Microbial Growth on the Nails of Direct Patient Care Nurses Wearing Nail Polish

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The link between caregivers’ hands and transmission of pathogenic organisms has been discussed since hand hygiene was first implemented by Semmelweis to reduce the incidence of puerperal fever (Nuland, 2004). It is widely accepted that caregivers’ hands are a vehicle for transmitting health care–acquired infection (HAI) pathogens (Siegel et al., 2019). Improved efficacy of hand hygiene among direct patient care nurses is of vital concern in the oncology setting because immunocompromised patients are at high risk for morbidity and mortality associated with HAIs (Abou Dagher et al., 2017). Although the process of hand hygiene has been studied extensively, less is known about the effect that wearing nail polish has on the growth of potentially pathogenic microbes on the hands of direct patient care nurses outside of the operative setting.

Nursing dress code policy may vary among institutions, but it lacks a basis in research evidence regarding the use of nail polish by direct patient care staff (Cimon & Featherstone, 2017). A review of the historic literature revealed that evidence supports dress codes banning artificial nails in the operative setting and for individuals providing direct patient care (Gordin et al., 2007; McNeil et al., 2001; Pottinger et al., 1989; Wynd et al., 1994).

This study hypothesized that wearing nail polish likely increases microbes retained at the junction of the polish and nail over time, despite routine healthcare hand hygiene. The investigators sought to generate evidence-based recommendations for improving nursing infection prevention practice and dress code policy. The conceptual framework for this study is based on the five-step sequence of transmission of microbes via healthcare providers’ hands according to the evidence-based model for hand transmission during patient care, as shown in Figure 1.