

SPATIAL IMAGE OF SCHOOL ENVIRONMENT IN CHILDREN WITH CLEFT LIP AND/OR PALATE

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ABSTRACT

To evaluate the adaptability of children with cleft lip and/or palate to school, their mental images of the school environment were investigated in a semantic differential method survey using 23 pairs of adjectives. The following eight places on and off the school grounds were chosen as environmental factors; classroom, gymnasium, school nurse's office, teachers' office, playground, hallway, road leading to school and road leading back home. 50 children with cleft lip and/or palate (ages 10–11 years) were enrolled in this study. These children had a feeling of liberation in the teachers' office and school nurse's office. However, they did not have an established feeling of relaxation or affinity in the classroom, gymnasium, playground, hallway, or on the road to and from school, the very locales that were the main areas of their school activity. This suggested that self-expression and adaptation were difficult for these children.

Key Words: Cleft lip and/or palate, Mental images of school environment, Elementary school, 23 pairs of adjectives

INTRODUCTION

In daily clinical practice, we are often approached by mothers of children with cleft lip and/or palate seeking our advice on their children's maladjustment to school. Passivity, inactivity or ridicule by classmates for a trifling physical feature (e.g., flat nose) are often cited by mothers as causes of their children's maladjustment. Reasons for maladjustment to school may be diverse and complicated. Unless peace of mind and a sense of affinity for the school environment are established, it is well known that lack of adequate self-expression and adaptation make school life difficult. The adaptability of children with cleft lip and/or palate to school environment was evaluated by investigating how educational spaces at and off school grounds were perceived by these children.

MATERIALS AND METHODS

A semantic differential method survey was conducted among 50 primary school children with cleft lip and/or palate in the 5th and 6th grades (ages 10–11 years) who were seen in July and

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The following 8 places were chosen; classroom, gymnasium, school nurse's office, teachers' office, playground, hallway, the roads leading to school and back home, because these places are common to all schools, are closely related to their daily activity and are deemed important from the viewpoint of student guidance.

For children's emotional responses to these spaces, each child filled out a questionnaire containing image items composed of 23 pairs of adjectives.¹⁾

Each item was evaluated using a 5-step sliding scale. The data obtained were analyzed by the semantic differential method.

For the image items at the 8 spatial areas, factor analysis (main factor analysis, varimax rotation) was performed after determining the mean values of the 23 answers, their standard deviations, and the correlation matrixes of the sliding scaled adjectives for the 8 environmental categories combined. For the clustering of the 8 environmental categories, cluster analysis was also performed using the score of each factor.

RESULTS

Analysis of image items

Two factors were derived by factor analysis of the 23 pairs of adjectives (Table 1).

The first factor was named "the factor of the sense of liberation", because a feeling of liberation emerged the following these image items. "interesting – uninteresting", "likeable – unlikeable", "sprints – spritless", "friendly – hostile", "buoyant – depressing", "harmonious – thorny", "refreshed – persistent", "bright – gloomy", "lighthearted – solemn", "happy – unhappy", and "lively – silent".

The major image items relating to the second factor included "clean – dirty", "serious – not serious," "calm – not calm" and "new – old." The second factor was named "the factor of the sense of order", because a feeling of order emerged from these image items.

Factor scores were then determined for the first and second factors, and the factor scores for the 8 environmental categories are shown in Figs. 1 and 2, respectively.

The mean factor score for the sense of liberation (first factor) was high for the teachers' and school nurse's office, and low for the classroom, playground, gymnasium, and the road back home. The mean factor score for the sense of order (second factor) was high for the classroom, road to school, road back home, and hallway, and was low for the teachers' and school nurse's office.

Table 1

		Subject		
		5th grade	6th grade	Total (no)
type	elementary school	13	16	29
		9	12	21
Total (no)		22	28	50

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Table 2 Main factor analysis of 23 adjective pairs

				(varimax after)	
				Cleft lip and/or palate	
image item				1st factor	2nd factor
1	warm	—	cold	0.3569	0.0037
2	interesting	—	uninteresting	0.6957	-0.2008
3	likeable	—	unlikeable	0.6478	-0.0525
4	easy	—	narrow	0.3827	0.0083
5	changeable	—	changeless	0.1142	0.0631
6	spirits	—	spiritless	0.6910	-0.2395
7	friendly	—	hostile	0.6827	-0.0652
8	quiet	—	hurried	0.1381	0.0124
9	buoyant	—	depressing	0.6518	-0.2242
10	harmonious	—	thorny	0.5740	0.2413
11	new	—	old	0.1049	0.3081
12	refreshed	—	persistent	0.5669	0.2485
13	bright	—	gloomy	0.6162	0.0763
14	lightheated	—	solemn	0.6588	0.0726
15	clean	—	dirty	0.1060	0.6174
16	serious	—	not serious	-0.0093	0.6435
17	soft	—	hard	0.4188	0.0874
18	happy	—	unhappy	0.7847	0.0473
19	clearly	—	stupid	0.2347	0.2077
20	calm	—	not calm	0.2498	0.3756
21	gentle	—	severe	0.4046	0.1042
22	wet	—	dry	0.3306	0.2213
23	lively	—	silent	0.6150	-0.2545
peculiar				5.6248	1.4413

Dendrographic arrangement of 8 environmental categories by cluster analysis

The results of cluster analysis are shown dendrographically in Figs. 3 and 4. Two clusters were formed for the first factor (sense of liberation). One was composed of “playground and classroom,” “gymnasium and hallway” and “road to school and road back home,” and the other was composed of “teacher’s and school nurse’s office” (Fig. 3).

For the second factor (sense of order), 2 clusters were also formed. One was composed of “classroom and gymnasium”, “playground and road leading back home”, “hallway” and “road leading to school”. The other was composed of “teacher’s and school nurse’s office” (Fig. 4).

DISCUSSION

Earlier studies on children’s reactions to school environment have often been undertaken using school buildings, facilities, the number of teachers or curricula as environmental factors. In a study on the psychological effect of school itself, Gump²⁾ divided school environment into 3 categories, (1) physical surroundings (physic milieu), (2) human factor (human components) and

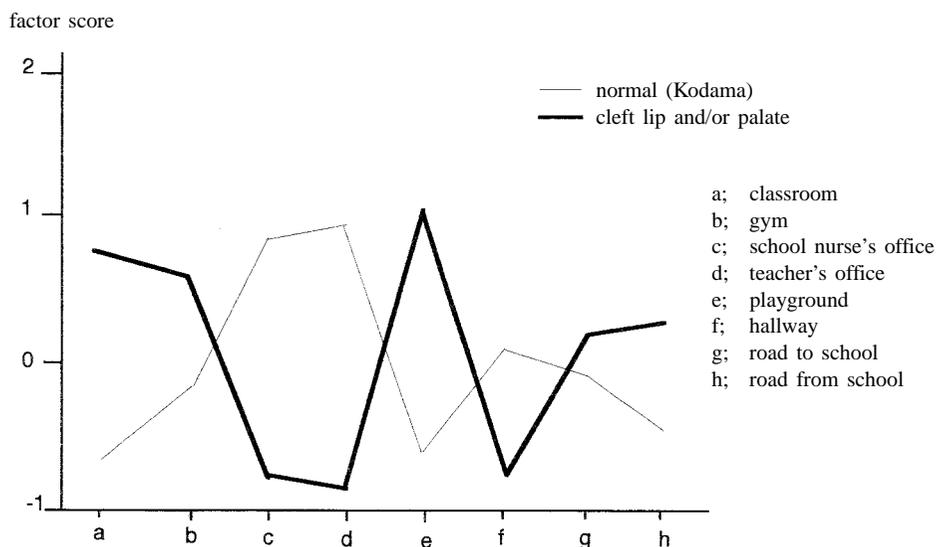


Fig. 1 Average of the first factor in each space

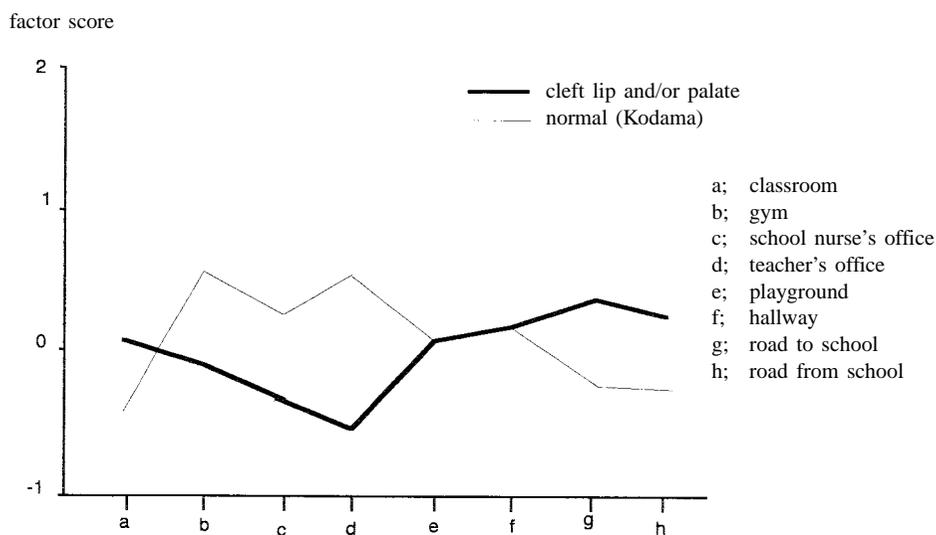


Fig. 2 Average of the second factor in each space

(3) programs (standing pattern of behavior), and investigated the effects of these factors on the behaviors of school children. Chaves³⁾, Furukawa⁵⁾ Ando⁶⁾ and Yanagisawa *et al.*⁷⁾ pointed out that a school as a social body is itself a factor which exerts an influence on communication between school children and teachers, and that a class as a small society is a factor which exerts an influence on the attitude of school children toward school life. Some investigators

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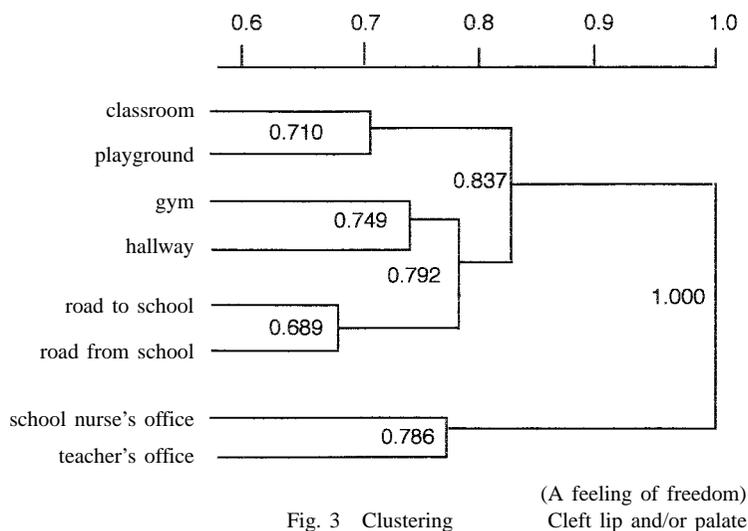


Fig. 3 Clustering

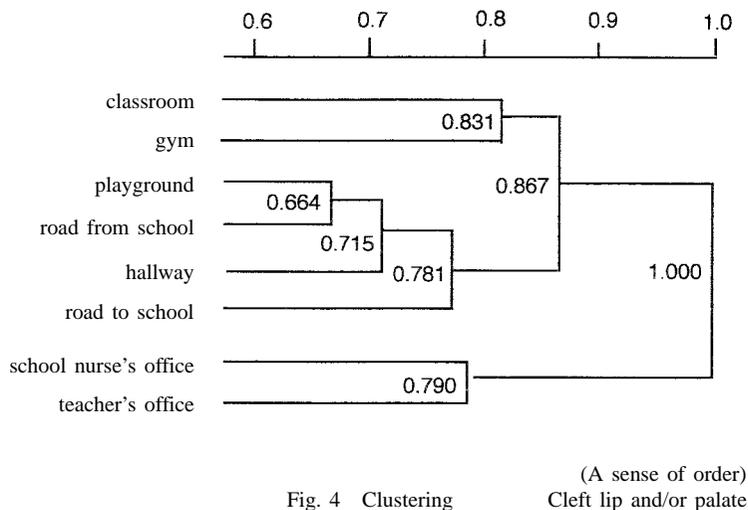


Fig. 4 Clustering

stressed the importance of studying the reactions of insiders to the environment (Trickett & Moos⁸⁹, Kodama¹⁾). School environment needs to be defined as an aggregate of plural factors; environment-constituting factors and reactions of school children inside the environment to these environment-constituting factors. To investigate the relation between environment and insiders' reactions to environment, there are overly complicated factors to be taken into account. The present study was, therefore, undertaken, with particular reference to the insiders' recognition of environment, to assess the adaptability of children with cleft lip and/or palate to the school environment by analyzing their perception (image structure) of school as an educational space.

From the viewpoint of insiders' perception of environment, Kodama et al.¹⁾ studied the images normal children had of the school environment. They described a feeling of freedom and entertained a vivid sense of liberation in a classroom which was a basic space for learning and

in the playground and gymnasium which were the grounds of their physical activity. A hallway which was just a passage from one place to another, whereas roads leading to school and from school where children were relatively less controlled and could behave relatively freely were perceived as spaces which demanded less of an orderly feeling. They further reported that a teachers' office and school nurse's office were spaces where they sensed order and control most strongly.

On examining the relation between children's school records and their reactions to 8 environmental spaces, they found that children with poor records had a sense of order and those with excellent records a sense of liberation in a classroom. In a school nurse's office, children with poor records had a sense of liberation, and those with excellent records had a stronger sense of order than other children. They also reported that children isolated from others had a strong sense of order in a playground and on the road back home. These images normal children had of their school environment suggest that children who established self-expression in their studies or relations with friends and adapted themselves to the school environment, were more active in the classroom, playground, road leading to and from school where they can act within their discretion and are emotionally more stable.

From the images of children with cleft lip and/or palate examined in this study, the teachers' and school nurse's office were recognized by them with a sense of liberation, whereas the classroom, playground, hallway, roads leading to and from school imposed a strong sense of order. These perceptions were opposite to those of normal children. The images of educational spaces entertained by the children with cleft lip and/or palate closely resembled those entertained by children with poor school records or children isolated from others. This suggested that the children with cleft lip and/or palate had no established peace of mind or sense of affinity for the major sites of their learning activity, and that it was difficult for them to develop adequate self-expression and to adapt themselves to their environment. This might be attributed to a variety of factors relating either to the children's personal problems (e.g., social immaturity, poor human relations, poor school record, lack of enthusiasm for any activity) or to socio environmental problems (e.g., scale of school, bullying, parent-to-child relations).

Manita *et al.*⁹⁾ reported that the lack or maldevelopment of sociability (e.g., poor human relations, inactivity) constitutes the trait common to school truants unable to adopt to school. The data⁴⁾ of the Ministry of Education for the guidance of students cites three background factors in bullying; (1) immature human relations, (2) mounting frustration and (3) narrow range of outlets for stress. Sohna¹⁰⁾ reported that bullying at school is largely evoked by a complex of circumstances surrounding children and is not to be imputed solely to the personality of the child who bullies others or is bullied by others, and portrayed the personality of a bullied child as egoistic, dependent on others, timid, sensitive, nervous, self-assertive and defiant. Sugihara *et al.*¹¹⁾ reported that a child different physically or otherwise from others becomes a target for bullying. It is easy to presume that a child with cleft lip and/or palate, a visible sign of deformity, can fall victim to harassment as someone different from others. Social immaturity is counted as a factor responsible for maladjustment to school or for becoming a target of harassment. In a previous study on the parent-to-child relationship in primary school children with a cleft lip and/or palate, we found that their parents treated their children as younger than they actually were and did not encourage them to develop autonomy. This disinclined these children to learn independence and socialization which are important themes of learning during childhood¹²⁾. These findings suggested that these children were socially immature, and that this social immaturity might be partly reflected in the data of this survey. However, further study is needed to determine the relation between social immaturity and other factors.

CONCLUSION

A semantic differential method survey was conducted among 50 children with cleft lip and/or palate to examine their spatial images of their school environment. It was found that such children perceived the teachers' or school nurse's offices with a feeling of liberation, and the classroom, playground, hallway, and roads leading to school and back home with a strong feeling of order. The mental reactions of these children were opposite to those of normal children.

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