

# Behavioral Perspectives toward Hand Hygiene Promotion

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Although hand hygiene (HH) is widely accepted as the most effective measure for preventing cross-infection in healthcare setting, overall compliance remains poor among health care workers (HCWs). The last 30 years have demonstrated a growing interest in many interventions determining effective strategies to enhance HH compliance. Based on those evidences, the World Health Organization guidelines on hand hygiene [1] have recommended multifaceted interventions as the most effective and sustainable tools to increase HH compliance, which consist of five components: system change, including availability of alcohol-based handrub at the point of patient; education of healthcare professionals; monitoring of HH practices and performance feedback; reminders in the workplace; and the creation of a HH safety culture [1].

Recently, many researches investigating factor associated with HH compliance have paid attention to behavioral aspects of HH compliance for more-pronounced and sustainable effect. The assumption that an individual's perceptions have a strong effect on each one's behavior brought about social cognitive models [2], which may give an insight into HH behavior. A report [3] already stated 20 years ago that infection control

field should learn from the behavioral science to achieve compliance of HCWs. Some models from social psychology have been applied to evaluate predictors of health behavior [4].

HCW's behavior can be stratified into individual (intrapersonal), interpersonal, and community level [2]. Intrapersonal factors include individual's knowledge, attitudes, and belief and interpersonal factors include interpersonal process as like a peer group pressure. Community factors indicate social networks and norms [2]. In particular, the specific effects from social pressure on individual's behavior have been called as "social network effects" or "peer effect [5]." The effect of role model for colleagues on HH compliance has already showed importance in a few quantitative [6] and qualitative researches [7]. A recent study [5] identified that the presence and proximity of other HCWs was associated with increased HH adherence and, more interestingly, the adherence increased the more as other HCWs became more crowded.

Lee et al. [8] have assessed the improvement of HH compliance and the change of perceptions: intention, knowledge, motivation regarding HH in HCWs in a tertiary teaching hospital in South Korea from 2009 to 2012, where HH promotion

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A detailed illustration of a cell surface, showing numerous purple spherical particles (likely viruses or bacteria) attached to the cell membrane. The cell membrane is depicted in shades of pink and purple, with internal structures visible.

programs including poster campaign, monitoring and feedback, and education have been actively conducted. Overall adherence with HH has dramatically increased during the period regardless of professional status or medical specialty. Lee et al. [8] focused on the perception change regarding HH as associated factor of enhanced adherence of HH. However, as the often-cited drawbacks to many intervention studies regarding HH is an independent causal relationship, this research is in danger of making the same mistake. While we can assess the change of perceptions of HCWs and the improvement of HH compliance, we cannot deduce an independent causality between the two facts, since they performed monitoring and performance feedback as well as education with special attentions to perceptions of being a role model for other colleagues. Similarly, Pittet et al. [9] identified awareness of being observed, the belief of being a role model, positive attitudes toward HH as associated cognitive factors of HH adherence. However they coupled observed each HCW's adherence to HH with each one's perceptions and demographic characteristics and conducted multivariate regression analysis for examining independent associated factors.

Nevertheless, it is noteworthy that current study by Lee et al. [8] demonstrated astonishing improvement in adherence and in perception and attitude regarding HH during a short period through promotion programs. Although alcohol-based hand disinfectants had already been available since 2004, authors noted this single intervention did not enhance the HH compliance. Furthermore, while knowledge about HH indication and awareness of being observed was not significantly improved between 2009 and 2012, positive attitude toward HH promotion was sharply increased. HH promotion programs including education emphasizing role model could reinforce the positive attitude/perception in HCWs in a positive feedback manner.

The inability to motivate HCWs' compliance with only some guidelines indicates that behavior regarding HH is a complex phenomenon [10]. Future HH promotion should consider not only expansion of physical facility like alcohol-based handrub or reminder, but also the dynamics of behavioral change based on the understanding of factors influencing HH cognition and behavior. Multi-level and multidisciplinary strategies

regarding behavioral determinants would show great promise for achieving sustainable improvement in HCWs' HH.

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