HPR
Hospital Practices and Research
http://www.jhpr.ir
Hosp Pract Res. 2025 March;10(1):587-588
doi 10.30491/hpr.2025.512135.1483
Letter to Editor

Using Alcohol-based Hand Rubs on Gloved Hands to Minimize Infections while Addressing Resource Limitations: A New Perspective on Hand Hygiene

Kiran Kumari [1], **Pushpa** [1*]

[1] Continuing Nursing Education, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India

***Corresponding Author:** Pushpa, Continuing Nursing Education, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India. Tel: +9001526775, Email: pushpachoudhary447@gmail.com

Received March 13, 2025; **Accepted** March 29, 2025; **Online Published** March 30, 2025

Dear Editor,

Hand hygiene is crucial in preventing healthcare-associated infections (HAIs) and the transmission of multi-drug-resistant organisms, both of which contribute to increased patient mortality and a significant socioeconomic burden. Despite global efforts to improve hand hygiene, HAIs remain a concern. Hand hygiene is the most important way to prevent this, but many opportunities for cleaning hands at the bedside are often missed. The compliance of hand hygiene remains low, averaging around 40%.[1]

Most healthcare workers (HCWs) frequently use gloves instead of performing hand hygiene while providing patient care. Improper use of gloves is common, with many HCWs wearing gloves unnecessarily or for extended periods. This practice reduces hand hygiene compliance and increases the risk of infection transmission. The World Health Organization (WHO) recommends that gloves should be changed between caring for different patients and between providing different types of care. A study conducted by Chau et al. reported that gloves were not changed in 75% of required situations.[2,3]

One of the major barriers to this is the high workload of HCWs, who may lack time to remove gloves and disinfect their hands between patient interactions. Alcohol-based hand rubs (ABHR) on gloves are considered one of the most effective ways to prevent the spread of infections. Disinfecting gloves instead of changing them when taking care of a single patient may improve workflow efficiency and compliance.[4]

A systematic review conducted by Scheithauer et al. stated that a multi-modal approach for improving hand hygiene leads to some progress in compliance, but it may not be enough. High workload and time constraints are key reasons for HCWs' non-compliance with hand hygiene guidelines. In such situations, disinfection of medical gloves could facilitate better workflow and thus optimize compliance rates. The disinfection efficacy for the different disinfectant/glove combinations was greater than for ungloved hands.[5]

The Centers for Disease Control and Prevention (CDC) do not recommend glove disinfection as standard practice, but this option can be used when there is an extreme shortage of gloves. However, disinfection of gloves may offer certain benefits such as reducing HCWs' workload, minimizing environmental impact, and lowering costs. Current guidelines for HCWs advise them to remove gloves, clean hands, and wear new gloves at every hand hygiene moment. However, this is not always practical.[6]

The disinfection of gloves can be an effective method, but the integrity of the glove should be carefully assessed before disinfection. Similarly, a study conducted by Fehling et al. concluded that gloves should be carefully inspected for any damage, such as holes or tears, and signs of wear, like stiffness, discoloration, or stickiness, before disinfection. If any damage is found, the gloves should be discarded rather than sanitized. After disinfection, they should be checked again, and if any deterioration is detected, they must be disposed of immediately.[7]

A randomized controlled trial conducted by Thom et al. reported in their research that poor compliance with WHO's five moments of hand hygiene leads to high levels of glove contamination and bacterial transmission. They concluded that contamination of gloved hands was significantly reduced by applying ABHR directly to gloved hands, but it was statistically higher than the gold standard. Therefore, regular glove disinfection with ABHR presents a feasible and time-efficient alternative to minimize microbial transmission in healthcare settings.[1] These findings are also supported by Vogel et al., who found that disinfecting gloves with an ABHR for 30 seconds effectively sterilized gloves in approximately

79% of cases. They suggest that regular disinfection of gloves could be a feasible alternative to reduce microbial transmission while improving hand hygiene compliance.[3]

A review conducted by Kampf and Lemmen showed that glove disinfection by HCWs may substantially reduce the risk of infection transmission when gloves are indicated for the entire episode of patient care and when performed during multiple activities on the same patient.[4]

Single-use gloves and proper removal remain the gold standard; however, evidence suggests that controlled glove disinfection could be a practical approach to reducing contamination risks, especially when frequent glove changes are impractical. Nevertheless, further research is needed to assess its real-world safety and effectiveness before widespread adoption.

Conclusion

The disinfection of gloves could be an easily implementable, resource-neutral tool as a new component within infection control bundles. Settings with a high number of aseptic procedures and unsatisfactory baseline levels would benefit most, especially in times of HCWs shortage.

Conflict of Interest Disclosures

The author declares no conflict of interest.

Acknowledgement

We would like to extent our gratitude to the Librarian at the All India Institute of medical Sciences, Jodhpur, for allowing access to the online literature database.

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