

## Correlation Between Pain, Disability and Quality of Life in Patients with Periarthritis Shoulder

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**ABSTRACT:** The aim of the study was to find the correlation between pain and disability with quality of life in patients with Periarthritis Shoulder. Forty-eight patients from outpatient department of Vinayaka Mission's Medical college hospital were included into the study after careful consideration of inclusion and exclusion criteria. The outcome measures of pain and functional disability was assessed through SPADI scale and Short Form - 36 was used to assess Quality of Life (QOL) in these patients. Establishing a causal relationship between pain, disability, and quality of life in patients with periarthritis shoulder was challenging. The result was analysed through Spearman's correlation test. The results of the study showed that there was moderate positive correlation between pain component and quality of life and also it showed that there was a negative correlation between the Functional Disability and Quality of life. It signifies that as pain increases in the disability increases and quality of life decreases. Hence any treatment that address towards reducing pain will increase the quality of life in periarthritis.

**Keywords:** Periarthritis shoulder, Pain, Disability, Quality of life.

### INTRODUCTION

Periarthritis is a clinical condition characterized by pain in and around the shoulder joint that causes various disturbances in the activities of daily life. Periarthritis shoulder is a common condition affecting individuals aged 30-60, causing inflammation and fibroblastic proliferation (Phansopkar and Qureshi 2022). Unlike other types of arthritis which are caused by degeneration of joint, periarthritis condition is due to inflammation of the joint. This inflammatory change can either be acute, sub-acute or chronic and can be insidious or of sudden origin. Though the inflammatory process can occur in any of the joints in the body, Shoulder joint is the most vulnerable joint to be affected by periarthritis condition. Shoulder being the most dynamic joint in human body when affected by this clinical condition affects most of the activities of daily living and makes the person feel crippled. The American Shoulder and Elbow Surgeons Society defined Periarthritis condition as "A condition of uncertain aetiology characterized by significant restriction of both active and passive shoulder motion that occurs in the absence of a known intrinsic shoulder disorder" (Zuckerman and Rokito 2011). It occurs in people between ages of 40 to 60 with women affected most (Fernandes *et al.*, 2017) It is estimated that it

affects almost 4 to 5% of the population and majority of them are diabetic for years together. It is roughly projected that 36% of people suffering from diabetes end up with periarthritis shoulder at one stage of their life time (Nagy *et al.*, 2013) The occurrence is connected to the dominant shoulder with a clinical representation of dominant side involvement twice as that as the non- dominant shoulder (Rizk and Pinals 1982).

Periarthritis also known as adhesive capsulitis or frozen shoulder was first described by Codman (Lho *et al.*, 2013). The causes are attributed to chronic trauma that occurs in an age when the changes connective tissues could produce the pathology. But it is usually predisposed to associated diseases or and of the sports activities (Kabbabe *et al.*, 2010). The most common clinical presentation is localized pain in initial stage and diffused pain all around the shoulder joint and scapular region which may or may not radiated to arms (Merolla *et al.*, 2016). There is marked limitation of movement in all the planes with external rotation being affected first and most. There is a constant compliant of inability to lie on affected side and reduced reaction time of the upper limb. Because of profound limitation in the shoulder movement the patient is left with no other choice than to compromise on the Quality of living (Ding *et al.*, 2014).

Quality of life is a multidimensional process that judge the way we live. It is defined as a model of quality of life is proposed that integrates objective and subjective indicators, a broad range of life domains, and individual values (Felce and Perry 1995). It takes account of concerns that externally derived norms should not be applied without reference to individual differences. Generally, any quality of life assessment involves assessment in five dimensions – Illness, Independent living, Social relationships, Physical senses and Psychological well-being. Any disease affects the quality of life undoubtedly (Kothari *et al.*, 2017). Especially the peri-arthritis condition leaves the patient dependent on many of their day to day activities on others which pose a serious drawback on their quality of living. The major complications of this chronic condition remain unnoticed to clinical practitioners unless until reported by the patient. Some of the unreported complications are reduced or poor quality of life (Hong *et al.*, 2014), Sleep deprivation (Buysse *et al.*, 1989) and lack of motivation in participating in social life (Monk 2003). Studies related to chronic pain and functional disability demonstrate the need to look for a treatment strategy that will address in improving the overall quality of life and ensuring optimal health. The aim of this study is to find out the correlation between the pain and functional ability on quality of life in Peri-arthritis patients.

## MATERIAL AND METHODS

This study is a correlational study that was conducted at Vinayaka Mission's Kirupananda Variyar Medical College Hospital after the approval of Institutional Ethical Committee. 44 subjects with a history of peri-arthritis and who reported poor quality of life were included in the study. Both men and women between the age group of 40 and 60 years of age with involvement of any one of the shoulders were included in the study. Those with bilateral complaint of shoulder, and who are on drugs for any kind of psychological problem, history of trauma, fracture in and around shoulder joint, recurrent dislocation of shoulder, prolonged immobilisation of shoulder, Rheumatoid shoulder, cervical spondylosis with brachial neuralgia and Acromioclavicular dysfunction were excluded from the study.

The subjects were selected on the basis of low scores in short form -36 survey questionnaire. The assessment of the selected subjects was done on the for confirmation of diagnosis on the range of motion restriction and reduced joint play. Once the assessment was over the subjects were briefed about the purpose of the study

and a written consent was taken and filed. The demographic data of the subjects were recorded which included name, age, sex, side of involvement and history of diabetes. Diabetes being the predisposing factor for peri-arthritis condition, the onset of the disease and medication history was recorded.

The outcome measures of the study included the Pain, functional Disability and quality of life. They were assessed by SPADI score and Short Form -36 questionnaire. The collected data was analysed using SPSS software version 25 version. The data being non-parametric in nature, a Spearman's correlation test was done.

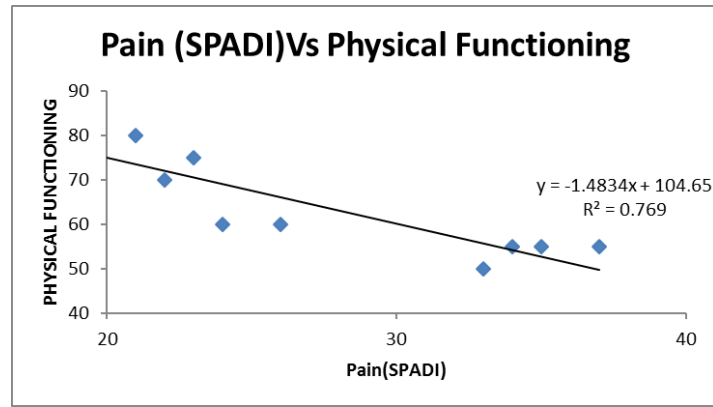
## RESULTS AND DISCUSSION

The mean age of 44 subjects included in the study was  $51 \pm 5.6$  years. And the study included 27 female and 17 male subjects. And 56% of the participants were diabetic out of which 37% were diabetic for more than 10 years and 19% were diagnosed diabetic within 5 years. 32 % of the participants had any one of the co morbid conditions of hypertension, thyroid issues or hyperlipidemia. 12% of the participants presented with perfect parameters were interestingly observed around 50 years of age.

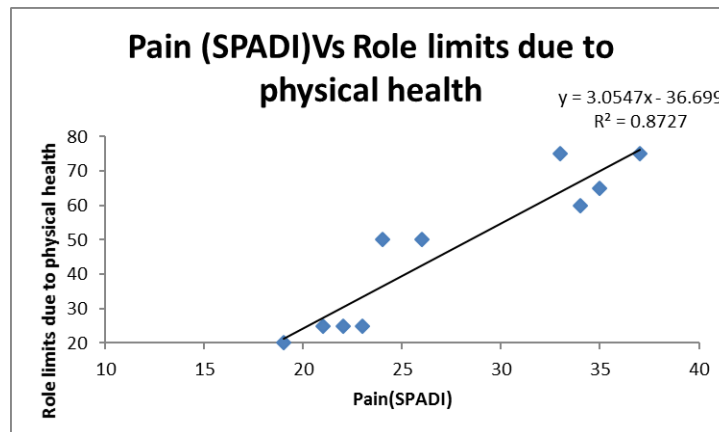
The spearman correlation value shows strong negative correlation between pain and quality of life. That is as pain increases there is decrease in quality of life. The study also shows there is moderate negative correlation between the Functional disability and quality of life. That is the relationship between functional disability and QoL is obvious, but the components are not directly identifiable. Fig. 1 to 6 shows the Spearman's Correlation graph.

The study was conducted to analyse the relationship between the pain and Functional disability on the quality of life in peri-arthritis patients. Poor quality of life definitely is a poor indicator of health which can affect in many ways. Among the many assessment tools available for assessing shoulder pain SPADI is considered more reliable and valid. And of the tools for assessment of QoL, SF-36 is more reliable to shoulder pathology and adopted in many studies.

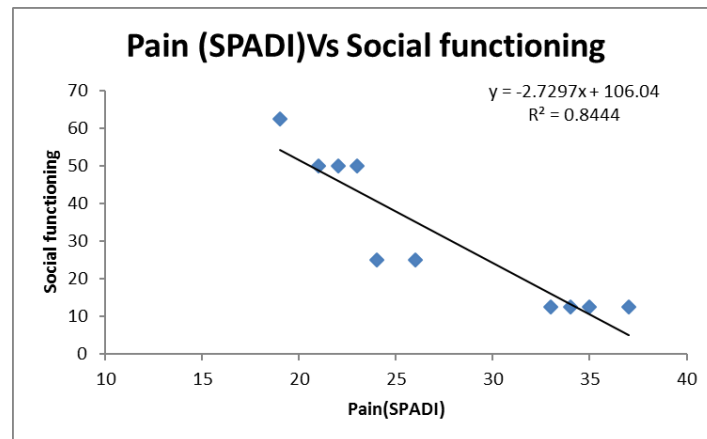
The result of the study shows that there is strong negative correlation with pain and QoL. That is as pain increases the quality of life decreases. The high scoring on SF 36 indicates poor quality of life which is directly reflected in the study and is in accordance with the previous study that demonstrates that pain has an influential effect in reducing the quality of life in peri-arthritis condition irrespective of the onset of the disease.



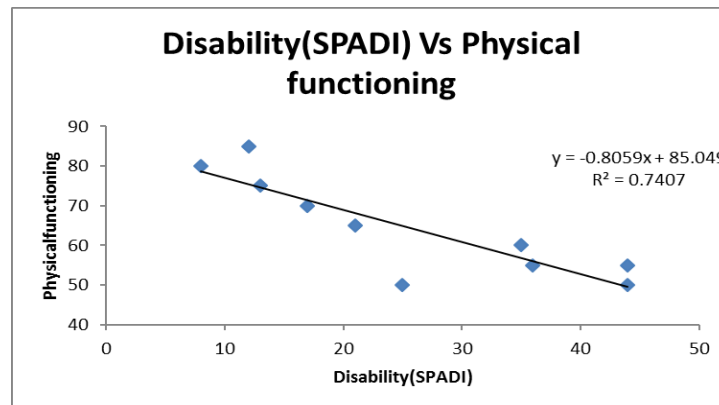
**Fig. 1.** Correlation between Pain SPADI and SF- 36 Physical functioning Component.



**Fig. 2.** Correlation between Pain SPADI and SF-36 Limitation Component.



**Fig. 3.** Correlation between Pain SPADI and SF-36 Social Functioning component.



**Fig. 4.** Correlation between Disability SPADI and SF- 36 Physical functioning Component.

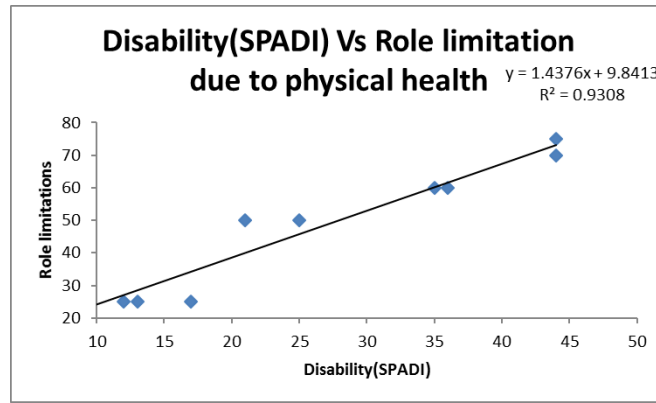


Fig. 5. Correlation between Disability SPADI and SF-36 Limitation Component.

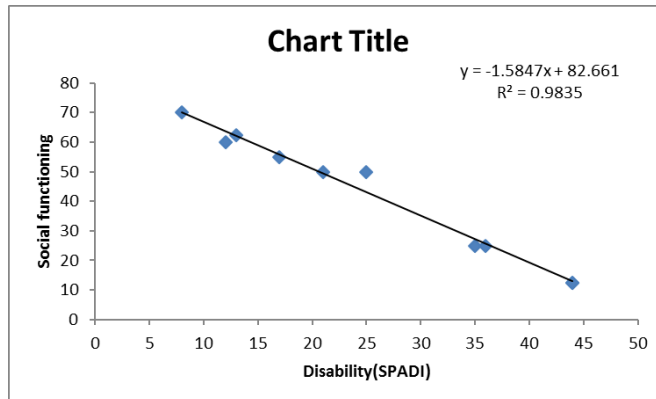


Fig. 6. Correlation between Disability SPADI and SF-36 Social Functioning component.

## CONCLUSION

In this research, participants with periarthritis of the shoulder were asked about their levels of pain and functional handicap, as well as their overall quality of life. Patients from the outpatient department were chosen to participate in the study based on certain inclusion and exclusion criteria. The SPADI scale was used in order to determine levels of pain and functional impairment, and the Short Form-36 questionnaire was used in order to determine levels of quality of life. Spearman's test of correlation was used in order to conduct the investigation into the correlation. These results highlight the need for comprehensive treatment methods that target pain management as well as functional improvement in order to enhance the overall quality of life for those who have this illness.

## FUTURE SCOPE

The future scope of research in this area lies in conducting longitudinal studies, intervention trials, utilizing objective measures, adopting multidisciplinary approaches, focusing on patient-centered outcomes, and exploring the potential of technology and digital health tools. By addressing these aspects, we can further advance our understanding of Periarthritis Shoulder and develop effective interventions to improve the quality of life for individuals affected by this condition.

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**Conflict of interest:** None

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