

Opinions of Intensive Care Nurses: Traditional or Disposable Wipes Bed Bath? A Quasi-Qualitative and Cost Analysis Study

Funda Büyükyılmaz^{1*} and Merdiye Şendir²

Florence Nightingale Faculty of Nursing, Istanbul University, Istanbul, Turkey

Faculty of Nursing, Sağlık Bilimleri University, Istanbul, Turkey

Abstract

Background: This study is to compare the traditional basin with the disposable washcloths bed bath in terms of two outcomes: ICU nurses' satisfaction/preference and cost analysis.

Methods: This is a quasi-qualitative and descriptive study was performed in three ICUs (orthopaedic, neurosurgery, and general surgical) at a university hospital. The sample consisted of 41 ICU nurses agreed to participate in the study. The ICU nurses used a visual analogue scale to respond to the questions about the two types of bed-baths. The researchers conducted interviews with ICU nurses about the two bed-bath practices based on open-ended questions. The interview, lasting for 20-30 minutes, was administered during a rest period. A cost analysis was calculated by researchers based on equipment and workload.

Results: The application time, workload of nurses, and cost analysis scores favoured the disposable bed-bath method ($p \leq 0.05$). The traditional bed-bath application scored higher than the disposable washcloth application in parameters (performing, providing communication to the patient, patient feedback, cleanliness, integrity, and softness of skin) ($p \leq 0.01$).

ICU nurses reported that the three most important parameters that affect the preference for the traditional bed-bath application are communication with patients, patient satisfaction feedback, and the cleanliness and integrity of skin.

Conclusion: Disposable bed-bath method was performed less time, less workload of nurses, and cost effective than traditional method. Furthermore the ICU nurses preferred the traditional bed bath application. Researchers determined that a bridge between cultural habits and nursing science should be established.

Introduction

Intensive care units (ICUs), in both acute and restorative care settings, provide intensive care (treatment and monitoring) for people in a critically ill or unstable condition. In ICUs, patients need specialized medical treatment and nursing care [1]. Coyer et al. [2] stated that most nursing interventions in the ICU included the promotion of personal hygiene, patient comfort, positioning, management of stressors, pain management, and sedation management. Maintaining personal hygiene is imperative for an individual's health and well-being and nurses should ensure that the hygiene needs of the patients in their care are adequately met [3,4]. Nurses maintain the personal hygiene needs (especially bed baths) of ICU patients because of their limited level of independence and self-care ability [4]. The bed-bath application is also recommended for reducing infection, enhancing comfort, and providing an opportunity to assess skin integrity [4-6].

Background

In the ICU, nurses have frequently given traditional bed baths with a basin of warm water, soap, and washcloths. Advancement of knowledge and innovation development of nursing has introduced several variations of the bed bath [7,8]. Some healthcare providers recommend the "disposable wipes bed bath" as an alternative to the traditional bed bath. This procedure consists of using a package containing 8-10 pre-moistened, disposable wipes warmed in the microwave or stored in a warmer until use [7].

Illness and hospitalization generally require modifications in hygiene practices. The goals are to promote personal hygiene and to encourage physical and psychological well-being [7]. During hospitalization, and especially in the ICUs, patients experienced

situations involving the need for personal hygiene, a procedure provided due to physical limitations from their disease [1,3,9,10]. In meeting hygiene requirements, nurses play a key role in ensuring that individual needs are met [4,7]. ICU nurses who assist patients with basic hygiene must especially respect individual patient preferences, providing only the care that patients cannot, or should not, provide for themselves [2]. Nurses should value each patient as an individual and take his or her physical, mental, and emotional state of being into consideration while providing hygiene care [7,8]. For these reasons, ICU nurses have to bridge the gap between health care technology and the patients' needs.

In ICUs, nurses spend a great deal of time performing personal hygiene care, especially giving bed baths to patients [1,9]. Coyer et al. [10] determined that the primary intervention for personal hygiene was bed baths for mechanically ventilated patients (54.7%). Bed bathing is a nursing ritual and also a fundamental therapeutic nursing intervention that improves patient hygiene, removes microbes, and decreases the potential for infection [6,11,12]. This application requires close contact with the patient, use of communication skills

***Corresponding Author:** Dr. Funda Büyükyılmaz, Florence Nightingale Faculty of Nursing, Istanbul University, Istanbul, Turkey, Tel: +90 212 440 00 00 (27104); E-mail: feyilmaz@istanbul.edu.tr

Citation: Büyükyılmaz F, Şendir M (2017) Opinions of Intensive Care Nurses: Traditional or Disposable Wipes Bed Bath? A Quasi-Qualitative and Cost Analysis Study. Int J Nurs Clin Pract 4: 269. doi: <https://doi.org/10.15344/2394-4978/2017/269>

Copyright: © 2017 Büyükyılmaz et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

to promote a caring therapeutic relationship, and assessing and implementing interventions such as range of motion (ROM) exercises, the application of dressings, and inspecting the intravenous site or incision area [7,8,12]. Recent studies determined that nursing staff valued the time saving of the disposable bed bath when compared to the traditional bed bath and found it effective, inexpensive, and easy to perform. A study by Hancock et al. [13] found that the soft towel (disposable) bed-bathing method was cost effective and provided more patient and nurse satisfaction than traditional bathing. Collins and Hampton [14] concluded that “disposable bed bathing” was cost effective and provided a high infection control procedure when compared the traditional method. Other study results determined that disposable bed baths took less time, had a lower cost, and ICU nurses’ were satisfied with the procedure [9].

The literature emphasizes that hygiene practices can be affected by culture (bathing habits, behaviours), socioeconomic class (financial resources), spiritual practices (religious beliefs), developmental level, and health state. Based on the literature, nurses, and especially ICU nurses, should evaluate the physical status, psychological status, socio-cultural habits of the patient, and use health care technology before applying a bed bath.

The purpose of this study is to compare the traditional bed bath with the disposable wipes bed bath in terms of two outcomes: ICU nurses’ satisfaction/preference and cost analysis.

Methods

Study design

This quasi-qualitative and descriptive study was conducted in three adult ICUs. Nurses opinions about two bed baths preference was conducted by quasi-qualitative design. A cost analysis was calculated by researchers based on equipment and workload.

Setting and sample

This quasi-qualitative and descriptive study was conducted in three adult ICUs (orthopaedic, neurosurgery, and general surgical) at a university hospital in Turkey in a six months period. These units were selected because they house critically ill adult patients who require bed baths.

Ethical consideration

Permission to undertake this study was received from the ethics committee of the hospital. ICU nurses were informed of the purpose of the research and invited by the researchers to take part as volunteers. Nurses were assured of their right to refuse to participate or to withdraw from the study at any stage. They were also told that the information they gave would be re-identified, no names would be stored, and that their identities would be kept confidential. In this way, the anonymity and confidentiality of participants were guaranteed and 41 ICU nurses agreed to participate in the study.

Measurements/Instruments

On the basis of a literature review, the researchers developed an ICU Nurses’ Information Form, which included thirteen questions about demographics (age, gender, level of education, and working experience), opinions about two bed-baths applications (the time, the number of nurses necessary to complete the procedure, learning, performing, communicating with the patient, patient feedback,

cleanliness, integrity, and softness of skin) [9,10,13]. The ICU nurses used a visual analogue scale of 5 (highly agree) to 1 (disagree) to respond to the questions about the two types of bed baths.

Cost details were obtained through a verbal discussion with the participating ICU nurses. Based on these interviews, the researchers conducted a data analysis of equipment and workload.

Interviews with ICU Nurses

The researchers conducted interviews with ICU nurses about the two bed-bath practices based on open-ended questions (similar to the questions on the ICU Nurses Information Form). One researcher conducted individual interviews with the ICU nurses who agreed to participate in face-to-face interviews in a service room. The interview, lasting for 20-30 minutes, was administered during a rest period.

Data collection/Procedure

Traditional bed bath methods are routine procedure in research units. All traditional bed baths equipment especially towels, lotions are provided by patients or relatives. Also nurses have used and paid attention that all equipment (washcloths/wipes, bowls, towels etc.) are disposable or belong to individual for self-care procedure. In this research, new applications as disposable wipes (ClinellBedBathWipes) were received by researchers. This product is containing benzalkoniumchloride, and propane-1, 2-diol. Before the data collection company representative and nurse researcher educated to ICU’s nurses about using product. All ICU’s nurses applied these disposable wipes according to manufactured procedure for three months [15]. Then researchers collected data for comparison two bed baths methods especially opinions of nurses (especially satisfaction/preference). All ICU’s clinics checked routinely for hospital-acquired infections (HAI) by Infectious Control Committee.

Data analysis

Researchers analysed data with the Statistical Package for the Social Sciences (SPSS), version 21.0 Windows (IBM Corp., Armonk NY, USA). Socio-demographic features and the opinions of the ICU nurses about the two bed-bath applications were evaluated with descriptive statistics (frequency and percentage values of the group variables, arithmetic means, and standard deviations of numeric variables). The χ^2 test compared application time and numbers of nurses concerning bed baths. The paired sample t-test was used to determine the difference of parameters between the two bed-bath applications. In this study, a p-value of less than .05 was considered statistically significant. One researcher completed all the interviews with the ICU nurses, took notes, and observed nonverbal behaviours. The answers from the follow-up questionnaire were written down verbatim and analysed with the help of phenomenography. Notes from the interviews were reviewed and analysed to identify both anticipated themes. This methodology can capture and describe people’s different understandings, experiences, and attitudes about a phenomenon in mutually exclusive, but logically-related categories [16].

Results

Sample characteristics

Of the 41 ICU nurses in the study, the mean age was 31.67 ± 7.63 years (in a range of 24-56 years), 90.2% were female, 68.3% were college graduates with a bachelor’s degree, work experience was 9.83 ± 8.63 years (in a range of 1-36 years), and work experience in ICU was 8.39 ± 8.21 years (in a range of 1-36 years) (Table 1).

| Characteristics | n | % |
|----------------------------|----|------|
| Age (yr) | | |
| ≤30 | 24 | 58.5 |
| ≥31 | 17 | 41.5 |
| Gender | | |
| Female | 37 | 90.2 |
| Male | 4 | 9.8 |
| Educational level | | |
| Associate degree | 8 | 19.5 |
| Bachelor's degree | 28 | 68.3 |
| Master's degree | 5 | 12.2 |
| Work experience(yr) | | |
| ≤10 | 29 | 70.7 |
| ≥11 | 12 | 29.3 |
| Work experience in ICU(yr) | | |
| ≤10 | 31 | 75.6 |
| ≥11 | 10 | 24.4 |

Table 1: Nurses' Characteristics (N=41).

ICU Nurses' Opinions about Two Bed-Bath Applications

According to the results of the ICU Nurses Information Form, the ICU nurses reported that the highest percentages of traditional bed baths were performed by two nurses (65.9%) for approximately 31-40 minutes (61.0%). One nurse performed the bed bath using the disposable wipes bed-bath method (63.4%) for approximately 21-30 minutes (82.9%). There was a statistically significant difference in application time and in numbers of nurses between the two bed baths, as seen in Table 2.

Table 2 also illustrates the comparison of parameters between the two bed-bath applications. In all parameters (learning, performing,

providing communication to the patient, patient feedback, cleanliness, integrity, and softness of skin), the traditional bed-bath application scored higher than the disposable wipes application. Except for the "learning" parameter, the other parameters had a statistically significant difference between the two applications ($p \leq .01$).

Cost Analysis

Table 3 summarizes the costing with respect to the traditional and disposable wipes bed-bath applications. This analysis was based on three ICUs, where nurses perform a minimum of five bed baths per day. Equipment and workload were calculated on the average national level of costs. Hospital cost centres regard water and electricity as a nil cost. The cost analysis showed that the traditional bed-bath application was approximately twice as expensive as the disposable bed-bath method and the difference for a year equalled 83.6865 Dolars.

| Expenses | Traditional Bed Bath | Disposable Wipes Bed Bath |
|--|--|---------------------------|
| Washcloths/Wipes | 3 pieces wash cloths including soap 0.35\$ | 10 pieces wipes 1.08\$ |
| Water | 2/3 bath full of water (2 bowls) Nil | --- |
| Electricity | --- | 360 watt (2 min.) Nil |
| Type of waste (General / medical) | General | General |
| Spent on labor (Average salary per month = 992.00\$) | 2 nurses - 30 min. 4.13\$ | 1 nurse- 20 min. 1.38\$ |
| Total cost (1 bed bath) | 4.48\$ | 2.46\$ |
| Total cost (5 bed baths=daily) | 22.4\$ | 12.3\$ |
| Total cost (yearly) | 8.176\$ | 4.4895\$ |

Table 3: Cost Analysis for Traditional and Disposable Bed Bath.

| Characteristics | Traditional Bed Bath | Disposable Wipes Bed Bath | Statistical test and p value |
|------------------------------|----------------------|---------------------------|------------------------------|
| Bathing time (min.), n (%) | | | |
| 10-20 | 2 (4.9) | 5 (12.2) | |
| 21-30 | 2 (4.9) | 34 (82.9) | $\chi^2= 47.88, p \leq .001$ |
| 31-40 | 25 (61.0) | 2 (4.9) | |
| 41≤ | 12 (29.3) | - | |
| Numbers of ICU nurses, n (%) | | | |
| 1 | 7 (17.1) | 26 (63.4) | |
| 2 | 27 (65.8) | 15 (36.6) | $\chi^2= 4.88, p \leq .05$ |
| 3≤ | 7 (17.1) | - | |
| Parameters, mean±SD | | | |
| Learning | 3.68±1.08 | 3.10±1.11 | $t=2.47, p \geq .185$ |
| Performing | 3.76±0.97 | 3.07±1.19 | $t=3.04, p \leq .01$ |
| Communication to patient | 3.76±0.94 | 2.73±1.00 | $t=5.23, p \leq .001$ |
| Patient feedback | 3.73±1.00 | 2.54±0.74 | $t=6.95, p \leq .001$ |
| Cleanliness of skin | 4.00±1.02 | 2.15±0.85 | $t=8.04, p \leq .001$ |
| Integrity of skin | 3.24±1.26 | 2.46±1.03 | $t=4.47, p \leq .001$ |
| Softness of skin | 3.12±1.38 | 2.49±1.19 | $t=2.96, p \leq .001$ |

Table 2: Bathing Time, Numbers of Nurses, and Parameters for Traditional and Disposable Bed Bath.

Interviews with ICU Nurses

ICU nurses reported that the three most important parameters that affect the preference for the traditional bed-bath application are communication with patients, patient satisfaction feedback, and the cleanness and integrity of skin.

Communication with Patients

"I can communicate longer with the patient and evaluate the skin integrity more carefully during the traditional bed-bath application." (Age 25, General Surgical ICU Nurse)

"I can communicate (verbally or non-verbally) with the patient using both methods. However, I can communicate with the patient longer using the traditional method. Even though it takes more time, thanks to it, mutual trust is strengthened." (Age 26, Neurosurgery ICU Nurse)

Patient Satisfaction Feedback

"Patients say that the traditional bath method makes them comfortable, as if they had a real bath, ritual habits in daily living. The satisfaction can be seen in their eyes." (Age 46, General Surgical ICU Nurse)

"Conscious patients say that the bath wipes leave a sticky feeling on their skin and don't provide comfort or relief. That is why they are more satisfied with the traditional method, which corresponds to our cultural habits." (Age 42, General Surgical ICU Nurse)

"According to our cultural habits, it is more appropriate to clean the body with water and soap, so patients are not satisfied with the bath wipes. They say that the bath wipes leave a sticky feeling on their skin." (Age 35, Orthopaedic ICU Nurse)

"If the patient is very dirty and intubated, I want the patient to be more satisfied when I approach him/her empathetically. That is why I prefer the traditional method for such patients." (Age 29, Neurosurgery ICU Nurse)

Cleanness and Integrity of the Skin

"The number of wipes (8 wipes on average) provided by the Social Security Institution (SSI) on a daily basis is not enough for one patient's bed bath." (Age 28, General Surgical ICU Nurse)

"I may have to apply more pressure to clean the skin using the bath wipe and this may risk skin integrity because of the friction." (Age 25, General Surgical ICU Nurse)

"I have a shower every day before coming to the clinic, so I care about my patients' cleanliness and I think they need more care. That is why I prefer the traditional method." (Age 32, General Surgical ICU Nurse)

"When the skin is very dirty, the bath wipes won't get it clean. In such situations, I prefer a traditional bath after cleaning with the bath wipes. The bath wipes can be used for daily localized cleaning, but they are not practical for post-operative bathing." (Age 52, Orthopaedic ICU Nurse)

"In the traditional method, we evaluate the patients' daily activities, and we also change the patients' pyjamas and bed clothing afterward

the bath. However, with the disposable wipes, I use local evaluation and focus on the site that needs cleaning." (Age 30, Orthopaedic ICU Nurse)

"The traditional method allows us to evaluate the patients' skin integrity from a different point of view and in a more detailed way because it is done more slowly by two nurses. We also gently wash, rinse, dry, and moisturize the patients. This supports their circulation and movement." (Age 45, Neurosurgery ICU Nurse)

"The bath method is important for reducing hospital-acquired infections. Disposable bath wipes pose little risk of infection, but because skin cleansing can be performed better with the traditional method, the risk of infection is reduced. However, it is also important to use disposable products along with the traditional method." (Age 39, Neurosurgery ICU Nurse)

Discussion

This study compared the two bed-bath applications, as well as the ICU nurses' interviews that asked for opinions about the two methods. The research results also analysed the cost difference between the two applications.

In the literature, some bed-bath methods are recommended [7,8]. In order to individualize the patient's care, nurses should implement the bed-bath application based on the individual's socio-cultural background, habits, physical ability, psychological dependence, local policy, and control of infection status [4,6,7]. In this study, application time, labour of nurses, and cost analysis scores showed a preference for the disposable bed-bath method, although ICU nurses preferred the traditional bed-bath application. This result is explained by our socio-cultural habits. Our cultural habits of bathing or washing (i.e., shower) prefer the traditional to the disposable bath. In addition the introduction of the disposable bed bath is a new issue in our nursing education. Since the disposable bed-bath method is a new concept for nursing science, education in skin care is being revised based on research. Coyer et al. [2] demonstrated that the choice of cleansing agent varies from simple soap to emollient-based lotions and the choice is often determined by the nurse or patient.

In comparing the two bed-bath applications, researchers found that the disposable bed-bath method required less time, fewer nurses, and was less expensive than the traditional method [3,9,16,17]. Other studies concerning the cost analysis of disposable wipes were determined cost-effective for ensuring infection control when compared to the traditional method [14,16,18].

Interviews with ICU Nurses

In this study, ICU nurses reported that communication with patients, patient satisfaction feedback, and cleanness and integrity of skin were the reasons for those who preferred the traditional bed bath. According to Turkish cultural habits, bathing is more preferred than dry bath (wipes, bonnet, dry shampoo etc.). So, in our study mostly ICU nurses preferred traditional bed baths than wipes. In the literature, there is little evidence from interviews with ICU nurses about the comparison of traditional and disposable bed-bath applications. The findings of Hancock et al. [13] showed that nurses were more satisfied with disposable bed baths because of the performing-learning method, maintaining skin condition, and patient comfort and well-being except in the cases of incontinent patients. Larson et al. [9] reported that although critical care nurses

preferred the disposable bed-bath method because it required less time, there was no significant preference about cleaning and moisturizing the skin. Likewise, Coyer et al. [10] identified a number of factors that are impacted by the bed-bath methods: organisational factors (timing, workload, and patient needs) and patient factors (incontinence, diaphoresis, post-operative condition, freshening-up, and the patient's/family's wishes). A study by Horstmann et al. [17] determined that the majority of nurses and elderly patients preferred disposable bed baths. The authors also demonstrated that disposable baths' cost less and took less time than traditional methods.

The researchers did not obtain any unexpected findings from the ICU nurses' comments during interviews. Their statements were consistent with other research results on this issue. There were limitations in this study. This study was compared with routine traditional bed bath to disposable wipes procedures. These results reflected only few groups' ICU nurses' opinions especially satisfaction/preference. In addition disposable wipes are just a new procedure for these nurses. Researchers were evaluated ICU nurses' self-report about two baths and calculated to cost according to their country procedure. So, a rise or drop in HAIs was not assessed.

Conclusions

The study examined two outcomes examined in this study: the ICU nurses' satisfaction/preference and cost analysis. According to the results of this study, the application time, workload of nurses, and cost analysis scores favoured the disposable bed-bath method. The ICU nurses preferred the traditional bed bath application, saying that the traditional method enabled the ICU nurses to communicate with patients more effectively. They also cited patient satisfaction feedback, and cleanness and integrity of the skin. Researchers determined that a bridge between cultural habits and nursing science should be established.

Bed bathing is a nursing ritual and a fundamental therapeutic nursing intervention, especially in ICUs. This study's research evidence recommends taking into account the ICU nurses' views as well as costing analysis. In terms of nursing education, the new bed-bath methods should serve as a guide to personal hygiene education and practice. In addition, it is recommended that the development of innovative healthcare technologies (equipment and devices) try to approximate the actual bath method. It is recommended that increase the awareness of ICU nurses healthcare technologies (equipment and devices) to approximate the actual bath method. Further research using different bed-bath methods, ICU nurses, and patient preferences in a larger study sample is suggested.

Competing Interests

The author declares that they have no competing interest exists.

Funding

This work was supported by Scientific Research Projects Coordination Unit of Istanbul University. Project number: 49006"

References

1. Urden LD (2009) Critical care nursing practice. In: Urden LD, Stacy KM, Lough ME, eds. *Critical Care Nursing: Diagnosis and Management*, (6th ed.) St. Louis: Mosby Elsevier, p.1-88.
2. Coyer FM, Wheeler MK, Wetzig SM, Couchman BA (2007) Nursing care of the mechanically ventilated patient: what does evidence say? Part two. *Intensive Crit Care Nurs* 23: 71-80.
3. Lopes JL, Nogueira-Mertins LA, de Barros LBL (2012) Bed and shower baths: comparing the perceptions of patients with acute myocardial infarction. *J Clin Nurs* 22: 733-740.
4. Pegram A, Bloomfield J, Jones A (2007) Clinical skills: bed bathing and personal hygiene needs of patients. *Br J Nurs* 6: 356-358.
5. Cowdell F (2011) Older people, personal hygiene, and skin care. *MedSurg Nurs* 20: 235-240.
6. Veje P, Larsen P (2014) The effectiveness of the bad bathing practices on skin integrity and hospital-acquired infections among adult patients: a systematic review protocol. *JBI Database System Rev Implement Rep* 12: 71-81.
7. Taylor C, Lillis C, Le More P, Lynn P (2008) Hygiene. In: Taylor C, Lillis C, Le More P, Lynn P., eds. *Fundamentals of Nursing The Art and Science of Nursing Care*. (7th ed). Philadelphia: Lippincott Williams & Wilkins, p. 864-83.
8. Baird SK (2009) Hygiene. In: Potter PA, Perry AG, eds. *Fundamentals of Nursing*. 7th ed. St. Louis: Mosby Elsevier, p. 849-907.
9. Larson EL, Ciliberti T, Chantler C, Abraham J, Lazaro EM, et al. (2004) Comparison of traditional and disposable bed baths in critically ill patients. *Am J Crit Care* 3: 235-241.
10. Coyer FM, Sullivan J, Cadman N () The provision of patient personal hygiene in the intensive care unit: a descriptive exploratory study of bed-bathing practice. *Aust Crit Care* 24: 198-209.
11. Happ MB, Tate JA, Swigart VA, Di-Virgilio Thomas, Hoffman LA (2010) Wash and wean: bathing patients undergoing weaning trials during prolonged mechanical ventilation. *Heart & Lung* 39: 47-56.
12. Ünsal A (2013) Hijyenuygulamaları (Hygiene practices). In AtabekAştı T, KaradağA, eds. *HemşirelikEsaslarıHemşirelikBilimveSanatı (Fundamentals of Nursing*. 2th ed. İstanbul: Akademi Basın veYayıncılık, p. 441-483.
13. Hancock I, Bowman A, Prater D (2000) "The day of the soft towel": comparison of the current bed-bathing method with the Soft Towel bed-bathing method. *Int J Nurs Pract* 6: 207-213.
14. Collins F, Hampton S (2003) The cost-effective use of Bag Bath: a new concept in patient hygiene. *Br J Nurs* 12: 984-990.
15. Yıldırım A, Şimşek H (2003) SosyalBilimlerdeNitelAraştırmaYöntemleri (QualitativeResearchMethods in Social Sciences). Ankara: SeçkinYayıncılık, p. 39-41.
16. Horstmann Noddesskou L, Hemmingsen LE, Hordam B (2015) Elderly patients' and nurses' assessment of traditional bed bath compared to prepacked single units-randomised controlled trial. *Scand J Caring Sci* 29: 347-352.
17. Sucre MJ, De Nicola A (2009) Economic comparison of the traditional bathing method with the basinless bathing method in coma patients. *Crit Care* 13: P459.