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Impact of Leg Ulcers on Quality of Life: Financial, Social, and Psychological Implications among the Patients Attending OPD of Vascular Surgery: A Study in Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh

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Abstract

Background: Leg ulcers distress perhaps many persons within Bangladesh, though there are not any definitive data their prevalence is probably going to rise as time and therefore the population ages. They cause considerable disability to figure or earning, limb or a part of limb loss, and therefore the cost of treating these chronic wounds is gigantic.

Objective: The purpose of this study was to assess the financial, social, and psychological Implications of leg ulcers on the overall quality of life and maltreated.

Methods: This is a descriptive type of cross-sectional study. The study has been carried out at vascular surgery OPD, Bangabandhu Sheikh Mujib Medical University, Dhaka Bangladesh from January 2013 to April 2015. Data were collected by standardized personal interviews with 69 patients with chronic leg ulcers. The interview covered several domains that were selected to determine the impact of leg ulcers on the overall quality of life.

Results: A significant number of patients had moderate to severe symptoms, principally pain, supplementary with the leg ulcer. Among them Seventy-three percent believed that their mobility was adversely suffering from the ulcer; the leading predictor of impaired mobility was swelling of the leg. For younger, working patients, leg ulceration was correlated with time lost from work, job loss, and adverse effects on finances like continuous discharge from the wound. Fifty-six percent of patients found caring for the ulcer burdensome. There was a robust correlation between time spent on ulcer care and feelings of anger and resentment and the inability to try the long-standing work. Seventy-two percent of patients reported that the ulcer had a negative emotional impact on their lives, including feelings of fear, social isolation, anger, depression, and negative self-image isolation from relations.

Conclusion: Leg ulcers cause a considerable threat to a variety of measurements of a patient's quality of life and need to intervene immediately.

Keywords: Severe symptoms; Leg ulcer; Psychological implications; Vascular surgery

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Introduction

The prevalence of leg ulcers is perhaps between 0.18% and 1% Chronicles of the population and is probably going to extend because the average age of the population rises. The value of treating chronic wounds is gigantic. The working capacity of the patient is usually reduced; in our society, no data is out there but approximately 2 million workdays are lost annually within the due to leg ulcers but in our country, we've no specific data or papers like that. Additionally, there is numerous psychosocial squeal. Effective and economic care of venous leg ulcers, combination of ordinary surgical procedures including perforator and sapheno-femoral ligation with long saphenous stripping and standard physiopharmaco therapeutic care is important [1]. During this study, we attempted to assess the general impact of leg ulceration on the patient's quality of life concerning physical, functional,

psychological, and financial domains. Bangladesh, a retrospective cohort study conducted by (as cited in Paul and colleagues' work) during a diabetic hospital, the BIRDEM (Bangladesh Institute of Research Rehabilitation in Diabetes, Endocrine, and Metabolic Disorders); found that the prevalence of DFU was 2.8% [2]. Leg ulcers are a standard presentation within the elderly population related to a negative impact on the quality of life. Several factors including venous and arterial insufficiency, immobility and obesity all contribute to an increased incidence during this age bracket. Foot ulceration is a common major endpoint among diabetic complications. Proper foot care and early recognition and management of risk factors prevent foot ulcers of diabetic patients. Foot complication in persons with diabetes has become an increasingly significant public health concern in both the developed and developing world [3]. Venous ulcers represent a standard and debilitating condition related to a significant loss for the patient also because of the society. It affects 1%-2% of the population, often with a protracted course of delayed healing and multiple recurrences. Though demographic data of patients with venous leg ulcers in developing countries like Bangladesh isn't available, still there's quite a sizable amount of patients. A chronic leg ulcer is defined as a defect within the skin below the extent of knee persisting for quite six weeks and shows no tendency to heal after three or more months. Chronic ulceration of the lower legs may be a relatively common condition amongst adults, one that causes pain and social distress. The condition affects 1% of the adult population and 3.6% of individuals older than 65 years. Leg ulcers are debilitating and greatly reduce a patient's quality of life. The common causes are venous disease, arterial disease, and neuropathy. Less common causes are metabolic disorders, hematological disorders, and infective diseases. Many adults with vascular disease and/or diabetes suffer from chronic leg or foot ulcers, resulting in loss of functional ability, poor quality of life and future ill-health. It's estimated that the developing countries will bear the brunt of diabetes epidemics within the 21st century [4]. Studies on patients with chronic leg ulcers have reported the typical duration of those ulcers is around 12-13 months, around 60-70% of patients have recurring ulcers, 24% of patients are hospitalized due to the ulcers and most of the people suffer from the condition for a mean of 15 or more years in the western world. look after chronic wounds is reported to cost 2%-3% of total health care spending in developed countries and these costs are set to rise with aging populations. Chronic Leg Ulcer (CLU) also referred to as chronic lower limb ulcer may be a chronic wound of the leg that shows no tendency to heal after 3 months of appropriate treatment or remains not fully healed at 12 months [5]. Treatment within the U.S. costs over 3 billion $US and therefore the loss of over 2 million workdays a year. Similarly, Harding quotes a price of £400 million annually within the U.K. In Australia, wound dressings are the second most frequent procedure generally Practitioner practice and chronic wound care accounts for 22%-50% of community nursing time within the UK and Australia. Additionally, to direct health care costs, chronic wounds are related to hidden burdens on the community resulting from loss of mobility, decreased functional ability, social isolation and loss of participation within the workforce and society. Despite reports of improved healing and reduced recurrence rates following the introduction of evidence-based guidelines and coordinated care, a big evidence-practice gap has been reported around the world inappropriate assessment of chronic leg ulcers and timely use of best practice treatments. For instance, around 70% of chronic leg ulcers are caused by venous disease and compression therapy is that the gold standard treatment, yet a U.S. study found only 17% of patients with venous leg ulcers received compression, and Australian studies found 40%-60% of venous leg ulcers in Australia didn't receive adequate compression. variety of reasons are identified as contributing to the present evidence-practice gap, including lack of data and skills, difficulties with access to evidence-based guidelines, the prices and lack of reimbursement related to specialist wound care and coverings like compression bandaging, limited access to specialist multidisciplinary teams, poor communication and limited evidence on effective assessment, referral and treatment pathways of care to manage this chronic condition. The researchers are inventing newer modalities of treatments for patients with chronic leg ulceration so that they will have a better quality of life and a reduction in personal financial burden [6]. Within the area of wound healing, many practitioners are involved in the trajectory of care. Ulcers of the skin may result in complete loss of the epidermis and sometimes portions of the dermis and even subcutaneous fat [7]. Up-front costs for future wound care (wound dressings, bandages, costs of health care service providers) and follow-up preventative care are identified as a barrier to implementing evidence-based practice. The potential benefits of specific health service pathways for chronic leg ulcer management and facilitation of evidence-based wound care aren't clear from current research. a couple of studies have demonstrated improved clinical outcomes following the introduction of evidence-based protocols; however, the relative benefits (both inpatient outcomes and effective use of health resources) of other models of care aren't well evaluated. This area of translational research is vital in addressing gaps between research findings and wide-spread implementation of the latest information to enhance patient outcomes.

Objectives

General objective

To explore the implication of leg ulcers on quality of life and to find out the alternative health service pathways of care for patients with leg ulcers.

Specific objectives

a. To observe the chronic leg ulcer as a health hazard in our society

b. To observed implication leg ulcers on financial, physiological, psychological and social life

c. To find out the major etiological factors which lead to chronic leg ulcer

Methods

- **Study design:** This is a descriptive type of cross-sectional study
- **Study place:** The study has been carried out at vascular

surgery OPD, Bangabandhu Sheikh Mujib Medical University, Dhaka Bangladesh

- **Study period:** The study has been carried out during the period from January 2013 to April 2015
- **Study population:** The study has conducted with the patients both male and female attending vascular surgery OPD, BSMMU, having leg ulcers
- **Inclusion criteria:**

  (a) Patient presenting with leg ulcer in vascular surgery OPD, BSMMU.

Exclusion criteria:

(a) Prisoner who are referred from jail

(b) Exclusion criteria included insulin-dependent diabetes

(c) Current known psychiatric illness, a diagnosis of AIDS

(d) Inability to speak and not to give Informed consent

- **Sample size:** Data were collected from 69 respondents
- **Sampling techniques:** A purposive sampling technique was used for sample selection
- **Data collection techniques:** A semi-structured questionnaire used as data collection implement for this study

Data Analysis

The data collected from the patients with leg ulcers attending cardiovascular OPD, BSMMU have been entered into SPSS 16. The data have been checked for their completeness and consistency. Incomplete and inconsistent data have been corrected if it is possible, otherwise removed. The processed data has been presented as in percentage (%). The result has been verified as logical and accurate as per the filled up questionnaire. The data processing includes the following steps:

a. Questionnaire making
b. Data collection and cross-checking
c. Data editing
d. Data entry and entry verifying
e. Entering data as per questionnaires structure in SPSS 16
f. Verifying the logic and accuracy of the data as per filled up questionnaire
g. Inputting data into SPSS worksheet
h. Tabulating as per objective and requirement in quantum
i. Program development as per the analysis plan
j. Report generation

Ethical Consideration

Permission will be taken from the concern departmental academic and technical committee and also from the central ethical committee to undertake the study. All patients included in this study will be described as the nature and purpose of the study and informed written consent will be taken from them.

Results

This study was 73 patients from the patients with leg ulcers attending cardiovascular OPD; BSMMU of them 69 patients fulfilled the inclusion criteria. There were 61 (88.4%) males and 08 (11.6%) females whose ages ranged from 15 to 75 years (mean, 42 years). The mean duration of ulceration was 2.4 years (range, 3 weeks to 6 years).

The mean age of the respondents was 42.0 ± 13.0 years. The age of the majority of respondents was more than 32 years where only 21.6% had the age below 32 years and the majority of the respondents were male (88.4%) and married (98.6%). About one-third of the respondents (36.0%) had a higher secondary and above the level of education followed by secondary (20.3%), primary (29.0%) and illiterate (23.2%). More than one-third of the respondents (39.2%) were business followed by service holders (24.6%), day labour (21.7%), housewife (8.7%) and others (8.7%). About ninety percent of the respondents (97.1%) came from nuclear family and rest are from a joint family and in regards to housing conditions, more than half of the respondents had Tin shed (62.3%) followed by Building (37.7%). More than one-third (39.1%) of the respondents had monthly household income in between 50000tk to 10000tk followed by 10001-20000 tk (29.0%), >20000 tk (20.3%) and no income (11.6%) as shown in **Table 1.**

The majority of the respondents (94.2%) had the complaint of pain and the physical domain encompasses numerous aspects of pain as well as swelling (27.5%), discharge (47.8%), itching (27.5%) and various aspects related to mobility. With regards to pain, including pain intensity mild (52.2%) moderate (17.4%) and severe (24.6%), the influence of pain on physical activities, sleep, analgesic therapy, and the coping strategies used to reduce pain are described. About half (49.9%) of the respondents were found the duration of leg ulcer 5 months-1 years which are venous type as shown in **Table 2**.

According to **Figure 1**, about half of the respondents (73.9%) reported their mobility was adversely affected due to leg ulceration followed by (26.1%) not much affect like that.

As shown in **Table 3**, more than two-thirds of the respondents (78.3%) reported unable to their daily job due to leg ulcer followed by severely affected (18.8%), moderately affected (34.8%), mildly affected (37.7%) and not affected (8.7).%. In terms of affected treatment for decrease earning money respondents (75.4%) and not involve (21.7%). Half of the respondents (50.7%) thinks that they might have a chance of total or part of limb loss due to leg ulcer and (49.3%) not thinks like that **(Table 3)**. Of the total, 91.3% of the respondents had a history of social problems due to leg ulcer followed by (8.7%) don't have any social problem as shown in **Table 3**. About One-thirds of the respondents (34.8%) reported that they have personal problems, Family problems (34.8%), social ignorance (24.6%), others (1.4%) for leg ulcers. About near one-thirds of the respondents (27.5%) reported the existence of co-morbid conditions, among them, diabetes mellitus was reported by 14.4% of respondents, hypertension (10.14%) and both (2.8%) as shown in **Table 3**.

More than half of the respondents were smokers 56.5% and

Table 1: Distribution of patients by their socio-demographic characteristics (n=69).

Variables	Frequency (n)	Percentage (%)
Age		
15-25 years	5	7.2
26-35 years	18	26.1
36-45 years	14	20.3
46-55 years	17	24.6
56-65 years	11	15.9
66-75 years	4	5.8
Mean ± SD (years)	42.0 ± 13.0	
Gender		
Male	61	88.4
Female	8	11
Marital Status		
Married	68	98.6
Unmarried	0	0
Divorced	1	1.4
Educational Level		
Illiterate	16	23.2
Primary	20	29
Secondary	14	20.3
Higher secondary and above	19	27.5
Occupational Status		
Service holder	17	24.6
Business	25	36.2
Day Labor	15	21.7
Housewife	6	8.7
Others	6	8.7
Family Type		
Nuclear	67	97.1
Joint	2	2.9
Housing Condition		
Building	26	37.7
Tin shed	43	62.3
Others	0	0
Monthly Household Income		
5000-10000 tk	27	39.1
10001-20000 tk	20	29
>20000 tk	14	20.3
No income	8	11.6

Table 2: Leg ulcer related symptoms of the respondents (n=69).

Variables	Frequency (n)	Percentage (%)
Pain in leg ulcer		
Mild pain	36	52.2
Moderate pain	12	17.4
Severe pain	17	24.6
No pain	4	5.8
Discharge from leg ulcer		
Discharge present	33	47.8
No discharge	15	26.8
Duration of leg ulcer		
1-3 months	6	8.7
3-5 months	29	42
5 months-1years	30	43.5
>1 years	4	5.8
Itching in leg ulcer		
Itching present	22	31.9
Itching not present	47	68.1
Edema in leg ulcer		
Edema present	19	27.5
Edema absent	50	72.5

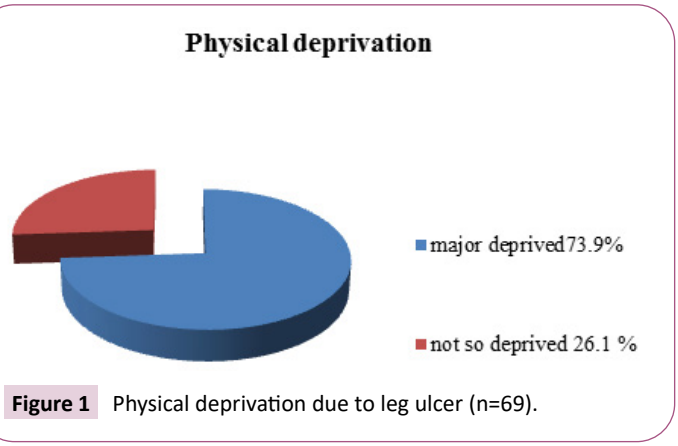

Figure 1 Physical deprivation due to leg ulcer (n=69).

Table 3: Impact of leg ulceration on the several domains in quality of life (n=69).

Variables	Frequency (n)	Percentage (%)
Degree of effect on daily job		
Severely affected	13	18.8
Moderately affected	24	34.8
Mildly affected	26	37.7
Not affected	6	8.7
Effect on income due to leg ulcer		
Affected	54	78.3
Not affected	15	21.7
Any chance of limb or part of limb loss		
Yes	35	50.7
No	34	49.3
Effect on treatment due to economic condition		
Yes	52	75.4
No	15	21.7
Social problem due to leg ulcer		
Yes	63	91.3
No	6	8.7
Type of social problem due to leg ulcer		
Personal problem	24	34.8
Familial problem	26	46.4
Social ignorance	17	24.6
Others	1	1.4
Status of co-morbid condition		
Yes	19	27.5
No	50	72.5
Co-morbid conditions		
Diabetes mellitus	10	14.49
Hypertension	7	10.14
Both	2	2.8

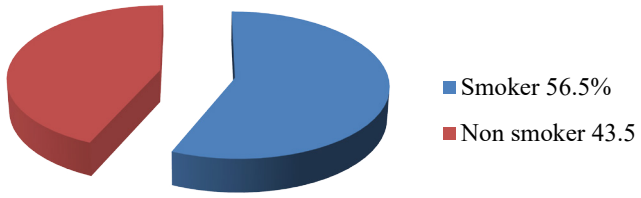

Figure 2 The status of smoking among the respondents.

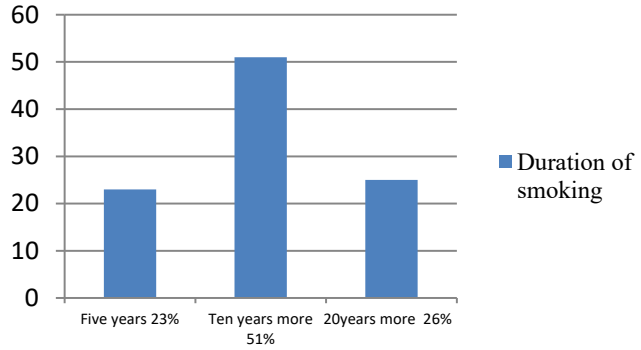

Figure 3 The duration of smoking among the respondents who smoke.

Table 4: Additional information only for female respondents (n=8).

Variables	Frequency (n)	Percentage (%)
Duration of marital life		
≤ 5 years	2	25
>5 years	6	75
Number of Children		
1-2 children	3	37.5
>2 children	5	62.5
History of huge swelling of leg during pregnancy		
Yes	0	0
No	8	8

among then 51.0% reported that they smoked for more than 10 years 26% for more than 20 years as shown in **Figures 2 and 3**.

Of total married women (n=8), more than two-thirds were found to have their marital life more than 5 years and 62.5% of women had more than two children. The majority of women reported that they had no history of huge swelling of their leg as shown in **Table 4**.

Discussion

Quality of life has been investigated in patients with leg ulcers with associated diseases. In my study, although many studies have focused on the epidemiological factors, cause, and treatment of leg ulcers, relatively few have examined the standard of life in patients with these chronic wounds. Thrombotic episodes secondary to vacuities, thromboangitis, and red blood cell disease also can end in arterial ulcers [4]. But unfortunately in our country we've no research papers found like this study. From the purpose of view of the patient, quality of life is crucial in assessing the effectiveness of medical treatments with daily and social life. Morbidity from leg ulcers can substantially reduce many aspects of a patient's quality of life. During this study, some interesting and important findings come out which are different statistical information than other studies, like (78.3%) respondents reported that they're affected try to their daily job decrease the income status led to poor quality of life. This condition becomes more pathetic in illiterate day labour and has arterial ulcer smoker who is that the only earning member of the family. This leads to social distress and considerable healthcare and private costs [8]. Chronic leg ulcers affect 0.6%-3% of these aged over 60 years, increasing to over 5% of these aged over 80 years. CLU may be a common explanation for morbidity, and its prevalence within the community ranges from 1.9% to 13.1% [9]. It thought that the incidence of ulceration is rising as a result of the aging population and increased risk factors for atherosclerotic occlusion like smoking, obesity, and diabetes. Within the course of a lifetime, almost 10% of the population will develop a chronic wound, with a wound-related death rate of 2.5% [10]. consistent with the Wound Healing Society, about 15% of older adults within the US suffer from chronic wounds, including predominantly venous stasis ulcers, pressure ulcers (bedsores), and diabetic (neuropathic) foot ulcers. Per annum, 2 to three million more Americans are diagnosed with various sorts of chronic wounds [11]. In Brazil, a study conducted in Botucatu, Sao Paulo, reported a 35.5% prevalence of varicose veins and 1.5% prevalence of severe chronic venous insufficiency with an ulcer or ulcer scar [12]. The peripheral artery disease, the circulatory disease commonly related to no healing wounds, affects about 8 million Americans and 12-20% of USA citizens aged group 65-72 years. It's estimated that there are over 7.4 million pressure ulcers within the world where estimation was possible, that is, excluding the vast number of developing countries [13]. In Western Australia (WA) in 1994, leg ulcers were found to affect 1.1 per 1000 population (0.11% point prevalence). This study demonstrated that 24% of the ulcers were present for 1 year, 35% had a drag of ulceration for five years, 20% had experienced 10 or more episodes of ulceration, and 45% of sufferers were housebound [14]. The prevalence of vascular ulcers within the US is estimated at 500,000 to 600,000 and increases with age [15]. Ulcers are often defined as wounds with a "full-thickness depth" and a "slow-healing tendency". Chronic ulceration of the lower legs may be a relatively common condition amongst adults, and ulcer symptoms usually include increasing pain, friable granulation, foul odour, and wound breakdown rather than healing. Estimate of the annual incidence of leg ulcer within the UK and Switzerland are 3.5 and 0.2 per 1000 individuals, respectively. Consistent with the study in Ireland the prevalence was 0.12% but it had been 1.03% within the patients aged 70 years and over. Women were twice as likely to be affected. Venous disease accounted for 81% of ulcers and arterial disease for 16.3%, while ulceration thanks to diabetic neuropathy and

rheumatoid vasculitis was unusual. Leg ulcers are a crucial source of morbidity in our aging population [16]. Consistent with a study administered in Germany, venous insufficiency was the dominating causative think about 47.6% and arterial insufficiency in 14.5%, and 17.6% of ulcers were thanks to combined arterial and venous insufficiency. Rarer causes included vasculitis (5.1%), exogenous factors (3.8%), and *Pyoderma gangrenosum* (3.0%) [17]. While there are few Indian studies on the epidemiology of chronic wounds, one study estimated the prevalence at 4.5 per 1000 population. The incidence of acute wounds was quite double at 10.5 per 1000 population [18]. Consistent with data from epidemiological studies, the incidence of chronic ulcers in surgically hospitalized patients in China is 1.5% to 20.3%. In one study, of the 580 wound areas in 489 patients, 366% or 63% were ulcers on the lower extremities [19]. Consistent with a recent report, Chronic Renal Disorder (CRD), hypertension, and myocardial ischemia can also be related to increased risk of developing foot ulcers including severe ulcers that necessitate amputation. Additionally, there are reports of upper rates of malnutrition and deficiencies of vitamins and minerals like zinc in patients with chronic venous leg ulcers compared to the overall population [20]. Many adults with vascular disease and/or diabetes suffer from chronic leg or foot ulcers, resulting in loss of functional ability, poor quality of life and future ill-health. Studies on patients with chronic leg ulcers have reported the typical duration of those ulcers is around 12-13 months, around 60%-70% of patients have recurring ulcers, 24% of patients are hospitalized due to the ulcers and most of the people suffer from the condition for a mean of 15 or more years. look after chronic wounds is reported to cost 2%-3% of total health care spending in developed countries and these costs are set to rise with aging populations. Treatment within the U.S. costs over 3 billion $US and therefore the loss of over 2 million workdays a year. Similarly, Harding quotes a price of £400 million annually within the UK. In Australia, wound dressings are the second most frequent procedure generally Practitioner practice and chronic wound care accounts for 22%-50% of community nursing time within the UK and Australia. Additionally, to direct health care costs, chronic wounds are related to hidden burdens on the community resulting from loss of mobility, decreased functional ability, social isolation and loss of participation within the workforce and society. Despite reports of improved healing and reduced recurrence rates following the introduction of evidence-based guidelines and coordinated care, a big evidence-practice gap has been reported around the world in appropriate assessment of chronic leg ulcers and timely use of best practice treatments. For instance, around 70% of chronic leg ulcers are caused by venous disease and compression therapy is that the gold standard treatment. the bulk of the respondents (94.2%) had the complain of pain and therefore the physical domain encompasses numerous aspects of pain also as swelling (27.5%), discharge (47.8%), itching (27.5%) and various aspects associated with mobility due to the high price of drugs medical equipment and dressing material these chronic wounds become more burdensome on their life this happens in venous ulcers mainly. In the UK and the USA, there are several supports for ulcer care. Ulcer care was frequently given by a nurse at considerable federal expense, which can amount to almost $40,000 per annum per patient in the USA [21-23]. In my study female respondent is (11.4%) than male (88.6%) which is unusual than other research finding this might flow from to female are a non-smoker and not doing long-standing work the foremost potential risk factor for developing leg ulcer [4]. The prevalence of arterial disease during this study is significantly increased (42.0%) than other study's due to the sizable amount of smoker (56.5%) patients was observed most of them are young male low-income groups. Fifty-six percent of patients had a previous history of smoking. The bulk of patients had severe pain and deemed their leg ulcers their most vital problem despite other important medical problems. This factor is perhaps underestimated by physicians' who will often judge a chronic wound as non-life-threatening as and thus smaller to the patient than other medical conditions [21]. Thus, in patients with leg ulcers and leg edema, reduction of swelling may be important in improving quality of life. This finding is particularly important due to the widely high failure rate of surgical intervention in patients with venous ulcer a spread of straightforward modalities might be wont to alleviate limb edema, including compression bandages, graduated compression elastic stockings [22,23]. We have an outsized number of lymphatic edema patients specially filariasis less in western society.

Conclusion

There is a variety of potential social and economic national benefits to be gained from improving health service coordination for this population in a country like Bangladesh where the resource is restricted very difficult to manage these chronic wound patients. Increased implementation of evidence-based care in venous case attempt to control venous hypertension by providing health education and arterial case attempt to remove the danger factors like smoking, dyslipidemia which significantly less use of health services. The outcomes include improved health, well-being and decreased pain for young adults suffering from this condition. A price-effectiveness analysis should be done and expected to specifically demonstrate the savings to the health care system to prevent lower limb disability.

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