FACTORS ASSOCIATED WITH MOBILITY APPREHENSION IN AMPUTEES

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INTRODUCTION

Studies report that after lower-limb amputation, patients have high levels of pain in the form of chronic low back pain, residual limb pain, and phantom pain leading to restrictions in functional activity[1]. Patients with high levels of pain and disability may develop avoidance behaviors. Vlaeyen et al. presents the fear-avoidance model, which suggests that after an injury there are two pathways a patient will take based on their interpretation of acute pain [2]. Pain that is perceived as non-threatening leads to the patient's recovery and return to normal activities of daily life. Pain that is perceived as threatening, or pain catastrophizing, causes anxiety and induces mobility apprehension which leads to avoidance behaviors. Avoidance behaviors may then lead to greater pain, depression, and disability[3]. Factors described in the literature that are related to mobility apprehension were measured in a sample of lower limb amputees. The purpose was to determine which of pain intensity, interference, and catastrophizing lead to increased mobility apprehension.

METHODS

 Subjects: Amputee Coalition Conference attendees were recruited for participation (see Table 1). *Apparatus*: Subjects completed the Tampa Scale for Kinesiophobia (TSK) to measure mobility apprehension. The Brief Pain Inventory (BPI) measures pain intensity which consists of a patient's current, worst, least, and average pain. The pain interference subscale quantifies general activity, mood, walking ability, normal work, relations with other people, sleep, and enjoyment of life. The Pain Catastrophizing Scale (PCS) measures the tendency to ruminate and magnify pain sensations. Self-report instrument data are presented in Table 2. *Data Analysis*: Descriptive statistics were explored to present mean and standard deviations for all outcomes. A multivariable linear regression model included all variables of interest and results are presented in Table 3.

RESULTS

Mobility apprehension was the main variable of interest with a mean score of 34. This score is approaching the cut-off score of 39 representing a high level. Half of the participants were questioned about recent falls and fear of falls. Of the 31 respondents, 16 (52%) experienced a fall within the last year and 9 (29%) reported a fear of falls.

DISCUSSION

This data presents an attempt to determine factors associated with mobility apprehension among lower limb amputees. The findings were that pain catastrophizing was directly related to mobility apprehension. Results indicate that a similar trial with a larger sample that is more representative of a wider cross-section of lower-limb amputees is warranted.

Table 1. Participant Characteristics

Characteristic	n (%)
Mean Age (years, SD)	48.3 (14.8)
Sex	
• Female	36 (68%)
• Male	17 (32%)
Race	
• White	43 (81%)
• Non-white	10 (19%)
Mean Years Since Surgery (SD)	11.3 (13.5)

Table 2. Self-report instrument data

Characteristic	M (SD)
Mobility Apprehension	34.2 (6.0)
High, ≥ 39 (n, %)	10 (20%)
Low, < 39 (n, %)	41 (80%)
Pain Intensity	1.6 (1.7)
High, ≥ 5 (n, %)	7 (13%)
Low, < 5 (n, %)	47 (87%)
Pain Interference	2.5 (2.6)
High, ≥ 5 (n, %)	13 (25%)
Low, < 5 (n, %)	40 (75%)
Pain Catastrophizing	9.1 (10.0)
High, ≥ 24 (n, %)	4 (8%)
Low, < 24 (n, %)	37 (92%)

Table 3. Multivariable regression for factors associated with mobility apprehension

Characteristic	β (*p*)
Pain Intensity	0.25 (.48)
Pain Interference	-0.03 (.96)
Pain Catastrophizing	0.31 (<.0001)

CONCLUSION

Pain catastrophizing was positively associated with mobility apprehension.

SIGNIFICANCE

Results may assist clinicians by further understanding mobility apprehension and the fear-avoidance model.

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