ORIGINAL ARTICLE

Patients with traumatic spinal cord injuries and their satisfaction with their general practitioner

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Objective: The objective of this study was to examine how satisfied patients with traumatic spinal cord injury (TSCI) are with their general practitioners (GP).

Materials and methods: The study included patients with TSCI, injured in the period 1982–2001 and living in western Norway. We performed a structured telephonic interview of the patients in the period 2004–2007. A total of 105 (59.3%) patients participated.

Results: Patients with TSCI were in general satisfied with their GP. Older patients were most satisfied, and patients with incomplete thoracic SCI were least satisfied. Patients with anxiety and/or depression reported low satisfaction with their GP on several parameters.

Conclusions: Patients with incomplete SCI were least satisfied probably because their physicians do not acknowledge their complicated medical complaints and do not meet the patient's expectations. Patients with anxiety and/or depression were more likely to report low satisfaction with their GP.

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Keywords: traumatic spinal cord injury; patient's satisfaction; general practitioners; primary health care

INTRODUCTION

To improve the quality of general practitioner (GP) services, the list patient system reform for GPs was introduced in Norway in June 2001.¹ Since then each inhabitant is listed with a general practitioner. The patients have the opportunity to change their GP, but in small communities, this might be difficult. The list patient system shall ensure equity in the use of health care services for the entire population. According to international experience this system will increase the perceived quality of the patient physician relationship.² Following the introduction of the list patient system reform, studies in Norway have shown that people in general are more satisfied than they were earlier.³

Patients with chronic illness usually have more frequent contact with the GP than patients without chronic illness; on average 3.5 visits versus 2.5 visits per year.⁴ Patients with traumatic spinal cord injury (TSCI) need frequent contact with their physician as SCI often lead to multiple medical complications. The patients need extensive practical arrangements both at home and at work, of which medical certificates from the GP are needed. We wanted to examine the TSCI patient's satisfaction with their GP.

MATERIALS AND METHODS

Study population

The study included patients from western Norway who had a TSCI in the period 1982–2001.⁵ Patients with non-traumatic spinal cord injuries were not included. TSCI was defined according to Kraus *et al.*⁶ as an acute, traumatic lesion of the spinal cord with varying degrees of motor and/or sensory deficit or paralysis. Although injuries of cauda equina were included, the definition excluded isolated injuries of other nerve roots.⁷

A total of 231 persons who were inhabitants of the Western Health Region during the period 1982–2001, sustained a TSCI; 182 men (78.8%) and 49

women (21.2%).⁸ At the start of the study 54 patients had died, 7 patients lived outside western Norway, and 56 patients did not respond. Eight men and one woman did not answer the specific questions regarding GP, and were excluded from this part of the project. A total of 105 (59.3%) participated in this part of the study.

Telephone enquiry

A questionnaire was developed based on a literature review focusing on spasticity, pain, quality of life and patient satisfaction. A letter was sent to all patients injured in the period 1982–2001 inviting them to participate in this study. The patients agreed to participate in advance of the telephonic interview, which took place in the period 2004–2007 using the questionnaire.

The interviews were performed by two medical students and one occupational therapy student. The students were working part time as assisting nurses at the Spinal Cord Unit, Haukeland University Hospital, and they were all familiar with TSCI. The interviewer for each patient was chosen randomly. However, if this interviewer knew the patient well, another interviewer was chosen. The study was carried out independently of the Spinal Cord Unit and all patients were informed that the participation in this study had no impact on the patient care. The interviewers were trained before the study and they also had written explanations to the questionnaire to ensure consistency between the interviewers.

The questionnaire

The questionnaire elicited questions regarding pain, spasticity, quality of life and patient satisfaction. To assess satisfaction with their GP, the patients were asked to rank six questions as not true/correct, occasionally true/correct, mostly true/correct, or true/correct.

- (1) Availability: It is easy to get in contact with my GP whenever I need.
- (2) Understandable: My GP expresses themselves in a way that I can understand.
- (3) Easy to ask: It is easy to ask my GP whenever I have a question.
- (4) Understanding: I feel that my GP understands my situation.

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- (5) Knowledge: I feel that my GP has knowledge of my condition.
(6) Overall satisfaction: I am satisfied with my GP.

Five of the participants failed to respond to one of the six questions.

Demographic and clinical data

Gender, age at injury (0–30, 31–60, 60+ years), time since injury (1–5, 6–10, 11–15, 16–20, 21–25 years), level of injury; cervical or thoracic–lumbar–sacral (TLS) and completeness of injury; complete or incomplete were recorded from the medical records (Table 1).

Spasticity, pain and chronic pain as reported by the patients were recorded as either yes, no or unknown. We measured anxiety and depression using Hospital Anxiety and Depression Scale (HADS), giving the results of yes, possible or no. The population size of the municipality where the patients were living at the time of interview was recorded (Table 1).

Norwegian population data

Norwegian Gallup standard municipal survey 2003 was used to compare satisfaction among patients with TSCI with the satisfaction reported by the Norwegian population.⁹ We adapted the questions used in the Norwegian Gallup standard municipal survey 2003 to be comparable to our questionnaire.

Statistical analysis

For categorical variables crude data and percentages are reported. Means and s.d.s are reported for continuous variables. To compare groups, the Pearson's χ^2 test¹⁰ was used for nominal variables, and analysis of variance for continuous variables adhering to the normal distribution.

To compare results from our study with data from the Norwegian Gallup study, we calculated a mean percentage score for each group (Figure 1).

The level of statistical significance was set at 0.05.¹ All *P*-values are two-tailed. Statistical analyses were conducted with PASW 18 (SPSS, Chicago, IL, USA) and StatXact 9 (Cytel Software, Cambridge, MA, USA) Cytel Studio.

Approvals

The study was approved by the Regional Committee for Medical Research Ethics and the Norwegian Data Inspectorate.

RESULTS

Gender, age and level of injury

Eighty four men and 21 women were interviewed (Table 1). Mean age at injury was 37.6 years (8.3–81.5 years), 35.2 years for females and 38.2 years for men. The mean time from injury to the interview was 11.9 years (4.0–25.2 years), 12.0 years for women and 11.9 years for men. There was no statistically significant difference between the group of patients who were interviewed and the patients who were not interviewed with regard to gender, age at injury and completeness of injury. The response rate was however higher among patients with lower injuries (TLS; 76%), than among patients with cervical injuries (57%).

Table 2 displays the patients' satisfaction with medical services in relation to gender and level and completeness of injury, percentages given. Women scored higher on all six questions compared to men, this was however not significant. The only significant difference was found in the overall satisfaction with their GP in relation to level and completeness of injury.

We explored the patients satisfaction with medical services in relation to age at the time of interview (in groups) and in relation to time since injury (in groups). The oldest group (67+ years) reported the greatest degree of satisfaction, whereas patients aged 35–49 years, scored lowest. There was, however, no statistical significance between the groups either for age at interview or for time since injury.

In Norway most GPs are self-employed with contracts administered by the municipalities.¹¹ There was no statistical significance between the groups with regard to population size.

Table 1 Demographic and injury characteristics of 105 patients with traumatic spinal cord injury

Characteristics	N=105 (%)
Age at injury (years), mean (s.d.)	37.6 (17.2)
Time since injury (years), mean (s.d.)	11.9 (6.0)
Age at interview (years), mean (s.d.)	
Total	49.5 (16.5)
Male	50.1 (16.7)
Female	47.2 (15.5)
Age according to level and completeness of injury (years), mean (s.d.)	
Cervical complete	47.1 (12.6)
Cervical incomplete	44.3 (15.4)
TLS complete	61.0 (15.8)
TLS incomplete	40.7 (14.0)
Gender, n (%)	
Male	84 (80.0)
Female	21 (20.0)
Age groups at time of interview, n (%)	
14–30 years	14 (13.3)
31–45 years	39 (37.1)
46–60 years	23 (21.9)
61–75 years	22 (21.0)
76+ years	7 (6.7)
Level and completeness of injury, n (%)	
Cervical complete	26 (24.8)
Cervical incomplete	36 (34.3)
TLS complete	31 (29.5)
TLS incomplete	12 (11.4)
Time since injury, n (%)	
1–5 years	18 (17.1)
6–10 years	38 (36.2)
11–15 years	19 (18.1)
16–20 years	20 (19.0)
21–25 years	10 (9.5)
Spasticity, n (%)	
Yes	77 (73.3)
No	24 (22.9)
Unknown	4 (3.8)
Pain, n (%)	
Yes	74 (70.5)
No	27 (25.7)
Unknown	4 (3.8)
Chronic pain, n (%)	
Yes	54 (51.4)
No	46 (43.8)
Unknown	5 (4.8)
Anxiety n (%)	
Yes	8 (7.6)
Possible	7 (6.7)
No	90 (85.7)
Depression, n (%)	
Yes	5 (4.8)
Possible	11 (10.5)
No	89 (84.8)
Municipality population, n (%)	
<3000	11 (5.6)
3000–7999	26 (13.3)
8000–19 999	16 (8.2)
20 000–89 999	16 (8.2)
≥90 000	36 (18.5)

Abbreviation: TLS, thoracic–lumbar–sacral.

Figure 1 Patients satisfaction with their general practitioners among patients with traumatic spinal cord injuries and the Norwegian population.

Many patients with TSCI have spasticity, pain, chronic pain, anxiety and depression, which may influence their contact with their GP. Table 3 shows the patients satisfaction with medical services in relation to spasticity, pain, anxiety and depression. Patients with anxiety according to HADS reported less understandable GP compared with those without or with possible anxiety ($P=0.040$). Patients with depression according to HADS reported their GP to be less understandable ($P=0.036$), not so easy to ask ($P=0.010$) and less understanding ($P=0.017$) compared with the patients without or with possible depression.

Figure 1 shows the patient's satisfaction with GP among males and females with TSCI and the Norwegian population, by calculating a mean percentage score for each group. There were statistical difference both for males and females compared with the Norwegian population ($P<0.001$).

DISCUSSION

The patients in our study were in general satisfied with their GP. This is consistent with previous national and international publications, which have shown that assessments of primary health care in general are high.^{9,12} Measuring the patients' subjective views on satisfaction can be a challenge, as personality traits and personality type may have an impact on the answers, rather than the objective factors in the actual situation.¹³ The high rates of satisfaction may partly be explained by the patient's relative dependence on and need to keep a positive relationship with their GP.¹⁴

The physicians were given the lowest scores on the question regarding knowledge, which may be related to the physicians limited knowledge about spinal cord injuries.¹⁵ Most GPs have a low number of patients with this injury, and therefore their knowledge and experience of SCI are low.¹⁶

According to international literature the physicians' knowledge of chronic disability/disease is a problem.^{17,18} Patients feel they have to spend much effort in teaching their physician about his or her disability.¹⁵ They also feel that the physician often focus on the disability *per se* rather than other specific problems they have.¹⁶

In our data, the patients aged 67+ years seemed to be more satisfied than patients in the other age groups. The elderly patients use their GP more frequently than younger and therefore become more familiar with their GP.¹⁹ Campbell *et al.*²⁰ found a clear correlation between age and satisfaction with primary health care. In their study, older patients scored higher in all areas examined. The differences between older and younger patients were particularly evident regarding questions about the physicians' knowledge of the patient, the physician's role in the coordination of care, overall satisfaction and the assessment of interpersonal aspects.²⁰

Persons aged 35–49 years seemed to be least satisfied with their GP. This differs from other studies where the percentage of satisfaction increases with age from 25 years.⁹ Presently the documentation is limited, but our clinical experience is that the expectations regarding health care often is very high among persons in this age group. Older patients have fewer expectations.

The Norwegian HUNT 3 found that women and elderly patients scored higher on questions regarding experience of the physician and of physician–patient relationship.¹⁹ Women visit their GP more frequently than men and this may have an effect on how they perceive their GP, similarly to elderly patients.¹⁹ Therefore we expected women with TSCI to be more satisfied with their GP compared with men with TSCI. There was a trend, but not a statistically significant difference, probably due to small numbers.

The patients with incomplete injuries, both cervical and TLS scored low regarding satisfaction with their GP (Table 2). Patients with incomplete thoracic TLS injuries are on average younger than those with complete TLS injury and are often expected to have a higher level of function compared with patients with complete injury. The low percentage of satisfaction among patient with incomplete TLS may be due to the discrepancy between the GP's evaluation and how the patients perceive themselves. They may experience significant problems in the daily life but as they are not paralyzed, the GP may underestimate their problems.

We have previously found that patients with incomplete TLS have a higher risk of dying from suicide and accidental poisoning compared

Table 2 Patients with traumatic spinal cord injuries: answers of patient's satisfaction according to gender and level and completeness of injury, percentages given

	Gender		P-value ^a	Level and completeness				P-value ^b
	Female (%)	Male (%)		Cervical complete (%)	Cervical incomplete (%)	TLS complete (%)	TLS incomplete (%)	
Availability (N=105)			0.898					0.297
Not true	4.8	4.8		7.7	0.0	9.7	0.0	
Occasionally true	0.0	2.4		7.7	0.0	0.0	0.0	
Mostly true	23.8	21.4		19.2	25.0	19.4	25.0	
True	71.4	71.4		65.4	75.0	71.0	75.0	
Understandable (N=105)			0.139					0.415
Not true	0.0	0.0		0.0	0.0	0.0	0.0	
Occasionally true	0.0	1.2		3.8	0.0	0.0	0.0	
Mostly true	4.8	16.7		19.2	13.9	9.7	16.7	
True	95.2	82.1		76.9	86.1	90.3	83.3	
Easy to ask (N=105)			0.314					0.859
Not true	0.0	1.2		3.8	0.0	0.0	0.0	
Occasionally true	0.0	1.2		0.0	0.0	3.2	0.0	
Mostly true	9.5	15.5		11.5	19.4	12.9	8.3	
True	90.5	82.1		84.6	80.6	83.9	91.7	
Understanding (N=104)			0.276					0.332
Not true	0.0	2.4		3.8	0.0	3.3	0.0	
Occasionally true	0.0	6.0		15.4	2.8	0.0	0.0	
Mostly true	20.0	19.0		11.5	22.2	23.3	16.7	
True	80.0	72.6		69.2	75.0	73.3	83.3	
Knowledge (N=104)			0.156					0.615
Not true	0.0	1.2		3.8	0.0	0.0	0.0	
Occasionally true	4.8	10.8		19.2	2.8	10.0	8.3	
Mostly true	28.6	37.3		15.4	41.7	36.7	58.3	
True	66.7	50.6		61.5	55.6	53.3	33.3	
Overall satisfaction (N=102)			0.736					0.015
Not true	0.0	2.5		3.8	0.0	3.3	0.0	
Occasionally true	9.5	8.6		7.7	2.9	10.0	27.3	
Mostly true	42.9	43.2		61.5	37.1	30.0	54.5	
True	47.6	45.7		26.9	60.0	56.7	18.2	

Abbreviation: TLS, thoracic-lumbar-sacral.

^aPearson's chi-square test.^bAnalysis of variance.

to other patients with TSCI.⁸ This may indicate that these patients suffer from a low quality of life post injury.

Patients with either anxiety or depression according to HADS reported their GP's to be less understandable, less easy to ask and less understanding (Table 3). There is an increased risk of depression after a TSCI.^{21,22} The Spinal Outreach Service has developed a Health Questionnaire, which can enable the GP to cover important clinical issues.²³ Depression is quite consistent over time in persons with TSCI, with the majority of change coming from those with clinically significant symptoms.²¹ Fann *et al.*²² found a prevalence of probable major depression of 23%, and a high lifetime prevalence of other psychiatric conditions, particularly anxiety disorders.²² They found a large gap in depression treatment in their population, which may indicate that the GP's underestimate these symptoms among TSCI

patients. Examining anxiety and depression at multiple time points may help GP's to identify patients at risk.

Overall, patients with TSCI are more satisfied with their GP than the Norwegian population (Figure 1). This finding may be explained by the fact that the study was performed more than four years after the injury, in which time the patients have found their preferred GP.

CONCLUSION

Although patients with TSCI as a group were more satisfied with their GP than the Norwegian population, patients with incomplete SCI were least satisfied probably because their physicians do not acknowledge their complicated medical complaints and do not meet the patient's expectations. Patients with anxiety and/or depression were more likely to report low satisfaction with their GP. There is a need for

Table 3 Patients with traumatic spinal cord injuries: answers of patient's satisfaction according to spasticity, pain, anxiety and depression, percentages given

	Spasticity			Pain			Anxiety			Depression		
	P-value ^a			P-value ^a			P-value ^a			P-value ^a		
	Unknown (%)	No (%)	Yes (%)	Unknown (%)	No (%)	Yes (%)	No (%)	Possible (%)	Yes (%)	No (%)	Possible (%)	Yes (%)
Availability (N=105)												
Not true	0.0	4.2	5.2	0.0	3.7	5.4	5.6	0.0	0.0	5.6	0.0	0.0
Occasionally true	0.0	0.0	2.6	0.0	0.0	2.7	1.1	14.3	0.0	1.1	9.1	0.0
Mostly true	25.0	25.0	20.8	0.0	11.1	27.0	24.4	0.0	12.5	21.3	27.3	20.0
True	75.0	70.8	71.4	100	85.2	64.9	68.9	85.7	87.5	71.9	63.6	80.0
												0.817
Understandable (N=105)												
Not true	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Occasionally true	0.0	0.0	1.3	0.0	0.0	1.4	0.0	0.0	12.5	0.0	0.0	20.0
Mostly true	25.0	12.5	14.3	25.0	11.1	14.9	13.3	14.3	25.0	13.5	18.2	20.0
True	75.0	87.5	84.4	75.0	88.9	83.8	86.7	85.7	62.5	86.5	81.8	60.0
												0.036
Easy to ask (N=105)												
Not true	0.0	0.0	1.3	0.0	0.0	1.4	0.0	0.0	12.5	0.0	0.0	20.0
Occasionally true	0.0	4.2	0.0	0.0	3.7	0.0	1.1	0.0	0.0	1.1	0.0	0.0
Mostly true	25.0	12.5	14.3	25.0	11.1	14.9	14.4	14.3	12.5	12.4	27.3	20.0
True	75.0	83.3	84.4	75.0	85.2	83.8	84.4	85.7	75.0	86.5	72.7	60.0
												0.010
Understanding (N=104)												
Not true	0.0	4.2	1.3	0.0	3.8	1.4	2.2	0.0	0.0	2.3	0.0	0.0
Occasionally true	0.0	4.2	5.3	0.0	3.8	5.4	2.2	28.6	12.5	1.1	27.3	20.0
Mostly true	0.0	20.8	19.7	25.0	11.5	21.6	18.0	14.3	37.5	18.2	9.1	60.0
True	100	70.8	73.7	75.0	80.8	71.6	77.5	57.1	50.0	78.4	63.6	20.0
												0.017
Knowledge (N=104)												
Not true	0.0	0.0	1.3	0.0	0.0	1.4	1.1	0.0	0.0	1.1	0.0	0.0
Occasionally true	0.0	12.5	9.2	0.0	11.5	9.5	7.9	28.6	12.5	6.8	27.3	20.0
Mostly true	25.0	29.2	38.2	50.0	34.6	35.1	34.8	14.3	62.5	36.4	27.3	40.0
True	75.0	58.3	51.3	50.0	53.8	54.1	56.2	57.1	25.0	55.7	45.5	40.0
												0.352
Overall satisfaction (N=102)												
Not true	0.0	4.2	1.4	0.0	3.7	1.4	1.1	0.0	12.5	1.1	0.0	20.0
Occasionally true	0.0	4.2	10.8	0.0	0.0	12.7	10.2	0.0	0.0	10.3	0.0	0.0
Mostly true	50.0	41.7	43.2	25.0	51.9	40.8	42.0	50.0	50.0	40.2	70.0	40.0
True	50.0	50.0	44.6	75.0	44.4	45.1	46.6	50.0	37.5	48.3	30.0	40.0

^aAnalysis of variance.

greater awareness among GP's with regard to anxiety and depression among patient s with TSCI.

DATA ARCHIVING

There were no data to deposit.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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