"EFFECTIVENESS OF PRETEND PLAY AS A THERAPEUTIC MODALITY TO ENHANCE SOCIAL COMPETENCE IN CHILDREN WITH AUTISM"

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CERTIFICATE

This is to certify that the research work entitled **"EFFECTIVENESS OF PRETEND PLAY AS A THERAPEUTIC MODALITY TO ENHANCE SOCIAL COMPETENCE IN CHILDREN WITH AUTISM"** carried out by **Reg. No.411513005**, towards partial fulfillment of the requirements of Master of Occupational Therapy (Advanced OT in Pediatrics), at KMCH College of Occupational Therapy (2015-2017), under the Tamil Nadu Dr. M.G.R. Medical University, Chennai.

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ABSTRACT

AIM: The aim of this study was to find out the effectiveness of pretend play in improving social competence among children with autism.

OBJECTIVES: The objectives of the study were to explore the pretend play behaviors and to improve social competence through pretend play for the children with autism.

METHODOLOGY: The study included 42 children with autism who were able to verbalize a word or two productively for interacting. All the children were assessed using Child Initiated Pretend Play for pretend play and Communication Deall Developmental checklist for social skills. The children were then grouped into experimental group who underwent a Learn to Play program and into the control group who were under general play based social skill training for a period of 80-100 sessions within 6 months.

RESULTS: The results of the study were, 19 children of the experimental group showed presence of typical indicators of pretend play explaining there was an improvement in the pretend play skills($p<.005$) and the social skills($p<.005$) of the children of the experimental group post Learn to Play program. The results also show an improvement on the elaborate play and imitative actions of pretend play and social skills ($p<.005$) of the control group attained by general play based social skill training. Yet the effect of the pretend play on the play group was greater ($d=0.8$) than the control group.

CONCLUSION: From the results it is evident that the Learn to Play program to develop and improve the pretend play of the children with autism is effective than the general play based social skill training. The study thus concludes that the pretend play is an effective therapeutic modality to enhance social competence of children with autism.

Keywords: Autism, Pretend Play, Social Competence.

INTRODUCTION

Howes and Matheson defined social competence as "behaviors and cognitions that reflect successful social functioning with peers. The socially competent child is effective in meeting his or her social goals with peers yet flexible and sensitive in responding to social communications from peers".[1]

Social development for a child is the child's ability to approach others, get along with other children and their ability to manage a relationship with other peers.[1]

Social competence requires communication, motor, cognitive, emotional and sensory perceptual skills. A deficit in any of these performance areas places the development of social competence at risk.[2]

To be socially developed and competent, a child needs to be provided with opportunities where he or she tries to get along with others, understand and express the emotions of others, and interact appropriately with others at timely situations.[3,1]

Play is a way through which a child can orient, decode and portray their social and affective experiences. Play as a powerful medium develops social competence, helps in understanding narratives, emotional regulation, and problem solving and language skills.[4]

Play as an occupation allows the child to express who they are as a player and to socially interact with others. Such a recognized play for a child to develop important skills like cognitive, language, as well as the social perceptiveness and emotional regulation is pretend play. Children who do not imitate or initiate play are likely to have difficulty in some area of childhood performance that limits their ability to respond.[5]

Pretend play allows a child to imagine, use symbols in the play which helps them to interact with peers, resolve conflicts and enables a child to be socially competent. 'Pretend play reflects reality as well as transcends reality' through the child's play behaviors.[2]

An enormously eliciting situation for a child to have good social contact with peers is through pretend play and when this elicitation in a child is a deficit during pretend play and

this counts for the poor social skills in a child, which is exhibited as a lack of interest to play with others.[6]

Pretend play is self-initiated in normal children but it is not the case when it comes to children with developmental disabilities like children with autism.[2]

The most prominent characteristics for children who receive the diagnosis of autism are their impairment in social engagement, creative symbolic play and language.[7]

Lack of imagination has been identified as one of the major symptoms that constitute the triad of autism spectrum condition (ASC) characteristics, together with impaired social interaction and communication. In particular, pretend/symbolic play is an important diagnostic indicator of childhood autism as defined by ICD-10 and DSM-V.[8]

Children with ASD rarely or does not engage in imaginative spontaneous play activities like typically developing peers instead they have very limited understanding on the use of toys, symbolization in play and to use socio- affective skills.[9]

Children with Autism spectrum disorder often experience challenges surrounding social pragmatics (e.g., turn taking in conversation, initiating conversation, and the ability to take the listener's perspective), perseverative speech, and emotion regulation, expression, and understanding. These deficits may possibly lead to rejection and isolation from peers.[2]

It can be said that atypical play among children with autism doesn't mean that the child is completely unable to symbolize. Many children when they grow older are able to show, act, imitate actions and tries to generalize simpler play forms when presented with examples or when directly instructed, yet 'their play tend to be limited, sterile and ritualized.'[7]

In pretend play, when the child is playing 'as if' and using imagination and imitation to play they get an opportunity to act out social situations, understand social rules, interact with peers, and initiate and communicate with others and when these opportunities are not met the children tend to be poor at social interactions, lack motivation and show reduced problem solving, planning skills in older years of their life which is likely an outcome seen in children autism spectrum disorder.[10]

Occupational therapists, who focus on the main role of the child as a player must address the participation restriction to acquisite the play and social skills by providing multiple opportunities for children to engage in pretend play which will improve the children's use of imagination, imitation and symbolization during their play time which helps the child to participate in group play, to interact with others and provides a social awareness for the child to where they belong and promotes their skill development.[2]

Need of the study:

Studies conducted previously had been done for

- Children of 3-5 years or 5-8 years[11] who were diagnosed with developmental disabilities, Down's syndrome, Intellectual Disability and autism from specialist school settings.
- For a time period of six months with interventions of pretend play given only twice a week, which may not be adequate for skill acquisition.[9,12]
- Including children of various diagnoses like children with intellectual disability, children with hearing impairment, vision impairment, downs syndrome, attention deficit hyperactivity disorder but children with autism were accounted less in numbers comparing to other conditions.[5,10,11]
- A presenting limitation of using fewer symbolic play scenarios to improve social competence has been noted.[4]

  This study thus was needed to be done by
- including a larger sample of children with autism spectrum disorder
- including children within the age group of 3 to 7 years
- giving therapy frequently in a six months' time frame
- Including different levels of social participation in pretend play and symbolic play scenarios to improve the social competence of children with autism.

RESEARCH QUESTION

Can pretend play be used as a therapeutic modality to increase social competence among children with Autism?

AIM AND OBJECTIVES

AIM:

To find out the effectiveness of pretend play in improving social competence among children with autism.

OBJECTIVES:

- To explore the pretend play behaviors of children with autism
- To improve social competence in children through pretend play

HYPOTHESES

NULL HYPOTHESIS:

Pretend play is not an effective therapeutic modality in improving social competence in children with autism.

ALTERNATE HYPOTHESIS:

Pretend play is an effective therapeutic modality in improving social competence in children with autism

OPERATIONAL DEFINITION

EFFECTIVENESS:

To mention if pretend play has an effect on social competence of children with autism after the intervention. In this study it is measures through assessing the pretend play, social skills level and the developmental play level of a child.

PRETEND PLAY:

A play in which the child is participating freely, involves symbolic actions to play and represent one object with another, reference to an absent object and substitution of a symbolic action through imagination.

SOCIAL COMPETENCE:

A child to say is socially competent must be able to initiate play, enter ongoing play groups, appropriately respond to a peer's initiations of interactions, and integrate affect and actions with peers.

RELATED LITERATURE

DSM-V describes Autism Spectrum Disorder (ASD) as when there are essential features which are persistent from early childhood and limit or impair everyday functioning of a person. The diagnosis criteria includes,[13]

A. Persistent deficits in social communication and social interaction across contexts, not accounted by general developmental delays and manifested by 3 of 3 symptoms,
    - Deficits in social – emotional reciprocity (unusual social approach, failure of normal back and forth conversation, reduced sharing of emotions/affect, lack of initiation of social interaction, poor social imitation)
    - Deficits in non-verbal communicative behaviors used for social interaction (impairment in social use of eye contact, impairment in the use and understanding of body, impairment in use and understanding of gestures, abnormalities in use and understanding of affect, lack of coordinated verbal and non -verbal communication)
    - Deficits in developing, maintaining and understanding relationships. (deficits in developing and maintaining relationships, appropriate to developmental level, difficulties adjusting behavior to suit social contexts, difficulties in sharing imaginative play, difficulties in making friends, absence of interest in others)

      These are the concerns which are focused on during the pretend play intervention.

PRETEND PLAY:

WHO proposed [2] that any child aged 18 months to 6 years involves or engages in pretend play. Pretend play can be observed when a child is playing with conventional toys such as a bed and a doll. With conventional toys, the child can pretend an action as doll sleeping on bed.

Pretend play can be said to be of two ways of play as conventional play and symbolic play. Conventional imaginative play refers to a child using conventional toys to

pretend, while symbolic play refers to primary use of symbols within pretend play. Pretend play is the mature form of play for the preschoolers.

The developmental play scale explains the symbolic play at various levels of age range as follows, [14]

Presymbolic levels:

- Presymbolic level I : 8 to 12 months

Children can coordinate attention to both an object and a person by showing or giving an object. Child is developing object permanence and is aware that a person or object continues to exist when out of view.

- Presymbolic level II : 13 to 17 months

Child explores toys more systematically, quickly locating the part of the toy that is responsible for its operation (levers, buttons) and attempts a variety of motor schemas on it. They recognize familiar objects and spontaneously use them appropriately (e.g. Combing hair, talking on telephone).

Child becomes active problem- solvers, they construct relationship between toys and physical environment, they may hand toys to adults for operation 'protoimperative' or they bring the toy to adults simply for attention 'protodeclaratives'

Symbolic levels:

Symbolic abilities involve the ability to allow one object to stand for another object and to transform and transcend immediate reality. Symbolic abilities develop in a variety of areas: play, art, language, mathematics, music. Play can be considered along four dimensions.

- Decontextualization and object substitution
  This trend allows play to occur with decreasing environmental support or changing reliance on props and increasing use of language.
- Thematic content

Play themes develop from themes in which children have been frequent active participants to themes in which they have participated less frequently to themes they have only observed, and finally to themes they have invented.

- Organization of themes

  Sequential combinations or integrations of actions lead to sequentially and later hierarchically organized play with greater coherence and complexity of action representations.

- Self-other relationship or decentration

  This dimension frees symbolic actions from children's own bodies, allowing them to adopt the roles of others in pretend activities and include others in their pretend. Development of theory of mind is critical for development in this dimension.

Symbolic level I: 17 to 19 months

The children exhibit the beginning of representational and symbolic pretend play. They use toys and objects not only functionally abut also in pretend.

Peer interactions at this level are limited and not sustained. Children require life- size, realistic props in order to engage in pretend play. They represent pretend actions in only those highly familiar events- washing, eating, and sleeping. They quickly move from one pretend action to another and use isolated schemas.

Symbolic level II: 19-22 months

The pretend representations continue as before however include not only reenactments of their own activities but also reenactments of activities of familiar other- cooking like mom, reading a book like big brother. Their pretend scripts continue to be brief and isolated from other scripts but their constructions increase.

Symbolic level III: 2 years

The themes at this level are highly participatory ones. Children will engage in reversed roles with adults but not with peers. Most children at 2 and 3 years of age play themes focus on common household activities such as cooking, eating, sleeping and so on. The pretend play scripts are still isolated but the individual events or scripts can become highly elaborated

because children the kinds of objects that generally appear together on doll's behavior or their ongoing activities using short sentences that may include 'ing', plural and markers.

Symbolic level IV: 2 ½ years

The major change at this stage is the thematic content of the play. Children begin to represent events they have personally experienced, less frequently. These events have been particularly memorable, because they are either pleasurable or traumatic. With normally developing children, common scripts that emerge are shopping or doctor play. Here, children begin to engage in reversibility of roles. Play scripts have only the organization that appeared at 2 years of age.

Symbolic level V: 3 years

3 year olds continue the pretend themes of the earlier stages; however, they begin to combine isolated scripts into multischeme sequential episodes (eg. Setting the table, cooking). The sequence of events evolves- one activity leading to the next-rather than being planned ahead. with peers, children engage in associative rather than full cooperative play. Children modify scripts of their own personal experiences so that the outcomes are more favorable. The emergence of evolving sequential scripts signals a cognitive basis for the use of language for reporting. This is the beginning of storytelling and also associated with literate language skills.

Symbolic level VI: 3 to 3 ½ Years

With metacommunication skills, children at this level are better able to adopt a shared pretend focus, mark their interactions as pretend, as well as relate to other's intentions in a pretend activity. They now begin to attempt to negotiate with peers during play. Children at this stage can engage in object transformations proclaiming that a chair is a car or that a block is an airplane.

Symbolic level VII: 3 ½ to 4 years

By this level, children are able to use gestures and language to set the play scene. The sequence of pretend events in their level does not simply evolve, but rather it is planned and

the planning may take as long or longer than the actual pretend play. With this planning comes improvisation of play themes.

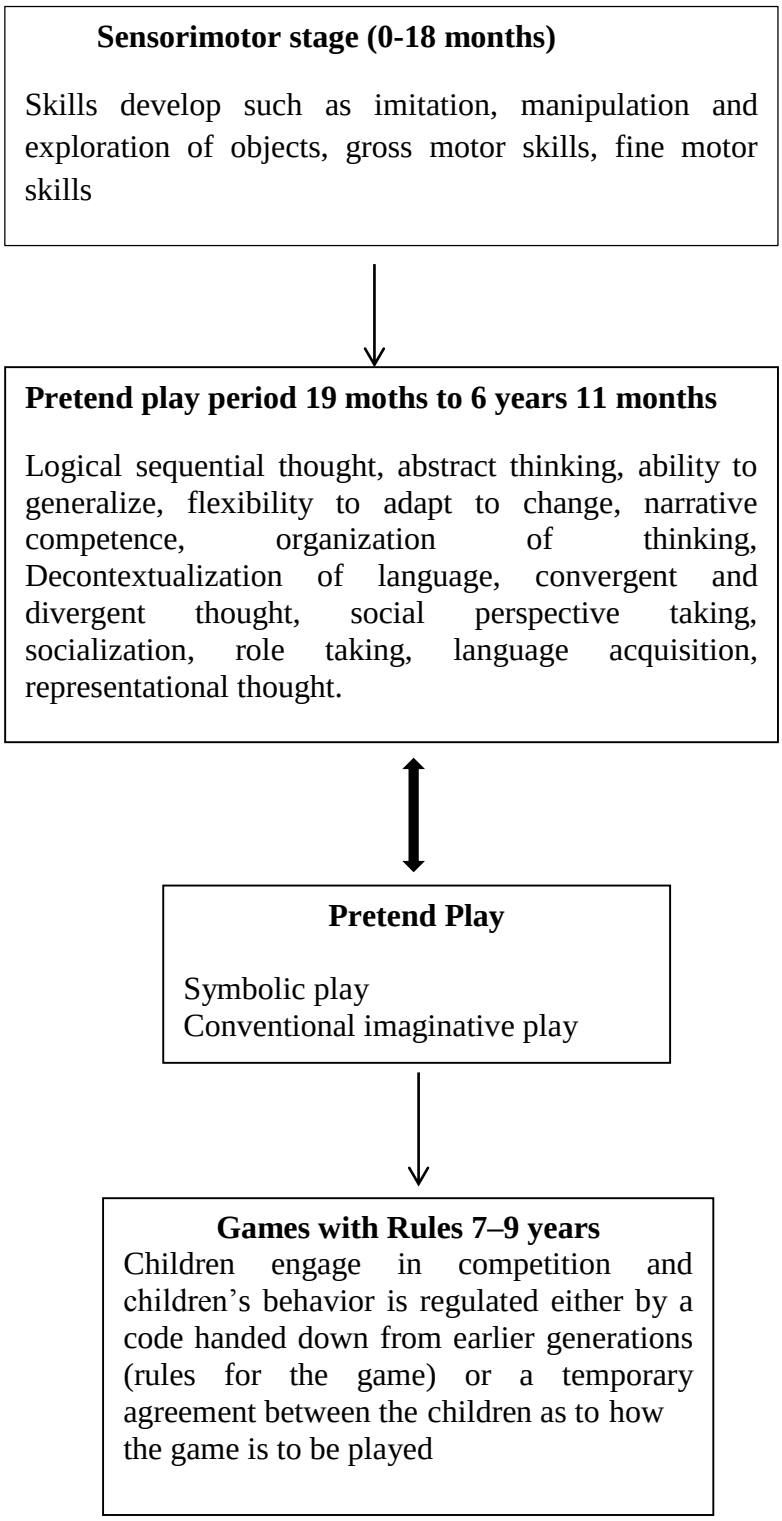
The self-other relationship becomes more elaborated in this stage. Children exhibit both a landscape of action and a landscape of consciousness in their play. Children begin to recognize that any individual may function in more than one role.

Symbolic level VIII: 5 years

By 5 years, play can be completely decontextualized. Children can use language alone to define scenes, roles, actions and invented objects in this play. At this level, children not only can play and plan out their own behavior but they also can plan and monitor the roles and behaviors of others. They now engage in full cooperative play.

PRETEND PLAY MODEL:

Using aspects of the theories offered by Piaget, Fein and Vygotsky a model of pretend play based on the classification system of WHO (ICIDH-2, 1999) was developed.[2]



SOCIAL COMPETENCE: [23]

The child even during infancy is not a passive recipient instead they are active using social patterns during their movement, speech and in imitations of simple facial expressions. As a result of complex influence of learning and social experience they function well in their environments as capable children.

Social competence is the result of the diverse skills and behaviors that allow the individuals to learn, to care for their daily needs and to maintain satisfactory human relationships within their cultural context.

Social competence provides the foundation from which an individual can successfully negotiate social and emotional changes. Social competence in an infant includes sensory and perceptual skill, such as orienting to smiles and imitating facial expressions.

Components of social competence:

Social competence requires an ability to imitate and learn social behaviors. In addition to social learning, children need some intrinsic motivation for social interaction. Intrinsic motivation develops from a sense of mastery and personal causation.

Mastery motivation

Children exhibit pleasure and confidence on mastering desired skills. When a child achieves a goal independently, it helps him or her open up for new challenges. Theories of mastery motivation emphasize the child's active role in his or her own learning.

Achieving task competence requires the understanding of the function of any objects involved, the sensorimotor skill to act on that object in an effective manner, and the mastery motivation to accept the task challenge.

Self esteem

Mastery motivation and the degree to which it is nurtured, provides the basis for self-esteem, a sense of self as individual and vital. This sense of personal value, that one can accept challenges and potentially master them, is considered the core of self esteem. Average or

typical children begin creating ideas about themselves and about their emotions between the ages of 18 months and 3 years.

Personal causation

Personal causation is the sense that one can influence the people and events within one's environment. It is an individual's perception of who (or what) is in control. Children's perception of themselves varies much more than that of adults. Changes in the environment can result in dramatic changes in the self-concept.

As the child matures, perception of control becomes a multidimensional construct that includes a child's perceived competence, social experience, and internal motivation.

Learned helplessness

Learned helplessness is that pattern of behavior that occurs when a child is exposed to unsolvable problems. In other words learned helplessness is believed to be behavioral result of a strongly externalized locus of control.

Interpersonal relationships in children:

The child's first social relationship is with immediate family and other caregivers. Children who are atypical in their development may show less affect than other children, or they may show atypical affect. Adults may perceive that lack of affect reflects lack of attachment or desire to interact, thus negatively influencing the parents' early feeling of competence.

Language is an important asset to the development of interpersonal skills. Nonverbal gestures, referencing behaviors and facial expression are all important social communication tools.

Teaching social skills and play skills:

Teaching spontaneous play skills to children with autism, or developing existing play skills, is not easy; if it were so, it would not be a recognized core problem of autism.

There have been some very encouraging attempts to teach social skills. The importance of the social element has been emphasized also in the teaching of advanced cognitive play skills. Sherratt in a successful action research study to teach symbolic play to children with ASDs, states that the play should be social: learning new skills from a more able player, gaining a desired object from someone else or sharing a sense of enjoyment from the actions of others.

Schuler and Wolfberg developed an integrated peer group model in which both the peers and the children with autism are trained to use attention directing behavior and language to establish joint attention, model symbolic play, and embed the autistic behavior in the context of a chosen play theme

Rogers reviewed attempts to increase social interaction in children with autism and concludes that they are responsive to a wide range of interventions. Peer tutoring (Choi et al.,), sociodramatic script training (Goldstein et al.), using obsessions functionally as the theme for a social game (Baker et al.), adopting a cognitive strategy (Eriket al.), and naturalistic teaching to stimulate play and interaction (Kohler et al.) have all proved somewhat successful with children.

LEARN TO PLAY: [16]

Learn to play is a practical program designed to develop imaginative play skills of children with developmental delays, autistic spectrum disorders, language disorders and other disabilities.

The imaginative play is used in this program to indicate both symbolic play and conventional functional imaginative play. Imaginative play with real objects or toys is regarded as conventional-functional imaginative play because the child relates to the play objects in a conventional manner.

Symbolic play occurs when a child begins to use representative thought, or represents one object by using another. Symbolic play also incorporates the child's ability to attribute properties to absent objects, presnt objects and situations. Symbolic play can be interpreted as a reflection of the internal mental skill that a child brings to the play situation.

Learn to Play recognizes that play is also a complex cognitive skill which necessitates the integration of many skills as the child grows. These cognitive skills are seen most readily in the child's imaginative or pretend play.

The play skills developed in this program- play themes, sequence of imaginative play actions, object substitution, social interaction, role play and doll or teddy play are all essential skills involved in imaginative play. If some or all of these skills are missing or delayed, then the child can either not play at their age level or may have difficulty playing at all. As a child grows these play skills becomes more intertwined and complex.

Developmental skill level:

The developmental skills chart has the play skills according to the developmental age levels.

PREIMAGINATIVE PLAY: (0-18 months)

- Sensory awareness – the child tolerates sensory input.
- Object exploration and manipulation – the child explores and manipulates objects
- Sense of proprioception – the child shows awareness of proprioceptive and kinesthetic input
- Sensation of movement – the child tolerates movement which involves their feet leaving the ground.
- Object permanence – the child understands that the objects are permanent even when they can't be seen.
- Imitating an action – the child imitates a single action
- Relating two objects that relate to each other – the child relates objects functionally.

PLAY THEMES:

- Play themes relate to the child's own body(18 months)
- Play relates to the daily routine(20-30 months)
- Play relates to the household activities(30-35 months)

- Plat relates to activities outside the home(36-42 months)
- Play themes are less frequently experienced life events(42-47 months)
- Play themes extend beyond the home(4 years)
- Play themes integrate more than one story and include other children(4 years)
- Play themes extend beyond the experience of any child(5 years)

SEQUENCES OF PLAY ACTIONS:

- Imaginative play actions are absent or random(0-12 months)
- One action activities(18 months)
- Two actions occur in play but the topic is the same.(20-23 months)
- Two or more actions occur in play but the sequence is illogical(20-23 months)
- The actions are logical and are more than two actions(24-30 months)
- Joining several actions in a logical sequence with no pre-planned story – play just happens(30-35 months)
- The child begins to pre-plan a logical sequence of play actions.(4 years)
- Play actions are preplanned and logical with a sub-plot(4 years)
- Play actions are preplanned with one or more sub-plots with a group of children(5 years)
- Preplanning a story with one or more sub-plots with a group of children.(5 years)

OBJECT SUBSTITUTIONS:

- The child explores objects.(0-12 months)
- The objects are related functionally(18 months)
- The child uses a similar looking object for the intended play(20-23 months)
- The same object is used for two different functions.(24-30 months)
- An object is used for more than two different functions.(30-35 months)
- The child can use blocks to build a fence(36-42 months)
- The child can build the needed simple object.
- The child uses body parts as an object in play(42-47 months)

- Farms- the child uses objects with less similar physical characteristics to the intended object(42-47 months)
- Imaginary objects are used(42-47 months)
- Language and gesture are used to describe an object's function.(42-47 months)
- Objects with their own function can be used for another object.(4 years)
- The child utilizes many different things in a play scene.(5 years)

SOCIAL INTERACTION:

- The child imitates an adult action(0-12 months)
- The child imitates actions that have been previously seen(18 months)
- The child copies others using objects(20-23 months)
- The child requests a missing object needed in play(24-30 months)
- The imitates another child(30-35 years)
- Children play in association with other children(42-47 months)
- Children play in cooperation with other children(4 years)
- Children play cooperatively and negotiates in play(5 years)

INDEPENDENT ROLE PLAY:

- The child imitates a single action(0-12 months)
- Simple role play of actions previously seen(18 months)
- Children role play by copying each other(24-30 months)
- Role play for 10 minutes(30 months)
- Role play for 15 minutes(3 years)
- Role play for 20 minutes(42 months)
- Role play for 30 minutes(4 years)
- A role is maintained throughout the play session(5 years)

DOLL/TEDDY PLAY:

- The doll is held upright(0-12months)
- The child may imitate one action relating to the doll(18 months)
- The child relates one action to the doll spontaneously(20-32 months)
- The child relates more to the doll than to self(30-35 months)
- The doll is active in play(36-42 months)
- More detail in play action occur with the doll(36-42 months)
- The doll is placed with precision(36-42 months)
- Other objects can be used as a doll(36-42 months)
- The child relates many objects to the doll in play(42-47 months)
- Characteristics are attributed to the doll(42-47 months)
- The doll is fully active in play and carries out actions by themselves.(4 -5 years)

The pretend play session consists of

- Building rapport with the child
- Exploration to the play materials and the child
- Teaching imitation of one to initiate, slowly increasing it to three actions which is continued for three days and new action sequences are introduced from fourth day along with the old ones and so on
- The child is initially let to play in parallel level which is followed by adding up play mates according to their age and developmental level with same materials and play actions to be followed.
- The children are later made to participate in interactive group games with simple rules and commands to follow.

REVIEW OF LITERATURE

PRETEND PLAY – SOCIAL COMPETENCE IN AUTISM

Stagnitti, Unsworth (feb.2000)[2] in their article speaks about the two models offered, which illustrate the importance of pretend play to child development and the sequence of play development. The paper concludes by recommending that occupational therapists address and reduce the participation restrictions that some children experience in learning and social situations by enabling a child to increase activity in pretend play**. Cognitive, social and emotional skills are presented as having the biggest impact on pretend play development.** If there is any impairment in these skills the child experiences a reduced ability to pretend play leading to possible participation restrictions in the child's life, such as difficulties in fulfilling usual social roles.

The assessment files of 101 children with Autism Spectrum Disorder were studied. Nonverbal cognitive ability and expressive language were both significantly and uniquely related to symbolic play, although receptive language was not. **Autistic symptomatology ceased to be significantly related to symbolic play** when controlling for two or more other variables **Social development was related to symbolic play in those children with high nonverbal cognitive ability** but not those with low nonverbal cognitive ability. Thus stating the relationship between symbolic play and other domains, such as degree of autistic symptomatology, nonverbal cognitive ability, receptive language, expressive language, and social development. ***Gillian C. Stanley, M. Mary Konstantareas*. (2006)[4]**

In her article **Rita Jordan (2003)[6]** considers the nature of the presumed social play deficit in autistic spectrum disorders (ASDs). The nature of play and its typical development is outlined and discussed in relation to play development in ASDs. It is suggested that social play is a confluence of two strands of development that are affected in autism: social and emotional development, and the cognitive development of play. **It is shown that social play develops in a transactional way and in ASDs initial social difficulties prevents the development of social interaction, with its role in eliciting and enriching spontaneous play**. At the same time, cognitive and affective difficulties prevent the play of children with autism developing to the extent of attracting other children and being of a complexity from

which social play might develop. This cycle of impoverished play opportunities for children with ASDs may be broken through direct teaching and there are encouraging models of teaching social play with some success.

Howes and Matheson 1992, [1] conducted a longitudinal study of peer play development, from infancy through preschool with 48 children (study 1). Children developed play forms in the expected sequence and at the expected ages. Children showed stability in both proportion and emergence of complex play**. Children's pattern of play form emergence and proportion of time in more complex play forms related to subsequent indexes of social competence**. In Study 2, children of ages 10 to 59 months were assessed for peer play. One sample (n = 259) attended minimally adequate child-care centers. The other sample *(n* = 48) attended a model child-care center. Children in the model center showed complex play form emergence at earlier ages and engaged in greater proportions of complex play than children in the minimally adequate centers.

McAloney and Stagnitti, **2009, [17]** the aim in their study was to investigate how a child's performance on a play assessment was related to social peer play. **Children's pretend play was assessed using the Child-Initiated Pretend Play Assessment.** Social peer play was assessed by preschool teachers completing the Penn Interactive Peer Play Scale. Fifty-three typically developing preschool children were assessed. A significant positive correlation was found between the level of a child's elaborateness of play scores and peer play interaction. A significant negative relationship was found between a child's ability to substitute objects and play disruption. **A significant negative relationship was also found between a child's ability to elaborate play and substitute objects with play disconnection. The results suggest that children's social competence can be inferred from their play scores on the Child-Initiated Pretend Play Assessment.**

An exploratory study[3] based on secondary analysis of developmental screening data for a preschool program in Connecticut was done by **Sebastianelli in 2010.** The sample comprised of 79 three and four year-olds. Proxies for pretend play and cognitive, language and social skills development were operationalized from a standardized instrument, **Developmental Indicators for the Assessment of Learning (DIAL) and a Social Skills Checklist** that was

developed by professional staff at the program. The findings of the research showed a **strong positive correlation between pretend play and social skills development; and language skills and cognitive skills**. There was **no significant relationship between pretend play and cognitive or linguistic skill development**. Positive correlations were consistent with prior research. They also tended to support Vygotsky's social theory of cognitive development versus Piaget's linear model.

PRETEND PLAY – NEED FOR INTERVENTION FOR CHILDREN WITH AUTISM

The authors **Connie Kasari, Stephanie Patterson[12] (2013)** argue that the study of autistic children provides a unique opportunity to consider which elements in play are important and how play skills are associated with different periods of child development. They emphasize that there is a need for more rigorous tests of children's ability to pretend to determine the place of pretending in their overall development. Play interventions may prove critical to later developmental outcomes including later language, cognitive, and social abilities, particularly for some children with autism.

They conclude that, because **pretend play requires intervention for the majority of children with autism, improving pretense in these children may shed more light on the causal impact of pretense on later developing skills in children.**

The focus of a study[7] in which it aimed at analyzing the nature and concomitants of pretend play among young children with autism was done by **Hobson J and Hobson P. (2013)** Age and language matched children with autism (n=27), autism spectrum disorder (n = 14), and developmental disorders without autism (n = 16) and researcher administered the Test of Pretend Play with an additional rating of 'playful pretence'. As predicted, **children with autism showed less playful pretend than participants with developmental disorders who did not have autism.** Across the groups, playful pretence was correlated with individual differences in communication and social interaction, even when scores on the ToPP were taken into account. **Limitations in creative, playful pretend among children with autism relate to their restricted interpersonal communication and engagement** was the study conclusion**.**

The authors **Fiorelli and Russ[18]** (2012) link play to cognitive and affective processes as important for a child's development and overall well-being. In this article, the authors examined the relationships involving pretend play, coping, and subjective well-being and investigated the stability and predictive power of play skills. **They found that affect or emotional themes in play related to positive mood in daily life and that imagination and organization in play related to coping ability**. Their results, they concluded, also support the stability of imagination and organization in pretend play over time.

Helena Lydon, Olive Healy, Geraldine Leader[9] (2010) during the comparison of Video Modeling and Pivotal Response Training to teach pretend play skills to children with Autism Spectrum Disorder f**ound a significant increase** in the number of play actions for both the Pivotal Response Training (PRT) and Video Modeling (VM) conditions in the training environment, **with greater increases evident as a result of PRT.** Significant increases were also found in the number of play actions in PRT compared to VM in the generalization environment in which the aim was to find effectiveness of Pivotal Response Training (PRT) and Video Modeling (VM) in the acquisition and generalization of scripted play verbalizations and actions as well as the use of novel statements or actions in both the training and generalization settings among the five participants.

Stagnitti and Lewis (2014)[19] investigated the quality of pre-school children's pretend play where it predicted their semantic organization and narrative re-telling ability when they were in early primary school. It was hypothesized that the elaborateness of a child's play and the child's use of symbols in play were predictors of their semantic organization and narrative re-tell. Forty-eight children were assessed using the Child-Initiated Pretend Play Assessment when they were aged 4–5 years. Three-to-five years after this assessment their semantic organization and narrative re-telling skills were assessed and the results indicate that **the elaborateness of a child's play and their ability to use symbols was predictive of semantic organization skills. Use of symbols in play was the strongest play predictor of narrative re-telling skills.** The quality of a pre-school child's ability to elaborate complex sequences in pretend play and use symbols predicted up to 20% of a child's semantic organization and narrative re-telling skills up to 5 years later which provides evidence that

the quality of pretend play in 4–5 year olds is important for semantic organization and narrative re-telling abilities in the school-aged child.

PRETEND PLAY – INTERVENTION FOR SOCIAL COMPETENCE

O'Connor, Sheppard[5] (Aug 2012) conducted a study where, 19 participants who attended a specialist school, with 10 of the 19 children having a diagnosis of autism were assessed for play, language and social skills of the children at the baseline and follow up using Child-Initiated Pretend Play Assessment, Preschool Language Scale and Penn Interactive Peer Play Scale and the children were given a child led play based intervention aimed at developing self-initiated **pretend play skills in children for 1 hour twice a week for 6 months** who showed an increase of 47.3% in shared variance of social interaction and 36% for social connection after the training program concluding that **The 'Learn to Play' program was associated with increases in children's language and social skills over a 6-month period within a special school setting, and was found to be an effective intervention for children with developmental disabilities.**

O'Connor, Stagnitti (may 2011)[11] Investigating the play, behavior, language and social skills of 35 children who had Intellectual disability, majority having more than one diagnosis who presented with challenging behaviors and decreased social interaction skills aged 5–8 years participating in a play intervention for 19 children of which to had the diagnosis of autism (based on the 'Learn to Play' program), compared to a group of16 children participating in traditional classroom activities within a specialist school over a six month period found that **children participating in the play intervention showed a significant decrease in play deficits, became less socially disruptive and more socially connected with their peers ; thus supporting the use of a play intervention in improving a child's play, behavior, language and social skills.**

Uren, Stagnitti, 2009 aimed to study the relationship between pretend play, social competence[10] and involvement in school-based activities in children aged 5–7 years and to determine whether children's social competence and level of involvement could be inferred from their scores on the Child-Initiated Pretend Play Assessment. In this the pretend play

skills of 41 primary school aged children aged 5–7 years were assessed on a one-on-one basis. Classroom teachers of the children assessed the children's social competence using the Penn Interactive Peer Play Scale and their involvement in school based activities using the Leuven Involvement Scale for Young Children and **significant positive relationships were found between elaborate pretend play and object substitution scores, involvement scores and peer play interaction scores** A significant negative relationship was found between elaborate pretend play scores, and social disconnection and social disruption scores , Play deficit indicators were significantly negatively related to involvement scores; This suggests that children with proficient pretend play skills are socially competent with peers and are able to engage in classroom activity. **Children who scored poorly on the play assessment were more likely to have difficulty interacting with their peers and engaging in school activities.** They concluded that social competence and involvement skills are related to a child's ability to engage in pretend play. A child's social skills and ability to engage in school activities as assessed by teachers can be inferred from their scores on the Child-Initiated Pretend Play Assessment.

CONCEPTUAL FRAMEWORK

Allen, Pratt describes symbolic play as "play and recreational experiences through which the child formulates, tests, classifies and refines ideas, feelings and combined actions; associated with the development of language; objects for which importance is given according to the child's ability to symbolize, control, change and master".

Jean Piaget's cognitive theory: [15]

Piaget specifies four maturational levels or periods of cognitive function.

1. Sensorimotor period (0-2 years)
2. Preoperational period (2-7 years)
3. Concrete operational period (7-11 years)
4. Formal operational period (11 years onwards)

In the preoperational period knowledge is represented by language, mental imagery and symbolic thought. Child learn to use classification (similarities and differences), seriation (size, weight, color, in rank order) and conservation (specifying object in spite of apparent change in space, volume, length) in terms of objects and play materials.

This expands their vocabulary, have increased use of symbolic representations in play which piaget explains in these categories as,

- Practice play : play of infants when a child reports actions that have been acquired
- Symbolic play : involves manipulation of tools and toys
- Games with rules: involves practice with tools.

Use of play as a therapeutic modality:[24]

To effectively use play as a therapeutic tool, it is important to remember that play is

1. " A transaction between the child and the environment which is intrinsically motivated, internally controlled and free from objective reality,

2. A continuum of behaviors from play to non-play. The therapist, then turn a non-playful interaction into a playful one by altering the motivation, perception of control or need to objectively orient to situation".

Pretend Play – Social Play:[25]

Social play is important as it entails many aspects of a child's development. Once acquired it incorporates intention, interrelatedness, emotional directedness and narrative ability.

In social play child starts playing in isolation, engage in the exploration of self, developing a sense of asking to others, and learning about cause and effect in relation to self and world. Later, during socialization process the child notices others, plays along with, shares, joins their lay and accepts "interference" in the routine of his/her play.

According to Sherratt, Pretend Play in particular offers opportunities and opens path for children to socially interact, share, and understand each other at his /her play experiences.

White identifies three critical dimensions to social play that may be affected in autism.

- Social processes: shared attention and understanding, emotional regulation and underlying social competence.
- Complexity of cognitive play : fostering longer and more complex interactions
- Social status: evaluation of and by others.

Failure of social play experiences makes a child have difficulties in in self- awareness, motivation, memory, socialization and self-control.

Teaching social play through symbolic play scenarios offers an opportunity to prevent or correct many of the secondary consequences of autism as mentioned above.

Occupational therapy intervention:

Occupational therapy intervention specific to play has three perspectives: [24]

1. Intervention that uses play as a therapeutic modality when the goals are to improve specific component skills. (I.e. fine motor, gross motor, cognitive and psychosocial skills).

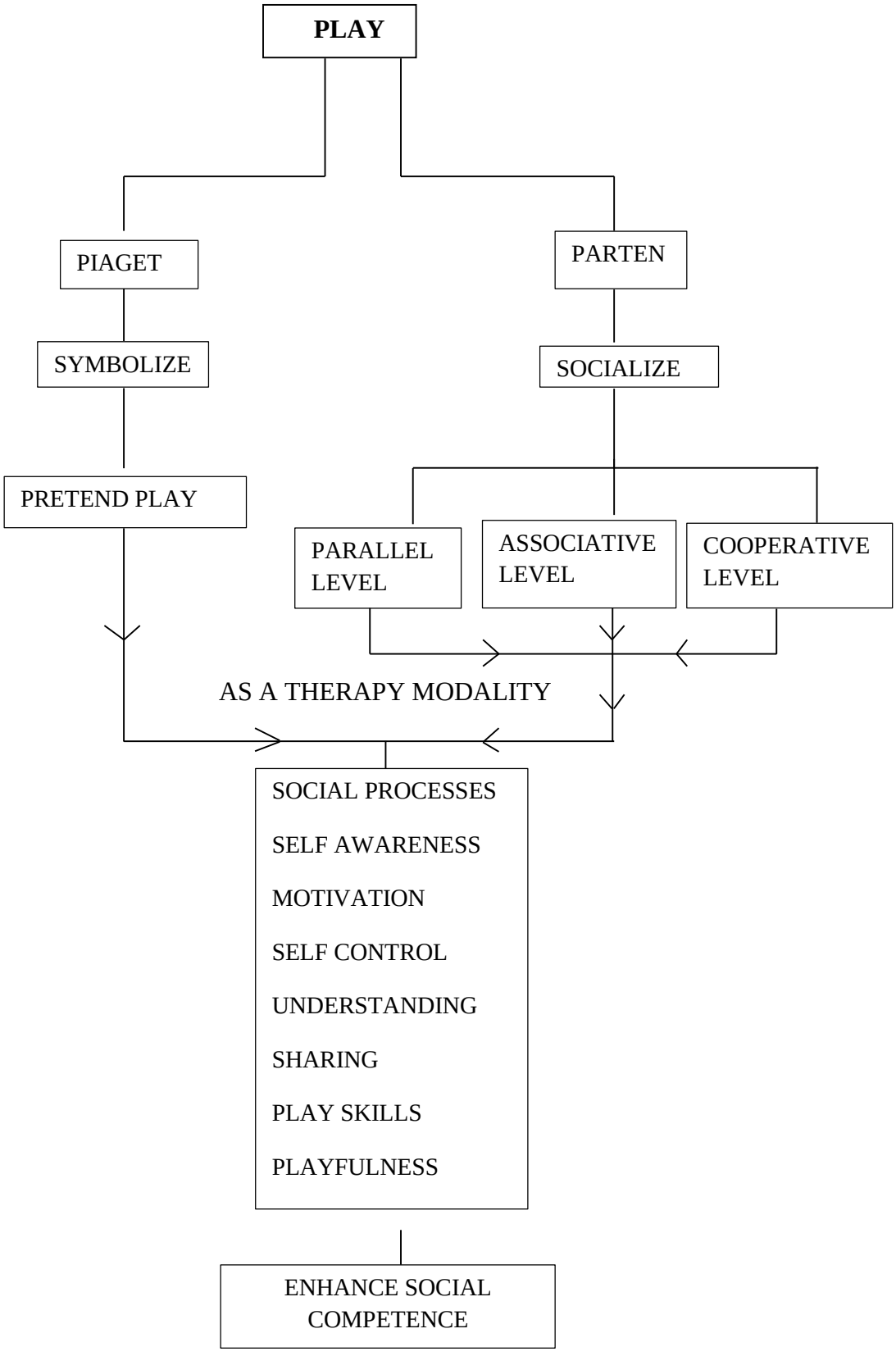
2. Intervention focused on improving play skills
3. Intervention focused on facilitating playfulness.

Occupational therapists can create play interactions that enhance social interaction skills which is done using the levels of social play developed by Parten. [24] As,

- Unoccupied play: playing with one's own body, random activity.
- Solitary play: playing with toys differently from children within speaking distance, interest centered on own play and independent activity.
- **On looker play** : watching others but not entering into the situation
- **Parallel play** : playing independently beside, not with others
- **Associative play**: group play with group agreement on common activities and interests.
- **Cooperative play**: the group is organized to achieve some goal; highly organized group activity.

Occupational therapists uses skill development group which works on specific training in performance of symbolic and creative activities. Treatment is aimed at expanding the child's play repertoire or ability to interact with his or her environment through play.

SCHEMATIC REPRESENTATION OF THE CONCEPTUAL FRAMEWORK



METHODOLOGY

PLACE OF STUDY:

The study is conducted In and around Coimbatore city.

STUDY DESIGN:

- The study is Quantitative, two group pre-test and post-test quasi experimental design.
- The study involves a control group and an experimental group

TARGET POPULATION:

Children with autism are the target population for the study

SAMPLE SIZE:

42 (21 in experimental group and 21 in control group)

SAMPLING TECHNIQUE:

Convenient sampling, Random grouping, assigning the first child in experimental group and second child in control group and so on for the 42 samples consecutively.

SELECTION CRITERIA:

Inclusion Criteria:

- Children within the age group of 3 years to 7 years who have autism
- Both boys and girls are included
- Children who can verbalize a word or two to interact productively and the verbalization being clear/ unclear
- Children who meet the criteria of receiving z- score (<-2 and -1) a level below the average and less than the average respectively in the Child initiated Pretend Play Assessment (ChIPPA)

Exclusion Criteria:

- Children with co- morbid physical dysfunctions are excluded (like, vision impairment, hearing impairment, physical disabilities)
- Children who have difficulty in attending everyday therapy

VARIABLES IN THE STUDY:

Independent Variable:

- Pretend play therapy for children (experimental group)
- General play therapy with social skill activities (control group)

Dependent Variables:

- Social competence of children
- Pretend play behaviors of children

Extraneous Variables:

- Children undergoing speech therapy along with intervention program
- Children taking part in social skill/ communication groups
- Play and communication evolving in natural environment.

TOOLS USED IN THE STUDY:

The scales were used to screen the children for inclusion and to measure the pre and post treatment effect.

- Child-Initiated Pretend Play Assessment
- Communication Deall Developmental Checklist
- Symbolic and Imaginative Play Developmental Checklist

CHILD INITIATED PRETEND PLAY ASSESSMENT: (ChIPPA)

- The ChIPPA is aimed to gather information on a child's ability to self-initiate their own play.
- The examiner is passive during a ChIPPA assessment with interactions being responding to the child or encouraging the child to continue engaging with the toys or play materials
- The ChIPPA has two sets of play materials because two aspects of pretend play are assessed – conventional-imaginative play and symbolic play.
- For 3 year olds, the ChIPPA is divided into play 2 sessions with 9 minutes assessing conventional-imaginative play and 9 minutes examining symbolic play.
- For 4 year olds to 7 year 11 month old children, the 30 minute session is divided into 2 x 15 minute sessions, with one 15 minute session being assessment of conventional-imaginative play using the toys, and one 15 minute session being assessment of symbolic play using the unstructured play materials. (Children who are competent players can play for longer than 30 minutes but most children are ready to finish at 30 minutes.)

Scoring:

There are three items that are scored:

1. The percentage of pretend play actions (PEPA), which shows the child's ability to organize play actions logically and in sequence;
2. The number of object substitutions (NOS), which indicates the child's capacity to use an object and pretend that it is something else; and
3. The number of imitated actions (NIA), which indicates whether the child has difficulty initiating play ideas and imitates the examiner's modeled play actions (Stagnitti, 2007)

The ChIPPA normative scores are based on z-scores.

These scores are categorized across four levels of performance. These are:

(a) Good performance (above the range of scores > +1),

(b) Performance expected for age (within the range, that is - 1 to +1),

(c) Delay for age (that is, scores between - 1 and - 2) and

(d) Significant delay (scores below - 2 which indicate intervention is needed).

Psychometric properties:

Reliability: Inter-rater reliability is good to excellent, with kappa scores ranging from .7 to .97

Validity: Concurrent validity of the ChIPPA was established with inference from ChIPPA play scores for a child's social skills ($r=.35$, $p<.05$)

COMMUNICATION DEALL DEVELOPMENTAL CHECKLIST (CDDC)[20]

It is a criterion referenced and a norm referenced checklist used for profiling various aspects of development such as Receptive and Expressive language, Gross and Fine motor skills, activities of daily living and cognitive/academic skills, Social and Emotional skills.

The domains of Expressive and Receptive language and social skills are profiled for the research.

Each domain has 36 items which is arranged ascending from 0-6 month upto 72 months of age range.

Scoring:

The assessment is carried out within each domain separately and is done from chronological age downwards. For children with developmental issues, skills must be assessed from bottom to top. (Lower to higher level skills)

The researcher assessing the child scores each skill on a 5-point rating scale. The response to each skill is marked on the scoring sheet. The scores are, [21]

0 - Not acquired
1 - Acquired but lost
2 - Acquired but present inconsistently/ emerging
3 - Acquired and consistently present but only in specific situations

4 – Acquired and consistently present across all situations

NR - No response

Psychometric properties:

The inter- rater reliability of the language skills (expressive and receptive language) and social skills was found to have a high correlation value of 0.97, 0.96 and 0.95 respectively

SYMBOLIC AND IMAGINATIVE PLAY DEVELOPMENTAL CHECKLIST (SIPDC)[16]

This is a checklist consisting of the developmental charts which are referenced for the developmental levels of the play skills being observed in the child.

The child was observed in the areas of pre-imaginative play skills and imaginative play skills before the treatment program

After six months of intervention the child was again observed on these areas to find out the advanced play skill levels post intervention

The ages given in the checklist are regarded as representing average or typical development.

PROCEDURE:

- An approval from the ethical committee, permission from the institutional head and consent from the parents were attained.
- The samples were screened using the Child Initiated Pretend Play Assessment (ChIPPA) and Communication Deall Developmental Checklist (CDDC) before the assessment and grouping process.
- All the children who got a score - a level less than the average or less than the average score in ChIPPA and those who possessed skill level below the chronological age level in CDDC were considered for the study.
- A pretest was performed for the target population using ChIPPA, CDDC and SIPDC which will give the pretend play level, social skills and developmental skill level of children
- Children were categorized into an experimental group and a control group.

- 42 children were randomly assigned in the experimental group (21 children) and in the control group (21 children) after the pretest.
- Next day after the pretest, the experimental and control group were introduced into the intervention program consisting of 60-75 individual therapy sessions of pretend play and 25-30 sessions of group participation along with pretend play.
- The experimental group underwent regular occupational therapy session of one hour in which pretend play was given for 30 minutes individually as well as in groups among these children for 6 days in a week covering 80-100 sessions within 6 months.
- The control group underwent regular occupational therapy session for one hour in which general play based social skill training was given for 30 minutes individually as well as in groups among these children for 6 days in a week covering 80-100 sessions within 6 months.
- Both the groups were involved in individual therapy for 60-75 sessions and group sessions with group participatory games for 20-25 sessions during the intervention period.
- After the completion of therapy for 80-100 sessions both the experimental group as well as the control group are assessed using the ChIPPA, CDDC, SIPDC to evaluate the pretend play, social skills and developmental skill levels presented post intervention.
- The provided data are then subjected to statistical analysis.

INTERVENTION

Learn to Play[16]

The learn to play program is used for the development of pretend play

The principles are to:

- start the program on the child's developmental play level, gain focused attention on the play
- task, model the play activity, talk about the play while the play unfolds ('metaplay'),
- use emotions and engage the child emotionally in the play,

- encourage imitation of the play activity, repetition of the play activity with variation (for example, having cups of tea but the action is varied each time such as blowing on the ‘tea’ to cool down),
- Focus on building logical sequences of play action, use of symbols in play, creation of a play story with incorporation of a figurine as if alive.

Six skills are the focus of the program. These are: **sequences of play actions, object substitutions, play scripts (the stories in the play), doll/teddy play, social interaction and role play**. (Explained in detail at related literature)

DATA ANALYSIS AND RESULTS

This chapter discusses the analyses of the collected data. The aim of this study was to find out the effectiveness of using pretend play in therapy to improve social competence of children with autism.

STATISTICAL DESCRIPTION OF THE VARIABLES

For this study analyses were done using SPSS for windows (version 20.0). Descriptive analyses were performed to characterize the groups and inferential analyses to compare the performance of the groups (Mann Whitney U , Wilcoxon, Paired sample t- test) were used.

- Pretest scores of experimental group and control group analyzed through the Mann Whitney U test. (table no. 4.1,5.1)
- Posttest scores of experimental group and control group analyzed through the Mann Whitney U test. (table no. 4.2,5.2)
- Pretest and posttest and both experimental group and control group separately were analyzed using the Wilcoxon signed rank test. (table no 6.1,6.2,7.1,7.2)
- To compare the means of experimental group and control pre and post and to find out the effect size from the groups paired sample t-test and Effect size Calculator formula were used respectively. (table no. 8.1,8.2)

  Effect size:

  $$d = M_1 - M_2 / \text{Spooled}$$

  $$\text{Spooled} = \sqrt{[(S_1^2 + S_2^2) / 2]} \text{ where}$$

  d is the descriptive measure (difference between the means) Cohen's

  M_1 and M_2 are means of posttest and pretest scores of each individual groups

  Spooled is the pooled standard deviation (the square root of the average of the squared standard deviations S_1 and S_2) of each individual groups

  An effect size of □0.2 to 0.2 is considered to be a small effect

  An effect size of 0.3 to 0.5 is considered to be a medium effect

  An effect size of 0.6 to >0.8 is considered to be a greater effect

Table 1: DEMOGRAPHIC DETAILS:

S. No	Groups	No. of Participants	boys	Girls	Mean Age
1.	Experimental	21	16	5	3.9
2.	Control	21	19	2	4.8

Table 2.1: Descriptives of the pre test scores of the pretend play, language and social skills components for both the experimental group and control group

Variables	N	Mean	SD	Minimum	Maximum
Percentage of Elaborate Pretend Actions	42	5.64	5.53	.00	24.00
Number of Object Substitutions	42	1.78	2.15	.00	10.00
Number of Imitative Actions	42	1.23	2.04	.00	11.00
Receptive Language	42	44.61	9.65	26.00	73.00
Expressive Language	42	42.95	11.05	30.00	72.00
Language	42	87.52	19.21	61.00	137.00
Social	42	33.26	6.09	23.00	49.00

Table 2.2: RANK VALUES OF THE PRETEST SCORES OF EXPERIMENTAL GROUP AND CONTROL GROUP

Variables	GROUP	N	Mean Rank	Sum of Ranks
Percentage of Elaborate Pretend Actions	**EXP**	21	24.76	520.00
	CON	21	18.24	383.00
	TOTAL	42		
Number of Object Substitutions	**EXP**	21	23.52	494.00
	CON	21	19.48	409.00
	TOTAL	42		
Number of Imitative Actions	**EXP**	21	24.64	517.50
	CON	21	18.36	385.50
	TOTAL	42		
Receptive Language	**EXP**	21	21.24	446.00
	CON	21	21.76	457.00
	TOTAL	42		
Expressive Language	**EXP**	21	21.83	458.50
	CON	21	21.17	444.50
	TOTAL	42		
Language	**EXP**	21	21.52	452.00
	CON	21	21.48	451.00
	TOTAL	42		
Social	**EXP**	21	21.21	445.50
	CON	21	21.79	457.50
	TOTAL	42		

The above table shows the means the mean ranks and sum of ranks of all the components of pretend play (percentage of elaborate actions, number of object substitutions, number of imitative actions), language and social skills (receptive language, receptive language, language and social skills) from the pretest scores of experimental group and control group.

Table 3.1: Descriptives of the post test scores of the pretend play, language and social skills components for both the experimental group and control group

Variables	N	Mean	SD	Minimum	Maximum
Percentage of Elaborate Pretend Actions	42	22.73	25.92	.00	85.00
Number of Object Substitutions	42	9.19	9.85	.00	31.00
Number of Imitative Actions	42	3.92	4.08	.00	11.00
Receptive Language	42	53.59	16.32	31.00	104.00
Expressive Language	42	50.21	15.16	30.00	82.00
Language	42	104.52	30.25	65.00	183.00
Social	42	53.28	23.54	26.00	105.00

Table 3.2: RANK VALUES OF THE POST TEST SCORES OF EXPERIMENTAL GROUP AND CONTROL GROUP

Variables	GROUP	N	Mean Rank	Sum of Ranks
Percentage Of Elaborate Pretend Actions	**EXP**	21	31.33	658.00
	CON	21	11.67	245.00
	TOTAL	42		
Number Of Object Substitutions	**EXP**	21	31.14	654.00
	CON	21	11.86	249.00
	TOTAL	42		
Number Of Imitative Actions	**EXP**	21	31.31	657.50
	CON	21	11.69	245.50
	TOTAL	42		
Receptive Language	**EXP**	21	28.88	606.50
	CON	21	14.12	296.50
	TOTAL	42		
Expressive Language	**EXP**	21	26.26	551.50
	CON	21	16.74	351.50
	TOTAL	42		
Language	**EXP**	21	28.36	595.50
	CON	21	14.64	307.50
	TOTAL	42		
Social	**EXP**	21	31.43	660.00
	CON	21	11.57	243.00
	TOTAL	42		

The above table shows the means the mean ranks and sum of ranks of all the components of pretend play (percentage of elaborate actions, number of object substitutions, number of imitative actions), language and social skills (receptive language, receptive language, language and social skills) from the post test scores of experimental group and control group.

Table 4.1: COMPARISON OF PRETEST SCORES OF PRETEND PLAY COMPONENTS BETWEEN THE EXPERIMENTAL GROUP AND CONTROL GROUP

Variable	Groups	Mean	SD	Z value	Sig (2 – tailed)
Percentage of elaborate Pretend actions (PEPA)	EXP	7.66	6.84	-1.739	**.082**
	CON	3.61	2.72		
No of Object Substitutions (NOS)	EXP	1.85	1.65	-1.105	.269
	CON	1.71	2.61		
No of Imitative Actions (NIA)	EXP	0.61	1.24	-.370	.712
	CON	.66	1.06		

GRAPH 4.1

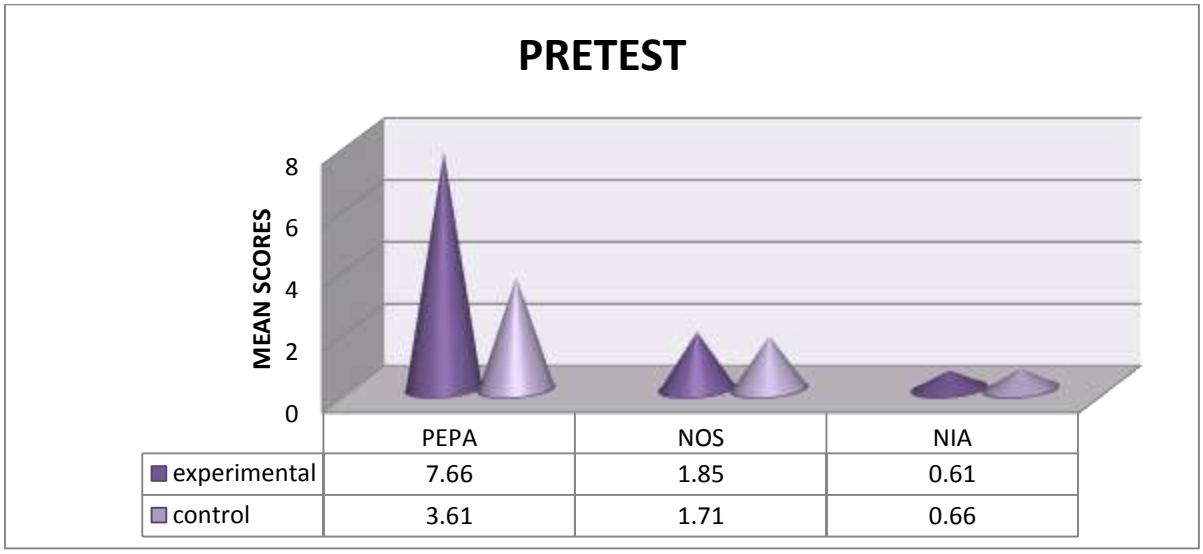


Table 4.1, Graph 4.1 shows that there is no significant difference (p>0.05) in the pretest scores of PEPA, NOS, NIA of the experimental group and the pretest scores of PEPA, NOS, NIA of the control group. Thus providing a homogeneity in groups for comparison.

Table 4.2: COMPARISON OF POSTTEST SCORES OF PRETEND PLAY COMPONENTS BETWEEN THE EXPERIMENTAL GROUP AND CONTROL GROUP

Variable	Groups	Mean	SD	Z value	Sig (2 – tailed)
Percentage of elaborate actions (PEPA)	EXP	43.04	22.54	-5.224	**.000**
	CON	2.42	1.66		
No of Object Substitutions (NOS)	EXP	17.19	7.95	-5.132	**.000**
	CON	1.19	1.24		
No of Imitative Actions (NIA)	EXP	7.38	2.95	-5.299	**.000**
	CON	.47	.67		

Graph: 4.2

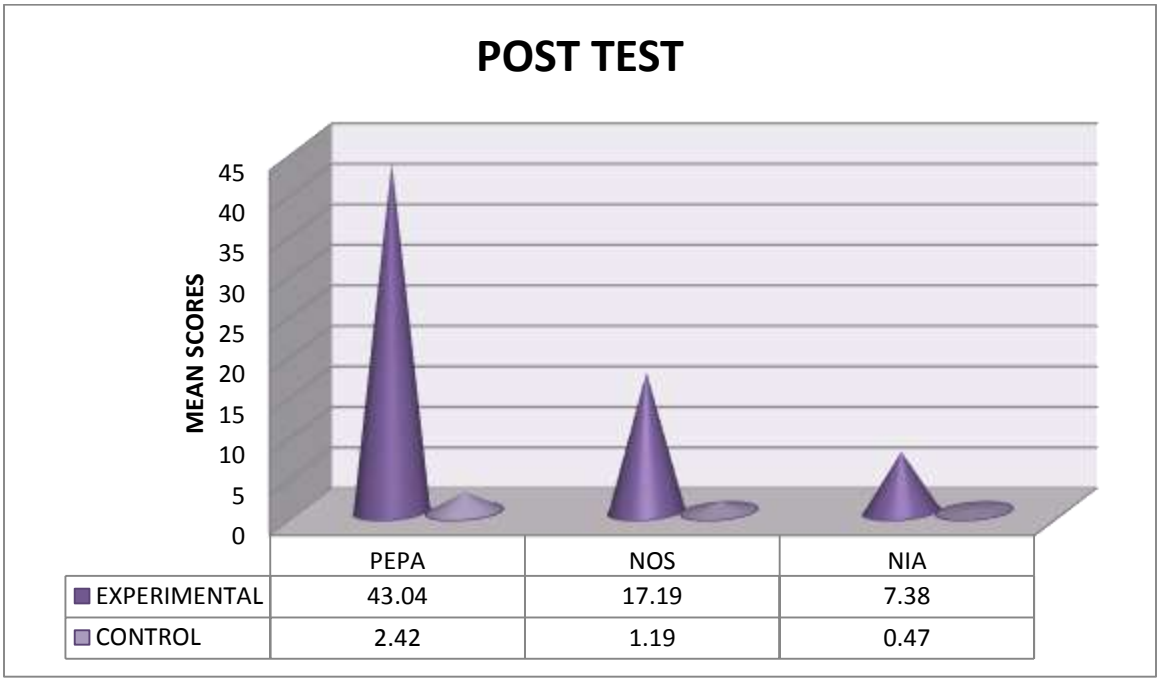


Table 4.2. graph 4.2 : shows that there was a statistically significant difference ($p<.05$) between the posttest scores of experimental group and control group which explains that there was an improvement in the Pretend play following intervention.

Table 5.1: COMPARISON OF PRETEST SCORES OF LANGUAGE AND SOCIAL SKILLS COMPONENTS BETWEEN THE EXPERIMENTAL GROUP AND CONTROL GROUP

Variable	Groups	Mean	SD	Z value	Sig (2 – tailed)
Receptive Language	EXP	45.28	11.00	-.139	.890
	CON	43.95	8.31		
Expressive Language	EXP	43.76	11.68	-.177	.860
	CON	42.14	10.61		
Language	EXP	88.95	21.32	-.013	.990
	CON	86.09	17.25		
Social skills	EXP	33.33	7.27	-.152	.880
	CON	33.19	4.82		

Graph:5.1

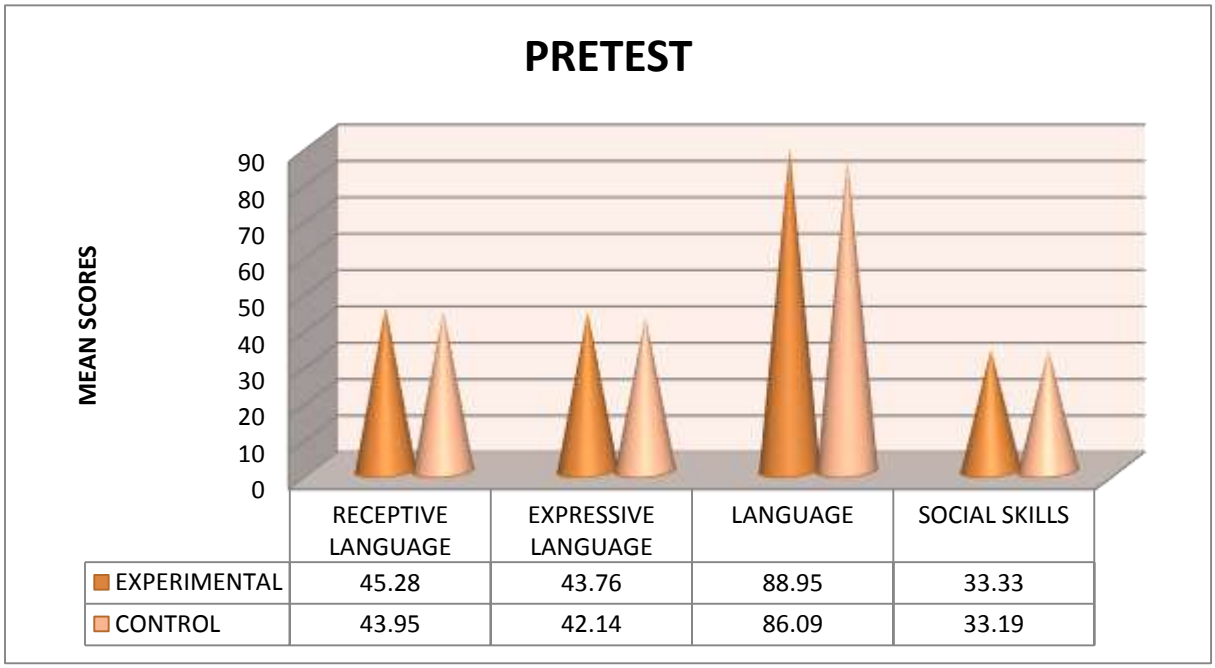


Table 5.1, Graph 5.1 shows that there is no significant difference ($p<0.05$) in the pretest scores of receptive language, expressive language, language, social skills of the experimental group and of the control group. Thus providing homogeneity in groups for comparison.

Table 5.2: COMPARISON OF POSTTEST SCORES OF LANGUAGE AND SOCIAL SKILLS COMPONENTS BETWEEN THE EXPERIMENTAL GROUP AND CONTROL GROUP

Variable	Groups	Mean	SD	Z value	Sig (2 – tailed)
Receptive Language	EXP	62.04	17.86	-3.908	**.000**
	CON	45.14	8.77		
Expressive Language	EXP	56.28	17.03	-2.519	**.012**
	CON	44.14	10.17		
Language	EXP	119.76	32.83	-3.624	**.000**
	CON	89.28	17.63		
Social skills	EXP	71.61	20.04	-5.263	**.000**
	CON	34.95	5.32		

Graph 5.2:

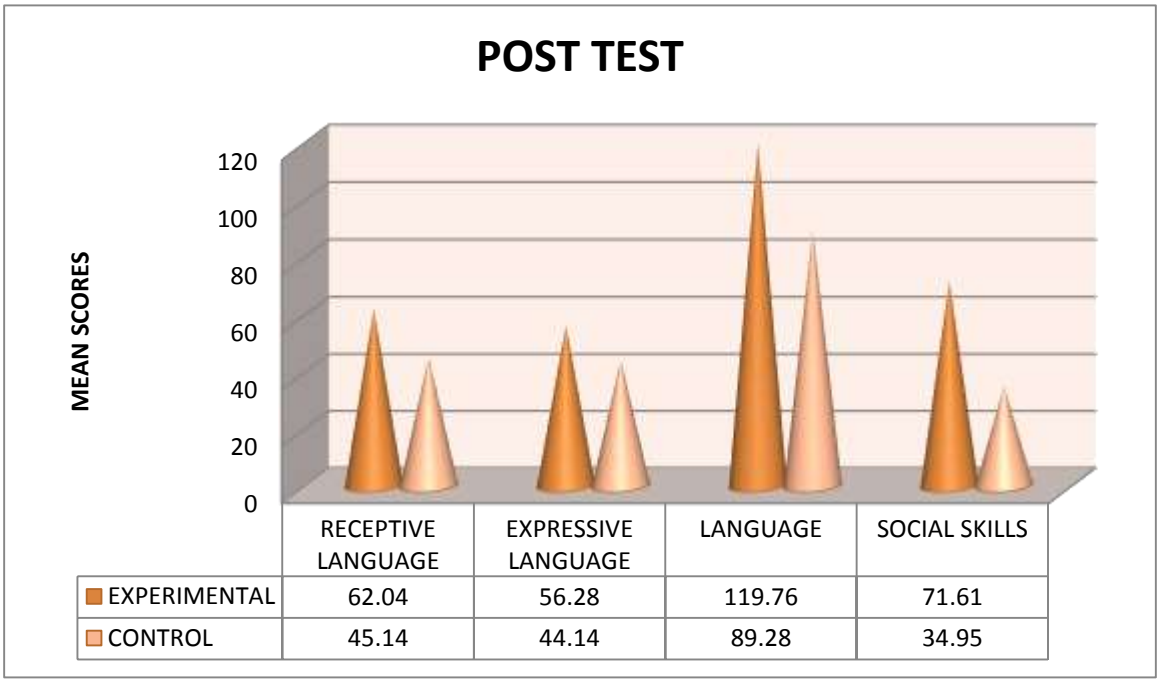


Table 5.2. graph 5.2 : shows that there was a statistically significant difference ($p<.05$) between the posttest scores of experimental group and control group which explains that there was an improvement in the language and social skills following intervention.

Table 6.1: COMPARISONS BETWEEN THE PRETEST AND POSTTEST SCORES OF PRETEND PLAY COMPONENTS OF EXPERIMENTAL GROUP

Variables	Experimental group pretest		Experimental group posttest		Z value	Sig (2 – tailed)
	mean	SD	mean	SD		
PEPA	7.66	6.84	43.04	22.54	-3.784	**.000**
NOS	1.85	1.65	17.19	7.95	-3.825	**.000**
NIA	.61	1.24	7.38	2.95	-3.791	**.000**

Graph 6.1:

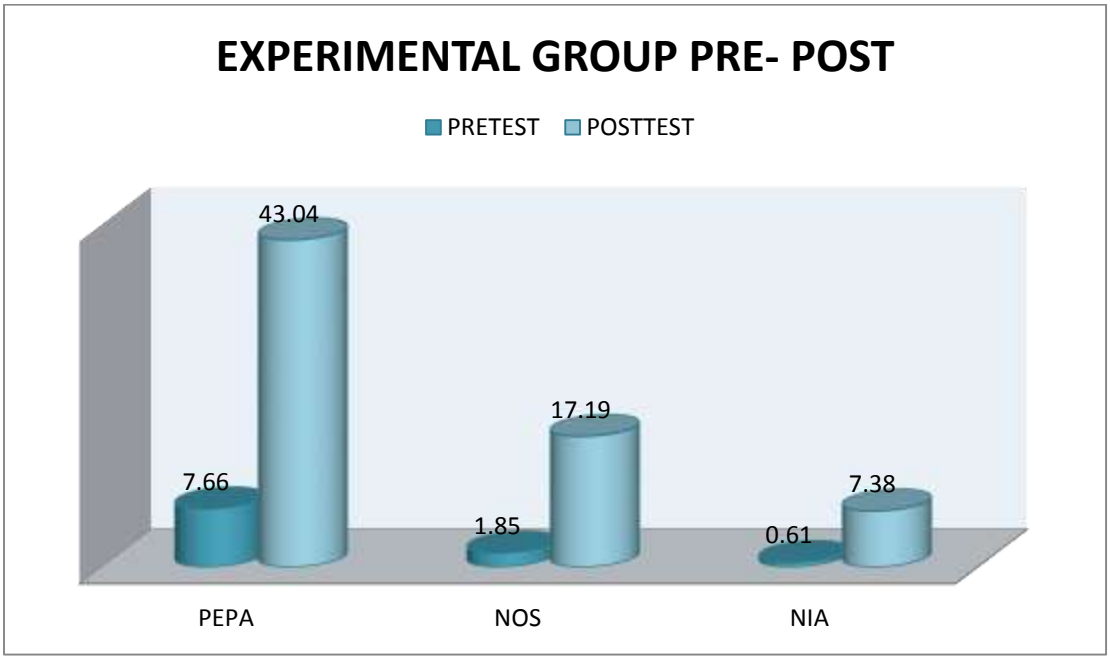


Table 6.1, graph 6.1: shows that there was a statistically significant difference ($p<.05$) between the pretest and posttest of experimental group which means that there was an improvement in pretend play following intervention.

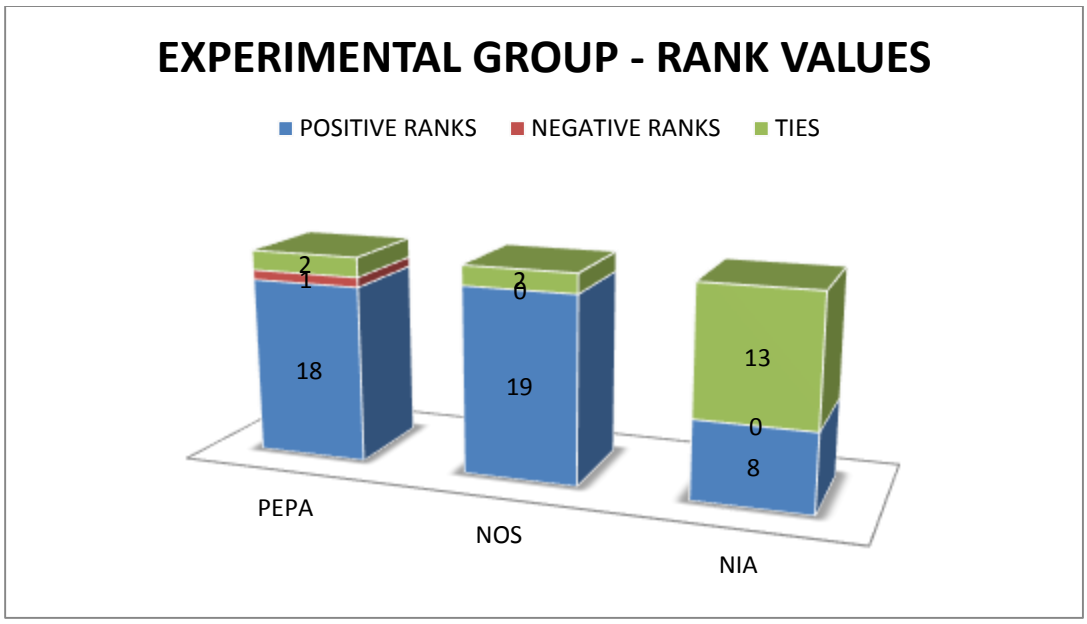
The high score in PEPA (mean= 43.04, SD= 22.54), NOS (mean = 17.19, SD= 1.85), NIA (mean = 2.95, SD = 2.95) indicates the scores of posttest explaining an improvement post intervention.

The low scores of PEPA (mean = 7.66, SD= 6.84), NOS (mean = 1.85, SD = 1.65), NIA (mean = .61, SD= 1.24) indicates the performance before the intervention

Table 6.1.a Rank Value of the pretend play components

VARIABLES	RANKS	N	MEAN RANK	SUM OF RANKS
Percentage Of Elaborate Pretend Actions Post- Pre	**Negative Ranks**	1	1.00	1.00
	Positive Ranks	18	10.50	189.00
	Ties	2		
	Total	21		
Number Of Object Substitutions Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	19	10.00	190.00
	Ties	2		
	Total	21		
Number Of Imitative Actions Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	8	4.50	36.00
	Ties	13		
	Total	21		

Graph 6.1.a



In the above table and graph, positive ranks indicates high scores of posttest and negative rank indicates high scores of pretest explaining the posttest scores were higher than the pretest scores in the experimental group.

Table 6.2: COMPARISONS BETWEEN THE PRETEST AND POSTTEST SCORES OF PRETEND PLAY COMPONENTS OF CONTROL GROUP

Variables	Control group pretest		Control group posttest		Z value	Sig (2 – tailed)
	mean	SD	mean	SD		
PEPA	3.61	2.72	2.42	1.66	-2.473	**.013**
NOS	1.71	2.61	1.19	1.24	-.846	.398
NIA	.66	1.06	.47	.67	-1.857	**.063**

Graph 6.2

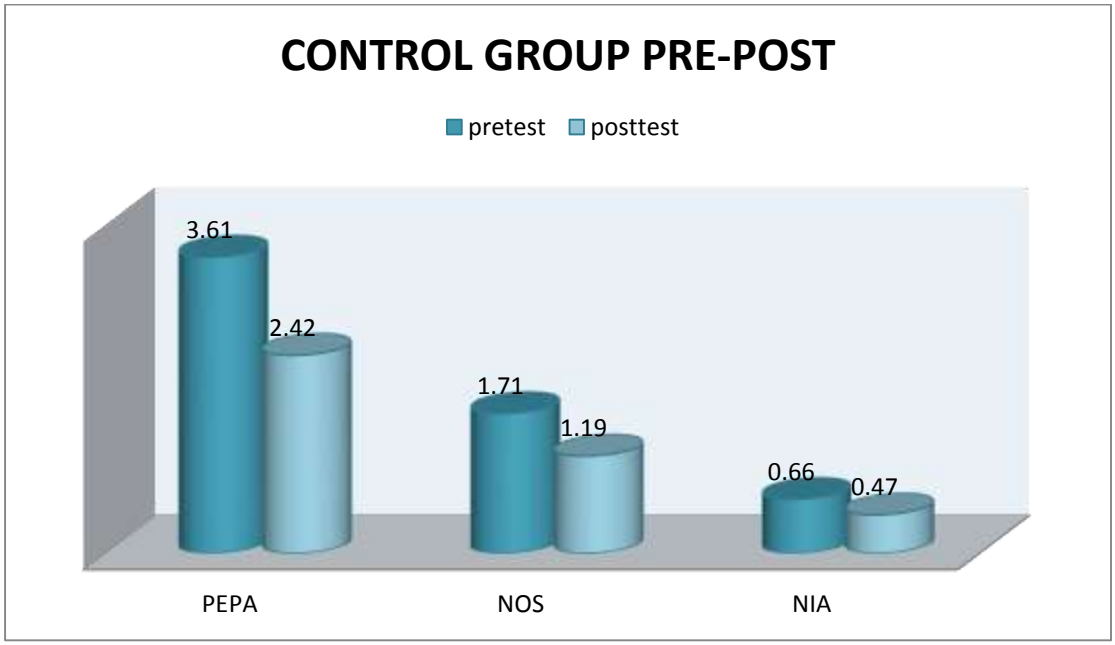
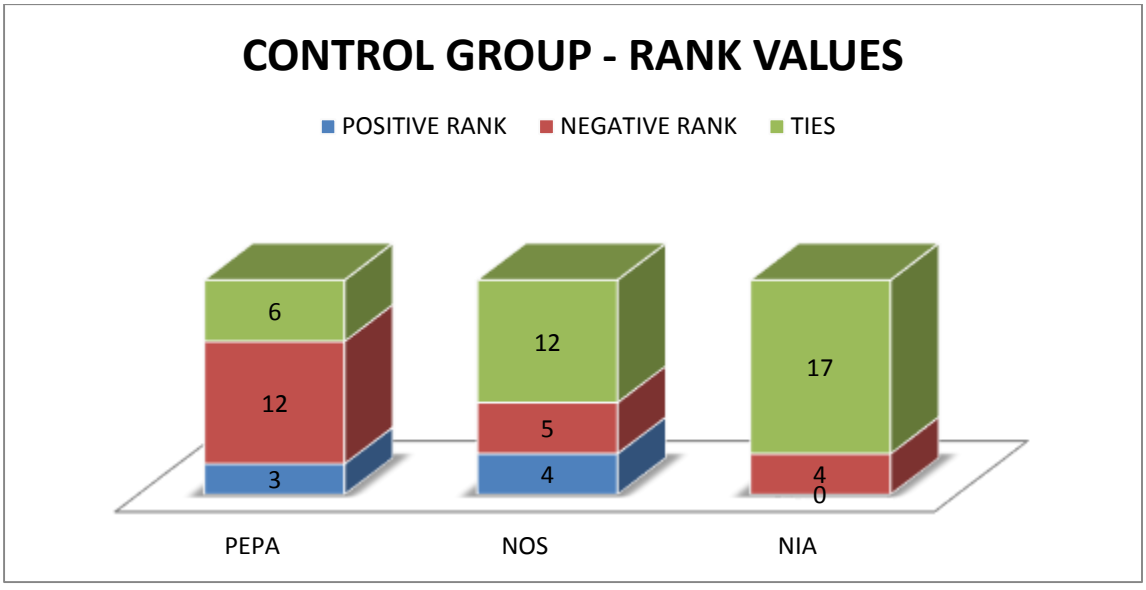


Table 6.2, graph 6.2: shows that there was a statistically significant difference ($p<.05$) between the pretest and posttest scores of PEPA (mean=3.61,SD = 2.72) ,NIA(mean = 0.66, SD = 1.06)of control group explaining it showed improvement, whereas there was no significant difference ($p>.05$) between the pretest and posttest of control group which means that there was no improvement in pretend play following intervention on the control group in the component NOS(mean=1.71, SD=2.61)

Table 6.2.a Rank Value of the pretend play components

Variables	RANKS	N	Mean Rank	Sum of Ranks
Percentage Of Elaborate Pretend Actions Post – Pre	**Negative Ranks**	12	8.58	103.00
	Positive Ranks	3	5.67	17.00
	Ties	6		
	Total	21		
Number Of Object Substitutions Post – Pre	**Negative Ranks**	5	5.90	29.50
	Positive Ranks	4	3.88	15.50
	Ties	12		
	Total	21		
Number Of Imitative Actions Post – Pre	**Negative Ranks**	4	2.50	10.00
	Positive Ranks	0	.00	.00
	Ties	17		
	Total	21		

Graph 6.2.a



In the above table and graph, positive ranks indicates high scores of posttest and negative rank indicates high scores of pretest explaining the pretest scores were higher than the post test scores in the control group and there was no improvement in the control group after the intervention period.

Table 7.1: COMPARISONS BETWEEN THE PRETEST AND POSTTEST SCORES OF LANGUAGE AND SOCIAL SKILLS COMPONENTS OF EXPERIMENTAL GROUP

Variables	Experimental group pretest		experimental group posttest		Z value	Sig (2 – tailed)
	mean	SD	mean	SD		
Receptive language	45.28	11.00	62.04	17.86	-4.017	**.000**
Expressive language	43.76	11.68	56.28	17.03	-3.922	**.000**
Language	.88.95	21.32	119.76	32.83	-4.015	**.000**
Social skills	33.33	7.27	71.61	20.04	-4.015	**.000**

Graph 7.1:

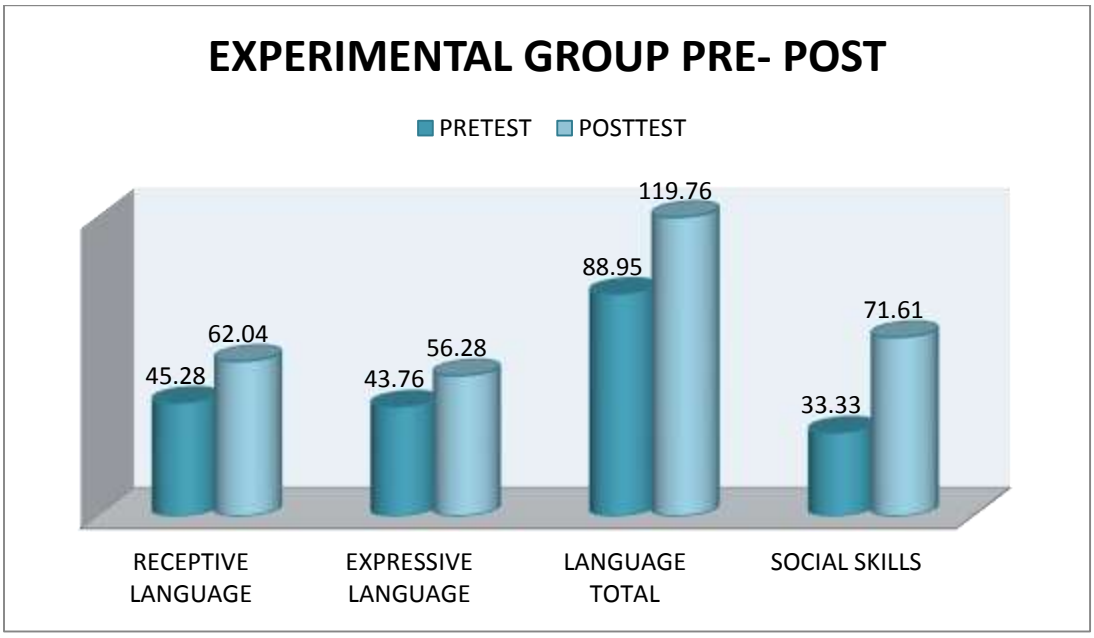


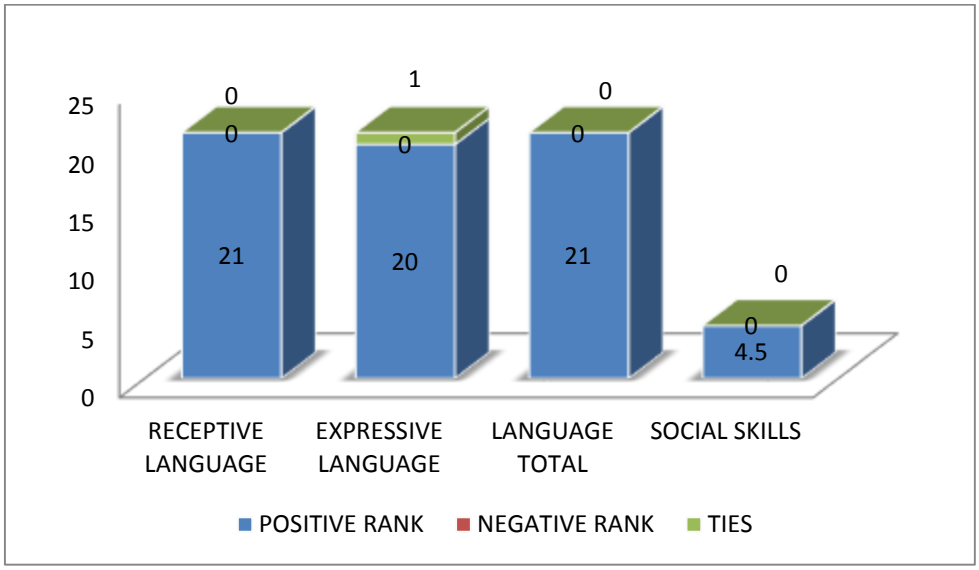
Table 7.1, graph 7.1: shows that there was a statistically significant difference ($p<.05$) between the pretest and posttest scores of experimental group in the receptive language, expressive language, language and social skills which mean that there was an improvement in language and social skills following intervention.

The high score in RL (mean= 62.04, SD= 17.86), EL (mean = 56.28, SD= 17.03), LANG (mean = 119.76, SD = 32.83) and SOCIAL (mean = 71.61, SD= 20.04) indicates the scores of posttest explaining an improvement post intervention. The low scores of RL (mean = 45.28, SD=11), EL (mean = 43.76, SD = 11.68), LANG (mean = 88.95, SD= 21.32) and SOCIAL (mean = 33.33, SD=7.27) indicates the performance before the intervention.

Table 7.1.a Rank Value of the language and social skill components of the experimental group

VARIABLES	RANKS	N	MEAN RANK	SUM OF RANKS
Receptive Language Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	21	11.00	231.00
	Ties	0		
	Total	21		
Expressive Language Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	20	10.50	210.00
	Ties	1		
	Total	21		
Language Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	21	11.00	231.00
	Ties	0		
	Total	21		
Social Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	21	11.00	231.00
	Ties	0		
	Total	21		

Graph 7.1.a



In the above table and graph, positive ranks indicates high scores of posttest and negative rank indicates high scores of pretest explaining the post test scores were higher than the pre test scores in the experimental group and there was an improvement in the experimental group after the intervention period.

Table 7.2 : COMPARISONS BETWEEN THE PRETEST AND POSTTEST SCORES OF LANGUAGE AND SOCIAL SKILLS COMPONENTS OF CONTROL GROUP

Variables	Control group pretest		Control group posttest		Z value	Sig (2 – tailed)
	mean	SD	mean	SD		
Receptive language	43.95	8.31	45.14	8.77	-2.207	**.027**
Expressive language	42.14	10.61	44.14	10.17	-2.820	**.005**
Language	86.09	17.25	89.28	17.63	-3.300	**.001**
Social skills	33.19	4.82	34.95	5.32	-2.820	**.005**

Graph 7.2:

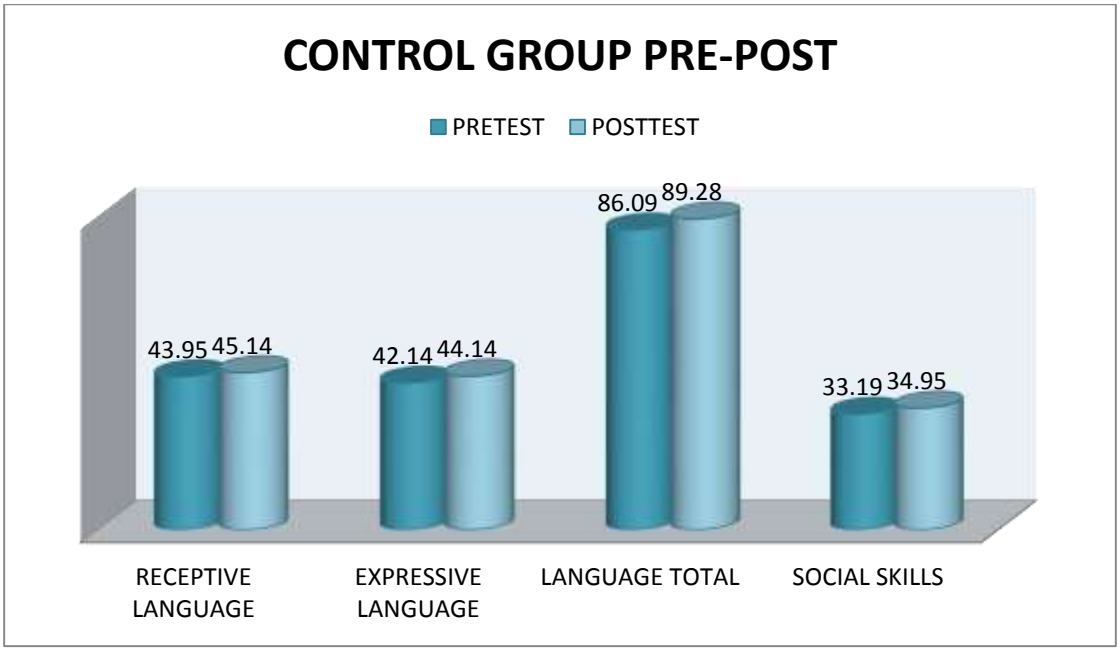
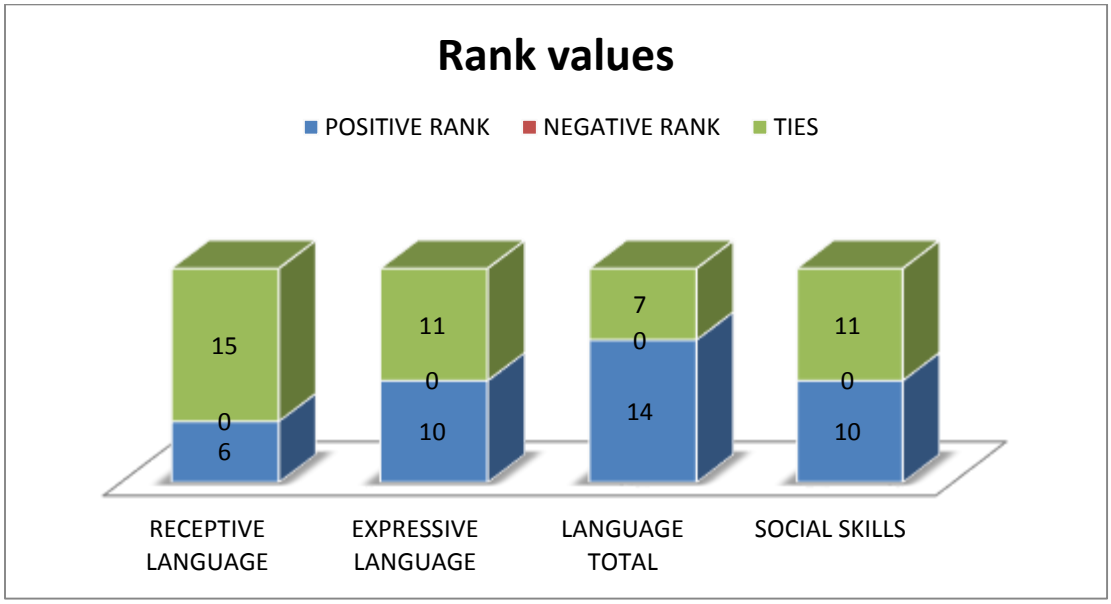


Table 7.2, graph 7.2: shows that there was a statistically significant difference (p□.05) between the pretest and posttest scores of control group in the receptive language, expressive language, language and social skills which means that control group has also showed an improvement in language and social skills following intervention period.

Table 7.2.a Rank Value of the language and social skill components

Variables	RANKS	N	Mean Rank	Sum of Ranks
Receptive Language Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	6	3.50	21.00
	Ties	15		
	Total	21		
Expressive Language Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	10	5.50	55.00
	Ties	11		
	Total	21		
Language Post - Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	14	7.50	105.00
	Ties	7		
	Total	21		
Social Post-Pre	**Negative Ranks**	0	.00	.00
	Positive Ranks	10	5.50	55.00
	Ties	11		
	Total	21		

Graph 7.2.a



In the above table and graph, positive ranks indicates high scores of posttest and negative rank indicates high scores of pretest and the ties indicating the values in pretest are identical to the values in posttest.

Table 8.1: COMPARING THE MEAN SCORES OF PRETEST AND POSTTEST OF EXPERIMENTAL GROUP TO FIND OUT THE MEAN DIFFERENCE AND EFFECT SIZE

Variable	Mean		SD		Mean difference	Effect size	t	df	Sig (2-tailed)
	Post test	Pre test	Post test	Pre test					
PEPA	43.04	7.66	22.54	6.84	-35.38	0.7	-7.258	20	**.000**
NOS	17.19	1.85	7.95	1.65	-15.33	0.8	-8.822	20	**.000**
NIA	3.23	.61	4.39	1.24	-2.61	0.3	-3.335	20	**.003**
Receptive language	62.04	45.28	17.86	11.00	-16.76	0.4	-7.057	20	**.000**
Expressive language	56.28	43.76	17.03	11.68	-12.52	0.3	-6.398	20	**.000**
Language	119.76	88.95	32.83	21.32	-30.80	0.4	-7.635	20	**.000**
Social skills	71.61	33.33	20.04	7.27	-38.28	0.7	-9.857	20	**.000**

Graph 8.1

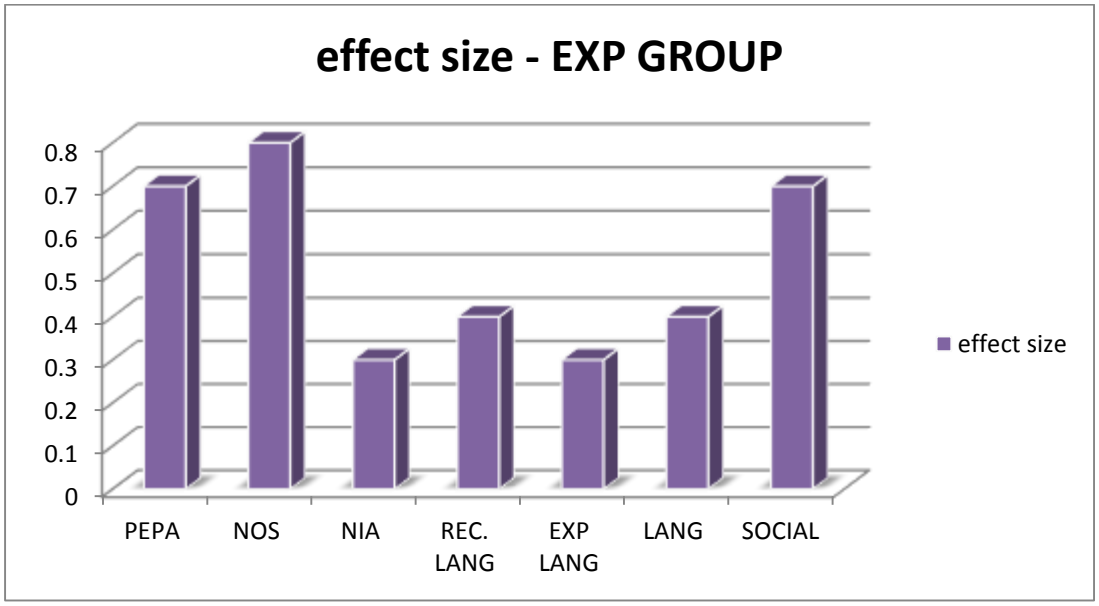


Table 8.1, graph 8.1: shows the effect size of pretend play, language and social skills components of the experimental group. It can be understood that the components (NIA, Receptive language, expressive language, language) showed medium effect size and components (PEPA, NOS, Social) showed greater effect size indicating the experimental group has improved post intervention

Table 8.2: COMPARING THE MEAN SCORES OF PRETEST AND POSTTEST OF CONTROL GROUP TO FIND OUT THE MEAN DIFFERENCE AND EFFECT SIZE

Variable	Mean		SD		Mean difference	Effect size	t	Df	Sig (2-tailed)
	Post test	Pre test	Post test	Pre test					
PEPA	2.42	3.61	1.66	2.72	1.19	-0.2	2.81	20	**.011**
NOS	1.19	1.71	1.24	2.61	.52	-0.1	1.20	20	.242
NIA	.38	.66	.66	1.06	.28	-0.1	2.03	20	**.055**
Receptive language	45.14	43.95	8.77	8.31	-1.19	0.06	-2.35	20	**.029**
Expressive language	44.14	42.14	10.17	10.61	-2.00	0.09	-3.90	20	**.001**
Language	89.28	86.08	17.63	17.25	-3.19	0.09	-4.7	20	**.000**
Social skills	34.95	33.19	5.32	4.82	-1.76	0.1	-3.65	20	**.002**

Graph 8.2:

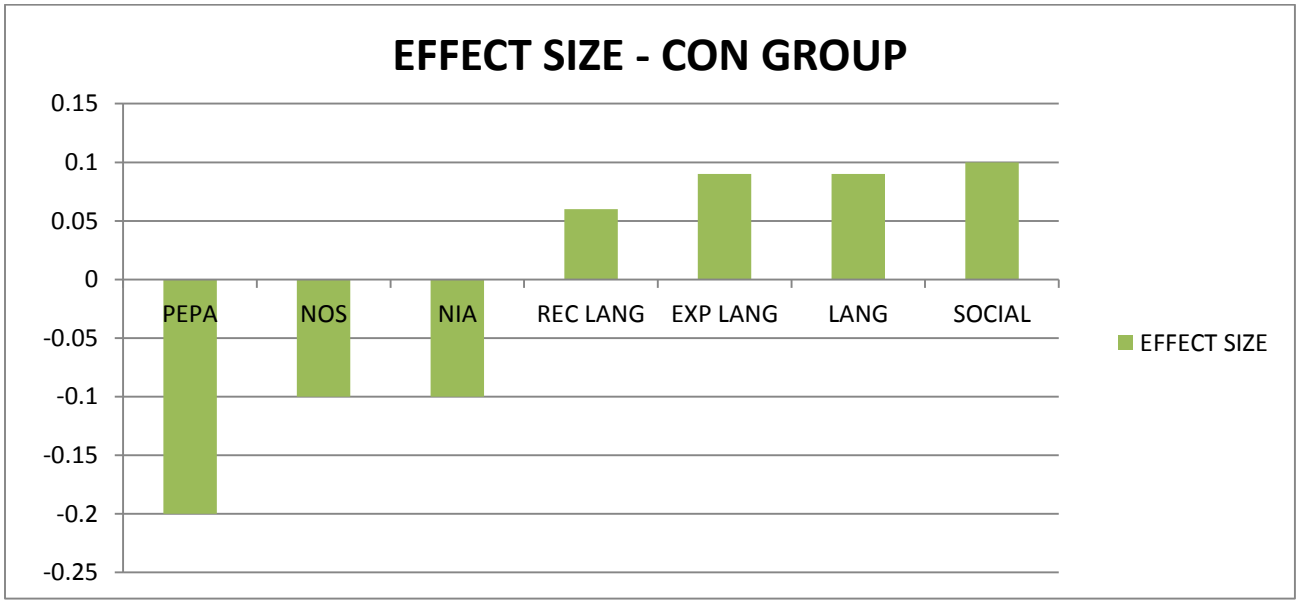


Table 8.2, graph 8.2: shows the effect size of pretend play, language and social skills components of the control group. It can be understood that the components (PEPA, NOS, NIA) showed effect size lower than small value and components (Receptive Language, Expressive Language, Language and Social skills) showed very small effect size indicating the control group does not show an improvement post intervention.

DISCUSSION

The study was conducted among the children with autism in and around the Coimbatore aiming to find out the effectiveness of pretend play in improving the social competence of these children. 42 children with autism were included in the study of which 21 children were assigned in experimental group and 21 children assigned in the control group after the completion of pretest. The objectives of the study were to explore the pretend play of the children and to improve the social competence of these children. The age of the selected subjects ranged from 3 years to 7 years with 16 boys and 5 girls in experimental group (mean age 3.9 years) and 19 boys and 2 girls in the control group (mean age 4.8 years) as shown in table 1.

The subjects underwent an intervention program which took place for 80-100 sessions within 6 months in which experimental group had pretend play session(Learn to Play) and control group underwent general play based social skill training. Of which 19 children in the experimental group attended regular therapy and 2 children were not regular for therapy after 50 sessions of pretend play with a gap of 5 days after the start of intervention.

A comparison to analyze the components of pretend play – Percentage of Elaborate Actions (PEPA), Number of Object substitutions (NOS), and Number of Imitative actions(table 4.1) and the components of social skills – Receptive Language (RL), Expressive Language (EL), Language (Lang – total score) and Social Skills (table 5.1) showed no significant difference ($p<.05$) thus making the two groups homogenous.

PRETEND PLAY – PLAY INDICATORS:

From the observations of the pretest and posttest indicators of pretend play it can be observed that the children of experimental group had play deficits during the pretest but had shown difference with indicators indicating typical play post intervention.

19 children of the experimental group showed the presence of typical play indicators and two did not show any difference explaining that the two children did not improve from the therapy. Whereas the control group did not show any difference in the pretend play between the pretest and posttest.

These typical play indicators in the experimental group leads to an understanding that the quality of a child's play in using various play scripts/ scenarios, involving doll in a play, trying to or establishing a narrative in their play has been developed after intervention. This can be referenced with a study where the typical play indicators were assessed and was found to have a positive correlation with social interaction 49% of shared variance, a 47.3% increase from the pretest scores.[5]

GROUPS	NO OF SUBJECTS	PRETEST			POSTEST			IMPROVEMENT OBSERVED /NOT OBSERVED
		Typical indicator > 9	Play deficit > 9	Total participants	Typical indicator > 9	Play deficit > 9	Total participants	
Experimental	19	0	21	21	19	2	21	Observed
control	19	0	21	21	0	21	21	Not observed

This explains that the Learn to Play program on the children had led to the development of pretend play (child's ability to elaborate their pretend actions, use of objects for substitutions and their ability to imitate actions as their peers) in children with ASD as listed in one of the present study objective.

PRETEND PLAY AND SOCIAL COMPETENCE:

The pretend play skills as well as the social skills of the experimental and control group post intervention were compared to find out if there was a difference in the pretend play and social skills after the interventions. The results from the table 4.2, 5.2 prove the fact that the components of pretend play and social skills showed a significant difference of $p<.005$ which explains that all the components of pretend play- elaborate actions, object substitutions, imitative actions , receptive and expressive language, language skill and social skill have shown improvement after the intervention. (Appendix 2)

This result from the table 4.2, 5.2 proves the fact that pretend play has an influence on developing and improving social competence in children with autism as mentioned in a study by the researchers.[10]

A significant value p<.005 in the pretest – posttest comparison of the experimental group indicates that the components of pretend play(table 6.1) – elaborate actions (z = -3.784, p <.005), object substitutions(z = -3.825, p <.005), imitative actions(z = -3.791, p <.005) and the social skills (table 7.1) – receptive language (z = -4.017, p <.005), expressive language (z = -3.922, p <.005), language skills(z = -4.015, p <.005), social skills (z = -4.015, p <.005) had improved and the children also showed typical indicators of play which explains the significance value in the posttest.

These results from this study is consistent with the hypothesis testing of studies which found a positive correlation between pretend play and social skills development[3] proving that pretend play has an impact on social skill development. And,

The use of Learn to Play program to improve the social competence was found to be an important factor where the children participated in play, used their play abilities, ability to interact with peers after a play intervention as discussed in the study[11] between the children of play and non-play interventions over a period of six months.

A lacuna of a previously done study[11] was that comparison group did not undergo any kind of intervention when the experimental group underwent an intervention of Learn to Play thus showing no difference in the control group post intervention.

Whereas the scores of elaborate action score (z = -2.473, p <.013) and the imitation score (z = -1.857,p <.063) of pretend play(table 6.2) and the receptive language (z = -2.207, p = .027), expressive language(z = -2.820, p <.005), language skills(z = -2.300, p = .001) and social skills(z = -2.820, p <.005) of the social competence(table 7.2), indicates that the control group has shared some improvement from the general play based social skill therapy given in the present study. This would have led to the significant difference in the posttest scores of the control group in this study. Likewise the object substitution component has not showed any significance (z = -.846, p = .398).table 6.2.

Since both the experimental and control group showed an improvement in the post test scores of pretend play and social skills an effect size calculation was done to know the group which has shown greater or more effect post intervention.

The findings of the effect size on the experimental group (table 8.1) shows that the elaborate actions and object substitutions showed greater effect of d = 0.7 and d = 0.8 respectively which is consistent with the study[5] were the PEPA and NOS has improved 39.7% and 50% respectively.

And the components imitative actions, receptive language, expressive language and total language showed a medium effect d = 0.3,d = 0.4,d = 0.3 and d = 0.4 respectively which proves that the experimental group indeed has developed well after the intervention program which explains that the pretend play is effective on improving social competence in children with autism.

Researchers [26] on reviewing the evidence on pretend play and child development found effects that pretend play only assists development when an intensive adult interaction is part of the training and when there is no interaction, pretend play does not increase development.

Contradicting to the above given fact, in this study pretend play among the children showed differences in interaction with adults as well as with peers that is probably due to the participation of children in parallel level to cooperative level of social play, their involvement in participatory group play/activities among the peers that has led to the increase in social competence of children; integrated through Learn to Play intervention program.

Supporting this, the control group (table 8.2) on the contrary shows very small and unrated effect size of d = -0.2 to d= 0.1 in the components of pretend play and social skills which undoubtedly proves that the participants in the experimental group has benefited from the pretend play inclusion in their regular therapy sessions which is consistent with the findings from the study which proved that there was a positive correlation between pretend play and social competence in children.[5,3, 10,11.]

Pretend play intervention thus is found to have an impact on the children's social skill development.

CONCLUSION

The pretend play is an effective therapy modality to enhance social competence of children with ASD. This can be summarized by the findings which prove that the pretend play of the children in experimental group varied from children of control group by showing a development in their social skills influenced by the pretend play.

All the components of pretend play – elaborate pretend actions, object substitutions, imitative actions and the components of social skills including the receptive language and expressive language has showed greater effect from the pretend play intervention.

The control group has also showed improvement implicating there is an effect from the regular play based social skill training also; yet since these effect are much lesser than the effect in the experimental group it is assured that the Learn to Play program paved a way for these children to express their abilities and pretend play behaviors with their playmates.

LIMITATIONS AND RECOMMENDATIONS

LIMITATIONS:

- Play and communication evolving in natural environment would have affected the scores
- Since the control group has also showed significance, to say pretend play alone has showed improvement after intervention is obscured.
- The evaluation timing of pretend play as provided by the scale may not be sufficient to analyze the performance of children
- Research was limited to some geographical areas only
- Small sample size
- parents awareness about importance of play and need to involve children in play was lacking

RECOMMENDATIONS:

- research to be conducted around various places with a larger sample size
- future studies to focus on the parents perspectives of pretend play should be encouraged
- Use of pretend play and other play modalities like integrated play groups (IPG) for two different groups to study the effect of pretend play must be focused.
- Pretend play to focus on other areas of skill development other than social competence using object substitutions and imitative actions should be thought of for further research.
- Follow up of the social competence and pretend play after a period of 3- 6 months is recommended as it might introduce a path for the vigorous use of pretend play as a therapy modality in daily basis occupational therapy focusing on new arenas in child development.
- Use of an ABBA research method to measure at baseline, introduce the treatment program, withdraw and measure the effect of treatment would be a promising method to know the effect.

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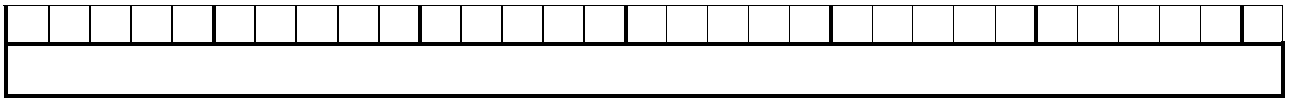
APPENDIX 1

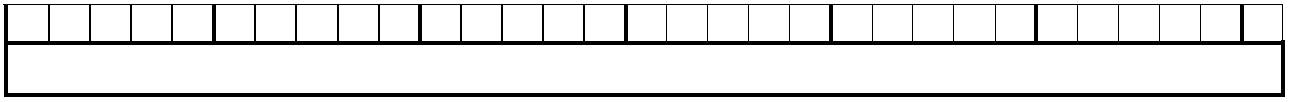
CHILD INITIATED PRETEND PLAY ASSESSMENT (ChIPPA) (3YEARS)

First THREE minutes (0-3 minutes)

(Top row – play action code; bottom row – object substitution record)



(Top row – play action code; bottom row – object substitution record)



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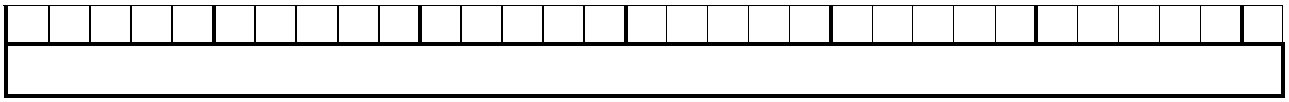

Second THREE minutes (4-6 minutes)

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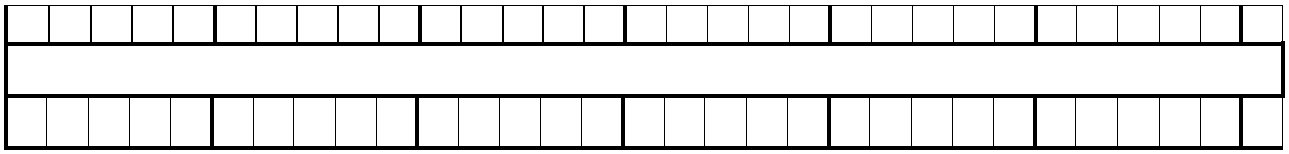

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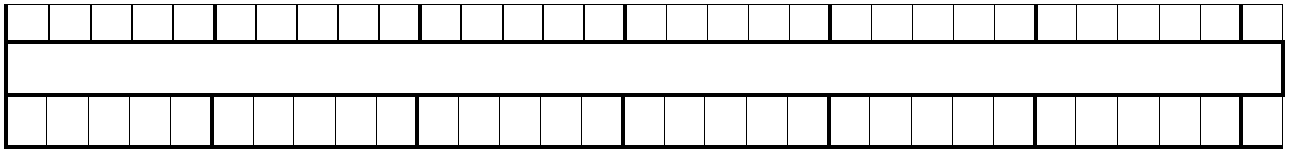
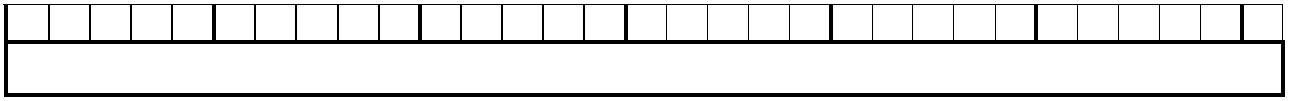


Final THREE minutes (7-9 minutes)

(Top row – play action code; bottom row – object substitution record)



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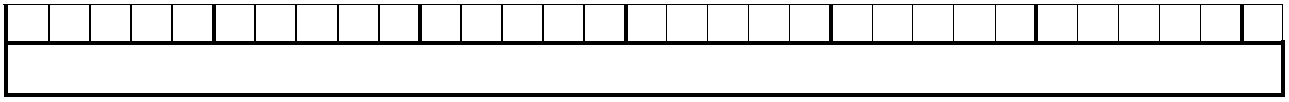

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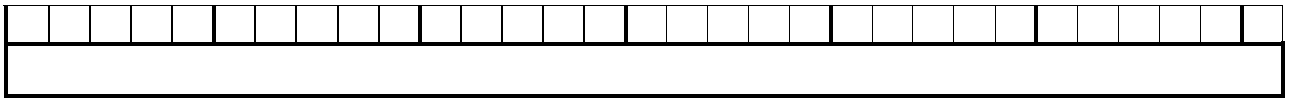


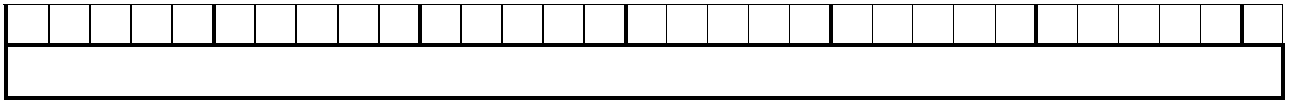
CHILD INITIATED PRETEND PLAY ASSESSMENT (ChIPPA) (3 YEARS)

SYMBOLIC PLAY SESSION

First THREE minutes (0-3 minutes)

(Top row – play action code; bottom row – object substitution record)

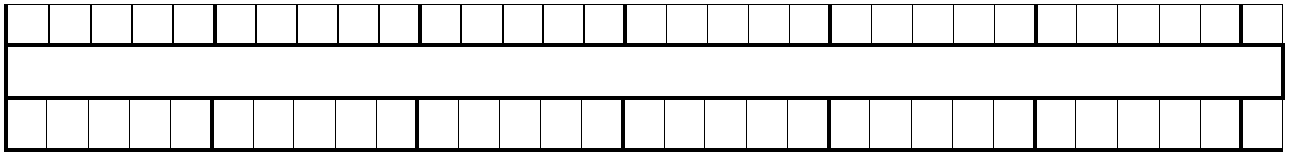
(Top row – play action code; bottom row – object substitution record)



(Top row – play action code; bottom row – object substitution record)

Second THREE minutes (4-6 minutes)

(top row – play action code; middle row- object substitution record; third row – tick for imitative action, corresponding action box should be left blank)



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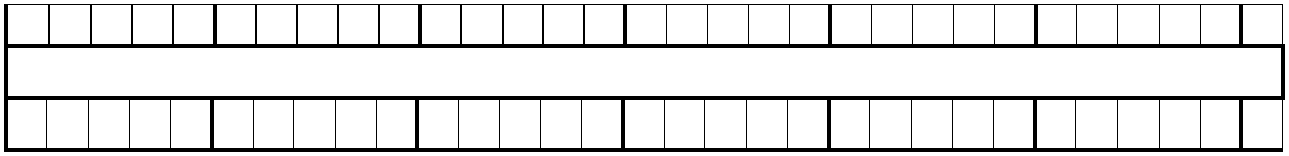
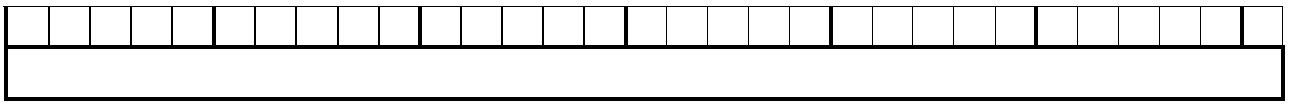


Final THREE minutes (7-9 minutes)

(Top row – play action code; bottom row – object substitution record)

(Top row – play action code; bottom row – object substitution record)

(Top row – play action code; bottom row – object substitution record)



SCORING

Conventional Imaginative play session **PEPA Score Calculation** Percentage of Elaborate Pretend Play Action Score Calculation: Total Actions = Elaborate Actions = Percentage = elaborate actions ×100 = ×100 = Total actions **Percentage of elaborate pretend play(PEPA) :** **Number of object substitutions (NOS) :** **Number of imitative action score (NIA) :**	**Symbolic play session** **PEPA Score Calculation** Percentage of Elaborate Pretend Play Action Score Calculation: Total Actions = Elaborate Actions = Percentage = elaborate actions ×100 = ×100 = Total actions **Percentage of elaborate pretend play(PEPA) :** **Number of object substitutions (NOS) :** **Number of imitative action score (NIA) :**

SCORE SUMMARY FOR ChIPPA ASSESSMENT

Child's Name: _____

	Raw Scores	Cut – off Scores
PEPA conventional (conventional imaginative play) PEPA symbolic PEPA combined (PEPA conventional + PEPA symbolic)	_____ _____ _____	_____ _____ _____
NOS (conventional imaginative play) NOS symbolic NOS combined (NOS conventional +NOS symbolic)	_____ _____ _____	_____ _____ _____
NOS (conventional imaginative play) NOS symbolic NOS combined (NIA conventional +NIA symbolic)	_____ _____ _____	

Recommendations

Clinical Observations
Child- Initiated Pretend Play Assessment
Children Aged 3 years

Note: **Name:**

CI – conventional functional play session

S – Symbolic play session

Where these symbols appear, please circle the relevant sessions

Observation	**Indicators of typical play**	**Indicators of play deficit**	**Comments**
Time The child finishes each segment of play (i.e. each 3 minute segment)	Yes	No	
if NO to above, answer the following: Child completes the conventional-functional section. Child completes the symbolic section The child completes the first 3 minute segment of 9 minutes. The child completes the final 3 minute segment of 9 minutes.	 Yes Yes Yes Yes	 No No No CI S No CI S	
Child only uses simple domestic themes in a repetitive manner	No	Yes	
The child shows evidence of play themes in the: Conventional functional play section Symbolic play session	 Yes Yes	 No No	
The child emotionally engages the examiner during the play sessions.	Yes	No	
The child demonstrates ability to initiate their own play ideas separate from the modeled actions of the examiner.	Yes	No	
The child extends the play	Yes	No	
Child initiates pretend play ideas before the modeling segment.	Yes	No CI S	
The child asks what to do several times	No	Yes	
The child develops a play story after setting up a scene (e.g. Setting up a farm scene).	Yes	No	
The child has narrative in the conventional imaginative play session.	Yes	No	
The child has a narrative in the symbolic play session	Yes	No	

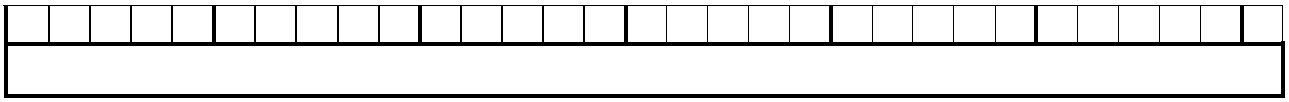
The child uses templates for stories during the play. For Example, the child 'recites' a section or a story from Thomas the tank.	No	Yes CI S	
The child uses the doll as an active participant in the play.	Yes	No	
There is evidence of reference to absent objects There is evidence of reference to property attributes.	Yes Yes	No No	
The child brings in toys from the onset of play materials. Circle the relevant observation	No, not at all Yes Unstructured objects brought to CI	Yes Toy set is brought in with the objects from S.	
The child talks about play throughout the play	Yes	No	
PLAY STYLE Not all children will show a play style on the ChIPPA. If the child does show a style, indicate the style of play. This may aid in intervention planning. Which profile would best describe the child's play **Typical play profiles** Narrative Based Play Profile Engineer Play Profile Experimental Physicist Play Profile The 12" Doll Syndrome Play Profile	**COMMENTS**		
These profiles indicate a play deficit The Imitator Play Profile The Disorganized Player Play Profile The Symbolic Play Deficit Play Profile High Fantasy Play Profile Pretend Play Basics Play Profile With Imitation Pretend Play Basic Play Profile Functional Player			

CONVENTIONAL - IMAGINATIVE SESSION

CHILD INITIATED PRETEND PLAY ASSESSMENT (ChIPPA) (4-7 YEARS)

First FIVE minutes (0-5 minutes)

(Top row – play action code; bottom row – object substitution record)



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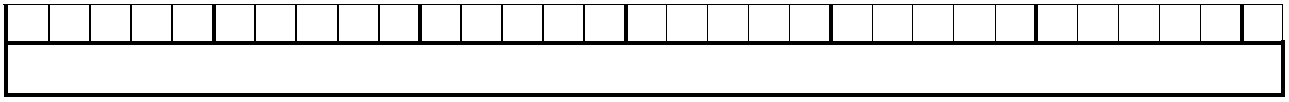
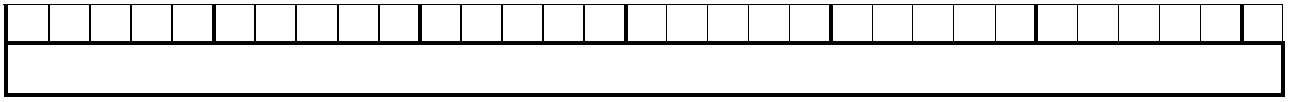
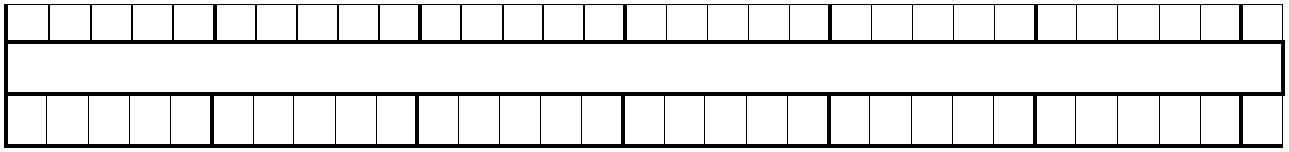


(Top row – play action code; bottom row – object substitution record)

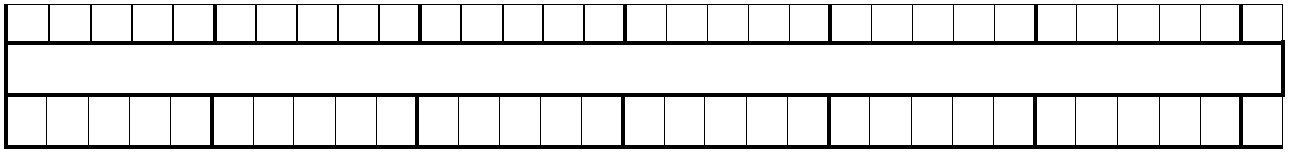


Second FIVE minutes (6-10 minutes)

(top row – play action code; middle row- object substitution record; third row – tick for imitative action, corresponding action box should be left blank)

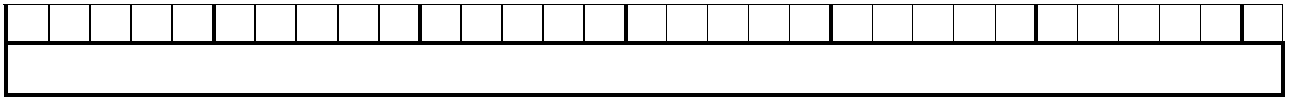


(top row – play action code; middle row- object substitution record; third row – tick for imitative action, corresponding action box should be left blank)

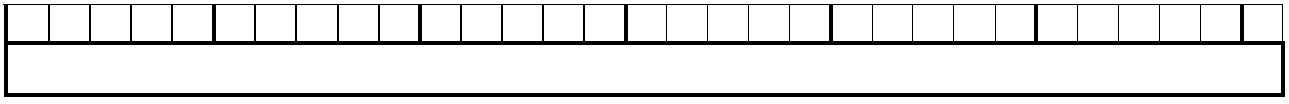


Final FIVE minutes (11-15 minutes)

(Top row – play action code; bottom row – object substitution record)



(Top row – play action code; bottom row – object substitution record)



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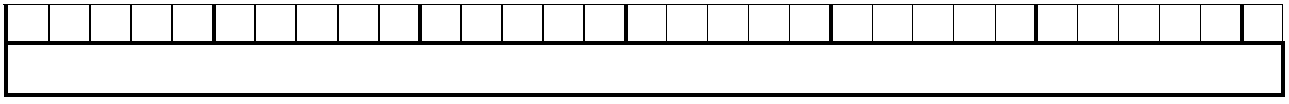
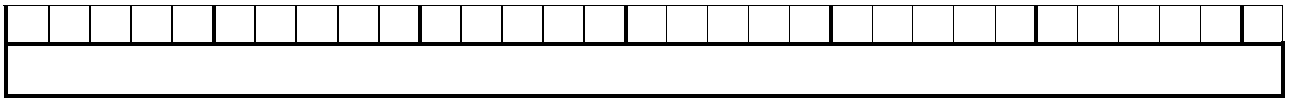


SYMBOLIC PLAY SESSION

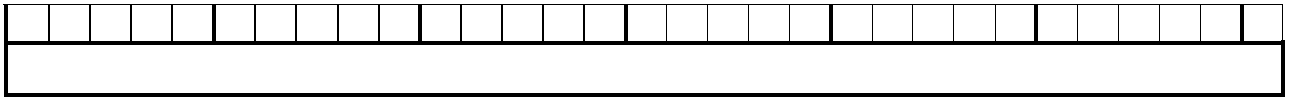
CHILD INITIATED PRETEND PLAY ASSESSMENT (ChIPPA) (4-7 YEARS)

First FIVE minutes (0-5 minutes)

(Top row – play action code; bottom row – object substitution record)



(Top row – play action code; bottom row – object substitution record)



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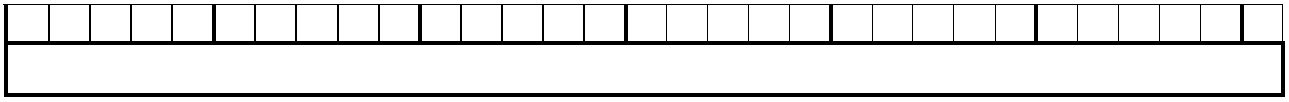
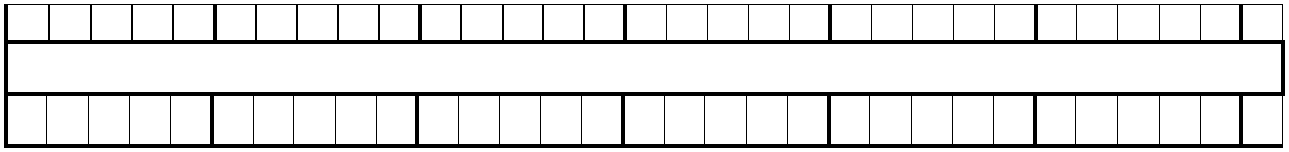


Second FIVE minutes (6-10 minutes)

(top row – play action code; middle row- object substitution record; third row – tick for imitative action, corresponding action box should be left blank)



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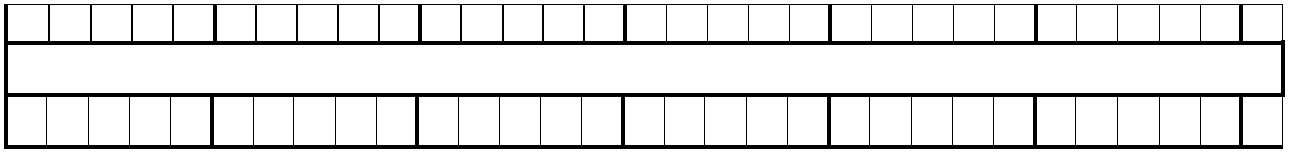
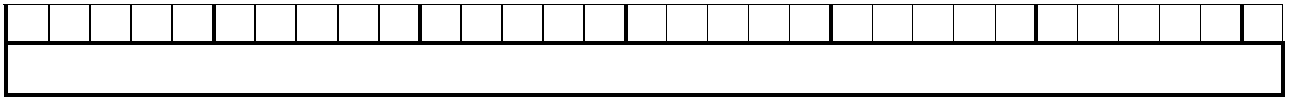


Final FIVE minutes (11-15 minutes)

(Top row – play action code; bottom row – object substitution record)



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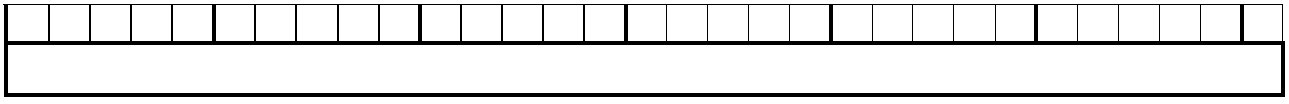

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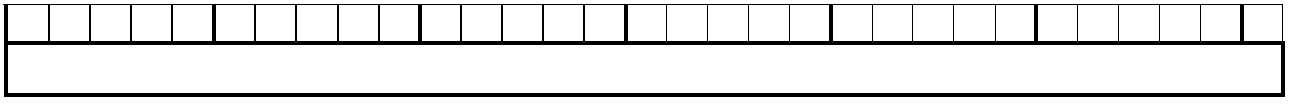


SCORING

Conventional Imaginative play session **PEPA Score Calculation** Percentage of Elaborate Pretend Play Action Score Calculation: Total Actions = Elaborate Actions = Percentage = elaborate actions ×100 = ×100 = Total actions **Percentage of elaborate pretend play(PEPA) :** **Number of object substitutions (NOS) :** **Number of imitative action score (NIA) :**	**Symbolic play session** **PEPA Score Calculation** Percentage of Elaborate Pretend Play Action Score Calculation: Total Actions = Elaborate Actions = Percentage = elaborate actions ×100 = ×100 = Total actions **Percentage of elaborate pretend play(PEPA) :** **Number of object substitutions (NOS) :** **Number of imitative action score (NIA) :**

SCORE SUMMARY FOR ChIPPA ASSESSMENT

Child's Name : _____

	Raw Scores	Cut – off Scores
PEPA conventional (conventional imaginative play)		
PEPA symbolic		
PEPA combined (PEPA conventional + PEPA symbolic)		
NOS (conventional imaginative play)		
NOS symbolic		
NOS combined (NOS conventional +NOS symbolic)		
NIA (conventional imaginative play)		
NIA symbolic		
NIA combined (NIA conventional +NIA symbolic)		

Recommendations

Clinical Observations
Child- Initiated Pretend Play Assessment
Children Aged 4-7 years

Note: **Name:**

CI – conventional functional play session

S – Symbolic play session

Where these symbols appear, please circle the relevant sessions

Observation	**Indicators of typical play**	**Indicators of play deficit**	**Comments**
Time The child finishes each segment of play (i.e. each 5 minute segment)	Yes	No	
if NO to above, answer the following: Child finishes more than 4 minutes early Child completes the conventional-functional section. Child completes the symbolic section The child completes the first 5 minute segment of 15 minutes. The child completes the final 5 minute segment of 15 minutes.	No Yes Yes Yes Yes	Yes No No No CI S No CI S	
Child consistently uses developmentally young play themes. For example, the child only uses simple domestic themes in a repetitive manner.	No	Yes	
The child shows evidence of play themes in the: Conventional functional play section Symbolic play session	 Yes Yes	 No No	
The child emotionally engages the examiner during the play sessions.	Yes	No	
The child copies modeled actions to the extinction of the child's own ideas,(note: the score sheet should have several arrows and/or imitated actions).	No	Yes	
The child extends the play	Yes	No	
Child initiates pretend play ideas before the modeling segment.	Yes	No CI S	
The child asks what to do several times	No	Yes	
The child develops a play story after setting up a scene (e.g. Setting up a farm scene).	Yes	No	
The child has narrative in the conventional imaginative play session.	Yes	No	
The child has a narrative in the symbolic play session	Yes	No	

The play narrative is in short bursts (i.e. there is never more than a string of 4 'e's	No	Yes CI S	
The child uses templates for stories during the play, For example, the child 'recites' a section of a story from Thomas the Tank.	No	Yes	
The child uses doll as an active participant in play.	Yes	No	
There is evidence of reference to absent objects There is evidence of reference to property attributes.	Yes Yes	No No	
The child brings in toys from the onset of play materials. Circle the relevant observation	No, not at all Yes Unstructured objects brought to CI	Yes Toy set is brought in with the objects from S.	
The child talks about play throughout the play	Yes	No	
PLAY STYLE Not all children will show a play style on the ChIPPA. If the child does show a style, indicate the style of play. This may aid in intervention planning. Which profile would best describe the child's play **Typical play profiles** Narrative Based Play Profile Engineer Play Profile Experimental Physicist Play Profile The 12" Doll Syndrome Play Profile	**COMMENTS**		
These profiles indicate a play deficit The Imitator Play Profile The Disorganized Player Play Profile The Symbolic Play Deficit Play Profile High Fantasy Play Profile Pretend Play Basics Play Profile With Imitation Pretend Play Basic Play Profile Functional Player			

COMMUNICATION DEALL DEVELOPMENTAL CHECKLIST

Social Skills

Age Range	Group	Item No	Items
66-72 months	XII	36	Enjoys school.
		35	Enjoys social gatherings.
		34	Knows about giving, receiving, sharing, and playing fairly.
60-66 months	XI	33	Joins in conversation at mealtime.
		32	Chooses own friend.
		31	Can follow request.
54-60 months	X	30	Engages in socially acceptable behavior in public.
		29	Plays with boys and girls but prefer the same sex.
		28	Organizes other children and toys for pretend play.
48-54 months	IX	27	Prefers to play with other children, is competitive.
		26	Shows more independence and wants to do things alone.
		25	Develops friendships.
42-48 months	VIII	24	Follows rules in group games led by adults.
		23	Likes group activities and time with friends.
		22	Uses imaginative play.
36-42 months	VII	21	Spends a great deal of time in watching and observing.
		20	Spontaneously shows affection for familiar playmates.
		19	Plays well with others and responds positively if there are favorable conditions in terms of materials, space and supervision (less likely to engage in prosocial behavior when any of these elements are lacking).
30-36 months	VI	18	Makes a choice when asked.
		17	Says please and thank you when reminded.
		16	Participates in circle games; plays interactive games.
24-30 months	V	15	Enjoys experimenting with adult activity.
		14	Plays side by side with other children; occasionally interacting
		13	Wants to help and please.
18-24 months	IV	12	Begins to be helpful, such as by helping to put things away.
		11	Interacts with peers using gestures.
		10	Engages in parallel play.
12-18 months	III	9	Plays ball cooperatively.
		8	Waves bye-bye.
		7	Plays with other children; seeks interactions with other children
6-12 months	II	6	Prefers mother/ or regular caregiver over all others.
		5	Generally friendly.
		4	Holds arms up to be lifted.
0-6 months	I	3	Responds to primary caregiver by smiling.
		2	Pats and pulls at adult facial features (hair, nose, glasses).
		1	Looks at human faces.

Expressive Language

Age Range	Group	Item No	Items
66-72 months	XII	36	Remembers lines from simple poems, repeats full sentence and expression from others.
		35	Socialized speech begins – children talk about other people as well as about themselves.
		34	Remembers lines from television shows and commercials.
60-66 months	XI	33	Uses all sounds correctly.
		32	Names 3 basic shapes.
		31	Names 6 basic colors.
54-60 months	X	30	Asks meaning of words.
		29	Possessive pronouns "his, her" emerging.
		28	Responds appropriately to "how often" and "how long" question.
48-54 months	IX	27	Can control volume of voice for periods of time if reminded.
		26	Likes to tell others about family and experiences.
		25	Learns new vocabulary quickly if related to own experience.
42-48 months	VIII	24	Conjunction "because" emerging.
		23	Reflective pronouns "myself" emerging.
		22	Appropriately answers "what if" questions.
36-42 months	VII	21	Corrects others.
		20	Requests permission.
		19	Answers 6-7 agent/ action questions like "why are you running.
30-36 months	VI	18	Answers "who" questions.
		17	Answers "where" questions.
		16	Uses several verbal forms – eating, drinking, sleeping, etc.
24-30 months	V	15	Uses 2 word combinations (me go, more bikki).
		14	Names 5 pictures.
		13	Asks for help with personal needs such as "wash hands", "do susu".
18-24 months	IV	12	Says names of toys.
		11	Names 3 pictures.
		10	Will use "no, not".
12-18 months	III	9	Protests when frustrated.
		8	Asks for something by pointing or by using one word.
		7	Chatters continuously while playing.
6-12 months	II	6	Attempts to communicate his/ her intentions.
		5	Vocalizes loudly / shouts for attention.
		4	Babbles series of sounds that 'sounds' like speech.
0-6 months	I	3	Makes sucking sounds.
		2	Uses vocal expressions of pleasure when played with.
		1	Shows random vocalization other than crying.

Receptive Language

Age Range	Group	Item No	Items
66-72 months	XII	36	Understands TV commercials.
		35	Listens to another speaker if information is new and of interest.
		34	Has an awareness of socially appropriate uses of communication.
60-66 months	XI	33	Understands small jokes, surprise, make- believe / pretend.
		32	Understands time sequences (what happened first, second, third, etc.).
		31	Understands more quantity concepts (whole, half).
54-60 months	X	30	Knows secondary colors such as pink, brown etc.
		29	Understands opposites.
		28	Understands sequencing of events.
48-54 months	IX	27	Knows difference between top and bottom.
		26	Understand complex directions e.g., point to a dog that is black / sleeping in the box.
		25	Hears and understands most of what is said at home and in school.
42-48 months	VIII	24	Understands words that relate to one idea to another if, why, when.
		23	Understands "now", "soon", "later".
		22	Understands number and space concepts – more, less, bigger, in, under, behind.
36-42 months	VII	21	Identifies hard / soft.
		20	Understands direction words – responds to directional words such as around, backward, forward.
		19	Understands three step directions, such as, "please pick up your book from the floor and put it in the top shelf".
30-36 months	VI	18	Shows interest in the 'how' and 'why' of things.
		17	Understands common objectives – nice, pretty, and hot.
		16	Understands prepositions such as 'on' 'under' 'front' 'behind' etc.
24-30 months	V	15	Can name objects when told their use, for e.g., 'something that you cut with".
		14	Understands the meaning of kinship words like 'grandma' 'uncle aunty'
		13	Understands the meaning of most common verbs like 'eat' 'drink' 'sleep' 'wash' etc.
18-24 months	IV	12	Listens to short rhymes.
		11	Recognizes name of familiar people and objects.
		10	Listens as pictures are named.
12-18 months	III	9	Responds accurately to action commands like "sit down" and "stop that".
		8	Selects and brings familiar objects from another room when asked.
		7	Follows simple one step commands e.g., get your toy.
6-12 months	II	6	Understands "no" and "bye-bye".
		5	Appears to listen to conversations between others.
		4	Pays some attention to music / songs.
0-6 months	I	3	Comforted by a friendly familiar voice.
		2	Looks at you with interest when you talk to him.
		1	Startle response to sudden loud noises.

Communication DEALL Developmental Profile

Name :
Age :
Sex :
Date :

Age	Gp	Item no	Soc	EL	RL
66-72 months	XII	36			
		35			
		34			
60-66 months	XI	33			
		32			
		31			
54-60 months	X	30			
		29			
		28			
48-54 months	IX	27			
		26			
		25			
42-48 months	VIII	24			
		23			
		22			
36-42 months	VII	21			
		20			
		19			
30-36 months	VI	18			
		17			
		16			
24-30 months	V	15			
		14			
		13			
18-24 months	IV	12			
		11			
		10			
12-18 months	III	9			
		8			
		7			
6-12 months	II	6			
		5			
		4			
0-6 months	I	3			
		2			
		1			

APPENDIX 2

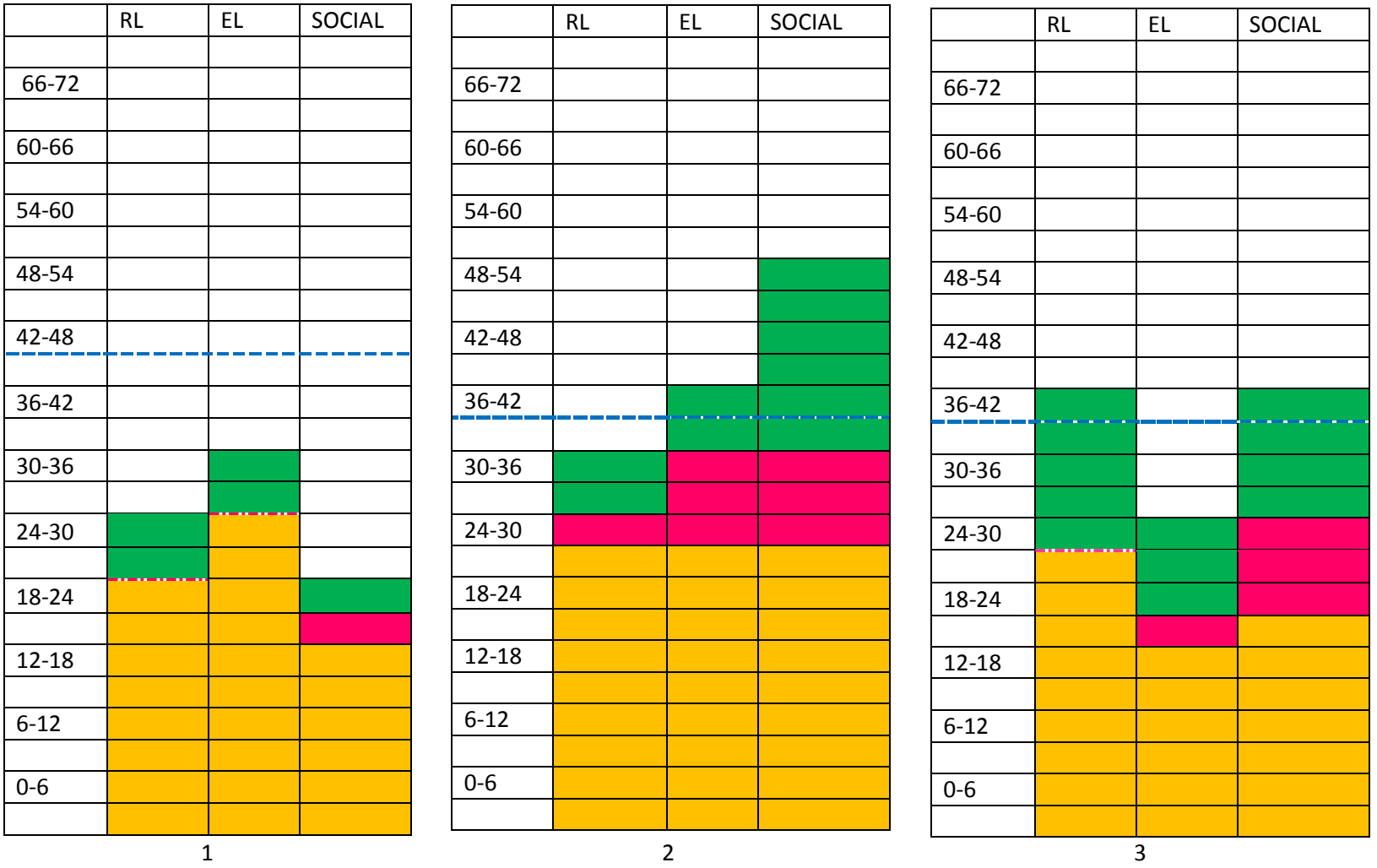
COMMUNICATION DEALL DEVELOPMENTAL CHECKLIST – SHADING OF LANGUAGE AND SOCIAL SKILLS

 ---------- skill level at Pretest

 ---------- skill level attained at mid intervention

 ---------- skill level attained at posttest

---------- ---------- age of child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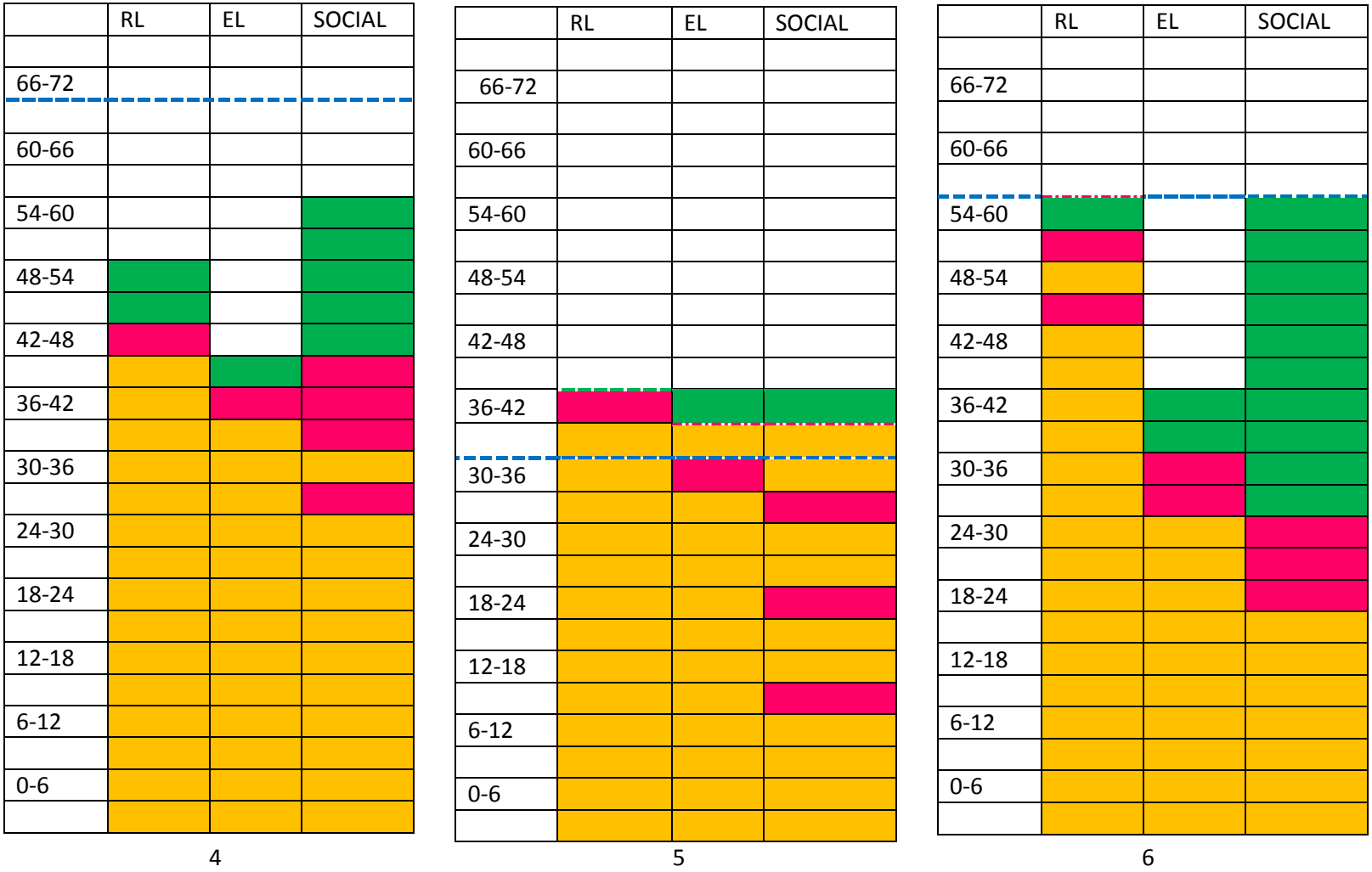
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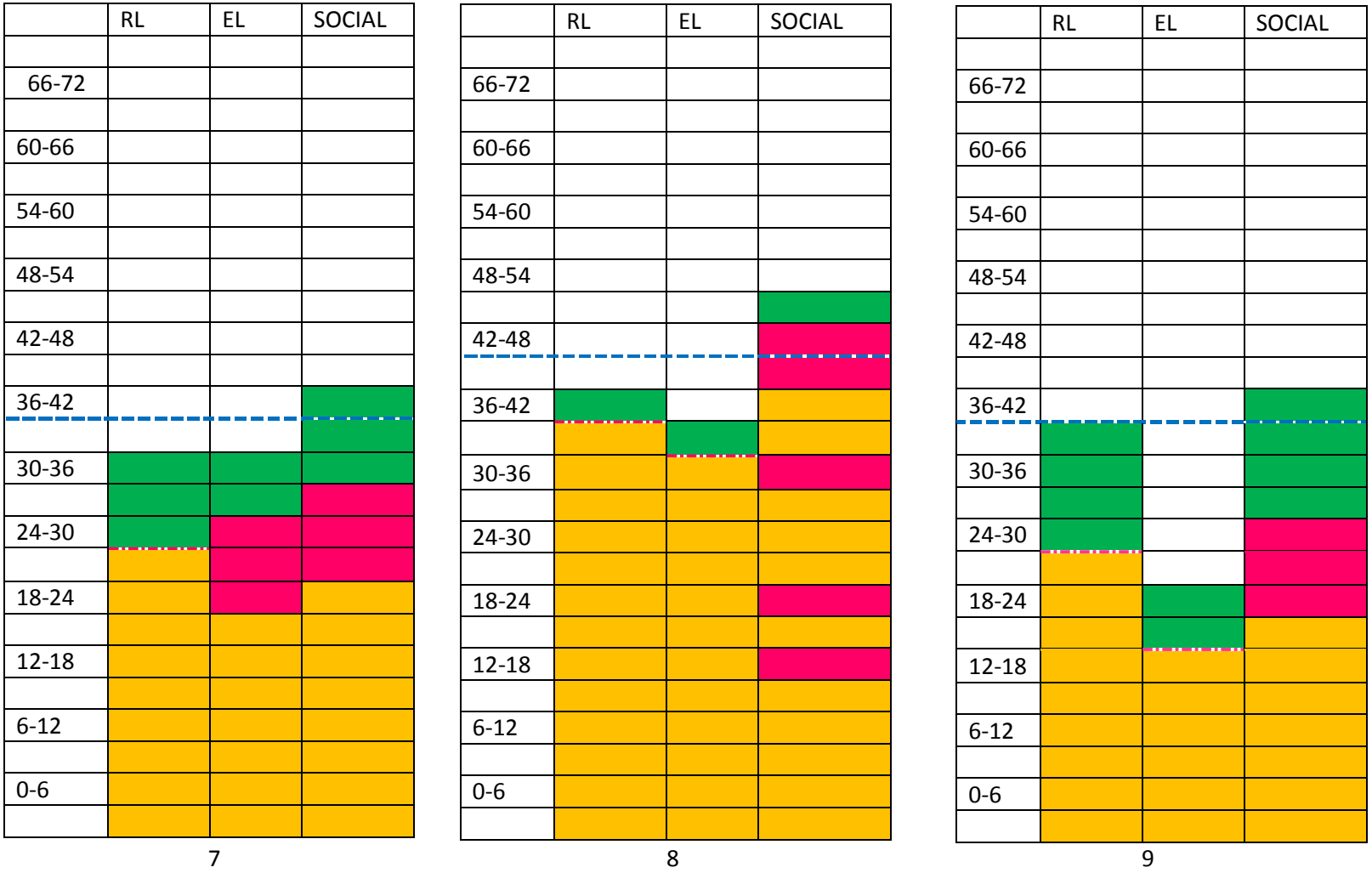
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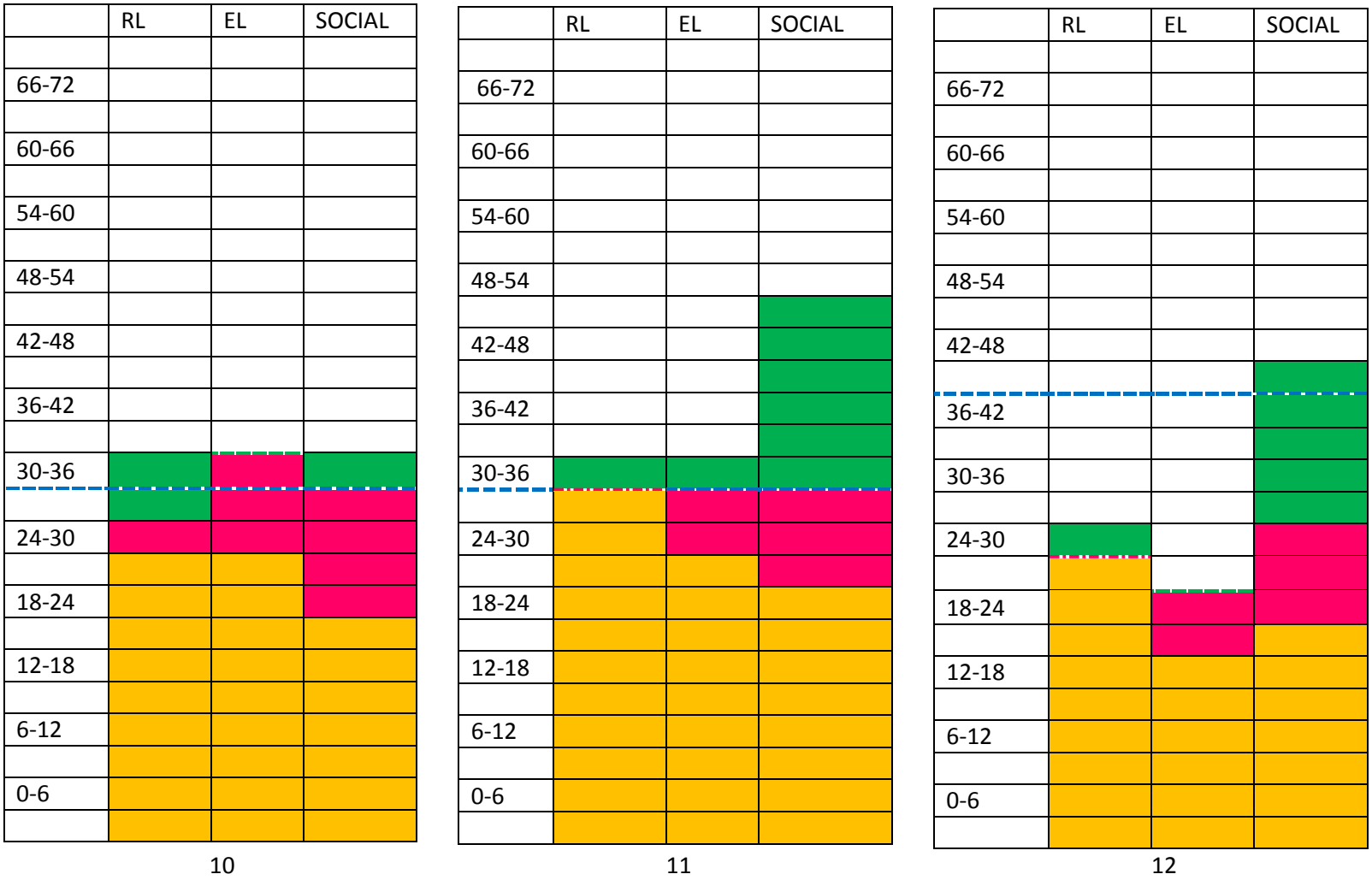
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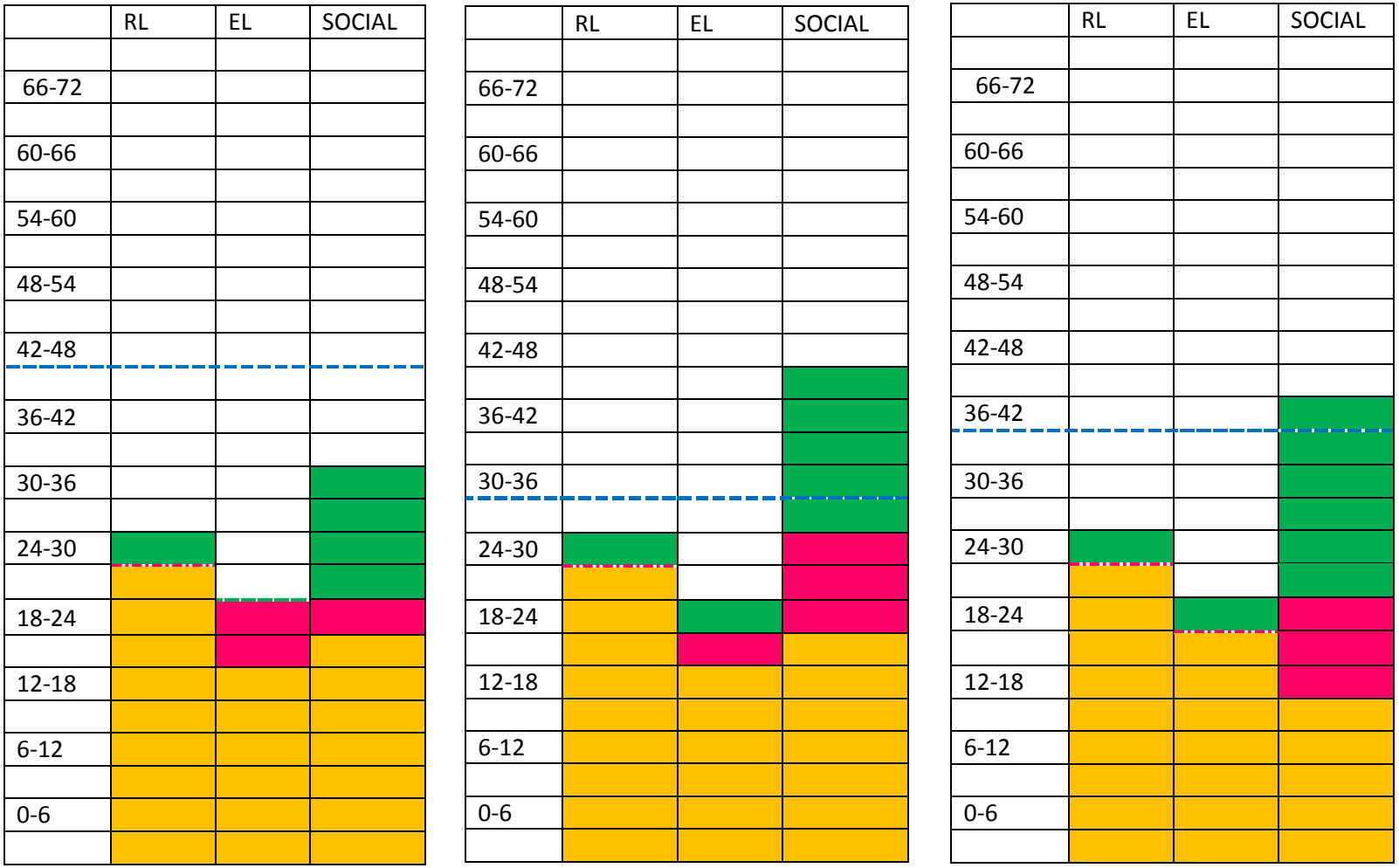
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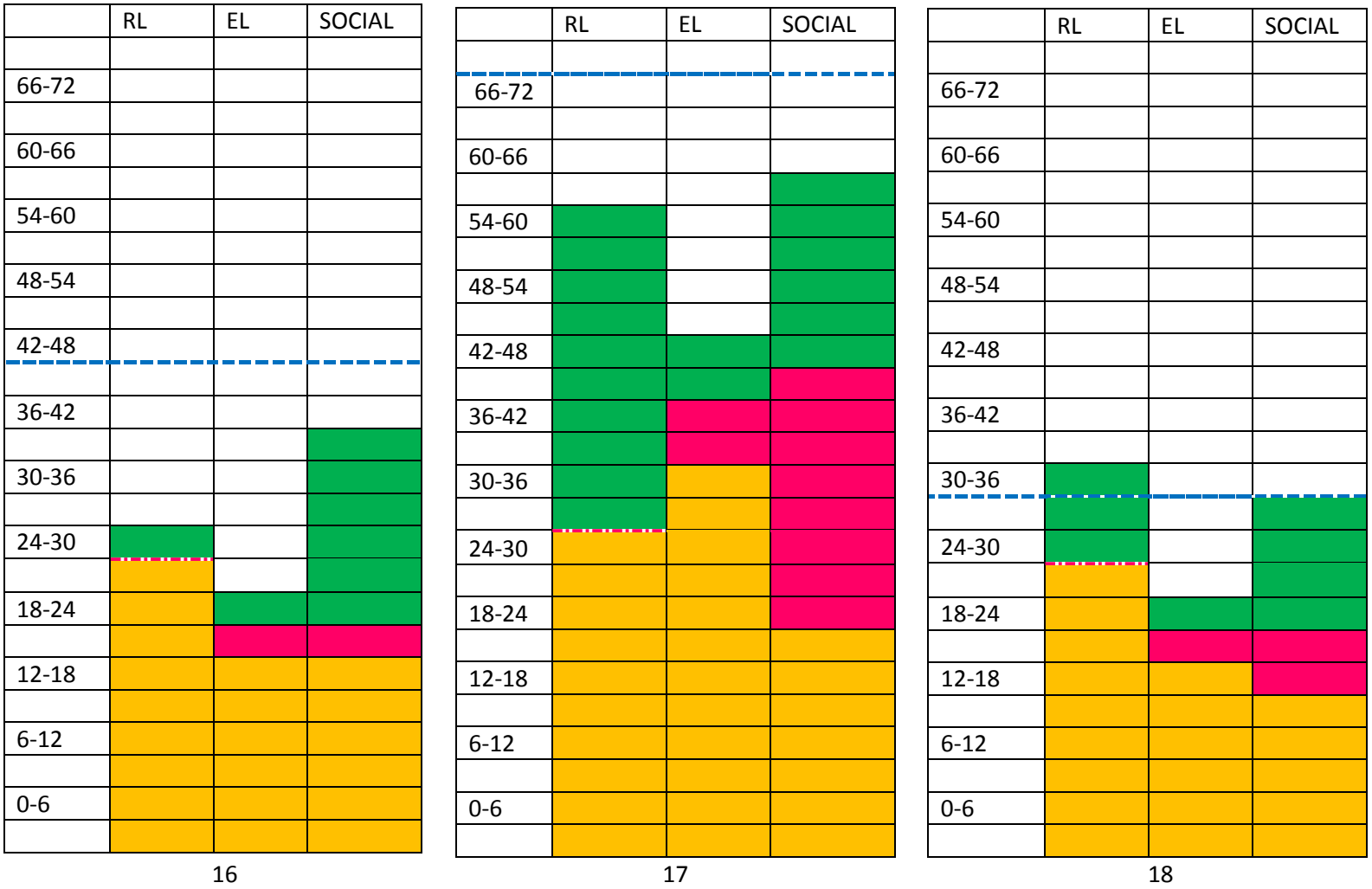
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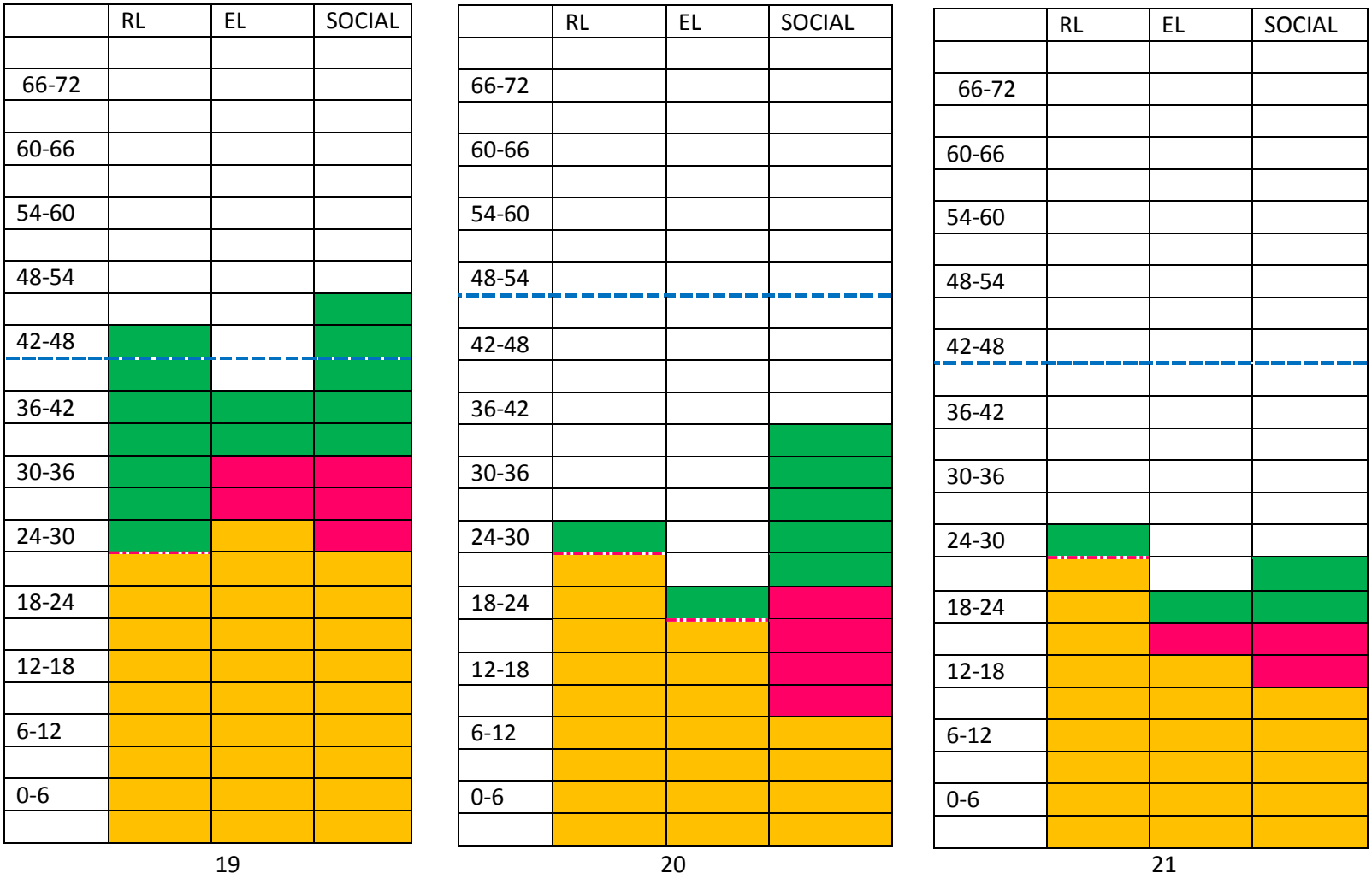
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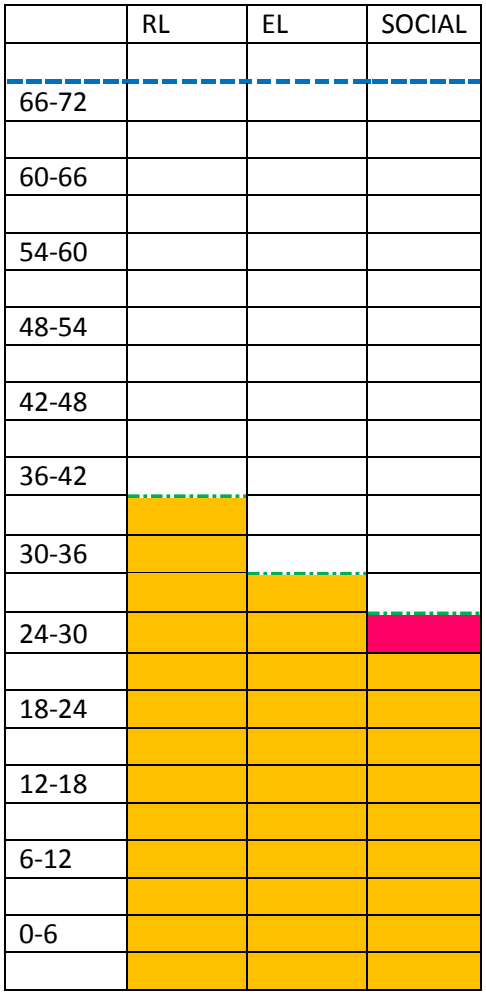
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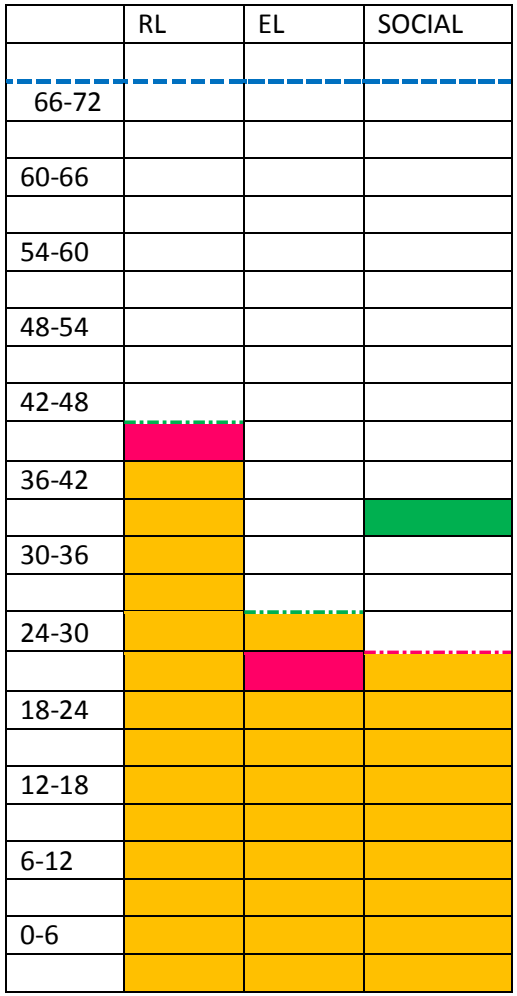
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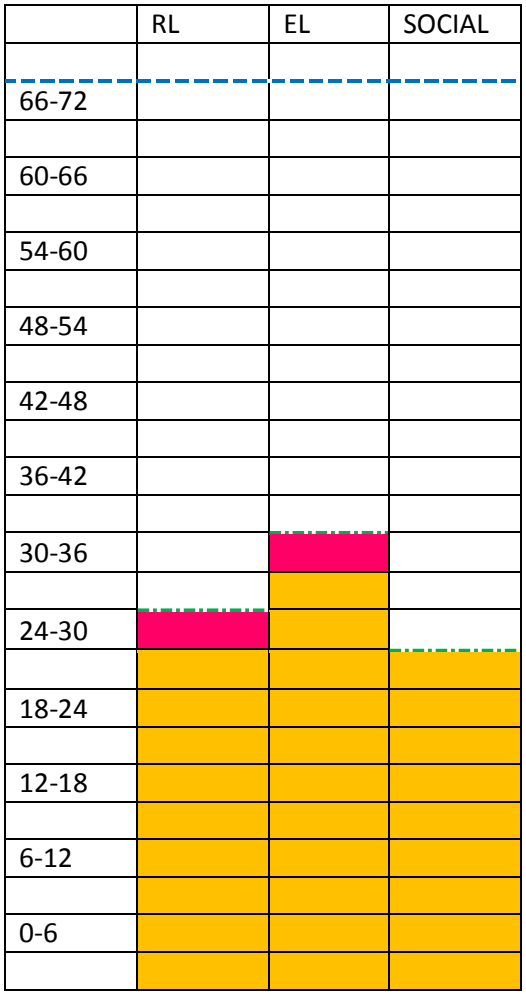
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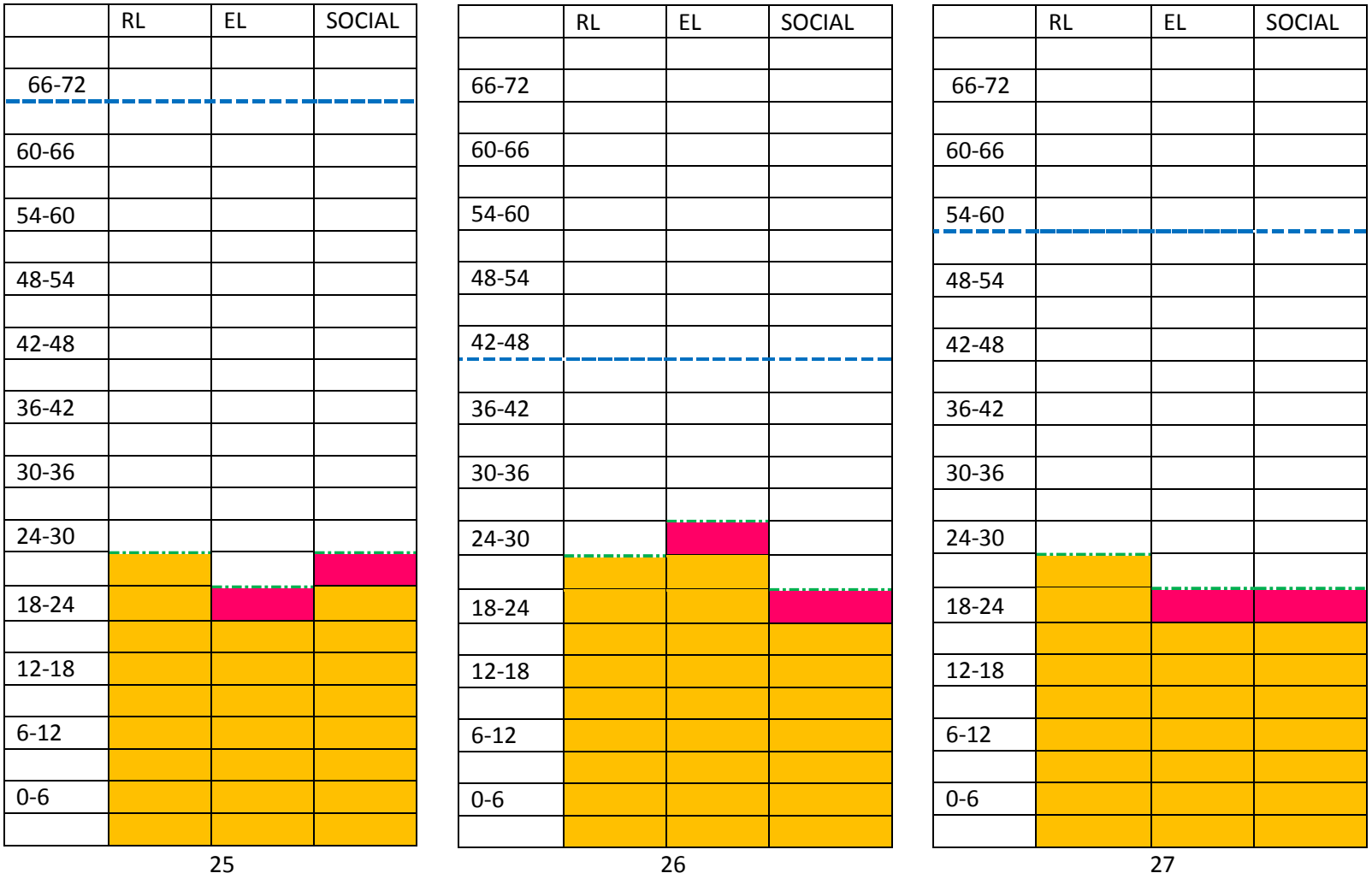
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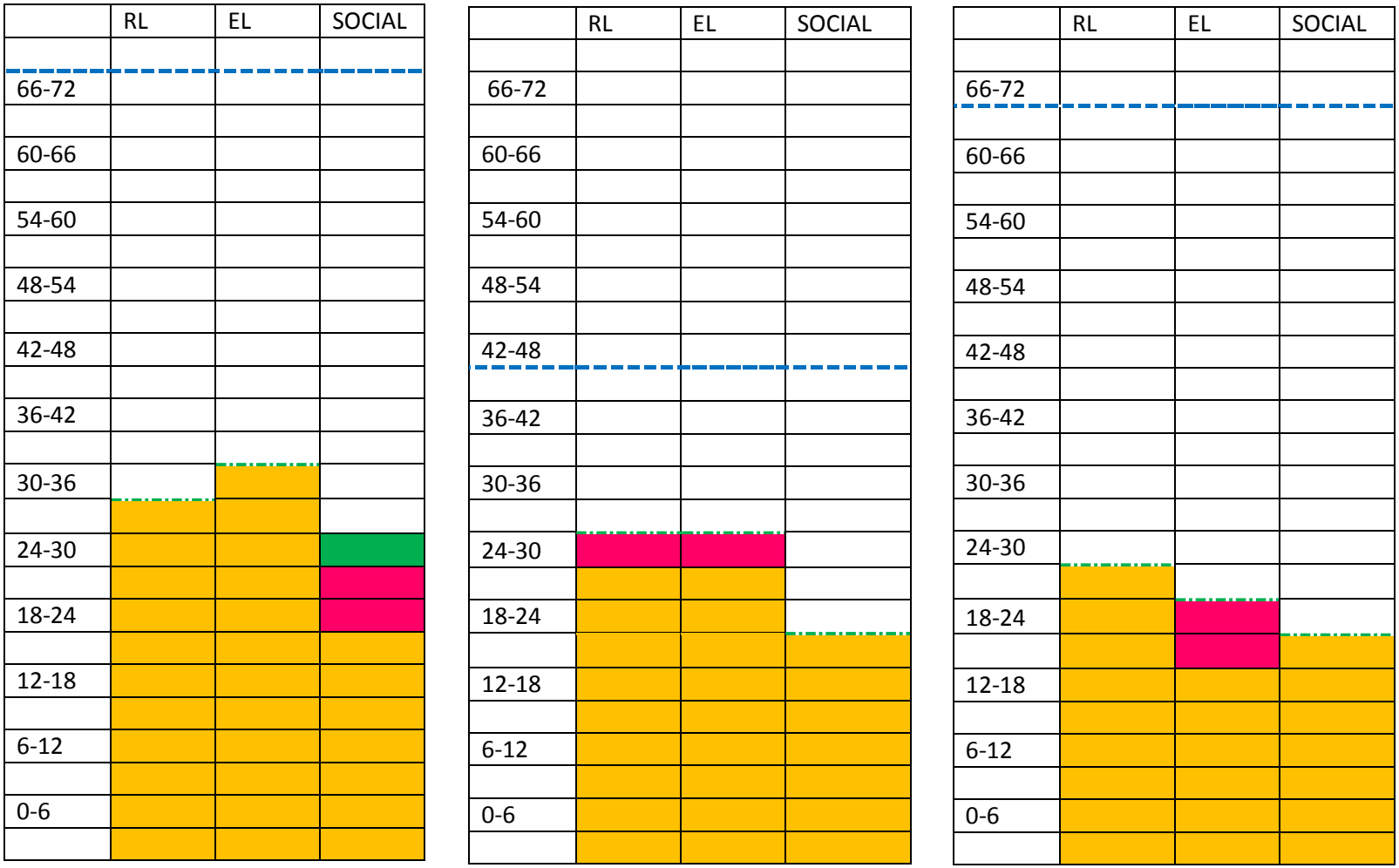
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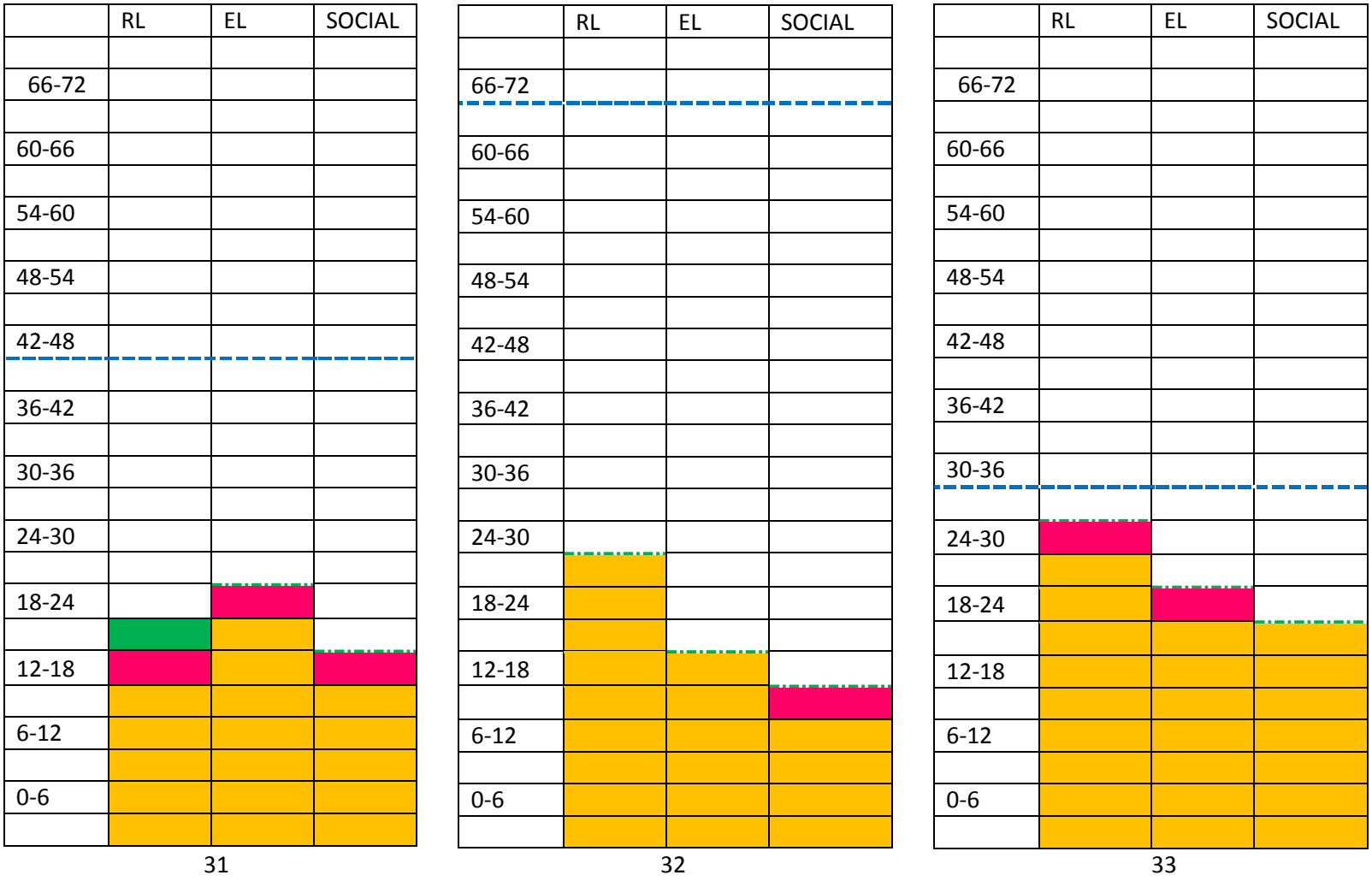
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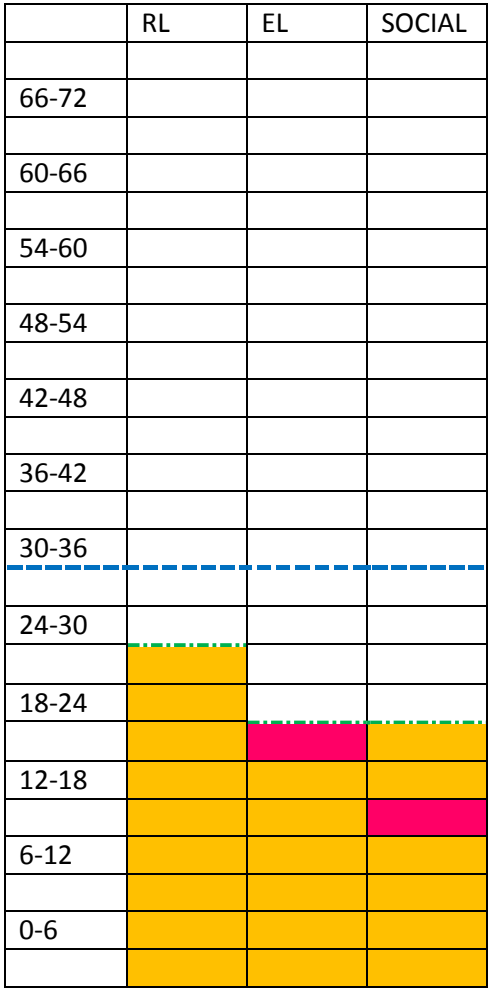
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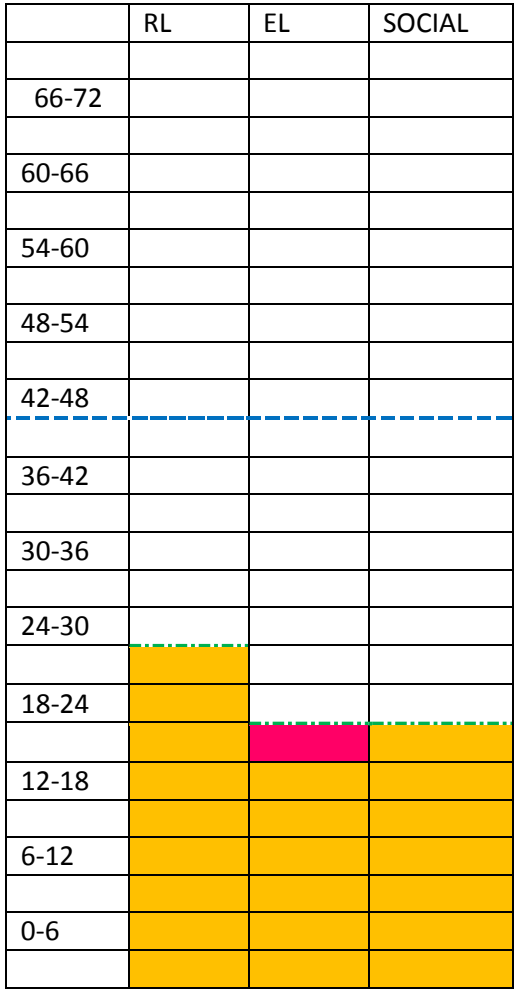
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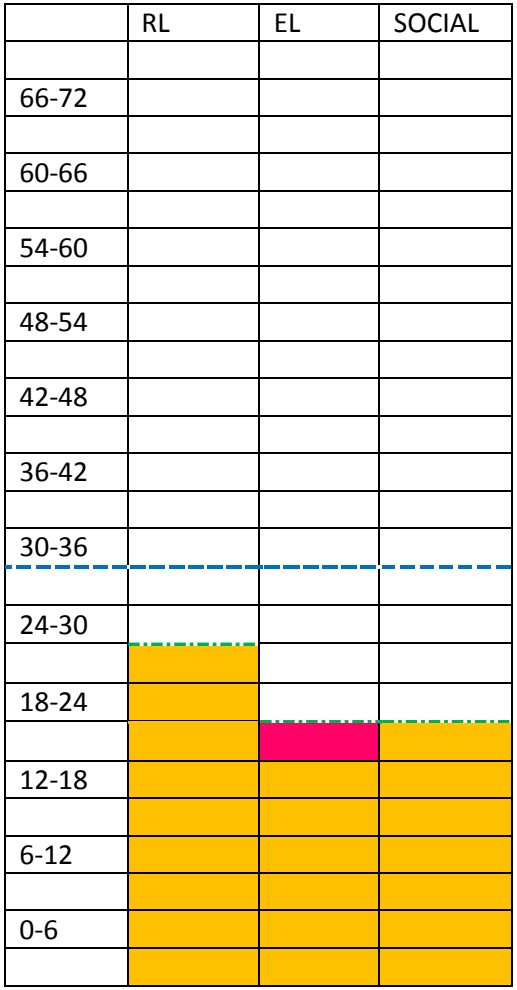
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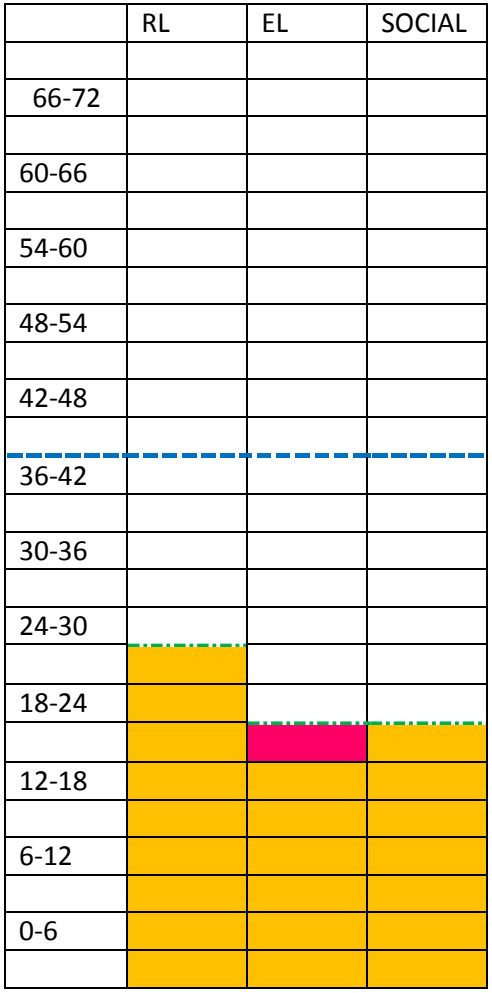
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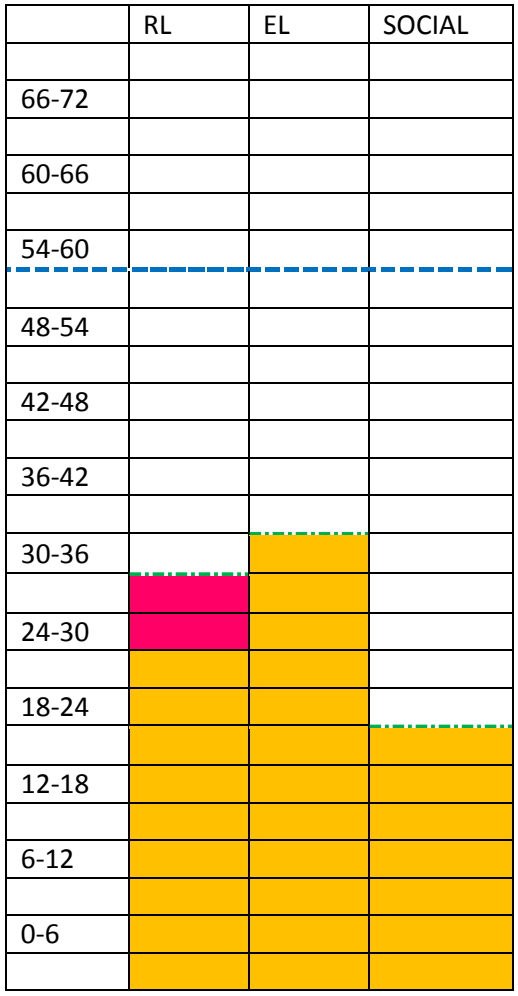
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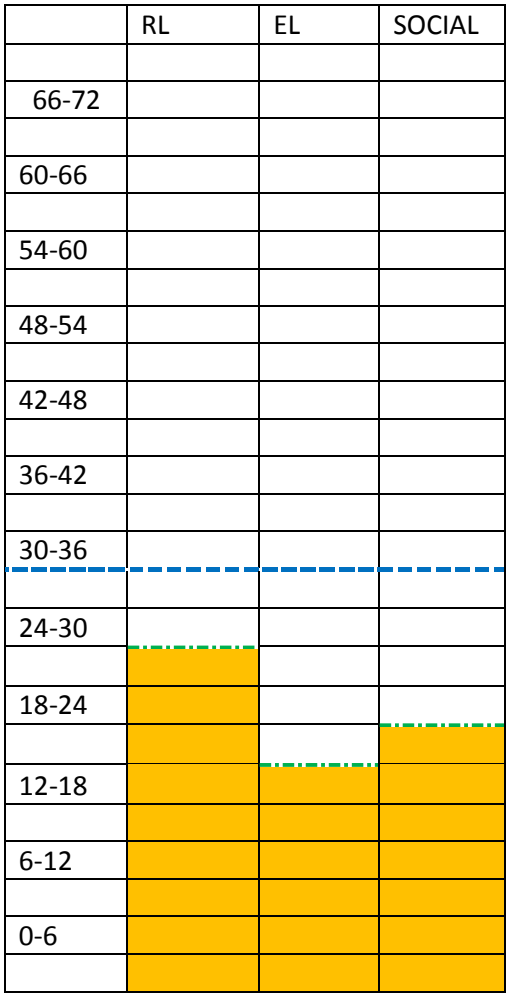
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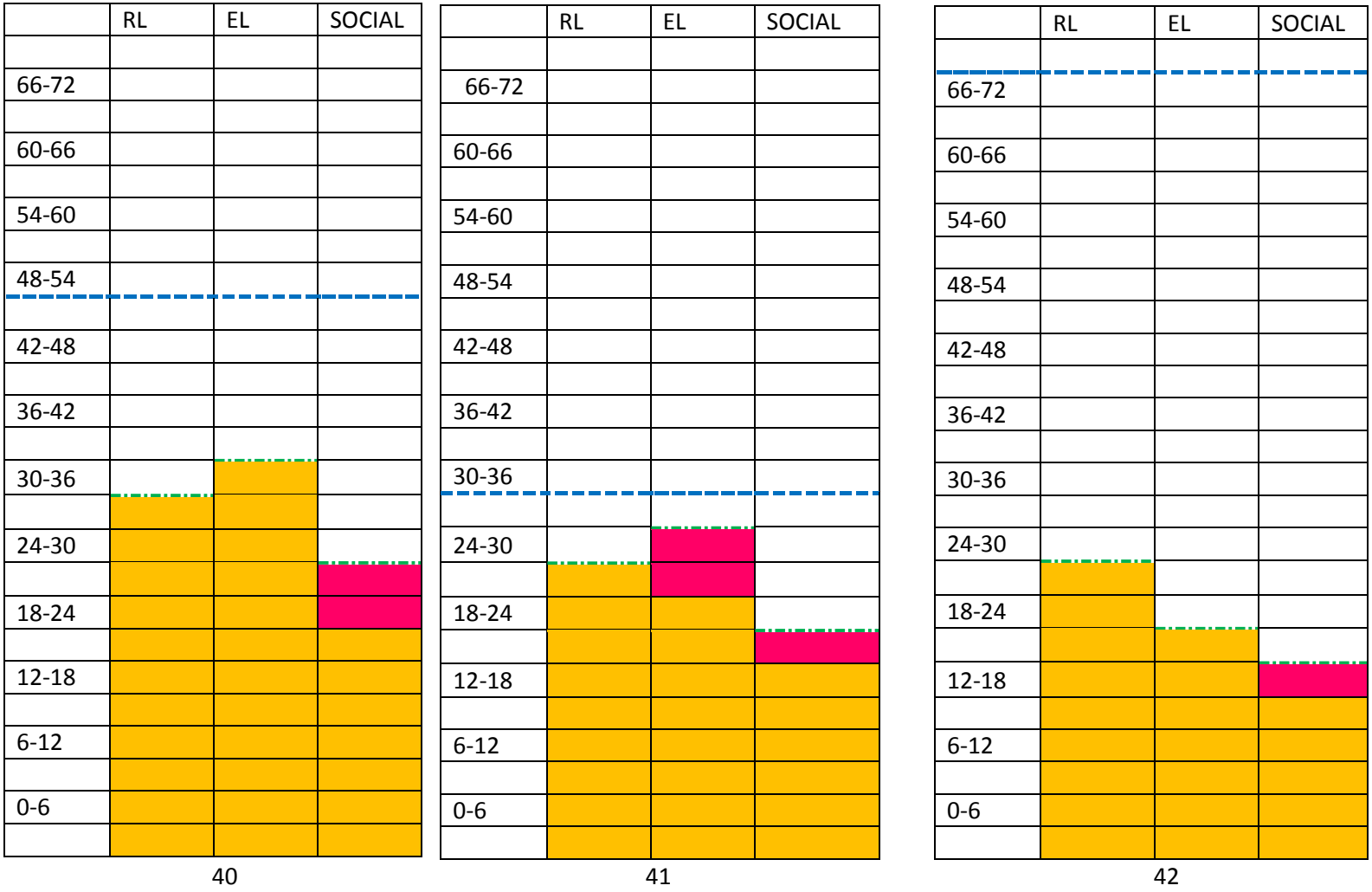
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KAUMARAM
PRASHANTHI ACADEMY
(Run by Kaumaram Prashanthi Trust)

Date: 20.3.17

To whomsoever it may concern

This is to certify that Miss. **RHEMA ANU.N**, MOT II Year, KMCH College of Occupational Therapy, conducted her study on "Effectiveness of Pretend play as a Therapeutic Modality to Enhance Social competence in children with Autism" in our Organization.

Mrs. Deepa Mohanraj,M.Sc.Psy
DIRECTOR
Kaumaram Prashanthi Academy
(A School For Children With Special Needs)
Director

239/2, Chinnavedampatti Post, Coimbatore - 641 049.
Phone : +91 96593 05550 www.kaumaramprashanthiacademy.org www.kaumaramprashanthitrust.org

KMCH ETHICS COMMITTEE
KOVAI MEDICAL CENTER AND HOSPITAL LIMITED

Post Box No. 3209, Avanashi Road, Coimbatore - 641 014. INDIA
✆ : (0422) 4323800, 4323619 Fax : (0422) 4270805
E-mail : ethics@kmchhospitals.com
EC Reg. No : ECR / 112 / Inst / TN / 2013

Ref: EC/AP/510/02/2017
13.02.2017

To
Mrs.S.Sugi MOT (Pediatrics)
Professor
KMCH college of Occupational Therapy
KMCH Campus, Avinashi Road
Coimbatore-641 014

Dear Mrs.S.Sugi ,

The proposal entitled **"Effectiveness of pretend play as a Therapeutic modality to enhance social competence in children with Autism."** Submitted by **Ms.Rhema Anu N,** under your guidance was reviewed by the Ethics Committee in its meeting held on 11.02.2017 and permission is granted to carry out the study at Kovai Medical Center and Hospital Ltd, Coimbatore, India.

Thanking you,

Yours faithfully,

Dr. P. R. Muthuswamy
Chairman, KMCH Ethics Committee

Dr. P. R. MUTHUSWAMY,
MA.,MBA..FDPM(IIM-A)Ph.D.
Chairman
Ethics Committee
Kovai Medical Center and Hospital
Avanashi Road,
COIMBATORE-641 014.

Copy to: Clinical guide:
Dr.K.Rajendran, M.D(paed)
Consultant Paediatrician and Neonatologist
Kovai Medical Center and Hospital

PARENTAL CONSENT FORM

I Mr/Mrs/Miss Mrs. Deepa as a parent/legal guardian, authorize

Raaghav (child name) to become a participant in the research study : "Effectiveness of pretend play as a therapeutic modality to enhance social competence in children with autism".

The researcher has explained me the content of her research in brief, what she needs to interview from, what treatment program she is providing and has answered the questions related to the research to my satisfaction.

Date: 04/11/2016

Signature of the parent/Guardian:

Signature of the Researcher: