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Coping, affective distress, and psychosocial adjustment among people with traumatic upper limb amputations

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Abstract

Objective: This study investigated the prevalence of symptoms of depression and anxiety in a sample of predominantly elderly males with acquired upper limb amputations (n=138) and examined the contribution of coping strategies to the prediction of psychosocial adjustment. **Method:** One hundred and thirty-eight men with injury-related upper limb amputations completed self-report questionnaires assessing coping strategies, symptoms of anxiety and depression, and psychosocial adaptation to prosthesis use. **Results:** Prevalence of significant depressive symptoms was 28.3% [Hospital Anxiety and Depression Scale, Depression subscale (HADS-D) score ≥8]. Prevalence of significant anxiety symptoms was 35.5% [HADS Anxiety subscale (HADS-A) score ≥8]. Coping styles emerged as important predictors of psychosocial adaptation. In particular, avoidance was strongly associated with psychological distress and poor adjustment. **Conclusions:** These findings suggest the potential benefits of interventions to reduce reliance on avoidant coping and stimulate more problem-focused approaches to coping with difficulties and challenges in order to facilitate adaptation and prevent problems in psychosocial functioning postamputation.

Keywords: Amputation; Coping; Psychosocial adjustment; Upper limb

Introduction

Amputation of an upper limb engenders a multitude of physical and psychosocial challenges including alterations in body image and lifestyle, changes in self-concept, impairments in physical functioning, prosthesis use, and pain [1–3]. The complexity and diversity of functions performed by the hands and their salience in communication and self-presentation [4] represent significant and distinct challenges for rehabilitation and prosthetic restoration. In recent years, significant technological advances in design and fabrication of upper limb prosthetic devices have greatly improved the potential functional and cosmetic outcomes for individuals with upper limb amputations [5]. There remains, however, a dearth of research explicitly addressing psychosocial adaptation to upper limb amputation and associated mediating factors [6], despite the importance of such variables in clinical rehabilitation, sustained prosthesis use, and long-term adjustment and quality of life.

It is not surprising that negotiating the evolving stressors associated with amputation may challenge the individual's ability to maintain emotional well-being and, in some instances, may promote maladaptive reactions leading to poor psychosocial adjustment. The extent to which this occurs may be partly dependent on the coping strategies or styles individuals adopt to manage experiences associated with their illness or injury [7–10]. Investigation of the role of coping strategies in adjustment to lower limb amputation, consistent with the wider coping literature, suggests that active/task-oriented strategies such as problem solving and perceiving control over the disability are conducive to

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positive psychosocial adjustment (e.g., Refs. [7,11,12]). In contrast, emotion-focused and passive strategies such as cognitive disengagement, avoidance, and catastrophizing have been associated with poor psychosocial outcomes [7,12,13]. For example, Livneh et al. [7] found that greater active problem solving was negatively associated with depression and internalised anger and positively associated with adjustment and acceptance of disability. In contrast, emotion-focused coping and cognitive disengagement were positively associated with depression, externalised hostility, and lack of acceptance of disability.

Despite a large and growing literature on psychosocial adaptation to lower limb amputation (see Ref. [14] for a review) there is little evidence regarding the prevalence of clinically significant affective distress amongst individuals with upper limb amputations. Indeed, to date, associations between coping strategies and psychosocial adjustment to upper limb amputation, as a unique condition, have not been investigated. This may be explained in terms of the lower incidence of major upper limb amputation. However, findings based on analyses of cases of lower limb amputation are clearly of limited generalizability to cases of upper limb amputation. There are obvious differences in terms of functional implications, visibility/concealability of the amputation and/or prosthesis, and in the characteristic circumstances surrounding upper and lower limb amputations. Amputations of the upper limbs typically result from traumatic injury and are characteristically sustained by relatively young adults who are otherwise in good health [15]. In contrast, the majority of lower limb amputations are performed secondary to peripheral vascular disease (PVD) [16–18]. The incidence of this condition increases with age; hence, those typically undergoing PVD-related amputation are older than 60 years [19] and commonly experience concurrent medical conditions [17]. Moreover, survival following major lower limb amputation for PVD is poor [20].

The purpose of the study is to determine the prevalence of clinically significant affective distress (symptoms of depression and anxiety) in a sample of individuals with upper limb amputations and to examine the contribution of coping strategies to the prediction of psychosocial adjustment of individuals with acquired upper limb amputations. In the current research, psychosocial adjustment is conceptualized as the absence of clinically elevated symptoms of anxiety and depression and evidence of positive adjustment to amputation and prosthesis use.

Methods

Study design and participants

Eligible members of the British Limbless Ex-Service Men's Association (BLESMA), a British national charity dedicated to promotion of the welfare of those who have lost a limb or limbs, one or both eyes, or the use of a limb in any branch of Her Majesty's Forces or Auxiliary Forces were invited to participate in a research project concerning psychosocial adjustment to physical injury. Data were gathered by using self-report postal questionnaires. An article outlining the aims of the study was published in BLESMA's quarterly magazine, the BLESMAG. Questionnaire packs including cover letters, a copy of the questionnaire, and a stamped addressed reply envelope were subsequently distributed to eligible members. A reminder to return completed questionnaires to BLESMA head office was published in the BLESMAG approximately 6 weeks after initial questionnaire distribution. Personalised reminders were not issued to nonresponders due to financial constraints and respondents were not offered incentives for participation. The ethics committee of the authors' institution approved the study protocol.

Of the questionnaires distributed (n=2500), 22 were returned because the intended recipient was deceased. A total of 1222 questionnaires were returned, representing a response rate of 49%, of which 1072 contained sufficient data for analysis. Data were collected for 952 individuals with limb amputation(s). The inclusion criterion for the current investigation was acquired upper limb amputation. Analysis of the role of coping in adjustment to lower limb amputation has been detailed elsewhere [12]. As eligible respondents (n=141) were predominantly male (n=139) and had injury-related (n=140) rather than disease-related amputations, 3 individuals (2 females and 1 male whose amputation was performed secondary to cancer) were excluded, and analysis was limited to a sample of 138 males with amputations resulting from traumatic injury. Characteristics of the sample are outlined in Table 1. The mean age of respondents was 74.6 years (S.D.=11.4; range, 39–91; median, 79 years). The average time elapsed since

Table 1
Sample demographics (N=138)

Characteristic	n	%	Mean (S.D.)	Observed range
Gender				
Male	138	100.00		
Cause of amputation				
Active combat	92	66.7		
Training accident	17	12.3		
Other accident	24	17.4		
Other	5	3.6		
Amputation level				
Hand	18	13.0		
Both hands	6	4.3		
Below elbow	34	24.6		
Through elbow	8	5.8		
Above elbow	66	47.8		
Bilateral arm	4	2.9		
Level unspecified	2	1.4		
Age (years)			74.64 (11.41)	39–91
Time since amputation (years)			50.21 (13.44)	4.6–63
Prosthesis users	100	72.5		