



Formative quality improvement trial: Leveraging humanoid robots to support coping, cooperation, and resilience of paediatric patients in the operating room

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Description

Literature suggests that engaging paediatric patients in therapeutic child life intervention to promote control of autonomy, mastery, increase self-esteem, provide opportunities for self-expression and social connectedness increases resilience and coping and cooperation during medical procedures such as induction in the Operating Room and facilitates a more positive hospital experience for paediatric patients and their families.

Humber River Hospital is leveraging a humanoid robot to support paediatric patients and their parent/guardian in the operating room with enhanced preparation and teaching, additional procedural support, distraction and comfort for anaesthetic along with parental presence for induction.

Aim

Pilot using a humanoid robot in the operating room to support therapeutic Child Life interventions.

Actions Taken

- A pilot was conducted during February-September 2018
- Patient/parent feedback was collected through a de novo questionnaire
- The healthcare team used a humanoid robot (Pepper) to:
 - » normalize the hospital experience and make it fun
 - » prepare and practice opportunities for induction
 - » role play with hospital equipment for comfort/familiarity

Summary of Results

Pepper has been used with n=515 paediatric surgical patients and in the OR n=115 times during the pilot. Structured assessments performed by Certified Child Life Specialists illustrate the use of a humanoid robot reduced children's anxiety and stress, increased coping and enhanced the patient experience (Figure 1 and 2).

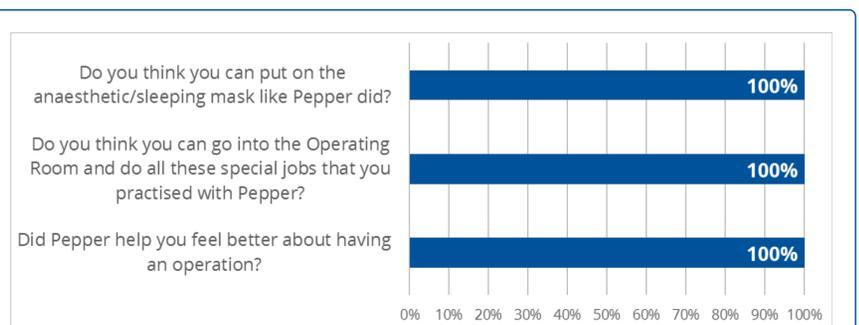


Figure 1. Patient/parent feedback

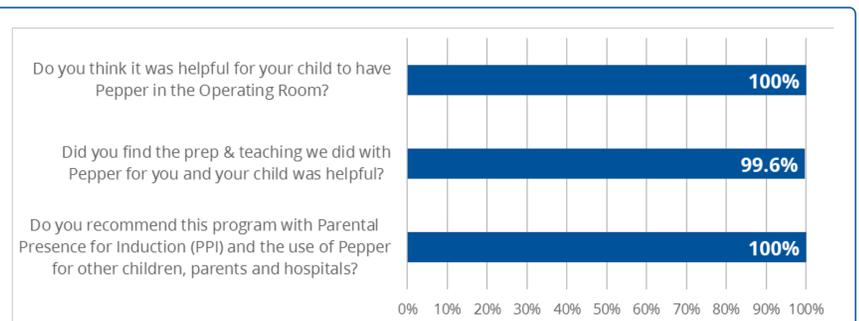


Figure 2. Patient/parent feedback

No.	Type of Interaction with Pepper
1	Holding Pepper's hand stationary
2	Touching Pepper's head
3	Talking to Pepper first and laughing
4	Putting their forehead on Pepper's forehead
5	Pulling Pepper by the hand to walk to the OR
6	Staring into Pepper's eyes
7	Giving Pepper a hug

Table 1. Most common interactions with Pepper for all children

