

Hand washing strategies and compliance literature review example

[Health & Medicine](#), [Hospital](#)



Research Question: Do health care workers comply with hand washing strategies at the hospital level?

Annotated Bibliography

Asare, A., Enweronu-Laryea, C. C., & Newman, M. J. (2009). Hand hygiene practices in a neonatal intensive care unit in Ghana. *The Journal of Infection in Developing Countries*, 3(05), 352-356.

In this study, the researchers sought to assess hand hygiene practices and the nature of patient contact in physicians and nurses at a neonatal intensive care unit (NICU) in Ghana. The study was descriptive and cross-sectional, lasted two weeks, and the amount time of observation daily was 5 hours. The researchers assessed compliance to alcohol rub as well. Compliance to hand washing before and after patient contact was higher for nurses before contact, and higher for physicians after contact (15. 4% vs. 38. 5% for physicians; (14. 1% vs. 9. 9% for nurses). Overall, hand hygiene compliance was low.

This article is useful because it measures compliance to hand washing strategies before and after contact with patients. It is similar in methodology to other studies analyzed because its setting is an intensive care unit. As the study was made in Ghana, it adds a global perspective to the analysis. This study was shorter in observational time compared to other studies analyzed. The methodology was specific enough to reproduce or repeat this study, thus assuring reliability.

Besides addressing hand washing strategies and compliance, this study takes into account gloves use and alcohol rub. The type of contact was stratified (high- or low-risk contact) which adds a risk perspective to this

analysis. This study would be directly compared to the study by Helder et al. (2010) because both are set on a NICU. This article reinforces the argument that hand washing strategies could be improved among health care workers. It also provides a perspective of compliance according to health profession.

Beggs, C. B., Shepherd, S. J., & Kerr, K. G. (2008). Increasing the frequency of hand washing by healthcare workers does not lead to commensurate reductions in staphylococcal infection in a hospital ward. *BMC Infectious Diseases*, 8(1), 114.

This study explores the extent to which hand washing helps to prevent staphylococcal infections in hospital settings. Researchers developed a deterministic and theoretical model applied to a hypothetical hospital setting. Researchers evaluated the impact of imperfect hand washing. Their model demonstrates that nosocomial staphylococcal infections could be prevented, even with imperfect hand hygiene. That means <50% of compliance.

This study is different from the rest that were analyzed. Differences are mainly methodological and in terms of results. Although hypothetical, the methodology is detailed and realistic enough to be considered for this analysis. This article explores the minimum level of compliance needed in order to ensure maximal benefits. It also explores staphylococcal infections, which are common in hospital settings.

This article is valuable because it provides a non-traditional view of hand washing compliance. It also explores how useful compliance would be to reduce outbreaks or spreads of diseases. I would use this article to contrast all other articles analyzed. It adds critical thinking to my argument. It could

also allow to balance the rate of compliance reported by the other articles.

De Wandel, D., Maes, L., Labeau, S., Vereecken, C., & Blot, S. (2010).

Behavioral determinants of hand hygiene compliance in intensive care units.

American Journal of Critical Care, 19(3), 230-239.

The aim of this study was to identify predictors of hand washing noncompliance. The setting was an Intensive Care Unit (ICU). Subjects were only nurses. This descriptive and cross-sectional study included a 56-item questionnaire based on a behavioral theory model. Mean compliance rate was 84%. Time-related obstacles were associated with noncompliance ($\beta = 0.147$, $p < 0.001$).

This article is useful for focusing on how nurses comply with hand washing strategies. This study is particularly different due to the use of self-reported questionnaires. It adds behavioral predictors that could explain if and why nurses comply with hand washing. I would contrast this study to those by Sharma, Sharma and Koushal (2012), and Rupp et al. (2008). The main similarity between these articles includes ICU setting.

I would use this article towards the middle-end of the analysis. It should be placed after setting the problem and after analyzing hand-washing compliance in all health workers. It provides evidence that time is one of the obstacles for nurses to comply with hand washing. It also explores theoretical knowledge of the consequences of noncompliance, which would be contrasted to the studies by Sharma et al. (2012) and Elaziz and Bakr (2008).

Duggan, J. M., Hensley, S., Khuder, S., Papadimos, T. J., & Jacobs, L. (2008).

Inverse correlation between level of professional education and rate of

handwashing compliance in a teaching hospital. *Infection Control and Hospital Epidemiology*, 29(6), 534-538.

The aim of this study was to evaluate educational level and hand washing compliance. Researchers observed and recorded hand-washing opportunities in all hospital employees. The total duration of the study was 22 weeks.

Nurses had the higher rates of compliance (91.3%). Attending physicians had the lower rate of compliance (72.4%, $p < 0.001$)

Methodologically, this study is robust because it includes several measurements under two conditions: before and after the visit of the JCAHO. Results were provided by hospital area, by type of healthcare worker, and by day of the week. Time of the shift was also included. Logistic regression was performed to see if the JCAHO visit influenced results. This study is reliable enough in terms of study population (2,373 observations).

Along with the study by De Wandel et al. (2010), this study allows to explore individual factors involved in compliance. It is interesting that an inverse correlation exists between educational level and compliance. The differences in compliance between the day of the weeks and the time of the day should be further explored. It is unlikely that these are due to educational level alone.

Elaziz, K. M. A., & Bakr, I. M. (2008). Assessment of knowledge, attitude and practice of hand washing among health care workers in Ain Shams University hospitals in Cairo. *Egyptian Journal of Community Medicine*, 26(2).

Researchers aimed to study the amount of knowledge, attitudes, and the rate of practice of hand washing techniques. Subjects were health care workers in a University Hospital in Cairo. This was a cross-sectional and

descriptive study that lasted six months. Observations were performed in 10 hospital departments. 2, 189 opportunities for hand washing were recorded. Physicians showed higher compliance (37.5%). Imperfection of technique prevailed (88.4%).

The results of this study support the argument that hand washing compliance is low among health care workers. It provides evidence on the rate of imperfect techniques. It also reports that physicians show higher compliance, with contrasts with the study by Duggan et al. (2008). I would refer to this article early on my analysis. Its methodology is reliable and specific enough in order to use it.

Along with the study by Asare et al. (2009), this article provides insight on how hand-washing compliance is in other countries, such as Egypt. It explores developing countries issues such as availability of supplies (sinks, paper towels). It also measures health care worker knowledge of compliance. Specific details of hand washing techniques such as contact time and drying are reported. Authors provide recommendations to improve these results. Helder, O. K., Brug, J., Looman, C. W., van Goudoever, J. B., & Kornelisse, R. F. (2010). The impact of an education program on hand hygiene compliance and nosocomial infection incidence in an urban neonatal intensive care unit: an intervention study with before and after comparison. *International Journal of Nursing Studies*, 47(10), 1245-1252.

In this study, researchers evaluated the effectiveness of an educational program and its relationship with hand washing compliance. This was an observational study with pre- and post-test measurements on healthcare professionals working at a NICU. The main outcome was the incidence of

nosocomial infections in very low birth weight infants. Results show that compliance increased before patient contact (65% to 88%, $p < 0.001$). This study differs from the rest because it observes compliance before and after the implementation of an educational program. The number of observations (1,201) is large enough to make it reliable. Besides reporting changes in compliance, it also reports the impact of hand washing in nosocomial infections in NICU. The hospital setting is similar as the one used in the study by Asare et al. (2009).

I would include this article towards the end of my analysis, to show what strategies could be useful to improve hand-washing compliance. It also shows that compliance reduces nosocomial infections. I would use this fact at the beginning of the article while setting up the problem. Last, I would suggest educational programs as a way to improve hand-washing compliance.

Marra, A. R., Luciana Reis Guastelli, R. N., Carla Manuela Pereira de Araújo, R. N., dos Santos, J. L. S., Luiz Carlos R Lamblet, R. N., Silva Jr, M., & Oscar Fernando Pavão dos Santos, M. D. (2010). Positive deviance: a new strategy for improving hand hygiene compliance. *Infection Control and Hospital Epidemiology*, 31(1), 12-20.

In this trial, researchers examined the effectiveness of positive deviance as a strategy for improving hand washing compliance. The study consisted of three phases of three months each. They recorded baseline number of episodes during the first phase, applied the strategy to only one wing of the hospital during the second phase, and then applied the strategy to both wings of the hospital during the third phase. Researchers observed

statistically significant differences during the second phase ($p < 0.01$) in hand washing episodes and incidence of healthcare associated infections (HAI).

Among the analyzed articles, this is the only trial, methodologically speaking. It explores methods to improve compliance in health workers. The use of a control group increases this study's reliability. Furthermore, the researchers recorded baseline characteristics, which aids reliability. The methodology is more robust than that in observational studies.

This article adds information on how behavioral techniques could improve hand washing compliance. I would use it towards the end of the analysis. I find this article useful to extend the strategies proposed by Elaziz et al. (2008) and Helder et al. (2010). Their similarities rely on the fact that they propose behavioral improving techniques for hand washing compliance.

McGuckin, M., Waterman, R., & Govednik, J. (2008). Hand hygiene compliance rates in the United States--a one-year multicenter collaboration using product/volume usage measurement and feedback. *American Journal of Medical Quality: The Official Journal of the American College of Medical Quality*, 24(3), 205-213.

In this study, researchers aimed to assess hand hygiene compliance in U. S. healthcare facilities. This was a multicenter study, which means that several healthcare centers were included. The observational period lasted 12 months. Measurements were made in ICUs and non-ICUs. Results show that monitoring and feedback increased compliance from 26% to 37% in ICUs ($p = 0.0119$), and from 37% to 51% in non-ICUs ($p < 0.001$).

This is the only U. S.-based multicenter study included in this analyses. It is

also longer than those studies by Asari et al. (2009), Duggan et al. (2008) and Sharma et al. (2012), but shorter than Helder et al. (2010). Its large number of centers (306) and units (1, 531) make it reliable enough to be used on this analysis. Furthermore, baseline characteristics were measured. This article would be useful for setting the problem.

The information provided by this article would be especially useful when providing evidence for compliance in the U. S. Therefore, it would be used at the beginning of the analysis. It supports the argument that compliance rates are low at a baseline level. It also suggest that monitoring and feedback increase compliance. Monitoring and feedback could be other strategies to improve compliance.

Rupp, M. E., Fitzgerald, T., Puumala, S., Anderson, J. R., Craig, R., Iwen, P. C., & Smith, V. (2008). Prospective, controlled, cross-over trial of alcohol-based hand gel in critical care units. *Infection Control and Hospital Epidemiology*, 29(1), 8-15.

In this article, authors sought to explore if compliance rates improved when using alcohol-based products. An important outcome measured was nosocomial infections. This prospective study was conducted in two adult ICUs for a year -one experimental, and one control-, and then reversed. Results show that adherence rates improved from 37% to 68% in one unit, and from 38% to 69% in the other after introduction of hand gel ($p < 0.001$). There were no statistically significant differences in rates of nosocomial infections.

The inclusion of a control group in this trial helps its reliability. The number of observations (3, 678 opportunities for hand hygiene) is high. It helps the

comparative analysis because provides information on gel-based products instead of hand washing with just water. Furthermore, as a prospective study, it takes into account the time variable, which other studies in this analysis do not.

It is interesting that the rate of nosocomial infections did not change, despite statistically significant improvements in hand-washing compliance. It also states that compliance improves when the gel-based product was present, which involves availability as a decisive variable, and this shows a similarity between this article and that of Elaziz et al. (2008).

Sharma, R., Sharma, M., & Koushal, V. (2012). Hand washing compliance among healthcare staff in Intensive Care Unit (ICU) of a Multispecialty Hospital of North India. *Journal of Hospital Administration*, 1(2), p27.

Researchers sought to assess hand washing practices in ICUs in India. They also evaluated the factors that motivate or inhibit compliance. It was a descriptive and cross-sectional study, and lasted two weeks. The authors report hand washing adherence of 84%, with nurses having the highest compliance (94%).

Although the study lasted only two weeks, the number of hand washing opportunities was large enough to consider this article for analysis (2, 400 opportunities). Sample size is also large enough (64 health care professionals). This article is useful to further explore hand washing compliance in developing countries. Methodologically, it is similar to the study by Elaziz et al. (2008).

This article contrasts the argument that healthcare workers have low rates of hand-washing compliance, but supports the argument that nurses have

better rates of compliance among other healthcare professionals. It also addresses the issue of availability of supplies in developing countries. I would use this article at the beginning of the analysis, to talk about the situation in India, contrast it to the situation in the U. S., and introduce reasons for noncompliance.

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