



ASSESSMENT OF THE LIFE QUALITY OF PERSONS WITH KNEE JOINT INJURIES AFTER SURGERY INTERVENTION

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ABSTRACT

The article presents the results of an assessment of the quality of life after staged rehabilitation of patients with combined injury of the knee joint. The study included 78 patient-athletes - men aged from 18 to 35 years (average age 27.8 ± 0.47 years), who had a history of surgical interventions on the knee joints to restore the anterior cruciate ligament and meniscectomy. A comparative analysis in 2 observation groups in the dynamics of rehabilitation therapy according to the psychological component of health showed that in the main group the greatest dynamics of the component were determined by role (emotional state) and social functioning. Less pronounced dynamics were detected in vital activity and mental health indicators.

KEY WORDS: injury, knee joint, surgery, rehabilitation treatment, quality of life, SF-36

1. INTRODUCTION

Injuries are not only a medical problem, but also have great socio-economic significance, since they lead to a high level of disability and medical and social consequences, including disability and mortality. In this regard, injuries become one of the main elements in the structure of the "burden of diseases".

According to the World Health Organization (WHO) "...every year, there 3.5 million people die due to injuries in the world, and more than 5 million injured people become permanently disabled, with 5-8% being cases of sports injuries».

Today, there are large gaps not only in the timely initiation of prevention and restorative and reconstructive measures after surgical interventions on the knee joint, but also in the lack of comprehensive information on statistical indicators, a recording system, data collection, as well as analysis and type of injuries.

2. PURPOSE OF THE STUDY

The purpose of the study was to assess the quality of life after staged rehabilitation of patients operated on for a combined injury of the knee joint.

3. RESEARCH METHODOLOGY

The study included 78 patient-athletes - men aged from 18 to 35 years (average age 27.8 ± 0.47 years), who had a history of surgical interventions on the knee joints to restore the anterior cruciate ligament and meniscectomy. From the total number of athletes, depending on the volume of rehabilitation therapy, 2 groups were formed: main group (MG) - $n=42$ (53.9%) patients, against the background of standard therapy, received treatment according to staged physical rehabilitation programs developed on the basis of the study results; control group (CG) - $n=36$

(46.1%) patients undergoing standard therapy. In terms of gender and age characteristics of the population, the groups were comparable. The average age in the observation groups was: in main group - 26.36 ± 0.65 years; in control group - 27.88 ± 0.47 years.

To evaluate the effectiveness of the developed and proposed program of rehabilitation measures after surgical interventions on the knee joint, a study of the quality of life was conducted using the SF-36 questionnaire. The SF-36 quality of life questionnaire was used to determine the level of physical and psychological health of patients. The questionnaire consists of 36 questions, combined into 8 sections: physical functioning; role functioning due to physical condition; the intensity of pain and its impact on the ability to perform daily tasks, including home and professional activities; general health; vital activity; social functioning; emotional role functioning and mental health. Scores on each scale ranged between 0 and 100, with 100 representing full health. All eight scales were ultimately combined and included in 2 overall questionnaire indicators: physical health (PH) and mental health (MH).

4. DATA ANALYSIS AND INTERPRETATION

The survey was conducted before and after physical rehabilitation in order to comprehensively assess the general condition of the athlete and the operated limb. Low scores on the physical health component indicated that the patient's physical activity was significantly limited by his health status. While low scores on the psychological component indicated the presence of depressive, anxious experiences, mental ill-being due to a knee injury and surgery.

When assessing the psychological component of health in the



main group after completion of the recovery program, positive dynamics were revealed for all studied parameters (Fig.1).

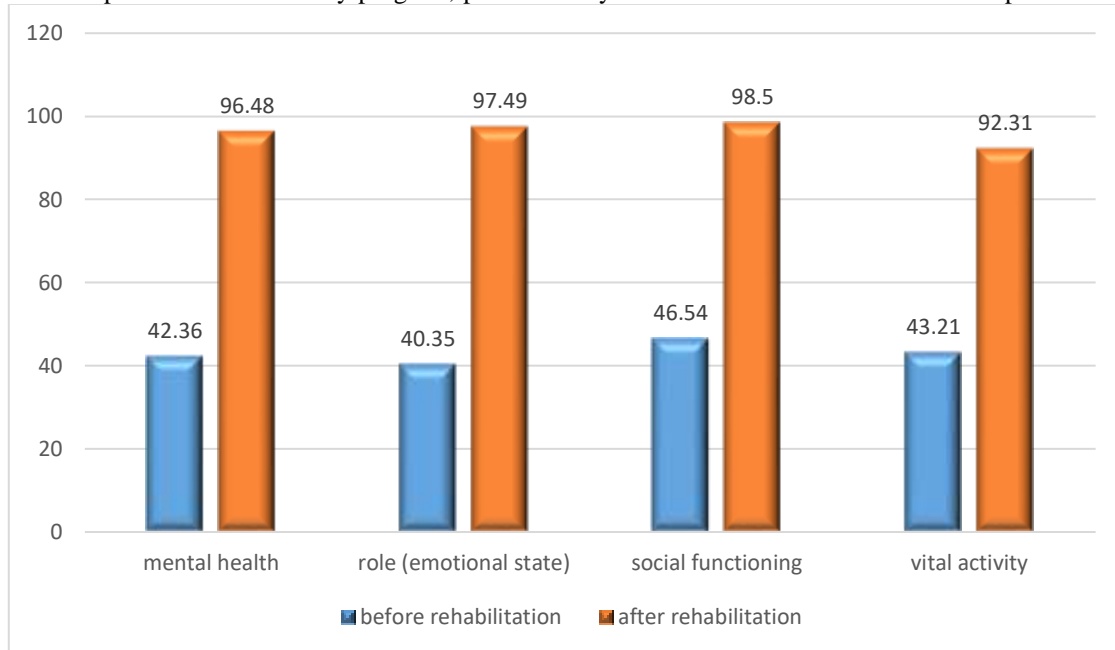


Figure 1. Assessment of the psychological component of health (MH) in the main group, points (n=42)

Total increase in vital activity indicators; social functioning; role functioning due to emotional state; and mental health was 2.24 times. Vital activity increased from 43.21 ± 0.12 points to 92.31 ± 1.24 points. Social functioning also improved markedly, with a score of 46.54 ± 1.23 points before and 98.5 ± 1.26 points after the rehabilitation program. Mental health of participants increased from

42.36 ± 0.38 points to 96.48 ± 1.72 points by the 6th month of the training and recovery period. The indicator of role functioning associated with the emotional state has achieved significant progress: its increase was 40.35 ± 2.11 points to 97.49 ± 2.03 points after a comprehensive rehabilitation program.

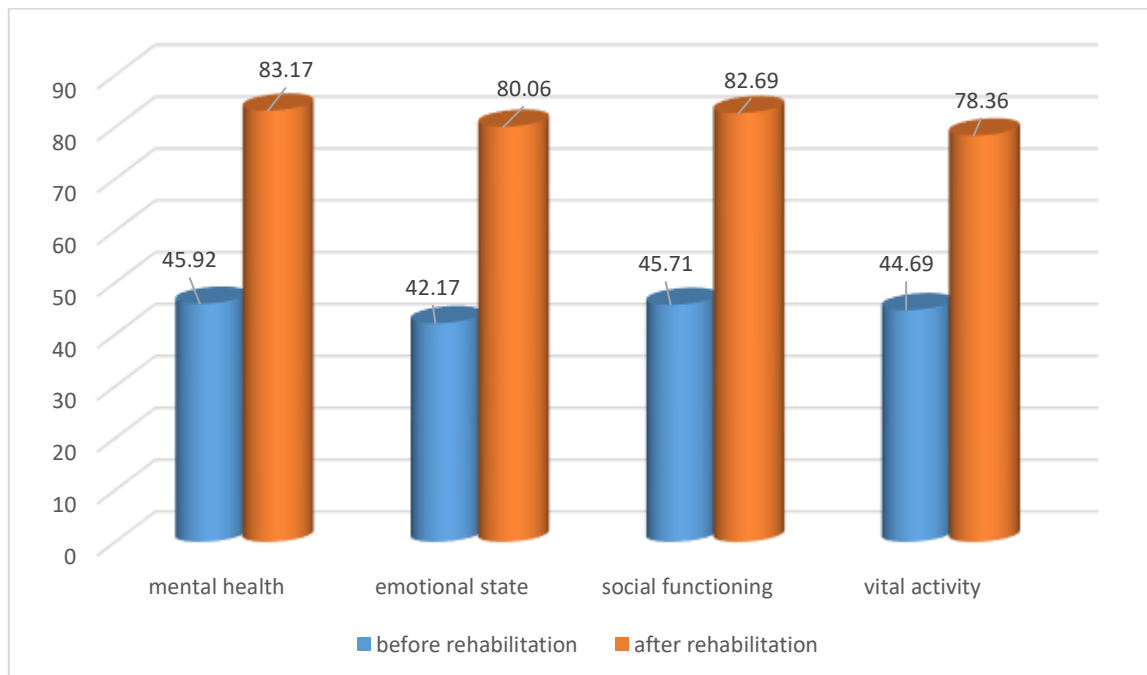


Figure 2. Assessment of the psychological component of health (MH) in the control group, points (n=36)

The results of the study in the control group on the components of psychological health showed an improvement of only 1.82 times after a standard physical rehabilitation program. There was less pronounced dynamics in the indicators of the

psychological component in comparison with the initial level: for example, if the vital activity parameter at the time of inclusion in the study was 44.69 ± 0.37 points, then by the end of 6 months it reached 78.36 ± 0.98 points; social functioning -



45.71±1.68 points and 82.69±1.84 points; role functioning related to emotional state - 42.17±2.64 points compared to 80.06±0.79 points, and mental health - 45.92±0.25 points compared to 83.17±0, 51 points before and after completing the rehabilitation program, respectively (Fig. 2). When assessing the physical component of health in the main group after completion of the recovery program based on general health, athletes give a

lower rating in comparison with their physical sports readiness, which, however, did not affect the assessment of role functioning due to physical condition (with a significant increase in 2.2 times); physical functioning – 1.9 times. The pain intensity indicator changed only 1.4 times, much lower than all other studied components of physical health, which may be associated with internal fear of pain (Fig. 3).

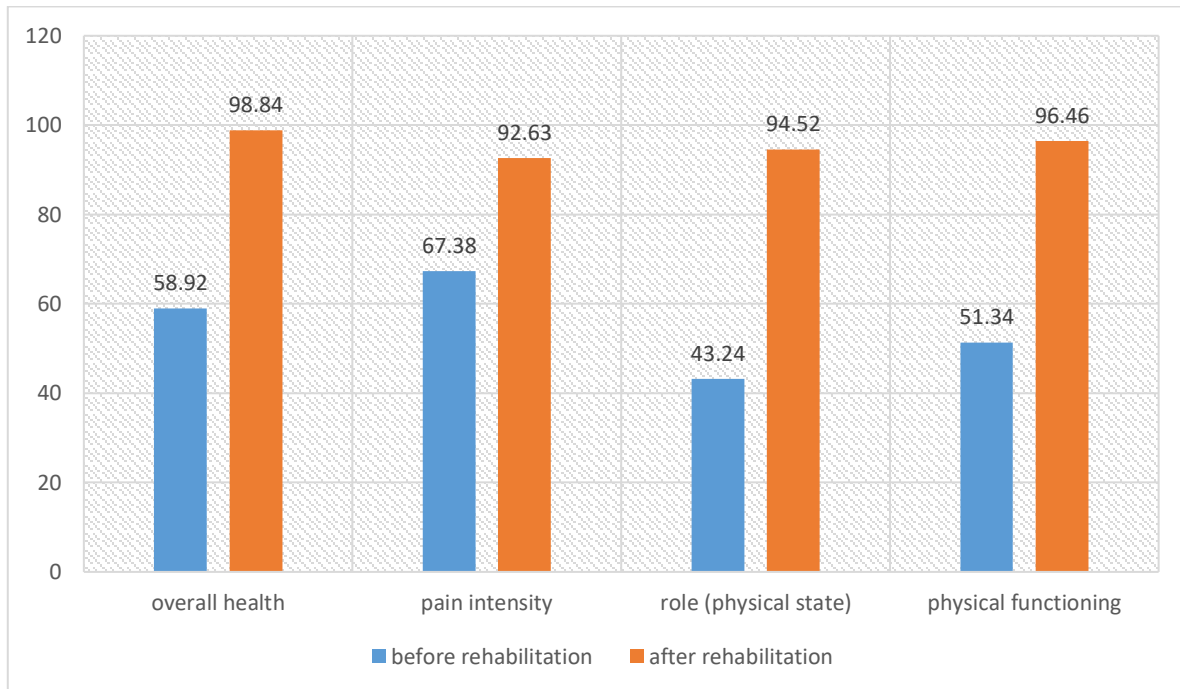


Figure 3. Assessment of the physical component of health in the main group, points (n=42)

Analysis of the dynamics of the studied parameters of the physical component of health in the main group showed that physical functioning at the time of inclusion in the study was 51.34±1.37 points. By the end of the course, after applying a specially developed rehabilitation program, this indicator increased to 96.46±1.62 points. Similar trends were observed when studying other parameters, such as role functioning due to physical condition (43.24±1.23 points before and 94.52±1.51 points after treatment), pain intensity (67.38±2.11 points before and 92.63±0.26 points after treatment), and general health (58.92±2.15 points before and 98.84±3.04 points after the rehabilitation program).

Indicators of the physical component of health among athletes in the control group were significantly lower at the end of the rehabilitation program in all domains. Thus, the parameter of physical functioning before treatment was 53.57 ± 2.17 points, while after applying the standard rehabilitation program at its end it changed only to 76.26 ± 1.35 points. Параметры ролевое functioning (45.28±1.53 points); pain intensity (68.45±2.09 points); general health status (56.22±1.49 points) also after recovery had a slight positive trend and amounted to 74.33±2.48 points; 82.64±1.72 points and 78.71±2.07 points, respectively (Fig. 4).

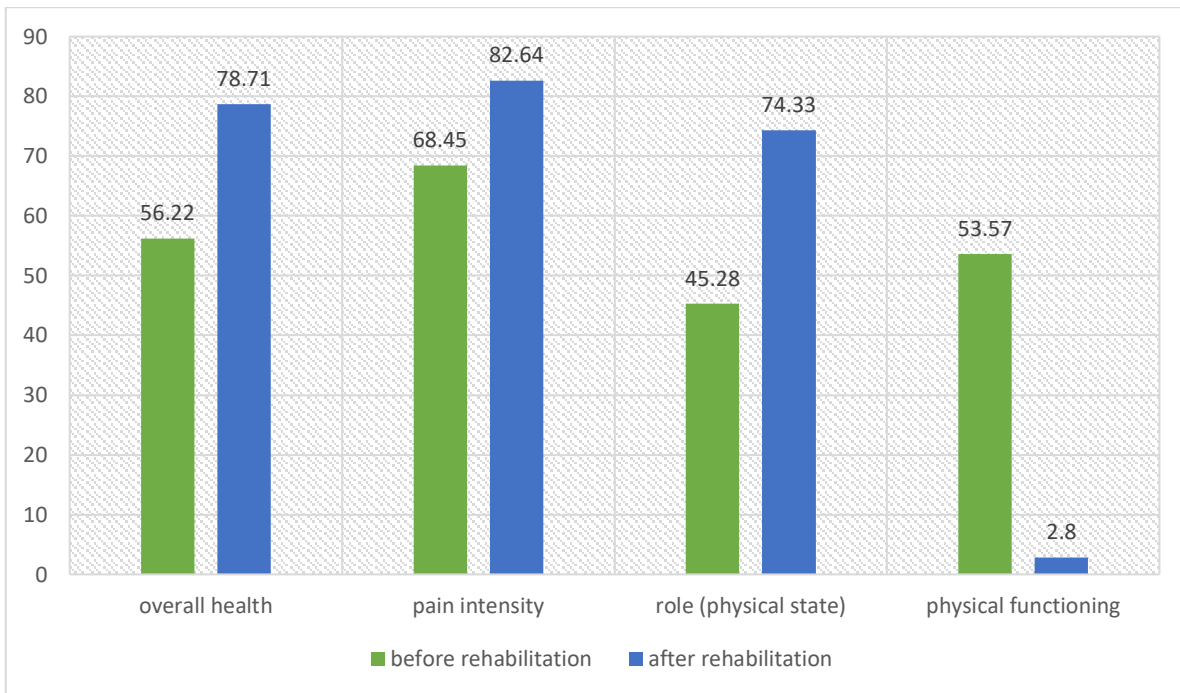


Figure 4. Assessment of the physical component of health in the control group, points (n=36)

In general, when assessing the physical component of health in the control group against the background of standard treatment in comparison with the main group of athletes who received a comprehensive rehabilitation

program, the difference between the studied domains for physical functioning was 20.2 points; in role-playing – 20.19 points; for pain intensity – 9.99 points and for general health – 20.13 points (Fig. 5).

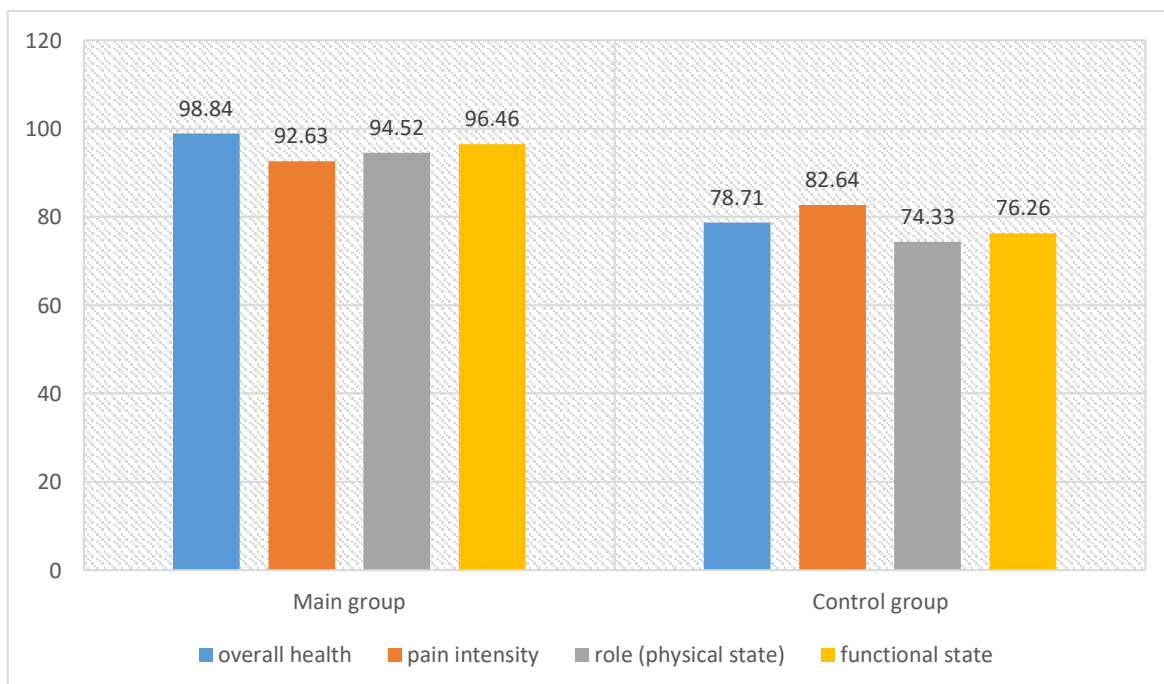


Figure 5. Comparative analysis of the physical component of health in observation groups, points

A comparative analysis in 2 observation groups in the dynamics of rehabilitation therapy in terms of the psychological component of health showed that in the main group the greatest dynamics of the component were determined by role (emotional state) and social functioning, and the difference between the main and

control groups at the end of the training and recovery period was 17.43 points and 15.81 points respectively. Less pronounced dynamics were revealed in the indicators vital activity - 13.95 points and mental health - 13.31 points (Fig. 6).

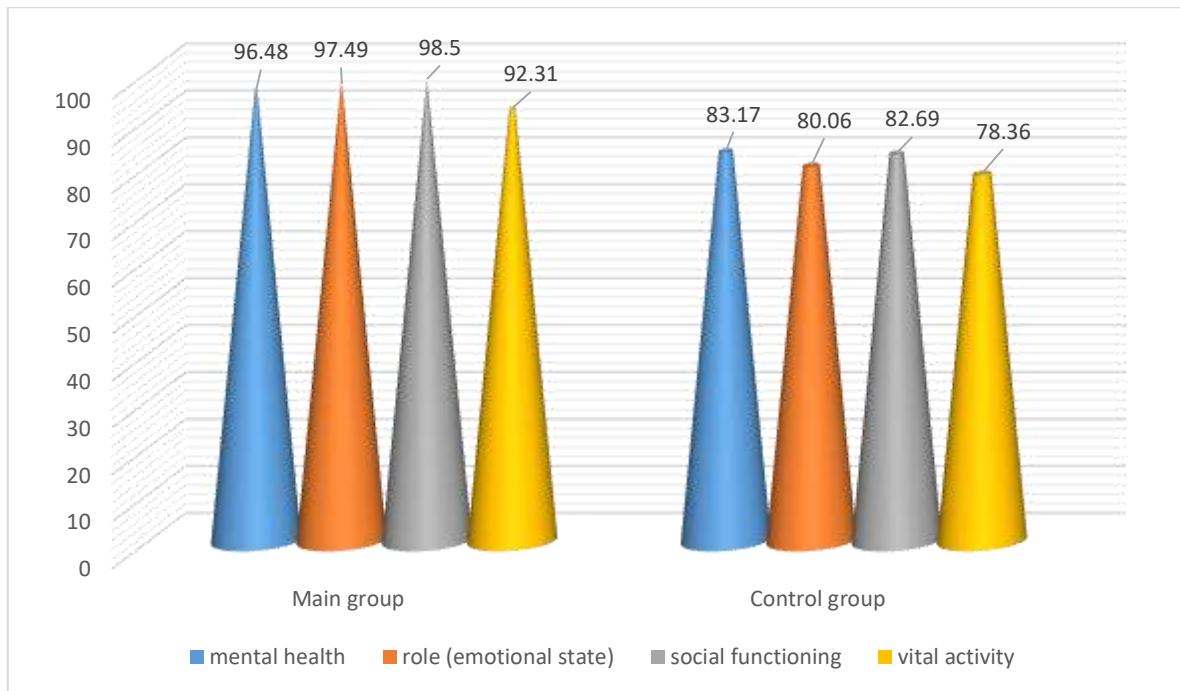


Figure 6. Comparative analysis of the psychological component of health in observation groups, points

5. CONCLUSION

Thus, we can state a significant and reliable improvement in the quality of life, both in the physical and psychological components of health in the main group using a comprehensive program of rehabilitation measures after surgical interventions on the knee joint in the sports contingent. This proves its effectiveness and medical and social significance, since not only the functional activity of the knee joint is restored, but also the psychosomatic status of athletes with the possibility of returning them to the training process in full.

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