

## ABSTRACT

The aim of the study was to find out if the new transfer methods, Durewall and Kinaesthetics, were less strenuous than the presently used method, and to find the least strenuous method which should, at the same time, be safe and comfortable for the patient and allow her/him to take part in the transfer to the limit of her/his capacity. The study included twelve female nurses and 18 patients. Patients' functional independence measure was low; one or two. The nurses were assigned to two groups and they received training in both new methods, but in different order. Nurses assisted a patient from the wheelchair to the bed and vice versa in three test sessions: before the training, after learning one method and after learning the other method. The nurses' skill in assisting a patient to move was evaluated with a new observation instrument, SOPMAS. The lower back and trapezius muscle activity of the nurses was measured by video EMG. The nurses rated their perceived physical exertion in lower back and shoulders on Borg's CR-10 scale. The patients rated their feeling of security, control and comfort on a bipolar rating scale, and their muscle activity was measured in the knee extensor muscles.

The nurses learned the new methods to assist a patient well, their skills developed from the lowest level to the second highest level after the first training session. After both training sessions, the group receiving the last Kinaesthetics training reached the highest level of skill. Applying both new methods their measured and perceived physical strain was significantly less than when applying the presently used method. The muscle activity and perceived physical exertion was reduced by 60–75 % in the lower back and 27–57 % in the neck and shoulder area. The patients' feeling of control in the transfer situation and their measured activity was higher when the new methods were applied. Patients also rated the new methods as safer and more comfortable than the presently used methods. The better the nurse's skill, the greater comfort, safety and control patients experienced when being transferred. However, there was no significant difference between the new methods. This study shows that the patients' support from somewhere other than the nurse is an important factor in decreasing the physical load of the nurse. Another factor is that the patients are better able to participate in their transfer, when the nurses learned to activate them more effectively and gave them more time and space to do so. The results can be exploited in making nursing physically less heavy and in improving the quality of nursing. The most important is to apply the new evidence in the professional training of nursing staff.

Keywords: nurse, elderly patient, physical strain, transfer skill, lifting, training-intervention, Durewall-method, Kinaesthetics.

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