

## Stressors and Positive Coping Strategies among Patients with New Limb Amputation

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**Abstract:** Background. Amputation is a profound loss that affects both the individual and family on all levels. Amputation poses challenges on many levels: physical, emotional, social, and financial. How people cope with their amputation depends upon their unique make-up, previous life experiences, support systems, and the meaning they give to their amputation. Aim of this study was two folds: firstly, identify the stressors and coping strategies among patients with new limb amputation, secondly, examines the relationship between stressors and coping strategies among patients with new limb amputation. Design a descriptive correlation research design was selected to fulfill the aim of the study and answer the research questions. Setting was the general surgery, orthopedic and/or vascular disorder departments at El Manial University Hospital. Sample a total of convenience of fifty limb amputated patients were recruited in this study. Tools, data were collected utilizing the following tools: 1) Structured Interviewing Questionnaire, 2) Amputation Related Stressors Questionnaire, and 3) Ways of Coping Questionnaire. Results of the study findings revealed that the new limb amputated patients facing different stressors related to, firstly social life, followed by nature of illness, work situation, body image changes, while hospital stay perceived as the least source of stress. The most common way of positive coping strategies that amputated patients used was minimize the situation followed by active coping strategy. There were statistically significant differences among the study subjects in relation to different coping strategy postoperatively. Recommendations. Comprehensive nursing management protocol dealing with amputation related stressors should be available to help such patients for adjustment.

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**Key words:** amputation, amputation related stressors, coping strategies

### 1. Introduction

All surgical procedures can potentially affect a person's functional ability; even a minor surgical procedure entails significant stress. Amputation may be congenital or result from an injury or surgery, or the only treatment of choice when other means cannot control or arrest a disease process (Bunker, 2000). Amputation has a devastating effect on the patient and family; it is a major source of permanent impairment, functional limitation, body image changes and displaces the body's sense of balance (Wilson, & Schirger-Krebs, 1983). Peripheral vascular disease is the major cause of amputation of lower extremities; however, trauma is the major cause of amputation of upper extremities. The level of amputation is determined by local and systemic factors; local factors include presence of ischemia and gangrene, while systemic factors include cardiovascular status, renal function, and severity of diabetes mellitus (Karen and Priscilla, 2008).

The goals of amputation are to alleviate symptoms, maintain healthy tissue, and increase functional outcomes; however, amputation may result in significant emotional and psychological changes; it may extensively affect a person's self concept, which may necessitate intensive, long-term rehabilitation,

both physically and emotionally (Ruth & Constance, 2008). Unless it is an emergency procedure, the patient should be prepared physically and psychologically for the removal of all or part of the extremity, the patient should understand the need for the amputation and should discuss with health care team members what can be expected postoperatively in regard to pain, immobility, and readjustment to self care (Dewitt, 2001).

The prospect of an amputation is frightening for both the patients and their concerns; it evokes disability in performing activities of daily living (ADL), and maintaining usual family and social roles at least initially which constitute psychological stressors for patient as well as create social related stressors (Chin & Finocchiaro, 1999). Many complications are associated with amputations, including hemorrhage, hematoma, necrosis, wound dehiscence, gangrene, contracture, infection and phantom limb pain (Adrienne & Nancy, 2004). Moreover, there were several stressors, such as changes in body image, role reversal, loss of employment, and financial problems. Amputation of a limb has significant long term consequences for the patient; the patient will grieve the loss of a body part and must adjust to a new self-image (Karen & Priscilla, 2008). Stressors associated with amputation can be

related to diagnosis, prognosis, treatment, alterations in social interaction and work (Donnal, 2000 and Bille, 1999).

Adaptations to amputation related changes occur slowly and the patient wants to utilize coping strategies that lower tension in order to manage the situation effectively (Shirley, 2002). Coping styles are typical, habitual patterns of behavior that a person prefers to use in dealing with stress. It is important that all health-care personnel not only engage themselves in the obvious physical aspects of the sickness/disability, but to see their patient from a holistic perspective (Karen & Priscilla, 2004). Oaksford *et al.* (2005), viewed that the general coping mechanisms used by individuals appear to fluctuate across time as psychological demands changes. Coping behaviors and stress tolerance are closely related to how a person defines stress and how that person has managed stress in the past (Ruth & Constance, 2008). Moreover, Ann and Byron (2008) found that there are several factors influencing response to chronic illness: the patients developmental/life span level, personality type/behaviors, coping behaviors, precipitating stressors, support systems, and nature of illness.

Individuals react to and deal with dramatic events in their lives in order to return themselves to functional acceptable level through four phases: shock phase, reactions phase, adaptation phase, and reorientation phase. The shock phase can last from a few seconds up to several days, the persons remove themselves from the outer world in order to protect their ego for a time, and they may appear to be normal but their inner self may be in complete turmoil. The reaction phase lasts no longer than 4- 6 weeks. This phase implies that persons have begun to realize what has actually happened and opening their eyes, and started to meet this new reality. The adaptation phase means that the persons have finally started a process to accept the incident by leaving it behind and beginning to look forward. This phase may continue up to a year after an incident. Finally, there is the reorientation phase, the persons have accepted (successful coping) the occurrence and begun to live their life in their new situation (Cullberg, 2003).

Understanding the effects of stress, coping, and adaptation is crucial to health promotion. Furthermore, appreciating the impact of stress on human behavior enhances the assessment process and helps the nurse to identify patient strengths, resources, and interventions that can reduce the deleterious effects of stress (Boyd, 2002). Assessing present and past coping behaviors, developmental and behavioral competencies are the vital components of nursing process. The goals of nursing care for a person with an amputation are to relieve pain, promote healing, prevent complications, support the patient and family during the process of

grieving and adaptation to alterations in body image, and restore mobility (Karen & Priscilla, 2004).

### **Significance of the Study**

The prospect of an amputation is frightening for both the patients and their concerns as it evokes disability in performing ADL which lead to psychological upset as well as create social problems (Chin & Finocchiaro, 1999). Prevalence rate for amputation as reported by World Health Organization (WHO, 2011) is approximately 1 in 142 or 0.70% or 1.9 million people in USA. Unfortunately no available census found in Egypt, revision of the medical records and statistical data of El Manial University Hospital revealed that prevalence of amputation was 130 cases of amputation at year 2008 and was 110 cases at year 2009 (Census of Cairo University). So, this study will be beneficial in identifying amputation related stressors, also results of the study will increase nursing knowledge as regards strategies of coping among amputees as evidence research. Additionally, this study might generate an attention and motivation for further researches in this area.

### **Aim of the Study**

The aim of this study was two folds: firstly, identify the stressors and coping strategies among patients with new limb amputation, secondly, examines the relationship between stressors and coping strategies among patients with new limb amputation.

### **Research Questions**

To fulfill the aim of this study, the following research questions were formulated:

1. What are the stressors exhibited by patients with new limb amputation?
2. What are the coping strategies for patients with new limb amputation?
- 3- Is there a relation between amputations related stressors and coping strategies among patients with new limb amputation?

## **2. Subjects and Methods**

### **Design**

A Descriptive correlation research design was selected to fulfill the aim of the study and answer the research questions. This design examines the relationship between two or more variables, this examination can occur at several levels: description, prediction or testing the relationship (Burns & Grove, 2007).

### **Setting**

The study was conducted at departments of general surgery, vascular and orthopedic at El Manial University Hospital which is one of the largest

educational university hospitals in Egypt.

### Sample

A convenient sample of 50 limb amputated patients admitted to El Manial University Hospital with the following criteria: adult male and female patients, aged above 20 years, with upper or lower limb amputation who agree to participate in the study constituted the study sample.

### Tools

Data of this study was collected using the following tools: Structured Interviewing Questionnaire (SIQ), Amputations Related Stressors Questionnaire (ARSQ), and Ways of Coping Questionnaire (WCQ). A panel of experts from medical and nursing staff and a pilot study established face and content validity of the constructed tools. The study tools were further elaborated as follows:

1. Structured Interviewing Questionnaire (SIQ) was designed by the researchers based on literature review it included two parts: the first part includes data related to subjects' characteristics namely; age, sex, marital status, etc. and the second part includes medical background data such as diagnosis, past medical history etc., data were collected after admission.
2. Amputations Related Stressors Questionnaire (ARSQ). After extensive literature review the researchers developed the tool guided by Hospital Stress Rating Scale developed by (Volicer, 1973), and Other Stressors Like Scale adopted from (Baird, 1991, and Fuller, 1994). It includes 54 items as following: hospital related stressors (which includes items related to hospital stay, financial, physical, and environmental stressors) "24 item", nature of illness related stressors "10 items", social life related stressors "5 items", work situation related stressors "5 items", and body image changes related stressors "10 items". The scale was developed as a 2-point Likert scale (Yes/No). The highest score indicates more stressors.
3. Ways of Coping Questionnaire (WCQ). It was adopted from Smyth and Yarandi (1991); this tool was translated and tested for content validity by Younis (2004). It was designed to assess the patient thoughts and actions in dealing with stressful incidents in their social life. It consists of 35 items divided into 3 sub-scales. The first, covering active coping "15 items", it describes aggressive efforts to alter situations. The second, reflecting avoidance coping "10 items", it describes wishful thinking and efforts to escape or avoid problem situation. The third, representing minimizing the situation "10 items", it describes efforts to detach oneself from an unpleasant situation. In the original scale, responses were

measured on a 4-point Likert scale with response options of doesn't apply/not used at all (1), used somewhat (2), used quite a bit (3), and used a great deal (4). It was modified in the current study into 3-point Likert Scale: with the following response options: doesn't apply/not use at all (1), used a little bit (2), and always used (3). A high score indicates greater use of that particular coping strategy.

### Ethical Consideration

Permission to conduct the proposed study was obtained from the hospital authorities of El-Manial University Hospital affiliated to Cairo University. Prior to the initial interview, the researchers introduced themselves to patients who met the inclusion criteria; each potential patient was fully informed with the purpose and nature of the study, and then an informed consent was taken from participants who accept to participate in the study. The researchers emphasized that participation in the study is entirely voluntary and withdrawal from the study doesn't affect care provided; anonymity and confidentiality were assured through coding the data.

### Pilot Study

Once permission was granted to proceed with the proposed study, a pilot study was carried out on 5 patients to test the feasibility and clarity of the used tools/instructions; modifications were done based on the results. The sample included in the pilot study was excluded from the final study sample.

### Procedure

An official permission was obtained from the concerned departments to conduct the proposed study. Once permission was granted to proceed with the proposed study, the researchers met the patients who fulfilled the inclusion criteria four times (1<sup>st</sup> time was preoperatively, while 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> time were conducted postoperatively). During First time, the purpose, nature of the study, and tools were explained and written consent was taken from educated patients and oral consent was taken from illiterate patients who accept to share in the study. The Structured Interview Questionnaire (SIQ) read, explained and the choices of answers from patients were recorded by the researchers. For more validation of information, patients' files were revised to complete the needed information. During second time, within 2 to 3 days post operatively, as soon as patients felt well enough to participate and respond to Amputation Related Stressors Questionnaire (ARSQ), choices and answers from patients were recorded by the researchers. During third time (before discharge) and fourth time (two weeks after discharge/during follow up visits), Ways of Coping Questionnaire (WCQ) was filled, and patients

responses were recorded. Each patient was interviewed individually throughout data collection; total time consumed by each patient was 45 to 60 minutes. Data was collected along 9 months over the academic year 2009-2010.

### 3. Results

The data were obtained through the designed and adopted tools were tabulated, analyzed and presented in four main parts: first part covered subjects' characteristic, second part displayed the postoperative amputation related stressors, the third one presented the postoperatively coping strategies on discharge (Post 1) and 2 weeks after discharge (Post 2), and the fourth part covers the relation between amputation related stressors and coping strategies.

#### I- Subjects' Characteristics

As shown in table (1), patients age ranged between 20 to above 60 years with mean age (50.48 ±15.42 years), more than half of the total sample's age ranged from 40-60 years. As regards gender, and marital status 62% of the total sample were males and 74% were married. Considering the educational level, the highest percentage was illiterate 42%, and only 26% had secondary or university level. As regards occupation 54% were working in manual work, more than two fifth of them were either unemployed or housewife, while the minority of them were employees. Data revealed that 80% of the study subjects had monthly income below 500 L.E., and the majority of the study subjects 94% living with others. High percentage of the study sample (80%) suffered from chronic illnesses as ischemia, diabetic foot, gangrene, and tumor (38%, 20%, 12%, & 10% respectively). The highest frequency of admission cause (64%) was discoloration. Regarding to amputation site 92% of the sample had lower limb amputation.

#### II- Postoperative Amputations Related Stressors

Regarding amputations related stressors, the majority of the study subjects (84%) respond positively to stressors related to social life, while only 42% perceived hospital stay related stressors as the least source of stress (Figure 1). Regarding relation between total score of amputations related stressors and patients' socio-demographic characteristics, there was a statistically significant difference at  $p < 0.05$  between patients' level of education, as well as patients' occupation with amputation related stressors total scores (Table 2). There was no statistically significant relation between any of the disease characteristics and amputations related stressors total scores (Table 3).

#### III- Postoperative Coping Strategies on Discharge and 2 Weeks after Discharge

Table (4) showed that about half of the new limb amputee used minimize the situation coping strategy, and 40% of them used no way of coping, while only 8% used active coping on Post 1; however, most of them (92%) used minimize the situation coping strategy, and only 2% of them used avoidance coping on Post 2.

As shown in table (5) there was a statistical significance positive correlation between minimize the situation coping scores and active coping scores' while there was a statistical significance negative correlation between minimize the situation coping scores and avoidance coping scores in Post 1 and Post 2.

Regarding the relation between socio-demographic characteristics and coping strategies, a statistically significant difference was found between active coping and age, level of education, as well as income, and between avoidance coping and gender as well as income in Post 1. Also, there was a statistically significant difference between active coping and level of education in Post 2 (Table 6).

#### IV- Relation between Amputations Related Stressors and Coping Strategies

As shown in table (7), there were statistical significant differences between changes in body image related stressors and minimize the situation subscale coping strategies on discharge (Post 1) and 2 weeks after discharge (Post 2). As well, there was statistically significant difference between social related stressors and active coping strategies subscale at Post 2.

### 4. Discussion

The discussion of this study was presented in the following sequence: Part one describe subjects' characteristic, second part displayed the findings that highlight different types of stressors that the new amputees suffered postoperatively, the third one presented different ways of coping among new amputated patients, and the fourth part covers the relation between amputation related stressors and coping strategies.

#### Part I: Subject Characteristics:

The current study findings showed that the majority of the study sample's age was above 40 years, this is consistent with the age group representing the study population, supporting the WHO (2007) report that the highest incidence of amputation was in the age group of 41 – 60 years. Regarding gender the current study showed that the high frequency was males, this result contradicted with Chin-Hsiao (2006) who mentioned that the prevalence increased significantly with age among men and women. About three quarters of the sample size were married, and about half had manual work, income of the majority was less than 500

LE and living with others, this result can reflect the Egyptian culture. Study results showed that the highest frequency of the sample had diagnosis of ischemia, admitted with discoloration of the lower limb; this

could explain the current state of Egyptian patients' culture where they came to hospital at late stage of the disease.

**Table (1): Distribution of Subjects' Characteristics According to Socio-Demographic Data and Disease Related Data of the Studied Sample (n=50).**

Subjects' Characteristic	NO.	%
<b>Age (years):</b>		
20-	11	22
40-	29	58
60+	10	20
<b>Gender:</b>		
Male	31	62
Female	19	38
<b>Marital Status:</b>		
Single	7	14
Married	37	74
Widow	6	12
<b>Education Level:</b>		
Illiterate	21	42
Basic	16	32
Secondary/University	13	26
<b>Occupation:</b>		
Unemployed/Housewife	21	42
Manual work	27	54
Employee	2	4
<b>Income /LE:</b>		
<500	40	80
500+	10	20
<b>Living:</b>		
Alone	3	6
With Others	47	94
<b>Diagnosis</b>		
Gangrene	6	12
Trauma	10	20
Diabetic foot	10	20
Ischemia	19	38
Tumor	5	10
<b>Cause of admission</b>		
Swelling	18	36
Hotness	18	36
Discoloration	32	64
Pain	24	48
Trauma	24	48
Gangrene	7	14
Ischemia	2	4
<b>Amputation site</b>		
Upper limb	4	8
Lower limb	46	92

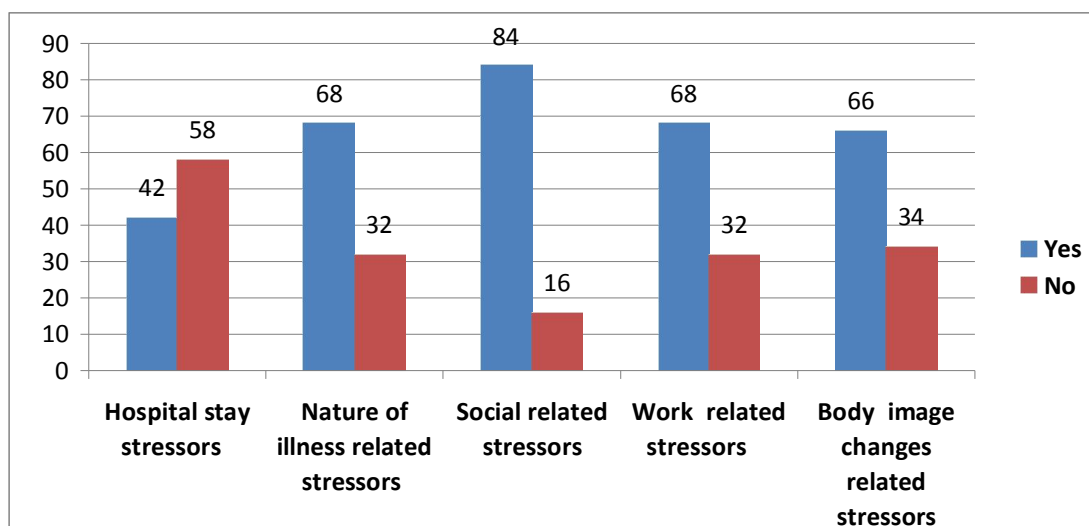


Figure (1): Percentage Distribution of Postoperative Amputations Related Stressors among the Studied Sample (n=50).

Table (2): Relation between Total Amputations Related Stressors' Scores and Socio-Demographic Characteristics among the Studied Sample (n=50).

Socio-Demographic Characteristics	Total stress scores X±SD	Mann-Whitney test	p-value
<b>Age (years):</b> 20- 40- 60+	77.5±5.2 78.1±4.7 79.0±5.8	H = 0.77	0.68
<b>Gender:</b> Male Female	77.6±5.1 79.2±4.8	H = 1.34	0.25
<b>Marital status:</b> Single Married Widow	74.6±4.7 78.8±5.0 78.3±3.9	H = 4.11	0.13
<b>Education level:</b> Illiterate Educated	80.2±4.5 76.6±4.9	H = 6.28	0.01*
<b>Occupation:</b> Unemployed/Housewife Working	79.8±4.8 77.0±4.8	H = 4.26	0.04*
<b>Income (LE):</b> <500 500+	77.9±5.1 79.4±4.4	H = 0.60	0.44
<b>Living:</b> Alone With others	73.2±5.3 78.5±4.8	H = 3.02	0.08

(H) Kruskal Wallis test

\* Statistically significant at  $p < 0.05$

Table (3): Relation between Disease Characteristics and Amputations Related Stressors' Scores among the Studied Sample (n=50).

Disease Characteristics	Total stress scores X±SD	Mann-Whitney test	p-value
<b>Amputation site:</b> Upper limb Lower limb	81.1±5.0 77.7±4.8	H = 3.33	0.07
<b>Use of walking aid</b> Yes No	78.3±5.0 77.9±5.0	H = 0.19	0.66



**Table (4): Distribution of Post 1 and Post 2 in Relation to Coping strategies used by Patients in the Study Sample (n=50).**

Coping Strategies	Frequency	Percent
<b>Post 1*</b>		
Active	4	8.0
Avoidance	7	14.0
Minimize the Situation	23	46.0
No way of coping used	20	40.0
<b>Post 2**</b>		
Active	11	22.0
Avoidance	1	2.0
Minimize the Situation	46	92.0

\*Post 1=on discharge

\*\* Post 2 = 2 weeks after discharge

**Table (5): Correlation Matrix of Post 1 and Post 2 Regarding Way of Coping Scores among Studied Sample (n=50).**

Coping score	Pearson correlation coefficient			
	Coping score			
	on discharge (Post 1)		2 weeks after discharge (Post 2)	
	Active	Avoidance	Active	Avoidance
Avoidance	0.03		0.18	
Minimizing the situation	0.32*	- 0.62**	0.00	- 0.51**

\* Statistically significant at  $p < 0.05$ \*\* Statistically significant at  $p < 0.01$ **Table (6): Correlations between Different Ways of Coping in Post 1 and Post 2 with Selected Socio-demographic Data among the Studied Sample (n=50).**

Socio-Demographic Characteristics	Active Coping		Avoidance Coping		Minimize the Situation	
	Post 1	Post 2	Post 1	Post 2	Post 1	Post 2
Gender	0.140	0.008	0.296*	0.180	-0.070	0.010
Age	0.176*	0.058	-0.132	0.244	0.047	-0.147
Marital status	-0.117	-0.117	0.091	0.040	-0.072	-0.033
Work	-0.014	-0.026	-0.095	0.062	0.028	0.231
Education level	0.511**	0.430**	0.071	0.015	-0.129	-0.251
Income	0.386**	0.244	-0.312*	-0.116	0.257	-0.220

\* Statistically significant at  $p < 0.05$ \*\* Statistically significant at  $p < 0.01$ **Table (7): Correlation between Amputations Related Stressors Scores and Postoperative Ways of Coping among Studied Sample (n=50).**

Way of Coping \ Amputations Related Stressors	Active Coping		Avoidance Coping		Minimize Situation Coping	
	Post 1 r	Post 2 r	Post 1 r	Post 2 r	Post 1 r	Post 2 r
Hospital stay stressors	-0.415	-0.364	-0.506	-0.321	0.048	0.287
Nature of illness related stressors	0.420	0.031	-0.335	-0.238	0.379	0.272
Social life related stressors	-0.089	* 0.917	-0.772	-0.787	-0.663	-0.472
Work situation related stressors	-0.116	0.174	0.066	0.039	-0.592	-0.806
Change in body image related stressors	0.060	-0.311	0.140	0.345	**0.798	*0.647

\* Statistically significant at  $p < 0.05$ \*\* Statistically significant at  $p < 0.01$ **Part II: Amputation Related Stressors postoperatively**

Amputation of a limb has an extensive effect on people's lives, people losing many physical functions

and abilities that were once taken for granted (Saradjian *et al.*, 2008). The study finding revealed that the majority of the sample expressed stressors related to social life, from the researchers' point of

view, amputation could prevent the patient from practicing the social role and consequently, necessitates, one of the family member to play the role of the absent father or mother, and at this time, the patient and all the members of the family focus their attention on the patients health state rather than social life. This was supported by Atherton & Robertson (2006) and Dawn and Stephen (2011) who mentioned that many lower limb amputees experience problems which subsequently reflecting on social life. Changes in family roles may lead the patients feel angry or guilty about being ill, moreover, changes of family roles and responsibilities have created another stressor for the patient and his family.

More than two thirds of the study sample suffering from nature of illness and work related stressors, this could be related to presence of physical symptoms accompanied with the illness as pain at amputation site and disease process followed by loss of control over activities of daily living, Cansever *et al.* (2003) and Hawamdeh *et al.* (2008) emphasized that most patients who lose a limb as a result of traumatic or surgical procedures encounter a series of complex psychological responses. Shives (1998) noted that, patients worry about health problems, what the outcomes will be, and how the illness will influence their lives. Helmy (1998), added that patients in her study had not enough information about their disease as the doctors had no time to give clear explanation about their diagnosis and medications, all these factors increased the patients level of stress.

Stressors related to the work might be due to the fact that, amputated patient has the inability to work, diminished work capacity, or loss of job after surgery. On the same line Helmy (1998) reported the same result in her study. Unexpectedly, there was no statistically significant difference between stressors and income although the majority had income less than 500LE. This could be interpreted on light of the fact that the majority of the study sample living with others, this could reflect the Egyptian culture.

Two thirds of the study sample had stressors related to body image. This could be related to fear of losing part of body, fear of disfigurement and then feeling of incomplete body. This result was supported by Hanley *et al.*, (2004) who mentioned that, surgical removal of a body part or limb often possesses a threat to body image and self concept. Also, Miller *et al.*, (2001) reported in their study that, there is a threatened loss of self and an alteration of body image that interferes with intimacy following amputation. These changes experienced by the patient result in disturbance in self-esteem.

In spite of the fact that the hospital represents an unfamiliar and strange environment when a person undergoes surgical intervention, unexpectedly the least

frequency (42%) of the study subjects expressed hospital stay as stressor; this is can be explained as a high percentage of the study subjects were chronically ill and they were used to such stressor. This result was supported by Helmy (1998) and Hanley *et al.*, (2004) who reported that, illness and hospitalization can be a life-threatening situation when hospitalized patients had certain factors that were a source of stress, such as the financial problems, inadequate explanation of diagnosis, unconcerned attitude of the hospital staff, being away from job, and loss of personal privacy. Hospital stay stressors also could be due to sudden hospitalization or admitting as an emergency case and consequently not prepared for hospitalization. This coincide with Amin (1995) who described that, most surgical patients experience high anxiety levels on admission, remain quite prior to the operation, and then this declines steadily during the week or two weeks after surgery.

Regarding to total score of amputation related stressors, and subject characteristics, the study revealed that there is only statistical significant difference between total score of amputation related stressors and education level as well income, that the patients who are illiterate and had no work suffer more stressors, no statistical significant difference with age, gender, marital status and income. Also there was no statistical difference with disease characteristics. This results supported by Andersson & Deighan (2006) who mentioned that amputation affects men and women of all ages, classes, races and religions. The patients' reactions are, however, entirely unique.

These results answered the first research question regarding to what are the post operative stressors exhibited by the new limb amputated patients?

### **Part III: Ways of Coping among Amputated Patients**

Three ways of coping was used in the current study namely, active, avoidance and minimize the situation, it was revealed that on discharge the most frequency of the study sample used minimize the situation as a way of coping followed by two fifth not used any way of coping. After two weeks of discharge the majority used minimize the situation as a way of coping, followed by active coping. The study showed statistically significant negative correlation between minimize the situation and avoidance coping, these might indicate that the new limb amputees were directed to adaptation and in the process of acceptance stage. This is probably true with other forms of disability and illness; also coping strategies have been shown to vary according to each situation.

These findings were congruent with Amputee Coalition of America (2001) who reported that during



the first six weeks after amputation, many changes are occurring rapidly, most of them are positive changes with decrease of pain and swelling and increase of mobility and accommodation to the physical reality of amputation; however, there are many real problems during this period, physical as well as emotional. On the same line, Desmond and MacLachlan (2005) found in their study that, an amputee's greater use of active coping and less use of passive coping strategies are associated with greater adjustment and acknowledgment of disability. Time since amputation could mediate the relationship between amputation and psychological adjustment. Several studies have reported no relationship between time since amputation and adjustment. When an effect of time since amputation has been found, the findings have indicated that increased time since amputation is associated with a more favorable outcome (Horgan & MacLachlan, 2004).

The current study results proved that, marital status, and occupation didn't influence ways of coping+ among the studied sample. However, gender, age, level of education, and income showed statistically significant differences with ways of coping, which may indicate that, education level, and age could be considered as main predictors of how patients use different ways of coping effectively as Mostafa reported (2006) in her study. These results are contradicting with Osman's finding (2003), who found that, neither age, nor exacerbation of illness influenced coping strategies, also reported that, worker' patients showed to be statistically significant different from non-workers; the work is central to the recovery of the patients, affecting all aspects of life as physical health, personal grooming, and helps patients to build up their self-esteem, self-confidence, and social interactions. The same research supports the current study results that no relation was found between those who are married versus the unmarried.

One can conclude from the previous findings that, there were different ways of coping among new amputees and the most commonly used were minimize the situation coping followed by active coping and the least commonly used was avoidance coping. These results answered the second research question regarding to what are the coping strategies for patients with new limb amputation?

#### **Part IV- Relation between Amputations Related Stressors and Coping Strategies**

The current study results proved that, stressors related to hospital stay, nature of illness and work situation didn't influence ways of coping among the studied sample, however, stressors related to social life and change in body image showed statistical significant differences with ways of coping. The

current study result findings may indicate that, the social support gained from family members help mostly in achieving adaptation with any crises including chronic illness and/or disability. The essence of the amputee support group is to provide a safe environment where amputees discuss grief and loss issues and lifestyles changes (Jacobsen 1998). Marzen-Grppler & Bartman (2005) reported whether it is a traumatic injury, congenital or disease-related amputation, losing a limb is a life-changing event that one should not go through alone. Body image found to have a considerable relationship with social life; so, losing a limb has been found to dramatically change a person's sense of body image and consequently self-image, which has, in turn, may lead to potential loss of social acceptance (Jacobsen, 1998). Patients with amputation viewed themselves as unfit for the society anymore and people in the society also viewed them as members of stigmatized group. The reason is that, body image not only provides a sense of self, but also affects how we think, act and relate to others (Wald, 2004).

Regarding the relationship between work related stressors and ways of coping, the study findings were on the same line with Oaksford *et al.* (2005) who reported that patients with amputation had problems in return to work, problems in finding suitable jobs, fewer possibilities for promotion, and problems in obtaining needed workplace modifications. Results related to social support were supported by Unwin *et al.* (2009) who reported in their study that social support was related to general adjustment at follow-up assessment. They emphasized the importance of psychosocial variables in the prediction of positive adjustment to lower limb amputation.

Nurisma (2009) found that a good perception of body image is best achieved within a supportive social framework; social support from significant others enhances both emotional and physical health. Clients with an active social support network are likely to make better progress than those without support. Moreover, besides an adequate support system, professional counseling can help the patient cope effectively with amputation.

These results answered the third research question regarding to, is there a relation between amputations related stressors and coping strategies among patients with new limb amputation?

#### **Conclusion**

Amputation itself is a change in body structure, but has a great influence on participation of many activities. This study has attempted to show how coping strategies may appear among amputees. There are several coping strategies utilized by these patients, depending on the individual circumstances and

resources available to each amputee. The study concluded that the patients with amputation suffered from different stressors related to social life, nature of illness, work situation, body image, and hospital stay. On discharge, forty percent of the studied sample did not use any way of coping. Two weeks after discharge, the majority used minimize the situation coping strategy. Considering the time factor, the new limb amputees were directed to adaptation and in the process of acceptance stage.

### Recommendation:

Based on the findings of the present study, the following recommendations are suggested:

- The necessity of multidisciplinary team to help patients to overcome the consequences of amputation related stressors.
- Encouraging the involvement of patients as well significant others in planning care and stress management activities program through initiation of amputee support groups within health care agencies or communities.
- Replication of the study is required to investigate the coping strategies of patients with amputation after one year.
- Further study to investigate coping strategies of patients with upper versus lower limb amputation.
- Comprehensive nursing management protocol dealing with amputation related stressors should be available to help such patients for adjustment.

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