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Effectiveness of biocide in daily disinfection and its impact on hands skin

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Summary

Background. Applying sanitizer that combines qualities of skin protector together with disinfectant is important for skin's health. It is critical to prove efficiency of such sanitizer to provide evidence-based conclusion of its disinfection qualities.

Methods. Bacterial swabs from hand surface were performed before and after disinfection with biocide-based sanitizer with contain Aloe Vera and D-panthenol. Bacterial swab was performed in compliance with European Standards (EN1500)

Aim. The aim of the study was to evaluate biocide-based disinfectant's effectiveness against pathogenic flora on hand's skin surface.

Results (I)

- The study included data of 30 participants
- Coagulase-negative *staphylococcus* (46.0%), *Bacillus spp.* (14.0%), *Acinetobacter spp.* (14.0%), *Enterobacter spp.* (16.0%), *Pseudomonas spp.* (2.0%), *Klebsiellas spp.* (2.0%) and *Candida albicans* (2.0%) were established after the first swab.
- After hand disinfection with biocide-based disinfectant, the number of colonies on participant's skin decreased or completely disappeared, and significant correlation was found between number of colonies before and after disinfection.

Gender	Missing	0
	Male	10 (33.3%)
	Female	20 (66.7%)
Age	Missing	0
	Mean (\pm SD)	42.63
	Median	40.0
	Min-Max	22.0-77.0
Profession	Missing	0
	Health care professionals	7 (23.3 %)
	Beauty field workers	7 (23.3 %)
	Public catering	1 (3.3 %)
	Business	1 (3.3 %)
	Office based workers	8 (26.7%)
	Construction	1 (3.3 %)
	Housewife	3 (10.0 %)
	Senior	2 (6.7 %)
	Hand disinfection frequency	Missing
>10 times per day		8 (26.7 %)
Up to 10 times per day		16 (53.3 %)
Once in a day		2 (6.7%)
1-2 times per week		4 (13.3%)

Table 1. Socio – demographic characteristic of trial population.

Results (II)

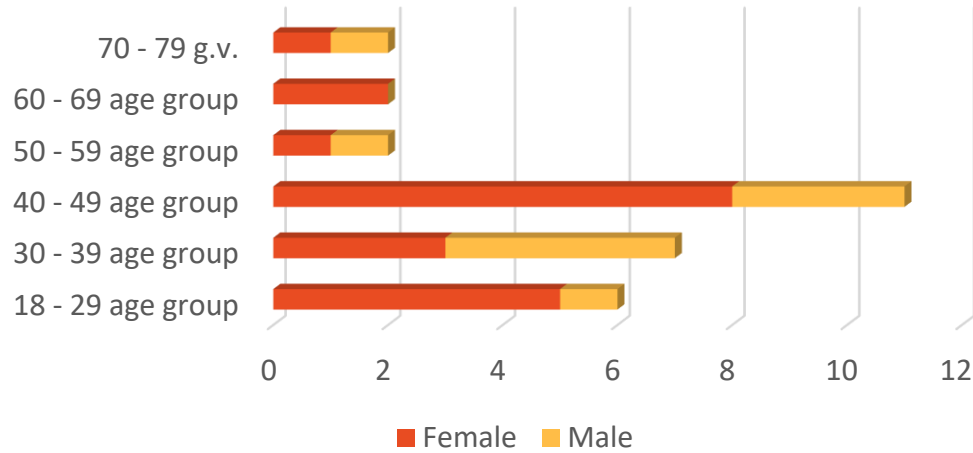


Figure 1. Study participants divided by age groups and gender

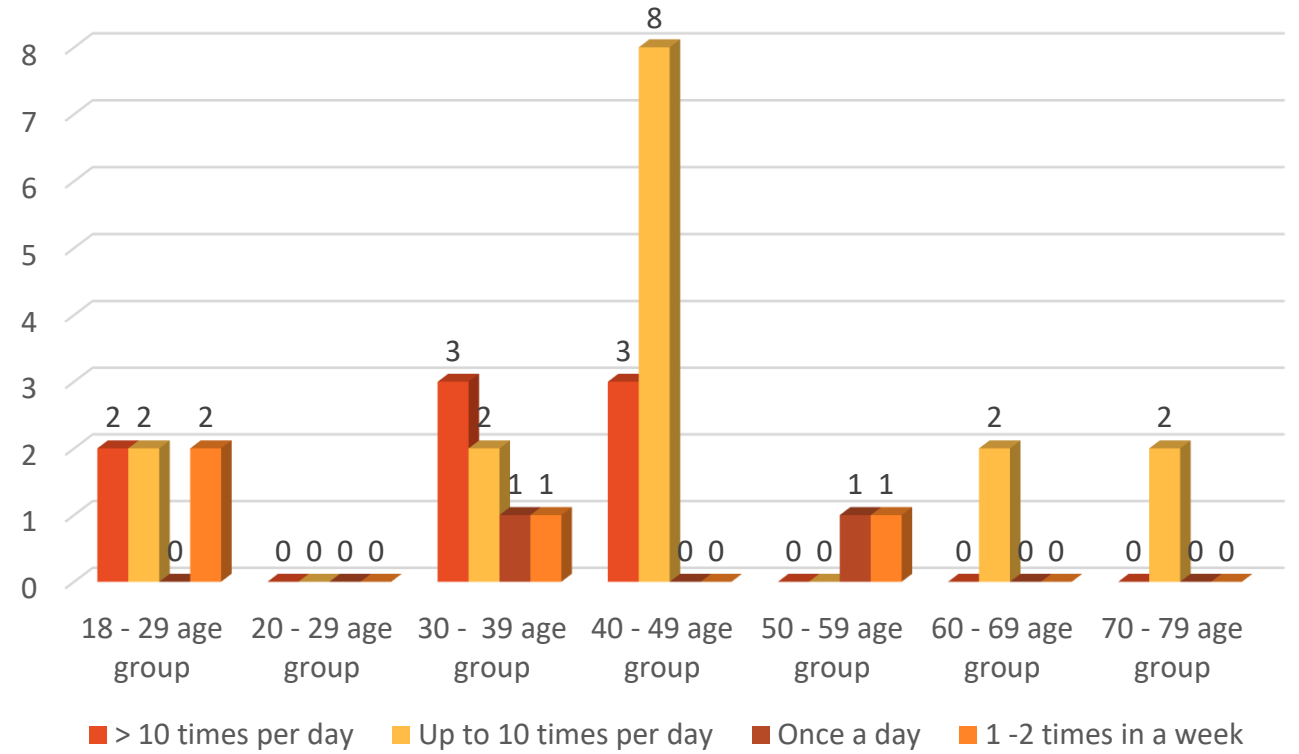


Figure 2. Frequency of hand disinfection

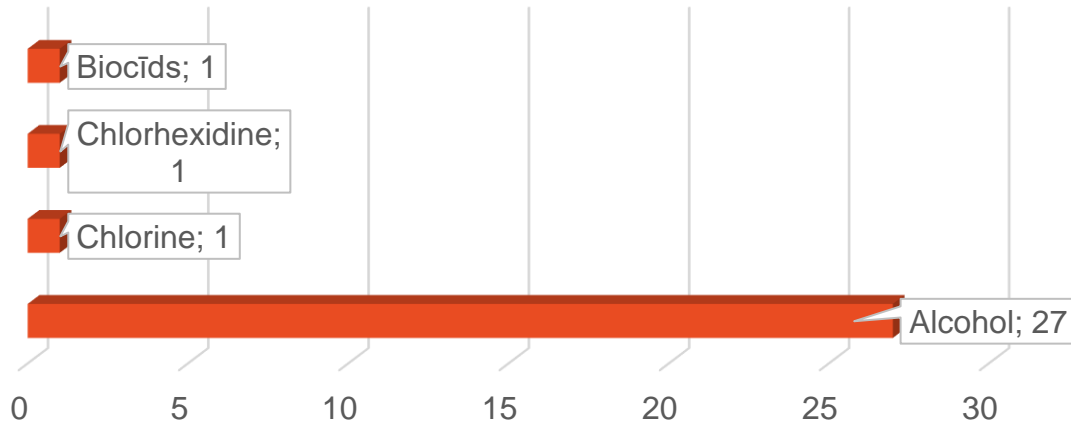


Figure 3. Choice of hand sanitizers

Results (III)

- In some cases, Coagulase-negative *staphylococcus* was still detected, but the number of colony-forming unit (CFU) decreased significantly [$p < 0.001$].
- Similarly, *Bacillus spp.* and *Acinetobacter spp.* still were found in 17.6% ($n=3$) of all cases after disinfection, but the number of colonies had decreased [$p=0.001$; $p=0.008$].

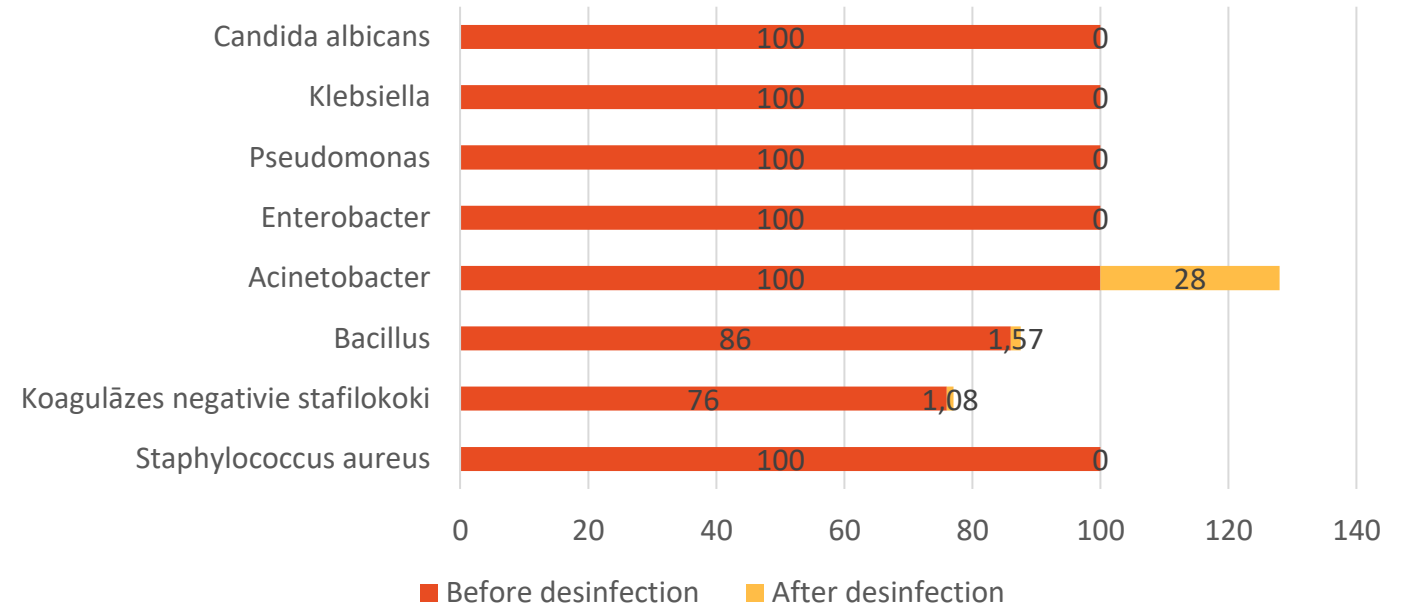


Figure 1. Number of colonies before and after disinfection with biocide based hand sanitizer

Conclusion. The primary results show that hand sanitizer based on biocide is effective in daily hand disinfection.