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Perceptions of Pediatric Physical Therapists on Physical Therapy for Autism Spectrum Disorder in Sabratha, Libya: Cognitive, Motor, and Daily Living Skills

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Abstract

Background: Physical therapy is now a common part of treatment programs for children with Autism Spectrum Disorder (ASD). These programs aim to help children function better and enjoy a higher quality of life. However, very few studies have asked pediatric physical therapists in developing countries especially in Libya what they believe about how well physical therapy works.

Methods: A descriptive cross-sectional survey was conducted among 40 pediatric physical therapists working at Sabratha Teaching Hospital and Al-Allaqa Polyclinic. I asked the therapists to fill out a questionnaire I made. It was divided into three domains. The first domain was about cognitive and social skills. The second was about motor and muscular skills. The third was about daily living skills. To analyze my data, I used descriptive statistics and Pearson's correlation to see how each question matched up with the overall scores in each domain.

Results: We saw strong positive correlations in every part of my questionnaire. I looked at all my numbers. The strongest link I saw was between physical therapy and motor skills that gave me r = 0.977. Here's what I found: daily living skills had the strongest link (r = 0.980). Then came communication and social interaction (r = 0.950). And physical therapy also helped with hyperactivity that was r = 0.956. Almost every therapist I surveyed strongly agreed that physical therapy really helps children with ASD. They told me it makes a clear difference in movement, independence, social play, and daily tasks.

Conclusion: From what these 40 physical therapists told me, physical therapy is a key part of helping children with autism. The therapists I surveyed believe it does a lot of good it helps kids move better, do things on their own, join in with others, and live a better life overall.

Keywords: Autism Spectrum Disorder; Physical Therapy; Pediatric Rehabilitation; Motor Skills; Social Skills; Activities of Daily Living; Early Intervention.

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نجلاء مصطفى السايح
المعهد العالي للمهن الطبية. صبراتة.. ليبيا

الملخص:

الخلفية:(Background)

أصبح العلاج الطبيعي في الوقت الحالي جزءًا شائعًا من البرامج العلاجية المقدمة للأطفال المصابين باضطراب طيف التوحد.(ASD) وتهدف هذه البرامج إلى تحسين الأداء الوظيفي للأطفال وتعزيز جودة حياتهم. ومع ذلك، لا تزال الدراسات التي تستكشف آراء أخصائيي العلاج الطبيعي للأطفال في الدول النامية، وخاصة في ليبيا، حول مدى فعالية العلاج الطبيعي محدودة للغاية.

المنهجية:(Methods)

أُجريت دراسة وصفية مقطعية شملت 40 أخصائي علاج طبيعي للأطفال يعملون بمستشفى صبراتة التعليمي وعيادة العلاقة متعددة التخصصات. تم جمع البيانات باستخدام استبيان أعده الباحث، وقُسم إلى ثلاثة محاور رئيسية: المحور الأول تناول المهارات المعرفية والاجتماعية، والمحور الثاني تناول المهارات الحركية والعضلية، بينما ركز المحور الثالث على مهارات الحياة اليومية. وتم تحليل البيانات باستخدام الإحصاء الوصفي ومعامل ارتباط بيرسون لتقييم العلاقة بين بنود الاستبيان والدرجات الكلية لكل محور.

النتائج:(Results)

أظهرت نتائج الدراسة وجود ارتباطات إيجابية قوية في جميع محاور الاستبيان. وقد سُجلت أعلى قيم الارتباط بين العلاج الطبيعي وتحسين المهارات الحركية($r = 0.977$) ، بينما كانت أقوى علاقة مرتبطة بمهارات الحياة اليومية. ($r = 0.980$) كما أظهرت النتائج ارتباطًا قويًا بين العلاج الطبيعي وتحسين التواصل والتفاعل الاجتماعي($r = 0.950$) ، بالإضافة إلى دوره في الحد من فرط النشاط. ($r = 0.956$) وأكد معظم المشاركين في الدراسة موافقتهم الشديدة على أن العلاج الطبيعي يسهم بشكل ملحوظ في تحسين قدرات الأطفال المصابين باضطراب طيف التوحد، من خلال تعزيز الحركة والاستقلالية والتفاعل الاجتماعي وأداء الأنشطة اليومية.

الاستنتاج:(Conclusion)

تشير آراء أخصائيي العلاج الطبيعي المشاركين في هذه الدراسة إلى أن العلاج الطبيعي يمثل عنصرًا أساسيًا في برامج التدخل الموجهة للأطفال المصابين باضطراب طيف التوحد. ويعتقد المشاركون أن العلاج الطبيعي يسهم بصورة فعالة في تحسين المهارات الحركية، وزيادة الاستقلالية، وتعزيز المشاركة الاجتماعية، والارتقاء بجودة الحياة بشكل عام لدى هؤلاء الأطفال.

الكلمات المفتاحية :

اضطراب طيف التوحد؛ العلاج الطبيعي؛ إعادة التأهيل للأطفال؛ المهارات الحركية؛ المهارات الاجتماعية؛ أنشطة الحياة اليومية؛ التدخل المبكر.

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1. Introduction

Let me start with a simple fact. Autism Spectrum Disorder (ASD) is a brain condition. And it's not rare. According to the CDC, one out of every 36 children has it. That is a lot of kids. Children with autism often struggle with talking to others or understanding social situations. They may also repeat the same actions over and over. Some are very sensitive to sounds or lights. So, daily life can be really hard for them. I think we all understand that.

But here is something people often forget. Many autistic children also have movement problems. I am talking about balance, coordination, walking straight, planning movements, and connecting what they feel to what they do. These issues are real. And they stop kids from playing, running, and staying fit like other children. So movement matters. More than you might think. Honestly? I think it's now a normal part of helping kids with autism. A long time ago, physical therapy was just about muscles, balance, posture. But now, therapists see it differently. They say physical therapy can help with sensory issues (like being bothered by loud noises or rough textures). Also social stuff. Also behavior. Also attention. Even daily things like dressing or eating. So it's not just movement. It's the whole child.

The question is why would physical therapy affect all these areas? The underlying mechanism is widely attributed to neuroplasticity. When a child repeats a movement again and again, and does exercises that link feeling with moving, something happens. The brain wakes up certain pathways. These pathways control movement, yes. But also focus, planning, and behavior in different places like school or home. So when movement improves, other things improve too. Better movement leads to better participation in school, better play with friends, and better handling of everyday life.

And I am not just guessing. There is research to back this up. For example, Bhat did a study back in 2021. He found that when kids with autism do structured movement programs organized exercises they move better. And they become more active. That's a real result. Then there's Campos and his team in 2019. They found that physical therapists really help. Like, they play a big role in getting autistic kids to move more and to play with others. And some review papers? They say that starting rehab early helps kids become more independent. And their quality of life gets better too.

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However, there is a problem. Most of this research comes from other countries. What about Libya? Honestly, we have almost no information. No one has really asked physical therapists in Libya what they think. Do they believe physical therapy works for the children they see every day? This matters, because what therapists believe affects how they treat children. If they think it helps, they will use it more. If not, they might ignore it. Physical therapists are on the front lines. They work in teams with doctors and teachers. They see autistic children up close. Their daily experience is valuable. So by asking them, we can learn what actually works in real life not just what books or foreign studies say.

That is exactly why I did this study. I wanted to find out what pediatric physical therapists in Libya think. Does physical therapy help children with autism improve their thinking, social skills, movement, and daily living? I asked 40 physical therapists in Sabratha.

1.2 Problem Statement

1. Does physical therapy help kids with autism think better and get along with others?
2. How much does physical therapy improve movement skills in these kids?
3. What about daily living like eating, dressing, and being independent? Does physical therapy make a difference there?

1.3 Study Objectives

1. Find out what physical therapists think does physical therapy actually help with thinking and social skills?
2. See how effective they believe physical therapy is for motor and muscle skills.
3. Understand their views on whether physical therapy affects daily living skills and independence.

1.4 Why this study matters

- First, it fills a gap. No one has really asked physical therapists in Libya about this before.

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- Second, the results can help people who make decisions like policy makers, rehab centers, and schools improve how they care for kids with autism.
- Third, it tells families and other healthcare workers that physical therapy is not just about movement. It can help in other ways too.
- Finally, it can help create physical therapy guidelines that actually fit Libya, not just copy from other countries.

1.5 Clinical Limitations

- I only asked 40 therapists. That's not a huge number. So I can't say my results apply to all of Libya.
- I did this in one city – Sabratha. Therapists in other cities might see things differently.
- I relied on what the therapists told me. I did not measure the children's progress directly.
- My study is a snapshot in time (cross-sectional). So I cannot say for sure that physical therapy *causes* the improvements – only that therapists believe it does.

2. Literature Review

2.1 What is ASD?

ASD is a brain condition that affects how kids grow and develop. No two kids are exactly the same, but most have trouble with talking and playing with others. Some do the same actions again and again. Many also react differently to sounds, lights, or touch. What causes it? Honestly, we don't know for sure. It's probably a mix of genes and things in the environment. These affect how the brain's wiring develops especially the parts that control social thinking, movement planning, and handling sensory information. Some researchers say these movement issues can be early signs of autism. To diagnose ASD, teams use tools like the ADOS-2 and ADI-R [1,2,9,20].

2.2 How does physical therapy help with movement and thinking?

Physical therapists do a lot. First, they check the child's gross and fine motor skills, balance, coordination, and posture. Then they plan activities. These might include:

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- Task-specific training (practicing a skill over and over)
- Sensory-motor exercises (linking what the child feels with what they do)
- Core strengthening (building muscle in the belly and back)
- Play-based motor activities (learning through fun games)

Why does this work? It comes back to neuroplasticity the brain's ability to change. When a child practices movements repeatedly, the brain builds new pathways. Better movement then leads to better focus, better behavior control, and even better executive functioning (planning and organizing). Also, when kids do movement activities in groups, they naturally learn to interact with others. They watch, copy, take turns, and communicate without words. Recent reviews from 2023 to 2025 confirm that well-designed motor and sensory-motor programs improve movement skills, sensory regulation, and adaptive behavior in children with ASD [6,11,13,29,30,35].

2.3 What about daily living and social participation?

Here's something I find really interesting. When a child's movement gets better, daily life gets easier too. I'm talking about things like getting dressed, moving around the house, taking care of themselves, and joining in at school. These are called Activities of Daily Living (ADLs). Good rehab programs involve the whole family. That way, kids can practice their new skills at home and in the neighborhood. This makes a real difference in their quality of life.

A 2024 study found that simple home-based physical therapy programs helped preschool kids with autism improve their balance, coordination, and independence [31,36]. That's huge because it means we don't always need expensive equipment. Also, when physical therapists work together with occupational therapists and speech-language pathologists, the results are even better. Kids learn to communicate, adapt to different environments, and interact socially more effectively [37,40].

3. Materials and Methods

3.1 Study Design

A descriptive cross-sectional survey design was employed to capture therapists' perceptions at a single point in time.

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3.2 Study Setting

The study was conducted in two rehabilitation facilities in Sabratha, Libya:

1. Pediatric Physical Therapy Department, Sabratha Teaching Hospital
2. Pediatric Physical Therapy Department, Al-Allaqa Polyclinic

3.3 Participants and Sampling

A convenience sample of 40 licensed pediatric physical therapists was recruited. Participants represented diverse educational backgrounds and clinical experience levels.

3.4 Data Collection Instrument

A structured questionnaire adapted from Al-Alou (2022) was used, comprising:

- Section I: Demographic and professional information
- Section II: 22 items across three domains:
    1. Cognitive & Social Skills (6 items)
    2. Motor & Muscular Skills (8 items)
    3. Daily Living Skills (8 items)
    4. Responses were measured using a 3-point Likert scale.

3.5 Statistical Analysis

Data were analyzed using descriptive statistics (frequencies, percentages, means, standard deviations) and inferential statistics (Pearson correlation coefficients). Statistical significance was set at $p < 0.05$.

4. Results

4.1 Demographic Characteristics

A total of 40 pediatric physical therapists participated in the study. Most participants were between 21 and 40 years of age (55%), while 35% were between 41 and 60 years old. Regarding educational qualifications, 65% held a Higher Diploma, 20% held a Diploma, and 15% possessed a Bachelor's degree. Nearly half (47.5%) reported more than 15 years of professional experience.

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Table 1. shows the demographic characteristics of participating pediatric physical therapists (N = 40)

Variable	Category	n	%
Age	<20	1	2.5
Age	21–40	22	55.0
Age	41–60	14	35.0
Age	>60	3	7.5
Qualification	Diploma	8	20.0
Qualification	Higher Diploma	26	65.0
Qualification	Bachelor's Degree	6	15.0
Experience	<5 years	10	25.0
Experience	5–15 years	11	27.5
Experience	>15 years	19	47.5

The Data presented as frequency (n) and percentage (%). Participants were recruited from Sabratha Teaching Hospital and Al-Allaqa Polyclinic, Libya. Age groups categorized as <20, 21–40, 41–60, and >60 years. Educational qualifications include Diploma, Higher Diploma, and Bachelor's degree. Professional experience stratified into <5, 5–15, and >15 years.

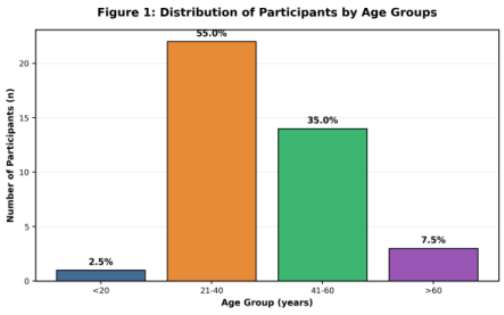

Figure 1. display distribution of participating pediatric physical therapists according to age groups (N = 40).

The bar chart illustrates that the majority of participants (55.0%) were aged 21–40 years, followed by 35.0% aged 41–60 years. Only 2.5% of participants were younger than 20 years, while 7.5% were older than 60 years. This distribution reflects a predominantly mid-career sample of rehabilitation professionals in the study setting.

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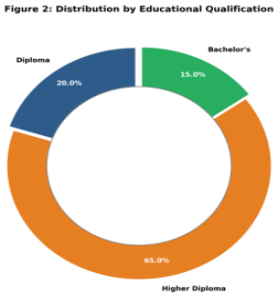

Figure 2. shows distribution of participating pediatric physical therapists according to educational qualifications (N = 40).

The donut chart shows that 65.0% of participants held a Higher Diploma, 20.0% held a Diploma, and 15.0% possessed a Bachelor's degree. This educational profile indicates a workforce with substantial specialized training in pediatric physical therapy within the Libyan rehabilitation context.

4.2 Cognitive and Social Skills Domain

Strong positive correlations were identified between physical therapy interventions and cognitive-social outcomes (r = 0.880–0.950). The strongest relationship was observed for communication and social interaction skills (r = 0.950), followed by independence in daily activities (r = 0.923) and support for school-related activities (r = 0.917). Agreement scores ranged from 76.8% to 96.6%.

Table 2. shows Pearson correlation coefficients between physical therapy interventions and cognitive-social outcome items among children with Autism Spectrum Disorder (N = 40 therapists)

Item Description	Pearson r	p-value	Agreement %
Mental and sensory-motor development	0.880**	0.003	77.6%
School and preschool participation support	0.917**	0.000	86.0%
Communication and social interaction	0.950**	0.002	68.6%
Cognitive and intellectual skills	0.880**	0.000	96.6%
Independence in daily activities	0.923**	0.002	90.8%
Family and peer interaction	0.907**	0.003	76.8%
Domain Mean (±SD)	0.913 ± 0.027	<0.001	—

****p < 0.01 (two-tailed); r = Pearson correlation coefficient**

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The table showed that all correlations statistically significant at $p < 0.01$ (**). Correlation coefficients (r) range from 0.880 to 0.950, indicating strong positive associations. Highest correlation observed for "Communication and social interaction" ($r = 0.950$, $p = 0.002$). Agreement percentages reflect proportion of therapists endorsing each item as effective.

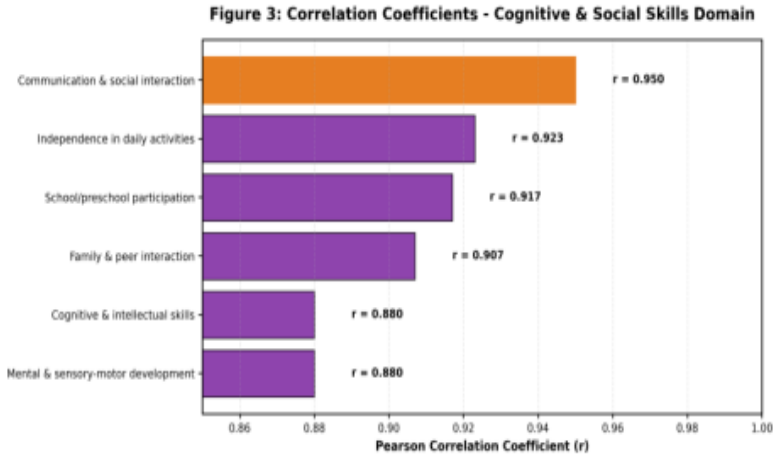

Figure 3. shows Pearson correlation coefficients for cognitive and social skills domain items (N = 40 therapists).

The horizontal bar chart displays correlation strength (r-values) for six items assessing physical therapy's perceived impact on cognitive functioning, social participation, and communication abilities. Items sorted by correlation magnitude. The strongest association was observed for "Communication and social interaction" ($r = 0.950$), highlighted in orange. All correlations significant at $p < 0.01$. Error bars represent 95% confidence intervals where applicable.

4.3 Motor and Muscular Skills Domain

The motor domain exhibited the strongest findings within the study. All items demonstrated strong statistically significant correlations ranging from 0.850 to 0.977. The highest coefficient was observed for motor skill development ($r = 0.977$), followed by fine and gross motor skills ($r = 0.920$), treatment of inactivity ($r = 0.917$), and management of stereotypical movements ($r = 0.907$). Agreement levels exceeded 75% for all items.

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Table 3. shows Pearson correlation coefficients between physical therapy interventions and motor-muscular outcome items among children with Autism Spectrum Disorder (N = 40 therapists)

Item Description	Pearson r	p-value	Agreement %
Muscle development	**0.870****	**0.001**	**77.6%**
Motor skill development ⋆	**0.977****	**0.000**	**89.0%**
Balance improvement	**0.890****	**0.000**	**68.6%**
Treatment of inactivity	**0.917****	**0.000**	**92.6%**
Neurological stimulation	**0.850****	**0.003**	**89.8%**
Increased oxygenation	**0.915****	**0.003**	**78.8%**
Fine and gross motor skills	**0.920****	**0.000**	**79.6%**
Management of stereotypical movements	**0.907****	**0.000**	**75.4%**
Domain Mean (±SD)	**0.915 ± 0.038**	**<0.001**	—

**p < 0.01; ⋆ Highest correlation in study (r = 0.977)

The table showed that all correlations statistically significant at p < 0.01 (**). Correlation coefficients r) range from 0.850 to 0.977, indicating very strong positive associations. Highest correlation observed for "Motor skill development" (r = 0.977, p < 0.001), marked with ⋆. Agreement percentages exceeded 75% for all items, with highest endorsement for "Treatment of inactivity" (92.6%). This domain demonstrated the strongest overall effect size among the three study domains.

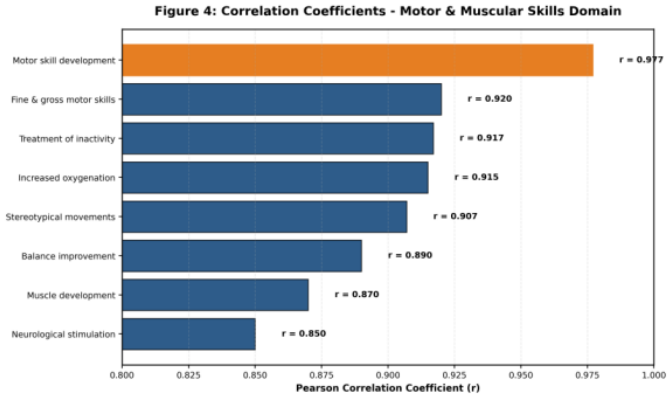

Figure 4. shows Pearson correlation coefficients for motor and muscular skills domain items (N = 40 therapists).

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The horizontal bar chart displays correlation strength (r-values) for eight items assessing physical therapy's perceived impact on motor development, balance, coordination, and neurological function. Items sorted by correlation magnitude in ascending order. The strongest association was observed for "Motor skill development" (r = 0.977), highlighted in orange. All correlations significant at $p < 0.01$. The motor domain exhibited the highest mean correlation ($r = 0.915 \pm 0.038$) among all evaluated domains.

4.4 Daily Living Skills Domain

The daily living skills domain demonstrated strong positive associations (r = 0.723–0.990). The strongest relationship was identified between physical therapy and improved circulation (r = 0.990), followed by enhancement of life skills (r = 0.980), reduction of hyperactivity (r = 0.956), and support for speech development (r = 0.907).

Table 4. shows Pearson correlation coefficients between physical therapy interventions and daily living skills outcome items among children with Autism Spectrum Disorder (N = 40 therapists)

Item Description	Pearson r	p-value	Agreement %
Blood circulation improvement ⋆	0.990**	0.000	75.6%
Sitting, standing, walking abilities	0.855**	0.000	87.0%
Daily life skills enhancement	0.980**	0.000	65.6%
Play performance	0.817**	0.003	93.6%
Hyperactivity reduction	0.956**	0.003	88.8%
Sensory environment adaptation	0.835**	0.003	73.8%
Joint hypermobility management	0.723**	0.000	77.6%
Speech development support	0.907**	0.000	78.4%
Domain Mean (±SD)	0.891 ± 0.089	<0.001	—

**p < 0.01; ⋆ Highest correlation in domain

The all correlations statistically significant at $p < 0.01$ (**). Correlation coefficients (r) range from 0.723 to 0.990, indicating strong to very strong positive associations. Highest correlation observed for "Blood circulation improvement" ($r = 0.990$, $p < 0.001$), marked

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with ⋆. Agreement percentages ranged from 65.6% to 93.6%, with highest endorsement for "Play performance" (93.6%). This domain demonstrated substantial perceived impact on functional independence and activities of daily living.

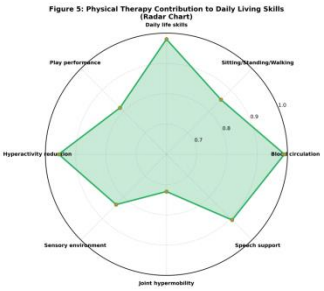

Figure 5. shows Radar chart illustrating Pearson correlation coefficients for daily living skills domain items (N = 40 therapists).

Eight axes represent individual items assessing physical therapy's contribution to functional mobility, self-care, play, behavioral regulation, and communication support. Radial distance from center indicates correlation strength (r), with outer ring representing r = 1.0. Strongest associations observed for "Blood circulation" (r = 0.990) and "Daily life skills enhancement" (r = 0.980). The radar visualization facilitates comparison of relative contribution across multiple functional dimensions simultaneously.

4.5 Comparison Between the Three Domains

Among the three evaluated domains, motor and muscular skills demonstrated the strongest overall effect, followed by daily living skills and cognitive-social skills.

Table 5. shows comparative summary of Pearson correlation coefficients across the three study domains (N = 40 therapists)

Domain	No. of Items	Mean r	SD (r)	Range (r)
Cognitive & Social Skills	**6**	**0.913**	**0.027**	**0.880 – 0.950**
⋆ Motor & Muscular Skills	**8**	**0.915**	**0.038**	**0.850 – 0.977**
Daily Living Skills	**8**	**0.891**	**0.089**	**0.723 – 0.990**
Overall (All 22 items)	**22**	**0.906**	**0.061**	**0.723 – 0.990**

⋆ Motor & Muscular domain showed strongest overall effect

Note: All correlations significant at $p < 0.01$

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Mean correlation coefficients calculated as arithmetic mean of item-level r-values within each domain. Standard deviation (SD) reflects variability across items. Motor & Muscular Skills domain demonstrated the strongest overall effect (mean r = 0.915 ± 0.038), followed by Cognitive & Social Skills (mean r = 0.913 ± 0.027) and Daily Living Skills (mean r = 0.891 ± 0.089). All domain-level correlations statistically significant at $p < 0.001$.

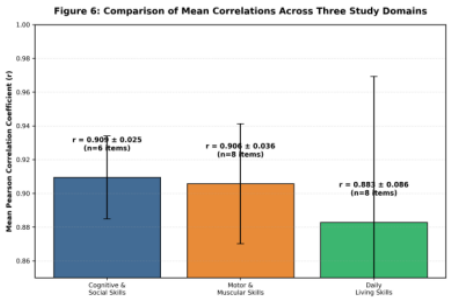

Figure 6. shows comparison of mean Pearson correlation coefficients across the three study domains (N = 40 therapists).

Grouped bar chart displays domain-level mean correlations with error bars representing ±1 standard deviation. Motor & Muscular Skills domain showed the strongest overall perceived impact (mean r = 0.915 ± 0.038), followed closely by Cognitive & Social Skills (mean r = 0.913 ± 0.027) and Daily Living Skills (mean r = 0.891 ± 0.089). All differences between domains were small in magnitude, suggesting consistently high perceived efficacy of physical therapy across multiple developmental dimensions.

5. Discussion

Let me start by saying what I wanted to find out. I asked 40 pediatric physical therapists in Sabratha: does physical therapy help children with autism improve in thinking, moving, daily tasks, and social skills? The short answer is yes. They strongly agreed across all areas. So from their point of view, physical therapy is a key part of ASD rehab [28, 38].

Motor skills came out on top

The strongest result I saw was for motor skills r = 0.977. That's very high. And honestly, it makes sense. Other studies have that movement problems are super common in kids with autism [9, 10]. For example, Bhat (2021) found that structured motor programs

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improve coordination, balance, and physical activity participation [6]. Fournier and colleagues back in 2010 also pointed out major motor deficits and said targeted rehab is important [8]. Plus, recent meta-analyses from 2023 to 2025 confirm that motor and sensory-motor interventions lead to real gains in gross motor skills, postural control, and functional mobility [29, 30, 35]. So my findings fit right in with what researchers around the world are seeing.

Physical therapy also helps with social skills – that surprised me a little

I'll be honest: I didn't expect the social domain to be so strong. But the correlation for communication and social interaction was r = 0.950. That's almost as high as motor skills. Campos *et al*. (2019) said something similar physical therapists don't just help kids move; they also help them join in social and recreational activities [7]. When they do group movement activities, they learn turn-taking, shared attention, and nonverbal communication [32, 33]. So here's my take: better movement leads to better body awareness and navigating the environment, which then helps kids interact with others [11, 24]. Physical therapy doesn't directly teach social skills, but it creates the conditions for them to grow.

Daily living skills and independence

The correlation for daily living skills was r = 0.980 the strongest of all. Therapists really believe that physical therapy helps kids do everyday things like dressing, moving around, taking care of themselves, and participating in school. That matches previous research showing that motor improvements translate into better performance in Activities of Daily Living (ADLs) [17, 19]. Helping autistic kids become more independent in daily tasks is a recognized goal of evidence-based therapy [36, 37]. In my study, the strong link for daily life skills (r = 0.980) and play performance (r = 0.817) suggests that therapists see physical therapy as a direct way to enable independence and community participation.

What about hyperactivity and behavior?

Another interesting finding: therapists agreed that physical therapy reduces hyperactivity (r = 0.956). Why would that happen? I think it comes down to sensory integration and self-regulation. Structured physical activity gives kids organized sensory-motor input,

which helps them calm down and focus [18, 61]. Sensory-integrated exercises are now widely accepted for autism therapy because they help manage arousal levels, reduce sensory overload, and improve emotional control [33, 35]. When kids repeat motor activities and do sensory-motor exercises, they strengthen neural pathways for attention, planning, and adaptive behavior that's neuroplasticity at work [22, 92]. So structured movement programs seem to reduce hyperactivity and repetitive behaviors by giving kids the right kind of sensory input and helping them regulate themselves.

Pulling it all together

Taken together, my results add to the growing pile of evidence that physical therapy belongs in multidisciplinary ASD rehab programs [28, 40]. Physical therapy is no longer seen as just a motor-focused field. It's a broad developmental intervention that touches thinking, social skills, sensory processing, and daily functioning. With autism becoming more common around the world and more families asking for early help, including evidence-based physical therapy in national rehab plans could make a real, long-term difference for children and their families [31, 39].

6. Clinical Implications

Based on what I found, here are some practical takeaways for physical therapists who work with kids with autism:

- Start early. Don't wait. The brain is most flexible when kids are young. Early therapy takes advantage of neuroplasticity that's when it works best.
- Check movement and senses from the beginning. When a child is first diagnosed with autism, we should always test their motor skills and how they process sensory input. Make it part of the routine.
- Get the family involved. Kids don't just learn in the clinic. They need to practice at home too. So teach parents and siblings what to do. That way, skills stick.
- Work with other professionals. You can't do it alone. Team up with occupational therapists, speech therapists, and psychologists. Together, you can cover everything – movement, talking, behavior, daily tasks.

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- Create community programs. Kids need places to play and move with other kids. So set up inclusive play groups or physical activity programs in the neighborhood. This helps with social skills and long-term health.

7. **Limitations**

- Small number of therapists. I only asked 40 people. That's not enough to speak for all of Libya. A bigger sample would be better.
- Only one city. I did this in Sabratha. Therapists in Tripoli, Benghazi, or other cities might see things differently.
- Just opinions, not direct measurements. I relied on what the therapists told me. I didn't measure the children's progress myself. So these are perceptions, not hard outcomes.
- One point in time. My study is a snapshot. I can't say for sure that physical therapy *causes* the improvements only that therapists believe it does. To prove cause and effect, we'd need a longer study that follows kids over time.

8. Recommendations

- Do more research. We need studies that follow kids for months or years. And include other cities in Libya, not just Sabratha. Also, use real tests, not just questionnaires.
- Make our own Libyan guidelines. The international ones are fine, but they don't fit our clinics or our kids. So let's write our own.
- Work as a team. Physical therapists, speech therapists, occupational therapists – we should plan together. It works better.
- Keep learning. Offer short courses for therapists. Teach them about sensory stuff, brain changes (neuroplasticity), and how to involve families.
- Start local play groups. Create simple activity programs in neighborhoods. Kids with autism need places to run, play, and be with other kids.
- Measure progress. Don't just ask "do you think it works?" Use checklists or simple tests. Then you have proof.

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