

Appendix-1



Avinashilingam

Institute for Home Science and Higher Education for Women

University

(Estd. u/s 3 of UGC Act 1956)

Coimbatore - 641 043, Tamil Nadu, India

CHECK LIST TO FIND OUT REGISTERED CASES OF AMPUTEES

**Name of the Organization/
Hospital/ Prosthetic Centre**

Address

Name of the Patient

Age of the Patient

Gender

Address

Year of Establishment

Occupation of the Patient

Cause of Amputation

Level of Amputation

Amputated Side

Appendix-2



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Coimbatore - 641 043, Tamil Nadu, India

INTERVIEW SCHEDULE TO ELICIT INFORMATION ON THE PROSTHETIC PRESCRIPTION OF AMPUTEES

1. Name of the Organization/ Hospital/ Prosthetic Centre
 2. Address

 3. Name of the Patient
 4. Age of the Patient
 5. Gender
 6. Address
 7. Occupation of the Patient
 8. Cause of Amputation
 9. Level of Amputation
 10. Amputated Side
- Prosthetic Prescription**
11. Socket types
 12. Suspension patterns suggested
 13. Components added to enhance satisfaction
 - a. Knee
 - b. Shank
 - c. Foot
 - d. Any Other

Appendix-3A



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SCHEDULE TO CHECK DETAILS ON THE FUNCTIONAL CAPABILITIES OF PROSTHETIC USERS

II	Social Acceptance	Yes	No
I General Details			
	a. Name of the Prosthetic User		
	b. Age		
	c. Gender		
	d. Marital status		
	e. Education		
	f. Occupation		
	g. Are you still continuing to be in the same job	Yes	No
	h. Nature of your Job	Part Time	Full Time
	i. Income		
	j. Cause of amputation		
	k. Level of amputation		
	l. Amputated side		
	m. Duration of disability		
	n. Do you don your prosthesis		
	o. Centre from your prosthesis prescribed		
	p. Duration of use of your prosthesis per Day		
	q. How often you change your Prosthesis		
	r. Where do you stay?	Alone	Family Home
a.	Have your family/friends accepted you as an amputee?		
b.	Do you feel that people are more reluctant to accept you socially since your amputation?		
c.	Do you feel handicapped or deprived from leading a normal life?		
d.	Do you feel there is a change in your personality as a result of amputation?		
e.	Do you find the appearance of your prosthesis a social embarrassment?		

III Prosthetic History		Yes	No
a.	Still wear your prosthesis?		
b.	How many Prosthesis you had since your amputation?		
c.	Was any modifications made to your prosthesis?		
d.	Is your prosthesis comfortable when you wear it?		
e.	Do you feel that the prosthesis is efficient, as your other limb?		
f.	Is your prosthesis cost effective one		
g.	Cost is a constraining factor for the change of a prosthesis		
h.	Maintenance and replacements for the prosthetic are expensive		

IV Lag period and Gait Training	
a.	How long you had to wait to get your prosthesis after surgery
b.	Where you provided with training immediately after the prosthesis fit

V Self –Propelling Used		Yes	No
a.	Self –propelling devices used		
If yes, mention the type of Self –propelling device preferred			
a.	Use one cane		
b.	Use two cane		
c.	Use one crutch		
d.	Use two crutches		
e.	Use walker		

VI Mechanical Maneuvering Device Used		Yes	No
a	Do you use Wheel Chair		
If yes, mention the when do you prefer using			
a	Office alone		
b	Outdoor/Travel		
c	Indoor/residence		

VII Donning and Doffing Prosthesis	
a.	Can dress and undress completely adequately
b.	Need absolute help in getting dressed and undressed
c.	Partial assistance needed

VIII Leisure Activity	
How do you spend your leisure time?	
a.	Indoor games
b.	Outdoor games
c.	Watch television
d.	Listen to radio
e.	Read books

IX Transportation

a	Do you drive with your prosthesis on?	Yes	No
If No, which type of transport do you prefer			
a	Bus		
b	Car		
c	Train		

X Sitting on the floor

a	Are you able to sit on the floor with your prosthesis?	Yes	No
If yes, mention whether you need assistance			
a	Do not need assistance		
b	Need assistance		

XI Sitting on the Chair

a	Do not need chair arms	Yes	No
If yes, mention whether you need arm support			
a	Need arms		
b	Need arms on low sunken chairs		
c	Need to use arms on all chairs		

XII Range of Movement Permissible

a	Are you able to walk with your prosthesis	Yes	No
If yes, How long you are able walk			
a	Home walker		
b	Restricted outside walker		
c	Unrestricted outside walker		
d	Unrestricted outside walker with very high demands		

XIII Tackling curbs/ obstacles

a	Are you able to tackle curbs/ obstacles	Yes	No
If yes, Do you require assistance			
a	Without assistance		
b	Need assistance		
	Going up- Forward Method		
	Going up-Backward Method		

XIV Managing stairs/ steps

a	Are you able to climb stairs	Yes	No
If yes, Do you require assistance			
a	Do not need help		
b	Need hand rails or other assistance		
	Step over step		
	One step at a time		

XV Managing Ramps

a	Are you able to use Ramps	Yes	No
If yes, How do you manage			
a.	Do not need assistance		
b.	Need assistance		
c.	Can only go up ramp with help		
d.	Use them with a wheelchair		

XVI Bathing

How do you manage to bathe?			
a.	Sit on floor		
b.	Standing Posture		
c.	Sit on a stool		

XVII Modification made in Home

Did you make any modifications in your house after amputation		Yes	No
a.	Ramps installed		
b.	Small platform or chair		
c.	Railing attached		
d.	Others		

XVIII Details on use of Prosthesis

Do you use your Prosthesis		Yes	No
If No, Reasons			
a.	Satisfied with other types of assistive devices		
b.	Socket uncomfortable		
c.	Costs too much		
d.	Harness uncomfortable		
e.	Don't want one for own reasons		
f.	Appearance poor		
g.	Heat and Sweat		
h.	Weight		
i.	Insurance won't cover		
j.	Can't find one that is comfortable		
k.	Poor function		
l.	Damage possibility /No durability		

Appendix-3B



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**OPINIONNAIRE ON THE CONDITION OF RESIDUAL
 LIMB OF AMPUTEE**

1.	Name of the Organization/ Hospital/ Prosthetic Centre	
2.	Address	
3.	Name of the Patient	

1. Condition of stump			
Do you experience the following		Yes	No
a.	Scar along front/bottom/back of stump		
b.	Any other surgical scar on amputated limb?		
c.	Does the amputation scar adhere to bone?		
d.	Does fluid ever drain from anywhere on the limb?		
e.	Do you have any areas that are tender to touch?		
f.	Is your stump painless		
g.	painful		

2. Phantom feeling			
Are you able to feel the following		Yes	No
a.	Phantom present		
b.	Part of missing limb		
c.	Entire missing limb		
d.	Phantom is same length as opposite limb		
e.	Missing part is painful and requires medicine		

2.3. Condition of Normal (UnAmputated) limb		Yes	No
Are you able to sense the following			
a.	Normal		
b.	Not able to be very active		
c.	Some cramping, but no problems		
d.	Open sores present		
e.	Painful all the time		

I	Sensation felt				
Sensations in phantom limb					
1.	Aware of non-painful sensations in the phantom limb	Never	Once/ Twice	Several Time	All the time
2.	Intensity of non-painful sensations in the phantom limb				
3.	Bothersome sensations in your phantom limb				
Pain in Phantom Limb					
1.	Pain in your phantom limb				
2.	Duration of phantom limb pain				
3.	Intensity of painful sensations in the phantom limb				
4.	Bothersome sensations in phantom limb				
Pain in Residual Limb					
1.	Pain in residual limb				
2.	Duration of residual limb pain				
3.	Intensity of residual limb painful sensations				
Pain in Contralateral (Non-Amputated) Limb					
1.	Pain in contralateral limb				
2.	Duration of contralateral limb pain				
3.	Intensity of contralateral painful sensations				
Back pain					
1.	Frequency of the experienced pain.				
2.	Intensity of the pain				
3.	Bothersome sensation of the pain				

Appendix-4



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INTERVIEW GUIDE ON PROSTHETIC CENTRE

1. Name of the Organization/ Hospital/ Prosthetic Centre
2. Address
3. Year of establishment of the Firm
4. Name of the Prosthetist
5. Years of experience

Prosthetic Prescription opted in the centre

1. Socket types
 - a. Transtibial Prosthesis
 - b. Transfemoral Prosthesis
2. Material used for fabrication of socket
3. Type of Suspension
 - a. Transtibial Prosthesis
 - b. Transfemoral Prosthesis
4. Components added to enhance satisfaction
 - a. Knee
 - b. Shank
 - c. Foot
 - d. Any Other
5. Type of Alignment used
6. Time taken to fabricate and fit the Prosthesis
 - a. Transtibial Prosthesis
 - b. Transfemoral Prosthesis

ANNEXURES - I

PERMISSION LETTERS

From
Dr. Sarasvathi V
Doctoral Research Scholar
Dept of Resource Management/Emergency and Trauma Care Management
Avinashilingam Deemed University For Women
Coimbatore

To
The Chairman,
KMC Hospital,
Coimbatore

Respected Madam/Sir
As I am doing my doctoral research in Avinashilingam Deemed University For Women on "An Ergonomic Perspective in the accessibility of a Prosthesis", I have to encompass the statistical details of accidents occurring in Coimbatore. I also have to collect the primary data from the patients who are using the crutches and prosthesis. So, I request you to kindly permit me to collect the data from your esteemed hospital to facilitate my research work

Thanking You

Yours Sincerely
Sarasvathi V
Dr. Sarasvathi V
12. 1. 11.

Dr. Edward
[Signature]

From

Dr. Sarasvathi V
Doctoral Research Scholar
Dept of Resource Management/Emergency and Trauma Care Management
Avinashilingam Deemed University For Women
Coimbatore

To
The Chairman,
K. G. Hospital,
Coimbatore

Respected Madam/Sir

Sub: Seeking Permission to collect the statistical data -Reg

As I am doing my doctoral research in Avinashilingam Deemed University For Women on "An Ergonomic Perspective in the accessibility of a Prosthesis", I have to encompass the statistical details of accidents occurring in Coimbatore. I also have to collect the primary data from the patients who are using the crutches and prosthesis. So, I request you to kindly permit me to collect the data from your esteemed hospital to facilitate my research work

Thanking You

Yours Sincerely
[Signature]
Dr. Sarasvathi V
10. 1. 2011

only no of amputation happen with

[Signature]
[Signature]

From

Dr. Sarasvathi V
Doctoral Research Scholar
Dept of Resource Management/Emergency and Trauma Care Management
Avinashilingam Deemed University For Women
Coimbatore

To
The Principal,
PSC Hospitals & Medical College,
Coimbatore

Respected Madam/Sir

Sub: Seeking Permission to collect the statistical data -Reg

As I am doing my doctoral research in Avinashilingam Deemed University For Women on "An Ergonomic Perspective in the accessibility of a Prosthesis", I have to encompass the statistical details of accidents occurring in Coimbatore. I also have to collect the primary data from the patients who are using the crutches and prosthesis. So, I request you to kindly permit me to collect the data from your esteemed hospital to facilitate my research work

Thanking You

Yours Sincerely
Sarasvathi V
Dr. Sarasvathi V

OK
[Signature]
[Signature]

From,
Dr. (Mrs) Sarasvathi V.
Research Scholar,
Dept of Emergency & Trauma Care and
Resource Management
Avinashilingam Deemed University
Coimbatore.

To
The Managing Director,
Ganga Hospitals,
Coimbatore.

Dear Sir,
I am a Research scholar, doing my doctoral research in "Ergonomic perspective in the accessibility of Prosthesis". Regarding this I need to collect statistical details of accidents/injuries and suggested Prosthesis. I also need to collect the primary data from the patients who are using steel crutches and Prosthesis. So I request you kindly permit me to collect the data.

Permitted to collect details for research purposes.
[Signature]
1. 1. 11.

Yours Sincerely,
[Signature]

ANNEXURES – II

STATISTICAL ANALYSIS - FORMULA

Regression analysis is one of the most frequently used multivariate statistical techniques. A regression equation gives the average relationship between one variable (dependent variable) and one or more independent variables also called explanatory variables. It is called simple regression when there is only one independent variable and when more than one independent variables are present it is called multiple regression equation.

A multiple regression equation can be mathematically written as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon \quad (1)$$

where β_0 is called intercept and β_i are called partial regression coefficients or simply regression coefficients and ε is the error term. It can be easily checked that equation (1) is **linear** w.r.t. to unknown parameters of the model, viz., $\beta_i, i = 0, 1, 2, \dots, k$. These parameters are estimated using Ordinary Least Squares (OLS) method. This method estimates the parameters in such a way that the sum of the squares of the residuals defined by $\sum_{i=1}^n (y_i - \hat{y}_i)^2$ is a minimum where \hat{y}_i is the predicted value of the i^{th} observation given by

$$\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_{1i} + \hat{\beta}_2 x_{2i} + \dots + \hat{\beta}_k x_{ki} \quad (2)$$

The coefficients, their standard errors, t-ratio, p-value of the respective coefficient and R-square estimated using software packages and we use MS-Excel. ***R-square expressed in percentage can be interpreted as the percentage variation in the dependent variable explained by the regression model (or by the explanatory variables selected).*** So if R-square=0.606 implies that 61% of the total variation in the dependent variable is explained by the regression model.

Correlation Coefficient

The correlation coefficient measures the strength of linear association between two variables. It is usually denoted by r . The significance of the correlation coefficient is tested using t -test. Pearson's Correlation Coefficient is used to measure this. It is defined as

$$\begin{aligned} r &= \frac{\text{Cov}(X, Y)}{\sigma_x \sigma_y} \\ &= \frac{\left(\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y}) \right) / n}{\sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n}} \sqrt{\frac{\sum_{i=1}^n (y_i - \bar{y})^2}{n}}} \end{aligned}$$

Properties

1. $-1 \leq r \leq 1$
2. $r=1$, perfect positive association
3. $r=-1$, perfect negative association
4. $r=0$, no association
5. The value of r nearer to +1 or -1 indicates high degree of correlation between the two variables.

The significance of the correlation