



Development and Evaluation of a Preoperative Preparation Program for Parents of Children Undergoing Fontan Surgery

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BACKGROUND

- Fontan operation is performed at 2-4 years of age among children with a univentricular heart
- Prior research by our team identified parent's perspectives of major challenges post Fontan:
 - psychological **distress**
 - prolonged** pleural drainage resulting in lengthy hospitalizations
 - unexpected** postoperative anticoagulation
- Many parents feel unprepared for these challenges^{1,2}
- Preoperative preparation programs for pediatric surgery have been shown to reduce:
 - Parent anxiety³
 - Postoperative maladaptive behaviours among children⁴
- There is a paucity of online resources to help parents prepare themselves and their child for Fontan surgery
- Objective:** To develop and evaluate a video-based online teaching program for parents to address these challenges

METHOD

- Single-center mixed-methods cluster randomized controlled trial of an educational intervention vs. control
- The educational intervention consisted of three brief (~5 minute) professionally-developed whiteboard videos, available to parents online from the time of enrolment in the preadmission clinic to 1 month postoperatively
- Each video addressed one of the unique post-Fontan challenges described above
- Primary outcome: Parent's State Trait Anxiety Inventory (STAI)-State score 1-week post-surgery. Range of scores is 20-80 with higher scores indicating greater anxiety⁵
- Secondary outcomes:
 - parent STAI-State score 1-month postoperatively,
 - child's Post Hospital Behavior Questionnaire (PHBQ) score 1 week and 1 month postoperatively (possible range 27-135),
 - parent feedback on the videos, including semi-structured interviews

RESULTS

- 26 children (13 females) and one parent per child; 16 intervention
- Mean STAI-State scores did not differ significantly between intervention vs. control at 1 week or 1 month postoperatively (Table 1)
- PHBQ scores were in the maladaptive range (>81) but did not differ between study groups (Table 2)

	Intervention Mean (SD) N=16	Control Mean (SD) N=10	p-value
Preadmission (N=26)	51.3 (6.3)	55.9 (5.8)	0.07
1 week postoperatively (N=24)	52.8 (6.5)	55.5 (3.9)	0.25
1 month postoperatively (N=21)	50.9 (6.7)	53.9 (3.9)	0.25

Table 1: State Trait Anxiety Inventory

CONCLUSIONS

- An online video-based intervention program did not impact STAI-State scores or PHBQ scores
- The majority of parents agreed that the videos were helpful, particularly when their child was 1-month post-surgery
- Pre-operative preparation needs to begin before pre-admission clinic appointment
- Qualitative findings will inform future educational video development for parents of children undergoing cardiac surgery

	Intervention Median (IQR) N=16	Control Median (IQR) N=10	p-value
Child's PHBQ total score			
1 week postoperatively (N=24)	88 (82 – 93)	87 (80 – 94)	0.81
1 month postoperatively (N=21)	83 (69 – 84)	85 (81 – 90)	0.30

Table 2: Post Hospital Behavior Questionnaire

- Pre-operatively, 71-86% of parents agreed or strongly agreed that the videos were helpful; 89-100% of parents agreed or strongly agreed that the videos were helpful by 1-month postoperatively (Table 3)
- Intervention group parents who were interviewed generally agreed that the videos would be of more benefit if they offered "more detail" and were provided earlier in the pre-operative preparation process
- Participants recognized the primary intent of the videos as being a method for standardizing information provided to parents

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Statement	Proportion of parents who "Agreed" or "Strongly agreed"	
	Pre-operatively (%)	1-month postoperatively (%)
"The video about psychological distress was helpful"	71	100
"The video about prolonged pleural drainage was helpful"	79	89
"The video about postoperative anticoagulation was helpful"	86	89

Table 3: Parent Feedback

DISCLOSURE

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