

The use of an augmented reality app to support an exercise intervention for children and young people with cancer: perspectives of users and healthcare professionals in the FORTEe trial



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INTRODUCTION

- Technological innovations are increasingly used to enhance supportive care in paediatric oncology, offering new ways to promote engagement and motivation in exercise-based interventions [1-2].
- The FORTEe European randomised controlled trial [3] evaluated an augmented reality (AR) app designed to support exercise participation among children and young people with cancer (CAYA).

METHODS

- CAYA (aged 9-21 years) and exercise and healthcare professionals from six European centres participating in the FORTEe technology sub-study were eligible.
- The AR app was designed to support exercise during home-based sessions, while allowing flexible use across settings. Features included personalised programmes, child-friendly avatar demonstrations, and an integrated exercise diary.
- Half-structured interviews were conducted with CAYA, and an anonymous online survey was completed by exercise and healthcare professionals.



RESULTS

- Feedback from 46 CAYA (mean age 13.6 ± 2.7 years, 39% female) and 31 exercise and healthcare professionals [4]

- 1 CAYA enjoyed being able to use the app at home and use it with family members.
- 2 The technology felt tailored to young cancer patients, increasing confidence in using the app.
- 3 Technical difficulties sometimes impacted reliability of AR features, e.g. time for avatar to appear or appearing in strange locations.
- 4 Additional gamification elements, challenges and avatar customisation were suggested for future development.
- 5 The AR app could be a useful addition to exercise programmes but should not replace face-to-face support.



“It was cool that I could take it home so I could use it with my sister” (Age 9)

“It feels tailored for cancer patients which increases confidence in using an app” (Age 17)

“Sometimes the avatar could not be found or was in very strange positions” (Age 10)

“It needs more game and challenges [for example], if you do this training you earn a pair of shoes [for the avatar]” (Exercise professional)

“I would recommend the AR as an addition to an exercise programme. However, I do not think that the app should replace any face-to-face provision” (Exercise professional)

CONCLUSION

The findings highlight the potential of AR to enhance participation in paediatric oncology exercise programmes and suggest that future tools should focus on improving reliability of AR features, increasing customisation and gamification, and ensuring the app complements rather than replaces face-to-face support. These insights will guide the development of more effective, child-centred digital interventions in healthcare.

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