

LETTER

Guidance on hand jewelry for prevention of COVID-19 transmission in healthcare settings

Dear Editor,

Frequent hand washing and donning of personal protective equipment (PPE) are recommended by the Centers for Disease Control and Prevention (CDC) to limit transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The CDC mentions evidence that jewelry may harbor microbes, but does not make specific recommendations regarding wearing jewelry in healthcare settings, citing insufficient data. Some hospital infection control policies specify that jewelry be removed in patient care settings. In a study of 134 health care workers in hospitals stipulating no jewelry in the workplace, 45% of individuals continued to wear finger rings or watches.¹ While specific SARS-CoV-2 data is unavailable, in this letter, we analyze data on jewelry as a source of microbial transmission and make evidence-based recommendations to guide physicians regarding wearing hand accessories during the coronavirus disease (COVID-19) pandemic.

Hand accessories act as surfaces for potential microbial growth and disease transmission (Table 1). In one cross-sectional study, fluid was collected from sterile gloves of 200 health care workers, and individuals wearing wristwatches had greater skin bacterial counts compared to those without hand jewelry.² In a similarly designed study, with 564 cultures obtained from hands of surgical ICU nurses, individuals wearing finger rings had 10-fold higher median hand bacterial counts, compared to those who abstained from wearing jewelry¹; bacterial counts increased step-wise with each additional ring.¹ Jewelry may act as fomites, particularly if not

regularly disinfected. SARS-CoV-2 shows the longest surface viability on stainless steel, a common jewelry material.³ Rings may also inhibit proper hand-washing technique; in a group of 100 health care workers, there were greater reductions in microbial loads after hand washing in subjects not wearing vs those wearing rings.¹ Microbes may be shielded from detergents on surfaces of wrist and finger jewelry.⁴ Jewelry edges may also create skin micro-tears, which are subject to secondary infections. Therefore, we recommend that physicians remove finger rings and wrist jewelry when caring for patients.

Finger rings and other hand jewelry are associated with higher glove tear rates; finger rings create multiple perforations at the base of gloves.^{1,4} Bacterial load was similar in those wearing a smooth wedding band vs a ring with a stone (n = 100), however a more complex ring design theoretically increases glove tearing risk.⁵ If desired, wedding bands may be worn on a necklace and tucked under clothing. Washable silicone rings may be the safest options for those wishing to wear wedding bands on the finger. The ring should be removed prior to handwashing, with frequent disinfection of the ring itself (Table 1).

There is substantial evidence that wearing hand jewelry increases total skin microorganism counts; specific data on SARS-CoV-2 and transmission rates require further study. Based on available data, hand jewelry should not be worn in healthcare settings. In conjunction with proper hand-washing technique and appropriate use of PPE, these suggested modifications might help to prevent unwanted SARS-CoV-2 transmission to patients.

TABLE 1 Associated risks and recommendations for hand jewelry in the healthcare setting

Jewelry	Associated pathogens	Evidence	Recommendations
Rings	<ul style="list-style-type: none"> • <i>Staphylococcus aureus</i> • <i>Candida albicans</i> • <i>Acinetobacter species</i> • <i>Stenotrophomonas maltophilia</i> • <i>Escherichia coli</i> • <i>Serratia marsencens</i> • <i>Proteus mirabilis</i> 	<ul style="list-style-type: none"> • Skin beneath finger rings is more heavily colonized with bacteria than bare digital skin. • Microbial counts increase in a stepwise manner with each additional ring. • Rings may inhibit proper hand washing and drying. 	<ul style="list-style-type: none"> • Wearing a metal ring on the finger should be avoided when caring for patients. • A metal ring can be worn on a necklace and tucked under clothing or a disposable gown. • Washable silicone finger rings can be used in place of metal wedding bands. The silicone ring should be removed prior to handwashing and frequently washed with soap and water.
Watches & bracelets	<ul style="list-style-type: none"> • <i>S. aureus</i> • <i>Enterobacteriaceae</i> • Gram-negative rods 	<ul style="list-style-type: none"> • Wrist jewelry may interfere with proper handwashing technique. • Skin cannot be dried properly if wrist jewelry is present. 	<ul style="list-style-type: none"> • Handwashing should include the hand and the distal half of the forearm. • All wrist jewelry worn below the elbows should be avoided in health care settings.

CONFLICTS OF INTEREST

Ms. Conway, Mr. Wu, and Dr. Lipner have no conflicts of interest related to this manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available at <https://pubmed.ncbi.nlm.nih.gov>

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