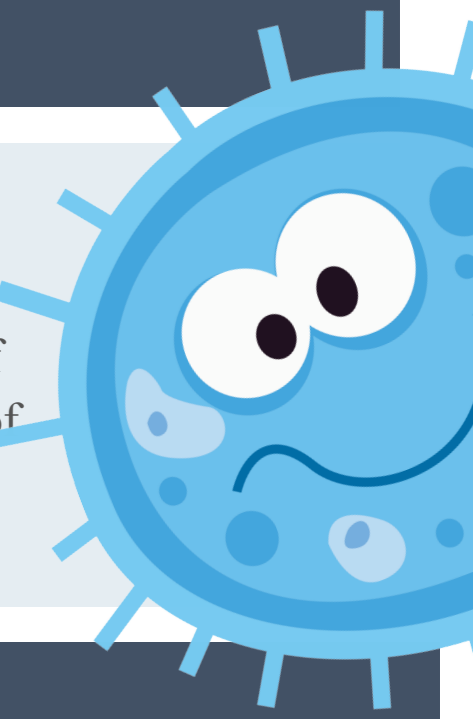


EXAMINATION OF MICROBIAL COLONISATION AND ANTIBIOTICS SUSCEPTIBILITY IN PHARMACIES DOOR HANDLES IN QASSIM REGION, SAUDI ARABIA

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Introduction

- ▶ The transfer efficiency of microbes to the hands is greater from nonporous surfaces such as acrylic, glass, ceramic tile, laminate, stainless steel and granite when compared with porous surfaces (Lopez et al., 2013).
- ▶ Door's location, design and mode of use influence the degree of handle Colonisation (Wojgani et al., 2012).
- ▶ This study aimed to isolate, identify the bacterial species and evaluate the antibacterial susceptibility patterns of bacterial contaminants from door handles of community pharmacies in Qassim region, Saudi Arabia.

Method

▶ This was an observational study conducted in Qassim region, Saudi Arabia.



- ▶ Samples were collected using a sterile cotton swab soaked in sterile water. Samples were then, cultured on blood and macconkey agars
- ▶ Identification and characterisation were performed following the standard bacteriological methods
- ▶ Further analysis was also done using Siemens MicroScan

Result

- ▶ All pharmacies door handles were found to be colonised with various types of bacteria.
- ▶ Three hundred and one (N=301) bacteria were isolated and 13 species were identified.
- ▶ The majority were *Staphylococcus* spp. **56.48%**, followed by *Bacillus* spp. **12.29%** and *Micrococcus* spp. **10.30%**

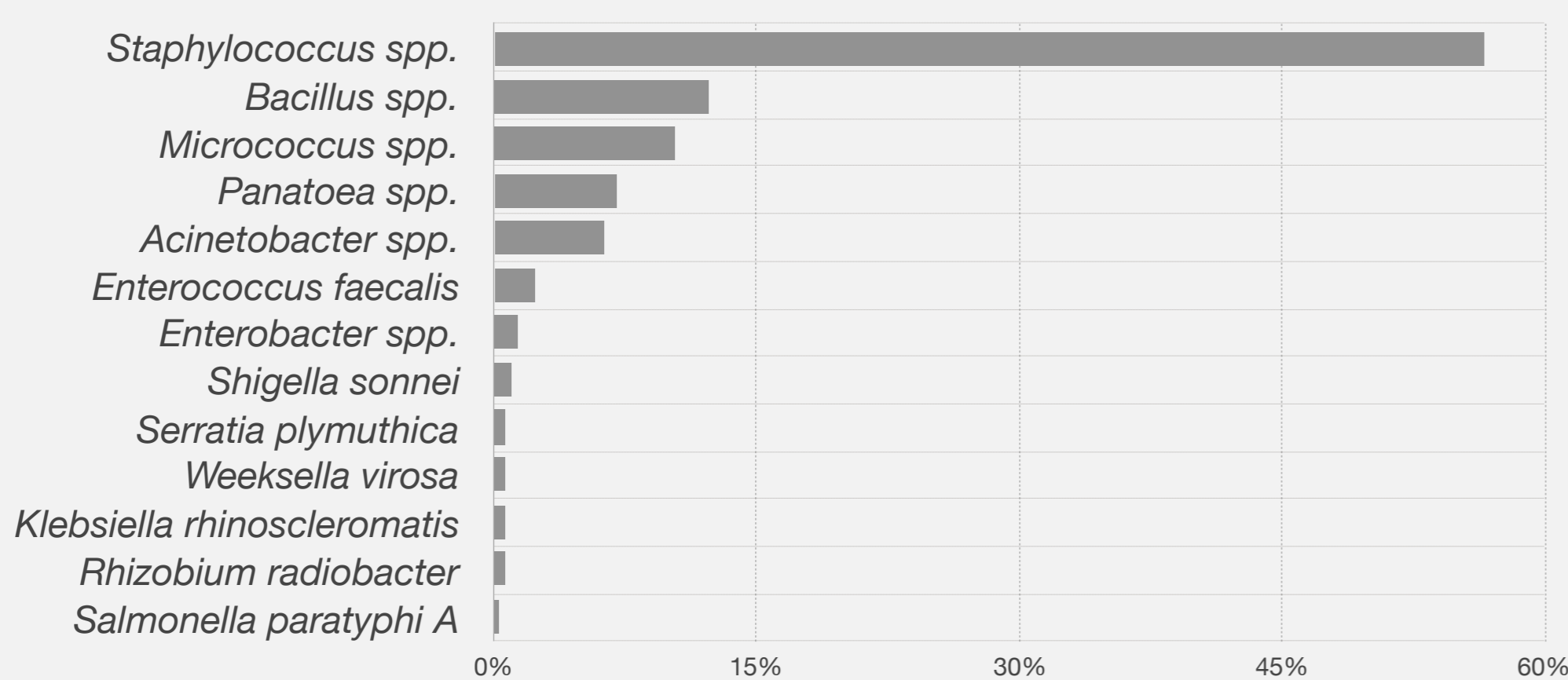


Figure 1: Percentage of bacteria isolated from pharmacies door handles.

- ▶ Bacterial colonisation in the main city Buraydah was the highest (26.25%), followed by countryside (25.91%), Unaizah (25.25%) then Al rass (22.59%).

▶ *Staphylococcus* spp. (n=39), were evaluated for antibiotic susceptibility **92.31%** showed antibiotic resistance (figure 2).

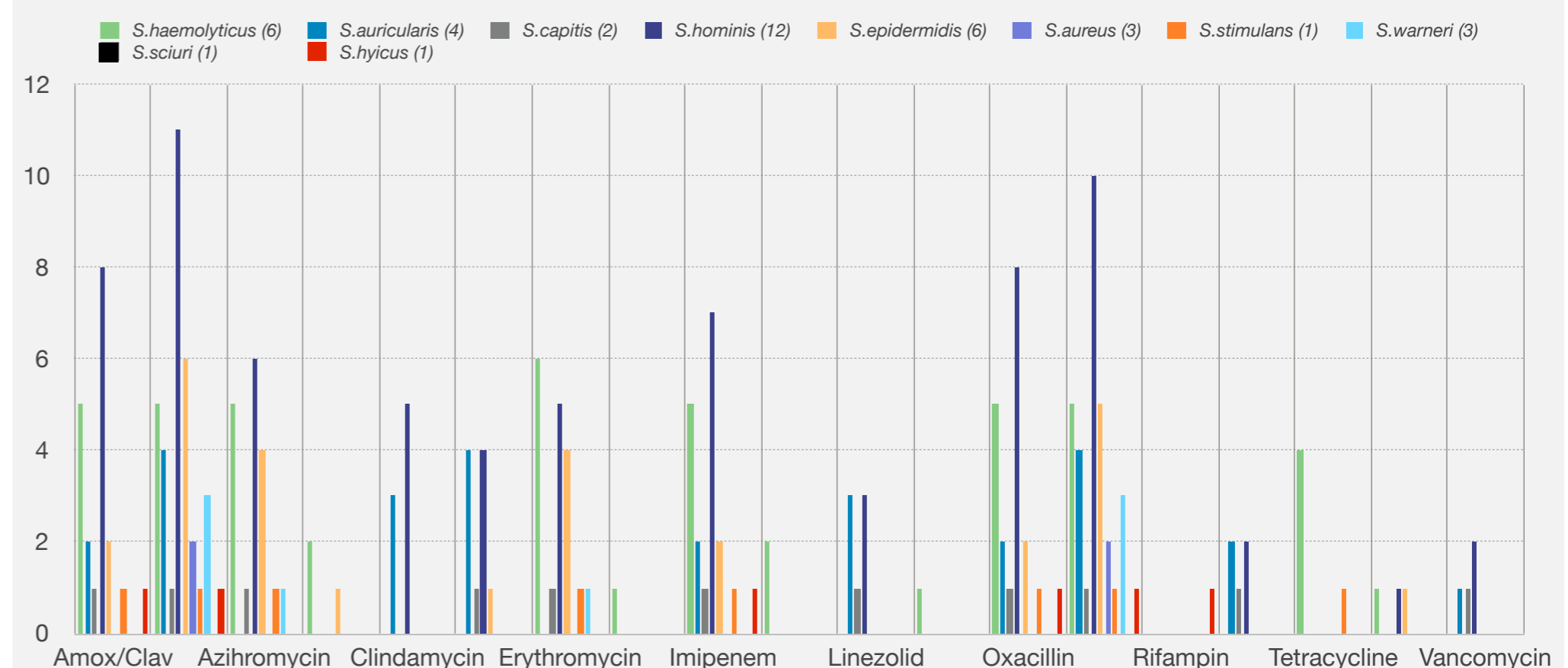


Figure 2: Antibiotic Resistance of selected Gram-positive bacteria.

▶ Gram negative bacteria (n=37) were also evaluated for antibiotic susceptibility, **21.62%** were resistant, and **13.51%** intermediate resistant (figure 3).

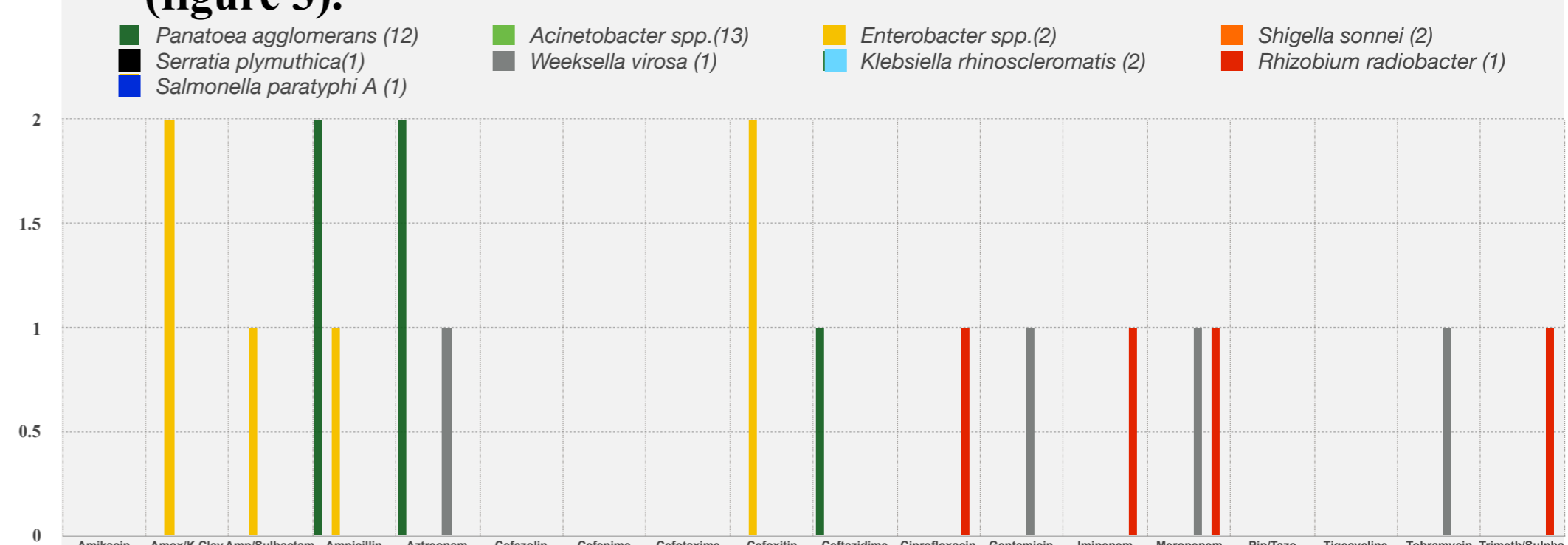


Figure 3: Antibiotic Resistance of selected Gram-negative bacteria.

Conclusion

- ▶ This study shows that pharmacies door handles were colonised with a diverse range of bacterial species and can act as a potential source of direct bacterial transmission to the community.
- ▶ Community awareness on hand hygiene should be raised and the use of automatic doors is highly recommended to reduce the chances of the transmission of pathogenic and MDR bacteria in the community.
- ▶ The efficacy of standard cleaning of the door handles should be revised. Further studies on the biofilm existence are also required.

Scan for References

