

# A Review on Patient Quality of Life Assessment during Fractures

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## Abstract

Based on the analysis of objective and subjective parameters as well as the influence of the fractured side on the final results, the purpose of this study was to assess patients' quality of life after treatment for a distal radius fracture (at least six months but no more than ten years after the treatment). Thirty women, all of whom claimed to be right-handed and were divided according to the side of the fracture (left limb or right limb), were included in the study sample. A goniometer was used to check for active wrist movement, elbow joint pronation, and supination. In addition, a dynamometer made by Biometrics Ltd. was used to measure the upper limb's global grip strength. After that, patients were given the PRWE wrist evaluation questionnaire and the Polish version of the SF-36 questionnaire that measured quality of life.

**Keywords:** Distal radius fractures • Treatment • Upper limb

## Introduction

Source data indicate that distal radius fractures (DRFs) account for approximately 17% of all fractures that require medical attention. This is why it is the most typical upper limb fracture. It is believed that low-impact falls, typically on the non-dominant upper limb, are the primary cause of this fracture in first aid facilities, DRFs are among the most frequently treated fractures. People typically fall from standing height, typically onto an extended arm, in 67–81% of all DRF cases after tripping over an obstacle. The issue of DRFs primarily affects children and the elderly, according to references Boys were more likely than girls to suffer fractures in the pediatric group. Polish researchers demonstrated, citing earlier Swedish research that these fractures were more prevalent in young men than in young women. Although the exact factors influencing the results were not presented in their study, the researchers assumed that men's increased physical activity was crucial. Women experience more fractures than men due to age-related differences in DRFs [1].

## Description

Further examination papers show that females somewhere in the range of fifty and sixty years old beat at a 2:1 proportion, however in considerably more established bunches that proportion is basically as high as 7:1. The authors draw a connection between the findings of their papers and women's menopause, highlighting the skeletal problems that come with it. As patients get older, their fracture rates rise as a result of advancing osteoporotic processes. The examinations referenced above likewise showed a hole in left-versus right-side wounds. The final explanation for this phenomenon has not yet been provided by the authors; however it is generally accepted that the tendency toward defensive positions on the side that is not dominant is to

blame. Additionally, it is noteworthy that the dominant limb is more developed and has a skeleton that is larger; therefore falls-related injuries that would normally result in a fracture do not always result in a fracture.

The fact that this fracture occurs frequently and is a well-known injury may suggest that numerous suitable treatments are available. However, due to the large number of biostructures in the damaged area (including forearm and wrist bones with joints and ligaments), each should be examined separately because the treatment may result in different outcomes based on the characteristics of the patient and the fracture. An accurate diagnosis is essential for selecting an appropriate treatment strategy. Finding the exact conclusion can be worked with by characterization frameworks helping definitively match the idea of the break to the current models introduced in typology. Despite the length of time that has passed since the injury, the outcomes of the injured limb are consistently worse than those of the non-injured limb. Intriguingly, the group with an injured dominant (right) limb showed this correlation. It is important to emphasize that each and every patient in the study declared that they were right-handed. The mean results of objective measurements of the active range of motion showed that the left injured limb's carpal joint had a fuller range of motion for palmar flexion than the right injured limb's, with an 8.8% difference between the limbs a difference of 10.2% between the limbs in dorsal flexion difference of 1% in radial abduction ulnar abduction, with a difference of 1.7 percent. In addition, results for the injured limb were significantly different from those for the non-injured limb, regardless of whether it was the right or left hand. Forearm pronation, the study also found that the right injured limb recovered strength and a fuller range of motion in the elbow joint than the left injured limb did supination of the forearm, with a difference of 2.2% maximum grip strength, a difference of 2.8% and the average of three grip strength measurement results, with a difference of 0.5 percent. Only the group with fractured left limbs showed statistically significant differences in the analyzed parameters for the above ranges. Only differences in forearm supination were statistically significant in the group with fractured right limbs. Gerald Gruber and Others[15] conducted a six-year follow-up on 54 patients who had undergone surgery with angle plate fixation. At the end of that time, the patients reported average results, which are consistent with our findings and demonstrate that the averaged results for the injured limb were lower than those for the non-injured limb in terms of active range of motion and handgrip strength [2-6].

On the other hand, patients who had an injury to their left hand had higher values for restoring their range of motion while also experiencing more pain. When we directly compare the pain relief to the restoration of the range of motion in palmar flexion, dorsal flexion, radial abduction, and ulnar abduction, this phenomenon may also be related to psychological factors.

Previous research also supported this study's findings, which

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demonstrated a particular challenge in restoring function to an injured limb even years after the fracture. However, there were no more in-depth studies comparing the outcomes of fractures of the dominant and non-dominant limbs. This study initially assumed that the dominant limb performed the majority of manual tasks. However, the results show that the non-dominant left limb is stronger than the injured (dominant) left limb and that the right injured limb has averagely less mobility. This may be because the non-dominant limb had to be used during the treatment and immobilization phases, which helped it function better.

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## Conclusion

The active wrist movement of the injured limb and the non-injured limb differed statistically significantly, as must be concluded. Additionally, injuries to the right (dominant) limb were associated with worse outcomes than those to the left. In addition, patients with right-limb dominance may have a lower quality of life if their right limb is injured.

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## Conflict of Interest

The authors declare that there is no conflict of interest associated with this manuscript.

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