



COMPARISON OF TOOTH BRUSHING HABITS OF IVF AND SPONTANEOUSLY CONCEIVED CHILDREN – A CROSS SECTIONAL STUDY

Dental Science

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ABSTRACT

In-vitro fertilization is one of the modern treatment modalities to treat infertility but it may induce some risk factors like multiple births, premature delivery and low birth weight, birth defects etc. Moreover recurrent IVF procedures may cause financial, physical and emotional stress. But the parents of IVF children are more concerned to their beloved child. So oral hygiene cares are one of the most important parts of their life style. Tooth brushing habits become established during the first years of childhood and last throughout lifetime.

Aims : Aim of the study is to compare the tooth brushing habits of IVF children and spontaneously conceived children of same age group.

Methods : A random sample of 2 – 5 years old IVF children and spontaneously conceived children were included in the study. Duration of brushing frequency and frequency of brushing assistance both group of children were analyzed with statistical analysis.

Results : Statistically significant relationship was found between two groups in some arena of study.

Conclusion : Through the obtained data, the present study shows that IVF children are better than spontaneously conceived children in the studied aspects.

KEYWORDS

in vitro fertilization, brushing, frequency, children

INTRODUCTION

Tooth brushing habits are helpful in maintaining the oral health status of an individual lifelong. It is established during the early years of childhood. The aim of this study was to describe the tooth brushing characteristics and oral hygiene habits of high caries experience and risk in 2–5 year-old IVF and Spontaneously Conceived Children through questionnaire.

MATERIALS AND METHODS

The present study was a cross-sectional study, approved by the Ethical Committee of JIS University, Kolkata. A random sample of 2 – 5 years old IVF children and spontaneously conceived children were included in the study. Duration of brushing frequency and frequency of brushing assistance of both group of children were evaluated properly. The children in both case i.e. IVF and control i.e. spontaneously conceived groups based on the route of pregnancy were enrolled for the study. Specific inclusion criteria of sample selection for the present study were - (a) child must be of 37–42 weeks gestational age, (b) family should have medium and high socioeconomic condition (c) singleton babies were preferred for the study (d) only first children were selected for the current study. Exclusion criteria were – (a) children having genetic syndromes and chromosomal abnormalities, (b) congenitally malformed children, (d) children having severe asphyxia, (c) parent having a history of multiple pregnancies were excluded from the present study. Confounding variables of this study were different behavioral pattern of individual, different social upbringing different food habits, and variation in parental care. Case and control studied individuals were matched for the maternal weight, maternal age, gestational age, socioeconomic status area of residence and year of birth. The study was conducted after informed consent was procured from the concerned authorities and respective guardians of children. A total of 342 parents of studied samples were approached to participate in the current study. Out of total sample size, the parents of 169 spontaneously conceived children 107 IVF children were agreed to participate in this research work. To exclude inter-observer error all examination and documentation procedure were made by a trained single examiner who was not informed about the birth status of present studied samples. Informed consents were collected from the parents all data were collected properly. Statistical analysis was done by Chi-square test or Z-tests.

RESULTS:

Among 107 IVF children 59.81% were male and 40.18% were female and among 169 Spontaneously Conceived Children 63.31% were male and 36.68% were female (Table 1) When observing brushing frequency, less than once a day/seldom or never the value of z is NaN. The value of p is < .00001. The result is significant at p < .05. When observing brushing frequency once a day the value of z is 2.7589. The value of p is .00578. The result is significant at p < .05. When observing brushing frequency twice a day the value of z is 7.7088. The value of p is < .00001. The result is significant at p < .05. during observation of brushing frequency more than twice per day. The value of z is 1.8849. The value of p is .0601. The result is not significant at p < .05 (Table 2-4)

Table 1 : Distribution of IVF Children and spontaneously conceived children according to sex.

Type of Delivery	Male		Female		Total	
	No.	%	No.	%	No.	%
IVF Children	64	59.81	43	40.18	107	100
Spontaneously Conceived Children	107	63.31	62	36.68	169	100
Total	171	61.95	105	38.04	276	100

Table 2 : Duration of Brushing frequency in IVF children

Brushing frequency	IVF Children					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Less than Once a Day/Seldom or Never	0	0	0	0	0	0
Once a Day	18	85.71	3	14.28	21	19.62
Twice a Day	37	52.11	34	47.88	71	66.35
More than Twice per day	9	60.00	6	40.00	15	14.01
Total	64	59.81	43	40.18	107	100

Table 3 : Duration of brushing frequency in spontaneously conceived Children

Brushing frequency	Spontaneously Conceived Children					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Less than Once a Day/Seldom or Never	8	57.14	6	42.85	14	8.28

Once a Day	74	67.88	35	32.11	109	64.49
Twice a Day	17	50.00	17	50.00	34	20.11
More than Twice per day	8	66.66	4	33.33	12	7.10
Total	107	63.31	62	36.68	169	100

Table 4 : Statistical comparison of brushing frequency in IVF and spontaneously conceived Children

Brushing Frequency	IVF Children	Spontaneously Conceived Children	P value	Z value	Statistical Result
Less than Once a Day/Seldom or Never	0	14	< .00001	NaN	Significant at p < .05.
Once a Day	21	109	.00578	2.7589	Significant at p < .05.
Twice a Day	71	34	< .00001	7.7088	significant at p < .05
More than Twice per day	15	12	.16152	1.4037	not significant at p < .05.

Table 5 : Frequency of brushing assistance in IVF Children

Brushing assistance	IVF Children					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Assisted	53	56.38	41	43.61	94	87.85
Not Assisted	11	84.61	2	15.38	13	12.14
Total	64	59.81	43	40.18	107	100

Table 6 : Frequency of brushing assistance in Spontaneously Conceived Children

Brushing assistance	Spontaneously Conceived Children					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Assisted	84	69.42	37	30.57	121	71.59
Not Assisted	23	47.91	25	52.08	48	28.40
Total	107	63.31	62	36.68	169	100

Table 7: Statistical comparison of brushing assistance in IVF and spontaneously conceived Children

Brushing Assistance	IVF Children	Spontaneously Conceived Children	P value	Z value	Statistical Result
Assisted	94	121	.00152	3.1706	significant at p < .05.
Not Assisted	13	48	.00152	-3.1706	significant at p < .05.

During observation of frequency of brushing of brushing assistance we found in the category of assisted brushing the value of z are 3.1706. The value of p is .00152. The result is significant at p < .05. During observation of non assisted brushing the value of z is -3.1706. The value of p is .00152. The result is significant at p < .05 (Table 5-7).

DISCUSSION :

The birth of first ever in-vitro fertilized child (IVF child) occurred in Oldham, England in the year 1978 on July 25th as a the result of the collaborative work of two innovative personality - Dr. P. Steptoe and Dr. R. Edwards.^[1] On 3rd October 1978 'Durga' was born as a result of untiring effort advocated by Dr. S. Bhattacharya and Dr. Subhas Mukherjee^[2] in Kolkata, West Bengal- world's 2nd test tube baby. Brushing with fluoride toothpaste twice daily is always associated with better oral health behaviour for children than brushing once daily 1998^[3] British Association for the Study of Community Dentistry widely recommended this for the betterment of children's oral health 2009^[4]. Studies suggest that high levels of maternal anxiety, poor maternal self-efficacy for brushing children's teeth, little naughty – not allowing to brush their teeth properly may be associated with poorer oral health and hygiene.^[5-7]

This study was probably the first study on which demonstrates tooth brushing habits of IVF children of West Bengal. The results reflect statistically significant betterment in tooth brushing habits in IVF children group. The results also reflect that parents of IVF children are also more concerned about their beloved child and provide necessary care to their children. No previous study is found involving IVF children in this new field of research. Hence, no comparison is presently possible with the previous study.

CONCLUSION :

In the present study, IVF children exhibiting healthy brushing pattern than spontaneously conceived children. IVF children are considered better than spontaneously conceived children when studied in relation to tooth brushing habits. This study invites further cross-sectional and longitudinal studies with larger sample size for better realization of the oral health status of IVF children.

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