Effect of cleaning and disinfection of toys on infectious diseases and micro-organisms in daycare nurseries

Background: The rising number of children in daycare nurseries increases opportunities for the transmission of infectious diseases. Pathogens may be transmitted directly from child to child via sneezing, coughing and touching, or indirectly via the environment. Toys are among the fomites with the highest pathogen load, but their role in disease transmission is unknown. Aim: To determine if washing and disinfection of toys can reduce sickness absence and microbial pathogen load in the nursery environment. Methods: Twelve nurseries (caring for 587 children) were randomized to intervention and control groups. The intervention consisted of washing and disinfection of toys and linen every two weeks for three months by a commercial cleaning company. The extent and causes of sickness absence among the children were recorded in both groups before and after introduction of the intervention. Ten sampling points in each nursery were examined for bacteria and respiratory viruses. Results: The presence of respiratory virus DNA/RNA was widespread, but very few pathogenic bacteria were found in the environment. The intervention reduced the presence of adenovirus [odds ratio (OR) 2.4, 95% confidence interval (CI) 1.1-5.0], rhinovirus (OR 5.3, 95% CI 2.3-12.4) and respiratory syncytial virus (OR 4.1, 95% CI 1.5-11.2) compared with the control group, but the intervention had no effect on sickness absence or disease patterns in the nurseries. Conclusion: Although cleaning and disinfection of toys every two weeks can decrease the microbial load in nurseries, it does not appear to reduce sickness absence among nursery children. (C) 2014 The Healthcare Infection Society. Published by Elsevier Ltd. All rights reserved.

General information
State: Published
Organisations: National Food Institute, Division of Food Microbiology, Copenhagen University Hospital, DHI Hørsholm
Contributors: Ibfelt, T., Engelund, E. H., Schultz, A. C., Andersen, L. P.
Number of pages: 7
Pages: 109-115
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Journal of Hospital Infection
Volume: 89
Issue number: 2
ISSN (Print): 0195-6701
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.52 SJR 1.66 SNIP 1.565
Web of Science (2017): Impact factor 3.354
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.66 SJR 1.245 SNIP 1.499
Web of Science (2016): Impact factor 3.126
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.41 SJR 1.399 SNIP 1.451
Web of Science (2015): Impact factor 2.655
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.3 SJR 1.203 SNIP 1.328
Web of Science (2014): Impact factor 2.544
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.21 SJR 1.394 SNIP 1.397
Web of Science (2013): Impact factor 2.782
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.26 SJR 1.436 SNIP 1.571
Web of Science (2012): Impact factor 2.855