



PREFERENCE USE OF TOYS, PLAY MATERIAL AND GAME EQUIPMENT IN CHILDREN WITH MENTAL RETARDATION

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Abstract

The present study attempts to show the difference in preference and use of toys, play material and/or game equipments in children with mental retardation. This varies according to child variables (such as, age, gender, presence/absence of problem behaviours, associated conditions and severity of mental retardation), family variables (such as, type of family, socio economic status, maternal age and education) respectively.

It was studied on a sample of 140 children with mild and moderate mental retardation between chronological ages of 6-18 years and mental ages of 3-12 years. The sample included 71 boys and 69 girls. The results indicate that the toy preferences of children with mental retardation appear to be restricted to very few items, such as, ball, cycle, doll, wooden blocks, colour pencils, toy car, play ring, marbles, etc.

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A great variety of easy available toys like beads, buttons, zip, balloons, nuts, bolts, dice, etc., do not form the armamentarium of toys for these children. This calls for the need to propagate use of interesting toys (a euphemism for teaching aids) that are safe, sturdy, accessible, durable, non-toxic, portable, user-friendly, age appropriate and above all-'teaching task' oriented.

It is generally seen that there are increasing number of toys used by older children than their younger age peers. The children with mild mental retardation appear to make greater use of toys than children with moderate mental retardation. Mothers with college education appear to show predilection to influence use of a variety of toys in their children as compared to parents with school education. Children of middle aged mothers between 30-39 years appear to show greater use of a variety of toys as against younger mothers below 29 years and older mothers above 40 years.

The results also indicate that a sequential hierarchy exists in play activities of children proceeding from simple to complex, general to specific and/or concrete to abstract modes of play. They show several positive behaviors like love for sharing their toys and play materials with others (N: 124; 88.6 %). They love to show their new toys to others (N: 85; 60.7 %), recognize and preserve their own belongings (N: 71; 50.7 %).

Introduction

Play is an important medium for overall development in children. It fosters their sensory, motor, cognitive, language and social development (Chanco, 1979). Children with special needs seek and indulge in play activities like their normal age peers-although they maybe qualitatively and quantitatively different in nature, scope, type or extent of the activities (Venkatesan, 2004a; 2004b; 2003). In a related study, no case of child with mental retardation was reported as 'never plays' even though such an item existed in their interview schedule (Venkatesan, 2000). In a previous study, it was noted that play behavior constitutes only 4.1 % of total time in the 24-hour activity cycle of a child with mental retardation (Khajevand and Venkatesan, 2007).

The study also noted that these children spent more time in a day on 'no activity at all' than the time they spent on play. Further, their range of play behaviors was found to be limited and restricted to being passive observers of others at play without understanding their rules and regulations. There are

many types of play in children depending on their age/developmental levels (Venkatesan, 2004a).

The use of toys during play by children has long been recognized (Fraser, 1966). The choice of toys during play by children of different ages has been focus of several investigations (Malone and Langone, 1998; Martin, Brady and Williams, 1991; Schwartz and Miller, 1988; Rubin and Howe, 1983; Newson and Newson, 1979; Malone, 1997).

Virginia Axeline (1989) listed:

Nursing bottles, doll family, dollhouse with house materials including chairs, tables, cot, doll bed, stove, tin dishes, pans, spoons, doll clothes, clothesline, clothespins, and clothes basket, a didee doll, a large rag doll, puppets, puppet screen, crayons, clay, finger paints, sand, water, toy guns, peg pounding sets, wooden wallet, paper dolls, little cars, airplanes, table, easel, enamel top table for finger painting, and clay work, toy telephones, shelves, basin, small broom, mop, rags, drawing paper, finger painting paper, old newspapers, inexpensive cutting papers, pictures of people, houses, animals and other objects, and empty berry baskets to smash.

Melanie Klein (1964) listed:

Little wooden men and women, usually in two sizes; cars, wheel barrows; swings, trains, airplanes, animals, trees, bricks, houses, fences, paper, scissors, a not too sharp knife, pencils, chalks or paints, glue, balls and marbles, plasticise and string.

Investigators have classified toys as follows:

- Family Toys: Dolls, dollhouse, people, puppets soldiers, etc.
- Representational Toys: Cars, boats, planes, trucks, etc.
- Expressive Toys: Paper, paint, crayons, marking pencils, etc.
- Sensory Toys: Clay, play doll, plasticise, etc.
- Structured Toys: Building blocks, puzzles, etc.
- Motor Toys: Balls, ring toss, knock out benches, etc.
- Dependency Toys or Furry objects of animals, puppets, etc.

- Aggression Toys: Aggressive animals, guns, Bozo the clown, etc.
- Board Games: Ludo, Chess, Snakes and Ladders, etc.

Bronson (2003) proposes a catalogue of play materials for primary school children between the ages of 3-6 years. They may be broadly classified into four categories:

- (a) Social and fantasy play materials- Exploration and mastery play materials
- (b) Music, Art and Movement play materials
- (c) Gross Motor Play Materials

Bambara, Spiegel-Mc Gill, Shores and Fox (1984) attempted a comparison on the utility of creative and non-creative toys during the manipulative play of children with severe handicaps. Their results indicated that only half of the sample made use of toys. Even wherein these children preferred the use of toys, they were found to use them non-creatively. The toys were predominantly used for possession and not for any creative manipulations during play situations.

For teenagers after the age of twelve, interest in toys begin to merge with those of adults. Their attention shifts to the use of sophisticated electronic games and computer based systems which are often considered as family entertainment rather than toys (Wright and Nomura, 1985).

Murphy, Carr and Callias (1986) were in favour of increasing toy play in children with profound mental retardation by making suitable adaptations in their design and accessibility.

The use of toys in children with special needs assumes special significance (Newson and Newson, 1979; Head, 1971). They serve both as a teaching aid (euphemism for 'toys') as well as a recreational device. Several factors have been identified as influencing the selection of toys for handicapped as well as normally developing preschool children, including developmental status, interests, sensory preferences, etc. (Fallon and Harris, 1989).

Lieber and Beckman (1991) noted that special adaptations are required in terms of safety, convenience in handling and economy of use when it comes to use of toys in individual as well as group play situations by children with various types of handicaps.

Martin, Brady and Williams (1991) investigated the use of toys on the social behaviour of preschool children in integrated and non-integrated groups. Results

indicated that toys play a facilitation role in fostering pro social behaviours with mild disabilities in integrated school settings. These results are close and similar to the findings of another study where the investigators attempted to determine the effects of social and isolate toys on the interactions and play of children in integrated and non-integrated educational settings. In this study (Beckman and Kohl, 1984; Field et al, 1982; Fenrick, Pearson and Pepeinjak, 1984).

Malone and Langone (1999) observed variability in play of preschoolers with cognitive delays across different use of toy sets. They encouraged use of toys that facilitate make believe play rather than use of board games or tools that facilitate physical activity.

Michael, Malone and Melissa (2001) studied the perception of mothers about toy play in preschoolers of children with developmental disabilities. It was seen that the choice of toys by mothers for their children was minimal. Even when preferred, there were disparities in their optima use against the background of the interests and intellectual status of their children.

Hypothesis

Specific Hypothesis Investigated under this theme:

There is difference in preference and use of toys, play material and/or game equipments in children with mental retardation. This varies according to child variables (such as, age, gender, presence/absence of problem behaviours, associated conditions and severity of mental retardation), family variables (such as, type of family, socio economic status, maternal age and education) respectively.

Aims and Objectives

It was the aim of this study to

- (i) Discover and prepare a comprehensive list of Toys, Play Materials or Game Equipments indulged in children with and without mental retardation;
- (ii) Arrange the identified list of Toys, Play Materials or Game Equipments in a sequential hierarchy based on reported age levels, gender and severity of mental retardation.

Operational Definitions

(a) Mental Retardation:

The term 'mental retardation' as defined in this study was the same as given in the official definitions. It is considered as a clinical condition in a person with less than sub-average levels of intelligence with concurrent deficits in adaptive behaviour manifesting within the developmental period of eighteen years (AAMD, 2002).

(b) Toys, Play Materials or Game Equipments:

These terms are used interchangeably and synonymously to represent things or materials that are used during play irrespective of their recreational or educational value. It also includes the category of things usually classified or identified as teaching aids-when it comes to remediation or training of certain learning or teaching objectives.

(c) Play Behaviour & Play Activity:

It is useful to distinguish between play behaviours and play activities. Play behaviours refer to observable or measurable play actions as seen or reported by significant others in a studied sample of children. Play activities-a broader term, encompasses not only the existing play behaviours; but also, the possible gaming or play behaviours that could be possibly fostered for betterment of the children with special needs (Hiedemann and Hewitt. 1992; Garvey, 1974).

Material and Methods

Data collection for the paper involved use of two tools. A 'Demographic Data Sheet' covered queries on personal details, diagnostic condition, associated problems and health status of each child included in this study. The second tool-'Play Activity Checklist for Kids with Mental Retardation' (PACK-MR) was exclusively developed for purpose of this study. It was attempted to be a comprehensive record of various types of play activities, games and play preferences, toys/materials used by children between 3-12 years. Observation, open ended questions and non-directive interview techniques was used to collect information on commonly indulged game/play activities of children as reported by their parents, caregivers or teachers. Wherever possible, several examples of reported games or play were collected to substantiate the declarative statements of respondents.

Further, a comprehensive review of literature (Morris and Schulz, 1989; Rogers and Sawyers, 1988; Rubin and Howe, 1985; Yawkey and Pellegrini, 1984; Wolfgang, Mackender and Wolfgang, 1981 Lowenfeld, 1935) was undertaken on enlist the various developmental play activities seen/reported in children. All these efforts resulted in an initial item pool of over 300 play activities. This was followed by another exercise to eliminate subjective, irrelevant, ambiguous, identical or repetitive items. The final format of PACK-MR derived at the end of these exercises comprised of 60 items to be used in main study.

The main study was carried out on a sample of 140 children diagnosed as mental retardation. A part of the sample was taken from various special schools in Mysore and Bangalore while others were drawn from cases routinely seen at All India Institute of Speech and Hearing, under Ministry of Health and Family Welfare, Government of India, located at Mysore. The sample included 71 males and 69 females with mental retardation in the age range of 6-14 years. (Mean Age: 10.43; SD: 3.64). Within the sample, there were 69 cases diagnosed as 'mild mental retardation' and 71 cases with 'moderate mental retardation'. Of the overall sample, 89 children had one or more associated problems like epilepsy, hearing or visual difficulties, etc. The remaining 51 children did not have any associated problems.

Results and Discussion

The results indicate that the toy preferences of children with mental retardation appear to be restricted to very few items, such as, ball, cycle, doll, wooden blocks, colour pencils, toy car, play ring, marbles, etc. A great variety of easy available toys like beads, buttons, zip, balloons, nuts, bolts, dice, etc., do not form the armamentarium of toys for these children. This calls for the need to propagate use of interesting toys (a euphemism for teaching aids) that are safe, sturdy, accessible, durable, non-toxic, portable, user-friendly, age appropriate and above all-'teaching task' oriented (Venkatesan, 2003).

It is generally seen that there are increasing number of toys used by older children than their younger age peers. The children with mild mental retardation appear to make greater use of toys than children with moderate mental retardation. Mothers with college education appear to show predilection to influence use of a variety of toys in their children as compared to parents with school education. Children of middle aged mothers between 30-39 years appear to show greater use of a variety of toys as against younger mothers below 29 years and older mothers above 40 years.

The results also indicate that a sequential hierarchy exists in play activities of children proceeding from simple to complex, general to specific and/or concrete to abstract modes of play in children with mental retardation.

The following is the profile of results related to distribution of types of toy preferences for children with mental retardation in relation to various child variables:

- (i) As shown in Table 1.1, the gender variable does not emerge as significant in influencing the toy preferences for children with mental retardation. (X^2 : 0.915; $p > 0.339$).
- (ii) In relation to age variable, it is seen that there are statistically significant differences in the toy preference of children between 3-6 years (N: 34), 7-9 years (N: 69) and 10-12 years (N: 37) respectively. It is generally seen that there are increasing number of toys used by older children than their younger age peers (X^2 : 056.203; $p < 0.001$; HS).
- (iii) In relation to severity variable, it is seen that there are statistically significant differences in the toy preference of children between mild mental retardation (N: 69), and moderate mental retardation (N: 71) respectively. The children with mild mental retardation appear to make greater use of toys than children with moderate mental retardation (X^2 : 8.237; $p < 0.004$; HS).
- (iv) In relation to children with mental retardation having associated conditions, it is seen that there are statistically significant differences in the toy preferences. (X^2 : 8.237; $p < 0.004$; HS).

The following is the profile of results related to distribution of types of toy preferences for children with mental retardation in relation to socio demographic variables:

- (i) As shown in Table 1.2, it is seen that type of family is a significant variable in influencing the toy preferences for children with mental retardation. (X^2 : 22.88; $p < 0.001$; HS).
- (ii) In terms of SES, there are similar differences in the toy preferences of children with mental retardation. It is seen that children from middle SES use more number of toys than the children in high SES and low SES respectively (X^2 : 170.001; $p < 0.001$; HS).
- (iii) In relation to parent education, there are statistically significant differences and influence of the caregivers is witnessed on their choice of toys in children with mental retardation. Mothers with college education appear to show predilection to influence use of a variety of toys in their children as compared to parents with school education (X^2 : 4.983; $p < 0.026$; HS).

Table 1.1. Distributions of Types of Toy Preferences in Children with Mental Retardation in terms to various child variables

Toy	Gender*		Age**			Severity***		Associated Condition****		Total
	Male	Female	3-6	7-9	10-12	Mild	Moderate	Present	Absent	
N	71	69	34	69	37	69	71	89	51	140
Ball	45 (68.2)	21 (31.8)	13 (19.7)	33 (50.0)	20 (30.3)	40 (57.9)	26 (36.6)	37 (56.1)	29 (43.9)	66 (47.14)
Car	30 (63.8)	17 (36.2)	9 (19.1)	21 (44.7)	17 (36.2)	30 (43.4)	17 (23.9)	22 (46.8)	25 (53.2)	47 (33.57)
Doll	1 (2.2)	44 (97.8)	11 (24.4)	27 (60.0)	7 (15.6)	29 (42.0)	16 (22.5)	23 (51.1)	22 (48.9)	45 (32.14)
Blocks	22 (53.7)	19 (46.3)	11 (26.8)	24 (58.5)	6 (14.6)	28 (40.5)	13 (18.3)	29 (70.7)	12 (29.3)	41 (29.29)
Bowling	11 (31.4)	24 (68.6)	11 (31.4)	17 (48.6)	7 (20.0)	21 (30.4)	14 (19.7)	20 (57.1)	15 (42.9)	35 (25.0)
Cycle	28 (82.4)	6 (17.6)	11 (32.4)	15 (44.1)	8 (23.5)	16 (23.1)	18 (25.3)	21 (61.8)	13 (38.2)	34 (24.29)
Marbles	7 (35.0)	13 (65.0)	6 (930.0)	13 (65.0)	1 (5.0)	13 (18.8)	7 (9.8)	12 (60.0)	8 (40.0)	20 (14.29)
Play ring	10 (58.8)	7 (41.2)	6 (35.3)	10 (58.8)	1 (5.9)	7 (10.1)	10 (14.0)	10 (58.8)	7 (41.2)	17 (12.14)
Shuttle Cock	12 (80.0)	3 (20.0)	6 (40.0)	6 (40.0)	3 (20.0)	4 (5.8)	11 (15.4)	7 (46.7)	8 (53.3)	15 (10.71)
Colours	9 (69.2)	4 (30.8)	2 (15.4)	8 (61.5)	3 (23.1)	8 (11.5)	5 (7.04)	7 (53.8)	6 (46.2)	13 (9.29)
Piggy Box	7 (53.8)	6 (46.2)	6 (46.2)	5 (38.5)	2 (15.4)	2 (2.9)	11 (15.4)	12 (92.3)	1 (7.7)	13 (9.29)
Others	4 (50.0)	4 (50.0)	- -	5 (62.5)	3 (37.5)	6 (8.7)	2 (2.8)	4 (50.0)	4 (50.0)	8 (5.71)

Figures are expressed in minutes; Figures in Brackets indicate percentage values. Cumulative percentage will exceed

100 since categories are multiply classified;

*X²: 0.915; df: 11; p: >0 .339;

** X²: 56.203; df: 22; p: < 0.001;

*** X²: 8.237; df: 11 p: <0 .04;

**** X²: 8.237; df: 22; p < 0.004

Table 1.2. Distribution of Types of Toy Preferences in Children with Mental Retardation in terms of Socio-Demographic Variables.

Toy	Type of Family*		SES**			Parent Education***		Maternal age****			Total
	Nuclear	Joint	High	Middle	Low	School	College	<29	30-39	>40	
N	89	51	26	87	27	68	72	36	68	36	140
Ball	41 (61.2)	25 (37.9)	14 (21.2)	40 (60.6)	12 (18.2)	34 (51.5)	32 (48.5)	16 (24)	45 (68.2)	5 (7.8)	66 (47.14)
Car	30 (63.8)	17 (36.2)	13 (27.7)	29 (61.7)	5 (10.6)	20 (42)	27 (58)	14 (29.8)	30 (48.8)	3 (21.4)	47 (33.57)
Doll	29 (64.4)	16 (35.6)	7 (15.6)	30 (66.7)	8 (17.8)	21 (46.7)	24 (53.3)	12 (26.7)	28 (62.2)	5 (11.1)	45 (32.14)
Blocks	27 (65.9)	14 (34.1)	14 (34.1)	28 (68.3)	4 (9.8)	14 (34)	27 (66)	8 (19.5)	28 (68.3)	5 (12.2)	41 (29.29)
Bowling	21 (60.0)	14 (40.0)	5 (14.3)	25 (71.4)	5 (14.3)	17 (48.5)	18 (51.5)	9 (25.7)	23 (65.7)	3 (8.6)	35 (25.0)
Cycle	22 (64.7)	12 (35.3)	5 (14.7)	27 (79.4)	2 (5.9)	14 (41.2)	20 (58.8)	12 (35.8)	20 (58.2)	2 (6.0)	34 (24.29)
Marbles	15 (75.0)	5 (25.0)	4 (20.0)	13 (65.0)	3 (15.0)	7 (35)	13 (75)	6 (30)	12 (60)	2 (10)	20 (14.29)
Play ring	8 (47.1)	9 (52.9)	5 (29.4)	10 (58.8)	2 (11.8)	7 (41)	10 (59)	6 (35.3)	10 (58.7)	1 (6)	17 (12.14)
Shuttle Cock	8 (53.3)	7 (46.7)	1 (6.7)	11 (73.3)	3 (20.0)	6 (40)	9 (60)	3 (20)	11 (73.3)	1 (6.7)	15 (10.71)
Colors	6 (46.2)	7 (53.8)	3 (23.1)	10 (76.9)	- -	5 (38.5)	8 (61.5)	3 (23.1)	10 (76.9)	0 0	13 (9.29)
Piggy Box	9 (69.2)	4 (30.8)	2 (15.4)	8 (61.5)	3 (23.1)	8 (61)	5 (39)	3 (23.1)	9 (69.2)	1 (7.7)	13 (9.29)
Others	6 (75.0)	2 (25.0)	3 (37.5)	4 (50.0)	1 (12.5)	3 (37.5)	5 (62.5)	4 (50)	4 (50)	0 0	8 (5.71)

Figures are expressed in minutes; Figures in Brackets indicate SD values; Cumulative percentage will exceed 100

since categories are multiply classified;

* χ^2 : 22.88; df: 11; p: >0 .001;

** χ^2 : 170.011; df: 22; p: < 0.001;

*** χ^2 : 4.983; df: 11; p: <0 .026

**** χ^2 : 179.51; df: 22; p: <0 .001

- (iv) In relation to maternal age, there are statistically significant differences and influence of the caregivers is witnessed on their choice of toys in children with mental retardation. Children of middle aged mothers between 30-39 years (N: 68) appears to show greater use of a variety of toys as against younger mothers below 29 years (N: 36) and older mothers above 40 years (N: 36) ($\chi^2: 179.51$; $p < 0.001$; HS).

Utility of the Study

This exploratory investigation has thrown light on:

- (i) The patterns of existing Toys, Play Materials or Game Equipments in mild to moderate grades of children with mental retardation.
- (ii) The Toys, Play Materials or Game Equipments also become useful planner for enabling play based therapy for children with mental retardation in school or home settings.

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