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Development of Play Therapy Module for Children with Autism

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The present research work attempted to develop a therapeutic module of play for children with autism. Four stages of play, viz., sensorimotor, constructive, functional, and pretend play were structured with suitable materials, following the rules of construction. Two groups (experimental and control) were formed with 10 children with autism in each. Each play stage was exposed to 10 children individually. A matched control group of 10 children were not provided the play sessions. Both the groups received the other regular management programme throughout the research. Pre and post scores of the dependent variables, viz., communication, socialization, cognition, and problem behaviour were measured. The result indicated the fact that all the stages of structured play offered significant gain in cognition, socialization, and communication of the children. Thus, it can be concluded that structured play, particularly, the present 'Play Module', can initiate breaking the glass shell of autism.

Keywords: Autism, Children, Play module

From Froebel (1782 – 1852) to Canning (2011), the term 'play' has been used as a fundamental process for every interaction and connection the children make, a platform for exploration and experimentation with emotions, social interactions, new ideas, imagination and fantasy, where children juggle with reality by pretending that certain events actually happen. Play is creative, and through this medium the child expresses one's unique way and becomes more aware of oneself through interaction with the world around.

Autism, a pervasive developmental disorder, depicted as withdrawal and self absorbed nature, is characterized by the following traits:

1. Qualitative impairment in social interaction, which includes failure to use multiple non-verbal behaviors such as eye to eye gaze and facial expressions.

2. Qualitative impairment in communication including marked impairment in the encoding-decoding process which results in less ability to initiate or sustain a conversation with others, lack of spontaneous make-believe play, or social imitative play etc.

3. Restricted, repetitive, and stereotyped patterns of behaviors, interests, and activities.

This lack of social and emotional reciprocity in the children with autism forms a hurdle in their way of play, particularly in the EYFS (Early Years Foundation Stage) (Canning, 2011) which underpins practice with children from birth to five years through play. Their play with toys and other materials may become characterized by the following traits—less diverse and more ritualistic, lack of spontaneity and imagination, lacks expressing interest in materials and people, lacks social interactions through play, are often found to get attached with a particular part of an object or toy, and sometimes may have unusual interest in objects such as thread, thermocol, stick etc. without its apparent usual social use.

In general, the therapeutic value of play lies in the fact that it assists the assessment process, that include diagnostic, behavioral, developmental. and continuous assessment. The use of play as a therapeutic medium to help emotionally and behaviorally disturbed children is the primary objective of this research.

Wolfberg (1999), in her IPG (Integrated Play Group) model opined, on the basis of Vygotskian theory, that children with autism can also maximize their developmental potential with social partners through guided participation in culturally-

valued activity. According to Sherrat (2002), some core difficulties of persons with autism can be addressed by symbolic pretend play. A variety of options can be demonstrated through play for developing communication, establishing relationship, and at the same time enhancing child's recognition and expression of emotions.

On this backdrop, an attempt was made to structure the "play" of autism with the aim to facilitate their total development. To fulfill this endeavour, the early years of play were separated into four categories as suggested by Beyer and Gammeltoft (2000) and then the play module was developed. The materials and instructions for interactions were so formulated that it would be mostly culture-free and would not in any way create problem for the children brought up in Indian culture.

Method

The Development of the Module:

Sensori-motor play: This stage normally develops during 6 to 8 months of age. This stage develops early interaction and joint attention which has also been termed as explorative play. According to Piaget's theory, in the sensori-motor stage, the infant develops some motor skills as they gain voluntary control over their actions. They engage in goal directed behaviors and the concept of object permanence also develops during this stage.

But this process is not that same for children with autism. These children show innumerable behavioral problems, which make them more unapproachable and hinder their development in all spheres. According to Ayers (1966), these problems have their origin in sensory integrative dysfunction. Until these problems are tackled, further improvements are never possible.

So, sensori-integration therapy became an integral part of this stage of play. Through the medium of play, therapy is provided to the children catering to their specific behavioral problems.

Autism makes a child resistant to such an extent that his functional level decelerates. To enhance the whole body interaction for the development of further motor and explorative skills, physiotherapy has also been also included in this stage.

With the aim of facilitating social interaction and communication, and developing sensori-motor skills, arrangement of simple games like ball throwing and sand play have been arranged. A scientific sand pool (with measured depth, space, and quantity of sand) has been structured, coloured balls and toys (according to the interest of the child) are kept hidden under the sand, and children would be motivated to search them along with the researcher. Different shapes of spoons and sieves have been kept for sand pouring. Thus, the child has to explore at first the object of his primary interest and then gradually expected to turn to culture specific social interests. After primary fulfillment of sensation with sand, a ball pool would be provided.

Thus, the sensori-motor stage has been designed with the aim of facilitating whole body interaction, for reducing behavioral problems, for developing eye contact, joint attention, and object permanence.

Organizational / Constructive play: The next stage is the *organizational/ constructive play*. This type of play occurs from 6 to 9 months of age when the child has developed strategies for examining the surrounding world and begins to understand that object have enduring qualities. Imitation, where the child copies the behavior of other people or the use of objects without being aware of why he does it can be viewed as a socially-oriented variation of this stage (Beyer & Gammeltoft, 2000).

In autistic children, the constructive stage does not occur naturally. Therefore to develop the strategies for understanding the world beyond their 'glass shell', this stage has been structured with some items, which would encourage them to take interest in the outer world. The items include modeling with plasticine, block building, form boards of different shapes and colours, two and three piece puzzles, and colour pyramid (Jeffrey, 1984).

Thus, the aim of this stage is to improve concentration, stimulate creativity, provide self-sufficiency in specific and shared attention, eye

contact, communication, and social interaction.

Functional play: The third stage is of *functional play.* This play normally dominates from the age of 9 to 12 months. Play items at this stage are used intentionally, according to their functions. The child at this stage is preoccupied with imitating the object-oriented behavior of other people.

Children with autism do not develop the functional play spontaneously, as they are not aware of the functions of different objects. As a result, an important part of the functional play is to acquaint them with the different objects and their functions.

This process has been started with identification of the body parts and their functions followed by identification of different fruits, vegetables, transports, cooking utensils, furniture, along with their functions. Finally, the situation has been structured in such a way that the children can be provided with a male and a female doll and learnt to describe their attire. Human models of different relations with different ages and imaginative figure like fairy have been introduced as per the capacity of the child. Objects of daily use have been so arranged that they can learn recognizing objects by name and learn and imitate the functions of those objects like "putting clothes into the toy almirah" and "sipping tea from a toy cup" etc.

Thus, the aim of this stage is to help the children to know about their surrounding and to imitate object-oriented behaviors of others.

***Pretend play*:** The final stage in structured play is *pretend play*. Normally, the child makes use of pretend play from the age of 18 months. This type of play is a valuable opening to the emotional and cognitive universe. It reflects the child's ability to imagine what other people are thinking (internal representation) (Beyer & Gammeltoft, 2000), self awareness, capacity for pretence and to suspend real world events, ability to distinguish real world from pretence (Canning, 2007).

This stage has been structured with the help of a dolls' house within which there are separate rooms for separate purposes, with suitable furniture according to the purpose of the room. The house has been so structured that by the age of three to four, the child can enter within the camp wall.

The child, with guided participation, first learnt the details of the rooms, he has been made aware about the family members of the house, and finally he could pretend his daily routine with the help of the dolls. Role taking has also been facilitated. Moreover, the model dolls of human beings as used in the previous stage have also been included with more variety of relationships and images.

Thus, the aim for this stage is to encourage mental representation, appropriate social interaction, and communication. So, it can be said that the stages have been so structured that sensori-motor stage would enhance physical and developmental flexibility among the children by reducing their behavioral problems and thereby, opens the avenues for the development of cognition, socialization, and communication, which would be contributed by the remaining three stages of the structured play. The stages are interrelated and total development would be incomplete in absence of any one.

Each play stages with all materials and instructions were finally selected after 'Relevance Judgement' by 10 psychologists and 10 special educators well exposed in the field of disability, particularly 'autism' in a 5-point scale where '1' denotes 'least relevant' and '5' denotes 'most relevant'. The items rated 3.5 (mean of 20 Judges) and above and less than 1 SD were selected. Moreover, according to their comments and suggestions, addition, alterations and eliminations were made regarding the quality of the items structured in the module. The clinical validation of the model was then established by the following experimentation.

Sample:

It consists of 12 boys and 8 girls (aged 4 to 14 yrs), already diagnosed with autism, and under intervention in some special schools of Kolkata. Their level of autism ranged from mild-moderate to severe as assessed by Childhood Autism Rating Scale (Schopler, Reichier & Barbara, 1980).

Tools:

Childhood Autism rating Scale (CARS): It was developed by Schopler et al. (1980) to diagnose autism. There are 15 items from which the behaviour was rated to identify children with autism, and to distinguish them from developmentally challenged children without autism. It further identifies the level of autism (mild – severe) the individual falls at that time of observation. The 15 CARS item incorporates (a) Kanner's primary autism features (b) other characteristics noted by Creak, which are found in many but not in all children who may be considered as autistic, and (c) additional scales useful in tapping the symptoms characteristic of the younger child.

Portage Early Education Programme (The Autistic Continuum); It was developed by Cameron and White (1989). The autistic continuum (TAC) suggests a thorough investigation of the behaviours, skills, and needs of children with ASD. It helps to decide in which areas intervention may be appropriate. TAC is also used to monitor progress and changes as the child develops, so that teaching or therapy remains realistic and relevant to the child's needs. It will also be extremely useful for students/professionals who simply wish to know more about this complex disorder. and investigate minute changes/ improvement of behaviour. There are six key developmental areas,viz., infant stimulation, motor, cognitive, socialization, self-help and communication. It consists of 624 behaviors, which are sequenced into years or stages of development. The scores are obtained in terms of mental age.

The Problem Behavior Checklist: This is constructed in this laboratory (GuhaRay, 2008) and used for the research purpose to assess behavioral problems (Wing, 1998) of autistic adolescents. This is a standardized checklist based on Indian culture, specially constructed for the person with autism. The checklist consists of 52 Statements encompassing 15 domains of behavioral problems with norm to assess the severity of problem behaviour of the person with autism

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Procedure:

After sample selection, children were assessed by PEEP and PBC and then a matched-pair technique was followed to divide them in two groups (Experimental & Control) on the basis of age, sex, level of autism, PEEP & PBC scores (as per practicable for children with autism). After initial assessment and group division, the experimental group started getting exposure to the above said 'Structured Play Therapy Sessions'.

Each play stage was exposed to 10 children individually. Each stage was provided for approximately 10 sessions, 2 sessions per week, and each session lasted for 30-40 minutes. The dependent variables were assessed before and after each stage. After completion of each stage, a gap of one month was given and a follow up assessment was done. The matched control group of 10 children was not provided the play sessions. Both the experimental and control group received the other regular management programme throughout the research.

Results

Mean values and 't' statistics show significant improvement in post conditions for both the control group and the experimental group in cognition, socialization, and communication in the Sensorimotor play stage (Table – 1). So, it can be said that general intervention procedure itself can bring significant positive change in case of children with autism irrespective of play therapy in this stage. Further, to extract the effect of play therapy, detail result reveals that though both groups show statistically significant improvement but at the post assessment point, the experimental group had a higher level of improvement in comparison to that of their control counterpart in case of cognition, socialization, and communication as evident from descriptive statistics. This can be considered as a special gain for sensorimotor stage of play therapy.

Problem behaviour, for both groups, shows no statistically significant difference between pre and post measures in Sensorimotor stage, but a gain in mean values can be observed in the Experimental group in comparison to its control

counterpart with a lowered value in post condition (Table 1). This gain, in no way, can be ignored when the subjects are autistic having low level of flexibility.

The data analyses of the Constructive play stage through t-test reveal that both groups show high level of significance with a higher value in post condition of cognition after play intervention (Table 2). Here also the Experimental group shows a higher mean value in comparison to its control counterpart.

For both groups, Communication shows no significant difference after this stage but detail analysis showed a higher mean value of the Experimental group which barely missed the significance level in comparison to its control counterpart. The statistical analysis of the scores obtained after the intervention of constructive play reveals that in the sphere of problem behavior, neither the Control nor the Experimental group shows any significant gain.

The maximum effect of *Functional play* was evidenced in the spheres of socialization and communication. In both these developmental spheres, both experimental and control group showed significant positive gain whereas the Experimental group gained comparatively more than its control counterpart as evident by mean difference which can be attributed to Functional play only, irrespective of the other intervention methods. (Table 3)

Similarly, in *communication,* the experimental group and control group showed high level of significance. Again the mean values confirm that the Experimental group had comparatively more improvement which can be attributed to Functional

Table 1. Effect of Sensorimotor play on four DVs for both experimental and control group as shown by Mean, SD and t ratio (N = 10)

Variables	Expt. Gr..						Ctrl. Gr.					
	Pre		Post				Pre		Post			
	M	SD	M	SD	't'	LS	M	SD	M	SD	't'	LS
Cog	7.9	3.8	10.1	3.6	5.25	.001	14.6	10.5	17.1	11.7	2.52	.03
Com	2.5	1.3	4.3	2.1	2.75	.022	3.6	2.0	4.3	1.8	2.6	.029
Soc	4.9	1.9	7.9	2.8	3.78	.004	6.1	2.9	7.1	3.1	2.74	.023
PB	104.4	19.8	99.6	20.3	1.82	.27	101.8	30.6	101.1	26.3	.43	.68

Table 2. Effect of Constructive Play on four DVs for both experimental and control group as shown by Mean, SD and t ratio (N = 10)

Variables	Expt. Gr..						Ctrl. Gr.					
	Pre		Post				Pre		Post			
	M	SD	M	SD	't'	LS	M	SD	M	SD	't'	LS
Cog	10.1	3.6	14.9	4.8	3.05	.014	17.1	11.7	22.4	11.7	2.7	.024
Com	4.3	2.1	5.38	2.6	2.19	.056	4.3	1.8	5.05	3.8	.44	.672
Soc	7.9	2.8	13.43	5.2	4.3	.002	7.1	3.1	10.64	8.3	1.5	.168

Table 3. Effect of Functional Play on four DVs for both experimental and control group as shown by Mean, SD and t ratio (N = 10)

Variables	Expt. Gr..						Ctrl. Gr.					
	Pre		Post				Pre		Post			
	M	SD	M	SD'	t'	LS	M	SD	M	SD	't'	LS
Cog	14.9	4.8	20.6	5.6	6.03	.001	22.4	11.7	27.1	7.5	3.79	.004
Com	5.38	2.6	9.31	3.2	4.18	.002	5.05	3.8	9.1	4.0	3.3	.009
Soc	13.43	5.2	20.61	7.3	4.25	.002	10.64	8.3	15.2	7.4	2.25	.051

Table 4. Effect of Pretend Play on four DVs for both experimental and control group as shown by Mean, SD and t ratio (N=100)

Variables	Expt. Gr.. Pre		Post				Ctrl. Gr. Pre		Post			
	M	SD	M	SD	't'	Sig	M	SD	M	SD	't'	Sig
Cog	20.6	5.6	27.01	8.3	3.72	.005	27.1	7.5	32.1	10.0	2.69	.025
Com	9.31	3.2	16.8	5.8	3.76	.004	9.1	4.0	11.7	4.7	1.45	.180
Soc	20.61	7.3	27.04	9.2	4.34	.002	15.2	7.4	17.1	8.6	1.8	.106
PB	90.6	8.3	88.1	9.8	1.77.	.109	96.2	10.1	94.9	9.1	.840.	.423

play only, irrespective of the other intervention methods.

In case of *problem behavior*, though both experimental group and control group show no statistically significant improvement for any type of intervention but experimental group reveal a gain in post condition, i.e., after play therapy.

The *Pretend play* score reveals that the intervention has been effective in all the three developmental spheres. The results of t-test reveal that the Experimental group in all the three developmental spheres shows high level of significance whereas t values of the control group significant only in cognition, but not in socialization and communication. Even, in cognition, though both groups show significant effect, the experimental group shows relatively better improvement, as evident from mean difference after receiving play intervention in comparison to the control group. Like previous stages, *problem behavior* shows no significant change either for the experimental or for the control group (Table-4). The mean values, however, show a trend of improvement in experimental group than control group which can be attributed to Pretend play, solely. So, it can be said that through structured play though the problems can be controlled to some extent but cannot be eradicated completely or to a significant extent.

So, it can be said that significant improvement on some basic skill development and reducing problem behaviour have been found after the training with the structured play module as developed by the present study. Both the pre and post measures were assessed by third persons (registered special educators who were unaware about the experiment). So, the clinical validity of the module was established.

Discussion

Thus, the result of the study focuses on the fact that every stage of Structured Play is contributive in facilitating the development in cognitive, social, and communication aspects. Constructive play and functional play are the most capable of facilitating cognition, socialization, and communication. Pretend play has its mammoth influence on socialization and communication. Interestingly, sensorimotor play, which was designed with the aim of increasing the physical flexibility and reducing problem behaviors, has been contributive in developing cognition and communication as well. It also needs mentioning here that the maximum reduction of problem behavior has been noticed after intervention by sensorimotor play stage.

To justify the failure of the researchers in finding any significant improvement in problem behavior, it may be said that behavioral problems in children with autism are innumerable and they originate mainly from sensory dysfunction. Therefore, even when the apparent and most prominent problems are controlled, some new ones emerge simultaneously. But from the overall findings, it has to be concluded that perhaps an average of 10 sessions for each stage may not be adequate for managing such major aspect significantly. But, the statistical analysis (mean values) reveals that an amount of positive gain is evident in managing problem behavior.

This research shows the efficacy of all the four stages on the three developmental spheres. Structured play constituted the structural conditions, elements, and processes of play

behavior which are also considered as the heart of play (Avedon & Sutton-Smith, 1971; Broadhead, 2006).

The *conditions* of play deal with factors surrounding the activity. Conditions primarily constitute the environment of the player and are, therefore, a determinant of play behavior. The interactions between differences in individuals and variations among environments such as colors, form, texture, spatial dimensions, and environmental quality are the determinants of variations in play behavior (Fjortoft, 2004; Miligram, 1970; Moss,1973;). In case of children with autism, the condition is necessary but the spontaneously available conditions, perhaps, are not sufficient for them to extract maximum input from them.to play. So, the environment for play, in this research work, was structured in such a way that they can extract meaning from the external stimuli to 'play' and thus play becomes systematic and productive for them.

The *elements* of play deal with the specific skills, abilities, and capacities required for carrying out the specific form of play behavior. Therefore, the "Cognitive Mental Age" was considered as the measure of their potentiality based on which these children were provided with different condition of varying difficulty.

The *processes* of play deal with the way the individual player decides to consciously manipulate the elements and conditions. In case of children with autism, spontaneous manipulation was observed to be haphazard and lacked creativity. Therefore, in the structured set up, the processes of imitation, modeling, and joint attention were used and it was observed that those were beneficial for them as they acquired many new skills and knowledge from this "structured manipulation" of their potentialities and environment.

"Play" was also structured keeping in mind the "generalization theory" of play, which accounts for our ability to react to novel play situations in accordance with their similarities to familiar cues (Kando & Summars 1971; Witt & Bishop 1970). The concept of generalization was kept in mind while structuring play for children with autism and the result shows that learned play behavior responses to one set of stimuli also evoked responses to other stimuli closely associated with the original one. For example, in the 'functional play' stage, where the child was introduced to the name and functions of an 'almirah' (a replica) and he learned to keep his clothes inside it, later, he could generalize this and keep his own clothes in his own cupboard (as reported by caregivers). Also, their interactions with teachers improved which they could generalize from the skills acquired in structured 'pretend play' stage.

The failure to attend to social cues in early life may bear a large share of responsibility for core social and communication deficits (Trepagnierc, Sebrechts, Finkelmeyer, & Stewart 2006). On the other hand, early imitation is a non-verbal means of information processing, which helps in shaping one's behavior and acknowledge the existence of someone else by copying him (Wing 1998), for both of which these children are lagging behind.

The items in structured play were selected, keeping in view the above information. "Imitation" was considered as significant tool in structured play, through which children were provided an opportunity to interact and attend the researcher socially. "Attachment", one of the core components of socialization, was facilitated between the children and the researcher, and this was observed in their behavior as in "the spontaneous and meaningful smile in the face of the child while holding the dolls in his hand".

Model of human behavior suggests that all individuals need either extrinsic or intrinsic motivation. This research on structured play had it in this component of creativity in almost all its stages, especially in the 'constructive stage', where, considering the cognitive abilities of children, they were exposed to different constructive items of play like block building, plasticine, jig-saw puzzles etc. Through these materials, they got the chance to experience a taste of creativity. For example, they learnt to make simple models with plasticine by imitating the researcher. The quantitative data also supports the fact.

The last three stages of play have the maximum contribution. This is also supported by the research based on Piaget's theory of play which predicted that more mature forms of play (pretend) was positively correlated with advanced cognitive and social skills (Smilansky, 1968).

Structured play opened the floodgate of novel items to children with autism to encourage maximum accommodation and assimilation – the two famous complementary processes as identified by Piaget. Through play, they got the opportunity to test out new social, physical, cognitive, and emotional patterns. It also assured the opportunity to practice and expand on existing behavior repertoires so that they would not be lost as a result of disuse.

Man is a stimulus seeker and Piaget's notions of accommodation and assimilation would be successful only when adequate stimulus is available in the environment. From the perspective of 'stimulation theory' of play, play is the behavior that maintains an optimal flow of stimulation for the individual. Structured play provided a paramount of stimulation and helps them to explore, which they are deprived of because of their glass shell. The play items in the different stages of structured play provided a continuous 'knock' at the door of the 'glass shell' of autism to prevent them from getting engrossed in their inner world. The items of play were the *bridges* of contact with their world and the reality. The attempt was successful to a large extent which is evident from the obtained result of the research.

Thus, Structured play, in this research, was not a solitary intervention. Rather it is an attempt to strengthen the existing management process, in bringing out the children with autism from their segregated world.

Suggestions

The present study shows little effect of play therapy on problem behaviour. Here, emphasis was given mainly on cognition and communication, e.g., identifying the objects in context to environment, use of object etc. with the assumption that there would be some indirect positive effect on problem behaviour, enhancing the attention part and reducing hyperactivity of the person with autism which actually did not work. So, further research with play therapy, emphasizing problem behaviour along with cognition, socialization, and communication in autism is suggested.

The study using play therapy can be used for healing the population affected with mental retardation, cerebral palsy, other pervasive developmental disorders, etc. and a comparative study can be done.

Emotional development is an important aspect in play therapy and children with autism are often found to have problems in expressing their emotions in appropriate way. An elaborate study is required using play therapy and emphasizing emotional aspects.

Conclusion

Thus, it can be said that this 'Play Module' can be utilized as a method of intervention for the children with autism for new learning in the future. Intervention through structured play will be an attempt to open the "windows" of the impenetrable "glass shell" of autism and will help them to be flexible, share attention, attend, imitate, learn and express.

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