

Return to work after acute spinal trauma in five hospitals in four low- and middle-income countries: a retrospective review of a prospectively collected multicentre cohort study

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Annex 1: classification of free-text pre-injury occupations by physical demand of the job among adults working before acute spinal trauma, five referral hospitals in Tanzania, Ethiopia, Kenya, and Malawi, July 2024 to August 2026 (100 distinct entries)

Occupation (free text)	Physical demand	Occupation (free text)	Physical demand
Ac mechanic	high	masonry	high
Bajaji driver	high	meat vendor	high
Banker	low	mechanic	high
Boda boda driver	high	merchant	low
Brick laying	high	miner	high
Broker	low	mining	high
Bucher	high	motorcycle driver	high
Bulder	high	motorcycle rider	high
Building	high	motorcyclist	high
Bus conductor	high	motorcyclist	high
Business	low	musician	low
Business man	low	nurse	high
Chauffeur	low	painter	high
Clerk man	low	pastor	low
Construction	high	pastoralist	high
Construction worker	high	plumber	high
Construction worker	high	porter	high
Courier	high	power saw operator	high
Courier	high	professional athlete	high
Daily laborer	high	public health officer	low
Daily laborer	high	pump attendant	low
Driver	low	ranger	high
Driver, mechanic	high	sales	low
Electrician	high	sales person	low
Engineer	low	security guard	low
Entrepreneur	low	self employed	indeterminate
Farming	high	self-employed	indeterminate
farmer	high	self-employed	indeterminate
farming	high	Semi-skilled	high
filling station manager	low	semi-skilled jobs	high
food vendor	low	semi-skilled worker	high
gold miner	high	shop seller	low
government employee	low	skilled worker	high
Handcart operator	high	small businessman	low
House manager	high	small-scale entrepreneur	low
Housewife	high	small vendor	low
Hr. officer	low	soldier	high
Juakali	high	student	low
Local businessman	low	sugarcane cutting	high
Local entrepreneur	low	tailor	low
Local vender	low	tax assistant	low
Local vendor	low	teacher	low
Lumberjack	high	truck driver	high

Lumberjack	high	waiter	low
Machine operator	high	welder	high
Manual laborer	high	welding	high
Manual labour	high	works at a local gold mine	high
Marketing	low	works in a tea plantation farm	high
Mason	high	workshop supervisor	low
Mason - construction worker	high	MDF (Malawi Defense Force)	high
Free-text pre-injury occupations were mapped to the physical demand of the job using this fixed table. High indicates regular heavy lifting or carrying, sustained manual work performed standing or in awkward postures, or operation of two- or three-wheeled vehicles. Low indicates predominantly seated or light standing work, including light-vehicle driving, trading and sales, and clerical or professional roles. Indeterminate indicates free text insufficient to infer job tasks			

Annex 2: baseline characteristics of adults working before acute spinal trauma who were analysed (n = 163) and not analysable because they had no post-injury work assessment (n = 258), five referral hospitals in Tanzania, Ethiopia, Kenya, and Malawi, July 2024 to August 2026 (N = 421)

Characteristic	Analysed (n=163)	Not analysable (n=258)	P
Age, years, median	35	37	.20
Male sex, n (%)	143 (87.7)	231 (89.5)	.68
No neurological deficit, n (%)	64 (39.3)	60 (23.3)	
Incomplete injury (ASIA B to D), n (%)	62 (38.0)	72 (27.9)	
Complete injury (ASIA A), n (%)	36 (22.1)	105 (40.7)	<.001
ASIA grade not recorded, n (%)	1 (0.6)	21 (8.1)	
Cervical injury, n (%)	33 (20.2)	90 (34.9)	.002
Operative treatment, n (%)	133 (81.6)	103 (39.9)	<.001
Health insurance, n (%)	69 (42.3)	63 (24.4)	<.001
Injured at the workplace, n (%)	93 (57.1)	155 (60.1)	.61
Site distribution			<.001

ASIA: American spinal injury association, ASIA: impairment scale; continuous variables were compared with the Mann-Whitney test and categorical variables with the chi-square test; admission neurological status was compared across all four categories; occupation class and education did not differ significantly (not shown)

Annex 3: twelve-month cumulative incidence of return to work by patient and injury characteristics (unadjusted) among adults working before acute spinal trauma, five referral hospitals in Tanzania, Ethiopia, Kenya, and Malawi, July 2024 to August 2026 (N = 163; 35 returns)

Factor	N	Returned	12-mo incidence, % (95% CI)	Unadjusted HR (95% CI)	Log-rank p
Overall	163	35	46.0 (33.9 to 60.1)		
Neurological status					<.001
No deficit	64	25	69.0 (51.1 to 85.3)	Reference	
ASIA B to D	62	10	36.0 (20.1 to 58.7)	0.31 (0.15 to 0.65)	
ASIA B	21	2	26.7 (6.6 to 75.7)	—	
ASIA C	22	1	4.5 (0.7 to 28.1)	—	
ASIA D	19	7	55.8 (31.1 to 83.3)	—	
ASIA A	36	0	0 (0 to 9.7) *	Not estimable	
Occupation physical demand					.598
High	110	23	43.5 (29.0 to 61.4)	Reference	
Indeterminate	5	0	0 (0 to 52.2) †	Not estimable	
Low	48	12	52.3 (32.3 to 75.5)	1.13 (0.56 to 2.28)	
Age group					.150
Under 30	49	12	45.2 (27.5 to 67.5)	Reference	
30 to 44	80	12	46.9 (27.8 to 70.9)	0.86 (0.38 to 1.92)	
45 and over	34	11	45.3 (25.0 to 71.8)	1.83 (0.80 to 4.16)	
Education					.005
Primary or less	103	18	34.9 (22.0 to 52.3)	Reference	
Secondary	43	8	54.1 (29.5 to 82.3)	1.25 (0.54 to 2.89)	
College or university	17	9	85.0 (53.0 to 99.2)	3.51 (1.58 to 7.83)	
Sex					.035
Male	143	29	43.7 (31.2 to 58.6)	Reference	
Female	20	6	69.6 (29.3 to 98.3)	2.54 (1.03 to 6.22)	
Health insurance					.624
No	94	19	49.5 (33.4 to 68.2)	Reference	
Yes	69	16	40.3 (24.5 to 61.2)	1.18 (0.61 to 2.30)	
Operative treatment					.156
No	30	9	64.2 (38.9 to 88.2)	Reference	
Yes	133	26	41.4 (28.4 to 57.5)	0.58 (0.27 to 1.25)	
Injury region					.417
Lumbosacral	81	21	50.6 (34.7 to 69.0)	Reference	
Thoracic	46	6	24.6 (9.5 to 55.2)	0.55 (0.22 to 1.37)	
Cervical	33	8	59.1 (32.9 to 86.6)	0.96 (0.43 to 2.18)	
Injured at the workplace					.015
No	70	19	63.3 (42.6 to 83.7)	Reference	
Yes	93	16	35.9 (22.5 to 54.1)	0.44 (0.23 to 0.86)	

CI: confidence interval; HR: hazard ratio; ASIA: American spinal injury association, ASIA: Impairment Scale; education combines none and primary as primary or less; * No events among 36 ASIA A patients, and the interval is the exact binomial upper bound on the crude proportion; † No returns among the 5 indeterminate physical-demand patients; the interval is the exact binomial upper bound on the crude proportion, and the hazard ratio is not estimable

Annex 4: return to work by physical demand of pre-injury occupation within admission neurological strata among adults working before acute spinal trauma, five referral hospitals in Tanzania, Ethiopia, Kenya, and Malawi, July 2024 to August 2026 (n = 162; exploratory)

Neurological status	Physical demand	Returned/n	%
No deficit	High	19 / 49	39
	Indeterminate	0 / 2	0
	Low	6 / 13	46
Asia B to D	High	4 / 34	12
	Indeterminate	0 / 3	0
	Low	6 / 25	24
Asia A	High	0 / 26	0
	Indeterminate	0 / 0	-
	Low	0 / 10	0

ASIA: American spinal injury association, ASIA: impairment scale; comparison of low versus high physical-demand occupations among ASIA B to D patients: Fisher exact $p=.297$; cell sizes are very small, and this analysis is hypothesis-generating only; the patient with a recorded deficit but missing grade could not be assigned to a neurological stratum and is not shown