

“The ones on your side”: co-creating social robotics with children living with anxiety.

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Children want to use anxiety-ready social robots to manage symptoms



Background

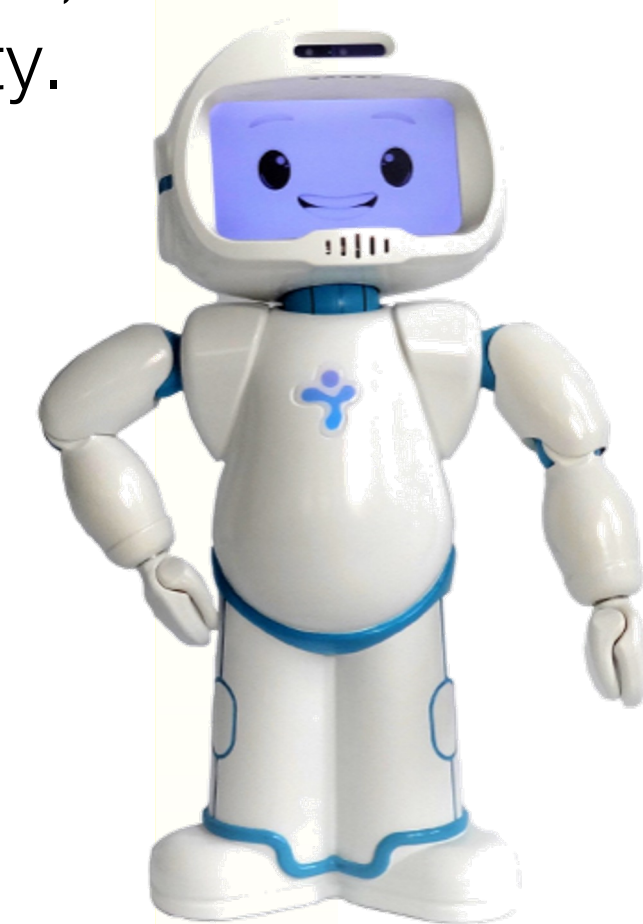
Social robots are promising tools in children’s healthcare [1,2,3]. These small characters adopt a variety of forms and functions to socially interact with the user. More than 20 social robots are commercially available for children and families [4].

However, social robots are often designed by experts without focusing on the experiences and outcomes that are important to end-users [3,5].

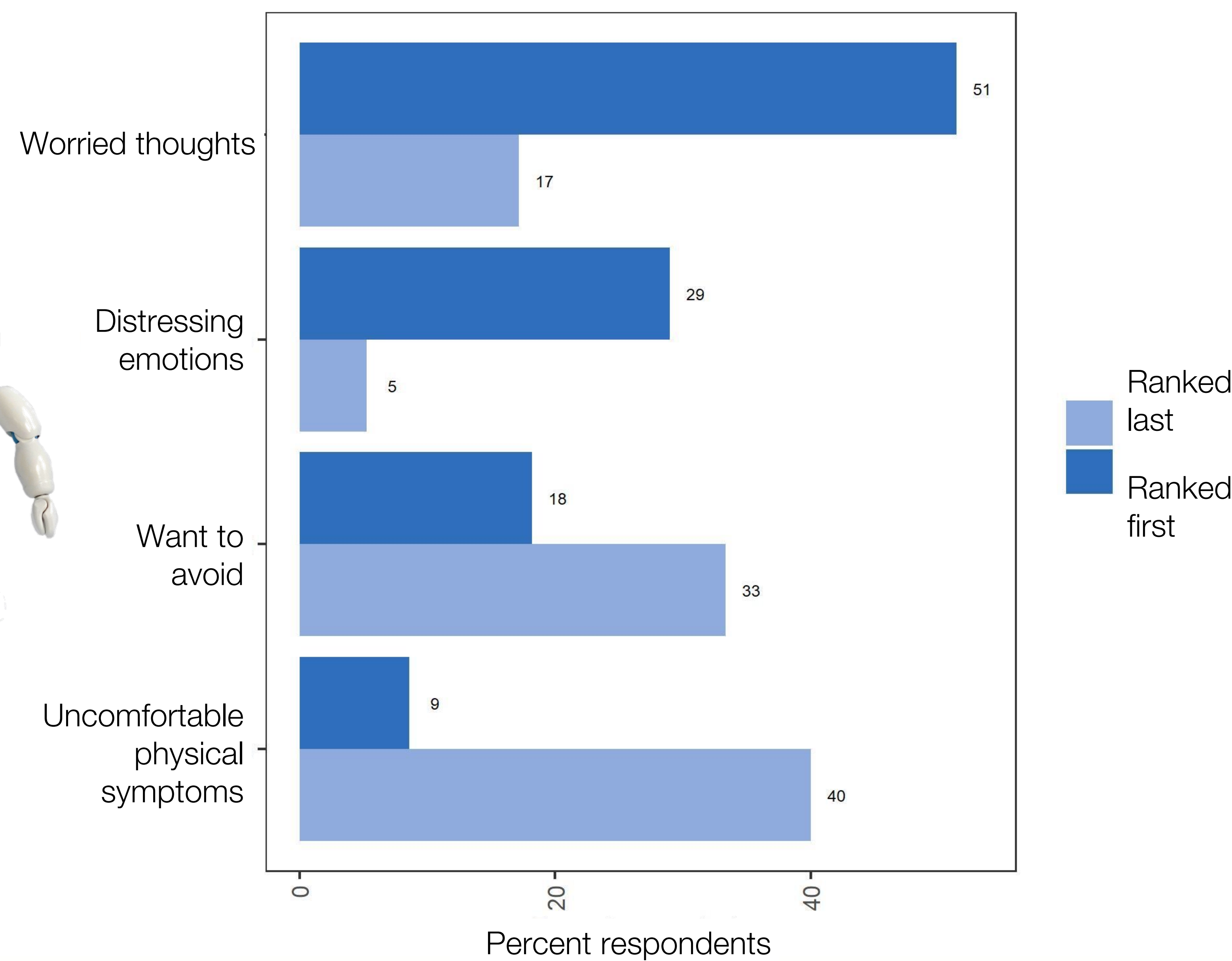
We explore design features, application areas, and emotional functionalities of social robots for use in paediatric anxiety care, from the perspective of children and families living with anxiety.

Methods

Established a Lived Experience Expert Advisory Group (n=8) ‘The Kid-League’, a panel of advisors with current or past experiences of anxiety. Kid-League members co-designed the workshops & provided feedback on the interpretation of results.



Symptoms of anxiety a social robot could help with



87% would use a social robot today or in the future

64% would be comfortable expressing emotions to a social robot

Anxiety specific forms & functions

Applications

- Managing intrusive or distressing thoughts
- Breathing & calming exercises
- Providing encouragement & support
- Distraction, i.e., suggesting activities, or playing comforting music
- Detecting & responding to user needs, “I would want it to know how I am feeling, so if you do not want to talk, it would know and be able to help you”

Look, feel & emotional display

- Soft, cuddly & pet-like
- Show emotions with facial expressions, sounds, colours & body movements: “snuggle up to you for showing love”
- “The robot should be predictable in its emotions & responses so that it lessens anxiety”

Concerns

- Privacy
- Storage & sharing of data
- Being responsible for the robots’ feelings
- Minimising interactions between people

An anxiety-ready social robot would be:

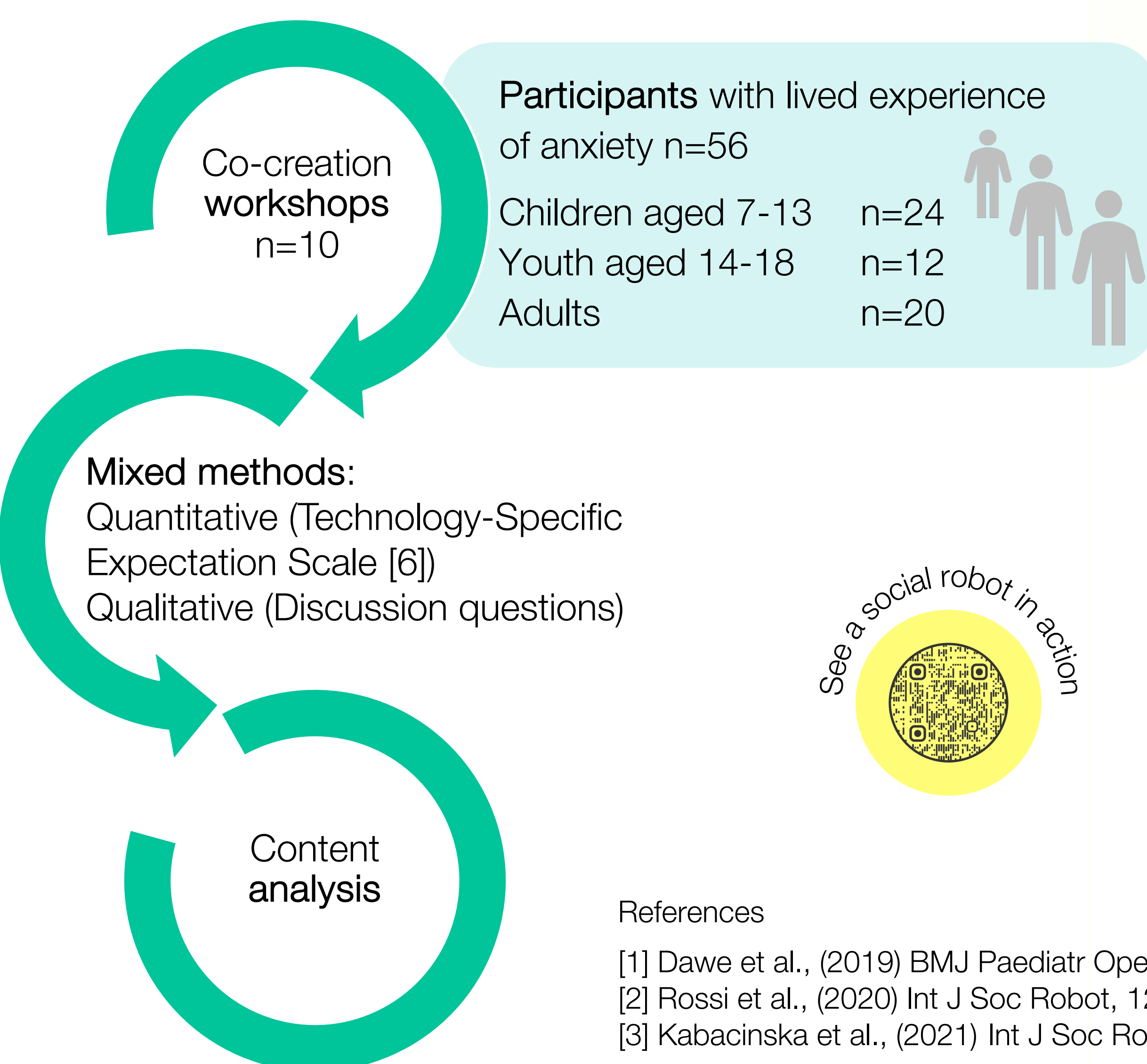
“a safe space for sharing feelings”

“a tool to help bring [your emotions] back to center”

“a physical comfort”

Conclusions

- We reveal key applications and considerations of social robotics for pediatric anxiety, especially around emotional display, and customisability.
- Findings will facilitate the development of patient-informed, effective, and ethical social robotic interventions for children both in a hospital setting and at home.



References

- [1] Dawe et al., (2019) BMJ Paediatr Open, 3
[2] Rossi et al., (2020) Int J Soc Robot, 12
[3] Kabacinska et al., (2021) Int J Soc Robot, 13
[4] Dosso et al., (2023) in prep.
[5] Alves-Oliveira et al., (2022) Front Robot AI, 9
[6] Alves-Oliveira et al., (2015) Social Robotics

Acknowledgements

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