Original Articles

Study on children's drawing development among hospitalized children

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Abstract

Introduction: For children, drawing development has 5 stages and expressive drawing has 3 stages.

Objective: To evaluate the effect of chronic ill health on children's drawing development

Method: A cross-sectional observational study was done on 2 groups of hospitalized children with and without chronic illness. Children in each group were subdivided into 5 different age groups viz. 3-4 years, 5-7 years, 8-9 years, 10-11 years and 12-14 years.

Results: Eighty eight hospitalized children took part in the study, 48 having acute illness and 40 having chronic illness. Children with chronic illness in the 12–14 year age group had significantly more advanced drawing development compared to children with acute illness ($P<0.05$).

Conclusion: Chronically ill hospitalized children in the adolescent age group had more advanced drawing development.

(Key words: Drawing development, expressive drawing).

Introduction

For children, their drawings are specific to their age and their stage of development. Age dependent drawing development in children has 5 stages[1].

1. **Scribbling stage** (2-4 years): Random scribbles begin at 1½ years but quickly take a definite shape, circular movement first as it is more natural anatomically. First disordered scribbles are records of enjoyable kinaesthetic activity, not attempts at portraying the visual world.

2. **Pre-schematic stage** (4-7 years): First conscious creation of form occurs around 3 years of age and provides a record of the child's thinking process. The first representation attempts a person but symbols constantly change. The colour is more emotional than logical.

3. **Schematic stage** (7-9 years): Child arrives at a "schema"- a definite way of portraying an object. At this stage there is a definite order of space relationship. Everything sits on a baseline. Use of colours is reflected as they appear in nature.

4. **Drawing realism** (7-9 years): The drawing of how things really look is usually expressed with more detail for individual parts but is far from naturalism. Space is discovered and depicted with overlying objects. This is the stage of complexity and stage of realism.

5. **Pseudo–realistic stage** (11-13 years): They try adult-like naturalistic drawing-light, shadow, folds, motion. Space is depicted as 3-dimensional by diminishing stage of objects that are further away.

Expressive drawing typical of childhood period

Literal expression is produced at 5-6 years. Then comes combined literal and metamorphical. As adolescent grows older metamorphical is prominent[2,3]. Literal expression is expressive drawing featuring facial expression cues. Metaphorical expression is abstract (light and dark, thin and heavy) and content cues (damaged object, sunshine).

A cultural programme was arranged among hospitalized children named "Drawing as you like". They were allowed to draw free pictures with no imposed topic and no restriction on child's ability to draw expressively.

Objective

To evaluate the effect of chronic ill health on children's drawing development

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Method

A cross-sectional observational study was conducted in the Department of Paediatrics, University College of Medicine and JNM Hospital, Kalyani on hospitalized children in stable health condition and able to draw. They were divided into two major groups: The first group consisted of patients admitted to hospital for the first time and without any chronic ill health (Table 1). The second group consisted of children with multiple hospital admissions suffering from chronic ill health (Table 2).

Table 1: ***Group 1 participants with acute illness***

Disease	No. of patients
Acute gastro-enteritis	22
Acute respiratory tract infection	18
Enteric fever	03
Malaria	02
Dengue	02
Hepatitis A	01
Total	48

Table 2: ***Group 2 participants with chronic illness***

Disease	No. of patients
Thalassaemia	22
Asthma	08
Nephrotic syndrome	07
Rheumatic heart disease	02
JIA without deformity	01
Total	40

Each major group was subdivided into 5 subgroups: subgroup A 3-4 years, subgroup B 5-7 years, subgroup C 8-9 years, subgroup D 10-11 years and subgroup E 12-14 years.

The materials used in the study for each child consisted of a white sheet of paper, a pencil and 12 crayons (red, pink, orange, yellow, light green, deep green, light blue, deep blue, violet, brown, deep brown, black).

All the children were asked to draw free pictures. There was no imposed topic, so that the children's opportunity to draw expressively was not restricted. The time taken for drawing was not limited. All participants were complimented on their drawings.

Statistical calculations were done using Fisher exact test and calculating the probability.

Results

A total of 88 hospitalized children, 3 to 13 years of age, took part in the study. There were 48 patients in the first group (Table 1) and 40 in the second group (Table 2). None of them were known to suffer from a mood disorder, a psychomotor drawing or handwriting disorder. All the children were from lower socio-economic strata.

Age dependent distribution of drawing in different developmental stages for group 1 participants is depicted in table 3. Age dependent distribution of drawing in different developmental stages for group 2 participants is depicted in table 4.

Table 3: ***Age dependent distribution of drawing in different developmental stages for group 1 participants (n=48)***

Age group	Total No.	Stages of Drawing Development				
		Stage 1 No. (%)	Stage 2 No. (%)	Stage 3 No. (%)	Stage 4 No. (%)	Stage 5 No. (%)
3-4 years	14	04 (29)	10 (71)			
5-7 years	12		04 (33)	08 (67)		
8-9 years	06		01 (17)	05 (83)		
10-11 years	06			02 (33)	04 (67)	
12-14 years	10				03 (30)	07 (70)

Table 4: ***Age dependent distribution of drawing in different developmental stages for group 2 participants (n=40)***

Age group	Total No.	Stages of Drawing Development				
		Stage 1 No. (%)	Stage 2 No. (%)	Stage 3 No. (%)	Stage 4 No. (%)	Stage 5 No. (%)
3-4 years	06	02 (33)	04 (67)			
5-7 years	14		04 (29)	10 (71)		
8-9 years	05		01 (20)	04 (80)		
10-11 years	05			02 (40)	03 (60)	
12-14 years	10				08 (80)	02 (20)

Whereas in group 1 participants 12-14 years old, 30% are in stage 4 and 70% in stage 5, in group 2 participants 12-14 years old, 80% are in stage 4 and 20% in stage 5. So by 'Fisher exact test' for contingency table there is a statistically significant difference (p=0.032). There are no statistically significant differences in other age groups regarding drawing development

Age dependent expressive drawing distributions for group 1 patients are depicted in table 5. Age dependent expressive drawing distributions for group 2 patients are depicted in table 6.

Table 5: ***Age dependent expressive drawing distributions for group 1 participants (n=48)***

Age group	Total No.	Expressive Drawing			
		Non Expressive No. (%)	Literal No. (%)	Metamorphical No. (%)	Literal + Metamorphical No. (%)
3-4 years	14	14 (100)			
5-7 years	12	12 (100)			
8-9 years	06	05 (83.3)	01 (16.7)		
10-11 years	06	05 (83.3)		01 (16.7)	
12-14 years	10	08 (80.0)		02 (20.0)	

Table 6: ***Age dependent expressive drawing distributions for group 2 participants (n=40)***

Age group	Total No.	Expressive Drawing			
		Non Expressive No. (%)	Literal No. (%)	Metamorphical No. (%)	Literal + Metamorphical No. (%)
3-4 years	06	06 (100)			
5-7 years	14	14 (100)			
8-9 years	05	05 (100)			
10-11 years	05	04 (80)		01 (20)	
12-14 years	10	07 (70)		03 (30)	

There are no statistically significant differences between group 1 and 2 participants regarding expressive drawing.

Discussion

A number of factors, both internal and external, affect a child's artistic development. Thus to expect that a particular child at a certain age should be at a certain stage of development is inappropriate[4].

- Socioeconomic factors have little role in the earliest stage and at early stages boys and girls tend to draw alike.
- Children's drawing shows greater development than painting because pencils and crayons are easier to control than paint and a brush.
- Considerable overlap exists between stages and 2 stages may be represented in one work.
- It is unlikely that a child will reach the later stages without adult support or instruction.

The pseudo-naturalistic stage (11-13years) is the beginning of adolescence and end of artistic development among most children due to frustration at getting things right. Those who do manage to weather the crisis and learn the secret of drawing will become absorbed in it. In our study, too, early stages of drawing development are not affected by chronic ill health. However, there is lack of development of art further in adolescence among participants of chronic ill health who need parental support or teacher's guidance. However, surprisingly there is no significant difference in expressive drawing development.

Conclusions

- Children with chronic illness in the 12–14 year age group were significantly more advanced in their drawing development compared to children with acute illness ($P<0.05$).

- There are no statistically significant differences in other age groups between children with acute and chronic illness regarding drawing development.

- There is no statistically significant difference between children with acute and chronic illness regarding expressive drawing.

Teachers and parents should provide older children and adolescents with opportunities to engage in both descriptive and imaginative approaches of drawing and not ignore the drawing development in children with chronic ill health.

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