



Cost-consequence analysis of “washing without water” for nursing home residents: A cluster randomized trial[☆]



Lisette Schoonhoven^{a,b,1,*}, Betsie G.I. van Gaal^{a,1}, Steven Teerenstra^c,
Eddy Adang^d, Carine van der Vleuten^e, Theo van Achterberg^{a,f,**}

^a Radboud University Medical Center, Scientific Institute for Quality of Healthcare, Nijmegen, The Netherlands

^b Faculty of Health Sciences, University of Southampton, Southampton, UK

^c Radboud University Medical Center, Department for Health Evidence, Section Biostatistics, Nijmegen, The Netherlands

^d Radboud University Medical Center, Department for Health Evidence, Nijmegen, The Netherlands

^e Radboud University Medical Center, Department of Dermatology, Nijmegen, The Netherlands

^f KU Leuven, Center for Health Services and Nursing Research, Leuven, Belgium

ARTICLE INFO

Article history:

Received 19 March 2014

Received in revised form 27 July 2014

Accepted 1 August 2014

Keywords:

Bed bath

Cost-effectiveness

Nursing

Skin damage

ABSTRACT

Background: No-rinse disposable wash gloves are increasingly implemented in health care to replace traditional soap and water bed baths without proper evaluation of (cost) effectiveness.

Objectives: To compare bed baths for effects on skin integrity and resistance against bathing and costs.

Design: Cluster randomized trial.

Setting: Fifty six nursing home wards in the Netherlands.

Participants: Five hundred adult care-dependent residents and 275 nurses from nursing home wards.

Methods: The experimental condition ‘washing without water’ consists of a bed bath with disposable wash gloves made of non-woven waffled fibers, saturated with a no-rinse, quickly vaporizing skin cleaning and caring lotion. The control condition is a traditional bed bath using soap, water, washcloths and towels. Both conditions were continued for 6 weeks.

Outcome measures were prevalence of skin damage distinguished in two levels of severity: any skin abnormality/lesion and significant skin lesions. Additional outcomes: resistance during bed baths, costs.

Results: Any skin abnormalities/lesions over time decreased slightly in the experimental group, and increased slightly in the control group, resulting in 72.7% vs 77.6% of residents having any skin abnormalities/lesions after 6 weeks, respectively ($p = 0.04$). There were no differences in significant skin lesions or resistance after 6 weeks.

Mean costs for bed baths during 6 weeks per resident were estimated at €218.30 (95%CI 150.52–286.08) in the experimental group and €232.20 (95%CI: 203.80–260.60) in the control group (difference €13.90 (95%CI: –25.61–53.42)).

[☆] Trial registration: ClinicalTrials.gov ID [NCT01187732].

* Corresponding author at: Radboud University Medical Center, 114 Scientific Institute for Quality of Healthcare, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands. Tel.: +31 24 3610458; fax: +31 24 3540166.

** Corresponding author at: Radboud University Medical Center, 114 Scientific Institute for Quality of Healthcare, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands.

E-mail addresses: Lisette.Schoonhoven@radboudumc.nl (L. Schoonhoven), Theo.vanAchterberg@radboudumc.nl (T. van Achterberg).

¹ Shared first authors: these authors contributed equally to this work.

Conclusion: Washing without water mildly protects from skin abnormalities/lesions, costs for preparing and performing bed baths do not differ from costs for traditional bed bathing. Thus, washing without water can be considered the more efficient alternative.

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What is already known about the topic?

- Bed baths with disposable wash gloves or washcloths are increasingly introduced as an alternative to washing with water and soap.
- Bed baths with disposable wash cloths are claimed to cost less than traditional bed baths, increase patient satisfaction and improve professional ergonomic aspects.

What this paper adds

- Bed baths with disposable wash cloths and bed baths with water and soap have similar effects on significant skin lesions and mildly protect from any skin abnormality/lesion.
- Costs for preparing and performing bed baths did not differ between both bed baths.
- Bed baths with disposable wash cloths can be considered the more efficient alternative.

1. Introduction

Bathing serves body hygiene and skin integrity, which in turn is vital to the prevention of disease (Bulechek et al., 2013). Bathing assistance is a major task in nursing and the quality and efficiency of bathing can have a large impact on health and health care costs. Yet there are no guidelines for preserving skin integrity with optimal bathing regimens.

Traditional bed baths have been the standard in bathing of bedridden patients for a long time. Their relevance for body hygiene has gone without debate and they are acceptable for patients and care professionals. Yet, use of soap in combination with water and towel drying has been reported to raise skin pH, remove natural skin oil, lead to skin dryness and decrease resistance to microbial invasion (Gray et al., 2012; Grunewald et al., 1995; Korting and Braun-Falco, 1996). Furthermore, bed baths have been reported to be stressful and leading to resistance and agitation in patients, and as being labor-intensive and physically heavy for nurses' backs and shoulders (De Bree, 2007; Sloane et al., 2004; Zweerts, 2004).

In the past decade, bed baths with disposable wash gloves or washcloths were increasingly introduced as an alternative for the traditional bed bath. These materials can be used with all patients who need bathing assistance, especially when taking a shower or sitting in a bath tub is not possible. Several pros and cons of disposable wash gloves are mentioned. On the positive side, disposable wash products are –most often – made of a mix of soft fibers and contain ingredients such as skin friendly cleaning and caring lotions that could optimize hygiene and skin integrity (Gray et al., 2012). Bed baths

with disposable wash gloves supposedly cost less than traditional bed baths, increase patient satisfaction and improve professional ergonomic aspects (De Bree, 2007; Enzlin, 2001; Zweerts, 2004). On the negative, none of these claims can be related to evidence from well-performed studies. Also, counter opinions critique bed baths with disposable wash gloves as being impersonal, coming with less subjective cleanliness for patients and as being promoted for reasons of cost saving only (Jansen, 2008; Zweerts, 2004).

Despite the lack of evidence and the controversy surrounding bed baths with disposable wash gloves, they are rapidly being implemented in healthcare (Vilans, 2009).

Therefore, the current study aims to compare the traditional bed bath with a bed bath with prepackaged disposable wash gloves on effects on skin integrity, resistance during bed baths and costs. We also evaluated satisfaction in residents and nurses in the experimental group.

2. Methods

2.1. Study design

A cluster randomized trial (WASHING WITHOUT WATER) was conducted between April 2011 and November 2012. Randomization was performed prior to baseline data collection and at the level of nursing home wards (Altman et al., 2001; Campbell et al., 2004). Residents within the same ward were considered to be a cluster (Fig. 1). To ensure that all bed baths were performed according to randomization, we removed the washbowls from the rooms of the residents who were included and stocked their rooms with disposable washcloths.

Bed bath regimens were continued for 6 weeks and delivered by nurses from the ward.

2.2. Setting and participants

We included 56 nursing home wards in 22 nursing homes in the Netherlands. All elderly, long stay residents at the wards, who received bathing assistance, were included in the study, as elderly residents are considered to be at high risk for skin damage because their skin is more permeable (Ersser et al., 2005). Both care dependent residents who were legally capable and residents who were legally incapable due to dementia, were included in the study as in practice, disposable wash gloves are being implemented in both groups.

Residents, who showered or bathed in a bath tub more than once a week, or who were too sick to participate, were excluded.

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