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Bachelor's Thesis

THE EFFECTS OF AMPUTATION ON BODY IMAGE AND WELL-BEING

- A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Degree Programme:	
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The study was based on life after amputation, focused on psychological, social and economic effects. Systematic literature review was used to analyze the data, twenty recent journals were reviewed and tables were generated to show details of the articles involved such as purpose of the articles, titles of the articles, authors, year of publication and the results. The purpose of the study was to give details of the life after amputation and to provide answers to the following research questions :

1. What are the problems that set in after amputations?
2. How can amputated victims be rehabilitated?

To achieve reliability of information, academic databases such as Sciencedirect, Ebesco, and Books were used. Results were generated for the study; limitations of the study were also identified and related topic was suggested as an area where future students of health care field can research on.

Key words: Amputation, quality of life, social stigma, body image and well-being, anxiety and depression, social integration, rehabilitation, psychosocial effect of amputation etc.

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1. INTRODUCTION

The issue of effects of amputation on body image and well-being came to mind while living with a limb-amputated victim due to diabetes. Shared experience after the amputation, gave insight into the kind of life amputated victims are going through. To have a deeper insight, efforts were made to dedicate a final thesis to lives after amputation.

Limb loss is defined as the experience of parting with a limb of the body (Flannery & Faria 1999, 100). Loss of a limb is a tragic event and in certain situations, amputation seems to be unavoidable. In this present society, a number of people have experienced limb loss for one reason or the other, as a result of this, their lives have gone through a total change. Meanwhile, Amputation itself is a change in body structure, but has a great influence on many activities, participation in activities and quality of life (Burger & Marincek 2007, 1322). As a result of amputation, lifestyles are forced to be changed; source of living is partially or badly affected and their line of thought about how people see them in the society will never remain the same. In other words, amputation goes a long way to affect people psychologically, socially and economically.

Globally, amputation has become one of the common problems in the present society, a number of people have one or both limbs amputated and the situation noticed to on increase worldwide. Currently, United States accounts for greater than 110,000 persons who lose their limbs through amputation annually, with approximately 101,000 (91.7%) of them involving the lower extremity (Flannery & Faria 1999, 101). Meanwhile, The National Lower Limb Information Center estimates there are 185,000 amputations in the United States each year and 75% of amputations occur in people who are aged more than 65 years (Marzen - Groller & Bartman 2005, 42). Also, according to the National Health Interview Survey, approximately 1285000 persons (0.4% of the US population) were living with limb loss in the United States in 1996 (Williams et, al. 2004, 862.)

Series of factors could be a cause for amputation. Flannery & Faria (1999, 101) noted that amputations are 15 times more likely to be needed in persons with diabetes than in persons without diabetes, not only because of macro-vascular changes, but also microvascular, autonomic, and sensory neuropathic changes. It is estimated that 0.5% of all operations performed annually in the United States are amputations related to Ischemia in a lower extremities (Jacobsen 1998, 31). Marzen - Groller & Bartman (2005, 42) contributed that these statistics continue to increase because of the aging population and early detection of diabetes mellitus and peripheral vascular disease. Diabetes is the cause for nearly 80% of the traumatic amputation, with atherosclerosis or chronic arterial occlusive disease as the underlying pathology (Flannery & Faria 1999, 101). In the other hand, amputation due to non-fatal incidence was noticed by Wald (2004, 6) in the United States between 1992 and 1999, there were approximately 11,000 non-fatal work place amputations each year. Other condition can occur after amputation, rates of depressive disorder among the persons with limb loss range from 21-35% compare to 10-15% in the general population (Williams et al. 2004, 862.)

2. BACKGROUND

In this Chapter, literatures concerning amputations and the related areas were critically examined and the relevant facts were noted. Amputation, body image & wellbeing and Quality of life after rehabilitation were made cogent.

2.1 **Amputation**

Amputation could be described as the removal of a body extremity by surgery or trauma. If amputation is taken as a surgical measure, it is used to control pain or disease process in the affected limb. Ordinarily, a person with an amputation feels mutilated, empty and vulnerable. Traumatic amputation is a catastrophic work injury and often a major cause of disability (Wald 2004, 6). Furthermore, decreased self-esteem, social isolation, perceived vulnerability, body image problems, and sense of stigmatization have also been associated with limb loss (William et al. 2004, 862). In some situations, amputation cannot be avoided as it is difficult to have total avoidance of injuries, infections etc. Independent of the cause of amputation, whether it is due to vascular, traumatic or orthopaedic causes, it is a mutilating surgery and it definitely affects the lives of these patients (De Godoy et al. 2002, 397). Amputation of limb is a common thing in this present society. Limb loss can be a psychologically stressful experience, rates of depressive disorders among persons with limb loss range from 21-35% compared to estimates of 10-15% in the general population (Williams et al 2004, 862.)

Individuals with an amputation are faced with adapting to several losses and changes to their lifestyle, social interactions and identity (Horgan & MacLachlan 2004, 839). The loss of an upper limb potentially has a greater impact than Lower limb, this is because people's hands and arms are not only particularly important functionally, they allow people to manipulate objects and carry out most of the activities of daily living, but socially as well (Saradjian, Thompson & Datta 2008, 872). After amputation, victims face a number of challenges both within himself and in the environment.
Besides, Victims have problems with returning to work after lower limb amputation

(Burger & Marincek 2007, 1328.)
As time passes, the individual discovers how well he or she can cope with the newly found limitations and restrictions (Horgan & MacLachlan 2004, 841.)

Concerning returning to work, it was realized that higher amputation levels decrease re-employment rate (Burger & Marincek 2007, 1327). Amputation of a limb has an extensive effect on people's lives, with people losing many physical functions and abilities that were once taken for granted (Saradjian, Thompson & Datta 2008, 871). Post-amputation jobs were generally more complex with a requirement for a higher level of general educational development and were physically less demanding (Burger & Marincek 2007, 1327). These factors indicate that re-integration may be more difficult.

2.2 **Body image and well-being**

Body image may be defined as the combination of an individual's psychosocial adjustment experiences, feelings and attitudes that relate to the form, function, appearances and desirability of one's own body which is influenced by individual and environmental factors (Horgan & MacLachlan 2004, 839). From another perspective, Flannery & Faria (1999, 100) see body image in a person as a dynamic changing phenomenon, it is formed by feelings and perceptions about a person's body that are constantly changing. Meanwhile, amputation results in disfigurement and may lead to a negative body image and potential loss of social acceptance (Jacobsen 1997, 31). Meanwhile, relationship between disability experience and stigma is not uni-dimensional, this means that they are interwoven and inter-dependent. Also, amputated victims see themselves as unfit for the society anymore after amputation and people in the society also see them as members of stigmatized group. The reason is that, body image not only provides a sense of ''self'', our body image also affects how we think, act and relate to others (Wald 2004, 9.)

The way amputation people see themselves contributes to the way society sees them. Horgan & MacLachlan (2004, 840) noted that perception of stigma can sometimes lead to disabled people being treated differently by non-disabled people because the latter may make assumption, on the basis of the disability, about all aspects of the individual's personality and functioning. Labeling is the recognition of socially salient differences, in terms of the disability experience, labeling occurs when others recognize that a certain biological trait differs from the norm in ways which have social significance (Green 2007, 330). Another way of putting this is that people with simulated disabilities, specifically, a simulated amputation, are treated differently by those without any visible impairment (Horgan & MacLachlan 2004, 840.)

Labeling could degenerate to seeing the amputated victims as being a kind of failure or their own fault, Individuals with disabilities are devalued, that is they are not treated like other individuals, their disabilities are seen as signs of personal failure, and they are considered less valuable than other human beings (Green 2007, 331). Despite series of limitations that prove to be stumbling block for the amputated victims in moving on with daily lives, much are still expected from the victims in other to portray themselves in a good way. In addition to having to cope with physical limitations and the impact that these can have on social functioning, individuals have to adjust to the fact that they appear different from other people (Horgan & MacLachlan 2004, 839.)

Public attitudes toward disability rather than the existence of impairments alone, negatively affect feelings of well being among individuals with disability (Green 2007, 338). Following an amputation, individuals must adapt to changed physical and social functioning and incorporate these changes into a new sense of self and self identity (Horgan & MacLachlan 2004, 840). Adaptation to one's present new life will liberate the mind from labeling and social stigma. Besides, stigmatization, segregation and labeling that troubled the life of the amputated people, their situation can still degenerate to a medical problem such as anxiety and depression, this will go a long way to affect a general well-being. Anxiety, depression and physical disability are three major problems faced by many adults (Green 2007, 338.)

Individual with an amputation have a particular vulnerability to developing depressive symptomology (Horgan & MacLachlan 2004, 837.)

Anxiety is a normal response to perceived stressors or threats and is manifested by feelings of nervousness or fear, recurrent and uncontrollable frightening thought, and a variety of physical responses (e.g increased heart rate, sweating, difficulty breathing, muscle tension (Wald 2004, 7). Moreover, Body image distortion and body image anxiety occur among some people who have amputation (Horgan & MacLachlan 2004, 839). Meanwhile, there is growing evidence that these problems are related (Brenes et al. 2008). Disability experience does not affect all components of stigma equally. Anxiety has been found to be associated with depression, poorer perceived quality of life, lower level of self esteem and higher level of general anxiety (Horgan & MacLachlan 2004, 839). Both anxiety symptoms and depressive symptoms are associated with greater physical disability with increasing age (Brenes et al. 2008, 158). In the same vein, since depression is associated with increased physical disability in older adults, social discomfort and perceived stigma could therefore impact on reduced physical and social activities indirectly as well as directly (Horgan & MacLachlan 2004, 846.)

Losing a limb has been found to dramatically change a person's sense of body image and consequently self-image, which has, in turn, been associated with a person's satisfaction with life (Saradjian, Thompson & Datta 2008, 871). Moreover, such anxiety has been found to be associated with depression, poorer pereived quality of life, lower levels of self-esteem, and higher levels of general anxiety (Horgan & MacLachlan 2004, 839). Due to satisfaction with life, after lower limb amputation, men are more concerned with the restoration of function and women with regaining a feminine body image (Saradjian, Thompson & Datta 2008, 871). Wald (2004, 7), in his contributions says that post-traumatic stress symptoms also involves deliberate attempts to avoid thinking about and talking about the traumatic event, objects, situations, and activities that serve as reminders of the accident may be avoided.

2. 3 **Quality of life and rehabilitation**

Physical part of the body was the most involved independent cause of amputation, wether it is due to vascular, traumatic or orthopaedic causes, it is a mutilating surgery and it definitely affects the lives of these patients
(De Godoy et al. 2002, 397). Quality of life automatically drops after losing any important part of one's body. Wald (2004, 10) realized that given the complex physical and psychological issues involved in work related amputation, a comprehensive and holistic rehabilitation approach is recommended. The goal of rehabilitation after amputation is to improve an individual's mobility and to assist integration back into the community (Singh et al. 2008, 122). The most affected attributes are the physical capacity, the physical, the general state of health, the social aspects, the emotional aspects and the pain (De Godoy et al. 2002, 400.)

Burger & Marincek (2007, 1323), claimed that the ultimate objective of rehabilitation is to allow amputees to integrate into the community as independent and productive members. The impact upon the person and the process of adjustment to limb amputation is a highly complex and dynamic one that varies across individuals (Saradjian, Thompson & Datta 2008, 873). Although physical injuries can be treated through medical care and rehabilitation, the psychosocial impact can last for several months, years, or even throughout amputee's life. Besides, success of rehabilitation can be measured in many ways but a common outcome measure is successful fitting of prosthetic limb as use of prosthesis improves functional mobility and independence (Singh et al. 2008, 122.)

Use of prosthesis is to restore body image and improve functioning in a cosmetically acceptable way (Saradjian, Thompson & Datta 2008, 872). The process of adjusting to work-related amputation often involves cognitive, emotional, and behavioural adaptations (Wald 2004, 6.)

Success of prosthesis fitting was the dependent variable and gender, age, length of patient stay, time taken to prosthetic fitting, comorbidity, level of amputation and social isolation were the independent variables (Singh et al. 2008, 123.)

There are many factors that have been investigated in moderating a person's psychological adjustment to losing a limb including patient demographics such as age, gender and level of education (Saradjian, Thompson & Datta 2008, 872). Meanwhile, rehabilitation in general involves regaining an acceptable level of functioning and participation (Kelly & Dowling 2007, 35). During the period shortly after amputation, Horgan & MacLachlan (2004, 837) say depression has been reported as being the reason for decreased use of their prosthesis and lower level of mobility amongst people with long term amputations. There is a process of adjustment to prostheses, which also demonstrated the individuality of a person's relationship to it (Saradjian, Thompson & Datta 2008, 881). Meanwhile, rehabilitation includes re-training and re-education of those who have become partially or wholly incapacitated (Kelly & Dowling 2007, 35.)

An important component of an amputee's rehabilitation is participation in an amputee support group, peer support, such as that received from an amputee support group, expands the resources available for coping with limb loss while educating amputees, family members and others (Jacobsen 1997, 31). Amputation level appears to be an important factor in predicting successful rehabilitation, prosthesis use decreases as level of amputation increases (Horgan & MacLachlan 2004, 837). Support groups provide an opportunity to identify and meet the special needs of the amputee and their family (Marzen-Grpller & Bartman 2005, 42). Participation in an amputee group can be extremely beneficial for the new amputee, successfully adjusted amputees who have participated in a support group often show that losing a limb is not losing a life and that many possibilities exist for a productive, active life if a person's mind is open to them (Jacobsen 1997, 31.)

Moreover, whether it is a traumatic injury, congenital or disease-related process, losing a limb is a life-changing event that one should not go through alone (Marzen-Grpller & Bartman 2005, 42). The essence of the amputee support group is to provide a safe environment in which to discuss grief and loss issues and lifestyles integration (Jacobsen 1997, 33.)

According to Jacobsen (1997, 32) :

- A support group provides opportunities for peers and interdisciplinary team members to meet the unique needs of amputees, including the psychosocial and physical aspects of care.

- Support group provides amputees opportunities to share common experiences, new amputees learn about the circumstances of other amputees (i.e, same etiology, same concerns and fears, and same initial problem of pain, movement and body image).

- Amputee support groups also provide opportunities to obtain resource information about available community services, national amputee organizations e.g Amputee Coalition of America.

One aspect of the broad construct of social support is social integration (SI), defined as the extent to which an individual participates in a broad range of social relationship (William et al. 2004, 863). Support group participation reduced the overall mortality and improved the patients' quality of life (Marzen-Groller & Bartman 2005, 42). Studies conducted across a variety of populations indicate that people who are more socially integrated live longer (William et al. 2004, 863). Social support has long been recognized as an important aspect to well-being and health (Marzen-Groller & Bartman 2005, 42.)

Jacobsen (1997, 32) spelt out the nursing roles in facilitation:
Nurses need general information about amputees as a foundation for their role in facilitating amputee support groups.

I Assessments including mail surveys, follow up phone calls, focus group discussions, and one to one conversations.

II Initiation of amputee support groups within health care agencies or communities, also initiation of the action needed to develop a group.

Kelly & Dowling (2007, 38) also developed a table to show detail roles of nurses in facilitating lives of an amputees:

Nurses' roles	Description
Assessment	Identifying and addressing actual and potential problem referrals to other team members and ongoing assessment provides up-to-date information for all team members.
Co-ordination and communication	Gathering synthesizing and disseminating information. Providing feedback to team members. Discharge planning, referral and negotiation.
Technical and physical care	Nutritional support, medication administration, wound dressing and infection screening. Helping patients meet personal hygiene needs and maintain comfort.
Therapy integration and therapy follow up	Carrying out prescribed therapy exercises. Minimizing physical, social and emotional barriers to rehabilitation and integrating skills relearned into activities of living, for example using new transfer methods.
Emotional support	Reassuring, explaining and encouraging, and creating a supportive environment.
Involving the family	Providing information, emotional care and reassurance.

3. AIMS AND RESEARCH QUESTIONS

The main aim of this research was to get better understanding of the ordeals being faced by the victims of amputation, in coping with life after amputation, and to provide answers to the research questions below. This requires review literatures on amputation, stigma, well-being and the related areas.

I What are the problems that set in after amputations?

II How can amputated victims be rehabilitated?

4. SYSTEMATIC LITERATURE REVIEW

4.1 **Method**

The method used in analyzing data in this study is systematic literature review. Features of the method will be critically examined. Systematic reviews use existing primary research for secondary data analysis, eliciting common themes and results, and providing a good evidence based to inform policy-making and practice (Neale 2009, 51). In a situation where large volume of data is involved, S. R helps in controlling the data in a logical way and make use of all the relevant information that evolved. Randomized controlled trials related to a particular question are identified systematically, and methods used to identify studies are reported in full (Brophy et al. 2008, 11.)

Today, Systematic literature review is applicable in different fields of research works, health field is inclusive. Health and social care practitioners need to be up-to-date with the latest information in their field, but they are unlikely to have the time to read, assimilate and interprete every publication or to follow debate (Neale 2009, 52). Making a decision on which method of data analysis is another important part of a research study. It uses systematic and explicit methods to identify, select and critically appraise relevant primary research and to extra and analyze data from studies that are included in the review (Callaghan & Waldock 2006, 344). It is difficult to assess and assimilate all the available articles on a research topic, particularly as individual studies often produce conflicting results. To meet up with the challenge of voluminous data, systematic reviews have emerged as an important research method to meet this need.

The objective of the initial review of the literature is to discover relevant material published in the chosen field and to search for a suitable problem area (Walliman 2001, 25). A literature review brings together existing knowledge on a particular topic, in so doing, the general aim is to summarize, evaluate, synthesize and interpret previous research, argument and ideas in order to make sense of current knowledge in the subject area being investigated (Neale 2009, 49). It is often easier to understand the phenomena when they are compared with similar phenomena from another time or place.
People faced lots of problems with explosion of information and ideas during a research study and ways of controlling this large volume of data has become a serious problem. Controlling a voluminous data in evidence based format prove to be a problem, according to (Callaghan & Waldock 2006, 344), a systematic review is a review of the evidence on a clearly formulated question.

Moreover, Systematic reviews have the advantage of bringing together what can be vast bodies of information, and they provide an easy-to-digest, considered synopsis of the latest evidence on a particular issue intervention (Neale 2009, 64). Analyzing a large volume of articles looks more reliable and accurate when it is being compared with other articles, especially from another area but having the same line of research. This helps the reviewer of the articles to arrive at a good result. Walliman (2001, 25) says as every piece of research contributes only a small part of a greater body of knowledge or understanding, researchers must be aware of the context within which their research work is to be carried out. Lots of information is involved in health field and there is need to make references to the old and distant studies in order to come up with substantial outcome in a research work. Conducting a systematic review of the literature can be very time-consuming, however, it is usually more time- and cost-efficient than undertaking a new study (Neale 2009, 67.)

Systematic literature review also has its own bad sides, it takes lot of time to analyze series of articles and there is tendency that one may be confused and mix things up during the analysis. Neale (2009, 68) eventually came up with some other strengths of this method:

- Systematic reviews have the advantage of bringing together what can be vast bodies of information, and they provide an easy-to-digest, considered synopsis of the latest evidence on a particular issue or intervention.

- A key strength of systematic reviews is that they provide a more objective appraisal of the available evidence compared with traditional narrative literature reviews.

- Systematic reviews allow a more thorough examination of all available data and enable reviewers to move the conclusions of individual studies.

- A further strength of systematic reviews is that the consistency of results can be examined across studies.

4.2 **Review process**

This study requires reviews of the existing literatures and there are lots of relevant materials on it and this led to use of systematic literature reviews. The guidelines were to use academic databases to attain reliable information. It was noted that the use of public search engines may not give reliable academic literatures and in other hand may have impact on the results.

Therefore, academic search engines such as Sciencedirect, Ebesco, Ebrary etc were considered as the appropriate choices. During the search, three criteria were set out to guide the search:

- Two research questions were developed in the beginning of the search as the borderline for the search and after reviewing the available articles, third research question was later formed.

- Keywords were created but limited to the terms that have relationship with the topic.

- Year of publication of the articles was also given priority in order to create room for articles with recent ideas. Meanwhile, series of relevant articles done few years ago were also proved to be relevant but only few of these were considered.

  Generally, about 27 articles proved to be relevant to the topic and all the research works were gotten from reliable academic databases. Considering the criteria set as guidelines for the study, selection of the most valuable articles were carried out, base on certain factors and considerations. Two articles were removed based on the fact that, each of them focuses on treatment of the amputated limbs and do not connect the amputation with the body image and well-being, they are of more medical issues than psychological, social and economic as stated in the main research topic.

  Concerning year of publication, five articles were carried out in the 1990s and the set target is to consider the most recent articles, most especially, the ones done in the year 2000 upward. Due to this reason, the two most valuable articles were given consideration out of these five articles and the others were removed.

  Ability of the articles to provide right answers to the research questions is very important in this study and it was noted that two articles have a relevant title but they could not really answer the research questions as required. Though, some ideas were benefited from the articles, but they could not be included for the literature review and therefore excluded.

Furthermore, efforts were made to make sure all the selected thirteen articles have something important in connection with the topic. In addition, they could in one way or the other, provide relevant answers to the research questions. The analyses of the results of all the considered articles were tabulated and the table is shown in the result analysis section. In the end, only twenty articles were considered and the rest were discarded but the substantial ideas gained from reading them helped as the study goes on.

4.3 **Data analysis**

This section is dedicated to analysis of the contents of all the selected articles, the main idea of each articles and how they are connected with the topic of the research work.

After the analysis, a table was drawn to show the results in a more precise and usable form. Two of the 20 articles include the words body image and well-being as part of their topic and six others discuss them as sub-topics in the contents. In their results as well, they provided answers to impact of amputation on body image and well-being. Concerning rehabilitation; psychosocial adjustment; impact of social groups and roles nurses in helping the amputated victims, seven articles have these terms as main topics and discussed them deeply. Aside those seven articles, other three articles also have those topic discussed as minor in their analysis. Altogether, about ten articles helped in providing answers to the research question that has to do with rehabilitation of the victims.

Meanwhile, other four articles are deep rooted in medical problems that set in after amputation such as anxiety and depression; quality of life after amputation; and problems about returning to work after amputation. In a number of other articles, all these issues are also given attention and they are inter-connected with other areas of the study. All the articles used in the study carried out their studies in different perspectives; some made use of sampling method. The data were collected through questionnaires,

interviews from the victims of a certain hospitals or community. These people were asked to share their real life experience and this data was used to generate information. A range of mathematical tools were used in those studies to arrive at reliable results, these tools range from Chi-square, t-test, Pearson's correlation co-efficient, time series and least square regression. More so, few of these studies are essay-type, which used argument and justification of facts to draw out the conclusion. Next page is the analysis of the eight articles that answers the research questions, in a tabular form.

ANALYSIS OF THE RESULTS

Authors	Name of the article	Aims and purpose	Results
Brenes G. A, Penninx B. W. J. H., Judd .P. H., Rockwell E, Sewell . D. D & Wetherell J. L2008	Anxiety, depression and disability across the lifespan	To examine the relationship of anxiety & depressive symptoms.	Physical disability is associated with both anxiety and depressive symptoms; anxiety and depression are independently associated with disability.
De Godoy J. M. P., Braile D. M., Buzatto S. H. G., Longo O., JNR. & Fontes. O. A. 2004	Quality of life after amputation	To evaluate the quality of life of the available samples	Quality of life is prejudiced, affected attributes are the physical capacity, the physical, the general state of health, the social aspects, the emotional aspects and the pain.
Green. E. Sarah. 2007	Health Sociology Review	To examine the impact of self identified disability experience	Complexity and multi-dimensionality of the relationship between stigma and wellbeing; support the contention of the Social Model of Disability.
Jacobsen. M. Joan. 1998	Nursing role with amputee support groups	How support groups can be used to rehabilitate amputees.	Support of amputation victims and how they can be rehabilitated. Consideration of needs of amputees in the outpatient arena. Involvement of nurses in the initiation of amputee support groups.
Flannery. C. Jeanne and Faria. H. Sandra. 1999	Limb Loss: Alterations in body image	To explore the concept of limb loss and body image	PAD & limb loss has a relationship. Limb loss and body image has a link. There are pathophysiologic conditions leading to PAD & limb loss. Nursing implications outlined.
Horgan Olga & Maclachlan Malcolm. 2004	Disability and Rehabilitation: Psychosocial adjustment to lower-limb amputation	Review of existing literatures on the social and psychological challenges.	Social Discomfort and body image anxiety found among some amputees, associated with a poorer adjustment in terms of greater activity restriction, depression and anxiety.
Saradjian Adams, Thompson. R. Andrew & Datta Dipak. 2008	experience of men using an upper limb prosthesis following amputation	To gain a rich understanding of the experience of living with an upper limb amputations and of using a prosthetic arm & hand	Physical difference and ability; psychosocial adjustment to social interactions; activities and roles that minimize this difference and the negative feelings associated with it
Singh Rajiv, Hunter John, Philip Alistair & Tyson Sarah. 2008	Gender differences in amputation stigma	To assess the influence of gender on the success of limb-fitting after amputation	Gender and social isolation in women tend to have a poorer outcome than men as well as people who live alone. Rehabilitation gives birth to the quality of life after amputation

Figure 1: Analysis of the results

4.4 **Results**

This section is to present the main answers to the research questions:

- What are the problems that set in after amputations?
- How can amputated victims be rehabilitated?

Quality of Life (QOL) is increasingly used to measure outcome in rehabilitation. QOL is complex and there is no consensus regarding a single definition or about the domains that constitute QOL. There are 2 aspects that are included in almost all definitions: multidimentionality and subjectivity of QOL (Zidarov et al 2009, 634). Physical disability is associated with both anxiety and depressive symptoms. Though amputation often serves a lifesaving measure, the amputee usually experience it as traumatic loss, adjustment problems commonly reported include anxiety, post traumatic stress, body image concerns, loss of a sense of wholeness, social isolation, decreased sexual activity and depression (Davidson et al 2002, 693). Social discomfort and body image anxiety found among some people with amputations, and these have been associated with a poorer adjustment in terms of greater activity restriction, depression and anxiety. Psychological problems and depression are common following amputation, as part of the emotional adaptation to limb loss (Marshall & Stansby 2010, 286.)

Amputation affects the physical, psychological and social aspects of an individuals life, as well as the lives of family members (Davidson et al 2002, 693). Importance of upper limbs in expression, communication and affection, with hands is very important. The complexity and diversity of functions performed by the hands and their salience in communication and self-presentation, represent significant and distinct challenges for rehabilitation and prosthetic restoration (Desmond 2006, 15). These lead to individuals with disabilities being devalued; that is they are not treated like other individuals, their disabilities are seen as signs of personal failure, and they are considered less valuable than other human beings.

Lower limb amputation is a permanent surgical procedure that has important functional,

psychologic, and social sequelae that can influence the Quality of Life of the person with amputation (Zidarov et al 2009, 634). Perception of stigma as personal problem of the victims themselves can sometimes lead to disabled people being treated differently by non-disabled people because the latter may make assumption, on the basis of the disability, about all aspects of the individual's personality and functioning.

Public attitudes towards disability rather than the existence of impairments alone, negatively affect feelings of well-being among individuals with disabilities. Rates of major depressive disorder are reported to be as high as 34% to 35% for inpatient amputees reporting and 21% to 35% for outpatient amputees (Wegener et al. 2009, 373). Meanwhile, the onset of a traumatic and sudden event such as limb loss has an enormous impact on an individual's body, mind and social world, therefore creating a psychological disequilibrum (Davidson et al 2002, 694). Amputations are among the most dramatic events from an individual as well as a social perspective (Fosse et al. 2009, 391). Moreover, disability experience does not affect all components of stigma equally, individuals with disabilities are not treated like other individuals, their disabilities are seen as signs of personal failure, and they are considered less valuable than other human being . Thanni & Tade (2007, 213) re-affirms that amputation results in a significant alteration to the body image affects both the amputee and community members.

In general, providing answers to the first question: What are the problems that set in after amputation? Series of problems could set as discovered in the reviewed articles and the cogent ones all summarized under the following four problems:

- Living with a perceived stigma of deformed body image.
- Feeling of emptiness and worthlessness.
- Difficulty in social integration by feelings of being treated differently.
- Lack of effective communication and expression, especially if upper limbs are concerned.
- Psychological problems such as anxiety and depression.
- Economic set back due to loss of job or change of job.

The second research question: How could amputated victims be rehabilitated? was answered from a number of articles. Successful surgery will result in a well-adjusted, rehabilitated patient (Marshall & Stansby 2010, 286). Rehabilitation can be offered by Nurses, relatives, victims themselves and other health professional like Physical therapists, recreationists, social workers and pathologists. Successful amputation surgery, with good outcomes for the patients, requires an attention to details and careful coordination with physiotherapy and rehabilitation department (Marshall & Stansby 2010, 284). Reason behind this is that amputation of an upper limb engenders a multitude of physical and psychosocial challenges including alterations in body image and lifestyle, changes in self-concept, impairments in physical functioning, prosthesis use and pain (Desmond 2006, 15.)

In recent years, significant technological advances in design and fabrication of upper limb prosthetic devices have greatly improved the potential functional and cosmetic outcomes for individuals with upper limb amputations (Desmond 2006, 15). The incidence per thousand population in NSW Australia during 1993 for major upper limb amputations was 0.56 per 100,000, and in 1991 and 1989 the incidence was 0.79 and 0.89 per 100,000 respectively (Davidson et al 2002, 688). Although rehabilitation aims to address these sequelae, measuring the effect of these interventions on rehabilitation outcomes of people who have had an lower limb amputation remains a challenge (Zidarov et al 2009, 634). A multi-disciplinary rehabilitation team, experienced in the rehabilitation of upper and lower limb amputees, is essential to ensure the best chance of a successful outcome (Davidson et al 2002, 688.)

With the increasing trend in the incidence of limb loss because of the aging of the population and the increase in prevalence of conditions leading to peripheral vascular disease, there is a growing interest in the development of programs aimed at the prevention of secondary conditions affecting those living with the loss of a limb (Wegener et al. 2009, 373). With persons with lower limb amputation, the majority of outcome studies to date address mobility, functional abilities, and use of prosthesis as the most important measures to evaluate rehabilitation outcomes (Zidarov et al 2009, 635). It

is not surprising that negotiating the evolving stressors associated with amputation may challenge the individual's ability to maintain emotional well-being and, in some instances, may promote maladaptive reactions leading to poor psychosocial adjustment (Desmond 2006, 15.)

Diabetes is reported in various countries as the cause of half of all lower limb amputations and people with diabetes are estimated to be 8-24 times more likely to have Lower limb amputation than people without (Fosse et al. 2009, 391). Moreover, the complete rehabilitation process for the amputee is a long one, it is therefore, essential for the rehabilitation team to develop a working partnership with the amputee where meeting his or her requests becomes the prime goal of the team (Davidson et al. 2002, 688). These secondary conditions can significantly impact function resulting in restrictions in activities and diminished quality of life (Wegener et al. 2009, 373.)

From the views of the afore-mentioned authors, rehabilitation of the amputated victims could be:

- Emotional, reassurance, encouragement and creating a supportive environment.
- Use of smart prosthesis
- Involvement of other units such as physical therapy, recreational services, social work, and pathology
- Enrolling the amputees in social group
- Promoting family unity
- Train them how to adapt and improve on coping skills
- Good communication between the clinical teams and the family, also address the problem early.

5. DISCUSSION

5.1 Method

This section is meant to give details on how the systematic literature review was used to analyze data in this study, though, details of the meaning and the features of this method, including the review has been given in the previous chapter.

After collection of several articles, the criteria to be used in selecting the most relevant articles were clearly stated, ranging from titles of the articles, contents of the study, aim and purpose of the study, main results, year of publication and the opinions of the authors. These criteria served as guidelines to avoid losing focus. Articles focusing on the same issues were classified under the same category. This was done in order to be able to relate closely related points raised by some articles. In the same way, grouping of articles make the review look more compact and easy to handle, meanwhile, year of publication made it possible to identify the recent articles. These groupings also faced some challenges, there are conflicts of ideas in the works of authors but salient points are meant to be considered according to the set guidelines for this study.

5.2 Results

The results of the study have been stated in chapter four as the answers to the research questions. However, this section is to explain how those results are derived from the review of the studies. All the articles involved have their main focus and objectives which can be traced down to the conclusive results in the discussion parts of all the studies.

Meanwhile, this study in particular is not wholly extracted from the results of the reviewed articles but parts of the ideas that led to the answers to the set research questions were derived from the analysis, arguments and comparisms in the main contents.

Attentions was paid to the line of reasoning of the authors which are used as quotes in this study. Nonetheless, parts of it are gotten from the results or outcomes of the reviewed articles and the conclusive opinions of the authors.

Besides, classification of ideas was also used to group the articles together based on their titles, in connection with their aims and purposes. This makes the whole study look analytical and compact. In searching for the results from the review, the main objective of the study is at the back of the mind and the related line of reasoning. In the work of Jacobsen (1998, 32), he reached a conclusion that nurses have opportunities to be involved in the initiation of amputee support groups within health care agencies or communities. He however developed steps in the process of developing an amputee support group:

I. Assess amputee need within agency or community
II. Solicit support of related discipline
III. Plan for first meeting
IV. Schedule meetings, arrange for speakers
V. Provide ongoing publicity and communication
VI. Encourage participation of support group members

There are lots of quotes in answering rehabilitation but the important ones are given priority without losing track of the main aim of the study. All the authors' ideas were critically assessed, compared and related to each other in order to come up with the results stated in chapter four. In some aspects, there was no disharmony in the opinions of the authors, in such situations, efforts were made to really know which one is evidence based facts and from which perspective is the situation being looked at.

There are common ways of looking at things or in a closely related ways. Davidson et al. (2002, 694) say normal adaptation to amputation involves a temporal sequence of personal experimentation through exposure to the environment until the individual reaches a point of effective prosthetic skill development and psychological compromise with an altered body image.

Many of the reviewed articles believe that the greater problems of the amputees are much more approached by himself and the families without laying much emphasis on the roles of nurses. Nursing responsibilities are seen as supportive roles but much emphasis were placed on the relatives and the victims themselves. Jacobsen (1998, 33), in his work, gave details of nursing roles in facilitating the lives of the victims as:

- General information about the amputees
- Initiation of amputee support groups within health care agencies or communities
- Nurses involve other units such as physical therapy, recreational services, social work, and pathology
- Nurses keep the support group members interested and involved

6. RELIABILITY AND LIMITATIONS

One of the main factors to be considered while carrying out a study is how reliable the study is going to be in consideration of factors that will act as limitations during the process. In the beginning of a study, some challenges and limitations can be taken care of but most of the time, limitations are met while the study is in process and there may not be any way of taking care of it. At every stage of the study, much effort was made as much as possible to avoid errors. In the first instance, use of academic database makes the retrieved articles to be more close to reality, because all the articles in the academic database must have underwent a critical test before certified to be fit for research works.

This study was analyzed by systematic literature review in order to gain control over the large volume of data involved. Step by step approach makes the data to be well controlled and managed to generate more accurate results. Year of publications is another important factor, only two of the considered articles were published before year 2000. All other articles are recent and published in the year 2000 and after. This makes the used articles to be recent enough for the study. Furthermore, about five studies out of the studies involved are real life studies, which involve direct contacts with the concerned amputees or in another way, by sharing out questioners for them to fill and express their feelings about certain questions. This also includes use of mathematical tools Chi-square, Regression, t-test etc to analyze the data. Use of contact studies in this particular research work indicates that decisions made are more close to accuracy.

There is no way limitations can be minimized to zero level, in this study, some limitations were met in the process. There are some conflicts of ideas from various authors simply because, the issue is all about the feelings of amputees and human beings have different natures. These differences in nature lead to conflicts of ideas to be generated, these ideas are critically viewed to bring out more reliable points from the pool of ideas. Nevertheless, justification of such conflicts cannot be fully free of errors.

7. CONCLUSION

Effect of amputation has proven to have serious psychological, social and economic impact in the lives of human being, with people losing many physical functions and abilities that were once taken for granted. Amputation of an upper limb engenders a multitude of physical and psychosocial challenges including alterations in body image and lifestyle, changes in self-concept, impairments in physical functioning, prosthesis use and pain (Desmond 2006, 15). The development of major depression can also be a further complication, and therefore, identification and monitoring of suicidality for some amputees require close attention by the treating team (Davidson et al. 2002, 693). Yet, amputation does not seems avoidable in certain circumstances; therefore, people should be ready to accept the change when it comes. In most situations, after amputation, men try to learn how to adjust to their new found situation but women think of how to recover the lost limbs or are deeply concerned about their image in the society.

With the importance of this topic in the lives of people, especially, in this present society where image and well being are no more taken for granted, the author expects this topic to be seen as a step pointing to some other more important topics in this kind of area. In the process of the review, it was realized that people who have not experienced amputation or gone through shared experience with an amputated victims, may not see this topic as demanding as it is. The review pointed to another similar topic, widely noticed in our present society and gives rise to the same image and well-being problems. This is attainment of certain body shape; people wish to have certain body features pleasuring to the looks like slimness, flat tommy, muscular physique etc. Even people go for surgery to achieve this shape and the fat people see themselves as being rejected and unfit for the society. Series of medical conditions such as anorexia, stomach ulcer for example are noticed to be associated with this lifestyle.

8. REFFERENCES

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