J Rehabil Med 2009; 41: 714–718

ORIGINAL REPORT

POSITIVE ATTITUDES AND PRESERVED HIGH LEVEL OF MOTOR PERFORMANCE ARE IMPORTANT FACTORS FOR RETURN TO WORK IN YOUNGER PERSONS AFTER STROKE: A NATIONAL SURVEY

Britta Lindström, PT, PhD[1], Jenny Röding, PT, PhD[1,2] and Gunnevi Sundelin, PT, PhD[1]

From the [1]Department of Community Medicine and Rehabilitation, Umeå University, Umeå and [2]Department of Health Science, Luleå University of Technology, Luleå, Sweden

Objective: **Significant numbers of younger persons with stroke should be given the opportunity to return to work. The aim of this study was to investigate factors of importance for return to work among persons after first ever stroke, in the age range 18–55 years.**

Methods: **A questionnaire was sent to all persons who had experienced a first ever stroke, 18–55 years of age, registered in the Swedish national quality register for stroke care, Riks-Stroke. Of the 1068 who answered the questionnaire, 855 (539 men and 316 women) were in paid employment before their stroke, and were included in this study.**

Results: **Sixty-five percent returned to work and, of these, an equal proportion were men and women. Significant factors associated with return to work were the perceived importance of work (odds ratio (OR) 5.10), not perceiving themselves as a burden on others (OR 3.33), support from others for return to work (OR 3.66), retaining the ability to run a short distance (OR 2.77), and higher socioeconomic codes (OR 2.12). A negative association was found between those rehabilitated in wards intended for younger persons and return to work (OR 0.37).**

Conclusion: **External support from others, and positive attitudes towards return to work, were factors associated with successful return to work after stroke. Contrary to what was expected, independence in personal activities of daily living and cognitive factors were not associated with return to work to the same extent as persistent higher level of physical functions, such as ability to run a short distance.**

Key words: questionnaire, rehabilitation, stroke, work, young adults.

J Rehabil Med 2009; 41: 714–718

Correspondence address: Britta Lindström, Department of Community Medicine and Rehabilitation, Physiotherapy, SE-901 87 Umeå University, Sweden. E-mail address: britta.lindstrom@physiother.umu.se

Submitted January 28, 2009; accepted May 14, 2009

INTRODUCTION

Approximately 30,000 new cases of stroke occur every year in Sweden (1). The majority of patients are over 65 years of age, and return to paid work is not the main aim of their rehabilitation, rather to gain as high a level of independence as possible in their daily living. However, as much as 20% of patients after stroke are under 65 years of age, and among them a substantial number would be eligible for return to work (2). For these young persons rehabilitation should aim at good functional capacity as well as preparing them to return to work with adapted work tasks, if necessary. Rehabilitation of patients after stroke is currently focused mainly on elderly patients, which may mean that the needs of younger patients are neglected (3, 4). In a previous study carried out by our group, we found in qualitative interviews that the young persons after stroke under 55 years of age felt frustration, tiredness and decreased participation (5). Lack of individually tailored rehabilitation programmes aiming at return to work is evident, and this aspect has not been focused on in rehabilitation programmes according to results from qualitative interview studies among persons after stroke (3, 6).

Return to work is highly contextual, and comparisons between different countries with differing social security systems might be difficult. In a Swedish study of rehabilitated persons after stroke return to work was as low as 20% (7) and in a British study as high as 42% one year after stroke (8). Other studies have shown a rate as high as 73% (9). Prognostic factors for returning to work can be demographic factors, stroke type, disability, and social factors. Furthermore, stroke location has not been found to be associated with return to work (10, 11), neither has independence in activities of daily living (12). A recent study from New Zealand pointed out that depression decreases the chance of return to work (13). White-collar workers have higher rates of return to work than blue-collar workers (6), especially in the long term (14), as is also the case for those patients with a higher education compared with those with a lower education (12).

Most studies of return to work after stroke are based on small groups emanating from follow-up studies from clinical settings. Only a few studies are based on larger materials (13, 14) or national data. The study base for this investigation includes all persons with a first ever stroke between 18 and 55 years of age, registered throughout Sweden, from July 2001 to December 2002.

The aims of this nationwide survey were therefore to investigate factors that are associated with return to work among young persons after stroke, 18–55 years of age, within a time-span ranging from 8 months to 2.5 years after their first ever stroke.

METHODS

Participants

Participants were recruited from the Swedish hospital-based national quality register for stroke care, Riks-Stroke (RS) (1). This register includes approximately 90% (15) of patients after stroke in Sweden. Name, age, type of lesion, municipality, stroke unit/non-stroke unit, etc., have been registered in this quality register since 1994 (16). For this study all registered patients, with first ever stroke between July 2001 and December 2002 in the age range 18–55 years at the onset of a stroke, were included. To be included, at least 12 months and not more than 30 months should have elapsed since the stroke. Fifty-five years of age was chosen as a cut-off point for this study group. In Sweden, in the year 2003, 80% of the workforce were under the age of 55 years, and this study group mirrors relatively well the working population in Sweden (17). Another reason for choosing 55 years as the upper limit and not 65, as is commonly used, is that co-morbidity increases with age and return to work would be more probable in younger age groups.

Postal questionnaires were sent to 1631 persons, and of these 1425 patients with first ever stroke were eligible for this study. Information from the RS showed that the 357 (25%) of 1425 eligible participants with a first ever stroke, who did not respond, were more likely to have diabetes, to be unconscious on arrival at hospital, and proportionally more had had a haemorrhage. The non-respondents were also more likely not to have been treated in stroke units. Data collection was finished in January 2004, and after 2 reminders 1068 questionnaires were returned. Due to administrative procedures at RS, the time since stroke for the included responders was between 8 and 30 months. Of the 1068 respondents, 855 (87% of the men and 73% of the women) were in paid employment before their stroke. In this study only those who had reported that they had paid employment at the time of the stroke event were enrolled (Fig. 1).

Ethical approval was provided by the ethics committee of the Medical Faculty of Umeå University (Dnr 03-165).

Questionnaire

Based on the results from our previous interview study of younger people with stroke, a questionnaire was constructed (5). Questions regarding the persons' current health condition, living and social arrangements, physical and cognitive function, activities of daily life, relationships, social life, leisure pursuits, self-perception, participation and work were included. According to Hamedani et al. (18), the "change" in function or well-being should be evaluated, and our questionnaire was designed to describe how the current situation differed from the situation prior to the stroke. An example of this is; "How do you manage to run a short distance (100 m) now, compared with prior to your stroke"? This question was rephrased and taken from a questionnaire on living conditions in the general population in Sweden (19). Parts of a quality of life instrument for young haemorrhagic persons after stroke (18) and questions from the Barthel Index concerning personal activities of daily living (P-ADL) (20) were included in the questionnaire.

The questionnaire included a total of 97 questions. In this paper, however, a selection of questions focuses on changes in the work situation after stroke, and factors related to return to work were used. All the answers in the questionnaire were self-reported, given by the persons after stroke. The questionnaire was primarily intended to be answered by the persons themselves. If help from others was needed, this should be noted in the questionnaire. In this study 89% of respondents answered the questionnaire without help. Medical background data were from RS, and thus not self-reported

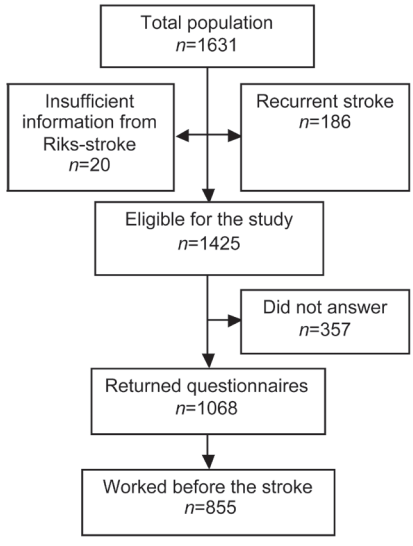

Fig. 1. The flow chart, showing the selection of the participants in the study i.e. those who have reported that they had employment before stroke.

Analysis

Descriptive analysis χ^2-tests were used to determine the difference between groups and multiple logistic regression analyses to detect factors associated with "return to work". "Return to work" and "Not return to work" were the dependent variables in the bivariate and in the multiple logistic regression analyses. In this study, paid employment was considered as work irrespective of number of working hours per day. The questions regarding work and work situation were descriptive, such as branch of work and socioeconomic codes, etc. The questions were multiple-choice. For physical functions the choices consisted of "no change", "nearly as good as before", "somewhat worse", "much worse", "cannot at all" and "could not before" and for cognitive functions "better, "unchanged", "somewhat worse" and "much worse". In the analysis the independent variables were either dichotomized or trichotomized in the univariate analysis and in the multiple logistic regression analysis all variables were dichotomized. All variables are shown in Table I. The persons were defined as independent in P-ADL if they had answered that, at least in 3 of 4 following items they; were able to dress, could manage toilet visits, walk upstairs and downstairs, and were able to move in- and outdoors (2, 21). A variable cluster analysis confirmed that the questions concerning cognitive function, such as changes in memory, tiredness, concentration, ability to be engaged in discussions/ talks, complete different tasks, and manage to be in environments with many people and much noise and to do things simultaneously, were ranked equal with the single variable concentration. Concentration had the strongest correlation in this cluster, and this variable was thus determined to represent the cognitive functions and was therefore used in the analysis (22).The variables that showed significant differences, with the p-value < 0.05 in the bivariate analyses, were included in the multiple regressions (Table I). Significant correlations between the variables used in the univariate tests existed, such as between "level of education" and "socioeconomic codes" (white-, green- and blue-collar); and between "feeling less respected" and "burden on others" existed. Thus, only one of the variables was included in the multiple logistic regression analysis. The analysis was adjusted for sex, age and time period since the stroke, although no differences existed in the univariate analysis. Odds ratio (OR) and the 95% confidence intervals (CI) are presented from the multivariate analysis (Table II). All calculations were made using SPSS version 15.0.

RESULTS

Work situation

Of the 1068 patients who were eligible for this study 82% (855/1048 who answered this question), 539 men and 316

Table I. χ^2 *calculations of RTW and not RTW in persons after stroke*

	Total *n*	RTW *n* (%)	Not RTW *n* (%)	*p*
Gender				
Men	517	338 (65.4)	179 (34.2)	0.91
Women	301	198 (65.8)	103 (34.6)	
Age, years				
18–34	39	29 (74.4)	10 (25.6)	
35–44	118	79 (66.9)	39 (33.1)	0.44
45–55	661	428 (64.8)	233 (35.2)	
Kind of stroke				
Infarction	660	441 (66.8)	219(33.2)	0.02
Haemorrhage	130[1]	73 (56.2)	57(43.8)	
Diabetes				
Yes	97	55 (56.7)	42 (43.3)	0.09
No	719	479 (66.6)	240 (33.4)	
Symtoms, side				
Right	313	207 (66.0)	106 (33.9)	0.82
Left	306	205 (67.0)	101 (33.0)	
Ward at admission				
Stoke unit	494	330 (66.8)	64 (33.2)	0.34
Other	324	206 (63.6)	118 (36.4)	
P-ADL				
Independent	661	431 (65.2)	230 (34.8)	0.74
Dependent	138	92 (66.7)	46 (33.3)	
Level of education				
Ordinary school	504	312 (62.9)	192 (37.1)	0.09
Secondary school	111	74 (66.7)	37 (33.3)	
University	197	141 (71.6)	56 (28.4)	
Time since stroke, months				
<12	29	14 (48.3)	15 (51.7)	
13–24	547	363 (67.5)	184 (32.5)	0.07
25–30	242	153 (63.2)	89 (36.8)	
Deterioration in concentration (cognitive function)				
No	327	250 (76.5)	77 (23.5)	<0.001
Yes	477	277 (58.0)	200 (41.9)	
Important to work				
Yes	565	442 (78.2)	123 (21.8)	<0.001
No	244	91 (37.3)	143 (61.1)	
Support to return to work				
Yes	255	213 (83.5)	42 (16.5)	<0.001
No	518	315 (60.8)	203 (39.2)	
Branch of work				
Public	314	207 (65.9)	173 (34.1)	
Private	394	260 (66.0)	134 (34.)	0.94
Entrepreneur	91	62 (68.1)	29 (31.9)	
Deterioration in ability to run a shorter distance (100 m)				
No	179	160 (89.4)	19 (10.6)	<0.001
Yes	609	350 (57.5)	240 (2.9)	
Ward for younger after acute treatment				
Yes	64	25 (39.1)	39 (60.9)	<0.001
No	720	493 (68.5)	227 (31.5)	
Informed about the stroke disease				
Yes	392	270 (68.9)	122 (31.1)	0.28
No	300	195 (65.0)	105 (35.0)	
Feeling as respected as before				
Yes	641	465 (72.5)	176 (27.5)	<0.001
No	165	68 (41.2)	97 (58.8)	
Sense of burden for others				
No	677	486 (71.8)	191 (27.2)	<0.001
Yes	130	44 (33.8)	86 (66.2)	
Socioeconomic codes				
White	322	239 (74.2)	83 (25.8)	
Green	126	80 (63.5)	46 (36.5)	<0.001
Blue	342	204 (59.6)	138 (41.4)	

[1] Unspecified stroke were excluded

P-ADL: personal activities of daily living; RTW: return to work.

Table II. *Odds ratio (OR) estimation and 95% confidence inerval (95% CI) of factors associated with return to work for younger persons after stroke (18–55 years of age)*

	OR	95% CI
Men	1.12	0.72–1.74
Age	0.89	0.53–1.51
Haemorrhage	0.58	0.33–1.00
Diabetes	1.27	0.80–2.69
Time since stroke	1.10	0.67–1.60
Rehabilitation ward units for younger persons	0.37	0.19–0.75
Cognitive function (concentration)	1.38	0.88–2.17
Run a shorter distance (100 m)	2.77	1.50–5.12
Important to work	5.10	3.35–7.74
Support to return to work	3.66	2.27–5.90
Not feeling like a sense of burden to others	3.33	1.94–5.71
Higher socioeconomic codes	2.12	1.39–3.24

women, reported that they were in paid employment when they had their stroke, and 65% (536/818) returned to work after the stroke. There was no significant difference between men and women and age groups concerning return to work (Table I). Seventy-seven percent reported return to the same workplace as before the stroke. The majority, 86%, returned to work between one week and 12 months since stroke. Among those who returned to work within 12 months, half of the patients returned within 3 months and the other half between 3 and 12 months. The time elapse between the stroke and return to work was considered to be the right length by 65% (343/530), too short by 20% (104/530) and too long by 8% (42/530).

According to the Nordic Employment Codes (NYK) (20, 23) the largest group, 24% (190/790) of participants, had employment that did not demand any special education. The specialist work group was the second largest group, 18% (143/790). Persons on a managerial level, agricultural workers, gardeners and forestry workers were most likely to return to work (Fig. 2).

Being self-employed was more favourable for return to work in comparison with private or public employment. Those with the highest level of education and those with higher socioeconomic status were most likely to return to work (Table I).

From the univariate analysis it was found that a significantly lower proportion of participants with deteriorated "ability to concentrate" returned to work, as well as those who had not retained the ability to run a short distance (Table I). Neither treatment in a stroke unit nor being independent in P-ADL had any significance for return to work.

Multiple logistic regression analysis showed that those persons after stroke, who considered that it was important to work (OR 5.10), who had retained the ability to run a short distance (OR 2.77), and who had support concerning their working situation (OR 3.66), had the greatest chance of return to work. Higher socioeconomic (OR 2.12) status and a perception of not being a burden on others (OR 3.33) were also associated with return to work (Table II).

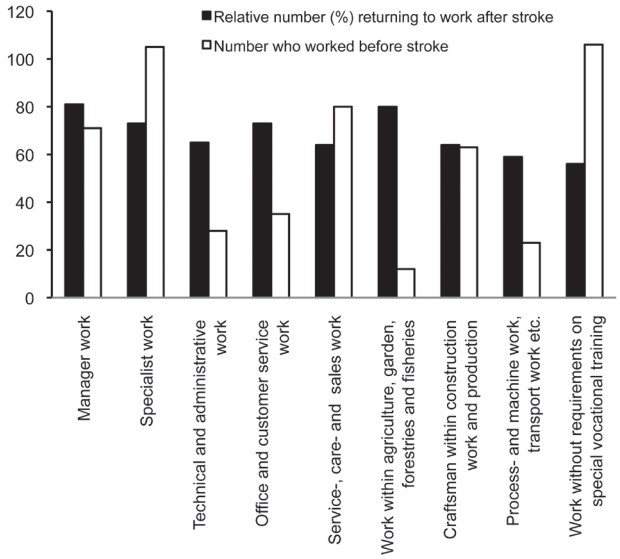

Fig. 2. Number of working participants who worked before stroke distributed according to working categories and the corresponding percentage (%) returning to work after stroke.

DISCUSSION

The aim of this study was to investigate factors of importance for return to work in a younger stroke population. We found that a positive attitude to work and support from others were significant factors for return to work, as was retained ability to run a short distance. Surprisingly, cognitive function and independence in P-ADL did not have the same considerable influence on return to work

A positive attitude concerning return to work for persons after a stroke is important (3, 7, 8), and this finding is in accordance with a study on persons with chronic pain (24). Hence, the type of impairment need not to be the main determining factor for return to work.

Our results showed, in accordance with other studies, that support from others was important for return to work (3, 8). Alaszewski et al. (8) found that disabilities formed barriers to work and that external support, such as supportive social networks and adjustment of the working environment, made it easier to return to work (8). Unfortunately, no detailed information on the kind of support was asked for in our study. This limits our possibilities to advise on how the best support for return to work should be implemented. Furthermore, we found that being a burden on others was negatively associated with return to work. This feeling might be a hindrance in asking for help with work adjustments and appropriate rehabilitative measures.

Surprisingly, independence in P-ADL did not have the same impact on return to work as did the ability to run a short distance. Apparently, although the participants were independent in P-ADL, they could still have significant motor deficits and cognitive limitations. A study by Vestling et al. gave similar results (12), where the ability to walk was a contributing factor for return to work in an older age group than in the current study. One could speculate that in a young population, as in our study, independence in P-ADL was an insensitive measure to detect significant remaining motor problems. Thus, asking for a higher level of physical function, such as running, made it possible to detect those who were most likely to return to work. Another explanation could be that blue- and green-collar workers were in the majority of those whose work situation probably demands relatively high physical functioning.

Persons with minimal remaining symptoms can still perceive limitations after a brain injury, although these may not to be visible (25). We also found in another study, that there was an association between cognitive and motor function (22). Surprisingly, no significant association between cognitive function and return to work was found in this study. As this was a questionnaire study it might have been difficult to capture dimensions on cognitive function. The findings of limitations in the higher level of physical function could also indicate existing subtle impaired cognitive function, although this was not detected as a contributing factor for return to work. Thus, to understand the physical and cognitive deficits, sensitive tests are needed to detect remaining symptoms in order to optimize rehabilitation and return to work.

In a review by Treger et al. (6) on return to work after stroke, containing figures from 16 different countries, a variation of between 19% and 73% was found. Our results were in accordance with these figures. The majority of patients in this study returned to work within one year and a greater part of them also perceived the time-point as being appropriate for return to work. The relatively high percentage, 65%, who returned to work, might be explained by the fact that all were classified as working, irrespective of the number of working hours per day. Another factor is the younger age, with 55 years as the upper limit, compared with most of the earlier studies in which subjects up to 65 years of age have been included. Although the results showed a high percentage of return to work, there were still 35% who did not return to work. This might be due to insufficient rehabilitation strategies for promoting return to work and the possibility that the strategies are not adapted to the needs of the younger age group (3).

An unexpected result was that there were proportionately as many women as men who returned to work after stroke, although more men than women worked prior to the onset of the stroke. Another surprising finding was that subjects working in agriculture, forestry or fishery returned to work to the same extent as those involved in managerial and speciality work. Similar results have been found by Walker at et al. (26) concerning traumatic brain injury and return to work. Although being self-employed often involves seemingly physically demanding tasks, it can also imply having greater control over the pace of work.

Rehabilitation in special units intended for younger persons with stroke was negatively associated with return to work. This result should be interpreted with caution, as the persons who were rehabilitated in such a ward were few in number. An explanation could be that these few persons could have been most affected by their stroke and thus were in need of specialized rehabilitation.

This study base covers approximately 80–90% of all persons after stroke in Sweden. The results thus gave a representative picture of the working situation in Sweden among younger persons after stroke. This was a population-based cross-sectional study and the results are applicable at specific time-points, and are not generally applicable to other settings. The labour market is not static, as it changes between recession and time of prosperity, and this consequently has a strong impact on the possibilities for a return to work, especially among persons with functional limitations.

In conclusion, we found that a positive attitude and support from others were significant factors for return to work, as well as a high level of physical function. Surprisingly, cognitive function and independence in P-ADL did not have the same considerable influence. External support from others and individually tailored rehabilitation programmes, including physical exercise and work adjustments, are prerequisites for successful return to work among persons after stroke.

ACKNOWLEDGEMENTS

Ellinor Flink and Helena Forsén are gratefully acknowledged for assistance in data collection and preparation. We also thank Norrländska Strokefonden for financial support and Riks–Stroke for access to the national quality register.

REFERENCES

1. Socialstyrelsen. Rapport Riks stroke 2006 [The National Board of Health and Welfare. The stroke register report 2006] [cited 2009 March 27]. Available from: http://www.riks-stroke.org/content/analyser/Rapport06.pdf. 2008 (in Swedish).
2. Socialstyrelsen. Livssituationen två år efter stroke [The National Board of Health and Welfare. Lifesituation two years after stroke] [cited 2009 March 27]. Available from: http://www.socialstyrelsen.se/NR/rdonlyres/40B56ADB-E819-4577-9BDA-5918476F5C78/2775/200412340.pdf (in Swedish).
3. Medin J, Barajas J, Ekberg K. Stroke patients' experiences of return to work. Disabil Rehabil 2006; 28: 1051–1060.
4. Wozniak M, Kittner S. Return to work after ischemic stroke: a methodological review. Neuroepidemiology 2002; 21: 159–166.
5. Roding J, Lindstrom B, Malm J, Ohman A. Frustrated and invisible – younger stroke patients' experiences of the rehabilitation process. Disabil Rehabil 2003; 25: 867–874.
6. Treger I, Shames J, Giaquinto S, Ring H. Return to work in stroke patients. Disabil Rehabil 2007; 29: 1397–1403.
7. Hofgren C, Bjorkdahl A, Esbjornsson E, Sunnerhagen KS. Recovery after stroke: cognition, ADL function and return to work. Acta Neurol Scand 2007; 115: 73–80.
8. Alaszewski A, Alaszewski H, Potter J, Penhale B. Working after a stroke: survivors' experiences and perceptions of barriers to and facilitators of the return to paid employment. Disabil Rehabil 2007; 29: 1858–1869.
9. Neau J, Ingrand P, Mouille-Brachet C, Rosier M-P, Couderq C, Alvarez, A, et al. Functional recovery and social outcome after cerebral infarction in young adults. Cerebrovasc Dis 1998; 8: 296–302.
10. Saeki S, Hachisuka K. Medical fitness to return to work for disabled workers. J UOEH 2004; 26: 41–50.
11. Wozniak MA, Kittner SJ, Price TR, Hebel JR, Sloan MA, Gardner JF. Stroke location is not associated with return to work after first ischemic stroke. Stroke 1999; 30: 2568–2573.
12. Vestling M, Tufvesson B, Iwarsson S. Indicators for return to work after stroke and the importance of work for subjective well-being and life satisfaction. J Rehabil Med 2003; 35: 127–131.
13. Glozier N, Hackett ML, Parag V, Anderson CS. The influence of psychiatric morbidity on return to paid work after stroke in younger adults: the Auckland Regional Community Stroke ARCOS. Study, 2002 to 2003. Stroke 2008; 39: 1526–1532.
14. Saeki S, Ogata H, Okubo T, Takahashi K, Hoshuyama T. Return to work after stroke: a follow-up study. Stroke 1995; 26: 399–401.
15. Eriksson M, Appelros P, Norrving B, Terent A, Stegmayr B. Assessment of functional outcome in a national quality register for acute stroke: can simple self-reported items be transformed into the modified Rankin Scale? Stroke 2007; 38: 1384–1386.
16. Asplund K, Hulter Asberg K, Norrving B, Stegmayr B, Terent A, Wester PO. Riks-stroke – a Swedish national quality register for stroke care. Cerebrovasc Dis 2003; 15 Suppl 1: 5–7.
17. Statistiska centralbyrån,(SCB). Registerbaserad arbetsmarknadsstatistik RAMS [Statistics Sweden (SS). Registrated labour market statistics] [cited 2009 March 27]. Available from: http://www.ssd.scb.se/databaser/makro/Produkt.asp?produktid=AM0207 (in Swedish).
18. Hamedani AG, Wells CK, Brass LM, Kernan WN, Viscoli CM, Maraire JN, et al. A quality-of-life instrument for young hemorrhagic stroke patients. Stroke 2001; 32: 687–695.
19. Statistiska centralbyrån (SCB). Undersökningar om levnadsförhållanden, ULF [Statistics Sweden, (SS). Investigation on living conditions]. [cited 2009 April 05] Available from: http://www.ssd.scb.se/Databaser/makro/MainTable.asp?yp=bergman&xu=scb&omradekod=LE&omradetext=Living+conditions&lang=2&langdb=1 (in Swedish).
20. Mahoney FI, Barthel D. Functional evaluation: the Barthel Index. Maryland State Med J 1965; 14: 56–61.
21. Glader EL, Stegmayr B, Norrving B, Terent A, Hulter-Asberg K, Wester PO, et al. Sex differences in management and outcome after stroke: a Swedish national perspective. Stroke 2003; 34: 1970–1975.
22. Roding J, Glader EL, Malm J, Lindström B. Perceived impaired physical and cognitive function after stroke in men and women between 18 and 55 years of age – a national survey. Disabil Rehabil 2009; 31: 1464–5165.
23. Svenskt näringsliv [Confederation of Swedish enterprise] [cited 2008 July 3]. Available from: http://www.loneanalyser.se/svensktnaringsliv/info.aspx (in Swedish).
24. Puolakka K, Ylinen J, Neva M, Kautiainen H, Häkkinen A. Risk factors for back pain-related loss of working time after surgery for lumbar disc herniation: a 5-year follow-up study. Eur Spine J 2008; 17: 386–392.
25. Shames J, Treger I, Ring H, Giaquinto S. Return to work following traumatic brain injury: trends and challenges. Disabil Rehabil 2007; 29: 1387–1395.
26. Walker WC, Marwitz JH, Kreutzer JS, Hart T, Novack TA. Occupational categories and return to work after traumatic brain injury: a multicenter study. Arch Phys Med Rehabil 2006; 87: 1576–1582.