

Predictors of Adherence to Treatment Recommendations for Positional Skull Deformity in Infants

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Introduction

The WHO defined that adherence is "the extent to which a person's behavior corresponds with agreed recommendations from a health care provider. " The study aims to understand factors associated with adherence to initial recommended treatment among pediatric patients with positional skull deformity.

Methods

adherence.

We aimed to review our institutional experience (2008-2014) in treatment of positional plagiocephaly to explore factors associated with adherence to recommended treatment. A retrospective chart review was conducted. Reported adherence was recorded. Univariate and multivariate analysis was used to assess the impact of patient clinical and demographic characteristics on

99	Total Screened in head shape clinic
	Inclusions: Diagnoses: Occipital Brachycephaly, Occipital Plagiocephaly, and patients with both diagnoses; Age: 0-11 months
48	Excluded 245 with other diagnoses, and 6 Age > 11 months
2	With recommended treatment plan: HM, RP/PT, RP/PT/HM
	Excluded 61 patients without recommended treatment plan
ļ	Potients received treatment: UM_DD/DT_DD/DT/UM
	Excluded 142 did not follow initial recommended treatment, 107 of 142 patients did not return for follow up after initial appoint.
1	Complete treatment

Results

991 patients age <12 months presented to the Texas Children's Hospital Head Shape Deformities Clinic from 2008-2014. According to our age- and risk-factorbased treatment algorithm, patients were recommended for repositioning(RP), physical therapy(PT), or helmet therapy(HM).

85.7% patients were adherent to initial recommended treatment. Average age at presentation was 6.2 months. 40.7% were white and 32.6% Hispanic. The proportion of private insurance to public insurance was 51.7%, 38.7%.

Univariate analyses shows difference in adherence rates. Children with public insurance had adherence rate 80.2%, and private insurance, 89.6%. Multivariate logistic regression confirmed factors associated with adherence included primary insurance payer, diagnosis (plagiocephaly versus brachycephaly), and recommended treatment. Patients with public insurance, brachycephaly, and recommended for HM were less likely to be adherent than patients with private insurance, plagiocephaly, and RP/PT treatment.

552(55.7%) patient completed the treatment, confirmed with follow-up appointment at end of therapy. Patients with private insurance (Odds ratio=1.53, 95% Confidence interval 1.10-2.02, p=0.013) and diagnosed with both brachycephaly and plagiocephaly(OR= 2.23, 95% CI 1.31-3.90, p=0.004) were more likely to complete treatment.

Abbreviations: HM: Helmet therapy; RP:Reposition; PT:Physical Therapy; CI: Confidence Interval.

Patient Characteristics By Adherence To Recommended Treatment

Recommended Treatment	Total		Follow		Not follow		P-Value
/ariables	N	%	N	%	N	%	
Corrected Age at present							0.132*
0-4 Months	193	19.5	173	89.6	20	10.4	
>4-6 Months	428	43.2	363	84.8	65	15.2	
7-9 Months	328	33.1	274	83.5	54	16.5	
9-11 Months	42	4.2	39	92.9	3	7.1	
Race							0.060*
White	403	40.7	361	89.6	42	10.4	
Black	41	4.1	35	85.4	6	14.6	
Hispanic	323	32.6	265	82.0	58	18.0	
Asian/Others	67	6.8	56	83.6	11	16.4	
Unknown	157	15.8	132	84.1	25	15.9	
nsurance							0.001*
Public	384	38.7	308	80.2	76	19.8	
Private	512	51.7	459	89.6	53	10.4	
Others	81	8.2	70	86.4	11	13.6	
Unknown	14	1.4	12	85.7	2	14.3	
Diagnosis							0.017*
Brachycephaly	182	18.4	145	79.7	37	20.3	
Both	120	12.1	109	90.8	11	9.2	
Plagiocephaly	689	69.5	595	86.4	94	13.6	
Recommended Treatment							<0.001*
нм	311	31.4	235	75.6	76	24.4	
RP/PT	543	54.8	515	94.8	28	5.2	
RP/PT/HM	137	13.8	99	72.3	38	27.7	

'1':p-value was the results of Chi-square Test or Fisher's exact test (with any cell < 5) *Covariates with p <0.2 at univariate analysis were included in the multivariate logistic model.

Factors Associated With Adherence To Recommended Treatment

Factors	Odd Ratio	Lower 95% Cl	Upper 95% Cl	P-Value
Race				10. 11.
White	Ref = 1			
Black	1.00	0.37	2.68	0.994
Hispanic	0.75	0.45	1.25	0.265
Asian/Others	0.58	0.27	1.27	0.173
Unknown	0.70	0.39	1.26	0.234
Insurance				
Public	Ref = 1			
Private	1.89	1.19	3.00	0.007*
Others	1.49	0.72	3.10	0.281
Unknown	1.86	0.37	9.35	0.453
Diagnosis				
Brachycephaly	Ref = 1			
Both	3.29	1.54	7.00	0.002*
Plagiocephaly	1.87	1.16	2.99	0.010*
Recommended Treatm	ent			
RP/PT	Ref = 1			
HM	0.16	0.10	0.26	<0.001*
RP/PT/HM	0.14	0.08	0.24	<0.001*

*: p<0.05; odds ratio < 1 means less chance to adherence to recommended treatment; Hosmer-Lemeshow goodness of fit test showed logistic model fitted well. 85.67% cases can be correctly classified by using these predicators.

Factors Associated With Treatment Completion 81.3 71.3 80.0 77.8 3.26 1.81 3.61 2.67 0.041* 0.077 0.038* 0.003* 3.50 12.11 5.12 0.94 56.7 1.04 1.43 0.10 2.50 0.58 1.84 2.73 0.21 6.03 0.903 64.1 0.75 0.274 11.2 74.5 0.041* Ref=1 1.11 51.3 57.6 0.79 1.55 0.548 Ref=1 51.3 2.02 2.26 37.94 1.53 1.36 4.11 58.6 1 10 0.013* 0.326 0.76 0.53 Ref=1 2.23 47.8 1.31 3.90 71.7 55.0 0.004 1.24 1.82 0.86 0.246 Ref=1 53.5 62.8 ithin 11.57 miles (Q1 of 1.36 0.95 1.96

*: p<0.05; odds ratio < 1 means less chance of treatment completion; Hosmer-Lemeshow goodness of fit showed model fitted well. 71.92% cases can be correctly classified by using these predicators.

Conclusions

Insurance type, degree of head shape deformity, and treatment were recommended appear to affect rates of adherence to recommended treatments for positional skull deformation.

Learning Objectives

At the conclusion of this session, participants should be able to:

(1) define adherence

(2) describe factors affecting rates of adherence to recommended treatment in positional skull deformity