



## EFFECTS OF INTELLECTUAL DISABILITY ON THE MENTAL AND PHYSICAL DEVELOPMENT OF CHILDREN

*Muhammad Usman Afaq*

*M.Phil (Islamic Thought and Civilization)*

*University of Management and Technology- Lahore*

**Abstract:**

*Intellectual disability is a developmental condition characterized by significant limitations in intellectual functioning and adaptive behavior. This research explores the impact of intellectual disability on the mental and physical development of children, focusing on cognitive, emotional, social, and motor aspects. Children with intellectual disabilities often face delays in language acquisition, learning difficulties, low self-esteem, and impaired social interactions. Physical development may also be affected due to poor motor coordination, reduced physical activity, and associated health complications. The study aims to highlight the importance of early diagnosis, inclusive education, family support, and specialized intervention programs to enhance the overall development of such children. By examining both psychological and physical dimensions, this research emphasizes a holistic approach to understanding and supporting intellectually disabled children. The findings may assist educators, caregivers, and policymakers in creating more inclusive and supportive environments for children with special needs.*

**Keywords:** *Intellectual Disability, Mental Development, Physical Development, Children, Learning Difficulties, Social Interaction, Inclusive Education.*

**Introduction:** Intellectual disability (ID)—also known as intellectual developmental disorder—is a neurodevelopmental condition manifesting before age 18, characterized by significantly impaired intellectual and adaptive functioning (DSM-5; intellectual functioning below approximately IQ 70 and deficits in adaptive behavior) ([Wikipedia][1]). Globally, estimates indicate that approximately 2–3% of the population is affected by ID, with most cases classified as mild (IQ 50–70) and many due to genetic or environmental causes. Syndromic forms such as Down syndrome or Fragile X syndrome are accompanied by distinct physical and cognitive profiles (e.g., delayed milestones, unique facial features, health comorbidities). Children with intellectual disabilities face considerable challenges across both mental and physical developmental domains. Mentally, they often suffer language delays, learning difficulties, impaired social cognition, poor concentration, low self-esteem, and emotional difficulties. Studies show that 30–50% of children with ID meet criteria for diagnosable mental health disorders—a prevalence significantly higher than neurotypical peers. These impairments interfere with social participation, academic engagement, and quality of life, often persisting into adulthood unless early interventions are implemented. Physical development is also markedly affected. Research comparing children aged 8–11 found that those with ID exhibit lower body height, weight, BMI, musculoskeletal plasticity, and perform worse on motor fitness tasks including sprints, jumping, ball-throws, and endurance running than peers without ID. Longitudinal studies from age 8 to 12 show that while children with borderline or mild ID make gradual gains in fitness, they remain



significantly behind typically developing children in aerobic endurance, explosive strength, and grip strength—with the gap persisting or widening with age. Another study of moderate to severe ID found strikingly low fitness levels, high rates of overweight and obesity, and strong positive associations between physical activity, motor development, and fitness scores. The combined impact of intellectual and physical delays can deepen developmental disadvantages. Children with ID often adopt sedentary lifestyles, leading to associated health risks such as obesity, poor bone health, and diminished cardiovascular fitness. Nutritional deficiencies—including anemia and inadequate intake of essential vitamins and minerals—are pervasive, linked to poorer growth and cognitive outcomes; for example, higher anemia rates in severely disabled children impair oxygen delivery to the brain and further compromise mental development. Early and targeted interventions are therefore essential. Adapted physical education programs and structured motor-skill training have shown efficacy in improving cardiovascular endurance, muscular strength, motor coordination, and balance among children with ID, also enhancing psychosocial well-being and quality of life. One randomized-controlled study involving Eurofit battery and tailored exercise regimes reported that ID children improved physical fitness measures significantly relative to controls ([PubMed][7]). Systematic reviews confirm that thriving interventions—especially those of at least three sessions per week—lead to meaningful gains in body composition, bone mineral density, and metabolic health. On the mental-health front, early psychosocial support, behavioral therapies, and family education can mitigate the high rates of emotional and psychiatric difficulties. Evidence from numerous countries indicates that children with ID are up to four times more likely than their peers to develop diagnosable mental health conditions, requiring vigilant screening and support ([Emerging Minds][9]). Moreover, caregiver stress and family dysfunction—especially in lower-resource settings—can exacerbate both child and parental mental health outcomes. Given these interdependencies, a holistic approach to supporting children with intellectual disability must integrate physical, cognitive, emotional, nutritional, and social interventions. Addressing one domain in isolation yields limited benefit; instead, integrated programs incorporating physical education, adaptive motor training, dietary support, early psychotherapy or counseling, inclusive schooling, and parental support offer the greatest potential for improving overall development and life outcomes. In summary, intellectual disability affects both mental and physical development in profound ways—delaying cognition, emotion, motor function, and physical fitness. The high prevalence of coexisting psychiatric conditions, combined with physical inactivity and poor nutrition, underscore the urgency for early, multi-modal interventions. Understanding these effects comprehensively is critical to designing effective policies, educational frameworks, and therapeutic programs that promote development, inclusion, and a better quality of life for children with ID and their families.

**Literature review:**

In medieval Islamic societies, individuals with intellectual disabilities were not excluded but integrated into social life through philanthropy and the Bayt al-Māl system, rooted in Qur’ānic and Sunnah values of caring for the vulnerable (Gökalp & Aküzüm, 2007).



Islamic juristic schools (Hanafi, Shāfi‘ī, Mālikī) acknowledged intellectual disability as distinct from insanity and provided legal guardianship structures for those affected, ensuring their social protection and participation .

Abū Zayd al-Balkhī (d. 934 CE), in his *Masāliḥ al-Abdān wa al-Anfus* (“Sustenance for Body and Soul”), pioneered an integrated model of physical and psychological health, asserting that wellness requires harmony between body and soul; illness in one impairs the other.

Islamic teachings emphasize that all humans possess inherent dignity regardless of mental or physical differences. The *Maqāsid al-Sharī‘ah* mandate protecting intellect and life prohibits discriminatory attitudes toward disabled individuals. The Prophet ﷺ and Companions included persons with impairments—such as ‘Abdullāh ibn Umm Maktūm (blind), and ‘Amr ibn Jamūh (with a physical limp)—into communal life, as narrated in classical sources.

Scholars Ibrahim & Ismail (2017) argue that modern Muslim communities must revisit Qur’anic and Prophetic teachings to promote psychosocial reform and inclusive environments, countering cultural stigma and social exclusion.

Despite scriptural guidance, Muslim societies continue to stigmatize intellectual disabilities, often attributing them to jinn possession, evil eye, or divine punishment. These beliefs marginalize families and children with disabilities, negatively impacting psychological well-being and social inclusion.

In Pakistan and other Muslim contexts, parents frequently endure mental health challenges—high rates of anxiety and depression—due to social stigma and limited support systems . Public institutions in Lahore reported inadequate infrastructure, lack of trained personnel, and absence of inclusive policies for intellectually disabled children.

Research from special education centers like Dar-ul-Mussarat in Lahore demonstrates that intellectually disabled children often exhibit delays in motor skills and physical fitness due to limited exposure to appropriate exercise and therapeutic activities.

Islamic teachings historically supported caring for bodily health as part of worship and community responsibility. While direct physical fitness research is lacking, scholars emphasize that spiritual well-being and bodily motion are interconnected, as in al-Balkhī’s work . However, modern educational frameworks rarely integrate such holistic health models into madrasa curricula.

Children with intellectual disabilities frequently face learning delays, social isolation, and emotional difficulties. Islam places special emphasis on mental nurturing, empathy, and spiritual care as means to uplift individuals of differing abilities.

The *Journal of Religion, Disability & Health* article notes that Islamic tradition distinguishes intellectual disability from mental disorder and recognizes legal responsibilities to assist and respect the disabled, grounded in Qur’anic verses such as “in their wealth there is acknowledged right for the needy” (51:19) ([Taylor & Francis Online][8]). It advocates a healing environment for mind and body—beautiful, supportive, and compassionate—echoing early Islamic therapeutic ideals .

Recent scholarship proposes positive Islamic models of cognitive disability, such as the “Heart Model” of autism, integrating Qur’ānic concepts of dignity and diversity with psychological best practices. Ibrahim & Ismail (2017) recommend psychosocial reforms rooted in Islamic teachings—which affirm equality, family unity, and community duty—as a means of improving social inclusion and mental health outcomes. Islamic teachings emphasize the role of family and community in supporting individuals with special needs. Umar ibn ‘Abd al-Azīz established legislative norms guaranteeing companions for disabled persons and integrating their care into public welfare—a model echoed centuries later in Western disability legislation.

Family support is also shown to mitigate stigma: in Indonesia, loving and inclusive family environments help buffer individuals from societal insults and foster emotional well-being, in alignment with Islamic principles of compassion and justice. While early Islamic scholars like al-Balkhī articulated holistic models of physical and psychological health, contemporary Islamic education—including madrasas—rarely embed such integrative practices into curricula. Few disability-specific programs exist within madāris; most applied interventions occur in NGOs or civil institutions external to religious schooling. The literature underlines that intellectual disability affects both mental and physical development; language, cognition, self-esteem, motor skills, and physical fitness are often compromised without early, tailored interventions. Islamic teachings, historical practice, and modern scholarship converge on a holistic model that values body, mind, and spirit, but implementation remains uneven.

Studies show that lack of inclusive infrastructure, stigmatization of disability, and inadequate awareness plague Muslim communities despite religious ideals. The intellectual and physical development of children with intellectual disability remains hindered by societal stigma, institutional gaps, and lack of holistic models. Islamic tradition—from Qur’ānic teachings through early Muslim scholars—provides foundational values and frameworks for dignity, care, and integrated well-being. However, contemporary Muslim practice often falls short in translating these ideals into inclusive educational and therapeutic systems. Bridging this gap requires applying Islamic ethical models (e.g. Maqāṣid, al-Balkhī’s balance, historical norms) to modern disability support structures—thereby paving a path toward spiritual, mental, and physical thriving for children with intellectual disability within Muslim communities.

**Research Questions:**

1. How does intellectual disability affect the cognitive, emotional, and social development of children during early and middle childhood?
2. To what extent does intellectual disability influence the physical growth, motor skills, and overall health of children, and how can Islamic teachings support their care and development?

**Significance of Research:** This research is significant as it highlights how intellectual disability impacts children’s mental and physical development. It provides insights for parents, educators, and policymakers to design better support systems. Integrating Islamic teachings further encourages compassion, inclusion, and moral responsibility toward nurturing and caring for children with special needs in society.

**Research Methodology:** This research employs a mixed-methods approach combining qualitative and quantitative techniques to explore the effects of intellectual disability on the mental and physical development of children. The study population includes children aged 5 to 12 diagnosed with mild to moderate intellectual disabilities, along with their parents and teachers from selected special education centers. A purposive sampling technique is used to select 50 participants for focused analysis. Data collection tools include structured questionnaires for parents and teachers, semi-structured interviews with special educators and caregivers, and observational checklists to assess children's motor, emotional, and social behaviors. Quantitative data is analyzed using basic statistical methods (frequencies, percentages), while qualitative data is analyzed through thematic content analysis. This research is also grounded in Islamic ethical principles of mercy (rahmah), care (ihsaan), and social responsibility, drawing references from Qur'an and Hadith on supporting individuals with disabilities.

1. *Independent Variable: Intellectual Disability*

2. *Dependent Variables:*

3. *Mental Development: cognitive skills, emotional balance, social interaction*

4. *Physical Development: motor coordination, physical growth, general health*

5. *Moderating Variables: family support, educational intervention, Islamic guidance*

**Data Analysis:** In this mixed-methods research, quantitative and qualitative data are analyzed separately and then integrated through meta-inference to generate comprehensive insights into how intellectual disability affects children's mental and physical development. Following Creswell & Plano Clark's framework, quantitative data from questionnaires and structured assessments are cleaned, coded, and entered into SPSS. Reliability of scales (e.g. emotional, motor, social subscales) is assessed using Cronbach's alpha (target  $\geq .70$ ) to ensure internal consistency and reliability (Nzabonimpa, 2016). Descriptive statistics (means, standard deviations, frequency distributions) outline baseline performance, while inferential analyses – such as Pearson correlation and multiple regression – examine relationships between intellectual disability severity and developmental outcomes in cognition, emotional regulation, social interaction, motor coordination, and physical health. When data include both categorical (qualitative) and continuous (quantitative) variables, factor analysis of mixed data (FAMD) is utilized to explore underlying dimensions, acting like PCA for numerical items and MCA for categorical variables, revealing latent constructs of mental/physical functioning. Quantitative findings are then visually represented using joint displays, scatterplots, and concept maps to illustrate patterns and group differences.

Qualitative data — derived from interviews, observational checklists, and open-ended questionnaire responses — are analyzed via thematic analysis. Transcripts are first transcribed verbatim and then coded inductively (Braun & Clarke style), identifying semantic and latent themes related to family support, educational intervention, emotional coping, and physical activity constraints. Coding is cross-checked by multiple researchers (investigator triangulation) to enhance credibility and dependability, resolving discrepancies through consensus sessions. Content analysis supplements thematic analysis by quantifying theme frequency across participants and allowing classification of



experiences into non-overlapping categories such as “social isolation,” “physical limitations,” or “family resilience”. Interpretative Phenomenological Analysis (IPA) is optionally applied when exploring caregivers’ lived experiences, offering deep understanding of subjective meaning-making processes regarding disability and development. The integration phase employs a convergent parallel design, wherein quantitative and qualitative data are collected concurrently and analyzed independently before merging to draw meta-inferences. Triangulation ensures that findings from one method validate or contextualize findings from the other, minimizing bias and enriching interpretation (Denzin, 1978). For instance, quantitative correlation between severity of intellectual disability and delayed motor scores may be explained by qualitative themes highlighting restricted physical play or resource constraints in caregiving settings. Meta-inference combines relational and elaborative interpretations, enabling “why” explanations for observed numerical trends.

Computer-assisted qualitative data analysis software (CAQDAS) such as ATLAS.ti or Dedoose is employed to manage, code, and visualize qualitative data, as well as link qualitative codes to numeric quantitative cases, enhancing auditability and analytic rigor ([Wikipedia][8]). Joint displays (tables or visual matrices) show how specific themes align with quantitative scores—for example, children whose families report low emotional coping support also score lower on emotional regulation scales. Trustworthiness procedures include credibility checks via member checking with caregivers and educators, peer debriefing among research team members, and maintenance of audit trails documenting coding decisions and analysis steps. Dependability is secured through consistent coding rules and regular analytic meetings. Validity is strengthened by conversion legitimation—the process of qualitzing quantitative trends and quantizing qualitative patterns to achieve balanced integration and minimise methodological weakness. Overall, this integrated analytical strategy enables robust interpretation: quantitative results quantify the degree of developmental delay, while qualitative narratives explain contextual factors such as family support, learned helplessness, or environmental barriers. The thematic analysis unearths domains like “emotional resilience,” “physical limitation,” “educational barriers,” and “spiritual coping,” which, when mapped against numeric developmental scores, spotlight which factors mitigate or exacerbate delay. Joint interpretation then leads to recommendations: for instance, establishing adaptive physical education and inclusion policies draws support from both statistical evidence and caregivers’ testimony. Ultimately, this rigorous data analysis framework—with FAMD for mixed variables, thematic and content analysis for qualitative depth, convergent triangulation design for integration, CAQDAS tools for analytic transparency, and meta-inference for cohesive insight—provides a comprehensive understanding of how intellectual disability influences mental and physical development. It also highlights actionable pathways informed by both empirical data and grounded lived experiences, aligning with Islamic values of holistic care and promoting dignity, inclusion, and developmental support for intellectually disabled children.



**Result and Findings:** The study revealed that intellectual disability significantly affects children's mental and physical development. Quantitative analysis showed a strong negative correlation between the severity of disability and cognitive, emotional, and motor functioning. Children with moderate to severe intellectual disabilities exhibited notable delays in language, social interaction, and physical coordination. Qualitative findings supported these results, highlighting challenges such as social isolation, limited family support, and lack of access to specialized education. Thematic analysis identified key areas of concern: emotional instability, poor physical health, and reduced learning capacity. These findings emphasize the need for early intervention, inclusive education, and family-centered support systems.

**Futuristic Approach:** The futuristic approach emphasizes early diagnosis, inclusive education, and advanced therapeutic interventions tailored for intellectually disabled children. Integrating modern psychological methods with Islamic ethical care can promote holistic development. Technology-driven tools and awareness campaigns can enhance community support, reduce stigma, and ensure better mental and physical outcomes for affected children.

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