Reference

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Employment Status in Individuals with Upper-Limb Amputation: A Survey of Current Trends

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Products

Upper limb prostheses

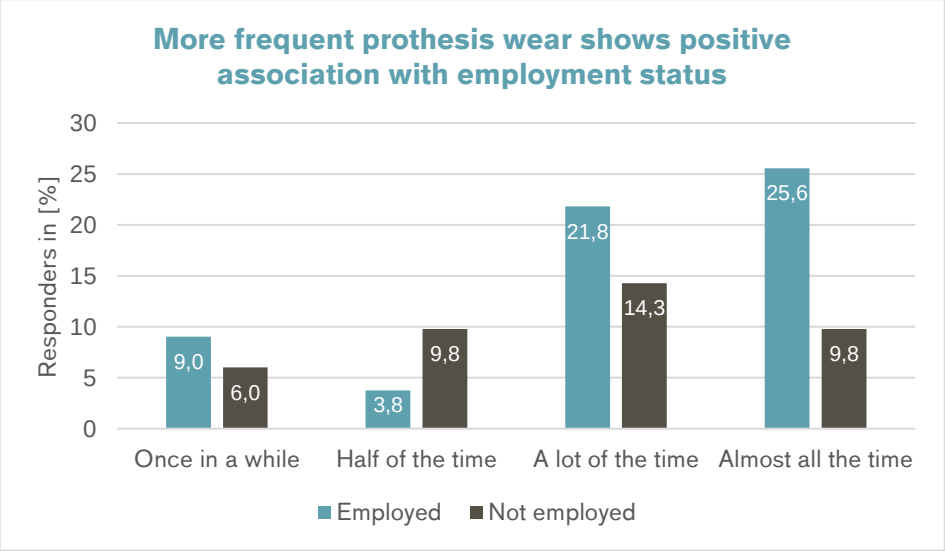
Major Findings

→ 29% of the of the responders needed to switch jobs after their amputation.

→ Factors positively associated with employment for individuals with upper limb amputation:

- **Younger age at amputation**
- **Unilateral Amputation**
- **Higher education level**
- **Lower pain frequency**
- **Wearing a prosthesis more frequently**

(In contrast, older age at amputation, a bilateral amputation, lower education level, higher pain frequency and less frequent prosthesis wear time are factors negatively associated with employment)

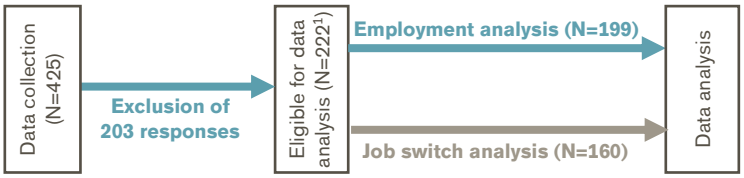


Population

Subjects:	199 upper limb amputees - 61.8% male, 38.2% female - 92% unilateral, 8% bilateral - Transradial (43.2%), Transhumeral (27.1%), Wrist (9.5%), Shoulder (9%), Elbow (5.5%), Forequarter (5.5%) (Values taken from publication)
Type of prosthesis (N=145)	Myoelectric (25.6%), Body-powered (32.2%), Passive/hybrid/recreational (15.1%) No prosthesis used (27.1%)
Amputation causes:	Trauma (62.8%), Non-trauma (15.1%), Congenital (22.1%)
Mean age:	41 ± 13 years
Mean time since amputation:	12 ± 16 years

Study Design

Retrospective study:



[1]Overlapping responses for "Employment-" and "Job switch analysis"

A total of 425 people responded to the survey. Responses from individuals who did not meet survey eligibility requirements (N=16), who also had lower-limb loss (N=52) or whose responses were incomplete (N=49) or blank (N=69) were excluded. Potential duplicate responses (N=17) were identified and removed after the consensus of three authors. After screening, 222 responses remained eligible.

For the "Employment analysis", individuals were further excluded who were outside of the working age at the time of survey (n = 23). This was defined according to the Organization for Economic Cooperation and Development (OECD) as ages 15 to 64 years. Furthermore, "Job switch analysis" (N=160) was done with all employed individuals' responses with acquired amputation.

Results

Body Function		Activity			Participation	Others	
Mechanics	**Pain**	**Grip patterns / force**	**Manual dexterity**	**Activities of daily living (ADL)**	**Satisfaction and Quality of life (QoL)**	**Training**	**Technical aspect**

Category	Outcomes	Results for Upper limb amputees	Sig.*
Satisfaction and Quality of life (QoL)	Employment analysis	**5 of the 11 factors explored were significantly associated to the employment status:** • **Age at amputation:** Younger age shows positive association with employment, in contrast to older amputees. • **Unilateral/Bilateral amputation:** Unilateral amputation shows positive association with employment, in contrast to bilateral amputation • **Highest level of education attained:** Higher education level shows positive association with employment, in contrast to lower education level. • **Pain frequency:** Less frequent pain shows positive association with employment, in contrast to more frequent pain. • **Prosthesis wear frequency:** More frequent prosthesis wear shows positive association with employment, in contrast to less frequent prosthesis wear.	++
		The other 6 factors were not significantly associated with the employment status: • Gender • Side of limb loss • Level of limb loss • Cause of amputation • Prosthesis wear (yes/no) • Type of prosthesis	0

Category	Outcomes	Results for Upper limb amputees	Sig.*
	Job switch analysis	**29% (47 out of 160) of the responders needed to switch jobs because of their acquired amputation.** None of the 11 factors explored were significantly associated with the need to switch jobs.	0
	Occupations within modified Occupational Information Network (ONET)**		

Zone	At the time of amputation [% responders]	At the time of survey [% responders] (change in % of responders)	
1	4%	2% (-50%)	–
2	20%	12% (-40%)	–
3	34%	14% (-58.8%)	–
4	28%	31% (+10.7%)	+
5	7%	3% (-57.1%)	–
M (Military)	3%	0% (-100%)	–
O (Other)	4%	1% (-75%)	–
Not employed	**0%**	**37%**	**–**

* no difference (0), positive trend (+), negative trend (–), significant (++/––), not applicable (n.a.)
**ONET Zones (1 = Need little or no preparation (e.g. constructor, waitress, etc.); 2 = Need some preparation (e.g. cashier, clerk, customer service, etc.); 3 = Need medium preparation (e.g. aircraft/auto mechanic, computer technician, etc.); 4 = Need considerable preparation (e.g. account manager, engineer, manager, etc.); 5 = Need extensive preparation (e.g. CEO, CFO, etc.); M = Military occupations (US Army, US Marine, Military); O = Other (Internship, self-employment)

Author's Conclusion

"Of the individuals with upper-limb loss who responded to the online survey, 39.2% were not employed at the time of survey and 29.4%reported needing to change jobs because of their amputation. This low rate of employment is related to multiple factors, such as age at amputation and level of education. Of these, clinicians may encourage individuals to obtain additional education because it is a modifiable factor that is also a significant predictor of postamputation employment status. Additional research is necessary to understand the underlying reasons that this population faces greater employment challenges than individuals without amputation. Future work should be directed toward understanding the roles of both clinical rehabilitation and job environment on this population's ability to fully integrate into the workforce." (Lee et al, 2022)