

BACKGROUND

- Silver Diamine Fluoride (SDF) is a clear liquid applied to teeth to arrest caries in both primary and permanent teeth
- SDF causes permanent black staining of treated tooth surface with caries due to oxidation of silver ions after application which has received poor parental acceptance due to esthetic reasons
- There has been a paradigm shift toward preventative dentistry and renewed interest in its quick, painless and easy application
- The purpose of this study was to evaluate primary caregivers' acceptability of SDF as a treatment option for Early Childhood Caries (ECC) compared with commonly available traditional treatment

METHODS

Survey data were collected from 104 primary caregivers of a child seen at the Dental Clinic at the Children's Hospital Colorado on their perceptions related to SDF treatment. The survey also included items on demographics, dental history of the child, and concerns regarding dental treatment and was collected electronically through REDCap. The Chi-Square test or Fisher's exact test was used to compare the proportions between the groups. Univariate and multivariable analysis was conducted to evaluate the acceptability of SDF with independent variables.

RESULTS

Table 1: Caregiver Acceptability of SDF vs Traditional Dental Treatment				
Treatment Type	Overall	Hispanic	Non-Hispanic	
Traditional				0.1253
Unfavored	67 (64.4%)	48 (69.6%)	19 (54.3%)	
Neutral	11 (10.6%)	8 (11.6%)	3 (8.6%)	
Favor	26 (25.0%)	13 (18.8%)	13 (37.1%)	
SDF Overall				0.7698
Unfavored	28 (26.9%)	19 (27.5%)	9 (25.7%)	
Neutral	5 (4.8%)	4 (5.8%)	1 (2.9%)	
Favor	71 (68.3%)	46 (66.7%)	25 (71.3%)	
SDF Anterior				0.2247
Unfavored	37 (35.6%)	27 (39.1%)	10 (28.6%)	
Neutral	7 (6.7%)	6 (8.7%)	1(2.8%)	
Favored	60 (57.7%)	36 (52.2%)	24 (68.6%)	
SDF Posterior				0.9916
Unfavored	23 (22.1%)	15(21.7%)	8 (22.9%)	
Neutral	6 (5.8%)	4 (5.8%)	2 (5.7%)	
Favored	75 (72.1%)	50 (72.5%)	25 (71.4%)	

Table 2: Multivariable Modeling on Factors Associated with Acceptance of SDF on Front Teeth				
Parameter	Estimate	Standard	Pr > t	R-Square
		Error		
Intercept	22.68	4.06	<.0001	0.223
Parentage	-0.06	0.05	0.2444	
Female	-5.64	2.30	0.0160	
Male	0.00			
White	-1.04	2.18	0.6353	
Black	-2.48	1.89	0.1929	
Hispanic	-2.19	1.37	0.1143	
All Others	0.00			
Concern for Local Anesthesia	0.45	0.45	0.3187	
Concern for Drill	0.55	0.42	0.1999	
Concern for Staining	-0.85	0.34	0.0157	
Hx of Dental Tx	0.83	0.95	0.3879	
Concern for Being Away from Work	-0.62	0.33	0.0603	
Table 3: Multivariable Modeling on Factors Associated with Acceptance of SDF on Posterior Teeth				
Parameter	Estimate	Standard	Pr > t	R-Square
		Error		
Intercept	28.76	4.33	<.0001	0.168
Parentage	-0.08	0.05	0.1493	
Female	-4.19	2.18	0.0586	
Male	0.00			
White	-0.82	2.10	0.6978	
Black	-1.37	1.82	0.4548	
Hispanic	-0.54	1.32	0.6825	
All Others	0.00			
Concern for Local	0.40	0.43	0.3526	
Concern for Drill	0.32	0.40	0.4282	
Concern for Staining	-0.44	0.35	0.2081	
Concern for Re-Retreatment	-0.54	0.35	0.1278	
Hx of Dental Pain	-1.51	0.65	0.0227	
Concern for Being Away from Work	-0.28	0.31	0.3806	

CONCLUSIONS

Out of the participants, 25% of primary caregivers were in favor of traditional treatment, while 68% of primary caregivers were in favor of SDF treatment overall. Of the primary caregivers who were in favor of SDF treatment, 58% accepted SDF treatment on the front teeth and 72% accepted SDF treatment on back teeth.

Increase in worry of having dark teeth decreased SDF acceptance overall (P= 0.0065), in the front (P=0.023) and the back (P=0.108). Caregivers with minimal history of tooth pain or no history of tooth pain for the child had decreased SDF acceptance overall (0.0107) and in the back (0.0403). Decreased or no dental treatment experience correlated with increased acceptance of SDF in front, although it was not significant. Increased concerns regarding the use of a drill increased acceptance of SDF in the front (0.045)

DISCUSSION

This cross-sectional study showed that the majority of caregivers were in favor of SDF compared to traditional treatment offered in the dental clinic. Its acceptability may be influenced by history of dental pain, dental treatment, and concerns regarding use of a drill. There were no significant demographic correlation to acceptability of SDF. With increased awareness of the benefits of SDF by caregivers and knowledge on factors that influence parents, providers can further advocate towards a preventative and conservative approach against ECC