An Examination by Randomized Control Test of the effectiveness Of exercise therapy (Takizawa Program) on bedridden elderly patients

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[Purpose]
The current condition of functional training at welfare facilities, where they take care of numerous bedridden people, is considered insufficient. Due to this situation, the disuse syndrome has developed and body functions of bedridden elderly people are rapidly deteriorating. The Takizawa Program is practiced as an exercise therapy regimen for infirm elderly people at the Geriatric Health Services Facility (GHSF) and geriatrics hospitals; however, the effectiveness of the Takizawa Program has not yet been proved by RCT. Therefore, this report will prove the effectiveness of the program and emphasize the importance of exercise therapy for bedridden elderly people.

[Subject and method]
This research was conducted with 52 female examinees out of 72 patients from “A” GHSF in Niigata prefecture. The examinees were in good health as of, May 1, 2003, and have agreed to be tested. The examinees were tested three times a week for three months, between May and July (or starting in May and ending in July). The patients were categorized by the degree of care and randomly divided into two groups; Exercise group (Ex) and Control group (Co). The following are evaluation items: the degree of care, the degree of bed rest, the degree dementia, Functional Independence Measure (FIM) and the Range of Motion (ROM), such as shoulder joint flexion, knee joint extension, foot joint dorsiflexion and foot joint plantar flexion. This report focuses on the results of the FIM and the ROM tests.

[Results]
Before starting exercise therapy, the ranges of the age groups were similar in both Ex. group and Co. group; Ex. group 85.36±7.09 years old, Co. group 86.26±6.73 years old. Similarly, there were no significant differences between the two groups regarding the ROM and FIM. When comparing the degree in the Ex. group before and after exercise therapy, the degree of ROM tended to increase after therapy except for knee joint flexion. Also, the degrees of right shoulder joint flexion and feet plantar flexion showed a significant difference (p<0.05). In the Co. group, the degree of right foot joint plantar flexion had significantly increased (p<0.05), and the degrees of right knee joint extension and right foot joint dorsiflexion had decreased after exercise therapy. In the FIM examination, urination control had improved in the Ex. group after exercise therapy (p<0.05). In Co. group, toileting and urination control had improved after exercise therapy, however, the degree of eating, the number transfers to bed and wheelchair, the number of transfer operations to the lavatory, and social interaction had decreased (p<0.05). Comparing the results of two groups after the exercise therapy, better results can be observed in Ex. group than in Co. group regarding the degree of shoulder joints flexion and right foot joint plantar flexion in the ROM examination (p<0.005). Ex. group showed slightly better results than the Co. group in the degrees of left knee joint extension, right knee joint flexion, right foot joint dorsiflexion, and right foot joint plantar flexion, however, there were no significant differences. In the FIM examination, Ex. group scored higher points in every item, especially in the degrees of comprehension and social interaction showed significant difference (p<0.05).

[Discussion]
One of the characteristics of Takizawa Program is to exercise shoulder joint, knee joint, and foot joint by using accessible devices. This is considered one of the aspects to achieve the improvements of ROM. The results of FIM had no significant difference, however, the degree of ADL in the Co. group tends to decrease after the therapy. Further research may be appropriate with an increased number of examinees.