

## **Health Needs of Patients with Lower Limb Amputation in Postoperative Period**

*Amira Mohamed Mohamed Ahmed El Shenawy Dr. Amal Bakr Abo El-Ata; Dr. Hayat Mohamed Abd-El-kader;*

*B.Sc. Nursing , Faculty of Nursing - Mansoura University ; professor of medical surgical nursing - Faculty of Nursing Port Said University; Assistant professor of medical surgical nursing - Faculty of Nursing - Port Said University.*

---

### **ABSTRACT**

**Background:** Amputation brings a drastic change in a person's life. This change has an effect on health needs of the individual due to the physical activities limitations. It also affects the individual's psychosocial and economic states. **Aim:** Assess health needs of patients with lower limb amputation in postoperative period **Subjects and Method:** Design a descriptive research design was used. **Setting:** The study was conducted in vascular, surgical and the isolation department for patients with diabetic foot in Mansoura university hospital and surgical ward in Al Salam Hospital in Port Said city. **Subjects:** purposive sample used in this study. Lower limb amputation patients 100 participated in the study **Tools:** Data were collected using two tools, patients' knowledge questionnaire and health needs questionnaire of lower limb amputation patients. **Results:** Results revealed that 67% studied patients had unsatisfied knowledge regarding wound care after discharge, 81% had unsatisfied knowledge regarding exercises and assistive devices used during movement. Patients had unsatisfied total measures regarding decrease pain and prevent muscle contracture (87%, 73%) respectively. Most need reported by patient's physical, psychological and social (83%, 80%, 85) respectively. **Conclusion:** The current study concluded that patients need knowledge regarding wound care after discharge and exercises, assistive devices used during movement and most of the study patients need support including: physical, psychological, and social needs. **Recommendation:** Continuous educational programs to improve patients' knowledge, measures and assess needs regarding to care for patients with lower limb amputation.

**Key Words:** Health needs, patient's lower limb amputation, Post-operative period.

## INTRODUCTION

Lower limb amputation (LEA) is a life changing surgery that results in huge morbidity and mortality worldwide (Aljarrah, Allouh , Bakkar , Aleshawi , Obeidat , Hijazi , & Mazahreh, 2019). There are in excess of 2,000,000 people presently living in the United States of America with extremity removals and that roughly 500 new amputation are played out every day. With expectations that the number of amputated patients will double by 2050 (Webster , Crunkhorn , Sall , Highsmith , Pruziner & Randolph , 2019). Amputation” got from the Latin word “amputare “(to extract, to cut out) has been characterized as the “removal of part or all of a body part enclosed by skin (Kumar , Souza & Diaz , 2018).

Extremity amputations are performed mostly secondarily to vascular disease (54%), trauma (45%), and malignancy of bone or joint (<2%). Amputations option to vascular disease had a comorbidity of diabetes in approximately two-thirds of patients ( Urits , Seifert , Seats , Giacomazzi , Kipp , Orhurhu & Viswanath, 2019). Hazard factors attributed to lower limb amputation indicates a complex a etiology. Being male, being African American, increasing age, having nephropathy, ischemic heart disease, hypertension or having persistent foot ulceration each elevates the risk of lower limb amputation (Abbott ., 2020).

Types of lower extremity amputations are toe amputation , partial foot amputations , syme amputation , transtibial , through –the-knee , trans femoral, hip disarticulation , and hemipelvectomy (Paz, 2019). Complications after amputation procedure are, Infection, Wound necrosis and hematoma, Contractures, Pain and Phantom limb sensation, and Dermatological problems (Iyer, 2019) .in addition impaired wound healing especially patients with PAD because of with critical limb ischemia (Morisaki , Yamaoka & Iwasa, 2018).

A person's psychosocial reactions to lower extremity amputation have implications not only at psychological, emotional, and social needs but also at physical needs. Depression and anxiety are the most psychological complication affected patient with lower limb amputation .primary year following amputation might be an particularly troublesome period, as patients are faced with adapting to numerous changes including reduced mobility and independence, an altered body image and self-perception, and facing the possibility that they may be seen by others as “disabled" (Sanders , Wadey , Day & Winter, 2020).

Health needs is influenced in a complex way by physical state, mental state, level of independence, social relationship and environmental relations. Health needs are a multidimensional build consisting ( physical needs ,psychological needs , and social needs ) .The individuals' satisfaction with their own life may differ from that of other patients, despite the fact that they have a similar disease due to their objective health and life conditions ( Matos , Naves & ARAUJO, 2019).

Physical needs of lower limb amputation consisted of prevent complication, improve mobility as much as possible, and prepare stump for Prostheses. Physical needs can be achieved through measures of wound care, measures to prevent contracture, measure to reduce pain, and performing exercise and using assistive devices. The best outcomes for muscle contracture improvement can be accomplished through a blend of both stretching and active exercise in addition to proper stump positions was also necessary. Also increasing awareness of stump contracture complications among amputees is very important ( Ghazali , Abd Razak , Osman & GhOlizadeh, 2018).

Pain management may include pharmacologic such asopioids. And Non pharmacologic pain intervention such as compression bandages, desensitization, relaxation (Paz, 2019). Psychological needs are accomplished through self-acceptance or holding positive attitudes toward oneself, qualities such as self-determination, autonomy, and internal behavioral regulation and purpose in life, consisting of objectives, intents, and a sense of direction and meaning (Sanders et al., 2020).

A patient must support and help in tolerating their appearance and limitations .It consider significant step in improve social needs of patient. Empowering the patient to undertake rehabilitation is very vital because it creates an opportunity for faster registration. Patient should inform about the development of prosthetics. Present day prosthetics allow the patient an opportunity to lead a relatively ordinary life. These activities restore hope to the patient that soon he will be able to perform the roles he performed before surgery (Jędrzejkiewicz., 2019).

#### **Significance of the study:**

Lower limb amputation is a significant event in an individual's life and remains a major problem worldwide. Universally, 200e500million amputations are performed yearly (Nizamli, 2020). According to Centers for Disease Control and Prevention (CDC), 2013 "Egypt is among 10 top countries with the highest prevalence of diabetes, and up to 15% patients will develop foot complication like amputation in their lifetime" (Salama & Zorin , 2018).

There are a limited number of nursing researches about health needs of lower limb amputation patient in post-operative period in Egypt. Patient's lack of essential knowledge about lower limb amputation so this study conducted to assess patient' knowledge regarding lower limb amputation and measures in post-operative period and assessment for health needs. That lead to Improving patients' out comes that help in decrease incidence of reamputation and prevent complications.

### **AIM OF STUDY:**

The aim of this study is to assess health needs for patients with lower limb amputation in postoperative period.

#### **Study objectives:**

- 1) Assess patients' knowledge regarding lower limb amputation in postoperative period.
- 2) Assess patients' measures regarding care of lower limb amputation in postoperative period.
- 3) Find out health needs for patients with lower limb amputation in postoperative period.

### **Subject and Method**

#### **Study design**

A descriptive correlational study will be used to achieve the aim of this study.

#### **Study settings:**

- This study was conducted in Mansoura university hospital; it is a big hospital in Mansoura intended by lower limb amputation patients and consists of five floors. It contains the vascular department, surgical department and the isolation department for patients with diabetes foot and each section contains a number of 10 beds.
- Al Salam Hospital in Port Said disturbed as following; it is a big and important hospital in Port Said intended by lower limb amputation patients. It contains surgical department which contains a number of 10 beds.

#### **Study subjects**

Purposive sample used in this study. Lower limb amputation patients 100 participated in the study

#### **Inclusion criteria:**

- Adult patients.
- Both sexes (males and females) will be involved.
- Patients able to communicate verbally.

**Excluded criteria:**

- Patients under 20 years old.
- Mental ill patients .
- Unable to communicate verbally.

**Tools of data collection:**

Data collected using the following tools:

**Tool (I): Patients' knowledge questionnaire**

It was designed by the researcher based on reviewing the scientific related literature (Abbott, 2020 & Paz, 2019). To assess patients' knowledge regard to lower limb amputation. It will be composed of four parts.

**Part (1): Demographic data of studied patients**

It includes data such as (Name, age, sex, marital status, level of education and occupation).

**Part (2): History of studied patients' diseases**

This part contains history of patients' disease regarding (cause of amputation, level of amputation, nutrition, and smoking).

**Part (3): patients' knowledge questions:**

This part was designed to assess patients' knowledge regarding lower limb amputation.

It includes the following items:

- Type of amputation wound (2 questions).
- Complication after surgery (4 questions).
- Clinical picture of infection (11 questions).
- Wound care after surgery (8 questions).
- Wound care after discharge (10 questions).
- Exercise and assistive device use (12 questions).

**Part (4): patients' measures questions:**

This part was designed to assess patients' measures in post-operative period includes the following items:

- Degree and nature of pain (6 questions).
- Patients' measures to decrease pain (5 questions).
- Patients' measures to prevent contraction (7 questions).

**Scoring system for first tool:**

Scoring system for patients' knowledge regarding lower limb amputation into the following items :( Type of amputation wound, complication after surgery, clinical picture of infection)

- Correct answer is (NO) was taken "1" and the incorrect is (YES) was taken "0", the scores were summed-up and the total divided by the total number of questions and converted into percent scores and considered " satisfied " if the percent score was less than 70% and " unsatisfied " if the percent score was 70 % and more .
  
- Scoring system for patient's knowledge regarding lower limb amputation into the following items: (Knowledge of patient regarding to wound care after surgery , Knowledge of patient regarding to wound care after discharge, Knowledge of patient regarding to exercise and assistive device use ).
  
- Correct answer is (YES) was taken "1" and the incorrect is (NO) was taken "0", the scores were summed-up and the total divided by the total number of questions and converted into percent scores and considered " satisfied knowledge " if the percent score was 70% and more . And " unsatisfied knowledge " if Less than 70 % .
  
- According to the degree and nature of pain. Patient was asked to select the severity of pain on scale (1 to 10) and scoring system was applied to determine the degree of pain and comprised from (mild – moderate – sever ) the degrees were divided into: scoring system for pain scale: (0-2 mild, 3-6 moderate, 7-10 sever)
  
- Scoring system for patients' measures to reduce pain.  
The patient's answer arranged from (1-5) degree, where one (1) scores are given for (not at all) answer, two (2) scores for (little) answer, three (3) scores for (a moderate) answer, four (4) scores for (very much) answer, and five (5) scores for (extreme) answer. Theses scores are converted into a percent score.
  
- Scoring system for patient's measures to prevent contraction correct answer is (YES) was taken "1" and the incorrect is (NO) was taken "0", the scores were summed-up and the total divided by the total number of questions and converted into percent

scores and considered "satisfied" if the percent score was 70% and more . And "unsatisfied" if Less than 70% .

**Tool (II):** Health needs questionnaire of lower limb amputation patients

It developed by researcher based on reviewing recent related literature (Morisaki, Yamaoka, & Iwasa, 2018 ; Colquhoun, Shepherd, & Neil, 2019). This tool was used in this study to assess health needs of lower limb amputation patient.it contains a total of an abbreviated 31 questions and 3broad domains of health needs.

It was divided into three aspects for needs:

- Assessment of physical needs (10 questions):

It was designed to assess patient physical needs. It contained these items (physical pain, medication, personal energy, financial needs, health information, movement, sleep, daily activity ability work). Patient asked to determine to what degree he satisfied to physical needs in post-operative period.

- Assessment of psychological needs (16 questions):

This part was used to reflect patient psychological needs It contained this items (patient health, negative feeling, stump care, home clothes ,speaking with amputated patient, feeling expression, good listener, medical condition , family visit ,enjoyment life , safety , concentration , physical appearance ,leisure activity). Patient asked to determine to what degree he perception to psychological needs in post-operative period.

- Assessment of social needs (5 questions):

It contained these items (personal relationship, supporting system, sexual life, living area, health services).

**Scoring system for second tool:**

Scoring system for patient health needs during different stages of surgery with all health needs:

- Scoring system for physical needs :

The patient's answer arranged from (1-5) degree, where one (1) scores are given for (Very high, Very bad, Very dissatisfied) answer, two (2) scores for (High, Bad, Unsatisfied) answer, three (3) scores for (A moderate, Neither good nor bad, Neither satisfied nor

dissatisfied) answer, four (4) scores for (Little, Good, Satisfied ) answer, and five (5) scores for (Never, Very good, Very satisfied ) answer.

- Scoring system for psychological needs:

The patient's answer arranged from (1-5) degree, where one (1) scores are given for (Very bad, Very satisfied, Always, Never ) answer, two (2) scores for (Bad, Unsatisfied, Often, Little ) answer, three (3) scores for (Not good or bad, Neither satisfied nor dissatisfied, To some extent, Moderate ) answer, four (4) scores for (Good, Satisfied ,Rarely, High ) answer, and five (5) scores for (Very good, Very satisfied, Never, very high ) answer.

- Scoring system for social needs

The patient's answer arranged from (1-5) degree, where one (1) scores are given for (Very unsatisfied ) answer, two (2) scores for ( Unsatisfied ) answer, three (3) scores for ( Neither satisfied nor dissatisfied ) answer, four (4) scores for ( Satisfied ) answer, and five (5) scores for ( Very satisfied ) answer.

Scoring system for total divided by the total number of questions and converted into percent scores and considered "reported high need" If the percent score was if Less than 70 %. And " reported low need " if more than 70 %.

## **(2) Operational Design:**

The operational design includes preparatory phase, content validity, pilot study and field work.

Preparatory phase:

It includes reviewing of related literature, and theoretical knowledge of various aspects of the study using Arabic and foreign text books, articles, internet periodicals and scientific research journals and magazines, this served in the development of the data collection tools.

### **Validity:**

Content related validity and appropriateness of translation were tested by 9 experts in the field of education from Port Said faculty of nursing. The necessary modifications were done based on expert's suggestions.

### **Reliability:**

Cronbach alpha coefficient was calculated to assess the reliability of the developed tool through their internal consistency. Cronbach alpha value for patients' knowledge questionnaire (0.89), and for health needs assessment questionnaire (0.91).

**Pilot study:**

- A pilot study was conducted on 10 patients of (10) the chosen sample. It was conducted two weeks before embarking on the field of working of the study. The purpose of the pilot study was to test the clarity, objectivity and feasibility of the study tools and to estimate the proper time required for filling out each tool. It also helped to find out any obstacles and problems that might interfere with data collection. Hence the pilot patients were excluded from the main study.

**Field work:**

The researcher visited the previous mentioned settings four times a week. And interviewed the patients to explain the nature of the study in order to gain their cooperation before data collection. Data collection took place during six months from (first of September 2018 –to first of February 2019). Data were collected from the selected settings by the researcher using the study tools. The researcher interviewed the patients and collect data through using structured patients' knowledge questionnaire regarding lower limb amputation in the post-operative period and health needs questionnaire of lower limb amputation patients .The patient's records were revised to help in completion of the needed information. The questions were read loudly, clearly and slowly to the patients and they answered each question applied closely to them. Patients were encouraged to ask questions about any unknown words or unclear instructions.

**Administrative Design: )3(**

Before conduction of the study, an official letter was taken from the Dean of the Faculty of Nursing to director of Mansoura university hospital to obtain their approval. An official written permission was secured to the directors of each hospital in the study settings. In addition to an oral approval was obtained from the medical staff and participated patients.

**Ethical considerations:**

Director of hospitals, medical staff and participated patients were provided with verbal explanation of the idea and the purpose of the present study. All patients were explained that they have the right to accept or refuse participation in the current study and the right to withdrawn at any time if they want. Further, they were told that the results would not be shared with anyone and it was only for scientific purpose. The researcher considered all obtained data as confidential data and no body allowed to view or access to them.

**Statistical Design:**

Data entry and statistical analysis were done using statistical software package for social Sciences program (SPSS) version 18. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, means and standard deviations for quantitative variables. Qualitative categorical variables were compared chi-square test. Statistical significance was considered at p-value  $\geq 0.05$ . Graphs were done for data visualization using Microsoft excel.

**RESULTS**

**Table (1): clarifies that** the mean age was  $57.85 \pm 14.087$ , it observes that 70% of studied patient aged 50 years and were males by 66%, 51% of them were married patients, also 30% of studied patients were illiterate. And 29% were manual worker.

**Table (2): shows that** 39% of patients suffer from vascular disease. While 36 % of patients are diabetic. And 40 % of them were suffered from below knee amputation. Also it found that 68% of the studied patients hadn't malnutrition. In addition to 52% of them were smokers.

**Table (3): concludes that** 67% of studied patients had satisfied knowledge regarding care of wound after amputation ,and most of them had unsatisfied knowledge regarding wound care after discharge and exercises, assistive devices used during movement (86%and 81%respectively).

**Table (4): shows that** the most of studied patients 87% had unsatisfied measures regarding decrease pain, and 73% of studied patients had unsatisfied measures regarding measures to prevent muscle contracture.

**Table (5): shows that** 44% of studied sample feels that they live in a little of healthy environment, and 42% of the sample do not have enough money at all to meet their needs. However, 41% of sample believes that they have a need for treatment very much in order to carry out your usual tasks in their daily life. While 54% of the patients had the ability to move and hike very weakly. And 51% of the studied sample considers that they are significantly dissatisfied with their sleeping pattern.

**Table (6): concludes that** 44% of the study sample believes that the degree of amputation affects very badly on their lifestyle and responsibility. while 46% of patients believe that participate in caring amputated part help them to Accept the new image is quite often , and 50% of studied sample believe that wearing their clothes from

home is very often more comfortable . In addition to 40% of them have quite often believed that talking to an injured person with amputation Will help them and verbal expression helps in expressing feelings, as well as the majority 80% of patients believe that they not at all enjoy with their life, just as 50% of them have a little acceptance about the physical appearance. And 45% of them have a little opportunity for leisure activities.

**Table (7): shows that** 39% of studied patients weren't responding to their satisfaction or dissatisfaction with personal relationships, and 42% of them satisfied on the support of friends and family, while 58% of studied patients didn't respond to their satisfaction or dissatisfaction with their sex lives, also 50% of studied patients have a neutral opinion about their satisfaction with the place of living, Also about access to health services by 41%.

**Figure (1) illustrates that** most of studied patient's reported "reported high physical, psychological and social need (83%, 80%, 85% respectively).

**Table (1): Demographic data of the study patients (n=100):**

Variable	<i>patients (n=100)</i>	
	N	(%)
<b>Age</b>		
<30	3	3
30 <40	9	9
40 <50	18	18
50 y and more	70	70
	<b>Mean ± SD 57.85±14.087</b>	
<b>Sex</b>		
Male	66	66
Female	34	34
<b>Marital status</b>		
Single	5	5
Married	51	51
Divorced	12	12
Widowed	32	32
<b>Level of education</b>		
Illiterate	30	30
Read and write	22	22
Basic education	20	20
Secondary education	15	15
University	10	10
Other ( master-doctorate)	3	3
<b>Occupation</b>		
Manual work	29	29
Professional work	20	20
Office work	17	17
House wife	20	20
Others ( unemployed )	14	14

**Table (2): History of study patient's:**

<b>Cause of amputation:</b>		
Bone cancer	5	5
Peripheral vascular Disease	39	39
Diabetes	36	36
Trauma	20	20
<b>Level of amputation:</b>		
Toe amputation	14	14
Atransmetatarsal amputation	9	9
Mid foot amputation	10	10
Ankle level amputation (syme-pirogoff)	1	1
Below knee amputation	40	40
Knee disarticulation	5	5
Above knee amputation	19	19
Hip disarticulation	2	2
<b>poor nutrition:</b>		
Yes	32	32
No	68	68
<b>Smoking:</b>		
Yes	52	52
No	48	48

**Table (3): Total knowledge of studied patients regarding care after amputation:**

<b>Dimensions</b>	<b>Unsatisfied (%)</b>	<b>Satisfied (%)</b>
- patient's knowledge regarding to care for the wound after amputation	33	67
- patient's knowledge regarding to care for the wound discharge from the hospital	86	14
- patient's knowledge regarding to exercises and assistive devices used during movement	81	19

**Table (4) Total measures of studied patients regarding to care after amputation surgery:**

<b>Dimensions</b>	<b>Unsatisfied (%)</b>	<b>Satisfied (%)</b>
- patient's measures to decrease pain	87	13
- patient's measures to prevent muscle contracture	73	27

**Table (5): assesses the physical health needs of lower limb amputation patients:**

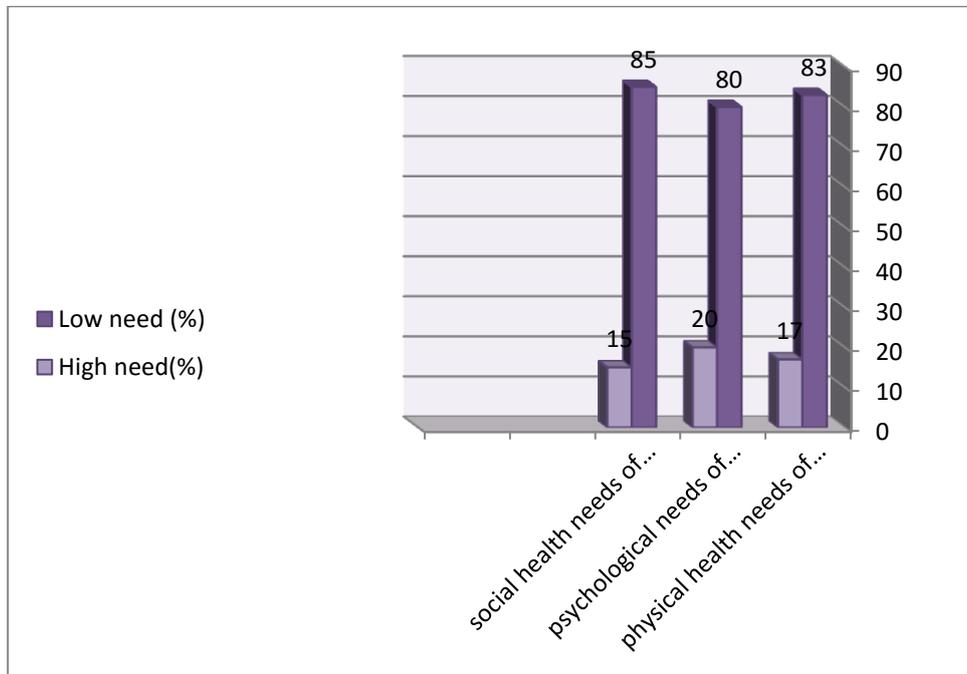
<b>Items</b>	<b>Not at all</b>	<b>A little</b>	<b>A moderate amount</b>	<b>Very much</b>	<b>An extreme amount</b>
1) Feeling physical pain.	2	7	20	37	34
2) Daily medical treatment.	5	15	20	41	19
3) Healthy physical environment.	21	44	31	3	1
4) Energy.	20	39	37	3	1
5) Money.	42	34	22	2	0
6) Daily information.	36	39	22	3	0
	Very poor	Poor	neither	Good	Very good
7) Movement	54	36	10	0	0
	Very dissatisfied	Dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
8) Sleep.	51	33	8	8	0
9) Daily living activities.	36	39	15	10	0
10) Work.	45	33	14	8	0

**Table (6): assesses the psychological needs of lower limb amputation patients:**

Items	Very bad	Bad	Not bad	Good	Very good
1) Life style and responsibility.	44	41	11	1	3
2) Feeling healthy.	34	36	13	9	8
	Seldom	Never	Quite often	Very often	Always
3) Negative feeling.	3	13	22	26	36
4) Participate in stump care.	10	16	46	27	1
5) Wearing clothes from home.	2	8	30	50	10
6) Taking another amputee.	0	19	40	36	5
7) Verbal expression.	2	22	40	34	2
8) Good listener.	3	16	38	25	18
9) Understanding condition helps accept a new life.	1	18	31	20	30
10) Family visit.	2	10	41	32	15
	Not at all	A little	moderate	Very much	extreme
11) Enjoying life.	80	15	5	0	0
12) Feel life meaningful.	42	35	17	4	2
13) Feeling safe in daily life.	27	37	30	4	2
14) Concentration.	25	41	29	3	2
15) Bodily appearance.	27	50	16	7	0
16) Leisure activities.	33	45	21	1	0

**Table (7) assesses the social needs of lower limb amputation patients.**

Items	Very dissatisfied	Dissatisfied	Neither satisfied or dissatisfied	Satisfied	Very satisfied
1) Personal relationships.	18	35	39	8	0
2) Family support.	9	19	25	42	5
3) Sex life.	21	17	58	4	0
4) Living place.	11	13	50	22	4
5) Health services.	16	19	41	15	9



**Figure (3) Total patients health needs**

## **DISCUSSION**

Amputation is the procedure of removing a limb or part of it by sectioning segment or more bones. Major lower-limb amputation (LLA) is a life-changing event associated with poor post-operative physical and mental functioning and decreased health needs. (Torbjörnsson, Ottosson, Blomgren, Boström, & Fagerdahl, 2017). For patients with amputation, the perception of their health needs are more connected with pain, adaptation to the prosthesis and psychosocial well-being (Davie-Smith, Coulter, Kennon, Wyke, & Paul, 2017; Matos, Naves, & ARAUJO, 2019; Wurdeman, Stevens, & Campbell, 2018).

Patient's care affects the psychophysical condition and functioning of the patient, reducing the complications resulting from limb loss. The priorities in patient's care change according to the patient's health needs. The main factors determining the type of care services include presence of pain, need for care for the stump or preparing it for prosthesis, and need for psychological support (Prylińska et al., 2019).

The present study aimed to assess health needs of lower limb amputation patients in post-operative period. The present study was conducted on a sample of one hundred patients with lower limb amputation. The results of the current study refers to Among a one hundred participated patients in the study, it showed more than two-thirds aged more than fifty years and were males, about half of them were married. Moreover, about one-third of study sample were illiterate and manual worker. This result was partially agree with (Torbjörnsson, Ottosson, Lofgren, Boström, & Fagerdahl, 2017) in a qualitative study entitled “The patient's experience of amputation due to peripheral arterial disease”, among Thirteen patients, in Stockholm, Sweden. It illustrated that more than two-thirds were male, with mean age seventy-five years, about two-thirds of them were married, and more than two-thirds of them were retired.

Additionally, contradictory finding was reported in a qualitative study by (Columbo et al., 2018) entitled “Patient Experience of Recovery after Major Leg Amputation for Arterial Disease” his median age of participating amputees was sixty years (range between fourty five to eighty eight years). More than two third of them were married; only fifteen percent of them were employment.

The current study finding also disagree with ( Mohd Hawari, Jawai, Md Tahir, & Azmeer, 2017) in their study entitled “Case study: survey of patient satisfaction with prosthesis quality and design among below-knee prosthetic leg socket users”, carried on twelve patients, in Selangor, Malaysia, that aimed to explore patient satisfaction with the quality of prosthetic leg sockets attachments proposed for persons with lower limb amputations. This study illustrated that the demographic profile of the studied sample included more than two-thirds of them were male, about one third of them aged ranged from twenty to thirty nine years, one quarter of them aged ranged from fourty to fifty nine years and sixty to eighty nine years, respectively.

In relation to cause of amputation, the present study showed that two-fifth of patients suffers from vascular disease. While more than one-third of them are diabetic. Concerning the level of amputation, it demonstrated from the current study that two-fifth of the group had below knee amputation. Also, it found that more than three-quarters of the sample had not malnutrition, and half of them were smokers. The majority of studied sample had a closed amputation wound.

This finding disagree with a study carried by (Hijmans, Dekker, & Geertzen, 2020) entitled “Pre-operative rehabilitation in lower-limb amputation patients and its effect on post-operative outcomes”. Reported that the characteristics of the study population included in the study were underwent different levels of amputation forty-three had unilateral below knee amputations (BKA), twenty-seven had unilateral above knee amputations (AKA), and two had hip disarticulations. There were fifteen bilateral amputation patients, eleven of whom with a bilateral BKA, two patients with one BKA and one AKA, and two patients with bilateral AKAs. The main cause for most amputations was critical ischemia, whereas the remainder were performed for a variety of orthopedic, ulcerative, and oncological reasons.

Moreover, the current study finding disagree with ( Mohd Hawari, Jawaid, Md Tahir, & Azmeer, 2017) that all the studied patients have below leg amputation, most of them had left affected limb, half of the studied patient reported the cause of amputation was trauma/ accident and diabetic, respectively.

Furtherly,( Spoden, Nimptsch, & Mansky, 2019) in their study entitled “Amputation rates of the lower limb by amputation level–observational study using German national

hospital discharge data from 2005 to 2015” reported that approximately more than two-thirds of all amputations of the lower limb in Germany are attributed to DM.

Our study findings were agreed with ( El sayed Mahdy, Nabil, & Mahfouz Shaker, 2017) in a study entitled“Bio-Psychosocial Needs of Patients with Post Diabetic Foot Amputation”, showed that more than two-thirds of them had unsatisfactory self-care of non-amputated foot totally. Significantly, the current study revealed that about two-fifth of studied sample feels that they live in a little of healthy environment, and more than one-third of the sample do not have enough money at all to meet their needs. However, nearly two-fifth of sample believe that they have a need for treatment very much in order to carry out your usual tasks in their daily life. Additionally, about half of the studied sample considers that they are significantly dissatisfied with their sleeping pattern.

The researcher attributes this finding to the studied sample socio- demographic profile, as two-thirds aged fifty years and more. Moreover, about one-third of study sample were illiterate and manual worker that reflect negatively in their income and increase their social and economic burden. Majority of the patient had no permanent job, while others are low- income earners. In addition, evidence demonstrated that amputation has an essentially effects on employment, which is confirmed by the fact that the vast majority of amputees lost their past job. Additionally, it may be related to level of amputation, as people after amputation below the knee joint present a better physical performance, and are in better general condition than patients, who underwent above-knee amputation and whose quality of life is even low.

Concerning to the psychological needs of LLA patients, the present study concluded that about two-fifth of the study sample believes that the degree of amputation affects very badly on their lifestyle and responsibility. Half of studied sample believed that wearing their clothes from home is very often more comfortable for them, also two-fifth informed that verbal expression quite often helps in expressing feelings, as well as the majority of patients reported that they not at all enjoy with their life, just half of them have a little acceptance about the physical appearance.

According to the social needs of patients with LLA, our study findings stated that about two-fifth of the sample were not responding to their satisfaction or dissatisfaction with personal relationships, and nearly two-fifth of them satisfied on their friends and

family support, while more than half of studied patient did not respond to their satisfaction or dissatisfaction with their sexual activity.

An opposite finding reported by ( Torbjörnsson et al., 2017), who found that a proportion of patients felt abandoned after their limbs were amputated. Furthermore, most patients experienced mental torment and emotional failure, such as feeling completely powerless, alienated, and rejected, as a result of their family and friends' inability to express empathy. Moreover, according to ( Amoah et al., 2018), one patient described himself as being on a boat in the middle of the ocean, suffering in excruciating pain. The majority of patients stated that they had become a significant burden on their family, even to the point of becoming disposable.

On the other hand, similar findings were illustrated by Day, Wadey, and Strike (2018), that individuals seeing themselves as a burden and feeling shielded by others, especially when complimented for completing simple and easy actions. Amputees' physical conditions have an impact on their capacity to continue working or even give up their careers.

On the other hand, agree findings were illustrated by (Xiuqun & Yuru, 2021), having the same amputation companion could set a positive example for amputees, assisting them in recovering from the emotional and physical trauma of amputation, and could discuss with amputees the use of artificial limbs and returning to the early experience of daily life activities to encourage patients to use the new change more quickly.

From the researcher point of view, LLA will result in anxiety and depression which will reflect on the patient social relationship, patients will tend to be isolated. Moreover, the body image disturbance plays active role on self-acceptance and partner/spouse acceptance so the sexual activity will be affected. The patients were confronted with the problem of loss of independence after amputation. The loss of independence mainly came from two aspects, one was the physical activity ability, and another was the social ability.

To sum up, patients experienced emotional changes and physical discomfort after amputation that increase their health-related needs. Patients after amputation encountered difficulties in adjusting to the new life, and social adaptation. As nurses, they

should have a deep understanding of the experiences of amputees, provide them with effective support, help them to regulate their emotions, and restore their independence and confidence in life.

## **CONCLUSION**

As a conclusion of this study and based on the findings of the current study, Most of studied patients had unsatisfied knowledge regarding wound care after discharge and exercises, assistive devices used during movement (86%, 81%) respectively. Also most of studied patients unsatisfied regarding to patient's measures to decrease pain, and regarding to patient's measures to prevent muscle Contracture (87%, 73%) respectively. It can be concluded that the most affected aspects of patients with LLA are the physical, social, and mental ones. Most of studied patient's reported "reported high physical, psychological and social need (83%, 80%, and 85% respectively).

## **RECOMMENDATION**

1. The health education program should be suitable to every patient's needs, and focused on their health need management
2. Design patient educational materials to provide information about complications, factors affecting wound healing, care for the stump.
3. Health education program should be correcting patient's unhealthy behaviors to avoid reamputation.
4. Health education program should share information with the patient's and family, and provide support.
5. Provide Information on measures in reducing pain, prevent muscle contracture, self-care, and home exercise following discharge.
6. A prompt referral should be made to occupational therapists, physiotherapists, and social work departments, and choosing the right prosthesis is important for amputated patient.
7. Education programs for high-risk group should be considered to reduce the need for amputation.

### **Recommendations for further study**

- Examine the effect of level of Lower limb amputation on patient quality of life.
- Impact of a diabetic foot care education program on lower limb amputation rate.

- Therapeutic management of phantom pain; postoperative nursing care for patients with lower limb amputation.
- Psychosocial adjustment to lower limb amputation after discharge.
- Nursing care based on Roy adaptation model for patients with lower limb amputation.

## REFERENCE

Aljarrah, Q., Allouh, M. Z., Bakkar, S., Aleshawi, A., obeidat, H., Hijazi, E., ... & Mazahreh, T. (2019). Major lower extremity amputation: a contemporary analysis from an academic tertiary referral centre in a developing community. *BMC surgery*, 19(1), 1-10.

Webster, J. B., Crunkhorn, A., Sall, J., Highsmith, M. J., Pruziner, A., & Randolph, B. J. (2019). Clinical practice guidelines for the rehabilitation of lower limb amputation: An update from the Department of Veterans Affairs and Department of defense. *American journal of physical medicine & rehabilitation*, 98(9), 820-829.

Kumar, G. K., Souza, C. D., & Diaz, E. A. (2018). Incidence and causes of lower-limb amputations in a tertiary care center: evaluation of the medical records in a period of 2 years. *Int J Surg Sci*, 2(3), 16-9.

Urits, I., Seifert, D., Seats, A., Giacomazzi, S., Kipp, M., orhurhu, V., ... & Viswanath, o. (2019). Treatment strategies and effective management of phantom limb-associated pain. *Current pain and headache reports*, 23(9), 1-7..

Abbott, C. A. (2020). Epidemiology of amputation and the influence of ethnicity. *The Foot in Diabetes*, 31-41.

Paz, J. C. (2019). 5 edition. Chapter 16 : *Amputation. Acute Care Handbook for Physical Therapists*. E-Book ,USA (p 383, 386 ).

Iyer, K. M. (2019). *Amputations. In general principles of orthopedics and trauma* (4th ed.) .Springer, Cham. Switzerland (p. 385 ,387 389,390,402 ,406 ).

Morisaki, K., Yamaoka, T., & Iwasa, K. (2018). Risk factors for wound complications and 30-day mortality after major lower limb amputations in patients with peripheral arterial disease. *Vascular*, 26(1), 12-17.

Sanders, P., Wadey, R., Day, M., & Winter, S. (2020). Narratives of recovery over the first year after major lower limb loss. *Qualitative health research*, 30(13), 2049-2063.

Matos, D. R., Naves, J. F., & ARAUJO, T. C. C. F. D. (2019). Quality of life of patients with lower limb amputation with prostheses. *Estudos de Psicologia (Campinas)*, 37.

Ghazali, M. F., Abd Razak, N. A., Osman, N. A. A., & Gholizadeh, H. (2018). Awareness, potential factors, and post-amputation care of stump flexion contractures among transtibial amputees. *Turkish journal of physical medicine and rehabilitation*, 64(3), 268.

Jędrzejkiewicz, B. (2019). Nursing care of a patient after limb amputation-case study. *Journal of Education, Health and Sport*, 9(9), 424-429.

Nizamli, F. M. (2020). Quality of life among Syrian patients with war-related lower limb amputation at the Military Hospital in Lattakia. *International journal of nursing sciences*, 7(3), 297-302.

Salama, A. A., & Zorin, S. K. (2018). Risk factors of diabetic foot in type 2 diabetic patients, Menoufia University Hospital, Egypt. *Egypt J Comm Med*, 36, 87-98.

Colquhoun, L., Shepherd, V., & Neil, M. (2019). Pain management in new amputees: A nursing perspective. *British Journal of Nursing*, 28(10), 638-646.

Torbjörnsson, E., ottosson, C., Blomgren, L., Boström, L., & Fagerdahl, A. M. (2017). The patient's experience of amputation due to peripheral arterial disease. *Journal of Vascular Nursing*, 35(2), 57-63.

Davie-Smith, F., Coulter, E., Kennon, B., Wyke, S., & Paul, L. (2017). Factors influencing quality of life following lower limb amputation for peripheral arterial occlusive disease: A systematic review of the literature. *Prosthetics and orthotics International*, 41(26), 537-547.

Prylińska, M., Husejko, J., Kwiatkowska, K., Wycech, A., Kujaciński, M., Rymarska, o., ... & Kędziora-Kornatowska, K. (2019). Care for an elderly person after lower limb amputation. *Journal of Education, Health and Sport*, 9(8), 886- 894.

Torbjörnsson, E., ottosson, C., Blomgren, L., Boström, L., & Fagerdahl, A. M. (2017). The patient's experience of amputation due to peripheral arterial disease. *Journal of Vascular Nursing*, 35(2), 57-63.

Columbo, J. A., Davies, L., Kang, R., Barnes, J. A., Leinweber, K. A., Suckow, B. D., ... & Stone, D. H. (2018). Patient experience of recovery after major leg amputation for arterial disease. *Vascular and endovascular surgery*, 52(4), 262-268.

Mohd Hawari, N., Jawaid, M., Md Tahir, P., & Azmeer, R. A. (2017). Case study: Survey of patient satisfaction with prosthesis quality and design among below-knee prosthetic leg socket users. *Disability and Rehabilitation: Assistive Technology*, 12(8), 868-874.

Hijmans, J. M., Dekker, R., & Geertzen, J. H. (2020). Pre-operative rehabilitation in lower-limb amputation patients and its effect on post-operative outcomes. *Medical Hypotheses*, 143, 110134.

Spoden, M., Nimptsch, U., & Mansky, T. (2019). Amputation rates of the lower limb by amputation level—observational study using German national hospital discharge data from 2005 to 2015. *BMC health services research*, 19(1), 1-9.

El sayed Mahdy, N., Nabil, S., & Mahfouz Shaker, N. (2017). Bio-Psychosocial Needs of Patients with Post Diabetic Foot Amputation. *Egyptian Journal of Health Care*, 8(4), 76-88.

Amoah, V. M. K., Anokye, R., Acheampong, E., Dadson, H. R. osei, M., & Nadutey, A. (2018). The experiences of people with diabetes-related lower limb amputation at the Komfo Anokye Teaching Hospital (KATH) in Ghana. *BMC Research Notes*, 11(1), 1-5.

Day, M. C., Wadey, R., & Strike, S. (2018). Living with limb loss: everyday experiences of “good” and “bad” days in people with lower limb amputation. *Disability*

*and Rehabilitation, 25, 1-10.*

Xiuqun, W., & Yuru, Y. (2021). Persons' experience before and after amputation: A descriptive review. *DIVA*. Retrieved 7 June 2021, from <http://www.diva-portal.org/smash/record.jsf?pid=diva2:1332782>

## الاحتياجات الصحية لمرضى بتر الطرف السفلى فى فترة ما بعد العملية

إ.د/ امل بكر ابو العطا ، ا.م.د / حياة محمد احمد عبد القادر

استاذ التمريض الباطنى و الجراحى. كلية التمريض . جامعة بورسعيد

استاذ مساعد التمريض الباطنى و الجراحى .كلية التمريض . جامعة بورسعيد

### الخلاصة

**الخلفية:** يحدث البتر تغييراً جذرياً في حياة الشخص. هذا التغيير له تأثير على الاحتياجات الصحية للفرد بسبب تقيد نشاطه البدنى. كما أنه يؤثر على الحالة النفسية والاقتصادية للفرد. **الهدف:** تقييم الاحتياجات الصحية للمرضى الذين يعانون من بتر الأطراف السفلية في فترة ما بعد الجراحة. **التصميم:** تم استخدام تصميم بحث وصفي. **مكان الدراسة:** أجريت الدراسة في قسم الأوعية الدموية والجراحية والعزل لمرضى القدم السكرية بمستشفى جامعة المنصورة وقسم الجراحة بمستشفى السلام بمدينة بورسعيد. **عينة الدراسة:** ولقد شارك مائة مريض بتر طرف سفلي في هذه الدراسة. تم جمع البيانات باستخدام أداتين ، استبيان معرفة المرضى واستبيان الاحتياجات الصحية لمرضى بتر الطرف السفلي. **النتائج:** أظهرت النتائج أن 67% من المرضى الذين خضعوا للدراسة لديهم معرفة غير مرضية فيما يتعلق بالعاية بالجروح بعد الخروج من المستشفى ، و 81% لديهم معرفة غير مرضية عن التمارين والأجهزة المساعدة المستخدمة أثناء الحركة. كما ان لدى المرضى إجراءات إجمالية غير مرضية فيما يتعلق بتقليل الألم ومنع تقلص العضلات (87% ، 73%) على التوالي. بالإضافة الى معظم الاحتياجات الجسدية والنفسية والاجتماعية (83% ، 80% ، 85) على التوالي. **الخلاصة:** خلصت الدراسة الحالية إلى أن المرضى بحاجة إلى معرفة فيما يتعلق بالعاية بالجروح بعد الخروج من المستشفى والتمارين ، والأجهزة المساعدة المستخدمة أثناء الحركة ، وأن معظم مرضى الدراسة يحتاجون إلى الدعم بما في ذلك: الاحتياجات الجسدية والنفسية والاجتماعية. **التوصيات:** برامج تثقيفية مستمرة لتحسين معرفة المرضى والاعراض المتخذة وتقييم احتياجاتهم فيما يتعلق برعاية المرضى الذين يعانون من بتر الأطراف السفلية.

**الكلمات المرشدة :** الاحتياجات الصحية ، بتر الطرف السفلي للمريض ، فترة ما بعد الجراحة.