

Summary of doctoral dissertation

Purpose

The purpose of the present study was to elucidate the effects of application of a hot compress to the posterior region of the neck (PRN) in inpatients, and to develop an effect model using covariance structure analysis.

Methods

A total of 60 inpatients were randomly allocated to two groups (n=30 each) using a table of random numbers. A heat- and steam-generating sheet (intervention group) or a non-warming sheet (control group) was applied to the PRN for 10 minutes per day for three consecutive days. In addition to a questionnaire on "subjective comfort" and "ease of living", skin temperature of the hands and feet, salivary amylase, and tympanic temperature were measured as "physiological indices", and diet, excretion, and sleep were investigated as part of an interview on lifestyle.

Attributes of the two groups were compared using the unpaired t-test and χ^2 test. Intergroup comparison was performed using an unpaired t-test and the Mann-Whitney test, while intragroup comparison was performed using a paired t-test and the Wilcoxon test, and an effect model was created using covariance structure analysis.

The present study was approved (10-037) by the ethics review committee of St. Luke's College of Nursing.

Results

Excluding the patients who dropped out, the intervention and control groups included 27 and 25 patients, respectively. There were no significant differences in attributes between the two groups. The 52 subjects had a mean age of 68.7 ± 13.8 years, and included 37 women (71%) and 44 orthopedic patients (85%).

Intragroup comparison showed that palm ($p=.004$) and plantar ($p=.024$) skin temperature increased and tympanic temperature ($p=.033$) decreased in the intervention group following intervention, but no significant intergroup differences were observed. As for questionnaire results, "pleasure during application of hot compress" ($p=.000$), "increased vitality" ($p=.005$), and "positive outlook on life" ($p=.019$) were significantly higher in the intervention group. Regarding lifestyle, the intervention group had a significantly longer "subjective sleep time" ($p=.007$).

"The effect model for the pleasure experienced during application of hot compress to the PRN" created using covariance structure analysis showed that effects resulted from the following two processes: (a) the "pleasure during application of hot compress" gives rise to a "warm sensation in the hands and feet" and increases "subjective sleep time", and thereby "alleviates symptoms", and (b) the "increased vitality" that follows "pleasure during application of hot compress" leads to "stabilization of feelings" (CFI=.972, RMSEA=.034).

Conclusion

The effects of application of a hot compress to the PRN, elucidated by comparing two groups of inpatients, were a feeling of comfort that could be characterized as an increase in vitality, a positive outlook on life, and prolongation of subjective sleep time. An effect model for the "alleviation of symptoms" and "stabilization of feelings" in inpatients that result from the pleasure experienced during application of a hot compress to the PRN was elucidated, and comfort level during application of hot compress to the PRN was found to be important for the patients' recovery.