



Impact of Medical Play on Neurotypical Patients during Dental Care

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Background

- Medical play is a therapeutic intervention by a Certified Child Life Specialist (CCLS) uses props that mimic medical instruments to engage children in play before, during, or after healthcare encounters.
- The purpose of this prospective, randomized controlled trial was to investigate the efficacy of medical play in improving the behaviors or cooperation of patients for dental examinations.
- The aim of this study was to determine preoperative anxiety in the children and evaluate their behavior and cooperation levels for dental examination and prophylaxis after medical play (test) or recreational play (control) intervention.

Methods

- This single-blinded, clinical trial was approved by the University of Colorado's Institutional Review Board that recruited neurotypical patients (ages 5-10 years) with previous uncooperative behavior during dental procedures were screened and offered study participation.
- After consent, subjects were randomized into two arms: medical (MP) or recreational play (RP)
- Play sessions were facilitated by CCLS with pre- and post-intervention validated survey.
- The caregivers completed Dental Behavior Assessment (DBA) pre-survey and post-visit survey assessing their child's behaviors.
- The subjects rated their perceived well-being before and after the dental visit.
- The provider recorded patient behavior and levels of cooperation throughout appointment.
- Clinical Trial Registration ID NCT05571423

Results

Patient Survey (Improvement)	RP (n=20)	MP (n=20)	Total (N=40)	P value
Likes going to the dentist	5 (25.0%)	6 (30.0%)	11 (27.5%)	1.0
Likes getting teeth checked	9 (45.0%)	7 (35.0%)	16 (40.0%)	0.75
Likes getting teeth cleaned	7 (35.0%)	3 (15.0%)	10 (25.0%)	0.27

Table 1: Pre-intervention patient surveys

Parent post-survey Questions (Response: Yes)	RP (n=41)	MP (n=41)	Total (N=82)	P value
Childs behavior improved	38 (92.7%)	36 (87.8%)	74 (90.2%)	0.71
Intervention was helpful	38 (92.7%)	40 (97.6%)	78 (95.1%)	0.62
Want same intervention for future	30 (73.2%)	36 (87.8%)	66 (80.5%)	0.03

Table 2: Pre- to post-intervention improvement in parent responses surveys

Blinded provider post-survey	RP (n=41)	MP (n=41)	Total (N=82)	P value
Frankl Behavior Rating Score:				0.67
1: Definitely negative	2 (4.9%)	3 (7.3%)	5 (6.1%)	
2: Negative	8 (19.5%)	9 (22.0%)	17 (20.7%)	
3: Positive	27 (65.9%)	22 (53.7%)	49 (59.8%)	
4: Definitely positive	4 (9.8%)	7 (17.1%)	11 (13.4%)	
Prophylaxis Difficult	19 (46.3%)	18 (43.9%)	37 (45.1%)	1.00
Dental Exam Difficult	11 (26.8%)	11 (26.8%)	22 (26.8%)	1.00
Fluoride Difficult	13 (31.7%)	13 (31.7%)	26 (31.7%)	1.00

Table3: Masked provider post-intervention surveys evaluating patient behavior and ability to complete procedural steps

Discussion

- Eighty-two children were recruited for the study with each group consisting of 41 patients.
- A major proportion of patients reported that they did not like to go to a dentist or get their teeth checked or cleaned.
- A higher proportion of parents reported that medical play improved their child's behavior or was helpful during dental visit, but the difference was statistically insignificant.
- A significantly higher proportion of parents wanted medical play for their child's future dental visit.
- There was no significant different between the proportion of children marked Frankl 3 or 4 between the study groups by a masked provider.
- A blinded provider found no statistically significant difference in hygiene task completion between the two study arms.

Conclusions

- Due to the low statistical power and effect size, the differences between medical and recreational play groups were non-significant.
- Medical play is a promising behavior intervention tool to positively shape child's behavior during dental care to help reduce procedural anxiety.

References and Acknowledgements

- Statistical analysis was provided via support from the Center for Research Outcomes in Children's Surgery (ROCS), Children's Hospital Colorado, Aurora, CO.
- References available upon request