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GREEN EXERCISE: AN ECOLOGICAL DYNAMICS APPROACH TO PROMOTING HEALTHY LIFESTYLES AND WELL-BEING IN ZIMBABWE

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Abstract:
Research has proven that contact with natural environment and green space promotes good healthy lifestyles and well-being of individuals (Henwood, 2001; Wells & Evans, 2003; and Pretty, 2004). Green exercise is seen as a strategy that helps to reconnect human beings with the natural world and has important implications for public and environment health. Green exercise occurs through interaction with natural environments to enhance human health and well-being. Thus, the presence of trees and natural environment should encourage more frequent use of outdoor space and the experience of nature should be seen to reduce mental fatigue for those involved in physical activity. Although critiques of green exercise have their own views, this paper aims to look at the importance of interacting with nature in green exercise and the impact this can have on the lifestyles and well-being of individuals. This paper will use the Ecological dynamics approach as a theoretical framework which emphasizes performer-environment relationships and their dynamics. This theory views humans as complex systems in their interactions with living systems and their environment. The theory is an approach for studying processes, perception, decision making and action in dynamic performance environments and looks at those taking part in sport within the environment and emphasize that they must focus on safety practice bearing in mind that affordances can be utilized in different activity environments. Ecological dynamics perspective is proposed to underpin observed effects of green exercise and physical activity. The paper will use the library approach as the methodology. It is hoped that the importance of being green and environmentally friendly will be recommended so

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that people adopt green workouts. Considerations of re-usable water bottles, eco-friendly equipment, material and clothing for making workouts greener will be considered for adoption.

Keywords: green exercise, ecological dynamics, natural environment, healthy lifestyles, well-being, physical activity, eco-friendly

1. Introduction

Sedentariness is consuming a great deal of people's time and University workers are no exception as they tend to spend a great deal of their time glued to their computers without thinking of engaging in physical activity. Digital revolution can be said to result in more sedentarism by adults, causing limited outdoor activity. This can also result in many health problems. Huge medical bills and costs can therefore be saved if individuals engage in more physical activity. Sport is not only a physical activity but can be viewed as an area where people can get opportunities to interact socially. Jarvie & Maguire (1994) observed that sport and leisure activities form an integral part of a social life in all communities and can be seen as intricately linked to society and politics. Sport therefore, improves health, fitness and education levels whilst also being seen as a cost-effective approach for dealing with health and social problems. Sport provides a chance for meaningful social interaction by participants and can be seen as a collective experience because participation results in more direct physical contact between participants, leading to interpersonal relationships. (Harms, 1982) Thus, being green or being environmentally friendly has become much more popular over the years. Recently, this "green mind-set" has crossed over into the exercise and fitness world and people are now more interested in having green workouts. You may be surprised by how many little changes one can make on how to exercise, what to wear during exercise and what one can do at the gym to make oneself overally fit and a routine greener and more environmentally friendly. It is vital for one to take a few minutes to reflect on one's current exercise routine and see if there are changes that can be made to have a green workout.

1.1 Aim of the study

The main aim of the study is to promote optimal health and wellness routines through the understanding of healthy lifestyle practices and regular participation in physical activities in green environments.

1.2 Objectives of the study

The main objectives of the study are as follows;

- To explore the possibility of engaging people in outdoor natural green environments for their health and well-being benefits
- To discuss how healthy lifestyles and well-being can be promoted through engaging in green exercise
- To explore the need for healthy life practices by many people in order to appreciate and create opportunities for engaging in more green exercise

1.3 Background to the study

Recent thinking on sustainability and sustainable development has discovered that people are rooted in the natural world and they are essentially part of nature. This thinking was absent in earlier 20th century science. Current themes of social responsibility and sustainable development subtly encourage a re-connection of people with nature, resulting in environmental advocacy (Dustin et al., 2010). It can be argued that this can be assisted by creating schemes such as green exercise programmes as a way to encourage people to have more outdoor exercise that has effects of further encouraging them to connect with nature (Mansfield, 2009). Further connection with the environment is made if the exercise or physical activity has a beneficial impact on the environment in which they take place. For example, this can be done through environmental remediation or conservation work (Mansfield, 2009). In Zimbabwe, most people can engage in more green exercise making its existence obscured. It is hoped that exposure to its existence may go a long way in popularizing it, making people much more conscious of its existence and great benefit.

Hinds and Sparks (2008) argue that a disconnection from the environment (due to urban living or a lack of green exercise activity,) might lead to self-reinforcing apathetic attitude towards ecological issues. Many people's connectedness to nature appears to be changing and this can have important implications on how humans are now interacting with nature. In other words, those who do not spend time in the natural environments fail to see its value. Hinds and Sparks (2008) further found out that there are correlations between time spent in nature and simple environmentally friendly behaviours such as recycling, buying eco-friendly products or using public transport. It was also found to be true in many cases that those with regular contact or experience with nature had an increased attachment to or value for nature. Suffice it to say that not everyone may be motivated by green exercise as different reasons motivate people differently. Those individuals who are extrinsically driven by external factors may consider green exercise and its benefits. The reasons may vary from health reasons

to social aspects. However, there are also anti-green exercise individuals who include those who do not spend time in the environment as they fail to see its value (Farrel & Liz, 2010). Thus, green exercise can be successfully introduced in Zimbabwe in order for those people who might not be aware of its existence to become aware and popularize its benefits.

Systematic reviews of literature show that nature experiences can lead to more positive psychophysiological states such as perceived stress relief and more positive states of well-being (Bowler et al., 2010). Studies have also shown that, when one exercises in the presence of nature, their focus of attention will be shifted towards the environment rather than towards internal feelings of fatigue, resulting in reduced perceived exertion (Harte & Eifert 1995; Cologiuri et al., 2015). A wide range of international research has therefore seen more evidence of key health benefits that can be experienced by many people after spending time in the natural environment. In other words, there is always a link between nature and health. Health benefits will include reduced stress levels, improved moods, enhanced psychological well-being and improved attention and concentration (Hine, Peacock & Pretty, 2008).

Natural places facilitate stress recovery, encourage exercise participation, stimulate development in children and provide opportunities for personal development and sense of purpose in adults (Hinds & Sparks 2008). Partaking in physical activity in natural surroundings and green exercise may also have therapeutic properties. Thus, natural environments have emerged as useful settings for promoting physical activity because access to them has consistently been associated with moderate-to-vigorous physical activity attainment worldwide (Bauman et al., 2012). Exercising in natural, green environments creates greater improvements in adult's self-esteem than exercise undertaken in urban or indoor settings. As Pretty et al. (2005:1) state, "*Natural and built features of the environment tend to affect behaviour, interpersonal relationships and actual mental states.*" Exercise in natural environments confers numerous health benefits, and yet very little is known as to why people engage in green exercise.

2. Ecological dynamics theory

Ecological dynamics approach, as a theoretical framework, emphasizes performer-environment relationships and their dynamics. This theory views human beings as complex systems in their interactions with living systems and their environment. This framework suggests a number of unexplored, interacting constraints that are always related to the type of environment which shapes the levels of benefit of green exercise. There is a direct relationship between green physical activity, health and well-being,

including levels of engagement, types of environmental constraints, levels of physical activity and skills effects. The framework of ecological psychology and dynamic systems theory has three features that are of great significance for the understanding of green physical activity. These are; i) emergence of behaviours from multiple subsystems, ii) interacting constraints, and iii) affordances. These constraints are related to each individual task or the environment which interact to shape behaviours, including perceptions, emotions, cognitions and actions (Brymer et al., 2015). Human beings perceive affordances directly from their surroundings and pick up opportunities or invitations for behaviours. Davids et al. (2016). In nature, one can feel wind, sunlight, rain etc. and can perceive distinct textures, terrains, surfaces, and even sounds from birds. One can pick up feedback from surface of feet while exercising. This will invite richer psychological responses when compared to a static situational condition. These key ideas in ecological dynamics make it a powerful guide to green physical activity research. Affordances will emerge from the three interacting constraints to shape different dimensions of behaviour that are all related to the health and well-being of an individual. Interaction with the three categories of constraints will influence affordances for behaviour that emerge from undertaking adventurous physical activities in natural environments (Davids et al. 2016). Thus, individuals use affordances to regulate their behaviours and perhaps attempt to manage or avoid possible dangers (Davids et al, 2016).

According to Brymer et al. (2015) the theory of ecological dynamics places emphasis on interaction between an individual and the environment in order to enhance effective psycho-emotional development through green exercise. The theory is an approach that is used to study processes, perceptions, decision making and actions in dynamic performance environments and looks at those taking part in sport within the environment whilst emphasizing focus on safety practices. One should bear in mind that affordances can be utilized in different activity environments. Affordances are invitations for behaviours that exist in an environment and depend on an individual's capacities for actions (Withagen et al., 2012). Affordances are seen to be useful as they help to understand how physical activity in green spaces can enhance mental health and well-being (Brymer et al. 2015). The ecological dynamics perspective is proposed to underpin observed effects of green exercise and physical activity as the framework emphasizes person-environment scale of analysis. Green exercise interaction with natural environments enhances positive human health and well-being (Brymer et al. 2015). This framework can support the work of multi-disciplinary teams of exercise designers advocating for a powerful role for organism-environment relationships through continuous interaction of perceptual and action systems that regulate

behaviours. A relationship, therefore, exists between individual and the exercising environment that provides affordances which as opportunities/invitations for human behaviours. These affordances are based on the characteristics of the individual and of the environment (Yeh et al. 2015). Gibson (1986) observed that affordances exist in different environments in order to be utilized by people during goal-directed behaviours. The ecological dynamics perspective underpins observed effects of green exercise and physical activities because of the affordances utilized in different activity environments (Yeh et al., 2015).

Based on the ecological dynamics theory, there is need to create an exercise environment which offers different affordances such as intentions, actions and capabilities of an individual that accrue as a positive rather than negative effects on human behaviour. Functional aspects of nature will invite or encourage particular actions from individuals while providing opportunities for more varied actions through properties of the environment (Brymer et al. 2015). Natural environmental scenes have an effect on an athlete taking part in any sport (Hefty and Nasar, 2000). The presence of mountains, trees, grass and many others may offer varied actions to individuals. For example, climbing, jumping, swinging activities are affected by natural environments. It is important to note that indoor and outdoor space can sometimes be constrictive to participants' performances.

3. The importance of Green exercise in Zimbabwe

Green exercise is a term that is used to describe any type of physical exercise taking place in a natural environment, rather than in a health club or gym. Pretty et al. (2005) define green exercise as the undertaking of physical activity in an environment that is under direct exposure to nature (Yeh et al., 2015). Green exercise is green physical activity that is planned, structured, rigorous, repetitive and purposive with the aim to improve or maintain one or more physical components of fitness (Caspersen et al, 1985). Green exercise comes in three distinct levels of engagement of i) bodily movement produced by skeletal muscles resulting in energy expenditure from utilization of affordances, ii) engagement with natural environments e.g gardening, walking in the park and iii) horse riding (or engagement with animals) or camping (living in very close proximity to nature and elements) (Brymer et al. 2014). In addition, this type of natural exercise usually does not involve the use of weight machines or other fitness equipment that is normally found in a gym setting. Instead, the strategies rely on the use of natural means of engaging in activities that promote strength and endurance with as little reliance on equipment as possible. Levels of outdoor activity also typically

vary due to weather and seasons, with a general decrease being noted during winter months (McGinn at al. 2007). The physical environment itself also affects participation in this type of activity, with hillier regions, for example, deterring walkers and cyclists from community group participation in outdoor activity (McGinn et al. 2007). Poortinga (2006) concurs with this, stating that "*living in a 'convenient' environment…increases the likelihood of walking*" (Poortinga, 2006: 2836).

Poortinga's (2006) research focused specifically on reducing obesity levels through outdoor activity. The study revealed that the following pre-conditions generally encouraged participation in outdoor activity like walking, regardless of the type of exercise undertaken and the intensity of activity or the duration of participation. The study recommended encouraging greater use of outdoor spaces as a means of countering increased rates of mental ill health (Pretty et al., 2007). They did, however, note that there is need to understand better the barriers to participation in outdoor activity and green exercise, in order to address both of them and support wider participation. In their quantitative study of green exercise participants Pretty et al. (2007) found that self-esteem and levels of mood disturbance among participants improved after participation, and that the results remained consistent over time. Pretty et al. (2007) concluded that on the psychological benefits of access to green spaces identified, there are a number of benefits to be gained from green exercise and that local green space tends to promote more social contact while encouraging stronger neighbourhood ties and outdoor activity.

There is a difference of opinion on what exactly constitutes truly green exercise, even when the activity takes place in a natural setting. For example, one school of thought holds that a truly natural exercise experience requires that the individual wears only clothing constructed with natural fibres. This same line of thinking would hold that barefoot running or walking would be more green and more desirable than running or walking wearing any type of manufactured protection. A slightly different approach to this green exercise puts more emphasis on fresh air, sunshine, and more involvement with the natural world and less with the equipment or clothing utilized during the exercise. This would mean that riding a bicycle along a forest path would be considered green exercise, even though the bicycle would not be considered a natural element. In like a manner, hiking in the woods or climbing a mountain using standard equipment and protective clothing would also be considered green exercise, since the equipment actually supports the action of interacting with nature. It should, therefore, be noted that the term green exercise does not only refer to physical activity taking place in "green" spaces (i.e., environments dominated by the presence of grass and green foliage colours). An increasingly large body of evidence shows that physical

activity in other natural environments, such as "blue" spaces (i.e., environments characterized by the presence of water) (White et al., 2015) and even "orange" spaces (i.e., landscapes dominated by fall foliage colour) can also equally provide equivalent health effects.

Green exercise has been developed from the premise of encouraging people to spend more time in natural setting. It is one of the most cost effective ways to improve physical and mental well-being. This is supported by Bird (2007) who demonstrates that contact with nature may be an effective method for coping with anxiety, strengthening communities, reducing crime and giving a sense of improved well-being and mental health. One of the underlying premises of green exercise is that the strategy helps to reconnect human beings with the natural world, something that has become less and less possible in recent years. Proponents of this approach claim that the interaction of human beings with nature helps eliminate health issues by lowering blood pressure, refreshing the mind and actually improving the self-esteem of people through regular exercise in natural environments. Mood and mental capabilities are also believed to be positively improved, since increased exposure to sunlight helps to increase the production of vitamin D in the body. Compared to non-green exercise, green exercise, therefore, can help to improve psychological measures such as positive moods, high self-esteem and vitality. Green exercise can promote a greater psychological engagement with nature than merely viewing nature. Green exercise research has often reported positive psychological health outcomes without rigorously controlling exercise. Green exercise is defined as engaging in "*physical activities whilst being directly exposed to nature"* (Pretty et al., 2005).

Green exercise research suggests a synergistic health benefit for self-esteem by engaging in 'physical activities in the presence of nature' (Barton & Pretty, 2010, Pretty, Peacock, Sellens & Griffin, 2005; Pretty, Angus, Bain, Barton, Gladwell et al., 2009). Furthermore, recent research findings from green exercise implying that nature is inherently fascinating and may provide a driver for changes in self-esteem (Pretty et al., 2005). Building environmental awareness and connections with nature is likely to increase participants' desire to continue with green exercise or other outdoor exercise activities. The benefits of Green Exercise for self-esteem may occur due to enhanced enjoyability of exercise in a natural environment. Green spaces may also encourage greater distractibility from daily stresses, helping people to feel better about themselves (Berger & Motl, 2000). Outdoor natural environments may also provide a distraction from feelings of fatigue experienced during exercise, thus helping one to feel easier through exercise (LaCaille, Masters & Heath, 2004). In the end, good exercise habits and

healthier lifestyles are likely to be encouraged to develop through involvement in green exercise in Zimbabwe.

However, not everyone in Zimbabwe is convinced that green exercise is inherently more beneficial than working out in a health club or gym. Critics of green exercise argue that many health clubs are constructed to make ample use of natural light, while also providing the benefits of an environment with controlled levels of humidity and temperature. At the same time, detractors note that use of weight machines and other devices may result in more challenging workouts which help strengthen the heart and lungs in many ways that are more simplistic exercises than would be possible in natural settings. Recent studies have shown that green exercise is often of a health-enhancing intensity (Elliot et al.; 2015, Sellers et al., 2012) and that it can be associated with additive psychological benefits over physical activity in other types of environments, including the reduction of psychophysiological stress and mental health challenges (Sellers et al., 2012). Such positive psychological effects have also been shown that it is possible to predict future engagement in physical activity (Calagouri & Chroni; 2014).

4. Conclusion

Guiding principles of ecological dynamics can help with current understanding of formulating green physical activity programmes in Zimbabwe. One has to ensure that human behaviour develops as a result of multiple interacting sub-systems in human beings. From an ecological dynamics point of view, all these contexts provide different effects to people to maintain and improve health and well-being, especially in the long term future. Furthermore, ecological dynamics emphasizes continuous interactions between an individual and a behavioural environment (Davids, et al 2016). In this case this theory is suited as it explains how physical activity and exercise experiences are likely to improve physical, psychological health as well as well-being of individuals (Davids et al., 2016). Thus, green exercise can help participants in Zimbabwe to enjoy their natural environment while participating and engaging in green exercise for their health and well-being benefits.

5. Recommendations

Among the key recommendations of this study are the following;

- More awareness of green exercise values, especially to those who are extrinsically driven by external factors for its health benefits and social reasons as

exercise environments have an effect on the quality of physical activity one engages in.

- Introduction of green exercise in Zimbabwe for ordinary people in order to have a big impact on the general population.
- To encourage Zimbabwean people to always protect their natural environment and preserve the species in them. People must be encouraged not to destroy their natural environment but make green exercise an issue at their work places
- To encourage Zimbabwean people to always retain the evolutionary connection with nature and be protective of it as they engage in green exercise
- To encourage people to promote green exercise in order to relieve health and economic challenges that are placed on the Zimbabwean society through exercise inactivity.

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