed by the Swedish National Institute of Public Health and led by a sociologist (B. Lewin) in cooperation with a research team of four further researchers. The data presented in this report were selected from a total of nearly 800 variables included in the survey.

The methods used for data collection and the epidemiological validity of the sample have been described in detail elsewhere (7, chapter 3, p. 27–55). Briefly, data were collected by use of strictly structured questionnaires and checklists in combination with structured face-to-face interviews conducted by specially trained professional interviewers. A random sample of 5250 women and men aged 18–74 years was drawn from the Swedish Central Population Register. An introductory letter

Table I. Self-reported levels (%) of satisfaction with life as a whole and with 10 different domains in a representative national Swedish sample of ages 18–64 years (n = 2533; women, n = 1207; men, n = 1326). Proportions of women/men are given in parentheses if significant gender differences were found. Decimals are generally avoided, hence rows may total 100 ± 1%. In the right column median values and variance of each LiSat-item are given

	Very satisfied (%)	Satisfied (%)	Rather satisfied (%)	Rather dissatisfied (%)	Dissatisfied (%)	Very dissatisfied (%)	Median (variance)
Satisfied with:							
Life as a whole	24	46	23	5	2	1	5 (0.82)
Vocation	19	35	27	9	6	5	5 (1.67)
Economy	8	31	35	13	8	6	4 (1.43)
Leisure	18	39	27	10	4	2	5 (1.21)
Contacts <sup>##</sup>	26 (30/23)	39 (39/38)	24 (22/27)	8 (7/8)	2 (2/2)	1 (1/1)	5 (1.03)
Sexual life	22	34	24	10	5	5	5 (1.32)
ADL <sup>##</sup>	79 (87/73)	16 (10/21)	3 (2/5)	1 (1/1)	0.4 (0.3/0.5)	0.4 (0.3/0.4)	6 (0.41)
Family life	45	36	13	4	1	1	5 (0.82)
Partner relationship <sup>#</sup>	50	32	12	4	1	1	5 (1.03)
Somatic health	37	40	16	4	2	1	5 (0.98)
Psychological health	45	36	13	4	1	1	5 (0.87)

<sup>#</sup> Those with partner.

<sup>##</sup> Indicates significantly higher level for satisfaction in women than in men.

ADL: activities of daily life.

was mailed to these persons and they were subsequently contacted (by telephone) by a professional interviewer. After exclusion of persons who were not living in Sweden, not able to communicate in Swedish, unattainable (approximately 100) or not considered able to participate in the investigation on account of loss of vision or hearing or mental impairment, 4781 persons remained. For various reasons 1971 of these persons declined to participate. The dropout rate of 41% led to post-hoc analyses, which showed that for the age interval studied here the sample was acceptably valid epidemiologically.

A time and place for meeting each of the remaining 2810 subjects was agreed upon. Among these persons 2533 (1207 women and 1326 men) were within the target age range (18–64 years) of this investigation. The average session time was 1.5 hours and no interviewee ended it prematurely. In no case was more than one person in the same household interviewed.

Within the sample, 81% of the women and 76% of the men reported that they had a steady partner. This 5% difference was significant ( $\chi^2$ : 9.25,  $p < 0.005$ ). While 16% of the women and 21% of the men lived alone, this was true for 8% of those who had a steady partner relationship and for 56% of those who did not. Regarding the location of domicile, 36% lived in a rural area (a community with fewer than 10000 inhabitants), 38% in a relatively small town (10000–300000 inhabitants) and 26% in one of the relatively large Swedish cities (Göteborg, Malmö, Stockholm). Eight per cent of both women and men were first-generation immigrants (defined as those who had been brought up abroad).

#### Statistics

Whenever simpler computations include the full six-graded life-satisfaction scale, ranking analyses (Mann-Whitney, Kruskal-Wallis) or Spearman's  $r_s$ , as appropriate, are applied. The chosen level of significance was  $p < 0.01$ . Logistic (stepwise, backward) regression analysis was used to obtain an impression of the impact (odds ratios) of gross levels of domain scores on gross level of satisfaction with life as a whole. For simplification, scores were dichotomized (scale grades 1–4 vs 5–6). Only significant contributors to the equation will be presented here. To find out whether interpretable patterns of items existed, factor analyses (orthogonal design, varimax rotation, four-factor option) were performed. The cut-off limit for an item to be regarded as a significant contributor to a factor was a rotated loading of at least 0.50. Cronbach's  $\alpha$  was computed to obtain an idea of the internal consistency of factors and of more extensive aggregations of items. For all analyses the SPSS™ version 10.0 statistical program was used.

## RESULTS

The relative distribution of the subjects among the six different levels of life satisfaction is given in Table I. The internal dropout rates for the different items were generally small (0.2–1.9%). The one exception was satisfaction with family life, where the internal dropout rate was 7.5% among women and approximately 14% among men; the main reason for this dropout was that a relatively large number of respondents who had no steady partner did not check this item.

As shown in Table I, gender differences were found for only two items. Women and men are therefore pooled: 70% were satisfied or very satisfied with life as a whole, while 8% reported different degrees of dissatisfaction. Satisfaction derived from contacts with friends and acquaintances, and satisfaction with personal ADL differed between genders, women being more satisfied in these respects than men. For both these items the women were more satisfied than were the men. However, nearly all women and men were satisfied or very satisfied within the ADL domain.

The majority (77–82%) were also satisfied or very satisfied with their family life, partner relationship (if they had a steady partner), and somatic and psychological health. Furthermore, slightly more than two-thirds of the women and approximately 60% of the men were satisfied or very satisfied with their contacts with friends and acquaintances. Somewhat fewer were very satisfied or satisfied with their leisure (57%) and their sexual life (56%). On the other hand, about one-fifth of all subjects were to some degree dissatisfied with their sexual life. Not fully 50% were satisfied or very satisfied with their vocational situation. Still smaller proportions reported satisfaction with their financial situation, less than 10% being very satisfied and about 30% satisfied.

Table II. Factor analysis of the 10 domain-specific items of LiSat-11. Respondents: 954 women and 1003 men aged 18–64. Four-factor option, Varimax rotation

Satisfaction with	Rotated loading	Eigenvalue	% variance explained
Factor I		4.02	40
Sexual life	0.82		
Partner relationship	0.88		
Family life	0.68		
Factor II		1.14	11
ADL	0.76		
Somatic health	0.78		
Psychol. health	0.62		
Factor III		1.00	10
Leisure	0.79		
Contacts	0.85		
Factor IV		0.89	9
Vocation	0.80		
Economy	0.78		

Spearman analysis was used to obtain an item-by-item impression of co-variances. As shown in Appendix B, all items were significantly correlated. The coefficients differed considerably. The lowest coefficient, though significant, was 0.09 and the highest 0.67.

A series of factor analyses (for details of methods and criteria, see statistics) were performed, entering all 10 domain-specific items. A total of 1957 subjects who had checked all items (77% of the respondents, 954 women and 1003 men) were included. There were no female/male differences in factor pattern, and gender differences in rotated loadings never exceeded 0.08. The four-factor pattern is given in Table II. For the total sample (and also for each gender) the four factors together explained 70% of the variance, the lowest eigenvalue (factor IV) being 0.89. Rarely did items other than those included in the factors attain rotated loadings above 0.25.

Factor I encompasses satisfaction with sexual life, partner relationship and family life. This factor, which we choose to label “*Closeness*”, explains 40% of the variance, while the remaining three factors each explains about 10%. Factor II (which we label “*Health*”) encompasses three items, namely satisfaction with personal ADL, somatic and psychological health, while factor III (“*Spare time*”) includes satisfaction derived from leisure and from contacts with friends and acquaintances. Finally, factor IV (“*Provision*”) has two items: satisfaction with the vocational and financial situations.

Cronbach’s  $\alpha$ -analysis was used as a further indicator of the consistency of the factors. This showed that the  $\alpha$ -value of factor I was 0.79 and those of factors II, III and IV were 0.66, 0.68 and 0.57, respectively. The  $\alpha$  for a conglomerate of all 10 domain-specific items was 0.82 and for the total LiSat-11 0.85.

Additional statistical manipulations were performed by factor-analysing the items by entering them for the total (analysable) sub-sample using the following alternatives: Full scale; Dichotomy 1, grades 5–6 vs 1–4; Dichotomy 2, grades 4–6 vs 1–3; or Trichotomy, grades 5–6 vs 4 vs 1–3. In these analyses,

identical factors emerged explaining 63–70% of the total variances.

A logistic regression analysis (see methods) was performed with gross levels of domain-specific satisfaction, i.e. satisfied or very satisfied (scale grades 5–6) versus grades 1–4 as independent variables and gross level of satisfaction with life as a whole, similarly dichotomized, as dependent variable. This gave an 83% correct classification of gross level of satisfaction with life as a whole, with an overall significance level of  $p < 0.001$ . Odds ratios for significant contributors were, in order of magnitude, as follows: Gross levels of satisfaction with psychological health, 3.9; partner relationship, 3.1; vocational situation, 2.8; leisure, 2.7; family life, 2.3; economy and sexual life, each 1.7. Thus all *Closeness* and *Provision* items, but only one among each of the *Spare time* and *Health* (psychological health) items were sizeable predictors of the overall gross level of life satisfaction.

#### *LiSat-11 and age*

In a series of Spearman ( $r_s$ ) analyses, age was analysed separately for women and men versus full-scale levels of all LiSat items. These analyses showed that neither satisfaction with life as a whole nor satisfaction with the domains sexual life, partner relationship, contacts with friends and acquaintances, and psychological health were significantly age-related.

In both women and men increasing age was positively associated with satisfaction with family life and with the vocational and financial situations ( $p < 0.005$ – $0.001$ ), and in women it was similarly associated with satisfaction with leisure. In contrast, increasing age in men was negatively correlated with satisfaction with two of the *Health* items, namely personal ADL and somatic health ( $p < 0.001$ ).

#### *LiSat-11 and partner status*

Subjects who did not have a steady partner relationship generally had significantly lower levels of satisfaction than those with such a relationship. As shown in Table III, only one item, satisfaction derived from contacts with friends and acquaintances, did not differ significantly between these two groups. In the women this was also true for satisfaction with ADL, and in the men for satisfaction with somatic health. Moreover, satisfaction with leisure was not influenced by partner status in men. For those who did not have a steady partner there were no significant differences in satisfaction with any of the LiSat-11 items between those who lived alone and those who did not.

#### *LiSat-11 and being an immigrant*

Irrespective of gender, the first-generation immigrants had a lower level of satisfaction with life as a whole than the Swedish-raised respondents (Table III). In contrast, these immigrants did not differ significantly from the Swedish-raised respondents in level of satisfaction with any of the *Closeness* items. For all other items, male immigrants had significantly lower levels of satisfaction than men raised in Sweden. This was also true for

Table III. Levels of statistical differences by gender in life satisfaction (Mann-Whitney U tests) between those who had (978 women and 1008 men) and those who did not have (227 women and 315 men) a steady partner relationship and between non-immigrants (1115 women and 1212 men) and first-generation immigrants (93 women and 113 men). Items are arranged according to factor-analytic structure. The chosen level of significant difference is  $p \leq 0.01$ . NS designates  $p > 0.01$

Satisfied with:	Partner or no partner women/men $p <$	Non-immigrants or immigrants women/men $p <$
Life as a whole	0.0001/0.0001	0.001/0.0001
<i>Closeness</i>		
Sexual life	0.0001/0.0001	NS/NS
Partner relationship <sup>#</sup>		NS/NS
Family life	0.0001/0.0001	NS/NS
<i>Health</i>		
ADL	NS/0.01	0.0001/0.0001
Somatic health	0.0001/NS	NS/0.001
Psychological health	0.0001/0.01	0.01/0.0001
<i>Spare time</i>		
Leisure	0.001/NS	0.01/0.0001
Contacts	NS/NS	0.01/0.001
<i>Provision</i>		
Vocation	0.01/0.0001	NS/0.0001
Economy	0.0001/0.0001	NS/0.0001

<sup>#</sup> Those with partner.

the female immigrants concerning both the two *Spare time* items and two of the *Health* items.

#### LiSat-11 and location of domicile

In women, no significant differences between location of domicile (relatively large Swedish city, town, or rural area) and level of satisfaction with any of the 11 items emerged. Among men, the levels of satisfaction with family life and leisure were consistently lowest ( $p < 0.01$ – $0.005$ ) in those living in relatively more densely populated surroundings.

## DISCUSSION

As stated in the introduction, the primary aim of this descriptive report was to provide population-based reference values for the LiSat-11 instrument. As in the case of other fairly new methods, very little comparable literature is available. Hence, a substantial part of the discussion will deal with conceptual rather than comparative considerations.

Some main features are:

(a) Gender only marginally influences self-reported life satisfaction as measured here. Not having a partner has a major negative impact on the majority of the LiSat-11 items. With the exception of levels of satisfaction with the *Closeness* items, first-generation immigrants—and in particular the men—have lower levels of life satisfaction than people raised in Sweden. On the other hand, within the age-span of

nearly five decades studied here advancing age was systematically and positively associated with vocational and financial satisfaction.

(b) Gross levels of satisfaction with life as a whole can to a high degree be classified by a combination of 7 of the 10 domains. The 10 domains also form a clear and gender-independent four-factor pattern, which appears robust, as its structure does not change when different manipulations of item scoring are used.

#### Conceptual considerations

Browne et al. (8) stated that future QoL research must address conceptual as well as psychometric issues if the concept is not to be redundant because of lack of clarity. We agree. In this context a major issue is the ontology of QoL/life satisfaction inventories. In our opinion and in agreement with Lau & McKenna (9), QoL is a rather doubtful concept, at least in rehabilitation medicine. Moreover, about 25 years ago Campbell et al. (10, p. 471) characterized QoL as “Something many people talk about but nobody very clearly knows what it is and what to do about it”. This opinion was supported by Bowling (11), who stated that QoL is a vague, multidimensional concept, and Wolfensberger (12) suggested: “Let’s hang up QoL as a hopeless term”.

Musschenga (13) identified three different conceptual backgrounds for QoL: (I) QoL can be regarded as the degree of normal function of a human being (i.e. a normalisable, objectifiable concept); (II) QoL can denote the degree of personal satisfaction which an individual can derive from his life; and (III) QoL can be seen as a level of human development. In the case of patient care and outcome of rehabilitation medicine, (I) and (II) appear to be the most relevant concepts.

In clinical practice and research, three different types of measurement are generally applied: (A) objective assessments of QoL, where somebody assesses somebody else’s QoL; (B) health-related individually perceived QoL, where most or all items are related to disease; and (C) subjective, self-reported QoL/life satisfaction without any explicit relation to a particular medical condition—that is, generic. Whereas (A) usually belongs to Musschenga’s category (I) (see above), (B) appears to have elements of both (I) and (II), while (C) clearly falls within category (II).

A wealth of health-related, diagnosis-specific or generic inventories have been described. At present some that are commonly used are the SF-36 (14), the NHP (15), the SIP (16) and the EuroQoL EQ-5D (17). It has been suggested that generic health-related QoL instruments can be useful in general surveys of health and in comparing disease states, while disease-specific instruments are best used for assessing the effect of particular therapeutic interventions (18). Hence, health-related QoL scores may perhaps best be regarded as “bother”, “distress” or “impact” measurements, and the answers may tend to be negatively biased by the health condition *per se*.

We have chosen to measure the subjective cognitive appraisal of an individual’s emotions in accordance with category (II) mentioned above. In this context it should be mentioned that two

much discussed models of life satisfaction are available, the “top-down” and the “bottom-up”. The top-down model implies that satisfaction with life as a whole is a disposition and a person who is satisfied will tend to be satisfied with the different domains of life. In contrast, according to the bottom-up model satisfaction with life as a whole depends on the degree of satisfaction with the different domains.

From the perspective of rehabilitation medicine, Bränholm & Fugl-Meyer (19) and later Post et al. (20) have suggested a causal model: Activity preferences → occupational roles → domain-specific life satisfaction → satisfaction with life as a whole. Such a causal “chain”, however, has not been ascertained and the finding that top-down and bottom-up models may interact (21) may cast some doubt on the validity of this kind of “medical” causal bottom-up model.

This investigation only to a limited extent sheds further light on that discourse. Thus, although we found that the items were generally significantly associated, for several of the items the proportions of satisfied and very satisfied persons were much lower—and for other domains higher—than the corresponding proportion for satisfaction with life as a whole. Thus more intra-individually structured reasoning may be indicated. Nordenfelt (22), with whom we agree, pointed out that people have different goals. These goals are “weighted”. Hence, the impact on satisfaction with life as a whole of reaching or not reaching a goal, leading to a higher or lower degree of domain-specific satisfaction, simply depends on the importance of that goal/that domain. An aspirations–achievement gap (23) may thus be evident at the domain level, but may not necessarily be reflected by low or decreased satisfaction with life as a whole.

As discussed by Pavot et al. (24), and in essential conformity with Nordenfelt (22), it appears that people “construct a standard” which they perceive as appropriate for themselves and with which they compare the circumstances of their life. Both Heady et al. (25) and Pavot et al. (24) have found that the subjective assessment of overall life satisfaction by an individual is generally stable over time.

Several inventories are available for the recording of self-reported life satisfaction. It is important for us to emphasize that the majority of these inventories are pluri- or multi-item constructs that aggregate item scores to a sum score. From the clinical rehabilitationist’s point of view we, in agreement with Veenhoven (26), question the applicability of aggregated scores as the sum may obscure domains within which a subject feels that she or he experiences an aspirations–achievement gap; this in turn may lead to diffuseness in therapeutic goal-setting. Hence, neither in previous nor in the present study have we used or encouraged use of the items in aggregation, although it appears that the internal consistency of some of the factors and of 10 or 11 items aggregations is acceptable.

*Comparisons* of the present results with reports from other countries are generally not possible. This seems to be particularly true for domain-specific life satisfactions. The proportions of people who were satisfied or very satisfied with life as a whole found here are in good accordance with those

reported by Campbell et al. (10, p. 23–60) and by Glatzer (27) from (Western) Germany.

In large nationally representative samples of women and men from several European countries, between 77% and 80% rated themselves as at least fairly satisfied with life as a whole (Eurobarometer, cited by Inglehart & Rabier, 28, p. 11), which are clearly lower proportions than the 93% who were at least rather satisfied in the present investigation and the 96% fairly satisfied in Denmark (28, p. 38). This discrepancy may well be based on methodological differences. For instance, the four-grade scale used by Inglehart & Rabier (28, p. 7) allows for less differentiation in responses than does the present six-grade scale. Another explanation for the differences in the proportions of at least fairly (or rather) satisfied subjects may be sought in national discrepancies. In Italy and Greece, for example, the proportions of fairly satisfied subjects were 64% and 60%, respectively. To what extent these differences reflect different culturally determined factors or less favourable living conditions is unclear.

The present finding that gross levels of satisfaction in most of the domains are significant classifiers of gross levels of satisfaction with life as a whole appears to be in essential agreement with observations in a previous study in northern Sweden (2). It would seem of interest to note, however, that two of the health items and one of the leisure items were not significant classifiers. We cannot explain these findings, nor have we located any literature on this particular subject. But in this context it should be pointed out (cf. Appendix B) that, using full scales, all these three items showed relatively low levels of association with satisfaction with life as a whole.

The four gender-independent domain-specific factors detected in this investigation quite closely resemble those (when comparable) found by us a decade ago when using the LiSat-9 in a small unselected northern Swedish sample aged 25–55 (2). A strength of this construct is its stability, i.e. the independence of gender and of different types of scale reductions, and it also appears pragmatically sound.

#### *LiSat-11 and age*

The finding that satisfaction with life as a whole was not significantly associated with age within the age span investigated here confirms reports from several large-scale investigations (see 29 for references). Systematic increases with increasing age in satisfaction with family life and with partner relationship have been found, however (30). This observation concerning family life, but not that for partner relationship, is supported by the present results.

Our finding that in women satisfaction with leisure was positively correlated with age may be interpreted as a result of the fact that fewer middle-aged than younger women are caretakers of young children. A relatively earlier decline in male than in female somatic health may conceivably reflect a reduction in the male, but not female, level of satisfaction with personal ADL and somatic health.

*LiSat-11 and partner status*

The fact that Swedes who have no steady partner are less satisfied with life as a whole and with most of the domains is in line with reports by others, both in Sweden (31) and elsewhere in Europe (28, p. 27). Moreover, married people are significantly happier than single ones (29), and Veenhoven (32) concluded that satisfaction with life as a whole (happiness) depends largely on marriage quality.

*LiSat-11 and being an immigrant*

Do the low levels of life satisfaction in Swedish first-generation immigrants reflect poor social acceptance/integration of these people? Or are they at least to some extent ethnically determined as suggested by others (33)? This latter notion appears to be contradicted by Veenhoven (34), who found no evidence of cultural measurement bias concerning the word "satisfaction". However, life satisfaction is highest in countries with better living conditions. One explanation for the relatively low levels of satisfaction among immigrants may be that first-generation immigrants have fewer opportunities to choose their lifestyle and to be properly vocationally assimilated and that many of them may have been psychologically traumatized in their country of origin. However, a post-hoc analysis revealed no significant LiSat-11 differences between immigrants from the Nordic countries, those from other parts of Europe and those from the "Middle East".

*LiSat-11 and location of domicile*

It has been reported (35) that QoL and overall life satisfaction are relatively low in densely populated areas. This is evidently not the case for Swedish women and rarely the case for Swedish men. From the medical-rehabilitation point of view it thus appears that it may not be particularly fruitful to emphasize the location of domicile as an *a priori* parameter of importance when assessing life satisfaction in our patients.

Finally, this study has provided population-based reference values of the LiSat-11 checklist and hence may be useful for those rehabilitation medicine researchers and clinicians who are interested in the issues of life satisfaction. In particular the LiSat-11 may be adequate for identifying areas of concern for patients, on admission and later on. Thus rehabilitationists—and others—can focus on treatment aspects of life that are particularly important to address during and after the rehabilitation process. Two general risk factors for a relatively low level of satisfaction 1) are to be a first-generation immigrant and 2) not to have a steady partner relationship. In this context it may console some of the relatively younger readers of this article that with advancing age they have a good chance, statistically, of perceiving their leisure time, their provision situation and their family life situation more positively.

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## APPENDIX A

### The LISAT-11 checklist (in English translation)

Here are a number of statements concerning how satisfied you are with different aspects of your life. For each of these statements please mark a number from 1 to 6, where 1 means very dissatisfying and 6 very satisfying.

1 = very dissatisfying 2 = dissatisfying 3 = rather dissatisfying 4 = rather satisfying 5 = satisfying 6 = very satisfying

My life as a whole is	1	2	3	4	5	6
My vocational situation is	1	2	3	4	5	6
My financial situation is	1	2	3	4	5	6
My leisure situation is	1	2	3	4	5	6
My contact with friends and acquaintances is	1	2	3	4	5	6
My sexual life is	1	2	3	4	5	6
My ability to manage my self-care (dressing, hygiene, transfers, etc.) is	1	2	3	4	5	6
My family life is <input type="checkbox"/> have no family	1	2	3	4	5	6
My partner relationship is <input type="checkbox"/> have no steady partner relationship	1	2	3	4	5	6
My physical health is	1	2	3	4	5	6
My psychological health is	1	2	3	4	5	6

## APPENDIX B

Correlation matrix (Spearman's  $r_s$ ) giving the level of associations between all the LISAT-11 items. The number of subjects in each analysis is given in parentheses

	Life as a whole	1	2	3	4	5	6	7	8	9
Satisfaction with Vocation (1)	0.43 (2508)									
Economy (2)	0.38 (2518)	0.36 (2503)								
Leisure (3)	0.46 (2520)	0.25 (2505)	0.33 (2515)							
Contacts (4)	0.38 (2525)	0.17 (2509)	0.15 (2519)	0.50 (2521)						
Sexual life (5)	0.43 (2503)	0.17 (2488)	0.17 (2497)	0.32 (2500)	0.31 (2504)					
ADL (6)	0.23 (2523)	0.12 (2508)	0.09 (2517)	0.16 (2519)	0.17 (2524)	0.16 (2503)				
Family life (7)	0.50 (2258)	0.22 (2244)	0.26 (2253)	0.38 (2255)	0.38 (2259)	0.40 (2242)	0.27 (2257)			
Partner rel (8)	0.50 (2083)	0.19 (2071)	0.22 (2078)	0.34 (2081)	0.34 (2084)	0.57 (2079)	0.23 (2083)	0.67 (1984)		
Somatic health (9)	0.36 (2524)	0.23 (2508)	0.20 (2518)	0.30 (2520)	0.22 (2525)	0.23 (2503)	0.29 (2523)	0.31 (2258)	0.28 (2084)	
Psychological health (10)	0.54 (2524)	0.32 (2508)	0.26 (2518)	0.37 (2520)	0.33 (2525)	0.33 (2503)	0.30 (2523)	0.45 (2258)	0.41 (2084)	0.53 (2525)

For all analyses  $p$  is  $<0.001$ .