

The life style of young persons after lower limb amputation caused by injury

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Abstract

In order to determine whether lower limb amputation changes the social life and free time activities of persons who were at the time of amputation young, a questionnaire was sent to 519 persons after trans-tibial or higher level of lower limb amputation who were at the time of amputation younger than 51 years, amputated because of injury, permanently resident in Slovenia and had visited the outpatient prosthetics clinic of the Rehabilitation Institute of Slovenia at least once in the last five years (1989-94).

There 228 responses, which were statistically analysed.

It was found that after amputation most persons participated less frequently in social activities, especially persons who were older at the time of amputation and also those who are older today. Changes in participation in social activities were not influenced by level of education.

Free time activities changed after amputation. Some 93 persons completely changed their free time activities and only 30 were still interested in the same activities as before. The three most frequent free time activities before amputation were cycling, team ball games and farm work. After amputation they were reading, watching television and/or listening to radio and music and housekeeping.

It is concluded that lower limb amputation severely changes the social life and free time

activities of persons who were young at the time of amputation.

Introduction

Disability following lower limb amputation is permanent and in many cases makes the individual dependent on other people (Pohjolainen *et al.*, 1989). To increase independence after lower limb amputation, there are two major goals in rehabilitation.

The first is to enable the person to walk. Although modern prostheses, with rapid incorporation of amputees into the rehabilitation programme and better therapeutic techniques, enable walking for an increasing number of persons (Pinzur *et al.*, 1992), many can walk only short distances and are not able to climb stairs (Helm *et al.*, 1986; Pohjolainen *et al.*, 1990; Nissen and Newman, 1993; Jones *et al.*, 1993; Fairhurst, 1994; Walker *et al.*, 1994).

The second goal in the rehabilitation of persons after lower limit amputation is to return them into their social environment and to restore previous social contacts. However, it has been reported that many people after lower limb amputation are not able to participate in all leisure and recreational activities and have problems of reintegration into work (Nissen and Newman, 1992; Jones *et al.*, 1993; Walker *et al.*, 1994; Fairhurst, 1994). Decreased time spent in leisure activities and early retirements reduce the quality of life of some (Niemi *et al.*, 1988; Trudel *et al.*, 1984).

To achieve both goals is specially important in the rehabilitation of persons who are young at the time of amputation and in Slovenia there are many such persons. However, until now there was no data about rehabilitation outcome for

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Table 1. Level of amputation.

Level	Men	Women	Total	%
Trans-tibial	95	19	114	50.0
Knee disarticulation	2	0	2	0.09
Trans-femoral	92	16	108	47.4
Hip disarticulation	2	2	4	1.8
Total	191	37	228	100.0

these persons.

Therefore, a questionnaire about mobility and social life was sent to all persons who were young at the time of amputation, to determine whether the lower limb amputation changed their social life and free time activities.

Subjects and methods

All persons after trans-tibial or higher level lower limb amputation who were at the time of amputation younger than 51 years, amputated because of injury, permanently resident in Slovenia and had visited the outpatient clinic for prosthetics of the Rehabilitation Institute of Slovenia at least once in the last five years (1989-94) were sent a questionnaire about mobility and social life. Some 519 persons were

sent a questionnaire, 391 (75.3%) responded but only 228 (58.3%) filled in questions about their free time activities.

The responses were statistically analysed by SPSS programme (Statistical Package for Social Sciences). The one way analysis of variance was used.

Results

Persons who answered the questionnaire were at present on average 53.3 years (SD 15.4 years) old. At the time of amputation they were on average 24.0 years (SD 10.0 years) old. A total of 191 (83.8%) were men and 37 (16.2%) women. About half of the persons had trans-tibial and about half trans-femoral amputation, whereas the disarticulations in joints were rare (Table 1).

Lower limb amputation severely changed the life style of persons who were young at the time of amputation. Almost half of the persons who answered the questions are less frequently visiting friends and relatives after the amputation and around two thirds are less frequently visiting the cinema, theatre, sport events and going to the library, dances and shows (Table 2). Persons who are less frequently visiting friends, cinema, theatre and

Table 2. How often are persons who were young at the time of amputation participating in social life.

Social activity	Less frequently		Equal		More frequently	
	No	%	No	%	No.	%
Friends	99	46.3	103	48.1	12	5.3
Show, dance	109	67.7	48	29.5	4	2.5
Cinema, theatre	107	71.3	37	24.7	6	4.0
Library	81	59.6	39	28.7	16	11.8
Sport events	95	64.6	41	27.9	11	7.5

Table 3. The influence of age at the time of amputation on social life - mean age (years) and standard deviation (SD).

Social activity	Less frequently		Equal		More frequently		p
	Mean age (years)	SD	Mean age (years)	SD	Mean age (years)	SD	
Friends	26.4	9.5	22.4	10.1	24.8	9.2	<0.05
Show, dance	24.5	9.3	20.8	9.5	19.0	11.0	<0.05
Cinema, theatre	23.8	9.3	21.5	8.3	16.3	3.3	=0.08
Library	24.0	8.9	22.9	8.4	20.6	11.3	Non sig.
Sport events	24.2	8.8	21.4	9.7	22.1	11.5	Non sig.

Table 4. The influence of present age on social life - mean age (years) and standard deviation (SD).

Social activity	Less frequently		Equal		More frequently		p
	Mean age (years)	SD	Mean age (years)	SD	Mean age (years)	SD	
Friends	58.5	13.4	48.1	14.7	47.1	17.2	<0.0001
Show, dance	54.2	14.0	42.1	13.3	49.8	25.2	<0.0001
Cinema, theatre	52.9	14.7	43.2	13.2	44.7	22.4	<0.005
Library	52.5	15.5	46.4	13.5	44.6	15.0	<0.05
Sport events	52.1	14.5	46.3	15.6	46.3	15.5	=0.08

Table 5. The influence of level of education on social life - mean level of education and standard deviation (SD). Level of education has a number from one to seven: 1 - less than eight years, 2 - primary school (eight years), 3 - vocational school, 4 - secondary school, 5 - high school, 6 - university, 7 - MS, PhD.

Social activity	Less frequently		Equal		More frequently		p
	Mean age (years) education	SD	Mean age (years) education	SD	Mean age (years) education	SD	
Friends	3.0	1.6	3.4	1.4	2.9	1.2	Non sig.
Show, dance	3.3	1.6	3.7	1.5	2.3	1.0	Non sig.
Cinema, theatre	3.4	1.5	4.1	1.5	3.0	1.3	<0.05
Library	3.4	1.5	3.8	1.6	4.0	2.0	Non sig.
Sport events	3.4	1.6	3.6	1.3	2.4	1.0	<0.05

going to dances and shows are those who were older at the time of the amputation (Table 3) and they are also those who are six to ten years

Table 6. Ten most often done activities in free time before the amputation,

Activity	Number of persons	
	Before amputation	After amputation
Cycling	86	25
Group games with ball	71	3+3 sitting volleyball
Farm work	67	11
Walking	61	66
Swimming	56	34
Hill walking	46	7
Dancing	46	8
Skiing	41	7
Gymnastics, recreation	30	8
Jogging	30	0

older today (Table 4). However participation in social life is not influenced significantly by the level of education (Table 5).

Amputation has a great influence also on free time activities. After the amputation 93 persons completely changed their free time activities and only 30 persons still take an interest in the same free time activities as before the amputation (Fig. 1). The three most frequent free time activities before amputation were cycling, team ball games and farm work (Table 6). After the amputation they were reading, watching television and/or listening to radio and music and housekeeping.

Discussion

This study shows that lower limb amputation severely changes the social life and free time activities of persons who were young at the time of amputation. It was found that one half to two thirds of persons who answered the questionnaire participated less frequently in social life (Table 1) and their free time activities were changed (Fig. 1, Tables 5 and 6).

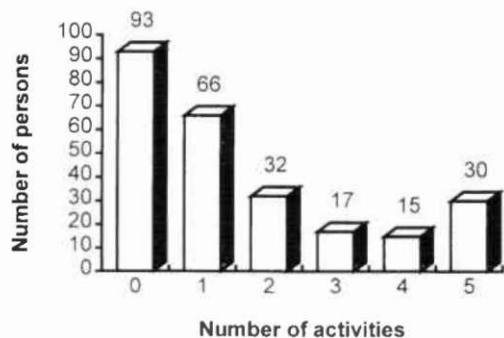


Fig. 1. Number of same free time activities the person was doing before and is still doing after the amputation.

Only 58.3% of persons who responded to the questionnaire answered the three questions about their free time activities. It is not known what the others are doing in their free time, but it is supposed that they are not very active. Some answered only what they did before the amputation and few that they have no free time.

Social activities depend on several factors. The most important are present age, age at the time of amputation and education. Present age may have a smaller direct and greater indirect influence on social activities. Directly the present age influences visiting friends and relatives, because older people may have fewer friends and relatives. An indirect influence may be through less mobility and associated diseases. Many authors (Narang *et al.*, 1984; Helm *et al.*, 1986; Pohjolainen *et al.*, 1989; Pohjolainen *et al.*, 1990; Siriwardena *et al.*, 1991; Campbell *et al.*, 1994; Tranter *et al.*, 1995; Bond *et al.*, 1995; Johnson *et al.*, 1995) reported that associated diseases and advanced age diminished mobility. The same was found also by the authors in a previous study (Burger *et al.*, 1995).

The influence of age at the time of amputation on social activities is small. Persons who were fairly young at the time of amputation are more frequently visiting the cinema and theatre and going to shows and dances. It may be that they were too young at the time of amputation and as they have grown up, they begin to go to these events more frequently.

The level of education influences mainly visiting cinema, theatre and sports events. The persons with the highest education are visiting these events as frequently as before the amputation and the persons with the lowest

education are visiting them more frequently. It may be that the persons who are visiting the events more frequently were very young at the time of amputation and still studying. Thus their education is low.

In contrast to the authors' expectation the level of amputation has no influence on social life of persons who were at the time of the amputation young.

Many persons after lower limb amputation completely changed their free time activities (Fig. 1), probably because they were not able to participate in the sport and recreational activities they were interested in before he amputation, therefore, the free time activities after the amputation become more sedentary and less dynamic (Tables 6 and 7). The same was found by many other authors (Narang *et al.*, 1984; Walker *et al.*, 1994; Nissen and Newman, 1992; Fairhurst, 1994).

In conclusion, it was found that lower limb amputation severely changes the social life and free time activities of persons who were young at the time of amputation. Thus it is recommended to include a recreational therapist in the rehabilitation of young persons after lower limb amputation. The recreational therapist should inform and teach patients alternate recreational activities, advise them on adaptations to sports equipment and give them

Table 7. Eleven most often done activities in free time after the amputation.

Activity	Number of persons	
	Before amputation	After amputation
Reading	105	23
Watching TV, listening music	84	9
Housekeeping	76	18
Walking	66	61
Gardening	51	27
Needlework	48	9
Visiting friends	34	26
Swimming	34	56
Parlour games	33	9
Cycling	25	86
Rest	24	0

information about sports clubs. All this may help persons to participate in recreational activities they were interested in before amputation or help them find new activities. In clubs they may find new friends and have more fun. The result may be smaller changes in social life and leisure activities and better quality of life (Bond *et al.*, 1995).

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