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Prosthetic Use, Satisfaction, and Activity Limitations Among Lower Limb Amputees in India: A Cross-Sectional Study

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Abstract
The experiences of lower limb amputees in India using prosthetic limbs were examined in this study, with a focus on prosthetic usage, limitations, and satisfaction. Prosthetic limbs were found to enhance stability and gait, thereby reducing fatigue and improving mobility. The findings underscore the importance of incorporating psychosocial support and counseling into rehabilitation programs to help amputees overcome emotional challenges and adapt more effectively. However, issues related to prosthetic comfort remain significant, highlighting the need for improved prosthetic design. The study also found that prosthesis usage is significantly influenced by factors such as age, education, and cause of amputation, but not by gender or employment status. Overall, this study highlights the daily challenges faced by amputees and suggests strategies for enhancing mobility, reducing complications, and promoting greater independence
Key words: Lower limb amputation, Prosthetic satisfaction, Activity limitations, Rehabilitation, Prosthetic use

Introduction

Mobility impairment is a significant public health issue in India, affecting approximately 20% of the population, with 2.2% living with disabilities (Verma, 2016). Disabilities often lead to discrimination, social isolation, and diminished quality of life, particularly among vulnerable groups such as the poor, uneducated, elderly, and women. Amputation—the surgical or traumatic removal of a limb—is one of the most common acquired disabilities and represents a major life-changing event (Mohammed & Shebl, 2014). Major lower limb amputations, defined as removal of a limb segment proximal to the ankle, impose profound psychological, physical, and socioeconomic burdens (Agha et al., 2017).

Prosthetic limbs are essential for restoring function and independence; however, user satisfaction with these devices is crucial for optimal rehabilitation outcomes and medical compliance (Smith et al., 2020). The adaptation process is further complicated by comorbid conditions such as diabetes and the need for advanced, personalized prosthetic technologies (Kumar et al., 2017; Brauckmann et al., 2024).

This study aims to explore the experiences of lower limb amputees using prosthetic limbs in India, with a focus on the relationship between demographic factors, prosthesis performance, satisfaction, and limitations in activities of daily living (ADL). By investigating these factors, the study seeks to provide insights that can inform more effective rehabilitation strategies and improve the quality of life for amputees

Objectives

1. To understand the life experiences of lower limb amputees.
2. To identify constraints faced by prosthetic limb users in their ADL.

Methodology

The study utilized a cross-sectional observational design to explore the daily experiences of lower limb amputees using prosthetic limbs. A total of 100 participants aged 20 years and above were recruited through convenience sampling, which involves selecting individuals who are easily accessible to the researcher (Rahi, 2017). Data were collected using a structured interview schedule administered one-on-one by the investigator, after explaining the study's purpose and obtaining informed consent. The questionnaire gathered information on demographic details, causes and degree of amputation, duration since amputation, and laterality. Data analysis was performed using SPSS software, employing frequency counts, percentages, ANOVA, t-tests, and correlation analyses to examine relationships among demographic factors, causes of amputation, satisfaction, and limitations in daily activities. The methodology aimed to provide a comprehensive understanding of the factors influencing prosthetic limb users' adaptation and satisfaction.

Hypothesis

- H_a1-There would be a significant difference between age, education, income, causes, laterality with satisfaction, limitation and prosthetic use of prosthetic users
- H_a2-There would be a significant difference between prosthetic use and satisfaction with prosthesis attributes and limitation

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Result and Discussion

Table : 1 Demographic characteristic

Demographic Characteristic	Category	Percentage (N=100)
Age	20–40	42
	41–50	47
	≥51	11
Education	Primary	13
	High school	23
	HSC (Higher Secondary)	12
	Graduate	47
	Illiterate	5
Gender	Male	69
	Female	31
Marital Status	Married	21
	Unmarried	75
	Separated/Widow	4
Employment Status	Working	68
	Not working	32
Monthly Income (INR)	Below 10,000	16
	10,000–20,000	39
	20,000–30,000	9
	Above 30,000	3
	No income	33

The present study's demographic findings align closely with prior research on lower limb amputees in India. Consistent with Swarnakar et al. (2023), the majority of amputees were males (69% in this study vs. approximately 70–80% in national data) and predominantly within the working-age group (20–50 years), reflecting the high incidence of trauma-related amputations in this demographic. Similarly, Mohan (1986) reported that over 90% of amputees in India are lower limb amputees, with males outnumbering females by about 4:1, which matches the gender distribution observed here.

The leading cause of amputation in this study was trauma (49%), followed by congenital conditions (27%) and tumors (14%). This is consistent with the epidemiological pattern described by Swarnakar et al. (2023), where trauma accounts for around 70% of amputations, especially among younger adults, while peripheral vascular disease and diabetic foot complications are more common in older populations. The relatively high proportion of congenital cases in this sample may reflect regional or sampling variations but aligns with the understanding that congenital limb deficiencies contribute notably to prosthetic use.

Prosthetic usage patterns in this study, including adaptation within 1–4 months and training durations of 2–4 weeks for most participants, correspond with rehabilitation practices reported in tertiary centers (Reddy, 2024). The high satisfaction with prosthetic attributes such as appearance and utility, contrasted with lower comfort satisfaction, echoes findings by Baars et al. (2018) and Khalid Alluhydan et al. (2023), who emphasize socket fit and comfort as critical factors affecting prosthetic acceptance.

Activity limitations reported—especially difficulties with stair climbing and walking long distances—are in line with Gailey et al. (2019) and Ephraim et al. (2020), who highlight mobility challenges due to energy expenditure and balance issues in lower limb amputees. The significant psychosocial impact, including stigma and reduced marriage prospects, also mirrors findings by Verma (2016) and recent psychological adjustment studies (Kumar et al., 2017; Brauckmann et al., 2024). Overall, this study corroborates national and international data on the epidemiology, challenges, and rehabilitation needs of lower limb amputees in India, while contributing valuable localized data on prosthetic satisfaction and daily activity limitations.

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Causes of amputation

The causes of amputation are diverse, including traumatic injuries, congenital conditions, tumors, and diseases such as diabetes or vascular disorders. Regardless of the underlying cause, amputation often leads to a loss of independence and requires a comprehensive rehabilitation process to facilitate adaptation to prosthetic devices and restore functional capacity (Sabzi Sarvestani, & Taheri Azam 2013; Kim, et al.,2025). The table clearly indicates that , Trauma is the most common cause of amputation in this dataset, accounting for nearly 70% of cases. This is consistent with findings from several regions, especially in developing countries, where trauma (including road traffic accidents, occupational injuries, and violence) is the predominant cause of limb loss. Trauma-related amputations are particularly prevalent among younger adults and often result from preventable incidents, highlighting the importance of injury prevention and safety regulations. Diabetes is the second most common cause and is responsible for 20% of amputations. Diabetes leads to limb loss primarily through complications such as peripheral vascular disease, chronic foot ulcers, infections, and gangrene. The risk of amputation increases with poor glycemic control and the presence of comorbidities like peripheral arterial disease. Congenital limb deficiencies account for a smaller (7 per cent) but significant proportion of amputations. These are due to developmental anomalies present at birth and tend to remain relatively stable over time. Amputations due to tumors (4 per cent), such as bone cancers or soft tissue sarcomas, represent a minority of cases.

Table: 2 Causes of Amputation

Causes	Percentage (%)
Accident (Trauma)	69
Congenital	07
Tumor	04
Diabetic Mellitus	20

Amputation Characteristics:

The laterality, level of amputation, and duration since amputation also played a significant role in determining the functional, emotional, and social impact on individuals

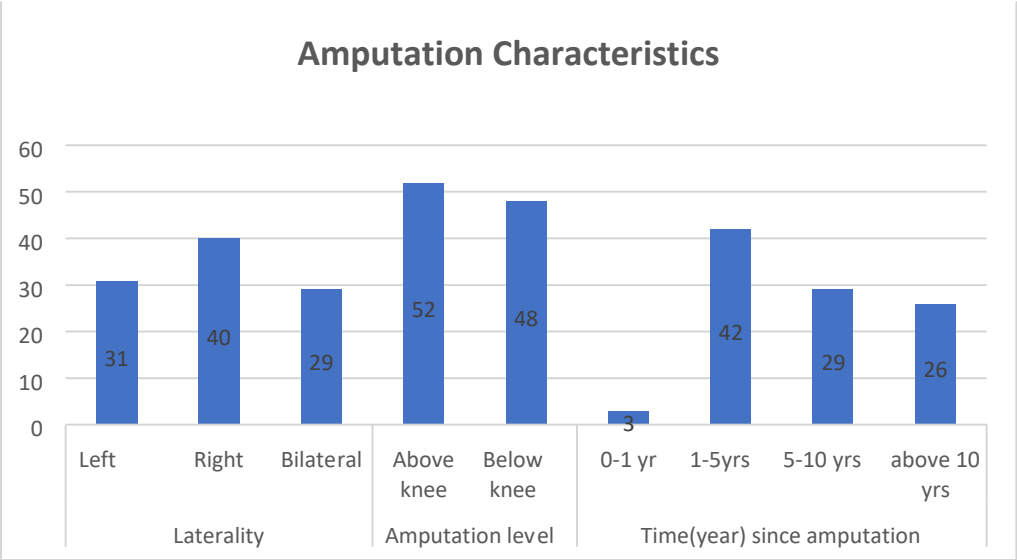

Figure 1 Amputation Characteristics

The Table indicates that limb laterality was nearly balanced among amputees, with right-side amputations accounting for 40% and left-side for 31%. Bilateral amputations comprised a significant 29% of cases, underscoring that a considerable proportion of individuals require more complex rehabilitation and prosthetic adaptation. The high incidence of bilateral cases highlights the need for specialized support and rehabilitation strategies tailored to these patients.

***Level of Amputation*:** Above-knee amputations were slightly more prevalent (52%) compared to below-knee amputations (48%). This distinction is clinically significant, as below-knee amputations generally offer better prospects for mobility and prosthetic function, potentially leading to more favorable adaptation outcomes and improved quality of life.

***Duration since Amputation*:** Most amputees (42%) had undergone amputation within the past 1–5 years, indicating ongoing challenges with rehabilitation and prosthetic adaptation. Additionally, 26% were long-term amputees (over 10 years since amputation), emphasizing the need for sustained rehabilitation and continuous prosthetic support to address evolving needs over time.

***Implications for Rehabilitation and Quality of Life*:** The findings highlight the profound impact of trauma-related amputations and the complex challenges faced by amputees, particularly those with bilateral or above-knee amputations. The degree and duration of amputation can significantly influence prosthesis embodiment and satisfaction, affecting overall adaptation and quality of life.

This study underscores the importance of understanding the medical and demographic characteristics of amputees—

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including laterality, level, and duration of amputation—to inform targeted rehabilitation strategies. Comprehensive, individualized rehabilitation and ongoing prosthetic support are essential to enhance functional outcomes and quality of life for all amputees, especially those with more complex needs.

Table 3: Prosthetic Usage Among Limb Users

Prosthetic usage	Variable	Percentage (n=100)
Time lapse	Less than a month	7
	1-2 months	39
	2-4 months	39
	More than 4 months	15
Training period	No training	7
	Less than 2 weeks	23
	2-4 weeks	55
	1-2 months	15
Prosthetic limb usage(years)	0-1	4
	1-5	37
	5-10	34
	above 10	25
Hours of usage prosthesis/day	Do not wear at all	2
	0-4 hours	24
	5-9 hours	46
	All day	28
Prosthesis lifespan before replacement	6 months	2
	1 year	23
	One and half year	9
	2 years	66

The data in the above table provides a comprehensive overview of prosthetic usage patterns among limb amputees, highlighting several key variables:

1. **Time Lapse After Amputation**: Most users (78%) began using a prosthesis within the first four months post-amputation (39% within 1–2 months, 39% within 2–4 months), while a smaller proportion (7%) started within a month, and 15% after more than four months. Early fitting and use of prostheses are generally associated with better adaptation and functional outcomes, as timely rehabilitation can reduce complications and improve confidence in prosthesis use
2. **Training Duration**: The majority (55%) received 2–4 weeks of training, with another 23% receiving less than two weeks, and 15% undergoing 1–2 months of training. Notably, 7% had no training at all. Adequate and structured training is crucial for maximizing prosthesis function, user satisfaction, and long-term usage. Lack of training or insufficient duration can contribute to poor adaptation and higher rejection rates
3. **Duration of Prosthetic Usage**: Most users (71%) have used their prosthesis for 1–10 years (37% for 1–5 years, 34% for 5–10 years), with 25% using it for more than 10 years and only 4% for less than a year. This distribution suggests a stable user base with a significant proportion of long-term users, highlighting the importance of ongoing support and periodic reassessment to address evolving needs
4. **Daily Hours of Prosthesis Use**: Usage patterns vary: 46% wear their prosthesis for 5–9 hours daily, 28% all day, 24% for 0–4 hours, and 2% do not use it at all. Extended daily use generally reflects higher comfort, better fit, and greater

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satisfaction, while limited use or non-use may indicate issues with comfort, prosthesis function, or psychosocial adaptation

5. **Prosthesis Lifespan Before Replacement**: Most users (66%) reported a prosthesis lifespan of two years before replacement, with others replacing at one year (23%), one and a half years (9%), and only 2% at six months. The typical two-year replacement cycle aligns with international standards, reflecting wear-and-tear, evolving user needs, and technological advances. Timely replacement is essential to maintain function and user satisfaction

The data highlighted the importance of early prosthetic fitting, adequate training, and regular follow-up for optimal prosthesis use. Most users adapt within a few months post-amputation and use their prosthesis for several years, with daily use patterns indicating generally good adaptation. However, a notable minority either receive insufficient training or do not use their prosthesis regularly, underscoring the need for individualized rehabilitation programs and ongoing support to address barriers to successful prosthetic use.

Resistance training combats muscular weakness brought on by decreased prosthetic use and physical inactivity, which helps lower limb amputees with strength imbalances. Walking ability is improved, muscular atrophy is decreased, limb strength imbalances are corrected, and hip strength, stability, and gait are all improved by this exercise. Prosthetic limbs increase involvement in daily activities by improving walking stability, lowering tiredness, and enabling better mobility on a variety of terrains. Poor prosthetic design, however, can cause despair and dissatisfaction, which reduces the use of prosthetics. In order to help amputees emotionally and psychologically adjust to using prosthetics, the study underlined the value of psychosocial support and counselling during recovery.

Prosthesis Satisfaction and Comfort Assessment: Limb amputation not only results in functional and sensory loss but also alters body image, significantly impacting an individual's Quality of Life. Scales of the Trinity Amputation and Prosthesis Experience Scales (TAPES) in people with a lower-limb amputation was used to assessing the complex experience of amputation and adaptation to a lower-limb prosthesis. TAPES assesses satisfaction using a 5-point scale that comprises questions on “color,” “noise,” “shape,” “appearance,” “weight,” “usefulness,” “reliability,” “fit,” “comfort,” and “overall satisfaction. (Baars et al., 2018)

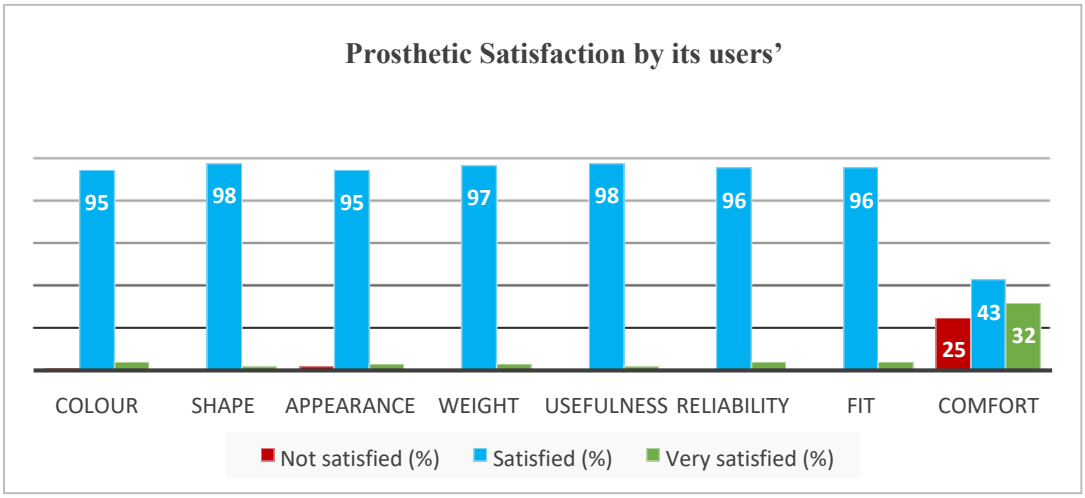

Figure 2 Prosthetic Satisfaction by the limb Users

The Tapes-R scale data reveal that the majority of users are satisfied with the color, shape, appearance, weight, utility, dependability, and fit of their prostheses. Specifically, satisfaction rates are high for color (95%), shape (98%), appearance (95%), weight (97%), utility (98%), dependability (96%), and fit (96%). Notably, the weight of the prosthesis was a particular point of satisfaction, although this may be influenced by limited awareness of lighter prosthetic alternatives.

Despite these positive findings, comfort remains a significant concern—only 43% of users reported satisfaction in this area, and 25% expressed dissatisfaction. This highlights an ongoing need for advancements in prosthesis design, as comfort is a crucial factor in overall prosthetic satisfaction and long-term use. Prosthetic satisfaction is particularly important for healthcare professionals and prosthetists, given the substantial impact of amputation on body image and psychosocial well-being.

Supporting this, Khalid Alluhydan et al. (2023) emphasized the critical role of the prosthetic socket in ensuring optimal fit, stability, and weight distribution. A well-designed socket, tailored to the unique shape of each individual’s residual limb, maximizes contact area and evenly distributes pressure, thereby reducing the risk of skin breakdown, enhancing comfort, and minimizing pressure points. Proper alignment is also essential for gait symmetry and biomechanical function.

Similarly, Demir et al. (2019) found high levels of prosthesis usage and satisfaction among lower limb amputees, even in the presence of challenges such as increased sweating, itching, and soreness. This suggests that, while functional satisfaction

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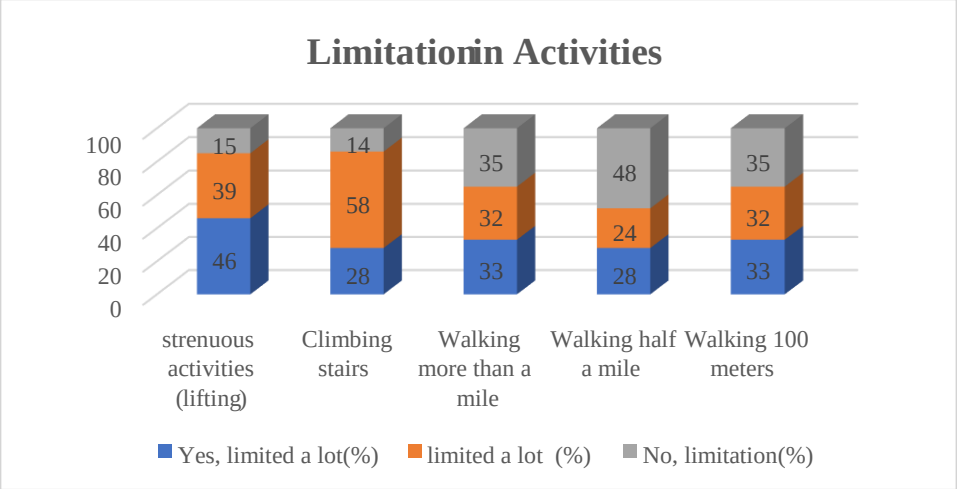
is generally high, there is still room for improvement in addressing comfort-related issues.

Gender-specific challenges also influence prosthetic satisfaction. Men may experience discomfort or self-consciousness if their prosthesis is difficult to wear with regular clothing, such as uniforms or trousers. Women, on the other hand, face unique anatomical and social challenges. Social expectations regarding appearance can make women more self-conscious about visible prostheses or gait abnormalities, further impacting their satisfaction and confidence. While most users are pleased with the functional and aesthetic aspects of their prostheses, comfort remains a key area for improvement. Addressing comfort and design issues—while considering individual anatomical, functional, and psychosocial needs—will be essential for enhancing prosthetic satisfaction and quality of life for all users. Gender-specific concerns should also be acknowledged and addressed in the design and fitting process to ensure equitable and comprehensive care.

Limitation in Activities:

Individuals with limb amputation commonly experience significant limitations in daily activities and participation due to a combination of physical, environmental, and psychosocial factors. Activity limitations most frequently impact self-care tasks, mobility, and the ability to engage in work, leisure, and social roles. These restrictions stem from impairments such as reduced muscle strength, compromised balance, altered gait mechanics, and increased energy expenditure during movement. The figure summarizes the limitation in various activities among prosthetic limb users.



The findings of this study reveal that lower limb amputees face a spectrum of challenges in their daily activities. Only 15% of respondents reported no activity limitations, while 39% experienced some restrictions, and a significant 46% reported being severely constrained, especially in physically demanding tasks such as lifting. When it came to stair climbing, just 14% indicated no difficulty, whereas 58% experienced some difficulty and 28% faced severe challenges. Many users reported avoiding stairs altogether due to fear of further injury or damage to their prosthesis.

Walking longer distances also posed a considerable barrier: 33% of participants found walking more than a mile extremely difficult, 32% found it somewhat challenging, and 35% reported no difficulty. For shorter distances, such as half a mile, 28% found it extremely difficult, 24% moderately challenging, and 48% had no trouble. Even for very short distances (100 meters), 33% experienced significant constraints, 32% some difficulty, and 35% no restrictions. Despite these hurdles—including issues like itching, sweating, and body pain—many amputees continue to use prosthetics as assistive devices to maintain independence in daily activities (lifting, climbing, walking), rather than relying on others.

Amputation results in permanent functional changes that significantly impact quality of life, particularly for those with lower limb loss. The primary goals of rehabilitation are to maximize functional mobility, improve body image, and enhance overall quality of life. As noted by Pereira et al. (2019), amputees often exhibit abnormal gait patterns and unique loading characteristics. These findings are consistent with previous research (Gailey et al., 2019), which highlights that increased energy expenditure and balance issues contribute to difficulties with mobility-related tasks. Ephraim et al. (2020) further emphasize that functional limitations are closely tied to prosthetic fit, comfort, and the effectiveness of rehabilitation strategies. Gaunaurd et al. (2018) also point out that prosthetic users frequently struggle with high-exertion activities, such as lifting and stair climbing, due to muscle fatigue and reduced endurance.

Overall, this study underscores the need for personalized prosthetic solutions and tailored rehabilitation programs to address the specific challenges faced by lower limb amputees. By focusing on improving prosthetic fit, comfort, and user-specific training, healthcare professionals can help reduce physical limitations and enhance the mobility and independence of amputees.

Association between Prosthetic Use with demographic profile, Cause, and Laterality

Gaining knowledge about the relationship between laterality, cause, and demographic profile and the usage of

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prosthetics in daily activities helped to clarify the effects of various causes. The average score for age, education, income, amputation causes, amputation side, and their statistical importance with regard to hours or years of prosthetic usage, prosthetic longevity, and training period for prosthetic limb users to adapt were all evaluated in this part.

Table 4: Association between Prosthetic Use with demographic profile, Cause, and Laterality

Prosthetic use		Mean± SD	F	P value
Age in years	=< 40	15.24±2.694	3.068	.051*
	41-50	14.40±2.909		
	>=51	12.91±3.300		
Education	Primary	16.23±1.964	3.769	.007*
	High school	14.43±3.188		
	HSC level	14.42±3.423		
	Graduate	14.68±2.323		
	Illiterate	10.60±4.561		
Income	Below ₹ 10,000	16.23±1.964	2.189	.076 NS
	₹ 10, 000-20,000	14.43±3.188		
	₹ 20, 000-30,000	14.42±3.423		
	Above ₹ 30, 000	14.68±2.323		
	No income	10.60±4.561		
Amputation cause	Tumor	16.14±2.476	4.433	.006*
	Accident	13.59±2.893		
	Congenital	15.26±2.782		
	Diseases	15.50±2.593		
Amputation laterality	Right	15.13±2.513	1.108	.334 NS
	Left	14.10±3.103		
	Bilateral	14.69±3.060		
Note: *- Significant at 5% level; NS – Not significant				

The findings indicated that age and prosthesis usage were significantly correlated (F = 3.068, p =.051*). The highest usage was recorded by those under 40 years (Mean = 15.24, SD = 2.694), followed by those between 41 and 50 years (Mean = 14.40, SD = 2.909) and those beyond 51years were the least amount of usage was reported (Mean = 12.91, SD = 3.300). This indicated that older people found it difficult to use prosthetic devices and shown adult endurance and willpower. The usage of a prosthesis was significantly correlated with education (F = 3.769, p =.007*). While illiterate amputees reported lesser usage (Mean = 10.60, SD = 4.561), respondents with the greatest educational level (primary) reported the highest usage (Mean = 16.23, SD = 1.964). These findings demonstrated how the educated and unskilled populations differed significantly. Additionally, there was a significant correlation between prosthesis use and amputation reasons (F = 4.433, p =.006*). The highest utilization was recorded by individuals who had tumor-related amputations (Mean = 16.14, SD = 2.476), congenital conditions (Mean = 15.26, SD = 2.782), and illnesses (mean = 15.50, SD = 2.593). Amputations connected to accidents had the lowest impact, according to the lowest value (Mean = 13.59, SD = 2.893).

In contrast to medical or hereditary causes, this suggested that traumatic amputations would have allowed for improved physical adaptation to use prosthetics. These findings demonstrated the difficulties faced by those who have their limbs amputated because of their age and income in comparison to the amputation side. Overall, the afflicted limb has less of an impact on prosthesis use than age, education, and the reason of amputation. The result showed that lower limb amputees belonging to various income and laterality did not differ significantly in their except age, education, amputation causes.

From the table 4 show that the hypothesis is the p-value of 0.334 and 0.076 is greater than the significance value of 0.05, hence we conclude the model does not show the significant relationship with income and laterality is here by accepted.

Comparison on the effects of employment, gender, and amputation level on prosthetic outcomes: Enhancing rehabilitation procedures requires an understanding of the interaction between the demographic profile, the degree of amputation with prosthetic use, the degree of satisfaction, and the limitations in daily activities.

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Table 5: Comparison on the effects of employment, gender, and amputation level on prosthetic outcomes

Factors	Variables		Mean ± SD	t value	P value
Prosthetic use	Amputation level	Above knee	15.08±2.550	2.225 NS	.083
		Below knee	14.06±3.225		.086
	Gender	Male	14.52±2.883	.052 NS	0.729
		Female	14.74±3.055		0.736
	Employment status	Working	14.13±3.661	.082 NS	0.344
		Not Working	16.32±1.309		0.940
Satisfaction with regards to Prothesis attributes and comfort	Amputation level	Above knee	16.19±1.284	.065 NS	.250
		Below knee	16.48±1.185		.248
	Gender	Male	16.36±1.260	.034 NS	0.699
		Female	16.26±1.210		0.695
	Employment status	Working	16.32±1.309	.082 NS	0.940
		Not Working	16.34±1.096		0.936
Prosthetic limitation	Amputation level	Above knee	9.81±2.877	.480 NS	.813
		Below knee	9.94±2.555		.812
	Gender	Male	10.13±2.838	2.071 NS	0.153
		Female	9.29±2.355		0.127
	Employment status	Working	9.78±2.676	.047 NS	0.629
		Not Working	10.06±2.828		0.637

Note: NS-Not significant

The study examines factors influencing prosthetic use, satisfaction, and limitations among amputees. Regarding prosthetic use, above-knee amputees (15.08 ± 2.550) reported slightly higher usage than below-knee amputees (14.06 ± 3.225). Employment status also played a role, as non-working individuals (16.32 ± 1.309) showed higher prosthetic use compared to working individuals (14.13 ± 3.661), suggesting that work-related demands might impact usage duration.

Satisfaction with prosthesis attributes and comfort remained relatively consistent across groups. Above-knee amputees (16.19 ± 1.284) and below-knee amputees (16.48 ± 1.185) reported similar levels of satisfaction. Gender differences were minimal, with males (16.36 ± 1.260) and females (16.26 ± 1.210) showing comparable responses. Employment status did not significantly affect satisfaction, as both working (16.32 ± 1.309) and non-working (16.34 ± 1.096) individuals reported similar scores.

Prosthetic limitations were slightly higher in males (10.13 ± 2.838) than females (9.29 ± 2.355), though the difference was not statistically significant. Amputation level did not have a notable impact on limitations, as above-knee amputees (9.81 ± 2.877) and below-knee amputees (9.94 ± 2.555) reported similar experiences. Employment status also showed minimal variation, with working individuals (9.78 ± 2.676) and non-working individuals (10.06 ± 2.828) reporting comparable limitation levels.

Resnik et al. (2020) investigated prosthesis satisfaction in a national sample of veterans with upper limb amputations. Although focusing on upper limb amputees, the study revealed that satisfaction was associated with prosthetic training, amputation level, age, and race. Notably, more proximal amputation levels correlated with lower satisfaction. Baars et al. (2018) performed a systematic review to identify factors influencing satisfaction with transtibial prostheses. The review highlighted that satisfaction was associated with prosthesis appearance, properties, fit, and residual limb aspects. Notably, these factors' relevance varied with gender, causes, liner use, and amputation level, suggesting that while gender may influence certain aspects of satisfaction, no single factor universally determined satisfaction levels.

The analysis of t test showed that effects of employment, gender, and amputation level did not differ significantly regarding various aspects such as prosthetic usage, Satisfaction with regards to Prothesis attributes and comfort and limitation.

Prosthetic usage and satisfaction with prosthesis attributes and comfort, and Prosthetic limitation :

The table below presents the correlation for prosthetic usage and satisfaction with prosthesis attributes and comfort, and prosthetic limitation.

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Table 6: Correlation test				
Inhibitors		Prosthetic use	Satisfaction	Prosthetic limitation
Prosthetic use	Pearson Correlation	1	.074	-.244*
	Sig. (2-tailed)		.465	.015
	N	100	100	100
Satisfaction	Pearson Correlation	.074	1	-.200*
	Sig. (2-tailed)	.465		.046
	N	100	100	100
Prosthetic limitation	Pearson Correlation	-.244*	-.200*	1
	Sig. (2-tailed)	.015	.046	
	N	100	100	100
*. Correlation is significant at the 0.05 level (2-tailed).				

	Satisfaction on Prothesis attributes and comfort
Prosthetic use	.074 (p=0.465)
Prosthetic limitation	-.200* (p=0.046)

The factor analysis of individuals Prosthetic use, comfort and happiness with prosthetic features, and prosthetic limitation are significantly correlated, according to the Pearson correlation coefficient (r). For both groups, the association is significant at the 0.05 level (2tailed), suggesting that prosthetic use can have a major impact on comfort and satisfaction with prosthetic features. Many persons with leg amputation experience that using a prosthesis enriches their quality of life and greatly increases their psychological health and well-being (Murray & Forshaw, 2013). The study reveals that personal adjustment and social acceptance significantly influence prosthesis perception, but work-related challenges and functional constraints remain significant issues. It suggests that prosthesis adaptation requires both technological and psychosocial support to improve users' quality of life and facilitate societal integration. From the table 6 it is clear that “there is significant difference between prosthetic use and satisfaction with prosthesis attributes and limitation” is here by accepted.

Conclusion

This study provides a comprehensive overview of the experiences and challenges faced by lower limb amputees using prosthetic limbs in India. The findings reveal that trauma remains the leading cause of amputation, predominantly affecting males in the working-age group. While most users report high satisfaction with the functional and aesthetic aspects of their prostheses, comfort remains a significant area for improvement, underscoring the need for advancements in prosthetic design and fit.

The study highlights that activity limitations—especially in physically demanding tasks such as lifting, stair climbing, and walking long distances—are common among amputees, often leading to reduced participation in daily activities. Factors such as age, education, and the cause of amputation significantly influence prosthetic use and adaptation, while gender, employment status, and amputation level have less pronounced effects.

Importantly, the research demonstrates a significant correlation between prosthetic use, satisfaction, and limitations, emphasizing that both technological and psychosocial support are essential for successful adaptation. Personalized rehabilitation programs, ongoing training, and psychosocial counselling are crucial to addressing the unique needs of each amputee, promoting independence, and enhancing overall quality of life.

Overall, this study contributes valuable localized data to the existing literature and reinforces the importance of a holistic, patient-centred approach in the rehabilitation and care of lower limb amputees.

Suggestion of future research

1. Conduct long-term studies to evaluate how prosthetic users adapt over time, focusing on physical, psychological, and social dimensions.

2. Compare outcomes between users of advanced prosthetics and conventional models to identify factors influencing performance and satisfaction.

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