



MULTIMODAL PHYSIOTHERAPEUTIC PROGRAMME AND QUALITY OF LIFE AFTER REVERSE SHOULDER ARTHROPLASTY

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ABSTRACT:

Introduction: Reverse shoulder arthroplasty is gaining more and more popularity as a surgical intervention focusing on improving the quality of life of patients with shoulder pathology.

Purpose: to evaluate the quality of life of the reverse shoulder arthroplasty patients who have undergone a multimodal physiotherapeutic programme.

Material and methods: Fifty-two patients with reverse shoulder arthroplasty, were divided into two groups. The patients in group 1 underwent classical physiotherapy, which was applied on the 2nd postoperative day and lasted up to the 16th week. The patients in group 2 underwent a multimodal physiotherapeutic programme after the 4th postoperative week until the 16th week.

Results and discussion: The comparative analysis of the overall assessment of the quality of life in both groups presents an increase in the average values with 23.5 units in favour of the multimodal physiotherapeutic programme. The data from the research of the four domains present an improvement in domain “Physical” with 7 units, followed by domain “Environment” (5.88), domain “Psychological” (3.54) and domain “Social Relationships” (2.03) in the combination of classical physiotherapy and cupping therapy in patients after reverse shoulder arthroplasty.

Conclusions: The inclusion of cupping therapy in the physiotherapeutic programme helps reduce pain, creating opportunities for earlier recovery of the shoulder joint. The multimodal physiotherapeutic programme gives the possibility for an improvement of the muscle strength of the reverse shoulder arthroplasty joint, which accelerates the functional recovery of the whole upper limb.

Keywords: physiotherapy, cupping therapy, reverse shoulder arthroplasty

INTRODUCTION

Pathology of the shoulder joint is one of the most common due to its high mobility. The shoulder arthroplasty can be utilized in different pathologies of the shoulder joints: primary osteoarthritis, arthropathy, severe ruptures of the rotator cuff, rheumatoid arthritis and as a revision arthroplasty. The data in the scientific literature regarding the recovery results are very contradictory, which determines the necessity of an additional development of the physiotherapeutic protocol standards. The necessity of quick change in the quality of life and returning to the daily activities sets a multitude of questions and challenges to the physiotherapists.

The patient-centred approach in this type of patient is of significant importance for the proper flow of the recovery process and for improving the ability to perform activities of daily living and working capacity. The correctly prepared physiotherapeutic programme in which the patient participates and takes responsibility is of utmost importance. The physiotherapeutic programme includes a long term strategy towards the specific patient. [1, 2, 3, 4]. The studies in the literature sources and the clinical experience present that in the occurrence of such a pathology, the age or gender indicators are not a significant factor. [5, 6]

The inclusion of cupping therapy helps the recovery process as it facilitates the performance of classical physiotherapeutic exercise programmes [7, 8]. This, in turn, improves working capacity and the ability to perform daily living activities.

PURPOSE:

To evaluate the quality of life of the reverse shoulder arthroplasty patients who have undergone a multimodal physiotherapeutic programme.

MATERIAL AND METHODS

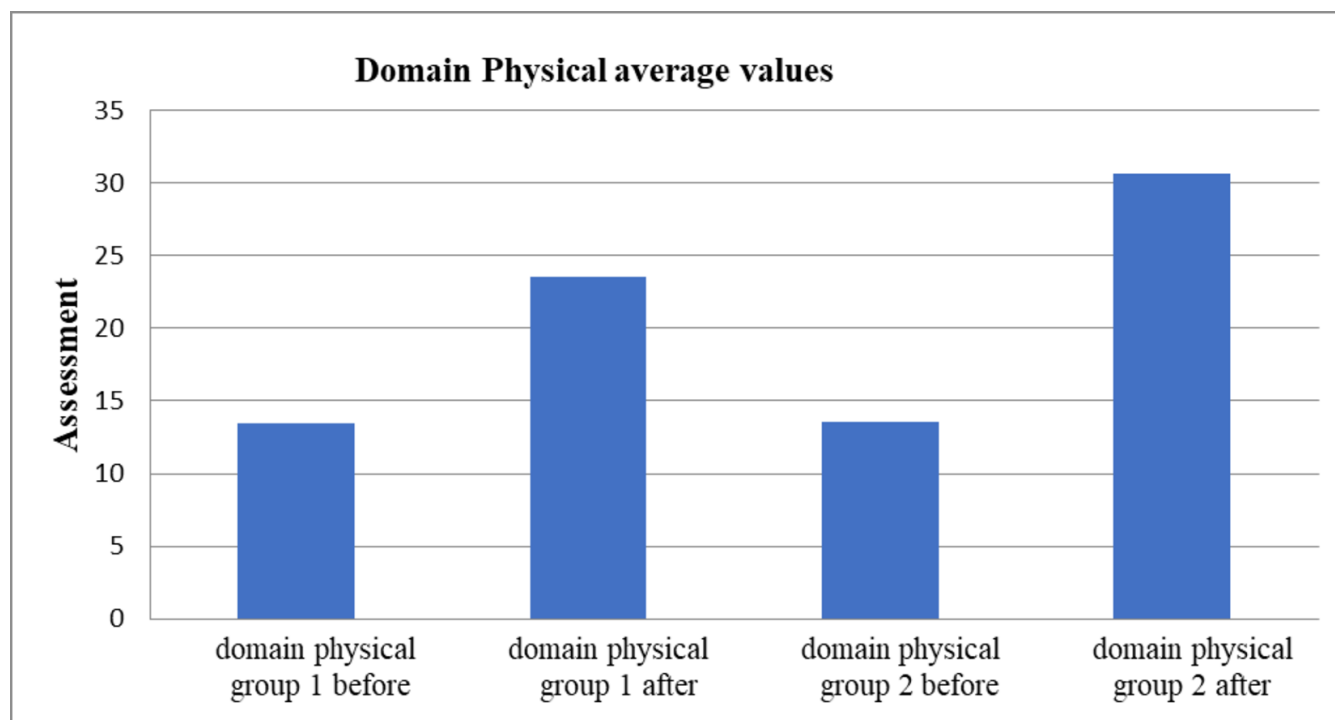
The article presents a part of the results obtained during the research in the doctoral thesis of the author. In the study, 52 patients with reverse shoulder arthroplasty took part, divided equally into two groups. The researched participants have undergone surgical treatment at the Orthopaedics and Traumatology Clinic at UMHAT “St. Marina” – Varna. The patients in group 1 (G–1) underwent classical physiotherapy, which was applied on the 2nd postoperative day and lasted up to the 16th week. The patients in group 2 (G–2) underwent a multimodal physiotherapeutic programme after the 4th postoperative week until the 16th week. The multimodal physiotherapeutic programme is a combination of classical physiotherapy and cupping therapy after the fourth postoperative week. The patients visited the physiotherapy office three times a week, receiving cupping therapy during two of those visits. Massage cupping, also called dynamic cupping, followed by static cupping lead to improvement in musculo-tendinous elasticity, range of motion and muscle strength of the operated joint. The research period was one year (2023 – 2024). Before and after the completion of the ac-

tivities, the quality of life of both groups was evaluated with the generic WHO questionnaire (WHOQOL–BREF).

RESULTS AND DISCUSSION

The comparative analysis of the overall assessment of quality of life in both groups presents an increase in the average values with 23.5 units in favour of the multimodal physiotherapeutic programme. The presented results are before and after the application of the methods in G1 and in G2 from the questionnaire for quality of life (QL) in the domains “Physical”, “Psychological”, “Social Relationships” and “Environment”. The obtained results from the research of domain “Physical” of QL in G1 present a dynamic in the values before and after the conduction of the classical physiotherapy – domain “Physical” of QL improves with 10,08 units (from 13,50 “before” increases to 23,58 “after”) (fig. 1). The data from the research of domain “Physical” in QL in G2 present an increase in the values before and after the conduction of the multimodal physiotherapeutic programme with 17,07 units (from 13,58 “before” increases to 30,65 “after”) (fig. 1)

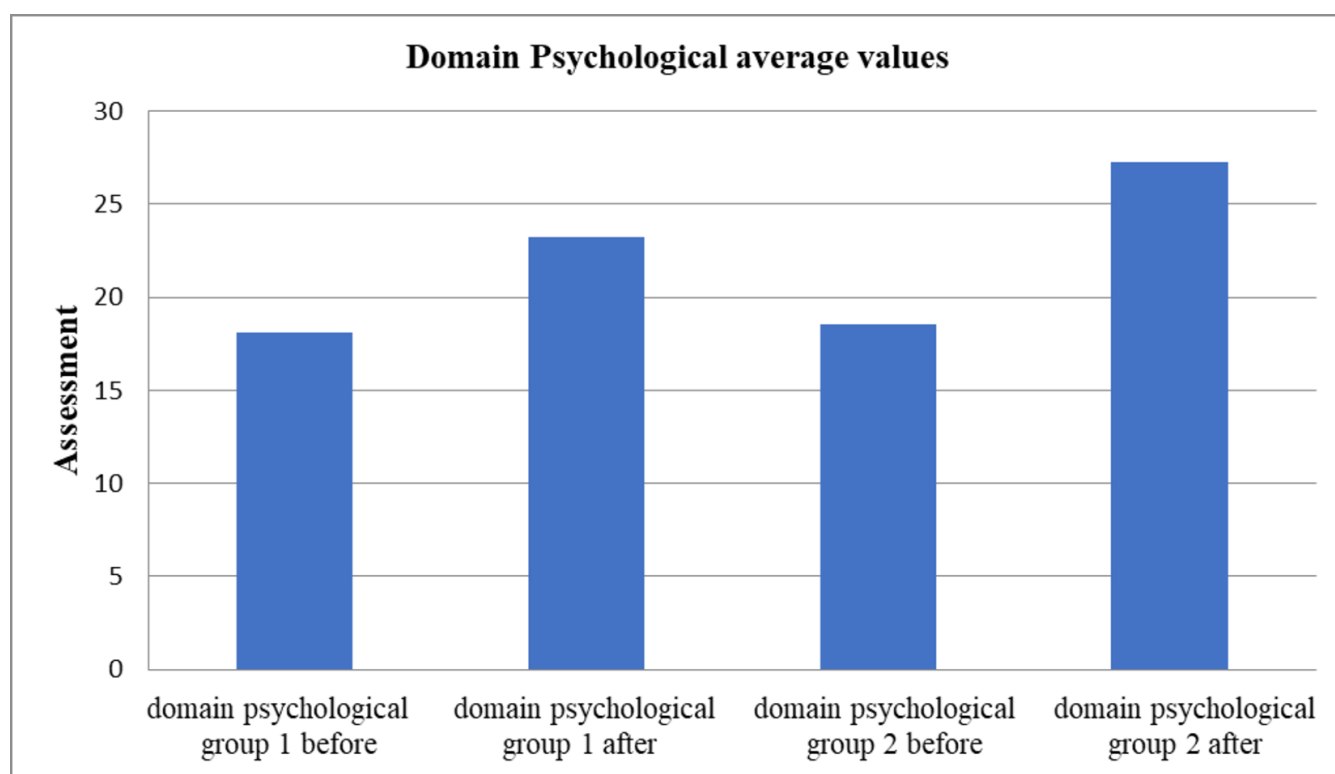
Fig. 1. Domain “Physical” of quality of life of both groups - before and after the programmes ($p=0,000 > \alpha=0,05$)



The results of the research of domain “Psychological” of QL in G1 establish a dynamic in the values before and after the conduction of the classical physiotherapy – domain “Psychological” of QL improves with 5,15 units

(from 18,12 “before” increases to 23,27 “after”) (fig. 2.) The obtained data in the domain “Psychological” of QL in G2 present an improvement with 8,69 units (from 18,58 “before” increases to 27,27 “after”) (fig. 2.)

Fig. 2. Domain “Psychological” of quality of life of both groups - before and after the programmes $p=0,000>\alpha=0,05$)



Proceeding from the statistics theory, the null hypothesis H_0 can be rejected and the alternative can be accepted with proof of the statistically significant difference in the indicator “Psychological domain” in patients “before” compared to those “after” in G1. An increase of nearly 5,2 units in the average values of the indicator “before” was reported in the patients from G1 compared with those “after”. The same statistical conclusion can be drawn in the domain “Psychological” for patients from G2 before and after the conduct of the multimodal physiotherapeutic programme. An increase was reported with nearly 8,7 units in the average values of the indicators “before” in patients from G2 in comparison with those “after”. The obtained results from the research before and after the conduction of the classical physiotherapy – domain “Social Relationships” of QL in G1 present a dynamic in the values before and after the conduction of the classical physiotherapy – domain “Social Relationships” of QL in G1 present a dynamic in the values before and after the conduction of the classical physiotherapy – domain “Social Relationships” of QL improves with 0.62 units (from 9,88 “before” increases to 10,5 “after”) (fig. 3). The data from domain “Social Relationships” of QL in G2 increase with 2,65 units after the conduction of the multimodal physiotherapeutic programme – from 9,58 “before” increases to 12,23 “after” (fig. 3.)

The data from the researched domain “Environment” of QL in G1 present a change in the values before and after the conduction of the classical physiotherapy – domain “Environment” of QL improves with 3,31 units (from 24,96 “before” increases to 28,27 “after”) (fig. 4). The obtained results from the research of domain “Environment” of QL in G2 establish a dynamic in the values before and after the conduction of the multimodal physiotherapeutic programme – domain “Environment” of QL improves with 9,19 units (from 24,54 “before” increases to 33,73 “after”) (fig. 4).

Proceeding from the statistics theory, the null hypothesis H_0 can be rejected and the alternative can be accepted with proof of the statistically significant difference the domain “Environment” in patients “before” compared to those “after” in G1. An increase in the average values of the indicator was established regarding the patients from G1 (“after” with 3,31 units in comparison with “before”) and in the patients from G2 – “after” with 9,2 units in comparison with “before”. The questionnaire for quality of life assessment, WHOQOL BREF, has a high degree of reliability regarding its own structure, contents and information intensity (Cronbach’s Alpha 0,816).

Fig. 3. Domain “Social Relationships” of quality of life of both groups - before and after the programmes ($p=0,000>\alpha=0,05$)

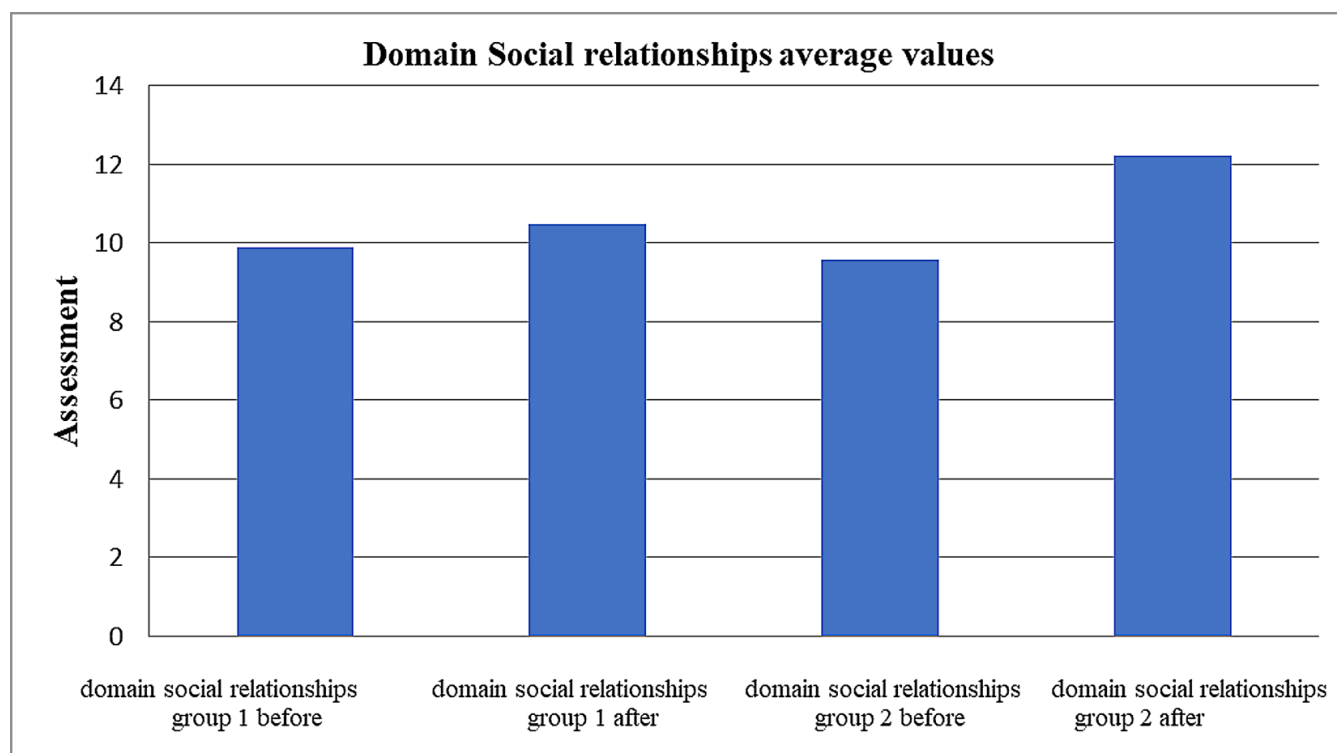
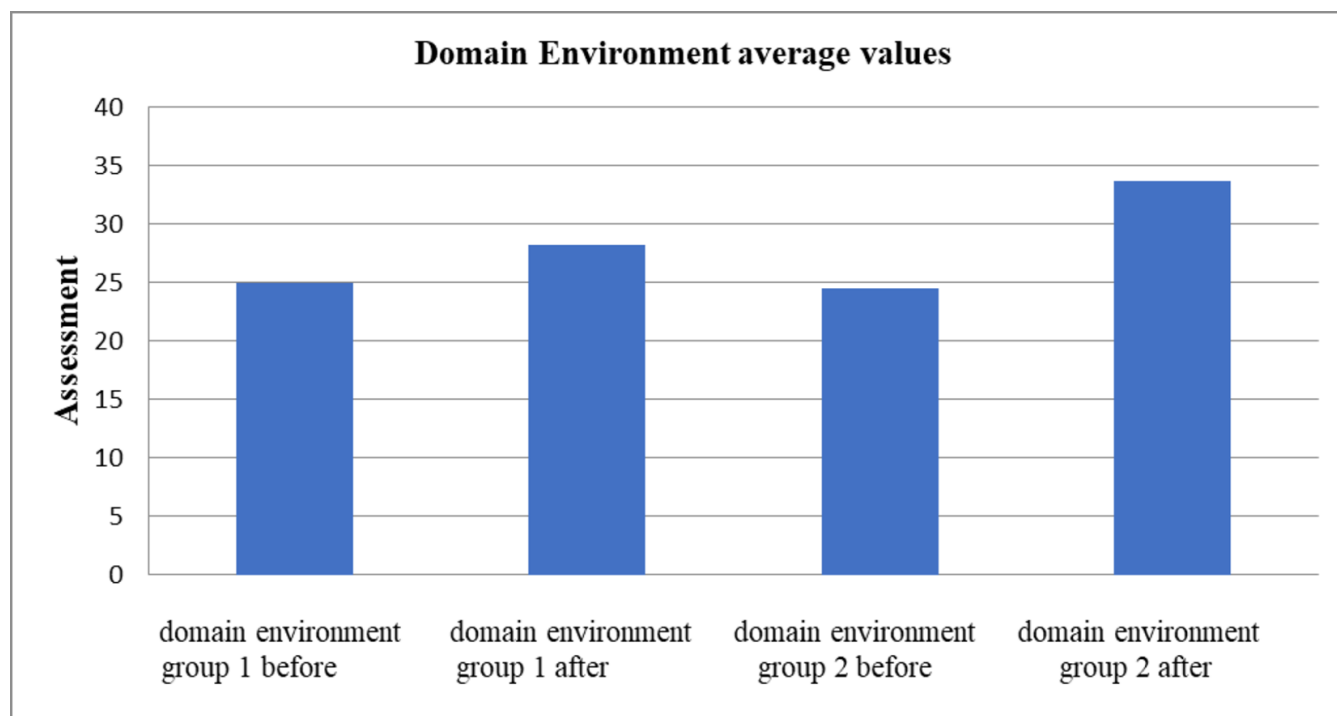


Fig. 4. Domain “Environment” of quality of life of both groups - before and after the programmes ($p=0,000>\alpha=0,05$)



CONCLUSION

The combination of classical physiotherapy and cupping therapy in patients after reverse shoulder arthroplasty increases the overall assessment of quality of life and the assessment in the domains “Physical”, “Psychological”, “Social Relationships” and “Environment”. The inclusion of cupping therapy in the physiotherapeutic programme helps in overcoming pain, which creates opportunities for earlier recovery of the shoulder joint. The

multimodal physiotherapeutic programme gives the possibility for an improvement of the muscle strength of the reverse shoulder arthroplasty joint, which accelerates the functional recovery of the whole upper limb. The data from the research are in support of the quality of life improvement in patients in which a multimodal physiotherapeutic programme was applied for their recovery after reverse shoulder arthroplasty.

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