

Profile of Lower Limb Amputees attended at a tertiary care Hospital: A Descriptive study

Dr. Battilal Jadeja,¹ Dr. Afifa Zafer², Dr. Rajeswari Jindal³ and Dr. Kusum Gaur⁴

¹Third Year Resident, Department of PSM, SMS Medical College, Japur (Rajasthan) India

^{2,4}Professor, Department of PSM, SMS Medical College, Japur (Rajasthan) India

³Professor, Department of PMR, SMS Medical College, Japur (Rajasthan) India

Abstract— Amputation is one of the major causes of permanent disability. In addition, amputation can often be associated with anxiety, isolation and depression which may change the social and free time activities of the person with lower limb amputation. So this present study was conducted to know profile of lower limb amputees this study was conducted on 500 lower limb amputees in attendees of PMR Department of SMS Medical College, Jaipur (Rajasthan) India. In this present study mean age of amputees was 39.7 years with age range 18-60 years and males predominate over females to 9 times. Rural background amputees slightly predominate in number over urban background amputees. Hindu predominate in number over Muslim to 8.6 times. religion 10.2%. About 2/3 of amputees were married while 28.8% were unmarried in this present study. Majority (92.2%) of amputees had unilateral only 7.8% were bilateral. Majority (82.8%) of amputees were either illiterate or educated upto secondary and above secondary were only 18.2%. Majority (57.6%) of the amputees had agricultural related work and only 0.4% of amputees were engaged in professional occupation. About 50% of amputees were either smoker or tobacco chewer and alcohol user were reported only 9.6%. In the present study it was observation that the most common cause of lower limb amputees was trauma (81%) followed by vascular disease (15.6%), diabetes mellitus (3.2%) and bone cancer (0.2%).

Key words: Amputation, lower limb amputees, Physical Medical Rehabilitation (PMR)

I. INTRODUCTION

An amputation is the complete or partial removal of a limb and is only performed when all other attempts to save the limb have failed¹. Amputation is one of the major causes of permanent disability. In addition, amputation can often be associated with anxiety, isolation and depression which may change the social and free time activities of the person with lower limb amputation which can ultimately adversely affect the quality of life of the lower limb amputees particularly. The incidence of lower limb amputation is also higher than the upper limb².

In developed countries, vascular complications are the major contributors to lower limb amputations whereas in developing countries, traumatic accidents are the major cause of amputation³. Limitations in body structure and function due to amputation affects the activity level, and thereby, the participation of the individual in the society⁴. Additionally, personal and environmental factors play important roles in determining outcomes after amputation and also long term functioning of amputees⁴. Lower Limb amputees as compared to Upper Limb amputees experience more changes in their life after the amputation. According to World Health Organization, India has highest number of road traffic accidents in the world as per the data that may lead to a significant cause of lower limb amputation⁵. 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 activities⁶

So this present study was conducted to know profile of lower limb amputees in attendees of PMR Department of SMS Medical College, Jaipur (Rajasthan) India.

II. Methods

A Hospital based descriptive type of observational study was conducted on 500 lower limb amputees in the physical medicine & rehabilitation (PMR) centre SMS Hospital Jaipur (Rajasthan). This hospital is attached to Sawai Man Singh (SMS) Medical College.

All eligible attendees fulfilling inclusion criteria were approached by investigator himself at OPD of PMR centre. They were explained about nature and purpose of the study after developing the rapport with the attendees. A brief description about questionnaire was given by investigator to enhance their understanding about the questions. During the survey the purpose of the study was explained and written inform consent was taken from the respondent and he /she was assured about secrecy and confidentiality of the information provided.

Data thus collected on a semi structured, pre designed schedule were entered in Microsoft excel sheet to prepare master chart, tabulated and analysed to get inferences. Significance of difference in proportions was inferred by Chi-square test and significance of difference in means was inferred by unpaired 't' tests. For significance 'p value' equal or less than 0.05 was considered significant.

III. Results

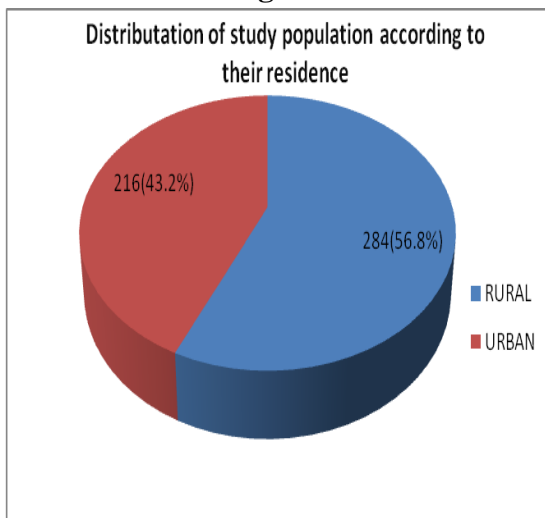
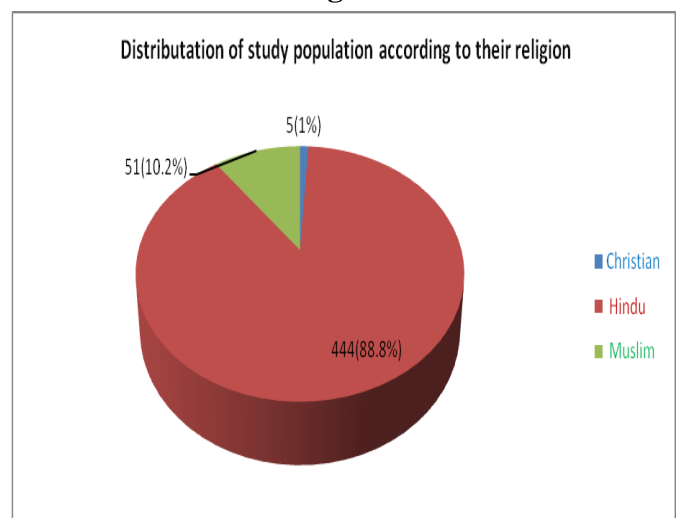
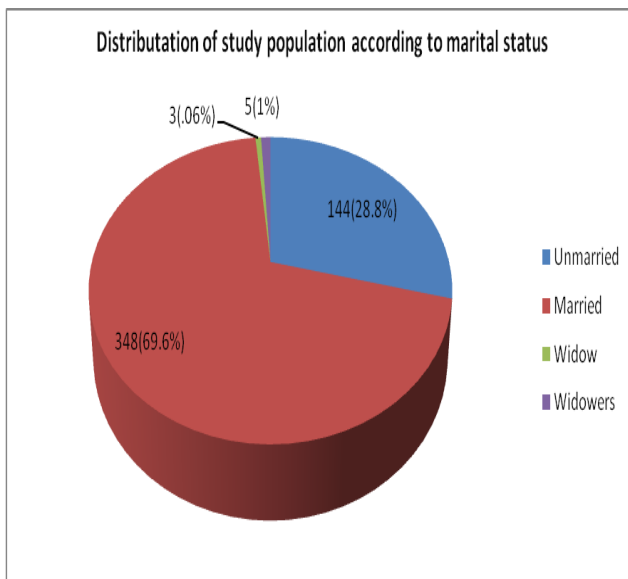
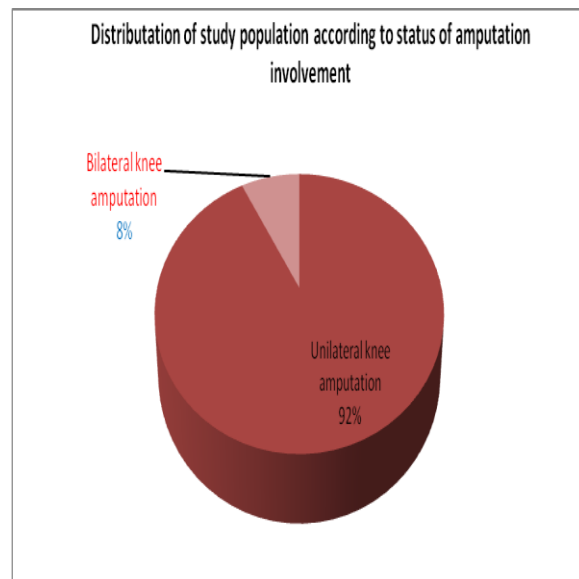
In this present study, majority 165 (33%) of study participants were 30 year or below followed by 116 (23.2%) belonging to 51 to 60 year and 115 (23%) from 31 to 40 year of age group. Only 104 (20.8 %) were 41 to 50 years of age and male participants (92%) were more as compared to females (8%). (Table 1)

Table 1

Distribution of study population according to age and sex

S. No.	Age Groups (in Years)	Females	Males	Total	
				No.	%
1	≤ 30	14	151	165	33
2	31-40	4	111	115	23
3	41-50	7	97	104	20.8
4	51-60	15	101	116	23.2
Grand Total		40	460	500	100

It was also observed out of 500 amputees, that 284 (56.8%) amputees were from rural setting while 216 (43.2%) were from urban background. (Figure 1). And majority, i.e. 444 (88.8%) belonged to Hindu religion compared to Muslim religion 51 (10.2%) and Christian 1% (Figure 2). More than two third of the amputees 348 (69.6%) were married while 144 (28.8%) were unmarried and 5 (1%) were widowers and 3 (0.6%) were widows. (Figure 3). Majority of amputee were having unilateral lower limb 461(92.2%) and only 39 (7.8%) were Bilateral. (Figure 4)

Figure 1**Figure 2****Figure 3****Figure 4**

Maximum amputees were illiterate 178 (35.6%), followed by primary 97 (19.4%) and middle 74 (14.8%); secondary 60 (12%) and higher secondary 44 (8.8%) and graduate 40 (8%) while post graduates were minimum 7 (1.4%). (Table 2)

Table 2**Distribution of Lower Limb Amputees according to their Educational Status**

S. No.	Education status	No.	%
1	Illiterate	178	35.6
2	Primary	97	19.4
3	Middle	74	14.8
4	Secondary	60	12
5	High secondary	44	8.8
6	Graduation	40	8
7	Post graduation	7	1.4
Grand Total		500	100

It also observed that maximum amputees were agricultural workers 288 (57.6%) and the next group was skilled & unskilled workers 210 (>40%) and professionals were only 2 (0.4%). (Table 3)

Table 3**Distribution of Lower Limb Amputees according to their Occupational Status**

S. No.	Occupation status	No.	%
1	Agricultural	288	57.6
2	Professional	2	0.4
3	Skilled	44	8.8
4	Unskilled	166	33.2
	Total	500	100

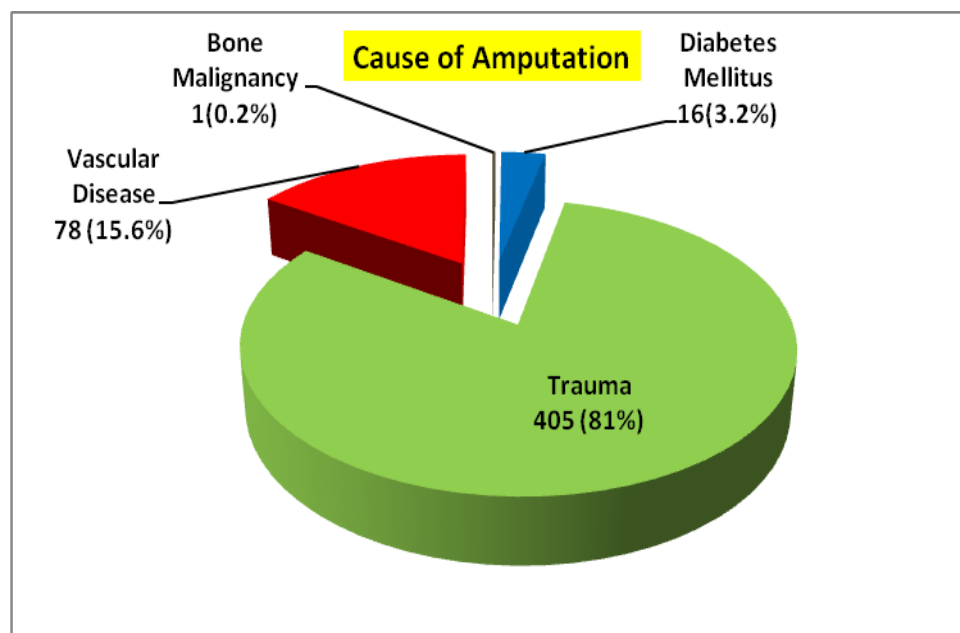
It was also observed that tobacco chewing was found in 224 (44.8%) amputees, smoking was present in 217 (43.4%) of them . surprisingly alcohol use was reported by only 48 (9.6%) amputees .this underreporting may be because of social stigma attached to alcohol use.

Table 4
Distribution of Lower Limb Amputees according to Personal Habits

S. No.	Personal Habits	No.	%
1	Tobacco	224	44.8
2	Smoking	217	43.4
3	Alcohol	48	9.6
4	Any others	10	2
	Total	500	100

When cause of amputation was revealed it was found that most common cause of lower limb amputation was trauma in 405 (81%); followed by vascular disease 78 (15.6%); DM 16 (3.2%) and bone malignancy 1 (0.2%). (Figure 5)

Figure 5



IV. Discussion

This present study observed that majority (33%) of study participants were 30 year or below followed by 23.2% belonging to 51 to 60 year and 23% from 31 to 40 year of age group with mean age of 39.7 years (range 18-60 years). Males predominate over females (92% v/s 8%). These findings are well comparable with the observations of other author's like Waleed Salah Eldin, et al (2013)⁷ who observed that most subjects were males 90.1% and a mean age of 40.1 years (range, 18–60 years). Sinha R, et al (2011)⁸ reported mean age of lower limb amputee in their study 43.7±15.0 years. Amanda H. Peirano, et al (2012)⁹ also male predominance over females (66.3% v/s 33.7%) with majority (58.3%) of

participants 51 years of age and older. More closure observations were made by Dajpratham P, et al (2011)¹⁰ and H. Burger, et al (1997)¹¹ who also found male predominance over females (79.5% v/s 20.5% and 83.8% v/s 16.2% respectively).

The present study also found that 56.8% amputees were from rural setting while 43.2% were from urban background. These findings are well comparable with the observations of other authors Prena Malik, et al (2010)¹² who reported that almost equal percentage of subjects came from urban as well as rural background. Similar observation was made by Waleed Salah Eldin, et al (2013)⁷ they found amputees from rural background 55.7% and urban 44.3%.

In the present study it was also found that majority of amputees, i.e. 88.8% belonged to Hindu religion compared to Muslim religion 10.2%. In contrast this Nassir Muzaffar, et al (2012)¹³ who observed majority (95%) of amputees belonged to Islam religion as compared to Sikhism (3%) and Hinduism (2%). This difference may be because of difference in area where the study was conducted.

Majority (69.6%) of the amputees were married while 28.8% were unmarried in this present study. These findings are well comparable with the observations of other author's like Arupendra Mozumdar, et al (2010)¹⁴ who also found 65.7% married amputees in their study (65.7%). Likewise Amanda H. Peirano, et al (2012)⁹ found 70.1% married, 11.1% were divorced/separated, single (10.2%), widowed (5.6%) and with no response (2.9%) in their study.

Out of the 500 lower limb amputees studied, majority (92.2%) of amputees had unilateral lower limb followed by bilateral (7.8%). These findings are well comparable with by Maqsood Mehreen, et al (2015)¹⁵ who reported that majority (91%) of amputees are unilateral and remaining 9% belonged to bilateral LLA.

Majority (35.6%) of amputees were illiterate followed by primary (19.4%) and middle (14.8%); secondary (12%) and high secondary (8.8%) and graduate (8%) while post graduates were minimum (1.4%) in this study. Well comparable observation made by Waleed Salah Eldin, et al (2013)⁷ who observed that illiterate were 19.8%, just literate were 12.2%, Primary education 13%, Secondary education 32.1% and university 15.3% graduate and above. Arupendra Mozumdar, et al (2010)¹⁴ also found that an average the participants had secondary level of education (58.8%).

Majority i.e. 57.6% of the amputees had agricultural related work and only about 40% amputees belonged to skilled and unskilled worker category remaining 0.4% of amputees were engaged in professional occupation in this study. These findings are comparable with the observation of other authors like. Muzaffar, et al (2012)¹³ observed that majority were Domestic workers(42%) followed by Unskilled laborers(19%), Students (17%), Businessmen (16%), Govt. employees (06%) in their study.

Majority (44%) of amputees was tobacco chewer, 44% smokers and alcohol users were reported only by 9.6% of amputees in this study. These studies are well comparable with other authors. Maqsood Mehreen, et al (2015)¹⁵ who found that majority (66%) of patients were bidi smokers, 16.6% patients cigarette smoker, 16.6% patient tobacco chewer and 16.6% patient had no such history. Nassir Muzaffar, et al (2012)¹³ who observed that majority of LLA had addiction mostly nicotine.

In the present study it was observed that the most common cause of lower limb amputees was trauma (81%); followed by vascular disease (15.6%) and diabetes mellitus (DM) (3.2%). These findings are well comparable with the observation of other authors like Hussein H, et al (2009)¹⁶ and Richa Sinha, et al

(2014)¹⁷ also observed that the main cause of amputation was trauma. Nearly similar observation made by James Behr, et al (2009)¹⁸ who reported primary causes of the limb loss was trauma (74%) followed by vascular disease (24%), gangrene (17%) and infection (12%).

CONCLUSIONS

In this present study mean age of amputees was 39.7 years with age range 18-60 years and males predominate over females to 9 times. Rural background amputees slightly predominate in number over urban background amputees. Hindu predominates in number over Muslim to 8.6times. religion 10.2%. About 2/3 of amputees were married while 28.8% were unmarried in this present study. Majority (92.2%) of amputees had unilateral only 7.8% were bilateral. Majority (82.8%) of amputees was either illiterate or educated up to secondary and above secondary were only 18.2%. Majority (57.6%) of the amputees had agricultural related work and only 0.4% of amputees were engaged in professional occupation. About 50% of amputees were either smoker or tobacco chewer and alcohol user were reported only 9.6%.

In the present study it was observation that the most common cause of lower limb amputees was trauma (81%) followed by vascular disease (15.6%), diabetes mellitus (3.2%) and bone cancer (0.2%).

CONFLICT OF INTEREST

None declared till now.

REFERENCES

1. Lower limb amputation a guide for you and your relatives. University Hospital of South Manchester Amputee Team. 2013 December.
2. Kathryn Ziegler-Graham, Ellen J. MacKenzie, Patti L. Ephraim, Trivison TG, Brookmeyer R. Estimating the prevalence of limb loss in the United States: 2005 to 2050. Arch Phys Med Rehabil .2008; 89(3):422-9
3. Esquenazi A. Amputation rehabilitation and prosthetic restoration. from surgery to community reintegration. DisabilRehabil .2004; 26(14-15):831-6
4. Üstün TB, Chatterji S, Bickenbach J, Kostanjsek N, Schneider M. The International Classification of Functioning, Disability and Health: a new tool for understanding disability and health. DisabilRehabil .2003; 25(11):565-71
5. Hagberg K, Temporal amputation, Quality of life and prosthetic function. Institute of clinical sciences, Georgis university. 2006
6. Mohler R, Schnepf W. Lived experience and management of the every-day life after lower-limb amputation caused by vascular diseases. Pflege. 2010; 23:99-107
7. Waleed Salah Eldin, Jon Mark Hirshon, Gordon S Smith, Abdel-Aziz Mohamad Kamal, Aisha Abou-El-Fetouh, Maged El-Setouhy. Health-related quality of life after serious occupational injury in Egyptian workers: a cross-sectional study. Published by bmjopen.bmj.com. 2013 January; 1-9
8. Sinha R , WJA van den Heuvel, P Arokiasamy. Factors affecting quality of life in lower limb amputees. Prosthetics Orthotics International, 2011; 35(1):90-6
9. Amanda H. Peirano, and Randall W. Franz Spirituality and Quality of Life in Limb Amputees. Int J Angiol. 2012 Mar; 21(1): 47-52
10. 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

11. H. Burger, C. Marine .The life style of young person's after lower limb amputation caused by injury. *O&P Library >POI>*1997; 21(1):35-39
12. Perna Malik, Rajinder Garg, Anil Gulia, Naveen Kumar, Balwant Singh Sidhu, Kuldeep C Sharma .Quality of life in posttraumatic orthopedically handicapped patients. *Indian Journal of Medical Sciences.*2010;64(5):224-233
13. Nassir Muzaffar, Intiaz Mansoor, Arifa Hafeez. Psychiatric Comorbidity in Amputees with Average Sociodemographic Status and the Role of Theologic and Family Support in a Conflict Zone. *Australasian Journal of Disaster and Trauma Studies* .2012 ;(1):31-38
14. Arupendra Mozumdar, Subrata K. Roy. Depression in adult males with lower extremity amputation and its bio-social correlates.*health.*2010;8(2):878-889
15. Maqsood Mehreen, Ali Nadeem, Bhat Abedullah, Bangroo Firdous A, Dhanda Manjit Singh, Singh Rajinder. Current trends of major lower limb amputations at a tertiary care centre of Jammu, India. *International Journal of Medical Science Research and Practice.* 2015; 2 (2):77-80
16. Hussein H. Atiyah, PhD Widad K. Mohammed, PhD. Determination of Quality of Life for Adult Patients with Limbs Loss. *Sci. J. Nursing.* 2009 ;22(1):72-82
17. Richa Sinhaa, Wim J.A. van den Heuvela, Perianayagam Arokiasamyb and Jitse P. van Dijke. Influence of adjustments to amputation and artificial limb on quality of life in patients following lower limb amputation. *International Journal of Rehabilitation Research.* 2014; 37(1):74-79
18. James Behr, Janna Friedly, Ivan Molton, David Morgenroth, Mark P. Jensen, and Douglas G. Smith. Pain and pain-related interference in adults with lower-limb amputation: Comparison of knee-disarticulation, transtibial, and transfemoral surgical sites. *J Rehabil Res Dev.* 2009; 46(7): 963-972.