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LIFE SATISFACTION IN SPOUSES OF PATIENTS WITH STROKE DURING THE FIRST YEAR AFTER STROKE

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Objective: **The aims of this study were to investigate whether spouses' life satisfaction changed between their life prior to their partner's stroke, and at 4 months and 1 year after stroke, and to study the association between spouses' life satisfaction and objective characteristics of the stroke patients.**

Subjects and methods: **Sixty-seven consecutively enrolled spouses to first-ever stroke patients <75 years of age participated. Life satisfaction was measured with the Life Satisfaction Checklist (LiSat-9).**

Results: **Compared with their life before stroke, the spouses' satisfaction with life as a whole, their leisure situation, daily occupation, sexual life, partner relationship and social contacts was lower 4 months after stroke. No significant change in life satisfaction was observed between 4 months and 1 year. Spouses of patients with sensorimotor impairment and low ability in self-care were less satisfied with their leisure situation, daily occupations, own ability in self-care, sexual life and partner relationship. Spouses of patients with cognitive or astheno-emotional impairments were less satisfied with their partner relationship, family life and sexual life. The associations were stronger at 1 year than at 4 months.**

Conclusion: **There is a need for support over a long time period that focuses on the social, occupational and leisure situation of spouses as well as that of patients.**

Key words: stroke, caregivers, rehabilitation, adaptation psychological, personal satisfaction, quality of life.

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INTRODUCTION

In everyday life after stroke, spouses of stroke patients often experience a change in role (1) and lifestyle in daily activities, such as domestic activities (2, 4), occupation (2) and leisure situation (3, 4). This also extends to their financial situation (5), relationships with their partner and family (2, 4, 5), sex life (2) and social life (2, 3, 5, 6). The spouses are responsible for providing a great deal of support to the stroke patient in community, domestic and personal activities of daily living (7). Increases in care tasks and restrictions of activities are associated with changes in the spouses' emotional health (8). Although many of the spouses' experiences after their partners' stroke are negative, positive experiences of the carer's role have also been reported (9). The spouses' sense of caregiver burden has been reported to be associated with both the stroke patients' level of dependency and behaviour changes (5) and the spouses' coping ability (10, 11). In a previous study we showed that, in the first weeks after stroke, spouses' appraisal of the personal consequences of stroke and of their own coping ability was more strongly associated with their psychological well-being than with the objective impairments of the stroke patients (12). Most previous studies have measured the impact of stroke on caregivers in terms of psychological well-being, such as perceived burden (13), strain (14), stress (15), depression (16, 17) and anxiety (17). Studies focusing on the spouses' quality of life are needed (18). To our knowledge, few studies have investigated spouses' life satisfaction (19) and no study has specifically investigated the spouses' change in their satisfaction with different domains of life after stroke. To better support spouses during the adaptation process, more information is needed about changes in life satisfaction and about factors that have an impact on their life satisfaction during the adaptation process. The main purpose of the study was longitudinally to investigate spouses' life satisfaction with their life prior to stroke and then at 4 months and 1 year after stroke. A secondary aim was to explore the relationships between the spouses' level of satisfaction with different domains of life at these 3 points in time, the age and sex of the spouses and the characteristics of the patient in the first week and at 1 year after stroke.

METHODS

Subjects

Stroke patients. The subjects were 67 stroke patients consecutively hospitalized from September 1994 to October 1997 at the Department of Neurology, Sahlgrenska University Hospital, Göteborg, with the following characteristics: (a) a confirmed diagnosis of a first-ever stroke (excluding subarachnoid haemorrhage); (b) no evidence of co-existing known malignant or other rapidly progressive medical disease; (c) aged less than 75 years; (d) living in Göteborg or the surrounding areas; (e) who spoke and understood Swedish. The inclusion process is described in a previous study (20). Forty-seven of the patients were men (70%). The average age of the stroke patients was 58 years (range 37–75 years).

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Table I. *Stroke patients' neurological and emotional characteristics (n = 67)*

	Type and location of stroke			
	n	(%)		
Cerebral infarction/intracerebral haemorrhage	55 (82)/12 (18)			
Cerebral infarcts according to the classification of Bamfords et al.:				
Lacunar infarcts	14	(26)		
Partial anterior circulation infarcts	29	(53)		
Total anterior circulation infarcts	2	(3)		
Posterior circulation infarcts	10	(18)		
	1 week after stroke		1 year after stroke	
Neurological and emotional impairments	*n*	(%)	*n*	(%)
Moderate/severe motor impairment	33	(49)	14	(20)
Cognitive impairment	35	(52)	37	(55)
Moderate/severe aphasia	17	(25)	5	(8)
Depression†			22	(37)
Astheno-emotional syndrome‡			47	(78)
Barthel Index: Md (IQ range)	95 (60–100)		100 (95–100)	

† *n* = 59; ‡ *n* = 60.

Details about the stroke patients' neurological and emotional characteristics are given in Table I.

Spouses. Of the 83 spouses in an initial study group (20), 67 participated in both of the 2 follow-up interviews and constituted the study population of the present longitudinal study. Forty-seven spouses (70%) were women; their average age was 57 years (range 30–79 years). Thirty-six (54%) of the spouses were employed full- or part-time. Thirteen couples (19%) had responsibility for children. The length of the partner relationships was an average of 30 years, range 2–54 years.

Of the withdrawals, 1 was male and 15 female. There were otherwise no statistical differences between the spouses who participated and those who withdrew regarding age, life satisfaction before stroke, the stroke patients' type of stroke or neurological or emotional impairments.

Written informed consent was obtained from all participants. The Ethics Committee of the Faculty of Medicine, Göteborg University, Sweden, granted approval of the study.

Instrument

Stroke patients. The stroke patients were assessed in an acute neurological stroke unit. All patients were investigated by means of 1 or more computed tomography (CT) scans. Subtypes of the cerebral infarctions were categorized according to the classification of Bamford et al. (21). The neurological deficits of the stroke patient in the first week after stroke were recorded by the neurologist on duty at the ward, by the speech therapist and by the neuro-psychologist and then categorized (CB). Impairments such as memory deficits, neglect and other perceptual impairments, apraxia and all sorts of aphasia were included in the category of "cognitive impairments", and aphasia was also separately categorized. No ability in speech/comprehension or only fragmentary expressions was classified as "severe aphasia". Reduction of speech and/or comprehension that had impacts on conversation was classified as "moderate aphasia". Difficulties in finding/comprehending words and sentences but which had no significant impact on communication were classified as "slight aphasia". With regard to sensorimotor impairments, inability to use the limbs was classified as "severe sensorimotor impairment" (corresponding to the item of facial palsy, arm, hand and leg motor power and gait in the Scandinavian Stroke Scale (SSS) (22), score 0–15). Ability to use the limbs but with impaired force and/or co-ordination was classified as "moderate impairment" (corresponding to SSS score 16–27) and impaired fine sensorimotor ability as "slight impairment" (corresponding to SSS score 28–31). The level of self-care was assessed by the Barthel Index (BI) (23), which has been found to be a valid instrument in measuring the ability in self-care in stroke patients (24). The BI scores ranged from 0 (total dependence) to 100 (independence). The assessment was first made an average of 7 days after the stroke (SD 4 days) by occupational therapists experienced in neurological rehabilitation. One year after the stroke, a neurologist (CB) reassessed the stroke patients' neurological impairments, made a global assessment of the stroke patients' cognitive deficits, rated depression according to the DSM-IV™ criteria (25) and assessed astheno-emotional syndrome according to Lindquist & Malmgren's criteria (26). A re-assessment of the stroke patients' ability in self-care was made by an occupational therapist. Data on the first 5 patients' clinical situation was drawn from their medical records, however. Their spouses supplied information on their ability in self-care. Three further stroke patients were too severely ill to participate in the formal re-assessment and the data on their clinical situation and ability in self-care were recorded by the same procedure. Two stroke patients died.

Spouses. Demographic data such as age and sex of the spouse, family situation, occupation and length of relationship were recorded. Life satisfaction was rated by the "Life Satisfaction Checklist" (LiSat-9) (27). This checklist consists of 9 items: satisfaction with: "life as a whole", "ability to manage self-care", "leisure situation", "vocational situation", "financial situation", "sexual life", "partner relationship", "family life" and "contacts with friends and acquaintances". Since the study group involved persons who were employed, were homemakers or were retired, the original item of "satisfaction with vocational situation" was expanded to read "satisfaction with vocational/occupational situation", which means satisfaction with ordinary daily occupation (personal communication KS Fugl-Meyer 1995). There is a 6-grade scale for each item ranging from 1 ("very dissatisfied") to 6 ("very satisfied"). The checklist is available in a 9-item (LiSat-9) (27) and an 11-item (LiSat-11) version (28) and is frequently used in studies of life satisfaction (29, 30). Norm values from a Swedish population study are available (28, 31). The participants rated their life satisfaction in a semi-structured interview that also included open questions on their experience of the ongoing life situation. In the first interview (mean 10 days, SD 4 days after their partners' stroke) the spouses rated their satisfaction with ordinary everyday life prior to stroke. In the follow-ups (4 months, SD 5 weeks and 1 year, SD 4 weeks) the spouses rated their satisfaction with ongoing life. One spouse was visually impaired and participated only in the interviews. There were also some internal drop-outs in the LiSat-9. The interviews were conducted at the occupational therapy department or in the spouses' homes by the same person (GF-W).

Data analyses

The individual intra-personal change in life satisfaction was investigated with the Wilcoxon signed rank sum test. To describe the proportions of spouses whose life satisfaction had changed, a difference of 1 category was considered a clinically relevant difference. To allow comparison of the proportions of satisfaction of the spouses in the study group at the 3 different time points with related studies, the data were also dichot-

omized into "satisfied" (categories 5–6 "satisfied" and "very satisfied") and "not satisfied" (categories 1–4 "very dissatisfied" to "rather satisfied") (27). Considering that satisfaction with life as a whole and with several life domains has previously been reported to be associated with steady partner relationship and with age (28, 31), a chi-square test with Yates' correction was used to compare the observed frequency counts of spouses (actual number of persons) who were satisfied or not satisfied with a known distribution taken from both a general Swedish population ($n = 1674$) and an age-matched sub-sample ($n = 649$), always considering only persons with a steady partner (personal communication KS Fugl-Meyer 2003, unpublished data). The associations between the level of the spouses' life satisfaction, their age and the BI of the stroke patients were analysed with Spearman's rank correlation. The stroke patients' impairments were dichotomized into no/slight vs moderate/severe or present vs not present. Differences in life satisfaction between the 2 groups of spouses were analysed with the Mann-Whitney test. To investigate whether the withdrawals had any impact on the results, a "worst case/best case scenario analysis" was made. In the worst case scenario analysis the missing data were replaced with the LiSat-9 category 3, "rather dissatisfied" and, in the best case scenario analysis, missing data were replaced with category 6, "very satisfied". The results showed that the withdrawals did not have an impact on the results. A p-value of <0.05 was chosen as the level of significance. Power analysis was computed to determine that the sample size of 66 had a sufficient power of 80% provided that the correlation coefficient was at least 0.33 (or–0.33), as the level of significance was 0.05. The data were analysed with SPSS 10.0™.

RESULTS

We first give the results of the statistical analyses of the intra-individual changes in life satisfaction and the proportions of spouses who were satisfied with life at the 3 times points as compared with Swedish norm values. The relationship between the spouses' life satisfaction, their age and sex and the characteristics of the stroke patients are then presented. The results for each of the variables analysed are presented separately.

Change in life satisfaction

The spouses' satisfaction with life as a whole ($Z = -3.48$, $p = 0.001$) and with their leisure situation ($Z = -4.33$, $p < 0.001$), vocational/occupational situation ($Z = -2.30$, $p = 0.022$), sexual life ($Z = -3.81$, $p < 0.001$), partner relationship ($Z = -3.42$, $p = 0.001$) and contacts with friends and acquaintances ($Z = -3.29$, $p = 0.001$) decreased significantly between the time before the stroke and 4 months afterwards. Between 4 months and 1 year after stroke, no statistically significant changes occurred in any of the domains of life. However, changes among individuals occurred in both a positive and a negative direction, as is shown in Figs 1 and 2.

The proportions of spouses who were satisfied with life as a whole and with the different domains of life prior to and at 4 months and 1 year after stroke are given in Table II. The proportions of persons who are satisfied in these respects in a Swedish population of persons aged 18–74 years with a steady partner (31) are given as comparison.

The spouses' rated a statistically significant higher satisfaction with their vocational/occupational situation ($\chi^2 = 7.10$, $p < 0.01$), economic situation ($\chi^2 = 4.82$, $p < 0.05$) and contacts with friends and acquaintances ($\chi^2 = 7.39$, $p < 0.01$) before their

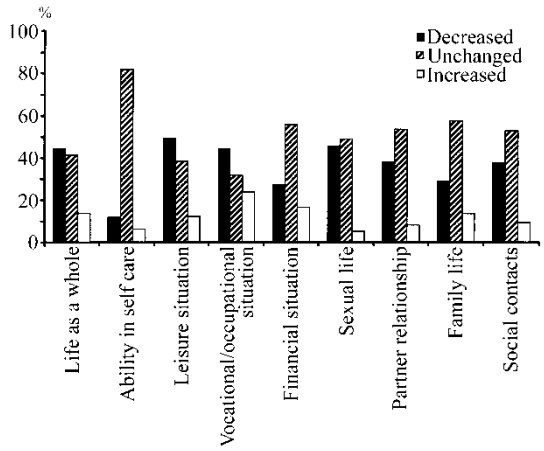

Fig. 1. Proportions of spouses with greater, unchanged and lower life satisfaction between their lives before and 4 months after their partner's stroke

partners' stroke than the Swedish population. However, 75% of the spouses were older than 50 years. The number of spouses satisfied/not satisfied aged 51–74 years was thus compared with subjects of the same age in the population study. The analyses showed no statistically significant differences in any of the life domains between the 2 study groups. At 4 months and 1 year, the spouses rated statistically significant lower satisfaction with life as a whole than the Swedish population (4 months $\chi^2 = 15.49$, $p < 0.001$ and 1 year $\chi^2 = 7.52$, $p < 0.01$). The same held for leisure situation (4 months $\chi^2 = 7.54$, $p < 0.01$ and 1 year $\chi^2 = 6.90$, $p < 0.01$), sexual life (4 months $\chi^2 = 11.44$, $p < 0.001$ and 1 year $\chi^2 = 19.33$, $p < 0.001$), partner relationship (4 months $\chi^2 = 9.41$, $p < 0.01$ and 1 year $\chi^2 = 14.58$, $p < 0.001$) and family life (4 months $\chi^2 = 6.95$, $p < 0.01$). The spouses aged 51–74 years also rated lower satisfaction with their vocational/occupational situation ($\chi^2 = 5.92$, $p < 0.05$) and with contacts with friends and acquaintances ($\chi^2 = 6.00$, $p < 0.05$) at 4 months and with family life at 1 year ($\chi^2 = 5.45$, $p < 0.05$) than the age-match subgroup in the population study.

Relationships between the spouses' level of life satisfaction and their age and sex

Prior to stroke, the men were less satisfied with their own ability in self-care ($Z = -2.54$, $p = 0.011$) and with their sexual life ($Z = -2.03$, $p = 0.042$) than the women. They were more satisfied with their leisure situation ($Z = -2.26$, $p = 0.024$). No significant differences in any of the domains of life were observed between the sexes at 4 months and 1 year after the stroke.

The younger spouses were more satisfied with their sexual life than older spouses prior to the stroke ($r_s = -0.36$, $p = 0.005$). The younger spouses were also significantly less satisfied with their financial situation, both at 4 months ($r_s = 0.29$, $p = 0.019$) and at 1 year after stroke ($r_s = 0.39$, $p = 0.001$). At 4 months, the older spouses were significantly less satisfied with their life as a whole ($r_s = -0.25$, $p = 0.049$) than the younger ones. There were

otherwise no significant associations between the spouses' age and their life satisfaction.

Relationships between the spouses' level of life satisfaction and the characteristics of the patients with stroke

Sensorimotor and cognitive impairments. The spouses of patients with stroke with cognitive impairments scored lower than the spouses of stroke patients with purely sensorimotor impairment in satisfaction with their partner relationship at both 4 months ($p = 0.047$) and 1 year ($p = 0.012$). At 1 year they also scored lower in satisfaction with life as a whole ($p = 0.006$) and family life ($p = 0.004$) (Table III).

As regards the presence of aphasia, the spouses of patients with stroke with aphasia in the first week after stroke scored significantly lower than the spouses of patients with stroke without aphasia in satisfaction with family life at 4 months ($p = 0.031$) and at 1 year ($p = 0.009$). At 1 year, the spouses of patients with stroke with remaining aphasia scored significantly lower in satisfaction with family life ($p = 0.029$) (Table IV).

The spouses of patients with stroke with a moderate/severe sensorimotor impairment in the first week after stroke scored lower in satisfaction with their vocational/occupational situation at 4 months ($p = 0.045$) than the spouses of patients with stroke with no/slight sensorimotor impairment. There were no significant differences between the 2 groups at 1 year. However, the spouses of patients with stroke with remaining moderate/severe sensorimotor impairment at 1 year scored lower than the spouses of patients with no/slight sensorimotor impairment in satisfaction with life as a whole ($p < 0.001$), their own ability in self-care ($p = 0.001$), leisure situation ($p < 0.001$), vocational/occupational situation ($p = 0.046$), sexual life ($p = 0.022$) and partner relationship ($p = 0.001$) (Table V).

Ability in self-care. The spouses' satisfaction with life as a whole ($p = 0.036$), leisure situation ($p = 0.018$), vocational/occupational situation ($p = 0.004$), sexual life ($p = 0.009$) and social contacts ($p = 0.033$) at 4 months were positively correlated with the stroke patients' BI in the first week after stroke. At 1 year, there were still significant correlations between the spouses' satisfaction with their sexual life ($p = 0.047$) and partner relationship ($p = 0.005$) and the stroke patients' BI score in the first week after stroke. At 1 year, there was significant correlations between the spouses' satisfaction with life as a whole ($p = 0.001$), their own ability in self-care ($p = 0.028$), leisure situation ($p < 0.001$), sexual life ($p = 0.003$) and partner relationship ($p = 0.002$) and the stroke patients' BI at that time (Table VI).

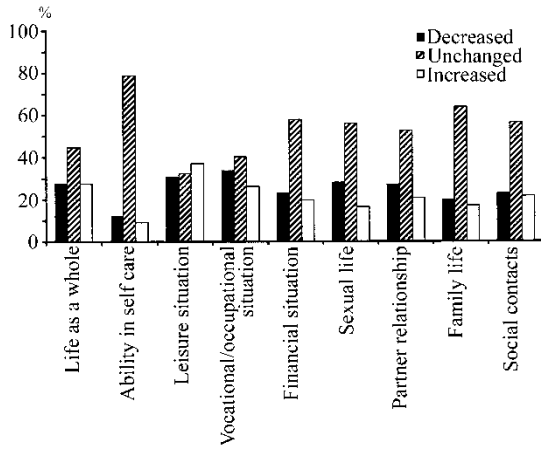

Fig. 2. Proportions of spouses with greater, unchanged and lower life satisfaction between 4 months and 1 year after their partners' stroke.

Emotional disorders. Spouses of stroke patients who were depressed at 1 year rated a significantly lower satisfaction with their sexual life ($p = 0.003$) than spouses of stroke patients who were not depressed. Spouses of stroke patients with astheno-emotional syndrome scored significantly lower in satisfaction with life as a whole ($p = 0.008$), sexual life ($p = 0.048$) and partner relationship ($p = 0.011$) than spouses of stroke patients without astheno-emotional syndrome at 1 year (Table VII).

DISCUSSION

The study shows that spouses' life satisfaction is often affected

Table II. *Proportions of spouses satisfied with life*

		Percent satisfied				
					Swedish population*	
	n at the 3 occasions	Before stroke	At 4 months	At 1 year	Men	Women
Satisfied with:						
Life as a whole	66-65-66	74	52	59	75	74
Ability to manage self-care	66-66-66	98	92	91	94	97
Leisure situation	66-65-66	71	43	44	61	59
Vocational/occupational situation	64-65-66	77	57	53	59	54
Financial situation	66-66-66	64	62	58	45	41
Sexual life	61-62-62	69	39	32	63	64
Partner relationship	65-63-65	82	65	62	83	82
Family life	66-66-66	77	73	77	85	85
Contacts with friends and acquaintances	66-66-66	83	67	68	64	69

*K. Fugl-Meyer (31).

Table III. *Differences in the Life Satisfaction Checklist between spouses of patients with stroke with and without cognitive impairments in the first week and 1 year after stroke, respectively. Mann-Whitney test. Z-values are given*

	Cognitive vs no cognitive impairment in the first week		Cognitive vs no cognitive impairments at 1 year
Life satisfaction	at 4 months	at 1 year	at 1 year
Life as a whole	−1.14	−2.46*	−2.75**
Ability in self-care	−0.12	−0.38	−0.13
Leisure situation	−0.80	−0.48	−0.91
Vocational/ occupational situation	−0.41	−0.27	−0.26
Financial situation	−1.22	−0.57	−0.81
Sexual life	−0.93	−0.89	−0.96
Partner relationship	−1.98*	−2.23*	−2.50*
Family life	−1.90	−2.43*	−2.87**
Social contacts	−0.49	−1.04	−0.98

*$p < 0.05$, **$p < 0.01$.

after stroke. Compared with life prior to stroke, the spouses' satisfaction with life as a whole, daily occupation, leisure, sex life, partner relationship and social contacts was significantly decreased at 4 months after the stroke. Between 4 months and 1 year, individual changes in life satisfaction ran in both positive and negative directions. The spouses of stroke patients with cognitive impairments and astheno-emotional syndrome were less satisfied with their partner relationship. The spouses of stroke patients with physical impairments and impaired ability in self-care were less satisfied with their daily occupation and leisure situation. Spouses of stroke patients with physical impairments and/or with depression were less satisfied with their sex life. The relationships between the spouses' life satisfaction and the stroke patients' physical and cognitive impairments were generally more marked at 1 year than at 4 months.

The lower proportion of caregivers of stroke patients who were satisfied with life as a whole compared the general population shows agreement with a previous study (19). With respect to social relationships after stroke, conflicting results are reported (2, 32). In the present study, the deterioration in relationships was most marked at 4 months after stroke while, in a longer perspective, the changes show greater inter-individual variations, which may explain the conflicting results in previous long-term follow-ups. However, the proportions of spouses who perceived negative changes in their partner relationship and family life are comparable with earlier reports (33). The proportion of spouses who experienced a decrease in satisfaction with their sex life also agrees with a previous study regarding couples in the same age group (34).

The spouses' changes in life satisfaction in the different life domains between 4 months and 1 year went in both negative and positive directions. This may reflect both an increased burden as well as an ongoing adaptation process with a normalization of daily routines and relationships. There is a need of further qualitative studies to better understand the causes of change in spouses' life satisfaction during the time after stroke.

Cognitive impairments have previously been shown to be associated with spouses' psychosocial burden (15). Aphasia has been assumed to have a strong impact on role changes in the family and spouses' emotional health (35). In the present study, the presence of cognitive impairments and of astheno-emotional syndrome in the stroke patients was related to the spouses' satisfaction with their close social relationships. However, in accordance with a previous study (36), the spouses of stroke patients with aphasia did not report lower satisfaction with their partner relationship than spouses of stroke patients without aphasia. The study by Korpelainen et al. (34) points out the

Table IV. *Differences in the Life Satisfaction Checklist between spouses of patients with stroke with no/slight and moderate/severe aphasia in the first week and 1 year after stroke, respectively. Mann-Whitney test. Z-values are given*

	Aphasia vs no aphasia in the first week		Aphasia vs no aphasia at 1 year
Life satisfaction	at 4 months	at 1 year	at 1 year
Life as a whole	−1.53	−1.62	−1.32
Ability in self-care	−1.23	−0.30	−0.08
Leisure situation	−0.99	−0.71	−1.64
Vocational/occupational situation	−1.88	−0.52	−1.38
Financial situation	−0.82	−0.71	−0.37
Sexual life	−1.39	−0.65	−1.55
Partner relationship	−1.63	−0.97	−1.44
Family life	−2.16*	−2.60**	−2.18*
Social contacts	−0.57	−1.17	−1.90

*$p < 0.05$, **$p < 0.01$.

Table V. *Differences in the Life Satisfaction Checklist between spouses of patients with stroke with no/slight and moderate/severe sensorimotor impairment. Mann-Whitney test. Z-values are given*

	No/slight vs moderate/severe sensorimotor impairment in the first week		No/slight vs moderate/severe sensorimotor impairment at 1 year
Life satisfaction	4 months	1 year	1 year
Life as a whole	−0.76	−0.68	−4.07***
Ability in self-care	−0.51	−1.14	−3.21***
Leisure situation	−0.95	−0.12	−3.61***
Vocational/occupational situation	−2.01*	−0.50	−2.00*
Financial situation	−0.38	−1.03	−1.17
Sexual life	−1.61	−0.75	−2.29*
Partner relationship	−0.22	−0.41	−3.38***
Family life	−0.22	−0.61	−1.41
Social contacts	−1.11	−1.37	−1.84

*$p < 0.05$, **$p < 0.01$, ***$p \leq 0.001$.

complexity of physical and emotional disorders on sexual satisfaction after stroke. It was also found in this study that the spouses of stroke patients with physical impairments as well as those with emotional disorders experienced less satisfaction with their sex life.

The presence of physical impairments and low ability in self-care in the patients with stroke seemed to have impact on the spouses' satisfaction with their own daily activities, leisure and self-care. Restriction of activities is assumed to have an impact on spouses' emotional health (8). To our knowledge, the spouses' satisfaction with their own activities after their partners' stroke has not been investigated previously. However, Periard & Ames reported 30% of caregivers to perceive their own daily personal care as being affected by the loss of time for their own personal concerns (33).

It can be assumed that rating previous life satisfaction in a chaotic period of time such as during the first weeks after a partner's stroke would influence perceptions of satisfaction with life before the stroke and thus affect measurements of change after stroke. Our study did not indicate such an influence. The proportion of spouses satisfied with the different life domains before their partners' stroke is similar to that in the Swedish population with respect to age. However, in the interview 10 days after their partners' stroke, the spouses often expressed their satisfaction with the support they received from their friends during the first week after stroke. This may have impact on their perception of their social contacts and could thus explain the great proportion of spouses satisfied with their social contacts before stroke.

It was also obvious during the interviews that, when a choice had to be made between 2 statements in the LiSat-9, the less negative response was often given even though less satisfaction with daily life had been indicated during the interview. This phenomenon has been observed previously in studies of experiences in stressful events (37). Therefore, life satisfaction in the group was probably somewhat lower than the results show.

Repeated measurements of life satisfaction over time could be affected by current mood and the respondent possibly being familiar with the questions (32). However, the LiSat-9 has shown high intra-individual stability over time as well as a sensitivity to changes in the life situation (38).

The nature of this study is explorative. The level of significance was thus chosen to be 0.05 in order to find possible patterns of relationships between the spouses' life satisfaction and the neurological characteristics of the stroke patients. However, since many analyses and tests are performed, there is a risk for Type I errors. Statistical significance must thus be

Table VI. *Association between the Barthel Index and the Life Satisfaction Checklist. Spearman's rank correlation. The correlation coefficients and 95% CI for the correlation coefficients are given*

	Barthel Index in the first week		Barthel Index At 1 year
Life satisfaction	4 months	1 year	1 year
Life as a whole	0.26 (0.02; 0.47)*	0.19 (−0.05; 0.41)	0.41 (0.19; 0.59)***
Ability in self-care	−0.06 (−0.30; 0.18)	0.09 (−0.16; 0.32)	0.27 (0.03; 0.48)*
Leisure situation	0.29 (0.05; 0.50)*	0.15 (−0.10; 0.37)	0.43 (0.21; 0.61)***
Vocational/occupational situation	0.36 (0.12; 0.55)**	0.04 (−0.26; 0.22)	0.21 (−0.04; 0.43)
Financial situation	0.05 (−0.19; 0.29)	−0.04 (−0.28; 0.20)	−0.02 (−0.26; 0.22)
Sexual life	0.33 (0.09; 0.53)**	0.25 (0.00; 0.47)*	0.38 (0.14; 0.57)**
Partner relationship	0.17 (−0.09; 0.40)	0.34 (0.11; 0.54)**	0.38 (0.15; 0.57)**
Family life	0.14 (−0.11; 0.37)	0.10 (−0.15; 0.33)	0.12 (−0.12; 0.35)
Social contacts	0.26 (0.02; 0.48)*	0.09 (−0.15; 0.33)	0.14 (−0.11; 0.37)

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table VII. *Differences in the Life Satisfaction Checklist between spouses of patients with stroke with and without depression or astheno-emotional syndrome at 1 year after stroke. Mann-Whitney test. Z-value is given*

	Depression vs no depression	Astheno-emotional syndrome vs no astheno-emotional syndrome
Life as a whole	−0.86	−2.65**
Ability in self-care	−0.25	−0.25
Leisure situation	−1.15	−1.89
Vocational/occupational situation	−0.34	−0.76
Financial situation	−0.10	−0.52
Sexual life	−2.97**	−2.00*
Partner relationship	−1.84	−2.53*
Family life	−1.13	−1.39
Social contacts	−0.03	−1.81

*$p < 0.05$, **$p < 0.01$.

interpreted with care and only be regarded as indications of possible relationships. Since the results of the analyses of relationships showed stable and consistent patterns over time, we believe that our findings are reliable. Further studies with larger study populations would be of value to confirm the results.

The focus of the present study was on the spouses of younger stroke patients and it is thus not possible to generalize the results to the whole stroke population, which is dominated by elderly patients. Spouses' coping resources, such as the social network and their health, are probably different in older age groups. Furthermore, older patients with stroke have greater co-morbidity and this may have an impact on the spouses' life satisfaction.

The main result of the study is that spouses often experience a decrease in their satisfaction with life as a whole as well as with important domains of life after their partners' stroke. Different impairments in the patients with stroke seem to affect different domains of life of the spouses, generally more marked at 1 year than at 4 months after stroke onset. Therefore, in the rehabilitation of the patients with stroke, there is a need for support over a long period of time, focusing on communication and on the social, occupational and leisure situation of the spouses as well as that of the patient with stroke.

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