Original Article

Quality of life and its relationship with demographic variables among physically disabled patients with artificial limb

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Objective: To assess the quality of life and its relationship with sociodemographic variables among physically disabled patients with artificial limb replacement seen at our tertiary care facility.

Methodology: This descriptive cross-sectional study was carried out in the artificial limb centre of Fauji Foundation Hospital, Rawalpindi, Pakistan - a tertiary care facility. 100 consecutive out patients of both genders between ages of 13-60 years with artificial limb replacement from December 2011 to July 2012 were included in the study. The patients below age of 13 years, comorbid congenital limb deformities other than limb loss, having language barrier and who refused to participate in study were excluded from the study. A detailed assessment included: application of consent form, demographic profile assessment, and assessment of quality of life by applying WHO QOL BREF (Quality of life WHO Scale) Urdu version. The data were analyzed using SPSS version 10.

Results: Majority of the patients had average quality of life in all domains. Regarding relationship of sociodemographic factors with quality of life, the average quality of life in all domains (D1, D2, D3, D4) was found in all variables except those who were educated till intermediate were having low quality of life in domain 3 and 4 (P <0.05).

Conclusion: The results of current study should be considered carefully when planning assessment and rehabilitation programs for individuals with physical disabilities and limb replacement. (Rawal Med J 2013;38:134-138).

Key words: Artificial limb replacement, quality of life, disability.

INTRODUCTION

The loss of a limb is a devastating event. Persons with a new amputation face a complex set of tasks to return to an adaptive mobility status. The type and quality of the prosthesis affect the patient's physical and mental ability of adaptation. Rehabilitation practitioners and researchers need measures that can distinguish among levels of disability, predict prognosis, assist in patient care, and map changes in functional status as the result of interventions.[1] As a result of amputation, people have to cope with loss of a part of their body with consequences on their body image, the loss of mobility, following dependency on means such as wheelchairs and prostheses, and the loss of the ability to manage daily activities.[2] The majority of previous studies in this area focus on the impact of amputation or the effectiveness of rehabilitation programs.[3]

World Health Organization Quality-of-Life Scale (WHOQOL-Bref) includes Physical, Psychological, Social, and Environmental domains, and measures the individual's perception of their quality of life.[4] A co-ordinated approach by practitioners in the field of prosthetics is necessary to ensure the inclusion of quality of life as an outcome measure and to ensure its measurement in a standardized and rigorous manner.[5] The factors associated with the good quality of life (QOL) includes higher education, having been employed after amputation, and having good prosthetic wearing comfort.[6] The amputation of lower limb constitutes a major handicap and we can reduce the risk of this incapacity by a good and appropriate rehabilitation.[7] Amputees require comprehensive multidisciplinary treatment and compassion so that they can successfully overcome their losses.

Ultimately, the patients must change, adjust, and adapt to successfully reintegrate themselves into their families, peer groups, job settings, and society as a whole.[8] The aim of this study was to assess the quality of life (QOL) and its relationship with sociodemographic variables among physically disabled patients with artificial limb replacement reporting at artificial limb center of our tertiary care facility.

METHODOLOGY

A descriptive cross-sectional study was carried out in the artificial limb center of Fauji Foundation Hospital, Rawalpindi, Pakistan - a tertiary care facility. 100 consecutive out patients of both genders between ages of 13-60 years with artificial limb replacement from December 2011 to July 2012 were included in the study. The patients below age of 13 years, comorbid congenital limb deformities other than limb loss, having language barrier and who refused to participate in study were excluded from the study. Participating patients underwent detail assessments which included: application of consent form, demographic profile assessment, and assessment of quality of life after wearing prosthesis by applying WHO QOL BRIEF (Quality of life WHO Scale) Urdu version. WHO QOL BRIEF (Quality of life WHO Scale) was administered by trained psychologists.

Ethical permission was acquired from the hospital Ethical Committee. The data was entered into SPSS version 10. To calculate the relationship of sociodemographic factors and quality of life domains Chi square test was applied and P value of significance was calculated.

RESULTS

The demographic profile of patients is shown in Table 1. Majority of patients were having average quality of life in all domains. The relationship of sociodemographic factors with quality of life is shown in Table 2.

Table 1. Demographic characteristics of study population.

Demographic factors		**Number of patients**
Age (in years)	13-19	06
	20-40	42
	41-60	**45**
	Greater than 60 years	07
Education status	Primary	18
	Middle	**33**
	Secondary	20
	Intermediate	08
	Grauadtion	10
	Post graduation	02
	Illiterate	09
Residence	Rural	**62**
	Urban	38
Gender	Male	**75**
	Female	25
Marital status	Married	**80**
	Unmarried	20
Employment status	Employed	39
	Unemployed	**61**
Site of amputation	Lower limb	**92**
	Upper limb	07
	Both upper and lower limb	01
Duration of prosthesis	Less than 1 year	**43**
	1-5 years	34
	greater than 5 years	23

Table 2. Relationship of Quality of life with demographic factors.

Demographic Variables		D1 (physical)			D2 (psychological)			D3 (social)			D4 (environmental)		
		Low	Avg	High	Low	Avg	High	Low	Avg	High	Low	Avg	High
Age in years	13-19	0	5	1	0	5	1	2	3	1	0	5	1
	20-40	2	32	8	2	22	18	14	20	8	8	31	3
	41-60	4	39	2	4	34	7	14	26	5	13	27	5
	>60	2	4	1	1	5	1	3	3	1	2	3	2
	Total	8	80	12	7	66	27	33	52	15	23	66	11
	P value	**0.143**			**0.111**			**0.942**			**0.357**		
	Chi square	**9.588**			**10.339**			**1.743**			**6.621**		
Residence	Rural	3	49	10	3	40	19	19	36	7	13	45	4
	Urban	5	31	2	4	26	8	14	16	8	10	21	7
	Total	8	80	12	7	66	27	33	52	15	23	66	11
	P value	**0.112**			**0.318**			**0.232**			**0.109**		
	Chi square	**4.375**			**1.946**			**2.925**			**4.432**		
Gender	Male	7	57	11	4	50	21	22	41	12	18	50	7
	Female	1	23	1	3	16	6	11	11	3	5	16	4
	Total	8	80	12	7	66	27	33	52	15	23	66	11
	P value	**0.218**			**0.516**			**0.400**			**0.635**		
	Chi square	**3.044**			**1.322**			**1.832**			**0.908**		
Education	Illiterate	1	8	0	1	7	1	3	5	1	2	6	1
	Educated	7	72	12	6	59	26	30	47	14	21	60	10
	Total	8	80	12	7	66	27	33	52	15	23	66	11
	P value	**0.482**			**0.77**			**0.295**			**0.616**		
	Chi square	**11.552**			**19.487**			**14.083**			**9.998**		
Marital status	Married	8	62	10	6	50	24	26	42	12	22	50	8
	Unmarried	0	18	2	1	16	3	7	10	3	1	16	3
	Total	8	80	12	7	66	27	33	52	15	23	66	11
	P value	**0.302**			**0.330**			**0.976**			**0.099**		
	Chi square	**2.396**			**2.219**			**0.050**			**4.628**		
occupation	Employed	4	31	4	3	23	13	11	22	6	7	27	5
	Unemployed	4	49	8	4	43	14	22	30	9	16	39	6
	Total	8	80	12	7	66	27	33	52	15	23	66	11
	P value	**0.752**			**0.479**			**0.708**			**0.606**		
	Chi square	**0.571**			**1.472**			**0.691**			**1.003**		

DISCUSSION

The objective of the current study was to assess the quality of life and its relationship with demographic variables among physically disabled patients with artificial limb replacement. World Health Organization Quality-of-Life Scale (WHOQOL-

Bref) includes Physical, Psychological, Social, and Environmental domains, and measures the individual's perception of their quality of life.[4] In our study, majority of patients had average quality of life in all domains. Early prosthetic fitting, training, and physical rehabilitation; early psychological and sociological support; and early return to work facilitate successful functional recovery. Psychological recovery may be a more arduous and extended process than physical recovery. We must teach our amputees from the outset to use their losses as an incentive for success, assist them to regain their quality of life, and encourage them to act as role models for and to educate others.[8]

Most of our patients were middle age, rural residents, male, married, unemployed, educated till middle class, lower limb amputees and were wearing prosthesis for less than one year. Studies done worldwide also favored the results of current study. A study on health related quality of life among the Thai people with unilateral lower limb amputation found that most of patients were middle age, male, with unilateral lower limb amputation. The factors associated with the good quality of life were higher education, and having good prosthetic wearing comfort.[5,6,7,9] On the other hand, in one of the studies done on lower limb amputees and their clinical evolution from the accident until rehabilitation discharge, majority of patients were employed that is against the finding of current study.[6,9]

Therefore, the assessment of the quality of life and its relationship with demographic variables suggests that a good number of psychosocial, disease, and disability-related variables influence the adaptation process after the loss of a limb. Thus, measures for psychological diagnostics and care should be initiated soon after the amputation to prevent psychological abnormalities. Here interdisciplinary management and cooperation of the professions involved in the care of the patient are recommended.[10]

Keeping in view the impact of amputation on individual's mental health, this study identified possible avenues which will provide basis for further research regarding this serious issue and highlight the need for future investigations of specific social, behavioral and other factors associated with the burden of disease. A coordinated approach by practitioners in the field of prosthetics is necessary to ensure the inclusion of quality of life (QOL) as an outcome measure and to ensure its measurement in a standardized and rigorous manner.

The limitations of current study were the chances of information bias as the QOL-BRIEF was administered by different researchers. This was the descriptive cross sectional study and to compare the socio-demographic characteristics with quality of life a case-control study should be designed. The study was conducted only in a Pakistani settings and sample size was too small to generalize the conclusion.

CONCLUSION

This study revealed an average quality of life in all domains in majority of patients with artificial limb replacement. In rehabilitation programs, not only physical disability assessment but also quality of life should be considered. There should be a careful planning for amputees so that they can adjust and cope with the difficulties of life.

REFERENCES

1. Carolyn E, Janice A. Quality of life in patients with prosthetic legs: A comparison study. J Prosthet Orthot 2009;21:154-9.
2. Mohler R, Schnepp W. Lived experience and management of the every-day life after lower-limb amputation caused by vascular diseases. Pflege 2010; 23:99-107.
3. Liu F, Williams RM, Liu HE, Chien NH. The lived experience of persons with lower extremity amputation. J Clin Nurs 2010;19:2152-61.
4. Deans SA, McFadyen AK, Rowe PJ. Physical activity and quality of life: A study of a lower-limb amputee population. Prosthet Orthot Int 2008;32:186-200.
5. Gallagher P. Measuring quality of life in prosthetic practice: benefits and challenges. Prosthet Orthot Int 2007 ;31:167-76.
6. Dajpratham P, Tantiniramai S, Lukkanapichonchut P. Health related quality of life among the Thai people with unilateral lower limb amputation. J Med Assoc Thai 2011;94:250-5.
7. Mezghani-Masmoudi M, Guermazi M,Feki H, Ennaouai A, Dammak J, Elleuch MH. The functional and

professional future of lower limb amputees with prosthesis. Ann Readapt Med Phys 2004;47:114-8.
8. Freeland AE, Psonak R. Traumatic below-elbow amputations. Orthopedics 2007;30:120-6.
9. Rotter K, Sanhueza R, Robles K, Godoy M. A descriptive study of traumatic lower limb amputees from the Hospital Hel Trabajador: clinical evolution from the accident until rehabilitation discharge. Prosthet Orthot Int 2006;30:81-6 .
10. Seidel E, Lange C, Wetz HH, Heuft G. Anxiety and depression after loss of a lower limb. Orthopade 2006; 35:1152-8 .