

**Quality of life in severely injured patients depends on psychosocial factors rather than
on severity or type of injury**

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Abstract:

Background: Former studies have demonstrated that health-related quality of life is decreased in severely injured patients. However, in those studies patients were asked about their functioning and not about their (dis)contentment concerning their functioning. Little is known about how severely injured patients experience their quality of life (QOL). The objective of this cross-sectional study was to measure this subjective QOL of severely injured patients after their rehabilitation phase and to examine which accident- and patient-related factors affect the QOL of these patients.

Methods: Patients of 18 years or older with an injury severity score (ISS) above 15 were included 15-53 months after their accident. Comorbidity before the accident, accident and sociodemographic characteristics, and QOL were obtained from the trauma registry and questionnaires. The WHOQOL-BREF was used to measure QOL. A reference group of the Dutch general population was used for comparison.

Results: The participation rate was 61% ($n=173$). Compared with the reference data, severely injured patients experienced a significantly worse QOL in all domains except social relations. The QOL scores were significantly decreased in all domains for patients with neurological injury in combination with other injuries. Patients with a severe intracranial injury ($AIS>3$) only reported significantly impaired QOL in the general and physical domains. Patients who resumed working or lived with others had significantly higher scores in all domains of QOL than patients who did not work anymore or were living alone. Significantly lower QOL scores were obtained from patients with comorbidity before the accident and from patients with longer durations of intensive care unit (ICU) treatment or hospitalization. Gender, accident characteristics and time since the accident did not appear to be important for experienced QOL.

Conclusions: The experience of impaired QOL appears to depend on living alone, inability to return to work and pre-accidental comorbidity rather than on the injured body area or the severity of the injury. Duration of hospital or ICU stay is important to subsequent QOL, even if ISS or body region is not.

Introduction

The outcome parameter most commonly used in trauma care studies is mortality. However, the majority of trauma patients survive their injury. Serious injuries often result in varying types of disability. This disability has numerous social and economic consequences because it frequently concerns young patients, who often become unfit to return to work, to regain their previous levels of activity or to reintegrate back into society.¹ Therefore, interest in trauma care studies has begun to focus more and more on the quality of life (QOL) of trauma survivors. The few existing studies reported that the QOL in severely injured patients is decreased.²⁻⁸ However, this observation is based on health related quality of life (HRQOL) or health status studies. Health status has been defined as the impact of disease on a patient's physical, psychological and social functioning.⁹⁻¹¹ In health status studies, patients are asked about their functioning, thereby focusing on disabilities, and not about their (dis)contentment concerning their functioning.¹² In contrast, QOL as defined by The World Health Organization Quality of Life Group (WHOQOL group) is: "the individual's perception of his/her position in life in the context of the culture and value systems in which he/she lives, and in relation to his/her goals, expectations, standards and concerns".¹³ Therefore, it also asks patients about their satisfaction with their functioning. The core of this definition is that QOL refers to patients' evaluation of functioning in line with their expectations.¹⁴ Thus, where health status only concerns patients functioning, QOL also includes patients' satisfaction with functioning. Little is known about this QOL in severely injured patients. The first objective of our study was to measure the experience of QOL among severely injured patients after their rehabilitation phase. The second objective was to examine which accident-related factors and patient-related factors affect the experience of QOL of these patients.

Patients and Methods

Patients

Trauma patients who were hospitalized in the St. Elisabeth Hospital between 1-1-2006 and 12-31-2008, were asked to participate if they had been severely injured (Injury Severity Score (ISS) >15) and were 18 years or older at the start of the study, still alive and had a traceable postal address. The patients or their caregivers decided whether or not they were able to answer a questionnaire that was sent by postal mail. The patients were included after written informed consent was obtained and if the questionnaires (described below) were completed and returned. When patients did not participate, they were called and asked for the reason and for some basic information on their health status using a 3 point likert scale from 'good' to 'not good at all'.

Patient characteristics

Demographic data (age, gender, household composition, education, being at work), characteristics of the accident (traffic, at work, at home, sports, attempted suicide), and medical data (injury, duration of hospitalization and Intensive Care Unit (ICU) treatment) were extracted from the trauma registry and a general questionnaire consisting of questions on socio-demographics, the accident, and their health situation before the accident.

Type of injury and injured body area

The Abbreviated Injury Scale (AIS) and ISS were used to determine the injured body area and severity of the injuries. The AIS is anatomically based and classifies each injury by body region on a scale from 1 (minor) to 6 (non-survivable).¹⁵ The ISS is the sum of the square of the AIS for the three most serious injuries in different ISS body regions and yields scores for the overall severity of the injury from 1 to 75.^{16;17}

Quality of life

The Dutch version of the World Health Organization Quality of Life assessment instrument-BREF (WHOQOL-BREF) was used to measure QOL.^{18;19} This instrument was used because it is a generic, cross-culturally developed comprehensive questionnaire measuring QOL, which measures a person's subjective perceptions about their life with respect to their goals, concerns, and satisfaction. It consists of questions within the domains of physical health (7), psychological health (6), social relationships (3), and the environment (8), as well as general (2) questions on QOL and general health. Each question has a five-point response scale. The domain scores denote an individual's perception of their QOL in each particular domain and are scaled in a positive direction (i.e., higher scores denote higher QOL). The reliability and validity of the WHOQOL-BREF are good.^{20;21} The domain values were calculated for each patient in our study and compared with the scores from a reference group of the Dutch general population with a mean age of 54 (SD 16) years old.²²

Statistical analysis

Independent sample t-tests were used for continuous variables and Chi-square tests for categorical variables to compare the group of non-respondents with the respondents. One-sample t-tests were employed to compare the QOL of the traumatized patients and subgroups of patients with and without intracranial injury with data from a reference group of the WHOQOL-BREF.²² To investigate accident- and patient-related predictors of QOL, univariate linear regression analyses were performed. Multivariable linear regression analyses were performed to investigate whether the injured body area affected QOL. For a comparison of QOL among patients groups with different types of injuries, the data were analyzed with an ANOVA and, if a main effect was found, also a post hoc Tukey test was performed. The data were analyzed using IBM SPSS statistics 19 software (SPSS Chicago, IL, USA; version 19.0). The significance level was $p < 0.05$ for all of the tests used.

Results

Patients

In the St. Elisabeth Hospital, 3195 trauma patients were hospitalized in the years 2006, 2007 and 2008, including 470 severely injured patients (ISS>15). Before the study started, 144 of these patients had already died (31%), 24 patients were younger than 18 years old (5%) and 21 patients were untraceable (4%). The remaining 281 patients were eligible to participate, and 173 of them returned the questionnaires (a response rate of 62%) 15-53 months after their accident. The selection procedure is shown in figure 1.

Slightly more than half of the non-respondents ($n=108$) could be contacted by phone ($n=56$) to ask them for their actual health status and reason for not participating (the results are represented in Table 1). Most of them were not interested (62%), and 14% did not want to be contacted any more. For 16% of the patients, their health status was too poor to participate. One third of the contacted non-respondents declared that they did not feel well at all.

The respondents and non-respondents did not differ significantly with respect to age, injured body area, severity of the injury, duration of hospitalization, or ICU care (see Table 2). Although both groups mainly consisted of males, the females responded significantly more often than the males, based on a comparison of the respondent with the non-respondent group (31% vs. 15%; $p=0.003$).

Patient characteristics

Patient characteristics are presented in Table 3. Most patients were male and did not live alone. The mean age was 47 (SD 19) years, and most injuries were caused by traffic accidents. The most common injury was intracranial injury (61%). Serious intracranial injury (AIS>3) was present in 52% of the cases. The median ISS was 21 (range between first quartile (17) and third quartile (27)), and 86% of the patients had received ICU treatment. The

questionnaires were completed between 1.3 and 4.4 years after the injury, and the mean time since the injury was 2.8 (SD 0.9) years.

Quality of life

Compared with a reference group of the general Dutch population (mean age 54 (SD 16) years), the severely injured patients had a worse QOL in all domains except social relations (see Table 4).

The QOL scores of the subgroup of patients with intracranial injury combined with other injuries were significantly decreased in all domains compared with the scores of the reference group. The subgroup of patients with severe intracranial injury (AIS>3) only scored significantly lower QOL for the domain physical health. The general QOL, psychological health and environment domains did not differ significantly from controls, nor did they differ significantly from the other injury groups. Only on the social domain a main difference was found between the three subgroups ($p=0.039$), i.e., the group with no intracranial injury scored significantly better than the group with combined injury ($p=0.029$).

The subgroup of patients without intracranial injury reported a significantly decreased QOL in the domains general, physical health and environment compared to the reference group (see Table 4).

The time from the accident to questionnaire completion was not significantly related to the QOL. The QOL was not found to be affected by sex or age, except for age in the environmental domain, in which older patients report better QOL than younger patients. Patients who had resumed working or who lived with others reported significantly higher scores in all QOL domains. Patients with a longer duration of hospitalization ($p=0.007$), a longer duration of ICU treatment ($p=0.016$) or comorbidity before the accident (physical comorbidity: $p=0.006$, mental treatment: $p=0.036$) had significantly lower QOL scores in the physical domain. Patients with mental treatment before the injury had significant lower QOL

scores in the psychological domain. The betas of the linear regression analysis are fairly consistent for duration of hospitalisation, duration of ICU treatment, physical comorbidity and mental treatment. When comparing patients with injuries in different body areas, significant effects were only found for environmental QOL. Patients with spinal injury reported a significantly impaired environmental QOL, and patients with thoracic injury reported a significantly better environmental QOL than patients with other injuries. No association was found between QOL and accident characteristics, the severity of the injury, or whether or not a patient received ICU treatment. Comparisons of the QOL scores using linear regression are shown in Table 5.

Discussion

The first objective of our study was to measure the experienced QOL of severely injured patients after their rehabilitation phase. This was accomplished by comparing the QOL of a sample of severely injured trauma patients with a sample from the general Dutch population. The patients experienced an impaired QOL in all domains except the social domain. This finding suggests that patients are satisfied with the social support they receive. The largest impairment in QOL was in the physical domain. Alves *et al.* also found that the social WHOQOL-BREF scores were affected less and the physical WHOQOL-BREF scores were affected most six months after discharge in a less severely injured population, compared with samples of the general population.²³

The second objective was to examine which accident-related factors and patient-related factors affect the QOL of severely injured patients after their rehabilitation phase. In contrast with HRQOL studies that found that poor HRQOL outcome was associated with higher age,^{8;24-26} we observed that older patients (≥ 55 years) reported a better physical QOL than younger ones. In the general Dutch population, older people report a decrease in physical QOL but not in psychological QOL.²⁷ We suggest that older trauma patients had other or fewer expectations about their (physical) QOL compared with younger patients. These latter patients likely wanted their lives to return to normal so they could fulfill their roles in life again and were disappointed.

The relationship between gender and HRQOL outcomes appears inconsistent. We found no relationship, in accordance with a number of studies,^{2;25;28} whereas women were found to be at risk of worse HRQOL outcomes in several other studies.^{6;8;26;29} As women reported lower QOL scores in the general Dutch population,²⁷ it is possible that female patients find it less difficult to accept that they must live with the sequelae of the accident than males. Other sociodemographic aspects (living alone and being unable to return to work) and pre-traumatic

comorbidity, psychological as well as physical, are related to impaired QOL. This result is consistent with previous HRQOL studies.^{6;8;30;31}

In agreement with most HRQOL studies,^{7;24;32-34} we found no relationship between ISS and QOL. This independence is likely due to the fact that the ISS is defined to calculate the mortality risk.¹⁶ Once a patient has survived, this value may well differ from the severity in terms of the remaining sequelae. Therefore, the ISS does not appear to be suitable for measuring the severity in terms of QOL.

Concerning the injured body areas, an impaired QOL was only found for patients with vertebral injury, and only in the environmental domain. A significantly better environmental QOL was reported by patients with thoracic injury. The results with regard to environmental QOL have not been examined in other studies because the WHOQOL instruments are one of the few that assess this domain of QOL. Spinal cord injury, lower extremity injury and brain injury were mentioned as predictors of poor functioning in the long term, and patients without intracranial injury reported a better long-term outcome of QOL in former studies.^{30;31;35} In other HRQOL studies, in which patients with traumatic brain injury were compared with a non-injured reference group, major problems were found in the social domain.^{34;36} This observation is consistent with the results found in our study, in which the subgroup of patients with intracranial injury in combination with other injuries also reported an impaired QOL in the social domain, compared with the subgroup patients without intracranial injury. Furthermore, this was the only domain in which the total study population did not report an impaired QOL compared with the reference group. Patients with isolated severe intracranial injury (AIS>3) only reported an impaired QOL for the domains of general and physical health. In our study, this is most probably due to the lower sample size of this group, considering the fact that the mean scores for the three subgroups is approximately the same. However, in several other studies, patients with severe head injury appeared to be better off than patients without severe head injury³⁷ or patients with less severe traumatic brain injury.³⁸

The experience of QOL may be better than expected based on the severity of the head injury and the remaining limitations, due to cognitive changes causing reduced insight into their own limitations and the effects on daily life.

The duration of hospitalization and duration of ICU treatment were also found to be correlated with decreased physical QOL scores. This observation is in agreement with results found in an HRQOL study.²⁴ So duration of hospitalization and ICU treatment may be important to subsequent QOL, even if body region is not.

Using different types of measures may result in different results for HRQOL and QOL.³⁹ In patients with intermittent claudication, Breek *et al.* found that patients with excellent and very poor QOL scores were found in nearly all the quartiles of the corresponding HRQOL domains.⁴⁰ However, in severely injured patients, factors that seem to be important for being satisfied with functioning are mainly in agreement with factors found to be important for the functioning itself in HRQOL studies, except for age. In accordance with HRQOL studies, we found that longer duration of hospitalization or ICU treatment, living alone, being unable to return to work and pre-traumatic comorbidity, are related to impaired QOL and that a relationship between ISS and QOL is absent.

Although conflicting results are found in the literature about variation of QOL over time,^{41,35,42} our results revealed that QOL is still decreased after the rehabilitation phase (1-5 years after the accident). This observation is in agreement with the results found at long periods after cerebral lesions by Teasdale and Engberg.⁴³

Several limitations should be mentioned. The patients were asked retrospectively for their pre-accidental health status and mental treatment, as these data are always unknown in trauma care studies. Secondly, the response rate in this study was 61% of the eligible patients. However, the group of non-respondents was similar to the group of respondents, except for an overrepresentation of women. Because the QOL was not affected by gender in our study, this is not expected to bias the measured QOL. Furthermore, we compared our data with data from

a reference group of the Dutch general population because no matched control group was available. The trauma patients were a slightly younger (7 years) than the reference group and contained mainly males, because severely injured patients are often younger males. We do not expect that this has affected the results, because we did not find significant relations between QOL and gender or age, except for age in the domain environment. The QOL of all patients may be overestimated in this study because 50 percent of the non-respondents, asked for a reason for not participating, indicated that they did not feel well at all or did not want to be remembered for the accident anymore. Moreover, half of the patients that did not feel well at all felt too unwell to participate. Therefore, the QOL may easily be even lower in the severely injured trauma population than was found in this study. Finally, except for the subgroup of patients with intracranial injury, the number of patients was too small to analyze subgroups.

Conclusion

Severely injured patients experience a lower QOL than the general Dutch population in all domains except social relations. The QOL was found to depend mainly on certain sociodemographic aspects (living alone and being unable to return to work) and pre-traumatic comorbidity, rather than the rehabilitation time after the accident, the severity of the injury or the injured body area. Duration of hospital or ICU stay is important to subsequent QOL, even if ISS or body region is not. This is in agreement with results found in HRQOL studies. The remaining physical limitations or psychological factors could, therefore, be more important for the experience of QOL than the severity of injury or the injured body area. Future studies should include prospective follow-up studies with larger subgroups in which the severity of the injury can be taken into account and analyses of patients with intracranial injury.

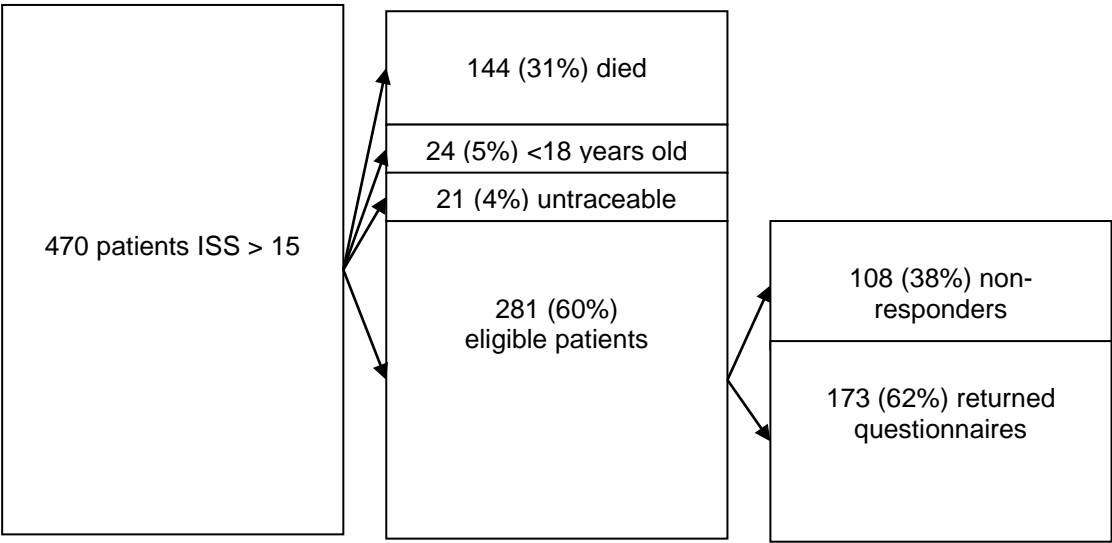


Figure 1: flow chart of selection of eligible patients

Table 1: Reasons for refusal to participate and the health status of the non-respondents.
Severely injured patients, St Elisabeth Hospital 2006-2008.

Health status	good	some disabilities	not good at all	unknown	Total
Reason					
Not interested	9	8	6	12	35
Does not want to be contacted	2	3	3		8
Unable to participate		1	9	3 because of language problems	13
Untraceable by phone				52	52
Total	11	12	18	67	108 non-respondents

Table 2: Comparison between respondents and non-respondents.
Severely injured patients, St Elisabeth Hospital 2006-2008.

n=281	Respondent		p	
	Yes	No		
Age	47 (SD 19)	44 (SD 20)	0.237	
Gender	Male	n=120	n=92	0.003*
	Female	n=53	n=16	
ISS	23 (SD 8)	23 (SD 8)	0.446	
Duration of hospitalization	25 (SD 24)	24 (SD 29)	0.809	
Duration of ICU stay	15 (SD 20)	15 (SD 18)	1.000	
Head	Yes	n=131	n=79	0.629
	No	n=42	n=29	
Face	Yes	n=131	n=79	0.638
	No	n=42	n=29	
Thorax	Yes	n=71	n=35	0.146
	No	n=102	n=73	
Abdomen	Yes	n=30	n=20	0.802
	No	n=143	n=88	
Spine	Yes	n=38	n=18	0.297
	No	n=135	n=90	
Upper extremities	Yes	n=53	n=34	0.881
	No	n=120	n=74	
Lower extremities	Yes	n=53	n=80	0.396
	No	n=120	n=28	

p-values, means and SD are shown for continuous variables and p-values and the numbers of patients per variable for categorical variables.

* $p < 0.05$

Table 3: Patient characteristics.
Severely injured patients, St Elisabeth Hospital 2006-2008.

Social-demographic characteristics (n=173)		category	n	%
Age at start of the study	< 55		111	64
	>=55		62	36
Gender	Male		120	69
	Female		53	31
Education level*	Basic		33	19
	Middle		86	50
	High		44	25
Household*	Alone		40	23
	Together		131	76
Living together with*	Partner		55	32
	Children		9	5
	Partner and children		36	21
	Parents		23	13
	Students		3	2
Had work at time of injury			113	65
Returned to work after injury*			54	31
Accident-related characteristics (n=173)			n	%
ISS	16 - 25		97	56
	>=25		76	44
Mechanism of accident	Blunt		166	96
	Penetrating		7	4
Type of accident*	Traffic		93	54
	At home		33	19
	At work		10	6
	Sports		8	5
	Raid		2	1
	Attempted suicide		3	2
	Other type of accident		23	13
At least one injury in this AIS region	Head		131	76
	Intracranial		105	61
	Face		46	27
	Thorax		71	41
	Abdomen		30	17
	Spine		38	22
	Transverse myelitis		12	7
	Upper extremity		53	31
	Lower extremity		53	31
Comorbidity before trauma (n=173)			n	%
Physical comorbidity*			43	25
Medication use*			67	39
Mental treatment*			16	10
Medication for psychological disorders			13	8

*Category unknown: Education level: 10, Household: 2, Living together with: 7. Returned to work after injury: 4, Physical comorbidity: 1, Medication use: 4, Mental treatment: 1.

Table 4: Comparison of QOL between severely injured patients of St Elisabeth Hospital, 2006-2008 and the general Dutch population.

Domain	General Dutch population	Multi-trauma Patients <i>n</i> =167	No intracranial injury <i>n</i> =66	Isolated serious intracranial injury (AIS>3)** <i>n</i> =38	Intracranial injury combined with other injury <i>n</i> =63	One-way between-groups ANOVA***
General						
Mean (SD)	7.8 (1.6)	7.1 (1.8)*	7.3 (1.7)*	7.2 (1.8)	6.9 (1.8)*	
<i>p</i> -value		<0.001	0.027	0.063	< 0.001	0.439
Physical health						
Mean (SD)	15.5 (2.7)	14.2 (3.5)*	14.2 (3.7)*	14.3 (3.4)*	14.1 (3.5)*	
<i>p</i> -value		<0.001	0.006	0.034	0.002	0.984
Psychological health						
Mean (SD)	14.7 (2.2)	14.1 (3.0)*	14.6 (2.9)	13.9 (3.1)	13.6 (3.1)*	
<i>p</i> -value		0.010	0.753	0.126	0.011	0.234
Social relationships						
Mean (SD)	15.2 (2.9)	14.8 (3.2)	15.5 (2.6) [†]	14.9 (3.3)	14.1 (3.5)* [†]	
<i>p</i> -value		0.149	0.293	0.568	0.015	0.039*
Environment						
Mean (SD)	15.9 (2.2)	15.1 (2.8)*	15.1 (2.6)*	15.2 (3.1)	15.1 (2.9)*	
<i>p</i> -value		<0.001	0.020	0.141	0.030	0.954

One sample t-tests were employed to compare the QOL of traumatized patients with data from a reference group of the Dutch general population, and to compare several subgroups with this reference group. The mean WHOQOL-BREF scores and SD are shown. QOL scores could not be determined for one patient without intracranial injury and one patient with intracranial injury in the general domain and for two patients with intracranial injury for the domain physical health.

* $p < 0.05$

** There are no patients with isolated intracranial injury with an AIS ≤ 3.

*** The p-value concerns the main effect of the comparison between the three subgroups. Individual p-values need to be interpreted cautiously when this ANOVA is non-significant.

[†] Post hoc Tukey test: $p = 0.029$.

Table 5: Results from linear regression analysis for patient characteristics, injury characteristics and treatment on quality of life. Severely injured patients, St Elisabeth Hospital 2006-2008.

	General		Physical		Psychological		Social		Environment	
	Beta	95% CI	Beta	95% CI	Beta	95% CI	Beta	95% CI	Beta	95% CI
Age	0.110	(-0.004 - 0.025)	0.032	(-0.023 - 0.035)	0.061	(-0.015 - 0.034)	0.032	(-0.020 - 0.031)	0.174	(0.003 - 0.048)*
Gender male	-0.051	(-0.787 - 0.397)	-0.085	(-1.844 - 0.528)	-0.099	(-1.641 - 0.354)	0.049	(-0.709 - 1.379)	0.045	(-0.655 - 1.202)
Living together	0.243	(0.384 - 1.634)*	0.203	(0.422 - 2.954)*	0.175	(0.163 - 2.316)*	0.237	(0.641 - 2.841)*	0.200	(0.326 - 2.320)*
Returned to work after injury	0.410	(0.814 - 2.054)**	0.539	(2.572 - 4.817)**	0.393	(1.291 - 3.406)**	0.212	(0.148 - 2.519)*	0.413	(1.368 - 3.388)**
Physical comorbidity before injury	-0.125	(-1.134 - 0.118)	-0.213	(-2.960 - -0.495)*	-0.099	(-1.757 - 0.378)	-0.115	(-1.949 - 0.276)	-0.150	(-1.953 - 0.016)
Mental treatment before injury	-0.195	(-2.073 - -0.258)*	-0.164	(-3.781 - -0.133)*	-0.280	(-4.389 - -1.361)**	-0.122	(-2.937 - 0.327)	-0.150	(-2.874 - 0.017)
ISS	-0.009	(-0.038 - 0.034)	-0.016	(-0.080 - 0.065)	-0.050	(-0.080 - 0.041)	-0.043	(-0.081 - 0.046)	0.020	(-0.049 - 0.064)
Body region***										
Head	-0.133	(-1.279 - 0.202)	-0.055	(-1.920 - 1.027)	-0.112	(-2.094 - 0.397)	-0.168	(-2.520 - 0.088)	-0.090	(-1.703 - 0.537)
Face	-0.022	(-0.772 - 0.593)	-0.078	(-1.972 - 0.719)	-0.082	(-1.694 - 0.580)	-0.056	(-1.584 - 0.796)	-0.081	(-1.536 - 0.509)
Thorax	0.063	(-0.404 - 0.854)	0.088	(-0.622 - 1.888)	0.065	(-0.667 - 1.457)	0.064	(-0.703 - 1.521)	0.213	(0.252 - 2.163)*
Abdomen	-0.003	(-0.808 - 0.782)	0.035	(-1.251 - 1.885)	0.022	(-1.157 - 1.510)	-0.035	(-1.687 - 1.105)	-0.039	(-1.481 - 0.918)
Spine	-0.102	(-1.133 - 0.276)	-0.158	(-2.756 - 0.81)	-0.110	(-1.988 - 0.397)	-0.057	(-1.677 - 0.820)	-0.233	(-2.632 - -0.486)*
Upper extremities	-0.043	(-0.777 - 0.443)	-0.024	(-1.758 - 0.688)	-0.101	(-1.695 - 0.368)	0.019	(-0.948 - 1.212)	-0.142	(-1.797 - 0.058)
Lower extremities	-0.084	(-0.989 - 0.337)	-0.069	(-1.507 - 1.126)	-0.033	(-1.326 - 0.896)	0.007	(-1.114 - 1.213)	-0.011	(-1.069 - 0.929)
Duration of hospitalization	-0.124	(-1.020 - 0.002)	-0.210	(-0.053 - -0.009)*	-0.147	(-0.037 - 0.001)	-0.145	(-0.038 - 0.001)	-0.158	(-0.036 - -0.001)*
ICU treatment y/n	-0.055	(-0.091 - 0.517)	-0.006	(-1.668 - 1.550)	-0.024	(-1.584 - 1.160)	0.022	(-1.224 - 1.638)	-0.041	(-1.608 - 0.935)
Duration of ICU treatment	-0.114	(-0.024 - 0.004)	-0.201	(-0.065 - -0.007)*	-0.100	(-0.040 - 0.010)	-0.177	(-0.052 - -0.002)*	-0.082	(-0.035 - 0.012)

In the upper and lower parts of the table univariate regressions were used. Multiple regression was only used for the body areas. Beta and the 95% confidence intervals for the unstandardized regression coefficients from a clarifying linear regression model are shown.

* $p < 0.05$

** $p < 0.001$

*** Injury in this AIS body region, regardless of the severity, adjusted for the other body regions.

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