Original Article

Vocational reintegration following spinal cord injury: expectations, participation and interventions

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Study design: Survey.

Objectives: To explore the process of reintegration in paid work following a traumatic spinal cord injury (SCI), including the role of early expectations of individual patients regarding return to work, indicators of success of job reintegration and a description of reintegration interventions and barriers.

Setting: Dutch rehabilitation centre with special department for patients with spinal cord injuries.

Methods: Descriptive analysis of data gathered by a mailed questionnaire, which was returned by 57 persons (response 83%) with traumatic SCI, aged 18–60 years, and data of earlier expectations reported by the individual patients during the rehabilitation admission following SCI from 1990 to 1998.

Results: Of 49 respondents who were employed at the moment of the SCI, 45% expected to be able to resume work. These positive expectations were associated with a higher educational level. In 67%, return to work was successful. The chance to reintegrate successfully was better if the patient expected to resume work. Logistic regression analysis did not reveal other significant indicators. About one-third of the 49 respondents working preinjury followed vocational retraining, which was successful for most of them so far. In the majority of work situations modifications have been made, such as job adaptations and reduction of working hours. Several unmet needs regarding reintegration interventions were also reported.

Conclusions: Positive expectations regarding resumption of work after a SCI are an important indicator of successful reintegration in work. An active role of the rehabilitation team is recommended in drawing up a vocational reintegration plan to prepare the patient, the employer and professionals involved in the reintegration process.

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Keywords: spinal cord injury; rehabilitation; vocational reintegration; expectations; reintegration interventions

Introduction

Return to paid work is regarded as one of the most important outcomes of reintegration in society following a spinal cord injury (SCI).^{1,2} It gives people a social status and meaning to life and makes them more financially independent. As the majority of patients with traumatic SCI are relatively young, attention to vocational reintegration is of particular importance, not just to the patients themselves but also from a wider social point of view.³ Job reintegration of disabled people has been an important point of political interest

in The Netherlands for the last decades. However, several studies have shown that reintegration interventions do not enable all people with chronic diseases and disabilities to resume work.^{4–7} The purpose of this study was to extend our knowledge about the process and the outcomes of reintegration in paid work following a SCI.

Vocational reintegration after a SCI has received considerable attention in literature. Percentages of success have varied from 25 to 48% in publications from various countries in the last decades.^{3,8–14} Factors related to the success of vocational reintegration include several personal and injury-related variables, such as age, type of lesion and Barthel score, and work-related variables, such as educational level, preinjury type of

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work and social security system.^{1–3,8–17} Only few studies focused on the relation between vocational outcome and more subjective indicators such as work interests and values, educational and vocational plans and societal attitudes.^{9,14} Nevertheless, the role of the individual patient seems very important in the process to successful job reintegration.

Research on the effects of the interventions during the vocational reintegration process following a SCI is limited.^{1,15,16,18} According to Wade, interventions at the level of participation include actions to maximise the behavioural repertoire of the patient and provide suitable opportunities for social interaction, such as educational and employment services.¹⁹

Recommendations to improve vocational outcome are tailor-made educational and vocational counselling, contact with peer groups, changing employer perceptions, improving transport and equal access and reducing financial disincentives to working.¹⁵ Most of these proceedings take place after the rehabilitation period. Aiming at optimal participation for people with SCI, we have to know which interventions promote adequate skills and strategies and create opportunities for return to work.²⁰

This study was conducted to gain more insight in the process of vocational reintegration, which largely takes place beyond the scope of the rehabilitation team. We were interested if early expectations of individual patients with SCI regarding return to paid work were realistic. With more knowledge of factors playing a role in the success of job reintegration prognostic information becomes available for the patient and professionals. Reintegration interventions were assessed, including vocational retraining, job modifications and contacts with job professionals. Barriers in the process of reintegration were investigated as well.

Methods

Patients

In this study, we focused on patients with an acute traumatic SCI, aged 18 to 60 years, who were consecutively admitted to the Centre for Rehabilitation Beatrixoord from 1990 until 1998. Of 89 eligible candidates, 16 patients were excluded: four patients deceased, three had serious psychiatric problems, one was discharged to a nursing home, two finished their rehabilitation programme in another rehabilitation centre and six were foreigners with difficulties with the Dutch language. Of four patients the addresses were not found and they were lost for follow-up. To 69 patients, a questionnaire was sent. The questionnaire was filled in and returned by 57 patients, which means a response of 83%.

Questionnaire

Data on the results and process of vocational reintegration were gathered from a questionnaire, which was

developed for this study. This questionnaire largely consisted of selected items of a questionnaire developed as part of the Vocational Handicap Research Programme of *TNO Arbeid* (Dutch Organisation for Applied Scientific Research). *TNO Arbeid* validated their questionnaire in several research projects.^{4,5} Data became available on the employment situation both preinjury and after the reintegration including having a job, the type of job, the job contract and number of working hours (appendix). Respondents were asked to report their income, educational level (grades 1–8), vocational retraining, job adjustments and contacts with reintegration professionals. The TNO assessment also includes several disease-specific items and opinions on the working conditions and social atmosphere, but these were not analysed in this study.

In order to relate the actual work situation of the respondents to the earlier expectations, the data of the predictions regarding resumption of work were used, reported by all patients during the rehabilitation period. Systematic assessment of expectations of patients with traumatic SCI was started in 1988 in the SCI department. Questions were asked such as 'Do you expect to be able to resume work (full-time or part-time)? Do you expect to be able to find a different job? Do you expect to follow vocational re-training?' Possible answers were 'yes', 'no' and 'uncertain'. The expectations were assessed at several moments during the inpatient rehabilitation period. Data were used of the final assessment after admission.

Several personal, job-related and injury-related factors were related to the early expectations and the final success of reintegration. Data concerning work were derived from the TNO assessment. Regarding injury-related variables, the type of SCI was defined according to the standards for neurological and functional classification by the American Spinal Injury Association. The time elapsed since the injury is given in months. The ability to walk and the level of continence for urine were both assessed on a three-point scale.

Analysis

We defined successful reintegration in work as being able to return to work for at least 4 h a week. Participants who returned to their jobs after the SCI and stopped working more than 2 years later, for reasons related to the SCI, were also regarded as being successful in reintegration.

Descriptive statistics were performed using the Statistical Product and Service Solutions (SPSS). Differences in the indicators between groups of patients with positive and negative expectations regarding return to their jobs, and between groups of patients with successful and unsuccessful vocational reintegration were tested using univariate logistic regression analyses. Odds ratios were presented as they are a useful indicator of the strength of the relationship,²¹ and the significance level was chosen as $P < 0.05$.

Results

The study group of 57 respondents consisted of 52 male (91%) and five female patients. Their age at the moment of the SCI ranged from 18 to 59 years with a mean of 33 years. The time elapsed since injury varied from 29 to 140 months with a mean of 84 months. In all, 40% of the injuries were caused by traffic accidents, 23% by industrial accidents, 37% by sports and private accidents. Six patients had complete tetraplegia, 17 patients incomplete tetraplegia, 20 patients complete paraplegia and 14 incomplete paraplegia.

The group of patients who returned the questionnaire was compared to the group who gave no response (Table 1). The most remarkable difference between the group of respondents and nonrespondents is the percentage of patients that worked preinjury. In the group of respondents, 86% worked at the moment of SCI versus 42% in the group of nonresponders. The time elapsed since SCI for the group of nonresponders was on average longer than for the group of responders. The differences regarding age, gender and type of SCI were not significant.

Results of reintegration in paid work

At the moment of the SCI, 49 of 57 respondents (86%) had a job. Five patients (male) with a mean age of 21 years went to school, three (male) were out of work for a long time. Of the group of 49 respondents who were employed preinjury 33 patients returned to work, so according to our definition successful reintegration took place in 67% of the cases. A total of 16 patients (33%) failed. Of those who resumed work, 20 (61%) kept

working for the same employer and nine of them changed to a different type of job. A total of 13 (39%) changed to a different employer.

Successful return to a paid job took place after an interval of 3–108 months (median 12 months). Four of them stopped working in the mean time after on average 67 months (range 50–90 months) after the SCI, and were not working anymore at the moment of assessment. Two persons were made redundant after a successful reintegration including vocational training, which was not related to the SCI. One is now full-time responsible for the housekeeping. Two self-employed responders initially carried on with their company after rehabilitation, but stopped after about 4 years working for reasons related to the SCI, namely progressive physical restrictions and mobility problems. In all, 31% of the 29 respondents currently working had a paid job without supplementary benefits and 69% worked with benefit from the Work Disability Act.

Early expectations and indicators of successful vocational reintegration

All patients made predictions regarding return to work during their stay in the rehabilitation centre 2–10 years before the current assessment. The early expectations of the 49 respondents working preinjury were related to their age, educational level and type of SCI, as well as to the type of job and job contract at the moment of SCI (Table 2). A higher educational level was significantly related to positive predictions regarding return to work. All six persons with a high vocational or university education (grades 6–8) expected to return to their job.

Table 3 shows the results of vocational reintegration of the 49 patients with a job preinjury related to the early expectations. Of the 22 patients who expected to be able to resume work, 20 respondents (91%) succeeded to return to work, of which nine actually returned to the same job. Of two (9%), the job reintegration failed. Of the 23 patients who expected not to be able to return to their job, but to be able to find a different job or study, 11 respondents (48%) reintegrated successfully. One returned to his own job and 10 found a different job. A total of 12 persons in this group (52%) failed to return to work. Of the four patients with a job preinjury who did not expect to be able to return to work or follow a study, two returned to work and two did not. The chance to reintegrate successfully was much better if the patient expected to be able to resume work with an odds ratio of 10.8 (95% confidence interval 2.1–55.4).

Of the five students, four expected to return to their study and one expected to be able to follow a different study. They all found a job. Of the three respondents who were out of work for a long time before SCI, all had negative expectations and they remained unemployed.

In Table 4 we show the correlation of the success of vocational reintegration with several personal, injury-related and work-related factors and did not find any other significant relations than the early expectations. Regarding the level of education, 59% of the lower

Table 1 Representativeness of the response group (mean (SD) and percentages)

	Respondents n = 57 (83%)	Nonrespondents n = 12 (17%)
Age at SCI (years): mean (SD)	33 (11)	34 (14)
Gender		
Male	52 (91%)	12 (100%)
Female	5 (9%)	0 (0%)
Time since SCI (months): mean (SD)	84 (29)	99 (30)
Type of SCI		
CompTetra	6 (10%)	2 (17%)
IncompTetra	17 (30%)	4 (33%)
CompPara	20 (35%)	5 (42%)
IncompPara	14 (25%)	1 (8%)
Job situation at SCI		
Work	49 (86%)	5 (42%)
School	5 (9%)	4 (33%)
Other	6 (5%)	3 (25%)

Table 2 Comparison of groups of patients working preinjury with positive and negative job expectations ($n = 49$) regarding personal and job-related variables and type of SCI (mean (SD) and percentages) with univariate logistic regression analyses (odds ratios (OR))

	Positive expectations $n = 22$ (45%)	Negative expectations $n = 27$ (55%)	OR	P-value
Age at SCI (years): mean (SD)	35.0 (10.9)	32.9 (9.7)	1.0	0.460
Educational level* (1–8): mean (SD)	4.8 (1.9)	3.6 (1.1)	1.7	0.012
Preinjury contract				0.149
Employee	11 (37%)	19 (63%)	0.4	
Self/temp-employed	11 (58%)	8 (42%)		
Preinjury job type ^a				0.165
Agr/trade/transp	14 (39%)	22 (61%)	0.4	
Adm/comm/serv/oth	8 (62%)	5 (38%)		
Type of SCI				0.664
Compl. tetraplegia	1 (20%)	4 (80%)	1.0	
Incomp. tetraplegia	6 (46%)	7 (54%)	3.4	
Compl. paraplegia	9 (53%)	8 (47%)	4.5	
Incomp. paraplegia	6 (43%)	8 (57%)	3.0	

* $P < 0.05$ ^aPreinjury job type: agrarian, trade/ industrial and transport or administrative, commercial, servicing and other scientific or technical

educated patients reintegrated successfully compared to 69% of the patients with an intermediate educational level and 100% of the higher educated persons.

Vocational reintegration interventions

Of 49 patients who were employed preinjury, 16 respondents (33%) reported participation in vocational retraining. All but one were below 40 years of age. Of 22 persons with intermediate and high levels of education, 11 (50%) followed vocational retraining versus five (19%) of 27 persons with a lower level of education. The training group contained relatively more patients with a complete tetraplegia and more employees. Four of 16 (with secondary vocational education) failed to return to work so far. Three of them did a successful work placement as part of vocational retraining, but were not able to resume work yet and hoped to find a job within a few months. A total of 13 (81%) of them were satisfied with the vocational retraining. Three respondents reported that they missed vocational retraining.

In 23 of the 29 current work situations (79%), job modifications have been made. It concerned material adaptations such as personal aids (38%) and adapted furniture or toilet facilities (45%). Adequate transport was arranged for 24% of the workers. Regarding immaterial modifications, 52% of the workers got the opportunity to work with personal time management (planning your own working day), 38% with flexible working hours, and 31% with less tasks. A total of 18 persons (62%) lost working hours in comparison with the situation before the SCI: five reported a reduction of 75–90%, 10 a reduction of 25–74% and three reduced their working hours to less than 25%. At the moment of the SCI they worked on average 48.7 h a week, while present job hours averaged 29.3 h a week. Employees worked on average 44.6 h preinjury versus 30.1 h a week now. Self-employed workers worked 60.0 h preinjury versus 27.9 h a week now.

The 29 respondents who still worked at the moment of assessment also reported unmet needs regarding the reintegration process. Seven (21%) of the present workers

Table 3 Expectations regarding return to work of patients with work preinjury ($n = 49$) related to the results of job reintegration (n (%))

	Reintegration successful	Same employer same job	Same employer other job	Other employer	Reintegration failed	Total
Expects to be able to return to job	20	9	5	6	2	22 (45%)
Expects not to return, but to find other job or study	11	1	3	7	12	23 (47%)
Expects not to return to work or study	2	1	1	0	2	4 (8%)
Total	33 (67%)	11	9	13	16 (33%)	49 (100%)

Table 4 Comparison of groups of patients with successful and unsuccessful reintegration in work ($n=49$) regarding personal, job-related and SCI-related variables and job expectations (mean (SD) and percentages) with univariate logistic regression analyses (odds ratios (OR))

	Reintegration succeeded $n=33$ (67%)	Reintegration failed $n=16$ (33%)	OR	<i>p</i> -value
<i>Personal factors</i>				
Age at SCI (years): mean (SD)	33.9 (10.3)	33.7 (10.8)	1.0	0.950
Educational level (1–8): mean (SD)	4.4 (1.7)	3.6 (1.2)	1.5	0.087
<i>SCI-specific factors</i>				
Type of SCI				0.336
Compl. tetraplegia	2 (40%)	3 (60%)	1.0	
Incompl. tetraplegia	10 (77%)	3 (23%)	5.0	
Compl. paraplegia	10 (59%)	7 (41%)	2.1	
Incompl. paraplegia	11 (79%)	3 (21%)	5.5	
Remain dry				0.921
Yes	16 (67%)	8 (33%)	0.9	
No/with difficulty	17 (68%)	8 (32%)		
Walking				0.090
Yes/with difficulty	19 (79%)	5 (21%)	3.0	
No	14 (56%)	11 (44%)		
<i>Work-related factors</i>				
Preinjury job type ^a				0.137
Agr/trade/transp	22 (61%)	14 (39%)	0.3	
Adm/comm/serv/oth	11 (85%)	2 (15%)		
Preinjury job contract				0.453
Employed	19 (63%)	11 (37%)	0.6	
Self/temp employed	14 (74%)	5 (26%)		
Vocational retraining				0.429
Yes	12 (75%)	4 (25%)	1.7	
No	21 (64%)	12 (36%)		
<i>Job expectations*</i>				
Positive	20 (91%)	2 (9%)	10.8	0.004
Negative	13 (48%)	14 (52%)		

* $P<0.05$

^aPreinjury job type: agrarian, trade/ industrial and transport, or administrative, commercial, servicing and other scientific or technical

wished (more) job modifications, especially more personal time management, the opportunity to work at home or (more) adaptations at the workplace. Six (18%) wished more contacts with reintegration professionals.

Unsuccessful job reintegration

Regarding our definition of successful reintegration, 16 patients failed to return to work and mentioned the SCI as a reason for not working. Problems related to the SCI were described as physical limitations by 88% of the respondents, and fatigue and mental problems by 25%. Environmental problems were mobility and transport problems (63%), lack of sanitary supplies (31%) and lack of adjusted work or specific adaptations (38%). All 16 were entitled to benefit from the Work Disability Act.

Of these 16 persons, three (19%) mentioned that they missed vocational retraining. Five persons (31%) responded that they might have been working now if

job modifications had been made. It concerned both material and immaterial adaptations. Six respondents (38%) preferred more contacts with professionals, particularly with professionals responsible for the execution of the Work Disability Act, but also the physician of occupational health (company doctor) and professionals of the rehabilitation centre.

In all, 11 persons, who failed so far (69%), still wished to return to work under certain conditions that take a good health, adequate job modifications, education and financial situation into account. Four were optimistic regarding their reintegration and expected to get a job within a few months or 1 year. Three of them followed vocational retraining recently. The other 12 respondents were less optimistic: three did not know when they might return to work and six did not expect to find a job again. Comparison of the unmet needs of the two subgroups who succeeded or failed to return to work is presented in Table 5.

Table 5 Results of job reintegration at the moment of assessment ($n = 45$) related to the unmet needs regarding the process of reintegration and application for a (different) job ($n(\%)$)

	<i>n</i>	<i>Missed training</i>	<i>Wish for (more) modifications</i>	<i>Wish for (more) counselling</i>	<i>Apply for job</i>
Currently working	29	0 (0%)	7 (21%)	6 (18%)	2 (6%)
Reintegration failed	16	3 (19%)	5 (31%)	6 (38%)	4 (25%)

Discussion

Return to work is regarded as one of the most important long-term rehabilitation goals.^{1,2} Despite the serious consequences of the SCI regarding ambulation, functional independence and social continence, this should never be a reason to exclude SCI-disabled people from the labour market without exploring vocational possibilities. People with SCI have a basic right to work.⁶ The principle findings in this study were that the rate of successful job reintegration was higher than expected from literature and that the expectations of the individual patient regarding future participation after a SCI are an important indicator of the vocational outcome. Apart from successful participation in vocational retraining and a large number of job modifications that facilitated the reintegration in work, also several unmet needs were reported by respondents who succeeded as well as by those who failed.

The process of vocational reintegration was explored in a retrospective study. Bias was negligible as we included all patients with traumatic SCI that were admitted to the rehabilitation centre in the given period and gathered a representative response group. Owing to the of small numbers, we included all types of SCI. As almost all patients with SCI in the age group until 60 years in The Netherlands are admitted to rehabilitation centres, the results can be generalised to the whole Dutch SCI population with vocational potential. The interval between the injury and the current assessment showed a lot of variation. The SCI existed at least 2 years taking the moment of the definitive assessment of the disablement according to the Dutch Work Disability Act into account.

The Dutch legislation regarding work disability is complex and different from that of most other countries. Owing to a large number of work disabled people in The Netherlands, several changes in legislation have been made in the last decade, aiming at the increase of reintegration in work. In the first year of absence from work due to illness or injury, the employee receives full compensation of salary based on the principles of the Sickness Benefit Act. Both the employer and the employee are responsible for prevention of sick leave and reintegration in work. Self-employed persons usually are insured to compensate their loss of income. From the second year of absenteeism disabled workers are entitled to benefit from the Work ability Act dependent on the loss of earning capacity regarding employment which can be managed. The employer is still obliged to support resumption of work or to offer

an alternative job. At the end of this second year a decision of disablement can take place, either leading to continuation of employment with or without benefits from the Work Disability Act, or to termination of the employment. Supplementary benefits from the Work Disability Act and an employer's bonus for the number of disabled in the company should make it more attractive for employers to keep disabled people employed. In spite of this, chronically disabled persons experience many problems and are often insufficiently enabled to reintegrate in the employment process.⁴⁻⁷

The percentage of 67% who reintegrated successfully in the present study was higher than expected. American studies in the eighties showed poor rates up to a maximum of 25% of persons being employed after the SCI.⁸⁻¹¹ In more recent American, Australian and European studies, the percentages of persons gainfully working at assessment improved and ranged from 31 to 48%.^{3,12-15} Success rates are determined by the social security system, economic circumstances and the willingness of employers to keep disabled people at work.²² The booming economy of the last decade and the labour shortage due to ageing of the labour potential was in favour of those with chronic diseases and disabilities. The variation in study samples in terms of demographic and injury-related characteristics makes it difficult to compare results of different studies. In a Dutch multi-centre study, Tomassen *et al* reported that 37% of preinjury workers were gainfully employed after the SCI.¹⁶ An explanation for our higher success rate is not easily given. Factors such as socioeconomic and cultural circumstances were not analysed in this study.

Significant objective indicators for successful reintegration in work were not identified in this study group. Predictors of successful job reintegration were subject of extensive research on vocational outcome of people with SCI. Returning to work is a complex process that results from an interaction of impairment and personal and environmental factors.¹⁸ Most studies focused on demographic and injury-related factors.^{1-3,8-15} Work-related and environmental factors were studied such as preinjury employment status, vocational retraining, transportation and architectural barriers.^{1-4,9-13,15,17} A predictive model for vocational outcome was developed in one study, in order to increase the cost-effectiveness of vocational rehabilitation by focusing efforts on the individuals with the greatest vocational potential.¹¹

It is a noteworthy finding that the vocational outcome of patients who expected to be able to return to work was significantly better than of patients who did not, even if they expected to be able to find another job or

study. As far as we know, the role of early expectations of the individual patient regarding work was scarcely studied in relation to vocational outcome.^{9,14} Lack of realistic vocational expectations was associated with lower work rates.⁹ Wade²³ assumed that the results of rehabilitation interventions depend on the goals a patient wishes to attain, which are determined by the future state that is desired and expected. Positive expectations of our study group regarding work were associated with a higher educational level. Identification of subjective factors, such as work values, coping abilities, motivation, but also social contacts at the work place, credits of the employer and financial disincentives (losing benefits when becoming gainfully employed) should be subject of further research. We concluded that positive expectations of the patient are a complex but strong indicator of successful reintegration. Individual coaching of the group with less optimistic expectations should start during the rehabilitation period. Focus on adequate coping abilities, motivation to work and willingness of the employer can reduce the risk of losing jobs.

In The Netherlands, individual job counselling and vocational services are formally available for all disabled persons. Studies on the effects of reintegration interventions for SCI disabled are scarce^{1,15,16,18} and need attention. In this study, one-third of preinjury working respondents followed vocational retraining, which is comparable with other studies.^{12,13} The majority of them reintegrated successfully. Vocational retraining can open up job possibilities that are less physically demanding, such as desk work and computer. However, especially for persons with lower levels of education, these jobs are not always attractive and pay less, so persons experience less incentive to return to work.^{15,16} More information about the contents and additional value of vocational retraining is needed to stimulate patients and professionals to make use of these programmes.

Job modifications are often indispensable to reintegrate successfully in former and new jobs. Reduction of time pressure, flexible work schedules, barrier free access and transportation, ergonomic work station design and positive attitudes of employer and fellow employees were recommended in literature.^{4,5,18,24} In this study, two-thirds of persons at work underwent substantial changes in working hours. Employees reduced their average working hours to two-thirds and self-employed workers even to half of their former working hours. Financial consequences were usually at least partially compensated by benefit from the Work Disability Act, which makes it attractive to carry on working. In spite of all the adaptations already carried out, the need for supplementary adjustments and more contacts with professionals should not be neglected.

All patients who failed to resume work, related this to problems due to the SCI, particularly physical restrictions. A substantial part of them wished more support from professionals (38%) and might have returned to work, if more job modifications had been made.

Mobility and transport problems, as well as lack of specific adaptations at the workplace, are still reported too often and seem unnecessary. We assume that more individual attention to the unmet needs of those people might have given better results of employment. At the beginning of the reintegration process, the majority of these patients expected to be able to find another job or retraining. Although most of them still wished to return to work, they lowered their expectations, which illustrates the adjustment to a situation without paid work.

To avoid disappointment and poor results of reintegration, we advocate that focus on vocational reintegration should start before discharge from the rehabilitation centre. The rehabilitation team can play an active role in drawing up a reintegration plan, supported by the patient and employer. Insight in the expectations of the patient improves the prognostic information regarding return to work and should be an essential part of the assessment. An inventory is recommended of the feasibility of return to the job, educational opportunities and required job modifications. A case manager who links the patient, the employer, the rehabilitation team and other professionals involved in the reintegration process can play an important role. With up-to-date information and coaching through the forest of rules and legislation, the patient keeps closely associated with the complex process of vocational reintegration.

In-depth interviews are needed to gain more insight in the process leading to job reintegration following a SCI, to enhance the quality of individual counselling and effective interventions. Effect studies on the result of vocational reintegration programmes are an important next step.

Conclusions

Early positive expectations of the individual person with a SCI are an important indicator of successful reintegration. Assessment of these expectations can improve prognostic information regarding resumption of work and enhance vocational rehabilitation programmes. The rehabilitation team can play an active role in drawing up a vocational reintegration plan to prepare the patient, employer and all professionals involved for job reintegration.

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Appendix

Questionnaire for workers as part of the Vocational Handicap Research Programme of TNO *Arbeid* (items not used in this study are in italics):

1. *Disease-specific items*
2. *Health: assessment of health perception on nine dimensions (RAND 36)*
3. Income
4. Educational level
5. Preinjury employment situation:
 - Type of job: agrarian, trade/ industrial, transport, administrative, commercial, servicing, other scientific or technical
 - Job contract: permanent employed, temporary employed, self-employed, other
 - Working hours
6. Current employment situation:
 - Type of job: agrarian, trade/ industrial, transport, administrative, commercial, servicing, other scientific or technical
 - Job contract: permanent employed, temporary employed, self-employed, other
 - Working hours
7. Job modifications:
 - Change of job or employer
 - Material and immaterial adaptations of the job
 - Wish for (more) job modifications
 - Wish for (more) contacts with reintegration professionals
8. *Opinions about the current working conditions and social atmosphere*
9. Situation of those who stopped working:
 - Reasons for not working
 - Wish for job modifications
 - Wish for (more) contacts with reintegration professionals
 - Expectations regarding return to work.