

The creative use of technology for distraction

Isobel Manning, Susie Hall, Victoria Jones, Vincent Harding, George Mellor, Martin Thompson,
Julie Bayliss, Lisa Shipway, Naomi Oldrieve, Anna Williams, Faith Gibson, Kate Oulton

Introduction

Children and young people are one of the biggest user groups of mobile technology, with many digital applications known to have a positive impact on their development in education and health. Digital technology should be effectively harnessed by healthcare professionals in order to provide innovative and relevant 'tools' that aid communication and preparation for procedures.

The Blood Quest application for the i-Pad (currently in development) is one such tool that aims to use digital technology to prepare children (7-11 years) for blood tests and provide an engaging distraction during the blood testing procedure.

This project builds on the outcomes from a collaborative research study led by the GO Create! arts programme and the Centre for Outcomes and Experience Research in Children's Health, Illness and Disability (ORCHID) at Great Ormond Street Hospital (GOSH), supported by Roald Dahl's Marvellous Children's Charity and the Burdett Nursing Trust.

In this study novel methods of information-giving combined with creative distraction techniques were shown to have a positive effect on the experience of children having their blood tested. A game was developed with children and the Blood Quest App brings together the learning and creative elements trialled, and allows us to explore the potential of 'digital distraction'.

Thank you to all participating families!



Needle related procedures are one of most frightening and upsetting parts of receiving medical treatment and being in hospital.

Background

Venepuncture for blood sampling is one of the procedures most feared by children (Carlson et al. 2000). It can be an especially distressing experience for patients who often need to have their blood taken on multiple occasions. A systematic review found strong evidence that distraction is effective in reducing pain and distress in children (Uman et al. 2013).

In practice, distraction is not always possible, for example in an emergency situation, where there is a lack of time to spend with children prior to or during the procedure or in some hospitals, a shortage of distraction aids available. In many cases, children are so acutely unwell that there is no time to prepare them for venepuncture. To our knowledge, no studies have focused on developing a preparation tool by children for children that does not have to be delivered by staff.

Methods

Phase 1

Arts-based workshops and one-to-one sessions with children on an oncology ward, exploring the importance of blood within the body, its role in medical conditions and why blood tests are needed.

A printed resource was developed based on ideas explored with children.

Sample: 7 hospitalised children aged 4-12 years with non-malignant haematological conditions and recent experience of having their blood taken.



Phase 2

Fifteen children aged 7-12 years played the game/resource before having their blood taken and answered questions about their experience.

All children found the game fun and reported having learnt something new about blood. A suggested improvement was to develop the 'game' element further so that children could benefit from playing it more than once.

Children wanted the 'tool' to be a game they could play before having their blood taken, both at home and in the hospital.

Phase 3

The hospital as a whole is moving to a 'tablet' model to replace the current Patient Bedside Entertainment System, and i-Pads will be available to all patients at the bedside. We explore the potential of digital distraction as a way of incorporating some of the suggestions made by families.

A 'Wire-Frame' was created to outline the potential functionality of a mobile Application. This was shared with pupils from the Children's Hospital School at GOSH and their feedback was used for further refinement.



Aims

Develop a 'tool' to prepare children for having their blood taken

Evaluate the 'tool' in an in-patient and out-patient setting

Provide a distraction for children during the blood testing procedure

Create a tool that is free and accessible

Create a tool that requires minimal staff input

Outcomes

App available for testing in August 2015

First App developed for children at GOSH

App available to use with hospital-wide 'tablet' model, which will support visitors who do not have their own devices

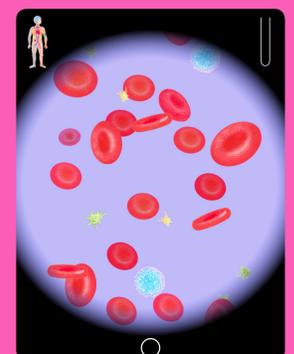
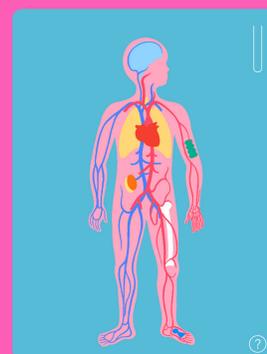
App free to download from the Apple Store for other healthcare organisations to use

BLOOD QUEST

Using expertise from the arts and humanities to co-create digital distraction and preparation opportunities that respond to the specific needs of hospitalised children, the Blood Quest App for the i-Pad will provide visually appealing and imaginative explanations that help answer some of concerns children have about blood tests. Our target audience are children between 7 - 11 years, but we are keen to trial the App with other age groups.

Used at home or in hospital, Blood Quest will offer a variety of opportunities for learning and interaction that were shown to be of interest to the target age group in our initial research. Children can explore facts about the blood and the circulatory system prior to having their blood taken with the help of engaging visuals created by illustrator George Mellor. The functionality of the App has been developed by Vincent Harding at award-winning Health Creatives (UCL), with sound design by Martin Thompson.

A key feature of the App is a game, designed to be used by children during a blood test procedure with levels and play that will be familiar to young people. Interest is held by working progressively through levels of increasing difficulty.



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