

A Comparison of Mental Health in Active and Inactive Elderly with an Emphasis on Physical Activities

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ABSTRACT

The present paper aimed at compare mental health in active and inactive elderly with an emphasis on physical activities. The statistical community was comprised of all male and female elderly of Gorgan City; 180 elderly were randomly selected as the subjects. Active Elderly (AE) were those who based their schedule on a regular physical activity with at least three sessions exercise a week; however, the inactive ones (IE) were those who participated in no sport activity. The Standard Questionnaire for mental health (GHQ-28) was adopted which measured four subscales (i.e. physical health, stress and insomnia, social performance, and depression). Descriptive statistics was adopted to describe the obtained data; also, Mann-Whitney U Test and Spearman Correlation Coefficient Test were used to analyze the data ($p \leq 0.05$). The results showed that compared to IE, AE had a better general mental health with more favorable subscales rates ($p \leq 0.05$). No significant difference was detected between male and female AE in terms of mental health. It was concluded that participation of elderly in regular sport activities will enhance not only their physical fitness but also their mental health. It can be also concluded that the elderly who participate in regular physical and sport activities possess higher life quality than inactive ones.

Keywords: mental health, physical activity, elderly.

I. INTRODUCTION

Health is considered as the most important factor for progress and survival of societies and also as one of the most precious gifts whose provision is not only a personal but also a public task [1]. In addition to physical health, mental health is also required in order to lead a healthy and fresh lifestyle [2]. The World Health Organization (WHO) has defined the term "health" as a balance of physical, mental, and social aspects of a person and considered a healthy person as the one who is away from diseases, mental disorders, and social crises [3]. On the other hand, modern lifestyles in industrial nations have made people sedentary creatures; this endangers their health status [4]. One of the methods to alleviate mental disorders, especially depression and stress, is joining physical activities. Several studies have approved positive effects of physical activities on reduction of mental disorders.

Aarnio et al. (2002) reported that the individuals with a regular weekly physical activity program possess favorable mental health and they are subjected to lesser stress rates [5]. Esfehiani (2002) studied effect of sport on physical well-being, stress and insomnia, social performance, and depression in college students and concluded that athlete students had better status than others in terms of mental health

and its four criteria [4]. Although the positive effect of physical activities to control general health and improvement of life quality among various society levels has been proved in several reports, some studies have reached different conclusions. Unlike the above-mentioned authors, Khaledan (2000) reported that participation in physical activities in adolescence and middle age has a little to do with their health in old age [6]. However, Kashef (2006) mentioned suitable level of physical activity as a factor to reduce heart disorders, blood pressure, diabetes, osteoporosis, obesity, and mental disorders and added that the individuals with a regular physical activity schedule live longer [2]. In a study named "physical activity, age, and mental health", Brown (1992) reported that there were few experimental evidences to certify the positive effect of physical activity to improve mental health of people [7]. Faulkner & Biddle (2001) reported that clinical psychologists consider physical activities merely as a random and experimental method [8]. Therefore, considering contradictory findings in the case of effect of physical activities on mental health of people, we aimed at comparing mental health (in terms of physical status, stress and insomnia, social performance, and depression) in the elderly with regular weekly physical activity schedule and inactive ones.

II. RESEARCH METHODOLOGY

The present study was based on a descriptive method and was performed as a field research. The statistical community was comprised of all elderly in Gorgan City. The subjects were chosen randomly to be 180 elderly where 85 were females (39 active and 46 inactive) and 95 were males (43 active and 52 inactive). The active subjects were those who had three 60-min sessions of physical activities per week; however, the inactive ones were those who had no physical activity during each week.

The Standard Questionnaire for mental health (GHQ-28) was adopted which measured four subscales (i.e. physical health, stress and insomnia,

social performance, and depression). This is a questionnaire based on self-reporting; also, in accordance with different cultures, briefer forms with 12, 20, 30, and 44 articles were provided from GHQ in order to recognize the ones with mental disorders. According to the calculation method for the scores obtained by the subjects, the lower score each individual receives, the better mental health he/she possesses. Validity of the questionnaire in different groups was estimated to be between 82% and 92% (R=82-92%) [3]. Descriptive statistics was adopted to describe the obtained data; also, Mann-Whitney U Test and Spearman Correlation Coefficient Test were used to analyze the data (p≤0.05).

III. RESULTS

Data collected about samples characteristics has been shown in table 1:

samples		Frequency	Age (year)	Height (cm)	Weight (kg)
Active	Male	50	64.17 ± 7.54	166.19 ± 6.25	69.44 ± 5.46
	Female	50	63.17 ± 5.20	161.35 ± 5.12	68.15 ± 4.25
Inactive	Male	50	66.45 ± 5.12	169.45 ± 6.15	67.28 ± 6.37
	Female	50	65.19 ± 5.22	164.60 ± 6.37	69.66 ± 5.22

Table 1- Samples characteristics

Collected data about mental health subscales from active and inactive elderly has been shown in table 2. A significant difference was detected in mental health subscales (i.e. physical health, stress and insomnia, social performance, and depression)

between active and inactive elderly (p≤0.01) where active ones had better status than inactive ones (Table 2).

Table 2- comparison of mental health subscales between active and inactive elderly

Signs	Physical signs		Stress and insomnia		Social performance		depression	
	mean	Standard deviation	mean	Standard deviation	mean	Standard deviation	mean	Standard deviation
Active elderly	2.48	1.65	2.64	1.62	3.14	1.53	1.67	0.73
Inactive elderly	4.14	1.20	4.17	1.37	4.52	2.86	2.71	0.87

It can be seen from Table 1 that active elderly received lesser scores than inactive ones in all the subscales proving higher mental health of active elderly.

Table 3- comparison of mean scores of mental health between active and inactive elderly

Statistical group	Number		Rank mean		Mann-Whitney U		Z		Sig	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Active elderly	43	39	103.5	112.5	17545.5	16641.5	-	2.740	0.005	0.005
Inactive elderly	52	46	138.5	146.5						

It can be realized from Table 2 that active elderly possess better mental health than inactive ones due to the lower scores they received.

It is noteworthy that no significant difference was detected in mental health status between male and female active elderly and both

groups enjoyed a same level of mental health. This points to the fact that females, like males, can benefit from positive effects of regular physical activities to improve their not only physical but also mental well-being.

IV. DISCUSSION AND CONCLUSION

The results obtained from the present study showed that active elderly (AE) have better mental health status than inactive ones (IE). Also, we found that AE significantly possess better status in four subscales of mental health (i.e. physical health, stress and insomnia, social performance, and depression) than IE ($P \leq 0.05$). What we found was consistent with the results obtained by several authors. Brosnahan *et al.* (2004) found a reverse correlation between health disorder rates and physical activities [9]. Ghezelseflou (2008), Ahmadi (2005), and Esfahani (2002), also, emphasized positive effect of physical activities on mental health of the ones participating in physical activities [1, 10, and 4]. This can presumably be owing to not only elevated levels of self-confidence and self-esteem in athletes but also exhaustion of energy during the activity leading to regulation of mental and spiritual structure of the individual. Although participation in any activity seems to have somewhat effect on body and mind, exciting, freshening, and competitive activities, namely sports, have definitely more favorable influences on individuals' minds; this will not only guarantees physical health but also freshens the spirit and presents opportunity for the person to develop his/her social relationships and to exhaust excitements [1]. Also, Cowper stated that physical exercises will improve athletes' mental health.

Our results are consistent with the ones acquired by Peluso *et al.* (2005), Guskowska (2004), and Goodwin (2003) who examined the role of physical activities to treat and prevent stress and depression and cited that daily physical activity and participation in sports would reduce stress and depression levels and would present soothing effect to relieve stress and mental pressures [12, 13, and 14]. Considering the relative literature, it can be concluded that majority of the studies in this area have put their fingers on positive role of sports and physical activities in order to improve mental health levels. Doubtlessly, this will grant higher life quality for elderly in a society. Therefore, the relative authority are strongly recommended to pay more attention to participation of elderly in physical activity programs because extension of public sport and engagement of elderly in physical activities will not only improve physical well-being of elderly but also reduce mental disorder occurrence rates. Undoubtedly, this will furnish the participants with numerous social and family advantages. Thus, they will be much distant from mental disorders, such as depression, through engagement in social interactions [1].

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