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**THE IMPORTANCE OF PHYSICAL ACTIVITY IN THE INTERACTION
BEHAVIOURS AND EMOTIONAL CHARACTERISTICS OF INDIVIDUALS WITH
MENTAL RETARDATION AND DEVELOPMENTAL DISABILITIES: A
TRADITIONAL REVIEW**

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Improving the quality of life of individuals with mental retardation and developmental disabilities is of great importance for public health and individual well-being. In this context, physical activity is a critical tool in improving individuals' physical health, improving their social interaction skills, and supporting their emotional characteristics. While the developing literature provides important findings to understand the effects of physical activity, it also emphasizes the need for comprehensive evaluations in this field. Regular physical activity improves physical health, strengthens social skills, and promotes emotional well-being in individuals with disabilities. However, it has also been reported that these activities contribute to physical fitness increased self-esteem, emotional regulation, and social participation. Such benefits are seen to have positive reflections on both the individual and social lives of individuals. In this study, the effects of physical activity in individuals with mental retardation and developmental disabilities were discussed comprehensively. The literature shows that physical activity improves physical health indicators and significantly contributes to the individual's social, emotional, and psychological well-being. In addition to supporting musculoskeletal functions, physical activity positively affects cardiovascular health, motor skill development, and weight management. In addition, it has been stated that it increases individuals' self-esteem, reduces negative emotional states such as stress and anxiety, improves social interactions, and facilitates their integration into society. The research was conducted

using the traditional review method, and the effects and importance of physical activity in mental retardation and developmental disability were revealed through literature research. As a result of the study, it is revealed that physical activity alleviates the emotional difficulties of individuals, improves their social skills, and improves their quality of life. The literature points out that physical activity programs should be adapted to the individual needs of individuals. The study emphasizes that physical activity is a multifaceted tool that improves the social cohesion and general well-being of individuals with mental retardation and developmental disabilities and the importance of developing more comprehensive and accessible programs to ensure the sustainability of this effect.

Keywords: Mental retardation, Developmental Disability, Physical Activity, Emotional Traits, Interaction

INTRODUCTION

The quality of life of individuals with disabilities depends on the perspective of the society they live in and the environment's view of people with disabilities (Yaşın & İlhan, 2021). Improving the quality of life of individuals with intellectual and developmental disabilities is important for public health and individual well-being. In this context, physical activity stands out as a critical tool for improving not only the physical health of individuals but also their social interaction skills and emotional characteristics. While the developing literature provides important findings to understand the effects of physical activity, it also emphasizes the need for comprehensive evaluations in this field.

Regular physical activity improves physical health, strengthens social skills, and promotes emotional well-being in individuals with disabilities (Blick et al., 2015). However, it has also been reported that these activities contribute to physical fitness, and to increased self-esteem, emotional regulation, and social inclusion (Bartlo & Klein, 2011). Such benefits positively affect reflections on both the individual and social lives of individuals.

The interaction behaviors of individuals with intellectual and developmental disabilities are often affected by social skills deficits, which limit their ability to establish and maintain relationships (McRaney et al., 2019). Interventions targeting the development of social skills increase participation in community activities and help individuals develop more meaningful connections with their peers (Seifert & Sutton, 2009). At the same time, these individuals' emotional intelligence and stress-coping skills play a vital role in shaping social interactions (Kou et al., 2024). Research shows that individuals with intellectual and developmental

disabilities experience increasing emotional difficulties and addressing these difficulties with supportive programs can lead to significant improvements in their overall emotional health (Jacob et al., 2022).

Despite the recognized benefits of physical activity, barriers to participation are a significant problem. Organizational limitations, societal attitudes, and individual constraints can limit access to inclusive programs designed for people with disabilities. In this context, developing strategies that promote inclusive practices will not only increase participation rates in physical activity but also allow for the creation of an environment where individuals with intellectual disabilities and developmental disabilities can develop both physically and emotionally (Chen & Nakagawa, 2023).

This study aims to comprehensively examine the existing literature by addressing the importance of physical activity in the interaction behaviors and emotional characteristics of individuals with mental retardation and developmental disabilities. Physical activity can not only benefit the health of these individuals but also contribute to their quality of life by enriching their social and emotional experiences. The findings of this study aim to contribute to the development of effective interventions that can be applied in related areas and to provide valuable contributions to the field by delivering guiding suggestions for future research.

Mental Retardation

Various individual differences among the people who make up society can influence all developmental dimensions in either a positive or negative direction, and they are decisive in terms of adequacy and inadequacy (İlhan & Esentürk, 2015). These differences directly affect how individuals utilize their potential and their social life obstacles. Intellectual disability is defined by limitations in an individual's intellectual functions and adaptive behaviors. This condition typically emerges during developmental processes and directly affects an individual's quality of life (Özsoy et al., 1988; Baysal, 1986). The term intellectual disability is generally considered in conjunction with an IQ score two standard deviations below the mean and deficiencies in conceptual, social, and practical adaptive skills (AAMR, 2002; Tekinarslan, Pınar, and Sucuoğlu, 2013). The causes of intellectual disability include genetic factors, prenatal and postnatal complications, and environmental influences. This condition can lead to learning difficulties, social skill delays, and independent living skills limitations (Eripek, 2005; Pratt and Greydanus, 2007).

When categorizing mental retardation, individuals' intelligence scores are taken as a basis. While individuals with mild mental retardation can develop basic daily living skills, individuals with moderate and severe disability need more comprehensive support (Nar & Cavkaytar, 2019; Karam et al., 2016). Special education programs for these individuals are critical to maximize their potential (Moeschler & Shevell, 2014). Effective education programs and social support mechanisms play an important role in improving the quality of life of these individuals (Chiurazzi & Pirozzi, 2016; Bourke et al., 2016).

Interaction behaviors and emotional characteristics of individuals with intellectual disabilities become evident as the cognitive limitations experienced by individuals are reflected in their social lives. These individuals may generally experience various difficulties in communicating with other people. In particular, limitations in their emotional expressions, timidity, and lack of confidence in social interactions are frequently observed (Nar & Cavkaytar, 2019). Interaction behaviors may vary depending on the social skill level of individuals. While individuals with mild mental retardation can generally participate in simple social relationships, individuals with more severe disabilities need more intensive support in communicating (Tekinarslan, Pınar, & Sucuoğlu, 2013). These difficulties in social interaction can make it difficult for individuals to be a part of social life and increase the risk of isolation (AAMR, 2002). When mental retardation is evaluated in terms of emotional characteristics, it is seen that these individuals generally have difficulty expressing their emotions. Emotional instability and outbursts of anger or anxiety are frequently reported (Eripek, 2005). In addition, it is stated that emotional problems experienced by individuals are usually triggered by negative environmental approaches (Pratt & Greydanus, 2007). For example, a critical environment or low level of acceptance may cause the individual to become more emotionally vulnerable (Chiurazzi & Pirozzi, 2016).

Supportive approaches and structured educational programs can contribute to the social and emotional development of individuals with intellectual disabilities. Specially designed therapy programs improve individuals' social skills and reduce emotional instability (Moeschler & Shevell, 2014). In addition, adopting a positive and patient approach by families and educators in this process can increase the individual's sense of trust and strengthen social relationships (Ministry of Family and Social Policies, 2014). Interaction behaviors and emotional characteristics of individuals with intellectual disabilities are directly related to environmental factors and individual support systems. Comprehensive support mechanisms are needed for these individuals' social lives (Bourke et al., 2016).

Developmental Disability

Developmental disability is defined as an individual showing significant differences from his/her peers in various areas such as mental, physical, social, emotional, or communication skills. This situation usually occurs during childhood and may limit the individual's capacity to fulfill daily life skills (Kırcaali-İftar, 2002). Developmental disabilities generally lead to functional limitations in basic areas such as learning, language use, motor skills, and independent living. These limitations are usually seen in multiple skill areas and affect the individual's quality of life (Eripek, 2005; Harris, 2006). The underlying causes of these disabilities include genetic and chromosomal abnormalities, prenatal and postnatal complications, premature birth, low birth weight, and risk factors such as maternal smoking, and alcohol or drug use during pregnancy. In addition, environmental factors such as neglect and abuse may also be effective in the emergence of developmental disabilities (Harris, 2006; AAMR, 2002).

Developmental disability is a concept that covers a wide range and includes many subcategories such as pervasive developmental disorders, autism spectrum disorder, mental retardation, Down syndrome, cerebral palsy, learning disabilities and attention deficit. These conditions reveal different levels of education and support needs of individuals and require interventions specially designed for each individual (APA, 2013). Individualized approaches are important in the education of individuals with developmental disabilities. Special education and supportive programs are needed to maximize the potential of these individuals. Appropriate education methods and support mechanisms can increase individuals' participation in social life and improve their independent living skills (Turnbull et al., 2003; Moeschler & Shevell, 2014).

Developmental disability is defined as an individual exhibiting significant limitations compared to his/her peers in areas such as social, cognitive, motor, language, or self-care. These limitations usually occur in early childhood and affect the individual's life in both individual and social dimensions (Heward, 2009). Developmental disability is a condition that limits the individual's capacity to learn, adapt, and function throughout life. These conditions usually manifest as the individual's inability to acquire age-appropriate skills or permanent problems with these skills (Eripek, 2005; AAMR, 2002). This type of disability is mostly caused by biological, environmental, and genetic factors before, during, or after birth. For example, genetic diseases (such as Down syndrome, and Fragile X syndrome), malnutrition, or exposure to toxic substances during pregnancy are important factors underlying developmental disabilities (Harris, 2006; APA, 2013). In addition, access to inadequate health services, low

socioeconomic levels, and inadequate educational opportunities are important environmental factors (Kırcaali-İftar, 2002; Turnbull et al., 2003).

Emotional characteristics of individuals with developmental disabilities draw attention as a reflection of their cognitive and social limitations. Generally, these individuals have difficulty defining, expressing, and managing their emotions. Emotional imbalances, anxiety, and depression are among the common features of developmental disabilities (Eripek, 2005). In particular, individuals who experience inadequacy in social interaction may have limited ability to understand emotional expressions and empathize. This affects their ability to communicate and develop relationships. For example, individuals with autism spectrum disorder have significant limitations in recognizing emotional expressions and understanding social cues (Fazlıoğlu & Eşme-Yurdakul, 2005).

Individuals with developmental disabilities may experience greater emotional difficulties when environmental support is lacking. The presence of a supportive environment stands out as an important factor in ensuring emotional balance and positive development of individuals (Forst, Wortham, & Raifel, 2012). These individuals' emotional regulation difficulties in emotion regulation usually manifest themselves as hypersensitivity or reactivity to environmental stimuli. Individuals who cannot manage their emotions may exhibit outbursts of anger or excessive introversion. In addition, lack of social interaction may lead to loneliness in these individuals, negatively affecting their psychological well-being (Celeste, 2006; Odom et al., 2002). Developmental disability is a complex condition that affects individuals' lives in many ways. Supportive interventions and educational programs that will reveal the potential of these individuals are important to ensure their integration into social life and improve their quality of life (Heward, 2009; Moeschler & Shevell, 2014).

Physical Activity

Physical activity refers to all physical movements that require energy expenditure performed by the musculoskeletal system of individuals. These movements can occur spontaneously or planned as part of daily life and generally serve purposes such as improving health, fitness, and physical capacity (Caspersen et al., 1985). From a scientific perspective, physical activity is usually categorized into four main categories: work or occupational activities, physical activities for transport, leisure time activities, and domestic tasks (WHO, 2010). In addition to supporting the metabolic health of individuals, physical activity has a critical role in preventing of chronic diseases such as cardiovascular diseases, obesity, type 2 diabetes, and some types of cancer (Penedo & Dahn, 2005). This concept is not limited to exercise; on the contrary, it covers

a wide range of activities, from mild mobility to high-intensity sports activities. Research shows regular physical activity improves cognitive functions and psychological well-being (Ratey & Loehr, 2011). In this context, physical activity is important to social health policies beyond protecting individual health.

For individuals with intellectual disabilities, physical activity is critical in improving their physical health and supporting their psychosocial well-being (Shields et al., 2011). Physical activity improves important health indicators such as cardiovascular health, weight management, and motor skills while supporting musculoskeletal functions (Frey, 2004). However, individuals with intellectual disabilities generally participate in lower levels of physical activity, which negatively affects their quality of life (Temple & Stanish, 2009). The benefits of physical activity for individuals with intellectual disabilities are not limited to physical health. Studies show that regular physical activity increases the self-esteem of these individuals, reduces the effects of psychological problems such as depression and anxiety, and improves their social interaction skills (Hutzler & Korsensky, 2010). It has also been stated that participation in physical activity programs helps individuals to acquire daily living skills depending on the level of mental retardation (MacDonald et al., 2011). There may be various barriers to the participation of individuals with mental retardation in physical activity. Among these barriers, individual factors (e.g. low motivation), environmental factors (e.g. lack of suitable areas), and social prejudices have an important place (Frey, 2004; Temple & Stanish, 2009). In this context, developing inclusive and supportive programmes is important to enable individuals with intellectual disabilities to participate more effectively in physical activity (Shields et al., 2011).

For individuals with developmental disabilities, physical activity plays an important role in improving physical and psychosocial health. While physical activity supports physical health indicators such as motor skills, balance, muscle strength and cardiovascular endurance, it also increases individuals' self-esteem, self-confidence and social participation levels (Eichstaedt & Lavay, 2010). Individuals with developmental disabilities can increase their mobility and improve their quality of life through regular physical activity (Rimmer & Rowland, 2008). However, the participation of individuals with developmental disabilities in physical activity is generally low, which can lead to health problems such as obesity, low muscle strength and low cardiovascular capacity (Harris et al., 2015). Research has shown that regular physical activity improves these individuals' health, reduces behavioural problems and supports academic success (Pan et al., 2011). To increase the participation of individuals with developmental

disabilities in physical activity, it is necessary to develop motivating and accessible programs suitable for individual needs (Foley et al., 2008). In addition, designing these programs to increase opportunities for social interaction can help individuals to integrate more into society (Sit et al., 2007). Environmental regulations and family support are also among the important factors that increase the participation of these individuals in physical activity (Rimmer & Rowland, 2008).

For individuals with intellectual disabilities and developmental disabilities, physical activity is an essential element that both improves physical health indicators and supports psychosocial development. These individuals generally show lower levels of physical activity participation, which can lead to health problems such as obesity, cardiovascular issues and motor skill deficits (Rimmer & Rowland, 2008). Regular physical activity increases cardiovascular endurance, supports musculoskeletal functions, and reduces the risk of obesity in these individuals (Harris et al., 2015). Physical activity is also of great importance for individuals with intellectual and developmental disabilities to increase self-confidence, alleviate psychological problems such as depression and anxiety, and improve social skills (Hutzler & Korsensky, 2010). Research shows that physical activity programs facilitate the integration of individuals into society by increasing their social interactions (Pan et al., 2011).

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Physical activity in developmental and intellectual disabilities also contributes to individuals' acquisition of daily living skills. For example, activities that improve motor skills support individuals' independent living skills and increase their daily functionality (Eichstaedt & Lavay, 2010). Moreover, planning physical activity programs in collaboration with families and communities is an important strategy to improve individuals' motivation and encourage participation (Shields et al., 2011). In this context, it is critical to eliminate barriers to participation in physical activity, to make supportive environmental arrangements and to develop programs suitable for the needs of individuals (Temple & Stanish, 2009). For individuals with intellectual and developmental disabilities, physical activity is an indispensable tool for physical health, social adaptation, and overall quality of life.

METHOD

The traditional review method was used in the study. The conventional review method is defined as a research method that summarizes and analyzes the existing literature on a specific topic in a non-systematic way. This method aims to synthesize a large body of knowledge on the topic to reveal general trends and key discussion points (Grant & Booth, 2009). Traditional review studies usually start with a topic or question the researcher identifies. At this stage, the

breadth and boundaries of the topic are defined. Basic concepts and theories in the literature are identified and an in-depth examination is conducted on these topics (Baumeister & Leary, 1997).

In the traditional review method, researchers can benefit from scientific articles, books, reports, and other academic sources (Paré & Kitsiou, 2017). In this study, “Google Scholar”, “Pupmed” and “ResearchGate” databases were searched. In this method, the research findings are presented in a way that includes a summary and recommendations about the general situation of the topic (Snyder, 2019). In this context, the research related to the topic identified in the scanned databases was examined and results recommendations were presented in line with the study purpose by ensuring the subject’s integrity.

DISCUSSION AND CONCLUSION

The positive effects of physical activity on the emotional, social, and general quality of life of individuals with intellectual and developmental disabilities have been widely discussed in the literature. Increasing emotional well-being and improving social skills in these individuals are directly related to participation in physical activity. Research emphasizes that physical activity contributes to the reduction of negative emotional states such as stress, anxiety, and depression (Hutzler & Korsensky, 2010). In particular, it has been stated that regular physical activity positively affects individuals' moods by increasing endorphin release and supporting self-esteem (Shields et al., 2011). This makes individuals feel more valuable and emotionally more balanced. Factors such as increased self-confidence and a sense of accomplishment result in physical activities positively affecting individuals' self-efficacy perception (Eichstaedt & Lavay, 2010).

Physical activity allows individuals to improve their social skills and interact more actively with society. Group-based activities support individuals' ability to empathize and cooperate while enhancing their communication skills (Pan et al., 2011). It is seen that such activities allow individuals to participate more in social life and help them express themselves better (Rimmer & Rowland, 2008). Designing physical activity programs that follow the interests and needs of the individual increases the impact of these activities. For example, providing an individual-oriented supportive environment can strengthen physical activity participation and individual motivation (Foley et al., 2008). In this context, it is stated that physical activity increases the quality of life of individuals in general (Tevis et al., 2022).

It is also stated that physical activity provides remarkable behavioral changes in individuals with intellectual and developmental disabilities. Behaviors such as hyperactivity, aggression and withdrawal decreased with regular physical activity (Shen et al., 2024). For example, physical activity has promoted more adaptive social behaviors by alleviating negative symptoms such as impulsivity and aggression (Taliaferro and Hammond, 2016). In addition, regular participation in physical activity is reported to increase individuals' attention span and improve their social cooperation skills (Carbone et al., 2021). It is a fact that physical activity strengthens social connections and contributes to individuals assuming more active roles in society. This important role of physical activity, especially in developing social skills, improves the quality of life by reducing the social isolation of individuals (Schalock et al., 2021). It is stated that such interactions facilitate individuals to take more part in social life and adapt to society (Oviedo et al., 2020).

The positive effects of physical activity on the health and well-being of individuals with intellectual and developmental disabilities are increasingly recognized. The literature review offers various perspectives on how structured and individually tailored interventions can improve the individual quality of life, physical health, emotional well-being, and social participation of these individuals. The effects of FA on emotional health are addressed within the framework of neurobiological mechanisms and psychological processes. Chen and Nakawaga (2023) explain the role of FA in alleviating emotional disorders through methods such as increased neurotransmitters, decreased oxidative stress, and endorphin release. These mechanisms contribute to improved mood, reduced anxiety and increased overall psychological well-being in individuals. In addition, it is stated that FA increases self-esteem and allows individuals to feel more valuable (Bartlo & Klein, 2011). Jacob et al. (2022) examined the effectiveness of interventions to improve social skills. They demonstrated that methods such as emotional intelligence training, peer networks, and play therapy play a role in strengthening social skills. However, it was noted that these interventions had limited effectiveness in school environments or in social behaviors based on individuals' self-reports. Nonetheless, these interventions have made progress in areas such as addressing gaps in social skills and developing emotional recognition and regulation skills. The effects of FA on social interaction and communication are also associated with managing challenging behaviors. Tevis and Matson (2022) suggest that challenging behaviors (such as aggression and self-harm) may stem from deficiencies in social interaction. Strengthening interpersonal relationships through FA indicates that it can effectively reduce such behaviors. In particular, group-based activities

allow individuals to improve their social bonds and develop positive interaction patterns (Kou et al., 2024). In this context, it can be said that it provides multifaceted benefits for individuals with intellectual and developmental disabilities. Physical activity offers various benefits in the emotional, social, and behavioral development of individuals with intellectual and developmental disabilities. The literature emphasizes the importance of considering the impact of physical activity in improving the quality of life for these individuals. Tailoring physical activity programs to meet individuals' needs will further enhance this effect.

The participation of individuals with intellectual and developmental disabilities in physical activity provides significant benefits for well-being and social integration. Findings in the literature reveal that physical activity supports emotional well-being, strengthens social skills, and improves overall quality of life for these individuals. However, barriers such as lack of individual motivation, environmental limitations, and societal prejudices are key factors that restrict the widespread impact of these benefits. In this context, developing personalized interventions, implementing inclusive strategies, and using physical activity to promote social inclusion will enable these individuals to realize their potential and participate more actively in society. In this regard, accessible and individualized physical activity programs should be developed to meet the needs of individuals with intellectual and developmental disabilities, societal awareness of the importance of physical activity for these individuals should be raised, prejudices should be reduced, and sustainable solutions should be created by fostering collaboration among families, educators, and local authorities to encourage the participation of these individuals in physical activity.

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