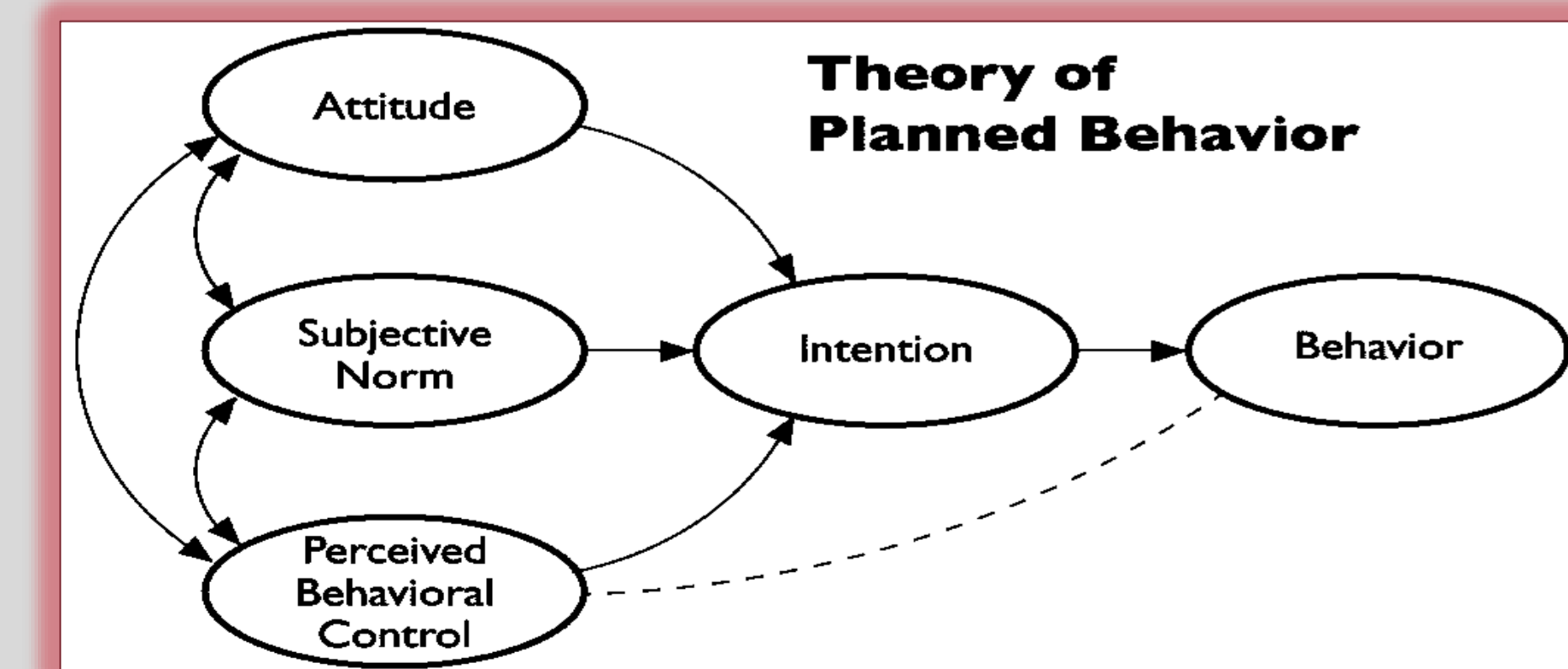


How aware are gym users about infection risks?

Project Team: Mary Cooper, Pavitra Dhamija & Elizabeth Youard. Special acknowledgements to our summer research student, Rollyn Sullano and to Jonathan Adams for his help in designing the online survey. For further information about this project, please contact mary.cooper@toiohomai.ac.nz

Background

- Staphylococcus spp. are the most common of micro-organisms in gyms with *S. aureus* and *S. epidermidis* found on all gym surfaces (Mukherjee et al., 2014).
- 10% of gym equipment carries methicillin-susceptible *Staphylococcus aureus* (MSSA) (Markley, Edmond, Major, Bearman, & Stevens, 2012).
- Materials used in gym equipment extends survivability of CA-MRSA contributing towards outbreaks (Desai, et al., 2011).
- Incidence of CA-MRSA among athletes ranges from 6%-61% per 10,000 athletes through cross-contamination with 91% of infection resulting from sharing facilities and gym equipment (Braun et al., 2016)
- Risk of CA-MRSA environmental transmission is around 40% (Karanika, Kinamon, Grigoras & Mylonakis, 2016).
- Decontamination is important best practice in shared gym facilities (Braun et al., 2016; Cluzet et al., 2015).
- The Theory of Planned Behaviour (TPB) (Ajzen, 1985) has been shown to explain and predict hand hygiene compliance (Eiamsitrakoon et al., 2013).
- According the TPB attitude is an important determinant of hand hygiene compliance (Eiamsitrakoon et al., 2013)



Research Gap:
Understanding gym users awareness of infection risk and intentions to mitigate this risk are unknown.

Aim:

A pilot study was undertaken to determine the behaviours of gym users' relating to infection risk management in a fitness centre setting. This study aimed to investigate:

- Awareness level of gym users about infection risks;
- Users strategies to reduce transmission and risk of infection.

Methods

- Convenience sample of 55 participants, 18 years and older who were members of participating Rotorua gyms .
- An eight-item questionnaire: 4-point Likert type scale with accompanying subscales containing subscales with between 2-4 items probing general infection risk knowledge and infection control strategies
- Demographics, gym use, gym routine and regularity of attendance were reported.
- Recruitment included posters and dissemination of flyers through participating gyms and use of selected social media platforms
- An online survey website, was used to host the survey.
- Toi Ohomai Research and Ethics Committee Approval (TRC 2018.060) was sought.
- Ethical conduct consistent with a self-selecting online survey was observed.

Limitations:

- Self-selection internet-based survey.
- Participants may have included of gym owners or their staff which could introduce bias

Do you go to the gym?

Answer a 5-minute online survey to help investigate the awareness of gym users about infection risks in gyms.

You can complete the survey online @ www.bit.ly/2UuLFgE

or just simply scan the QR code using your smart phone

For more info, contact Rollyn Sullano, Research Student, Toi Ohomai Institute of Technology at gymsandbugs@gmail.com

Ethics approval reference number: TRC 2018.060

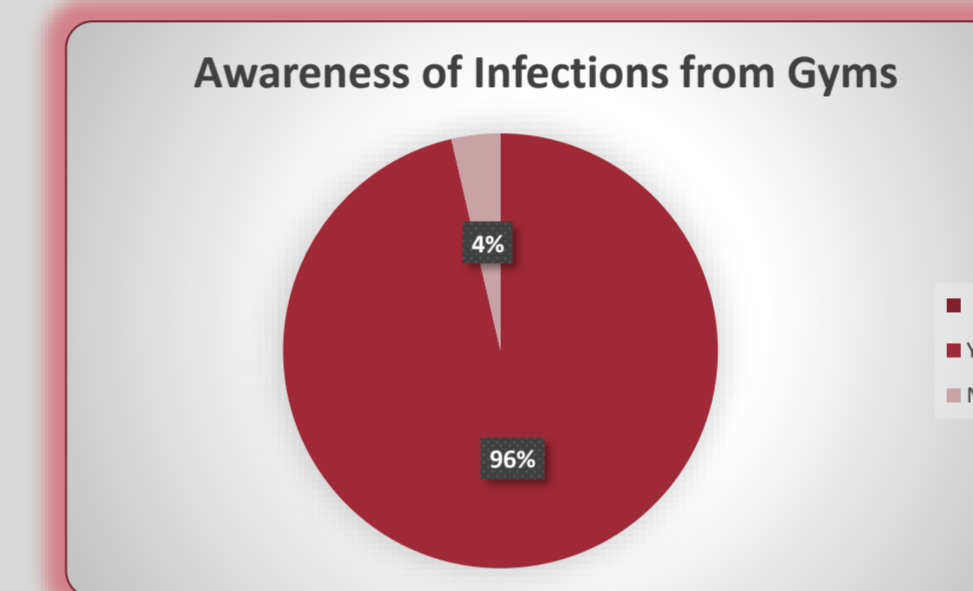
Results

- Eight gyms participated.
- 55 participants fully completed the survey

Participant Characteristics

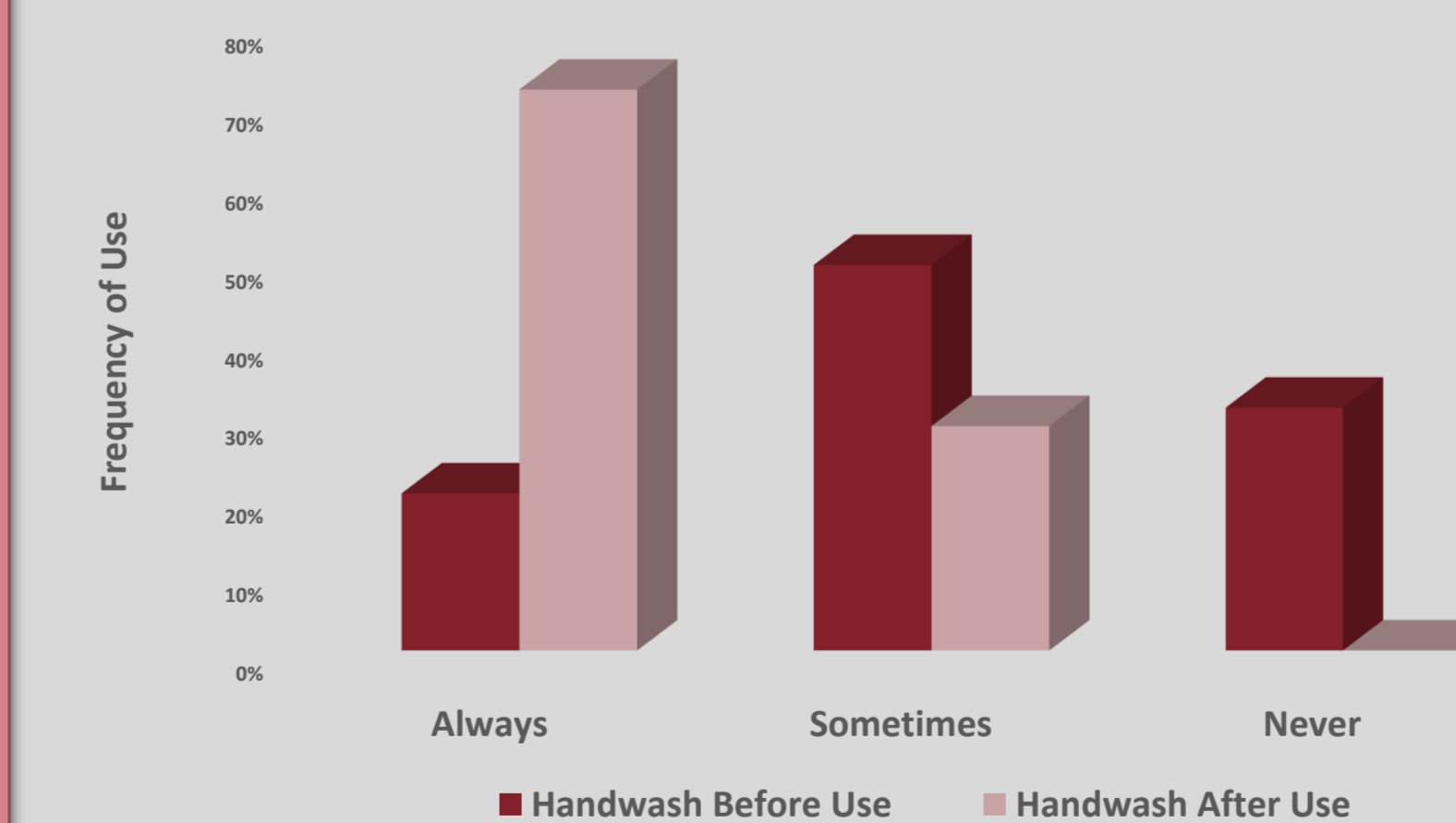
- 80% of participants were aged 18-44 years
- 20% were 45 years and older, 2% were over 65 years
- 60% attended the gym 3-4 times weekly, 25% twice a week.

Are infections acquired from using shared gym equipment?



There is a high level of awareness of infection risks in gyms among the participants. However, inconsistencies in some of their gym habits, such as seldom compliance in hand hygiene between gym use, varying decontamination and self protection practices pose potential risk of an infectious outbreak occurring in the gym.

Hand Hygiene Hand Washing or Hand Sanitiser Use



Gym users demonstrate a greater adherence to handwashing practices after gym use, rather than before gym use. The practice is consistent with the theory of planned behaviour showing gym users adopt self directed and self motivated behaviour.



Towel use is common in the gym, however awareness about the use for self protection appears inconsistent.



Decontamination practices are regularly maintained by at least 50% of gym users. However, results indicate that further awareness is required within the fitness industry to reduce the potential infection risk of environmental transmission from gym equipment.

Conclusions

With a growing threat of CA-MRSA, infection risk management has a widened scope and now includes atypical areas in the community. This study highlights the need for increased awareness of and compliance with hand hygiene and decontamination strategies in fitness environments similar to those practiced in health care settings.

Future Directions

Studies investigating specific microbial ecology of gym surfaces in New Zealand with microbiological identification via swab cultures of gym surfaces can aide in understanding infection risks specific to New Zealand.