

The Role of Play in Developing Intelligence and Life Skills in Children with Down syndrome (An Analytical Study of Three Cases at the Psycho-Pedagogical Centre of El Bayadh Province)

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Abstract

This study aims to explore the role of play in the development of intelligence and life skills in children with Down syndrome through the analysis of three cases at a psychological centre. The research adopted the case study method and focused on the impact of play on children's cognitive and behavioural development. Data were collected via various tools, including direct observation to monitor children's interactions with different types of play, interviews with parents and therapists to understand developmental changes, and psychological and educational tests to measure changes in intelligence and life skills after specific periods of play activities. The results showed that guided and free play significantly improved the participating children's thinking, communication, independence, and social interaction skills. Furthermore, motor and educational games enhance cognitive abilities and

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support acquiring essential life skills. The study recommends intensifying play as an educational and rehabilitative tool for children with Down syndrome, emphasising the need for a stimulating and supportive environment in psychological and educational centres and the development of specialised play programmes.

Keywords: Play, Intelligence, Life skills, Down syndrome.

Introduction

Intellectual disability is a phenomenon that has long been part of human and social history. It is central to special education, which has captivated scholars and experts across various fields, including psychology and social science. Given its complex nature, intellectual disability requires significant effort from those involved in the upbringing and rehabilitation of this group.

Children with intellectual disabilities, especially those with Down syndrome, have faced numerous challenges related to strategies for dealing with and adapting to their condition from ancient times to the information age. With increasing awareness among individuals, they are no longer seen as a form of stigma. However, their acceptance has grown, with increased attention to their upbringing, education, and empowerment to showcase their cognitive abilities. Despite the disability, it is undeniable that this group possesses many abilities, which has led specialists to create educational approaches tailored to their characteristics. Various methods have been employed to teach children with Down syndrome, and we have chosen the play-based learning method. Play, in general, is an essential need that cannot be disregarded. It holds both recreational and educational value, as well as therapeutic dynamics. It is an outlet for children and is an integral part of their behaviour. Play is one of the methods used to develop skills, and it is considered the most effective way to enhance intelligence and equip children with many skills that promote independence. This independence is key for children with special needs to help them adapt to their environment and society.

There is no doubt that play plays a crucial role in the lives of children across various groups, serving as one of the fundamental means to enhance their abilities. Play helps strengthen their cognitive, social, and emotional skills, enabling them to interact with their environment naturally and spontaneously. The importance of play is even greater for children with Down syndrome, as it becomes an effective tool to stimulate their mental, physical, and social development, which, in turn, contributes to improving their quality of life and enhancing their independence. Children with Down syndrome face challenges in areas such as perception, communication, and social adaptation, necessitating the use of practical educational and rehabilitative methods that enable them to develop various skills. Studies have shown that play, whether individual or group-based, structured or free, can enhance one's ability to think, improve one's level of social interaction, and help one develop life skills such as problem-

solving, independence, and communication. Moreover, motor games improve motor coordination and strengthen muscles, whereas educational games help enhance cognitive and language skills. Therefore, this study aims to explore the role of play in the development of intelligence and life skills in children with Down syndrome by analysing three cases in a psychological centre. The study also seeks to highlight the best methods of using play as an educational and rehabilitative tool, with recommendations for supporting this group and enhancing its integration into society. Therefore, our study is based on the effectiveness of play in developing the intelligence of children with Down syndrome.

Problem Statement

Individuals with special needs are considered one of the most significant groups addressed in recent studies, which have focused on caring for this group in various areas of life to help them adapt to the surrounding society. One of the most important groups of individuals with special needs is those with intellectual disabilities, as this group has unique characteristics in terms of the severity and type of impairment. Furthermore, the multiple disorders present in one individual, particularly at the level of cognitive processes such as attention, perception, memory, and intelligence, are notable.

Down syndrome is one of the most important types of intellectual disability, where children with this syndrome are considered like any other individuals; however, as previously mentioned, they have specific characteristics that manifest as a slower pace in their performance. They exhibit difficulties in tasks that require intelligence, such as general cognitive ability, and this inherent slowness naturally hinders the child's life. This has led to the establishment of psychological centres by the state to focus on rehabilitating this group and other types of intellectual disabilities and individuals with special needs. These centres are overseen by a group of specialists and trained educators who assist in developing specific skills. One such method is learning through play, which utilises play to develop intelligence in children with Down syndrome. In this context, play is considered a directed or nondirected activity undertaken by the child to achieve enjoyment and entertainment (Shaush, 2001).

While play may be considered a secondary element in the life of a typical child, it is an essential component for children with special needs. Children express all their needs and emotions through play. Furthermore, while multiple alternatives exist for a typical child, play is one of the most deliberate methods for educating children with special needs and developing intelligence (Shaker, 2009).

According to Taylor, play is "the breath of life for the child; it is their life and not just a way to pass the time or occupy themselves. Play, such as education, exploration, recreation, and work for adults, is essential." This definition emphasises the importance of play from the perspective that it is a fundamental aspect of a child's life, one that cannot be dispensed with, as it aids growth. Therefore, play is a primary rather than a secondary concern (Al Heila, 2010, p. 33).

Maria Souter (1994) conducted an experimental study to examine the effectiveness of play in increasing the cognitive abilities of individuals with intellectual disabilities. Through her study, she concluded that play effectively enhances the child's motivation to learn and attention. Additionally, Biutte (1987) focused on studying patterns of the Stanford-Binet intelligence scale for mentally disabled individuals capable of training. She reported that children were able to retain several behaviours after repeated sessions.

Moreover, Goodwin (1985) studied role-playing to teach social skills to children with intellectual disabilities. The study demonstrated that the role-playing technique led to behavioural modification and the acquisition of a certain level of independence and self-reliance (Saoudi, 2017).

General Problem

✚ Does play have an important role in developing intelligence in children with Down syndrome?

SubProblems

✚ Does the group play have a role in intelligence development in children with Down syndrome?

✚ Does the individual play have a role in developing intelligence in children with Down syndrome?

General Hypothesis

✚ Play has an important role in developing intelligence in children with Down syndrome.

Sub-Hypotheses

✚ Group play plays a role in developing intelligence in children with Down syndrome.

✚ Individual play plays a role in developing intelligence in children with Down syndrome.

Reasons for Choosing the Topic

✚ Our choice of this topic stems from our interest in and efforts to understand the group of children with Down syndrome.

✚ The importance of this unique group needs assistance to develop their general abilities and, specifically, their cognitive abilities.

✚ The importance of learning-through-play strategy and play dynamics are among modern education's most successful methods.

✚ Understanding the role of play in facilitating and enhancing the learning process and developing intelligence in this special group.

Objectives of the Study

- To explore the importance of the learning-through-play strategy.
- To highlight the importance of using games in psychological centres.

- To examine the contribution of play to the development of intelligence in children with Down syndrome.

Definition of Terms:

- **Play:** is an activity performed by the child either freely or in a controlled manner, often involving movement or a series of movements, individually or in a group. Through play, the child utilises their physical and cognitive energies as a source of emotional release. Play is one of the most important aspects of childhood, as childhood is a phase characterised by play. It is a voluntary activity full of enthusiasm and desire, where the individual engages in it simply for the pleasure and satisfaction it provides.

- **Intelligence** is the mental ability to understand information, solve problems, and adapt to new situations. This study uses standardised psychological tests to measure the development of cognitive functions such as thinking, memory, and attention after engaging in play activities. The child can solve their problems in the least amount of time and with minimal effort.

- **Life skills** are a set of abilities that enable a child to interact efficiently with the demands of daily life, such as communication skills, independence, self-care, and social interaction. Therapists and parents observe these skills and use specialised educational evaluation tools.

- **Down syndrome** is a genetic disorder caused by an extra copy of chromosome 21. Distinctive physical traits and delays in intellectual and physical development characterise individuals with Down syndrome. The individuals in this study's sample are identified based on a formal diagnosis of Down syndrome.

Previous studies

In recent years, the field of special education has been distinguished by numerous studies, particularly those focusing on individuals with intellectual disabilities. These studies aimed to raise awareness among members of society and increase attention to this group. We attempt to present some studies related to our research topic, which is the role of play in the development of intelligence in children with Down syndrome. These studies have played a significant role in enriching our study, and we present them as follows:

Maria Soto's Study (1994): This study aimed to examine the effectiveness of play in enhancing the cognitive abilities of individuals with intellectual disabilities. The sample consisted of four students, and the games selected were appropriate for the age of the students with intellectual disabilities. The program was implemented through manual activities designed to stimulate the student's senses, such as shape, colour, and numbers. The experimental study results indicated improvements in cognitive

ability through the use of manual play tools. The study also emphasised that stimulating the child's motivation and attention through play led to improvements in performance.

The results of this study confirm the effective role of manual games in increasing a child's motivation to learn and enhancing attention, subsequently improving cognitive outcomes and overall performance.

Bissette's study (1987) focused on examining the patterns of domain scores on the "Stanford-Binet" intelligence scale, form four, for students with intellectual disabilities who are capable of training. The researcher used a sample of 25 students whose average scores significantly differed across the four domains of the scale.

The results indicated a deficiency in short-term memory among individuals with intellectual disabilities, particularly in the verbal and quantitative reasoning domains. However, the visual abstract reasoning domain showed no significant differences from the other domains. The average scores of the intellectually disabled sample were significantly lower than the average scores of the normative sample (Al-Rousan, 2000).

Applying the "Stanford-Binet" test revealed that individuals with intellectual disabilities experience deficiencies in short-term memory, particularly in verbal and quantitative reasoning. This suggests that educators should focus on repeated behavioural reinforcement to help the child retain information. Once the child can retain the information, they do not face difficulties in other areas, as no significant differences were found in the other domains.

Goodwin's study (1985) focused on role-playing to teach social skills to children with intellectual disabilities. The study sample consisted of four children with intellectual disabilities. The results showed that the role-playing technique led to behavioural modification in the four residents of care institutions and the acquisition of some social skills (Khattab, 2008).

This study demonstrates the effectiveness of role-playing in helping children with intellectual disabilities acquire social skills that may contribute to fostering independence and self-reliance, depending on the capabilities of this group.

Philip's study (1975): The study aimed to increase social play in preschool children with intellectual disabilities via drama activities. It aimed to enhance social play through social drama activities and, if possible, during free play. The sample consisted of 8 children with intellectual disabilities, with an IQ of 37 on the Stanford-Binet test, categorising them as having severe intellectual disabilities. The study revealed improved children's social behaviour and increased ability to interact with others (Khattab, 2008, p. 11).

Saoudi's study (2017) aimed to examine the effect of play pedagogy on increasing learning motivation and developing creative thinking skills. A sample of 18 students from group "A" at the first-

grade level was randomly selected, and they underwent pre- and post-observation. The study used an observation network and the Torrance Test of Creative Thinking, Form "A."

The study results indicated that implementing a program based on play pedagogy in mathematics activities developed creative thinking in first-grade students. This was evidenced by statistically significant differences between the pre-and post-test scores in the total creative thinking score, including skills such as fluency, flexibility, and originality, favouring the post-test. This confirms the effectiveness of the program (Saoudi, 2017).

This study's results reaffirm play pedagogy's effectiveness in enhancing learning motivation and increasing cognitive capacities and innovative skills. These skills represent various types of intelligence, not only for children with special needs but also for typically developing children.

Sassane's study (2016): This study aimed to examine the role of play in learning and memory development in children with Down syndrome. The study sample consisted of 12 children with Down syndrome who had recently started school and were enrolled in the "Tafteen" class.

The researcher used the Columbia Intelligence Test, pre- and postmeasurements, and play-based learning activities.

The study's results revealed statistically significant differences between the sample's average scores in the pre-and post-measurements for recognising and identifying colours, recognising and identifying shapes, and coordinating colour and shape, all in favour of the post-measurement. The study also confirmed the importance of play in the learning process, especially for children with Down syndrome, and its role in stimulating and developing memory by spontaneously engaging multiple senses (hearing, sight, touch) (Sassane, 2016).

Based on the results of this study and following the application of a training program for children with Down syndrome, we observe the effective role of play in improving memory by engaging multiple senses during the learning process. In addition, children acquired many skills that were previously absent.

Spatial Scope

- Location of the Study: The study was conducted at the Psycho-Pedagogical Center for Children with Intellectual Disabilities and Mental Impairment in El Abiodh Sidi Cheikh.

Human Scope

- Human Scope:

Cas	Name	Gender	Age	Date	of	Disabili
es				Care	ty	
-01	B - E	Female	13	/09/25		Down

				2016	Syndrome
-02	T - M	Male	12	/09/25	Down
				2016	Syndrome
-03	A - E	Male	10	/09/23	Down
				2018	Syndrome

Selection of the Sample

We selected this group because of our interest in and efforts to understand the group of children with Down syndrome who require assistance to develop their general abilities, particularly their cognitive abilities.

Time Frame

This study was conducted between November 10, 2024, and December 15, 2024.

Study Methodology

The research topic dictates the use of a specific methodology. Determining the appropriate methodology is an important and necessary step in conducting a scientific study of the topic. Given the nature of the issue, the methodology used in this research is the clinical approach.

Research Group Presentation

The research group was selected based on the study's focus on the role of play in developing the intelligence of children with Down syndrome. The research group consisted of three patients aged between 10 and 13 years, all with the same level of disability. This information was obtained from the children's files. The following table provides a summary of the research group:

Cases	Name	Gender	Age	Date of Care	Disability
-01	B - E	Female	13	/09/25	Down
				2016	Syndrome
-02	T - M	Male	12	/09/25	Down
				2016	Syndrome
-03	A - E	Male	10	/09/23	Down
				2018	Syndrome

Data collection techniques

Field Observation:

Observation is considered a complementary method to interviews and a means for collecting data. In this method, the researcher observes behaviour and its relation to the discussed situation, recording everything observed. During our study, we focused on observing the cases while they were

playing, which allowed us to observe their behaviour, how they interacted with the games, and how they engaged with them. These observations indicate intelligence development through sensory, emotional, and behavioural skills and provide insight into a child's cognitive growth.

Clinical Interview:

An interview is based on examining and approaching a case to make a diagnosis. It aims to gather the necessary and sufficient information for the research. We interviewed the mothers to obtain relevant information and with the children to implement the programme.

The Draw-a-Man Test

The draw-a-man test appeared in 1926 and is widely used with children in schools, institutions, and special needs groups to measure intelligence. It has been used in many countries worldwide because of its nonverbal nature. Below is an explanation of how the Draw-a-Man test is used to assess both intelligence and personality.

After the Draw-a-Man test was introduced in 1926, the child was asked to draw a man, and the drawing was analysed according to a list that included 48 items. Based on this analysis, the mental age and intelligence quotient (IQ) are estimated.

The Draw-a-Man test has many advantages: a. This nonverbal test does not rely on language, reading, or writing. b. It is simple in terms of the procedures for its application. c. It can be administered as an individual test for one child or as a group test for multiple children.

Program for the Study

Program:

The structured play program was designed for children with Down syndrome. We used a unique play program developed by a clinical psychologist at the psycho-pedagogical centre for children with Down syndrome. These games aim to enhance intelligence in this group.

How the Program is Applied

A clinical psychologist implements this program, and it can be used either individually with one child or collectively with a group of children.

Objectives of the Program

This program, designed by a psychology specialist, aims to develop intelligence through play. It focuses on the following objectives:

- Helping the child increases concentration, attention, and perception.
- Assisting the child in overcoming the limits of reality and fulfilling their needs and desires in a compensatory manner through play.
- Development of a child's sensory and motor abilities.

- Making the child feel valued and important through their achievements.
- Fostering a sense of initiative.
- Encouraging self-reliance.
- Revealing the child's cognitive development.

Programmed as follows:

Session	Activities Used	Play Tools	Location	Objectives
Individual Session	Colour Sorting Game (Red and Yellow)	Toy Puzzle	Psychological Clinic	-Increase concentration and attention.
Group Session				-Encourage the child to discover their creative and imaginative abilities.
Individual Session	Matching Game	Pedagogical Board for Shapes	Psychological Clinic	-Make the child feel valued and important through their achievements and constructions.
Group Session				-Increase concentration and attention.
Group Session	Free Play	Various Games	Playroom	-Freedom to choose the game the child wants to play.
Individual Session				-Freedom of action without the intervention of the specialist.
				-Encourage self-reliance.
				-Ability to explore and choose freely.
				-Increase concentration and attention.

Group Session	Construction Game	Construction Toys	Classroom	<ul style="list-style-type: none"> -Increase concentration and attention. -Assemble toys to form a specific shape. -Reveal the child's cognitive role. -Help recognise primary colours. -Develop creativity. -Enhance intelligence.
Individual Session				
Group Session	Football Game	Football	Playground	<ul style="list-style-type: none"> -Develop intelligence through sensory, motor, emotional, and behavioural skills. -The child kicks the ball. Holding and passing the ball. Develop visual-motor focus. Foster teamwork. Increase concentration and attention.
Individual Session				
Group Session	Placing Balls in a Basket by Color	Basketball	Playroom	<ul style="list-style-type: none"> -Focus and attention skills. -Develop sensory and perceptual abilities. -Sort balls by colour, placing each ball in the basket according to its colour. -Foster initiative. -Encourage self-reliance.
Individual Session				
Individual Session	Play with Dough	Dough	Psychological Clinic	<ul style="list-style-type: none"> -Develop fine motor skills. -Visual-motor coordination. -Help with focus and

Gro up Session				<p>attention.</p> <p style="text-align: center;">-Enable the child to create models.</p> <p style="text-align: center;">-Promote the child's creativity and imagination.</p>
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Used Play Activities:

1. Toy Puzzle Game: This colour sorting game contains various pet animal shapes in different colours. We selected the colours red and yellow. These were placed on the table, and the child was asked to sort the shapes by placing those with red on one side and those with yellow on the other side. The children performed well in sorting the two colours (red and yellow), and they also showed their creativity by using their imagination to create different models.

2. Matching Game: The clinical specialist presents the child with a pedagogical board containing geometric shapes and another board with pet animals. The child is asked to place the correct shape in its designated place. Sometimes, the clinical specialist provides guidance and instructions. This game aims to increase concentration and attention, reveal the child's cognitive growth, and help the child recognise the missing part on the pedagogical board.

3. Free Play: The children were taken to the playroom and allowed to choose the game they wanted to play from various options. They were allowed to play as they wished. This type of play allows the child to select a game, and the researcher simply observes it. In other words, we provide them the freedom to act and observe how they engage with each other and the game. This type of play aims to promote independence, provide the child with an opportunity for self-expression, and develop a sense of responsibility.

4. Construction Game: The children sit on the carpet, and the specialist distributes different types, shapes, and colours of construction toys. The child is given the freedom to play and build. Each child creates different models, which aim to develop the child's creative ability, enhance their intelligence, and encourage them to feel valued and important through their accomplishments.

5. Ball Placement in the Basket Game: This is a group game in which children compete to see how many times they can place or put a ball into the basket. They are required to place the ball in the basket of the matching colour, with one red basket and one yellow basket. The child places the ball in the basket that matches its colour. The specialist provides guidance and correction. This type of play helps develop concentration and attention, enhances sensory-perceptual abilities, fosters a competitive spirit, promotes initiative, encourages self-reliance, and enhances cognitive abilities, contributing to intelligence development.

6. Football game: This is a competitive team game. The children were taken to the playground at the centre, and the group was divided into two teams, each consisting of two children, with the fifth child acting as the goalkeeper. Each team works to score as many goals as possible in a simple competition, which involves encouragement and fun. We observed great joy among the children, creating an atmosphere of friendly competition. This game aims to help the child develop sensory-motor competition through goal scoring, foster teamwork, play in a group, learn to respect rules by adhering to the game's regulations and enhance concentration during play and the ability to distinguish.

7. Play with Dough: This activity was carried out through individual sessions, where the child was given dough and asked to create a free form. The children created various shapes, such as circles, balls, and straight lines. This activity increases attention and concentration, in addition to developing fine motor skills and visual-motor coordination. It also allows the child to create free-form models, thereby expressing their ideas. It fosters creativity based on their imagination and helps with behavioural modification.

Pre-Test Draw-a-Man for 3 Cases

Table 01

Pre-Test

Name and Surname	Intelligence Quotient
01- B. E	25%
02- T. M	36%
03- A. E	45%

Programmed as follows:

Session	Activities Used	Play Tools	Location	Objectives
Individual Session	Colour Sorting Game (Red and Yellow)	Toy Puzzle	Psychological Clinic	<ul style="list-style-type: none"> - Increase concentration and attention - Encourage the child to discover their creative and imaginative abilities - Develop selective attention - Recognise the colours red and

				yellow
Individual Session	Matching Game	Pedagogical Board for Shapes	Psychological Clinic	<ul style="list-style-type: none"> - Make the child feel valued and important through their achievements and constructions - Increase concentration and attention - Develop visual matching - Promote cognitive growth in the child
Individual Session	Free Play	Various Games	Playroom	<ul style="list-style-type: none"> - Freedom to choose the game the child wants to play - Freedom of action without the intervention of the specialist - Encourage self-reliance - Ability to explore and choose freely - Increase concentration and attention
Individual Session	Construction Game	Construction Toys	Classroom	<ul style="list-style-type: none"> - Increase concentration and attention - Assemble toys to form a specific shape - Reveal the child's cognitive role - Help recognise primary colours - Develop creativity - Enhance intelligence
Individual Session	Football Game	Football	Playground	<ul style="list-style-type: none"> - Develop intelligence through sensory, motor, emotional, and behavioural skills - The child kicks the ball - Holding and passing the ball - Develop visual-motor focus - Foster teamwork

				- Increase concentration and attention
Individual Session	Placing Balls in a Basket by Colour	Basketball	Playroom	- Focus and attention skills - Develop sensory and perceptual abilities - Sort balls by colour, placing each ball in the basket according to its colour - Foster initiative - Encourage self-reliance
Individual Session	Play with Dough	Dough	Psychological Clinic	- Develop fine motor skills - Visual-motor coordination - Help with focus and attention - Enable the child to create models - Promote the child's creativity and imagination

Table 2
 Post-Test for Draw-a-Man Test

Name and Surname	Intelligence Quotient
B. E	40%
T. M	44%
A. E	66%

Table 3
 Pre-Test for Draw-a-Man Test

Name and Surname	Intelligence Quotient
M. N	38%
A. B	50%
B. A	35%

Programmed as follows:

Session	Activities Used	Play Tools	Location	Objectives
Group Session	Colour Sorting Game (Red and Yellow)	Toy Puzzle	Psychological Clinic	<ul style="list-style-type: none"> - Increase concentration and attention - Encourage the child to discover their creative and imaginative abilities - Develop selective attention - Recognise the colours red and yellow
Group Session	Matching Game	Pedagogical Board for Shapes	Psychological Clinic	<ul style="list-style-type: none"> - Make the child feel valued and important through their achievements and constructions - Increase concentration and attention - Develop visual matching - Promote cognitive growth in the child
Group Session	Free Play	Various Games	Playroom	<ul style="list-style-type: none"> - Freedom to choose the game the child wants to play - Freedom of action without the intervention of the specialist - Encourage self-reliance - Ability to explore and choose freely - Increase concentration and attention
Group Session	Construction Game	Construction Toys	Classroom	<ul style="list-style-type: none"> - Increase concentration and attention - Assemble toys to form a specific shape - Reveal the child's cognitive role - Help recognise primary colours

				<ul style="list-style-type: none"> - Develop creativity - Enhance intelligence
Group Session	Football Game	Football	Playground	<ul style="list-style-type: none"> - Develop intelligence through sensory, motor, emotional, and behavioural skills - The child kicks the ball - Holding and passing the ball - Develop visual-motor focus - Foster teamwork - Increase concentration and attention
Group Session	Placing Balls in a Basket by Colour	Basketball	Playroom	<ul style="list-style-type: none"> - Focus and attention skills - Develop sensory and perceptual abilities - Sort balls by colour, placing each ball in the basket according to its colour - Foster initiative - Encourage self-reliance
Group Session	Play with Dough	Dough	Psychological Clinic	<ul style="list-style-type: none"> - Develop fine motor skills - Visual-motor coordination - Help with focus and attention - Enable the child to create models - Promote the child's creativity and imagination

Table 4

Post-Test for Draw-a-Man Test

Name and Surname	Intelligence Quotient
M. N	47%
A. B	58%
B. A	45%

First: Case Analysis and Evaluation:

Ten sessions were conducted with six cases; the results were almost identical, with no significant differences. The cases are as follows:

Patient 1:

- Name: B. E
- Age: 13 years
- Gender: Female
- Position in the Family: Sixth

• The mother was interviewed and stated that her pregnancy was planned and that the pregnancy went smoothly. The birth was natural. Information regarding her psychomotor development and all relevant family and case information was collected.

• Living Conditions: The family lives in a moderate financial situation and cannot provide all the necessary material resources.

- Family Relationship: Everyone loves her, and all the family members spoil her.

Patient 2:

- Name: T. M
- Age: 12 years
- Gender: Male
- Position in the Family: First

• The mother was interviewed, and she confirmed that her pregnancy was planned and that the period went normally. The birth was natural. Information was obtained regarding his psychomotor development and all family—and case-specific data.

• Living conditions are perfect, as the family provides the child with all the necessary material resources and conditions.

- Family Relationship: He is loved by everyone and is especially spoiled by his mother.

Case 3:

- Name: A. E
- Age: 10 years
- Gender: Male
- Position in the Family: Third

• The mother was interviewed, and she stated that her pregnancy was planned and went smoothly. The birth was natural. Information was obtained regarding his psychomotor development and all family- and case-specific data.

Living Conditions: The family lives ideally and provides all the necessary material resources for the child.

Family Relationship: The child is spoiled by the mother and is loved by all family members.

Discussion of the Hypothesis:

Play is a behavioural phenomenon that dominates the childhood world and is an essential educational tool that contributes to developing a child's personality and intelligence. Both individual and group play can increase the intelligence of children with Down syndrome. Both individuals and groups help create a safe environment that allows children to express their needs and emotions and develop intelligence.

On this basis, the significance of our study lies in exploring the role of play in the development of intelligence in children with Down syndrome. This is based on the following questions:

- Does play contribute to the development of intelligence in children with Down syndrome?
- Does individual play contribute to intelligence development in children with Down syndrome?
- Does group play contribute to intelligence development in children with Down syndrome?

Study Hypothesis:

Both individuals and groups play a significant role in developing the intelligence of children with Down syndrome aged between 10 and 13 years. Six children with Down syndrome were selected to explore the role of play in intelligence development. To study the hypotheses thoroughly, the following tools were used:

- Clinical Interview: This was conducted to gather as much information as possible about the case.
- Clinical Observation: The aim was to observe how the children play and interact with the toys.
- Draw-a-Man test: This test is used to measure the degree of intelligence.
- Program Followed: We applied a unique play program to six cases, and the results were similar, indicating that play has the same significant role in developing intelligence for all the cases.

The results revealed that play programs, both individual and group, play a significant role in the development of children's intelligence. The study also revealed that the time spent playing is particularly significant for children with Down syndrome, as they spend more time playing than typically developing children. Play is essential for them, fulfilling several goals such as emotional release, learning, intelligence development, and therapy.

The results also revealed that individuals and groups significantly and effectively enhance intelligence in children with Down syndrome.

Conclusion:

Play is considered a purposeful educational, teaching, and therapeutic method that plays a vital role in motor, cognitive, and emotional development. It helps children recognise their environment, making it essential to use it as a teaching tool for children with Down syndrome, whose cognitive abilities are limited. This limitation is evident in their difficulty in acquiring and mastering the educational programs presented to them. Play is the appropriate medium that provides new opportunities for children to gain experiences and apply their learning in real life. Therefore, this study has shown that play has psychological and educational significance, as it contributes to developing cognitive abilities and improving attention, perception, thinking, language, communication, and memory. It also helps them acquire the educational material provided to them.

Based on the findings of this study, the following recommendations can be made:

- Improve the pedagogical tools used in teaching children with Down syndrome.
- Adapting the teaching methods and content of the programs provided to individuals with intellectual disabilities to the educational tools used at each group's level of intelligence should be considered.
- Special attention should be given to learning through play by planning, guiding, and implementing it in a structured and scientific manner to ensure that the delivery and teaching methods are systematic and practical.

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