

**Aim:** Investigate effectiveness of physiotherapy using gait trainer.

**Materials and methods:** A total of 50 stroke subjects (31 women, 19 men) were randomly assigned to either the treatment group or the control group. All subjects received a routine individual physiotherapy (basic and functional) for 30 – 45 minutes, 5 times a week.

The subjects in the control group also received additional about 20 minutes gait training with traditional compensatory measures.

The subjects in the treatment group also received additional about 20 minutes gait training with gait trainer.

Balance parameters were assessed using Berg Balance Test. Gait parameters were collected using a 10 m walking test and measuring walking distance. The functional independence parameters were collected using Barthel Index. All statistical analyses were performed using „SPSS Windows 17“ and „Excel 2010“ programs.

**Results:** The results of control and treatment groups have significantly increased during the research. At the end of research average Berg Balance test result was significantly higher in treatment group than in control group ( $p < 0,05$ ) (Figure 1).

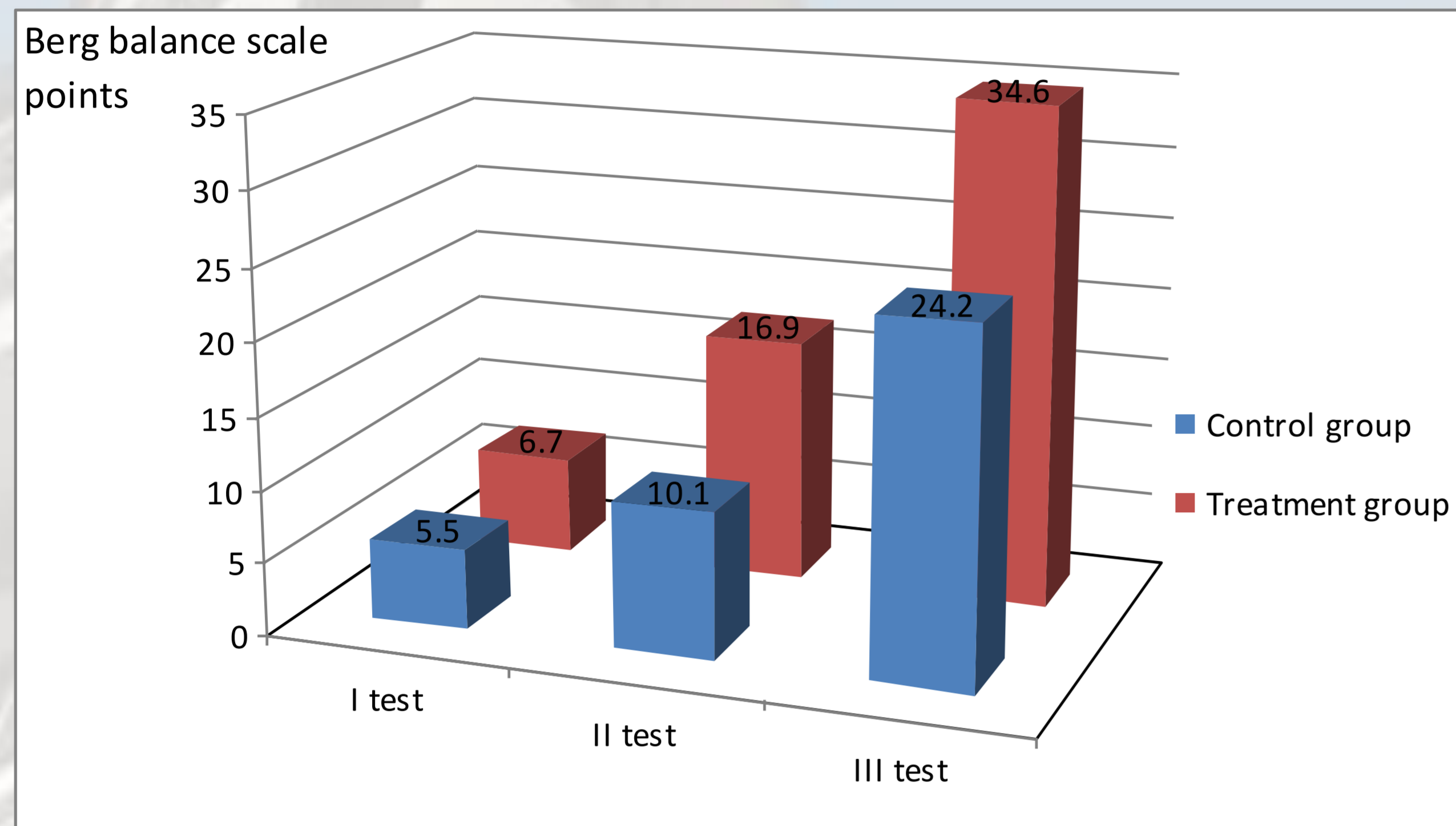


Figure 1. The results of Berg balance test

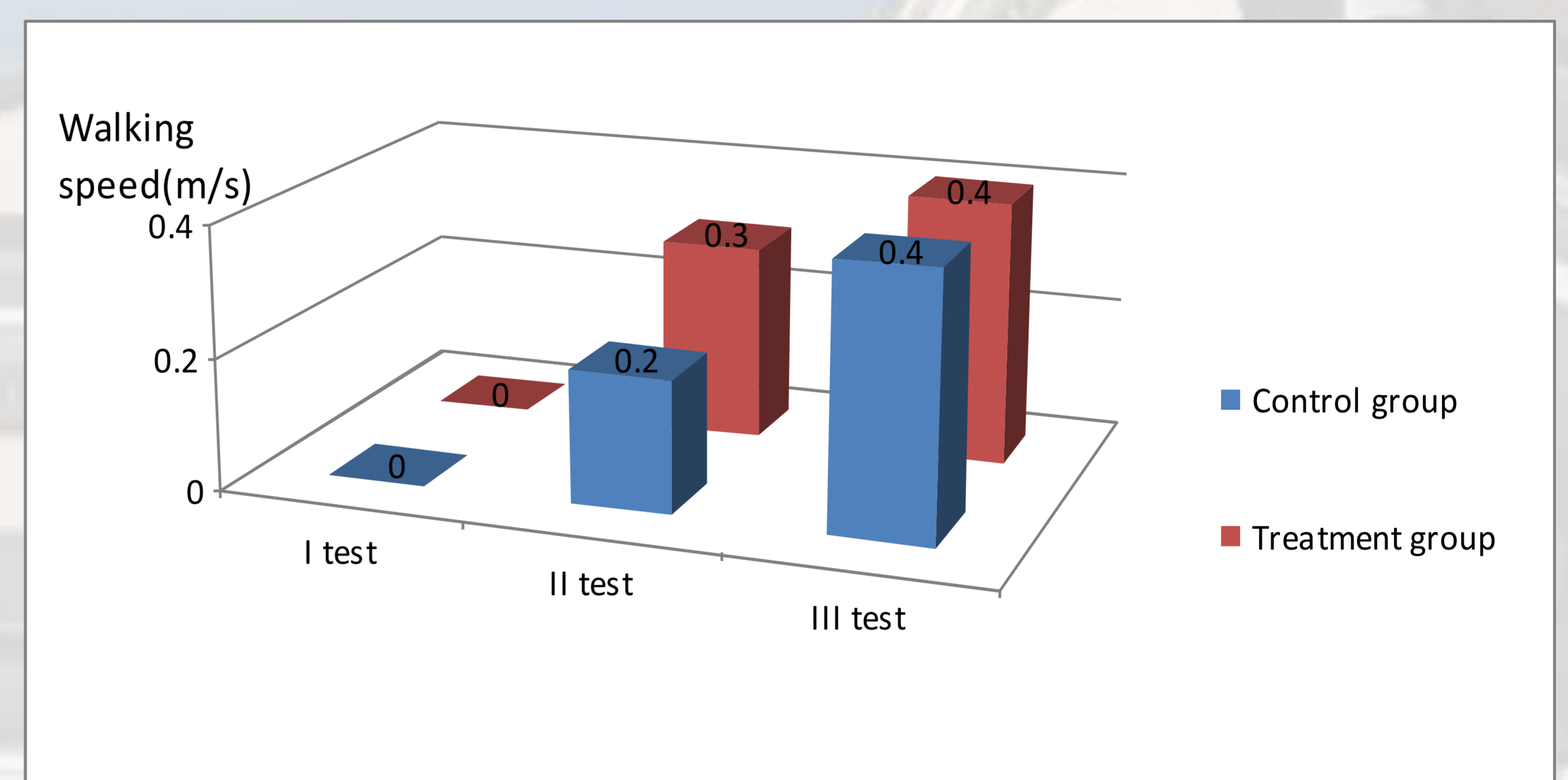


Figure 2. Walking speed during research

The walking speed in both groups has increased during the research, however no significantly difference was found between groups ( $p > 0,05$ ) in the end of the research (Figure 2). Patients in treatment group could walk twice longer distance than patients in control group ( $p < 0,05$ ) after the research (Figure 3). The patients functional independence have significantly increased in both groups during the research ( $p < 0,05$ ). The results of functional independence test was significantly higher in treatment group than in control group ( $p < 0,05$ ) in the end of the research (Figure 4).

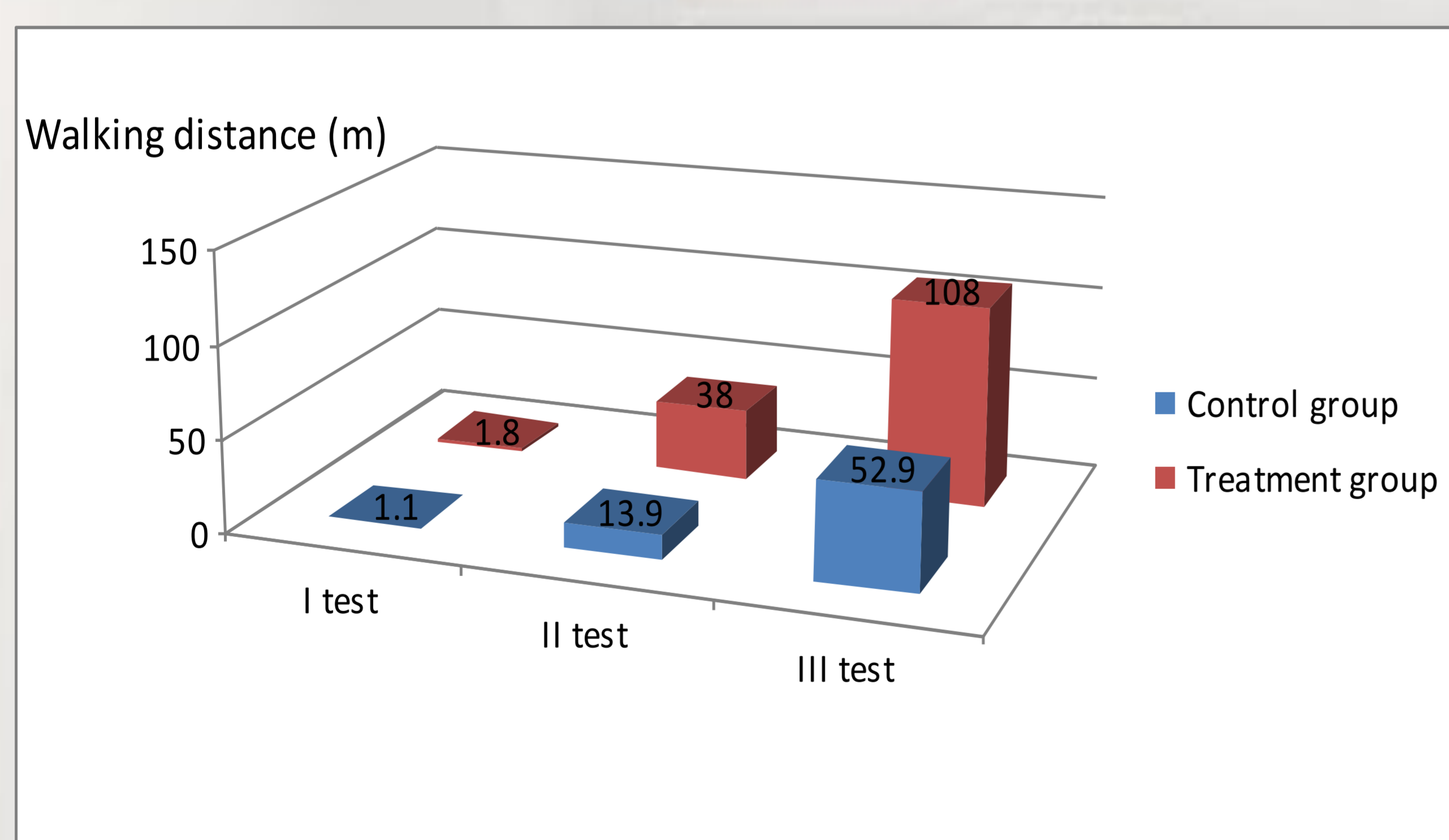


Figure 3. Walking distance during research

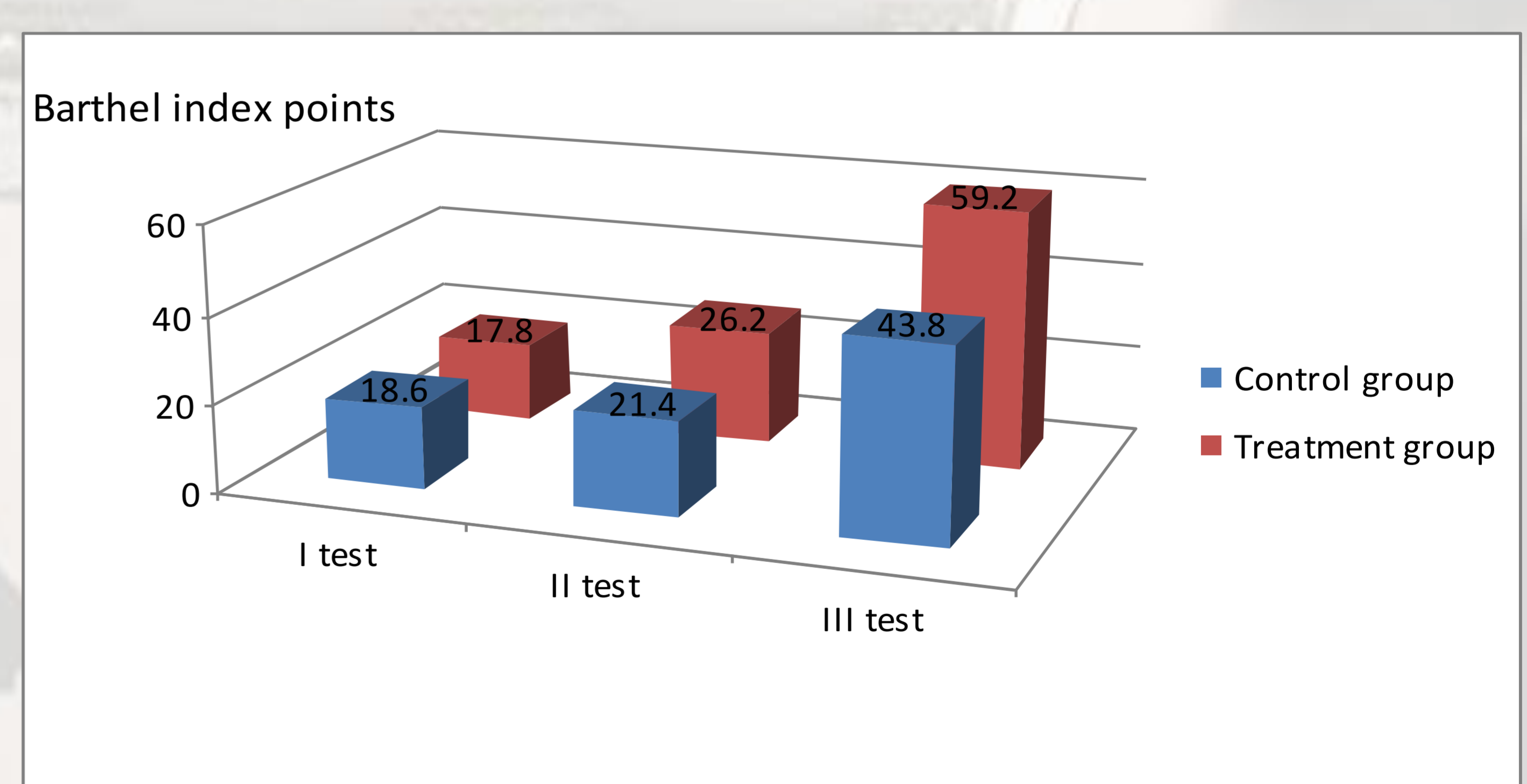


Figure 4. The results of Barthel Index during research

**Conclusions:** The findings demonstrate that the physiotherapy procedure using gait trainer was more effective than physiotherapy procedure using traditional compensatory measures in improving balance, walking distance and independence ( $p < 0,05$ ).

### References:

- Schmid A, Duncan PW, Studenski S et al. Improvements in Speed-Based Gait Classifications Are Meaningful. Stroke 2007;38:2096
- Abdullah Özer and Jungwon Yoon. Exoskeletons and Robotic Devices for Mobility Assistance and Therapy: A General Perspective. Gyeongsang National University School of Mechanical and Aerospace Engineering Jinju, Gyeongnam 2010; 660-701, Korea