

Impact of Frozen Shoulder on Quality of Life of Patients Attended at CRP: A Cross Sectional Study

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Abstract: *Purpose:* The purpose of the study was to determining impact of frozen shoulder on quality of life of patients attended at CRP. *Objectives:* To explore the impact of frozen shoulder on quality of life of patients attended at CRP, to find out the socio- demographic (age, gender, occupation, marital status and educational level) information, to find out the status of physical function affecting by frozen shoulder, to find out the association between pain and frozen shoulder patients. *Methodology:* A Quantitative study was conducted with close ended questionnaire to collect data from 100 participant age ranging from 30-59 years. Data were numerically coded and captured in Microsoft Excel using an SPSS 16.0 version. *Results:* A total number of 100 participants were recruited in the study. In ratio, the male participants were about 54% (n=54) and female were about 46% (n=46). Both physical and mental health status were poor and physical health status was showed more affected as compared to mental health status. Pain was severe among the participants and that's why most of the patient's general health was fair and assistance was required for their daily activity. Mental health was some time interfering due to their pain and social function was moderately interfering among the participants. There was no correlation between age and physical functioning (p=0.30) which indicated that frozen shoulder might be main contributor for limiting physical functioning. There have strong association of both overhead activity and hand behind neck activity (p=0.002) and also hand limitations to ages (p=0.025) among the patients with frozen shoulder. Most of patients 47% (n=48) were feeling difficulty to continue their social functioning along with carrying shopping bag (p=0.003). *Conclusion:* This study has shown that patients with frozen shoulder have poor quality of life pertaining to the physical health component as well as mental health component, but physical function was more limited than mental function. So, treatments should be emphasized in physical function.

Keywords: Quality of Life, Frozen Shoulder, Adhesive Capsulitis, Physical Functioning

1. Introduction

Frozen shoulder, also known as, adhesive capsulitis is a condition characterized by pain and significant loss of both active range of motion (AROM) and passive range of motion (PROM) of the shoulder [1]. Adhesive capsulitis is the most common disease among those musculoskeletal diseases [2]. This is a common but poorly understood syndrome of painful shoulder stiffness. Frozen shoulder syndrome was first described by Duplay in 1872. He used the term peri- arthritis

scapulo-humeral and believed that manipulation under anesthesia had a role in its treatment.

In 2009, Captuli used the term frozen shoulder to describe this condition. Adhesive capsulitis a term is an orthopaedic condition that is commonly encountered in general practice. It is characterized by an insidious and progressive loss of active and passive mobility in the glenohumeral joint presumably due to capsular Contracture. He stated that most cases resolved in about two years without treatment. More recently, Zuckerman and Cuomo defined frozen shoulder or

idiopathic adhesive capsulitis, as a condition of uncertain etiology characterized by substantial restriction of both active and passive shoulder motion that occurs in the absence of a known intrinsic shoulder disorder [3].

Adhesive capsulitis (frozen shoulder) is an insidious painful condition with gradual restriction of all planes of movement in the shoulder. It is the main cause of shoulder pain and stiffness. For this condition, the pain and stiffness can limit the ability to do simple everyday activities like getting dressed, brushing hair or reaching into a cabinet [4]. Frozen shoulder usually affects patients aged 40-70, with females affected more than males, and no predilection for race. In Bangladesh, Adhesive capsulitis is one of the common disabling diseases affecting both elderly male and female [5]. In 6-17% of patients, the other shoulder becomes affected, usually within five years, and after the first has resolved [6]. The occurrence of one side frozen shoulder has the chance to the risk of contralateral shoulder involvement by 5% to 34% and simultaneously bilateral shoulder involvement occurs often 14% of the time [7]. Adhesive capsulitis can be due to idiopathic or post-traumatic causes but the term adhesive capsulitis should be reserved for the idiopathic type of shoulder stiffness. Factors associated with adhesive capsulitis include female gender, age older than 40 years, trauma, immobilization, diabetes, thyroid disease, stroke, myocardial infarction, and the presence of autoimmune diseases, cervical spine disorders and reflex sympathetic dystrophy syndrome. Idiopathic (primary) adhesive capsulitis is characterized by fibrosis of the capsule resulting with progressive, painful loss of active and passive shoulder motion. There is growing evidence that impact of frozen shoulder on quality of life of patient with frozen shoulder is much limited which is essential to explore. So, this study will explore how much impact of frozen shoulder on quality of life is limited for frozen shoulder patient. Also, it gives details information about frozen shoulder. So, patient can modify their life style and maintain a good health related quality of life. As a health care professional, it improves our knowledge about frozen shoulder patient and make the profession strongest and this study will be used as preventative measure for altering impact of frozen shoulder on quality of life in elderly patients with frozen shoulder. So, there is no alternative option to do research as a professional to develop our profession [10].

2. Method

2.1. Study Design

This study was conducted using cross sectional prospective survey under a quantitative study design. Cross sectional study design was chosen to meet the study aim as an effective way to collect data.

2.2. Study Area

Data was collected from the outdoor and indoor musculoskeletal physiotherapy unit of the Centre for the

rehabilitation of the paralyzed in Savar and Mirpur.

2.3. Study Population

The study population was patient with frozen shoulder who attended in CRP for treatment.

2.4. Sample Size

Sample a group of subjects will be selected from population, who are used in a piece of research [8]. A sample is a smaller group taken from the population. Sometimes the sample size may be big and sometimes it may be small, depending on the population and the characteristics of the study [9]. The actual sample size for this study was calculated as 212, but as the study performed as a part of academic research project and there were some limitations, so that 100 frozen shoulder patients was taken as the sample of this study from musculoskeletal unit of CRP at Savar.

2.5. Sampling Procedure

Findings the appropriate number and type of people take part in the study is called "sampling" [10]. The study will be conducted by using the purposive sampling methods due to the time limitation and as it will be the one of the easiest, cheapest and quicker method of sample selection. The researcher will use this procedure, because getting of those samples whose criteria will be concerned with the study purpose.

Inclusion criteria: Both male and female was included, medically diagnosed frozen shoulder patient, Patient who had willingness to participate.

Exclusion criteria: Traumatic injury around the shoulder joint, Other orthopedic condition like ankylosing spondylitis, septic arthritis, Patient who was medically unstable., Mental disorder patients.

3. Results

3.1. Shoulder Pain Associate Depression

Of the participants 43% (n=43) patients were feeling minimum period of time depression for this shoulder pain whereas 57% (n=57) patients were feeling maximum period of time depression for this pain.

Table 1. Shoulder pain associate depression.

Depression level	Percentages
Maximum period of time	57%
Minimum period of time	43%

Association between depressions with different ages:

In the association test using chi-square (χ^2) the value was 2.294 which indicates among variables was not significant because p-was 0.318 ($p > 0.05$).

3.2. Shoulder Pain Affects Limitation in Working Activity

About 63% patients were feeling most of the time limitation in work whereas 8% patients were feeling

minimum time limitation and 29% patient never feel limitation in work for this pain.

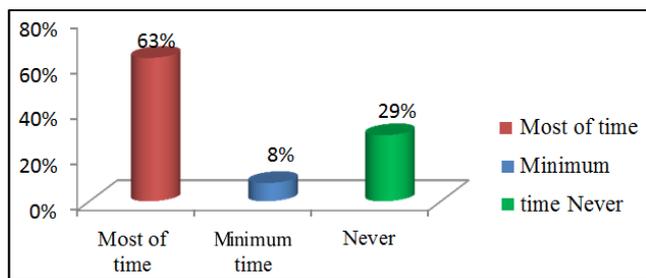


Figure 1. Shoulder pain affects limitation in working activity.

Association between limitations in working activity with different ages:

In the association test using chi-square, (χ^2) the value was 4.47 which indicates among variables was not significant because p-was 0.345 ($p > 0.05$).

3.3. Maximum Need Time to Complete the Official Work

Among the participants 23% patients replied that most of the time they need extra time to complete the official work whereas 37% patients need sometimes extra time to complete the official work and minimum time required for 43% patient.

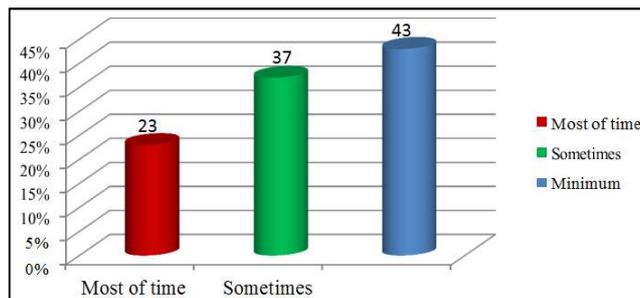


Figure 2. Maximum need time to complete the official work.

Association between limitations in official work with different ages:

In the association test using chi-square, (χ^2) the value was 29.560 which indicates among variables was significant because p-was 0.00 ($p < 0.05$).

Table 2. Chi-Square.

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-Square	4.477 ^a	4	.345

Association between social functioning with different ages:

In the association test using chi-square, (χ^2) the value was 25.537 which indicates, there is a strong relation in between social functioning with different ages ($p < 0.05$) and the rate is high among the age group 50-59 years.

Table 3. Pain affecting the social life.

Age of participants		30-39 Year	40-49 Year	50-59 year	Total
Social life affects the pain	Most of the time	0	1	13	14
	Sometime	3	19	25	47
	Little bit time	11	19	9	39
Total		14	39	47	100

Table 4. Chi-Square.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.537	4	.000

4. Discussion

The study found that mean age of the participant was 49.83 (± 7.58) years and most of the participants were above 45 years. The youngest participants in this study were 40 years old and oldest participants were 60 years old. In this study, female participants were 54% and male participants were 46%. Frozen shoulder usually affects patients aged 30-70, with females affected more than males, and no predilection for race [10]. In this study 44% (n=44) participants were service holder, 35% (n=35) participants were businessman, House wife participants were 13% (n= 13) and teacher participants were 8% (n=8). By this study it was ensured that service holders were more vulnerable for frozen shoulder. Respective occupation previously in which repeated flexion movement of affected shoulder was performed by 53% of patients whereas 38% was performed

repeated abduction of affected shoulder and the rest of 9% were only performed repeated extension movement. But rest of 30% didn't do any repeated movement of affected shoulder. In this study, 78% of the respondent performed overhead activity of their affected shoulder in their job in which 54% were male and the rest of 24% of them were female. In 22% respondent performed no overhead activity of their affected shoulder and its number for female was 10% and male was 12%. In the association test using chi-square, the value was 9.47 which indicates among variables was significant because p-was 0.002 ($p < 0.05$). Study showed that 72% of the respondents were feeling difficulties during lifting or weight bearing any objects whereas rest of 28% didn't feel any difficulty during use affected hand for their daily living's activity. In the association test using chi-square, the value was 1.529 which indicates among variables was not significant because p-was 0.570 ($p > 0.05$). In total 78% of the respondents were feeling difficulties of their affected

hand to reach out behind neck whereas rest of 22% didn't feel any difficulty during use of affected hand for this type of activity. In the association test using chi-square, the value was 12.603 which indicates different age group of patients with frozen shoulder were feeling difficulties of functional activity and it was significant because $p=0.002$ ($p < 0.05$). Study showed that 65% of the respondents were feeling difficulties of their affected hand to reach out behind back whereas rest of 35% didn't feel any difficulty during use of affected hand for this type of activity. But association test using chi-square, the value was 1.960 which indicates among patients with frozen shoulder this activity was not significant because $p=0.375$ ($p > 0.05$). Study revealed that in total 68% of the respondents were feeling difficulties of their affected hand to do bathing or wearing cloth and rest of 32% didn't feel any difficulty during use of affected hand for this type of activity. In the association test using chi-square, the value was 3.980 which indicate among patients with frozen shoulder this activity was not significant because variables were not significant because $p=0.137$ ($p > 0.05$). Study showed that there have strong association between overhead activity and different ages of frozen shoulder patient ($\chi^2=9.47$; $p<0.05$) and also strong association between hand behind neck activity and frozen shoulder because $\chi^2=12.603$ ($p<0.05$). Study revealed among participants 46% ($n=46$) patients were feeling severe limitation of bathing or wearing shirt and their age range was 40-49 years, whereas 43% ($n=43$) patients were feeling sometimes limitation of these activity. Study demonstrated that 73% patients were feeling difficulty during playing card, chess, Carum, badminton playing with this shoulder pain whereas 27% answered that they didn't feel any difficulty. Study focused among participants 43% ($n=43$) patients were feeling depression for this shoulder pain whereas 57% ($n=57$) patients were feeling minimum period of time depression for this shoulder pain. Study stated maximum participants occupations were service worker and business and most of patients 63% were feeling limitation in work whereas 8% patients were feeling minimum time of limitation and 29% patients never feel limitation in work for this pain. Study focused that most of the time 23% patients need extra time to complete the official work whereas 37% patients need sometimes extra time to complete the official work and minimum time required for 43% patient. Maximum participants were feeling difficulties to continue their social activity and its percentage was 47% ($n=47$) due to their shoulder pain. In this study among the participants 17% patients had taken leave for their job place due to this pain. Study found that among participants 54 patients with frozen shoulder felt unhealthy due to shoulder pain where the percentage for men was 28% ($n=15$) and female was 72% ($n=39$). In compare one study findings was that more women tended to be unhealthy for frozen shoulder whereas men were found within average healthy category [11].

5. Conclusion

From this study it was concluded that females were more

affected than male with frozen shoulder. Overhead activity and repetitive activity were aggravating factors for developing frozen shoulder and service holders were more affected among all occupation. Frozen shoulder was mostly responsible for impairment of physical function, physical role limitation. Frozen shoulder affects the general health of the participants so, maximum participants have fair health. Frozen shoulder only affects the physical health but it also affects the mental health of the participants. Pain is also high in all of the participants. This study showed that patients with Frozen shoulder were attended at CRP have relatively poor quality of life pertaining to the physical health components but there was relatively less impact on mental health than physical health. Male and older ages were main two contributors for poor quality of life of frozen shoulder patients. The results emphasized that who refers the highest shoulder disability was associated with a lower QoL, which ultimately requires a special attention by the health professional that assists both their rehabilitation and social reintegration.

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