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THE IMPORTANCE OF PHYSICAL ACTIVITY IN DETERMINING THE QUALITY OF LIFE OF PEOPLE WITH MENTAL DEFICIENCY

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Abstract: *The present paper offers a theoretical insight regarding the quality of life and health state of people with mental deficiency. Research results regarding the link between physical activity and quality of life of people with mental disorders are discussed. Literature review outlined that physical activity generates major benefits for people with mental deficiency. Conclusions point out the need to implement physical activities that can be performed by people with mental deficiency to increase their quality of life. Public and private stakeholders should cooperate in order to develop specific strategies and policies, as well as adapted programs for people with mental deficiency to maintain their health status and quality of life at a decent level.*

Key words: *mental deficiency, physical activity, quality of life, health status*

1. Introduction

Studying people with disabilities, particularly those with mental deficiency, is a sensitive problem and insufficiently researched if we relate to the needs of this group. In Romania, relevant studies concerning physical activity and mental deficiency are in practice almost non-existing. Internationally, most publications are based upon studies within the North American and Western European context. The majority of publications concerning quality of life for people with mental deficiency are carried out in USA, Canada and Western Europe (Germany, Sweden, Spain, and Switzerland). However, a limited body of research has been conducted on the quality of life of people with mental deficiency and on factors affecting it [4, 5]. Some studies focus on the quality of life of children with mental deficiency, but research focusing upon adults with same issues is very limited [4], [48].

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It is generally accepted that quality of life is a multidimensional concept and comprises both subjective indicators, such as health, roles regarding physical or social functioning, and objective indicators like social support [34]. The WHO defines quality of life as ''individuals' perceptions of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns'' [49]. Measurement of quality of life should as such include the ''persons' physical health, psychological state, level of independence, social relationships, personal beliefs, and their relationships to salient features of the environment'' [49]. Some domains of adult quality of life are more researched than others: physical well-being, social interaction, leisure and recreation, family, personal development etc. [7], [45].

2. Objectives

Quality of life is an important aspect to consider in research concerning mental and developmental deficiencies [34] since this type of knowledge can contribute to the development of specific services and policies at an individual level [44]. Still, the measurement and conceptualization quality of life of people with mental deficiency is still disputed [44]. Researchers have explored quality of life from the perspective of people with mental deficiency [4], [45], but due to limitations in cognition, social interaction and communication, not all people with mental deficiency have the possibility to rate their quality of life. This is why many studies have used family members or staff to assess these individuals` quality of life [5], [34]. Results between the two types of evaluation may differ.

However, quality of life is primarily about one`s own perception about his/her experiences [44]. Studies on quality of life for people with mental deficiency emphasized the fact that it is of great importance to develop a measure adapted for this category of population [11]. Mental deficiency, from mild to profound forms, is characterized by a lower mental capacity than the average in combination with lacking cognitive, social, communication and motric skills [24]. People with disabilities represent 2% of the global population and have an increased predisposition to develop health disorders compared to others [1]. Even tough life expectancy for people with mental deficiency has increased, the mortality is still high, especially after the age of 40 [4]. On a general basis, it can be said that public health researchers have neglected the health of people with mental deficiency [35].

3. Material and Methods

The present paper offers a theoretical insight regarding the importance of sports and physical activity for people with mental deficiency. Physical activity is a determining factor in increasing the quality of life of this category of population. We reviewed the and focused on papers and research results on topics like: the importance of sports and physical activity for people with mental issues, their health state and involvement in sports, their quality of life, sports as a link for social relationships. Hence, we pointed out the most important information for the topic in a clear and objective synthesis.

4. Results and Discussions

Significant deviations from normal weight (identified primarily by body mass index - BMI) and lack of physical exercise are identified as the most significant health risks, even for non-disabled people [26], [50]. Lack of physical activity is generated by several factors such as sedentary lifestyle, low motivation, as well as certain psychological, physiological or motoric barriers [9], [19]. Research shows that physical activities and social events have brought significant changes in body weight and health status, indicating that specialized support may positively influence the adoption of a healthier behavior [23]. Research reveal that people with disabilities and chronic conditions have a lower health status than other people [42]. Even if some studies have reported an average to very good quality of life for people with mental deficiency [45], the quality of life of people with mental deficiency is generally lower than that of the healthy individuals [48, 33, 4]. One of the few Romanian studies is in line with other findings: quality of life for people with mental deficiency is lower than for the healthy population [16].

There is a wide spectrum of factors affecting the quality of life of people with mental deficiency. Socio-demographic variables [33], as well as personal traits [5] were often considered in determining the quality of life of people with mental deficiency. Even though opportunities to make friends, maintain and improve social interaction is rather limited for people with mental deficiency, social relations play a major role for the social inclusion of these individuals [8], [45]. While relations with family members are crucial in shaping attitudes and values in people living with mental deficiency [4], friendships contribute to their feeling of inclusion and self-esteem [45]. Research showed that social relationships can enhance the overall life satisfaction for these individuals [14], [48].

In general, people with mental deficiency are sedentary and inactive, which leads to a decreased physical performance and loss of balance [19]. Researchers and service providers involved in studying people with intellectual disabilities consider that their health disorders are generated by unhealthy eating habits [19], excessive weight and lack of physical activity [21]. To underline the need to improve the quality of life of people with mental deficiency, Special Olympics Inc. [47] ordered a report to examine their health needs. The report highlighted the lack of empirical information on the health status of people with mental deficiency, but also the need to understand the risk factors and the need for specific strategies in preventing diseases. Also, it recommends the provision and implementation of physical and public health services.

Research shows that only a small proportion of adults with mental deficiency (17.5% to 33%) practice physical exercises [46]. The lack of adapted physical activity programs may be a reason for these decreases in physical activity rates. Psychological symptoms and low cognitive functioning may also be a barrier to a regular physical activity. In addition, people with mental deficiency manifest associated negative traits (sadness, depression) that, associated with mental deficiencies, are barriers for sports practice [47].

Several studies prove the effectiveness of physical activity programs for people with mental deficiency in terms of weight loss, physical and mental health improvement, or a reduced risk of chronic illness; but, these programs can also lower the need of social services and social care for this group [3], [27], [40]. Sports has shown to be a very efficient method for increasing also the well-being of people with mental deficiency [4] because it can diminish the negative consequences of a poor health state. Although, young people with mental deficiency do not participate as much in leisure and recreational activities, research suggest that such activities (listening to music, playing etc.) lead to an improved quality of life for this category of individuals [45]. One research showed that people with autism prefer to engage in a form of physical exercise weekly [41]. A pilot project approached „dementia in nature" and outlined that people living with dementia are often excluded from regular connection with nature and should benefit physically, socially and emotionally from being active in nature [39].

Research has shown that physical activity measured in number of steps/day results in a better physical condition of people with mental deficiency. Participants in some intervention groups increased their physical activity by 1608 steps/day compared with the control groups [3]. Studies show that after a 12-week physical activity cycle, the average percentage of fat mass is reduced by about 5.8% [40], and the motor capacity of people with mental deficiency registers a significant improvement [25]. Also, muscle strength, physical resistance, flexibility, cardiovascular and respiratory efficacy are improving [32].

Research on people with mental deficiency is mainly focused on health monitoring (body mass, height, weight and waist circumference), and the level of motor expression as determinants of their quality of life [21]. In general, researchers are using medical data of people with mental deficiency in correlation with individual effort in avoiding complications that may later occur [38]. In order to improve the health status and overall quality of life of people with mental deficiency, several researchers compared their results with data from other studies on people with mental deficiency, but also with values recorded on healthy population, in order to develop adapted intervention programs for people with mental deficiency [35]. Research results suggest that more attention should be paid to the body weight of people with disabilities, especially people with mental deficiency, to minimize long-term negative consequences of overweight on health. Generally, research underlines the need of constant supervision when people with mental deficiency practice physical exercises, while the effort intensity is gradually increased in correlation with their physical capabilities [15]. Also, a medical consent and an ethical agreement is necessary [25].

Depending on the research objectives, such investigations are typically performed on subjects ranging from 100 to 300 individuals [3], aged between 16 and 40 years [22], and with an IQ level within the limits of mild to moderate retardation [25], [46]. Research participants are usually randomly selected, especially within the common residences, specialized institutions or

organizations that provide assistance to people with mental deficiency at least 10 hours a week [12]. The assessment methods used to record the physical activity of people with mental deficiency may differ as means of intervention, but may be very similar in structure [12]. Research highlights the importance of testing people with mental deficiency both before any intervention and after the end of the intervention period through physical exercise (usually of 12 weeks) [25]. Usually, initial tests indicate a low level of motor activity in people with mental deficiency (muscle strength, movement speed, resistance, balance), which has led to the development of programs to improve their physical abilities [38] based on the low cardiovascular capacity of these individuals. The average time of physical activity intervention on people with mental deficiency is between 10-16 weeks [20], [38]; during this period, physical activities are performed at 30-50% of the capacity of people with mental deficiency, 2 - 3 days/week, 20-60 minutes/session [38], [43]. Effort intensity must gradually increase, reaching 60-75% of the maximum capacity. Physical activity was evaluated by using pedometers such as Keep Walking LS2000, or accelerometers such as Actigraph GT1M, Actigraph LLC, and transposed in number of steps/day [13], [19]. The most popular assessment of motor capabilities of people with mental deficiency was performed using Eurofit testing, considered to be the most suitable for this category of people [37]. Researchers usually measured balance, speed of movement and strength of people with mental deficiency [25]. Balance is an important aspect to be followed in the mental deficiency population; initial and final measurements are recommended by using Papcsy-DePaepe and Bruininks tests [38], or the EPS pressure platform. Also, it is very important to constantly monitor the heart rate in order to determine the intensity of the physical activity and avoid fatigue [38]. The effect of such programs is usually seen after 16-35 weeks of activity [36]. In general, jogging, dancing, aerobic and walking activities are recommended, the latter being the most popular physical activity for people with mental deficiency [19]. Although such research can have various limitations determined by the health status or lack of motivation to participate in all activities and assessments [3], the need for investigations towards the health and quality of life of people with mental deficiency is high.

A strong inverse relationship exists between aerobic capacity and all-cause mortality, and survival improves when unfit subjects become fit. Endurance training with high intensity is more time efficient and superior in improving VO2max, independent of an individual's initial fitness level [31]. Different training intensities influence adaptations in physiological parameters differently. Cardiorespiratory endurance has long been recognized as one of the fundamental components of physical fitness. Because accumulation of lactic acid is associated with skeletal muscle fatigue, anaerobic metabolism cannot contribute at a quantitatively significant level to the energy expended [2], [17]. Pate and Kriska have described a model that incorporates the three major factors accounting for interindividual variance in aerobic endurance performance:

maximal oxygen uptake (VO2max), lactate threshold (LT), and work economy (C). Several studies support this model [29], [30]. Thus, the model should serve as a useful framework for comprehensive examination of the effects of aerobic training on endurance performance [28].

5. Conclusions

Maintaining the health status of people with mental deficiency at a decent level should be an important and permanent concern for specialists but also for other stakeholders such as NGOs, authorities, institutions etc. So, even if an individual is facing intellectual and developmental deficiencies, he/she has to be integrated into the society and treated as a valid member in this sense. Consequently, we can state that there is an urgent need for finding efficient methods of including people with mental deficiency in the society. Social isolation can accelerate the decline of people with Down syndrome [6] and continues to be a problem with intellectual and developmental disabilities [10].

Research on both the efficiency and cost-effectiveness interventions aiming the lifestyle, physical activity and eating habits of people with mental deficiency is needed to help develop new health promotion programs among this population. Consequently, there is a need to develop appropriate strategies to promote and implement physical activities that can be easily performed by people with mental deficiency in order to ensure a healthy lifestyle [18], [40]. A lower health status of people with mental deficiency compared to the healthy population indicates the need for public health programs, as well as of intervention programs addressing particularities of people with mental deficiency [42]. Therefore, more studies are needed in this direction.

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