PHYSICAL ACTIVITY AND PARTICIPATION IN REGULAR EXERCISE BY PEOPLE WITH PHYSICAL DISABILITY: WHAT DO THEY STAND TO GAIN?

Journal website at;
http://mrtbjournal.org/index.php/njmr/issue/current/showToc

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Summary

The practice of using health promotion activities such as exercise and sports to prevent development of certain health conditions and thus promote healthy living is not new to health sciences. Several researchers and clinicians have reported beneficial effects to this practice in the general population. However, individuals with physical disability, including those with mobility disability, are not usually considered to be possible candidates for health promoting physical exercise. This is probably due to many reasons including the belief that only people who are "healthy" or non-disabled need to be healthy, competing health needs of the physically challenged as well as socio-economic considerations, especially in a poor income countries, like Nigeria.

In this article, the need for health promoting physical exercise to prevent development of secondary health conditions, the type of exercise and the known beneficial effects of physical exercise among people with physical disabilities are discussed. Recommendations made include making physical exercise part of the total rehabilitation plans for people with physical disabilities. This is considering that participation in physical exercise for health promotion purposes would help reduce the risks of secondary health conditions in this group of people.

Key Words: Physical Disability; Exercise; Health Promotion.

INTRODUCTION

Disability has been defined by different authorities in diverse ways. The World Health Organisation (1980) defined it as any restriction or lack of a person's ability to perform a task or activity within the range considered normal for a human being, usually resulting from impairment. The activities used within this context are those related to Activities of Daily Living (ADLs) or things that people do in their day- to-day normal life and takes place in a relationship with the person's environment and at his own performance level. The 1990 American Disability Act also delineate person with disability as one who has a permanent or temporary physical or mental impairment that substantially limits one or more major life activities (e.g. walking, speaking, bathing, seeing, hearing breathing caring for oneself or working) 'substantially limits' refers to nature and severity of disability, how long it will or is expected to last; and its permanent or long term impact (Golden, 1991).

Physical disability is not one, but a wide range of problems. It includes loss of limbs, blindness or deafness, difficulty moving or walking, inability to sustain physical effort for any length of time and so on. The treatment of disability as if it was a single problem may therefore mean disabled people receive insufficient or improper assistance. Hence each person experiences life and disability in unique ways (Dennis et al, 1993). Disability is a common phenomenon all over the world cutting across age, gender, culture, religion and socio-economic barriers. Studies show that, in Africa, south of Sahara, out of the 524 million people, about 36 million of them are disabled. It is projected that by the year 2025, the region would be populated by about 435 million handicapped people who

would need to be rehabilitated (Helander, 1992).

Physical activity is well established as a key component in the maintenance of good health and disease prevention. It is defined by Krause and Kjorsvig (1992) as bodily movement produced by skeletal muscles that requires energy expenditure and produces health benefits. Physical activity is an umbrella term which includes many other concepts such as fitness exercise training and conditioning. Physical exercise, a component of physical activity, is any activity performed in order to develop or maintain physical fitness and overall health (Shephard, 1991). Physical exercise has been identified as preventive health behaviour often employed as a strategy to improve health (Li and Yoshida, 1998). It is a planned, structured, and repetitive bodily movement done to improve or maintain one or more components of physical fitness. It may mean a setting in action, practicing or any activity designed to develop a skill or ability. Physical inactivity, on the other hands, denotes a level of activity less than that needed to maintain good health.

Benefits of exercises includes its relevance in preventing or causing improvement in major illness such as high blood pressure, obesity, heart disease, diabetes, insomnia, cancer and depression, among others. It has been hypothesised that increasing physical activity in previously sedentary people may prove the most effective strategy for prevention of cardiovascular disease on a population basis (Caspersen and Heath 1993). This is because, exercise also helps promote health by putting one's cholesterol and blood pressure in check, enhancing health-related component physical fitness (cardio-respiratory endurance, muscle strength and flexibility), prevent incidence of depression and enhance general feelings of wellness. However, despite the known beneficial effects of exercise, less than 20% of adults in most developed countries are sufficiently active to derive any discernible health and fitness

Determinants of Physical Activity among People with Physical Disability

Factors that may determine participation in exercise/ recreational activities by people with physical disability are environmental barriers including the architecture, organisational policies and practice, discrimination and social attitudes. A study carried out by Rimmer et al (1990) to examine the accessibility of health club to persons with disabilities and visual impairment revealed that, there was low to moderate level of accessibility to the 35 health clubs and fitness facilities they surveyed in the United States. In another study by Rimmer et al (2000) involving African-American women with one or more physical disability in which participants were asked to identify and rank factors they considered as barriers to exercises, the four major ones identified were: cost of exercise programme (84.2%); lack of energy (65.8%); transportation (60.5%) and not knowing where to exercise (57.9%). The study concluded that whereas the majority of subjects (81.5%) wanted to join an exercise programme but was restricted by their inability to overcome several barriers to increase physical activity participation.

Healthy People 2010 report that very low level of exercise and general activity patterns have been observed in African-American women with physical disability with only a mere 8.2% of the sample participated in the leisure physical activity and only 10% engage in exercises for three or more days per week for at least fifteen minutes. This trend was observed to be capable of empowering these groups of individuals to a higher risk of secondary health conditions. It appears that more people with disability were reported to having leisure – times physical activities when compared to their non-physical disabled counterparts.

What Type of Exercise?

Health promotions have been traditionally associated with the healthy, non-physically challenged individuals in the society generally. This was said to be a result of the antiquated definition of health as "absence of disease". Thus, those persons who had cerebral palsy, multiple sclerosis or other physical disabilities were not considered a good candidate for health promotion activities (such as regular exercise) because the aim was solely to prevent disease and disability in the healthy and not to take care of the sick or the disabled (Hoeman, 1992). Yet, every individual including those with physical disability should participate in regular exercise that is tailored to the individual's capacity.

Heath and Fentem (1997) observed that population - based surveys had consistently demonstrated that persons with disability were less likely to be physically active compared to persons without such limitations. They however identified a major limitation in the literature to the fact researchers included relatively few subjects, and relied on the assessment methods that may not be sensitive and specific enough for identification with the physical disability.

Effects of regular exercise among the physically disabled persons, would in addition to those benefits listed for the healthy, include prevention of development of secondary health conditions such as osteoporosis, osteoarthritis, decreased balance, increased spasticity, weight problem, depression (Rimmer, 1999). The major components of fitness programmes for people with disabilities are the same as for the general population and these include cardio – respiratory endurance, muscular strength and flexibility. However, the type, intensity, frequency and duration of activities used to improve fitness may vary (Pollock and Wilmore, 1990). The difference between exercise training for people with or without physical disability lies in the manner in which the principles are applied. The underlying principle however is that it should be for the development or maintenance of cardio respiratory fitness, strength, muscular endurance and flexibility (Welsch et al, 1994). Generally starting

intensity for persons with diseases is lower, the frequency and duration higher and the progression of exercise slower to allow a more graduated adaptation to exercise training. Exercise participation varies by diagnosis among people with disabilities. There are variations across disabilities based upon demographic characteristics, including age, gender, and other socio-demographic variables (Krause and Kjorsvig, 1992).

The intensity of aerobic exercise varies depending on the person. In general, health professionals recommend a moderate or low intensity workout. Moderate intensity exercise such as whole body periodic acceleration might serve as a whole substitute for the physically challenged individual; hence such ones should be discouraged from passive motorized cycling to aid in the release of nitric oxide into circulation (Sackner et al, 2005). Chin A Paw et al (2006) submitted that less than twice week training was not enough for improving functional and physical function of older adults living in long-term health facilities although they observed that it was difficult for elderly subject to exercise twice a week. Li Jx et al (2001) assessed the characteristic effects of Tai Chi Chuan (TCC)-a type of exercise on metabolism and cardio respiratory response as well as its effects on cardiorespiratory function, mental control, immune capacity and the prevention of falls in the elderly. It was found out that TCC is a moderate intensity exercise that is beneficial to cardiorespiratory function immune capacity, mental control, flexibility and balance control as well as improving muscle strength thus reducing the risk of falls.

Walking is the most natural physical activity and the only sustained dynamic aerobic exercise that is common to the general population. It involves a rhythmic dynamic aerobic activity of large skeletal muscles that confers multifunction (Moris and Hardman, 1997). Any physical activity that will result in some amount of energy expenditure, as an adult will accumulate from a 30 – minute walk, could be considered to receive a clinical significant health benefit. Although details remain to be clarified, it is now clear that regular physical activity reduces risk of morbidity and mortality from several chronic diseases and increase physical fitness which leads to improved function. A study by Blair et al (1992) stressed on the importance of the amount of energy expenditure and not the type of physical activity. Hence individuals with sedentary habits were considered to be at a high risk of mortality and morbidity from several diseases and those who are likely to have functional limitations in later years were advised.

Health Benefits of Physical Activities in Individuals with Physical Disability

Preventing secondary health conditions by empowering people with physical disabilities to take control of their own health will be more cost effective than watching them decline in function from lack of good health maintenance. Physiotherapists should therefore join in the collective effort to enrich the levels of people with disabilities. Therefore the inclusion of exercise training programmes that will enhance cardio – respiratory conditioning in victims of poliomyelitis is advisable in order to reduce the energy demand in ambulatory activities (Hamzat, 2000). The ICF looks at the body, individual activities, social participation and social environments (WHO, 2001). Instead of a negative description of disability, impairment and handicap, the ICF provides a neutral description of body structure, function, activities and participation. It also recognizes the role of environmental factors in either facilitating functioning (body functions, activities and participation) or raising barriers.

The ICF is useful for a broad spectrum of different applications, for example, social security, evaluation in managed health care, and population surveys at local, national and international levels. It offers a conceptual framework for information that is applicable to personal health care, including prevention, health promotion, and the improvement of participation by eliminating social hindrances and encouraging the provision of social supports and facilitators. It is also useful for the study of health care systems, in terms of both evaluation and policy formation. Under the framework, the term "disability" refers to externally imposed impairments, activity limitations or participation restrictions.

It is known for a long time that exercise increases physical fitness, has beneficial effects on the general health condition as well as playing preventing role against various disease states (Karacabey, 2005). To decrease the risk of disease and maintain good health, the natural defense system of the organism needs to be strengthened. It is thought that in addition to increasing the body's resistance to disease through the strengthening of the immune system, physical exercise decreases the convalescence time, increases work efficiency and improves the sportive performance of the individual all which would contribute positively to the national economy. That is healthy individuals whether with or without physical disability need a health life status to contribute meaningfully to the economy. The positive effects of regular exercise of aerobic nature such as strengthening of the immune system, protection against diseases as well as its positive effects on quality of life will help to emphasize the importance of physical exercise and improve the general view of sports by society (Karacabey, 2005).

Santiago et al., (1993) highlighted the importance of exercise in promoting fitness and preventing secondary disabilities in adults with physical disability in a study which revealed that exercise significantly improved physical work by 23.1% and cardio-respiratory fitness by 16.1% for pulmonary ventilation and 23.7%for maximal oxygen consumption. This revealed the importance of aerobic exercises for individuals with physical disabilities. Other equally important benefits of exercise include the development of self-esteem, social integration, and the learning of social and team skills (Sherrill, 1998).

In a spinal cord injured patient, involvement in sport recreation, they are commonly restricted by loss of voluntary motor control, autonomic dysfunction, altered fuel – homeostasis, inefficient temperature regulation and early onset muscle fatigue. In spite of this restriction, there is large, volume of evidence supporting belief that recreational and therapeutic exercises improves the physical and emotional well being of participants of spinal cord injuries (Nash, 2005).

Sports and recreational activities have led to an increase in quality of life and awareness of the needs to integrate people with disabilities into the society (Cooper, 1990). Fitness and recreational opportunities for people with disabilities have been increasing every year, among health promoters.

Conclusion

Despite the growth in health promotion programmes for able-bodied people, it seems little effort has been devoted to developing programmes for those with physical and cognitive disabilities. Encouraging individuals with physical disability to partake in recreational activities would help promote their health and prevent secondary health conditions. Rimmer and Braddock (2002) had suggested that programme for people with disabilities must be developed with full recognition of limitations caused by both the primary and secondary disability. It is therefore important that attempts be made to design programmes aimed at incorporating health promotion activities for the individuals with physical disability in every community. This can be done effectively only when there is background information to justify the idea of health promotion activities such as recreational activities by the physically disabled.

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