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Preliminary study of the effects of complete bed baths with synthetic towels — Comparison between inpatients and healthy individuals

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Abstract

Research background and objective: We have been conducting research to promote hygiene care techniques while taking into consideration safety, comfort, and medical economics in nursing care settings in Japan.

Our previous studies have suggested the following: Only a few steamed towels are used in hygiene care provided for severely ill patients; The reuse of cotton towels is not safe in terms of infection prevention; According to the results of a comparative experiment using towels made of synthetic (Figure 1), instead of cotton, as alternative materials, there were few functional differences between synthetic and cotton.

The objective of the present study, a preliminary study to develop hygiene techniques required to provide safe and comfortable care, was to examine the effects of bed bath using synthetic towel conducted for inpatients (Figure 2).

Results and Discussion: Inpatients exhibited significant increases in core body temperature from the start; mean skin temperature tended to increase after temporarily dropping directly after completing the bath (Figure 3). No marked changes were observed in blood pressure, heart rate, or autonomic nerve activity upon completing the bath, suggesting that results were affected by aging. Decreased alertness and lower POMS scores were observed, and scores for 3 of 6 texture items were high. Although no marked changes in autonomic nerve activity were observed in healthy individuals from the start, significant increases in core body and skin temperature and significant decreases in heart rate and systolic blood pressure were observed, showing marked temperature sensation and circulatory response.

Further, after completing the bath, significantly decreased alertness and increased VAS were observed (Figure 4), and only one texture item received high scores.

Conclusions: When it compared the effect of complete bed baths, marked temperature sensation and circulatory response occurred in healthy individuals, but very little response was observed in inpatients.

Keywords: synthetic towel, inpatient, healthy individual, complete bed bath, bed bath effects

Methods

Research Design: One group pretest-posttest design
Subject: 5 inpatients (73.2 ± 12.1 , males: 3, females: 2); healthy subjects (20.1±1.0 , males15)
Preparation of steamed towels: in a cleaning cart, 78.1±0.6 ℃; Synthetic towel. 55.7±0.5 ℃
Experimental environment: Room temperature : 25.2 ± 1.3℃, 61.2 ± 10.8%, 150.0 ± 39.5 Lux, 44.6 ± 2.5dB

Preparation of synthetic towel

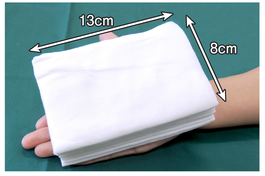

Figure 1. Small-size towels that fit into the palm of the hand.
8 sets of 3-layered fabric sheets (40×18cm,15g)

Bathing methods

Figure 2. A scene of bed bathing.
Subjects are resting supine position on the bed.
Bed bathing procedure:
<1> Wipe in both directions three times: 23 to 25 cm for one stroke
<2> Pressure to be applied during wiping: 0.57 ± 0.04 kgf/cm²
<3> Put a steamed towel on the back of the patient for 30 sec, then wipe the back, neck, chest, abdominal area, arms, and legs.
<4> It takes 8 min to complete the procedure.

Data collection

Subjective indices
Shortened version of the POMS (Profile of Mood States)-J
<1> Tension-anxiety
<2> Depression-dejection
<3> Anger-hostility
<4> Activity
<5> Fatigue
<6> Confusion

Two types of Visual Analogue Scales (0 to 100)
<1>Wakefulness
<2>Relaxation

Texture of the materials
<1> Soft
<2> Warm
<3> Favorable texture
<4> Feeling comfortable when being wipe
<5> Feeling refreshed
<6> Feeling a sense of fitness
<7> Feeling that the body has been cleaned

Physiological indices
Blood pressure
Deep body temperature (Coretemp-210, Terumo)
Skin temperature (Terumo Finer CTM-303, Terumo)
ECG (MemCalc, GMS)

Data analysis

A Friedman test was conducted with the values obtained before bathing as the criteria.
A Wilcoxon's signed rank test was used for comparison following the completion of bathing.

Significance level, $P<0.05$

Results

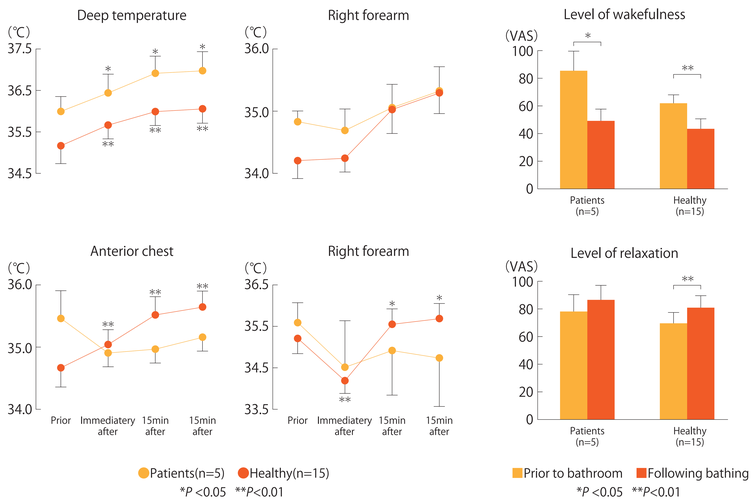

Figure 3. Changes in the deep and skin temperatures.

Figure 4. Subjective effect.

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