

# Role of Physiotherapy In Managing Pressure Ulcers: Physiotherapists' Perspective

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## ABSTRACT

**Background:** Pressure ulcers, although being very common, are still a neglected field of study in Pakistan. They can result in debilitating complications if not treated early and properly. Proper medical care along with prompt physiotherapy is the idealistic choice in managing pressure ulcers

**Objectives:** Assess the awareness among doctors about the role of physiotherapy in management of pressure ulcers.

**Methods:** The cross sectional survey involved 200 doctors selected by convenience sampling from government and private hospitals of Karachi. Doctors were interviewed through a structured questionnaire and *p* value <0.05 was considered as significant.

**Results:** Awareness of physiotherapy among doctors, in managing pressure ulcer patients was 83.5% (n=167). "Usual practice" followed by doctors in their hospital settings, involved the application of various physical agents to enhance pressure ulcer healing such as HVPCs (high voltage pulse current) 18.0% (n=36), US (ultrasound) 28.5% (n=57) and cold laser 11.0% (n=22). Practices to prevent ulceration included health education sessions only up to 44.5% (n=89).

**Conclusion:** Our study results showed that there was awareness among doctors about the role of Physiotherapy in management of pressure ulcers, but even after realizing not all the doctors were referring patients for physiotherapy. Further awareness sessions are required for spreading more knowledge among the doctors and the patients and their families to prevent pressure ulceration.

**KEY WORDS:** Awareness, Pressure Ulcers, Physiotherapy.

## INTRODUCTION

Pressure ulcer is a common occurrence throughout the globe and if not treated properly can lead to complications, at times even amputation.<sup>1</sup> Human body tissues differ in their ability to tolerate pressure. Muscle tissue dies first as a result of pressure. Pressure ulcer, also known as decubitus ulcer, are open wounds which are formed as a result of prolonged posture maintenance exerting pressure over the skin covering bony

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prominences of the human body.<sup>2</sup> Pressure ulcers are classified in to four stages for the purpose of assessment, treatment and evaluation. At stage one, the area of skin is deep pink, red, or mottled, stage two is characterized by blistering, cracking, or abrasion of the skin, stage three is characterized by a craterlike sore with involvement of the underlying structures and at stage four there is deep ulceration and necrosis involving underlying muscle and possibly bone tissue.<sup>2</sup> Pressure ulcers are among the most ignored conditions in critically ill patients, who are bedridden due to stroke, post-surgery, neurological deficits and unconscious patients.

Not much work is done to know the prevalence of pressure ulcers all over the globe except for certain places such as Sweden where the prevalence of pressure ulcers was figured out to be 28.2% (grade 1 excluded: 14.1%) in 2004 where, in surgical care it was reduced from 26.7% in 2004.<sup>3</sup> In Europe the prevalence was (grade 1-4) 18.1%. Only 9.7% of the patients in need of prevention received fully adequate preventive care. Corresponding figures for geriatric care were 59.3% and 50.0%.<sup>4</sup>

Some wound care experts advocate holistic approach for wound care that consider coexisting physical and psychological factors, including nutritional status and disease states such as diabetes, cancer, and arthritis of a patient.<sup>5, 6</sup> The goal of Physiotherapist in treating

pressure ulcers is to manage and create an environment that is conducive to normal, timely healing, prevent infections and loss of function. Conservative approach of physiotherapy also involves use of electrical modalities accelerating healing of pressure ulcers like high-voltage pulsed galvanic stimulation (HVPG) and use of laser for its potential positive effect in wound healing.<sup>7</sup> Tissue mobilization in post-surgical patients such as burn patients also requires physiotherapy to mobilize the skin graft and to prevent contractures.<sup>8</sup>

Karachi is a huge industrial city of Pakistan where most of the big hospitals have many patients with pressure ulcers. In general, physical therapist's role in wound care is initiated by very few physicians or as a post-surgery protocol. A physiotherapist can play a major role in prevention, risk assessment and management of pressure ulcers and therefore we want to assess the awareness of role of physiotherapy among Karachi doctors in managing pressure ulcers.

**METHODOLOGY**

A cross sectional survey was done at various government and private hospitals of Karachi through non- probability convenient sampling with a sample size of 200 doctors. The inclusion criteria defined doctors

(graduate and post graduates) working in I.C.U and departments of surgery and medicine and were practicing for one or more than one year. All the doctors were interviewed through a structured questionnaire and the collected data was analyzed on SPSS version 17.0 and P-Values less than 0.5 were taken as significant.

The duration of study was from December 2011 till June 2012. The study was approved by the Ethical Review Committee of Ziauddin University and the collected data was kept confidential.

**RESULTS**

Data was collected form 200 participants working in the ICU, Medicine and Surgery departments. The following questions were asked from the doctors of various departments, results shown in table 1.

**Table 1: Survey Statistics**

	ICU (n=66)		Surgery (n=53)		Medicine (n=81)		P-Value
	n	%	n	%	n	%	
Inadequate dietary intake causes pressure ulcers	34	52	39	74	46	57	0.255
Patient age and skin texture contribute for early development of pressure ulcers	61	92	48	90.6	65	80.2	0.041
Psychosocial health of patient can affect pressure	39	59	44	83.0	144	72.0	0.296

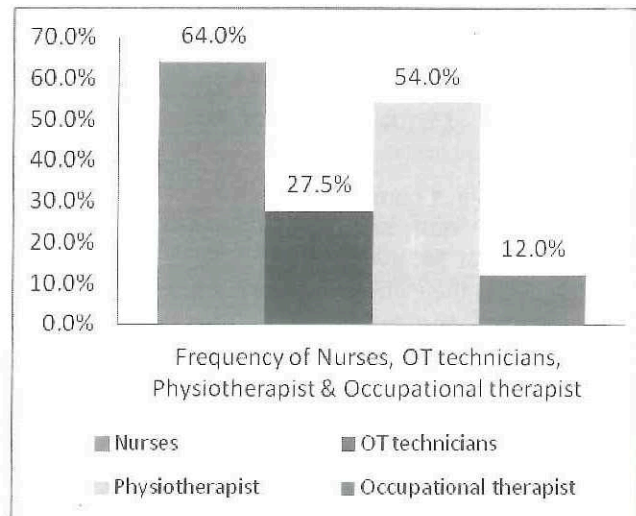
ulcers healing							
Know the term "Debridement"	63	96	49	93	185	93	0.00
Evaluate pressure ulcer's healing	41	62	42	79	146	73	0.29
Health education sessions for pressure ulcer patients	29	44	26	49	89	45	0.86
Contribution of physiotherapist in managing pressure ulcers	50	76	45	85	167	84	0.04

Doctors working in the I.C.U, Surgery and Medicine departments were asked about the usage of various physical agents in the treatment of pressure ulcers results briefed in table 2.

**Table 2: Usage of various physical agents in the treatment of pressure ulcers**

	Frequency (n)	Percentage (%)	p-value
HVPCs	36	18.0	0.078
US	57	28.5	
Cold Laser Therapy	22	11.0	
Any Other	85	42.5	

**Figure 1: Contribution of Various Rehabilitating Team Members in Managing Pressure Ulcers**



**DISCUSSION**

Related to our study, not many researches are available in Pakistan. A survey was done by Marylou Guihar Jennifer Hastings and Susan L Garber to find out therapists' role in Pressure Ulcer management in persons with spinal cord injury. Results indicated 75% involvement of the physiotherapist in pressure ulcer management as a part of their usual practice.<sup>8</sup> Another study, done at U.S.A (United states of America) also highlighted physiotherapist as an essential member of the wound care team and were considered in all aspects of wound care.<sup>9</sup> Results of our study coincide with the above results as we found out physiotherapist role up to 54.5% (n=109).

Application of various physical agents enhances tissue healing in pressure ulcers. A research report highlighted the efficacy of HVPCs (High Voltage Pulsed Galvanic Currents) for healing of pressure ulcers in patients with spinal cord injury. Results demonstrated significant greater percentage of change decrease in the wound surface area up to 75% from their pretreatment size.<sup>10</sup> Contrast to their findings our study results showed only 18.0% (n=36) use of HVPCs in managing pressure ulcers. A study conducted at university of Southern California, Los Angeles on application of low frequency ultrasound with lower extremity wounds showed significant increase in SPP (skin perfusion pressure) values (mean=9.11mmHg, SD=4.34) after five minutes of application.<sup>11</sup> Besides our study results figured out 28.5% (n=57) of ultrasound role in the treatment of pressure ulcers. Similarly, a comparative study, was done to compare the effectiveness of Ultrasound and Low level Laser Therapy (LLLT) on second stage pressure sores, showed a significant (p=0.001) decrease in pressure sore surface area after giving ultrasound and laser therapy and stated laser therapy to be more effective than ultrasound therapy.<sup>12</sup> Apart, our research showed 11.0% (n=22) utilization of laser in managing pressure ulcers.

A coherent study, done in USA, determined the role of physical therapist as an essential member of wound care team involved in debridement, dressing selection and application.<sup>9</sup> Likely our doctors were also aware of the term "debridement" 92.5% (n=185).

Educating patients with pressure ulcers is of utmost importance to prevent them from further complications of

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the disease. A prospective quasi-experimental study was carried out on older adults' knowledge of pressure ulcer prevention. The results demonstrated that an education leaflet boosted patients' knowledge relating to pressure ulceration.<sup>13</sup> Our study results constituted of only 44% (n=89) health education sessions, among the patients of pressure ulcers.

Limitation of our study was that the doctors were busy for their clinic during the night shifts and it took long to collect data from them because of their busy schedule.

## CONCLUSION

Practice of wound healing is undergoing revolutionary changes as wounds bring financial, psychological and social implications that we must address. According to APTA (American Physiotherapy Association) physiotherapist are skilled in managing pressure ulcers and are a part of multidisciplinary team in screening, prevention, risk assessment, evaluation and management of pressure ulcers. In USA physical therapist are considered to be the most important member of the wound care team. They provide multiple services involving debridement, dressings, usage of electrical modalities for pain management and facilitate wound healing.<sup>9</sup> But in Pakistan, the knowledge about the importance of physiotherapy in prevention and management of wounds is not widespread and also lacks team works among the several health care professionals with difficulty in access of patients to secondary and tertiary health care hospitals, all acquiring similar treatment according to the standards.

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## CASE REPORT

# A Severely Anemic Young Woman with Multiple Leiomyomas

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### ABSTRACT

Uterine leiomyoma, or fibroids, are most common benign tumors of the uterine smooth muscle and extracellular matrix in women of reproductive age. They can range in size from very tiny (a quarter of an inch) to larger than a cantaloupe. Sometimes they can cause uterus to grow to the size of four to five months of pregnancy. Most of the fibroids are asymptomatic using sensitive imaging techniques<sup>1</sup>, however, women with pain and heavy menstrual bleeding depending on their location have limited treatment options. The fibroids can grow under the influence of the hormone estrogen and are most often seen after the menarche, and tend to shrink after the menopause. Typically the patient is nulliparous or of low parity. Common complications of uterine fibroids include menorrhagia with symptoms of dysmenorrhoea, pressure symptoms, abdominal distension, and infertility.

**KEY WORDS:** *Leiomyomas, Pregnancy Uterine Tumors.*

### INTRODUCTION

The prevalence of fibroids varies depending on the age and racial mixture.<sup>2</sup> All uterine fibroids can be detected by ultrasonography, but not all of the tumors are clinically significant.<sup>2</sup> Fibroids are known to grow in response to both estrogen and progesterone stimulation. Estrogen receptors, progesterone receptors and aromatase are present in higher concentration in fibroids.<sup>3, 4</sup> Early age at menarche, obesity and conditions that are associated with a greater exposure to endogenous steroid hormone are the common factors of developing fibroids.<sup>5</sup> Increased parity may reduce its risk.<sup>5</sup>

Fibroids are found more often in women presenting with abnormal menstrual bleeding<sup>6, 7</sup> and the amount of bleeding is related to the size of the fibroids. Fibroids can grow very large in size; they can cause a sense of pelvic pressure<sup>8</sup>. Urinary frequency caused by bladder compression is common in women with large fibroids.

Surgical treatment options for uterine fibroids are Myomectomy, Hysterectomy, Uterine Artery Embolization and Endometrial Ablation. Several medical therapies have been shown to reduce menstrual bleeding in women with idiopathic menorrhagia but have not been studied in women with menorrhagia due to fibroids.<sup>9, 10</sup> Nonsteroidal anti-inflammatory drugs not

only reduce menstrual cramps but also menstrual blood loss by about 40%.<sup>9, 11</sup> Relative to other therapies short term or cyclic use of progestin is ineffective in treating menorrhagia.<sup>12</sup> Local administration of progesterone through a progestin releasing intrauterine device can reduce menstrual bleeding in many women. The average growth rate of fibroid is about 0.5 cm/y in diameter, but growth of 3 cm/y in diameter or greater has also been observed<sup>13</sup>.

### CASE STUDY

A thirty year old unmarried female with BMI of 20.5 came to gynecology OPD with complaints of heavy painful periods, feeling of fullness in lower abdomen and low back pain. On examination she was pale with rapid shallow breathing using her accessory respiratory muscles for inspiration, Her blood pressure was 100/60 mmHg, HR = 88/min. Menarche at 13 and was in good health up to five years ago, when she began to flow more than usual she was treated by various doctors but not investigated and treated completely due to her poor socioeconomic conditions. On auscultation there is an audible S<sub>1</sub>, S<sub>2</sub> and mid diastolic murmur at the apex. Her investigations were as follows

**Blood CP:** Hb% 4.0 g/dl, WBC 6800 / cumm, Platelets 225,000 / cumm

**LFT:** Bilirubin Total = 0.7 mg/dl, Bilirubin Direct = 0.3 mg/dl, SGPT = 21 U/L

**RBS = 152 mg/dl, Urea = 32 mg/dl, Creatinine = 0.8 mg/dl.** Electrolytes were all in normal ranges

Her Echocardiography shows EF 60% and mild mitral stenosis. Ultrasonography report confirmed the presence of multiple fibroids in the uterine cavity with enlarged uterus and one fibroid is sub mucosal. Clinical correlation is suggested

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