



## Exercise is more important than Medicines: A Clinical Approach

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### ABSTRACT

Promotion, as well as maintenance of health, is directly associated with exercise and good dietary habits. Lack of exercise and good dietary habits adversely affect health, therefore this study was conducted to assess the perception of patients regarding the effectiveness of exercise and medicine in the maintenance of health. Total of 30 patients of different diseases (heart diseases, hypertension, and obesity) was voluntarily taken as a sample of the study. For the collection of data, a questionnaire was developed; collected data were analyzed by applying Student's t-test using SPSS version 21.0. Heart problems, hypertension, and obesity all are the chronic health problems and the majority of the respondents opined that the impact of performing various kinds of exercise along with medicine for reducing these chronic health problems was significant ( $p=0.004$ ). On the basis of findings, the researcher concluded that exercise is the sister art of medicine which plays a significant role in preventing different health problems such as heart diseases, hypertension, and obesity.

**Keywords:** Exercise, Medicine, Sister art, Human health, Health risks

### INTRODUCTION

Exercise is also known as physical activity (PA) but it is the organized shape of physical activities that promote one's health [1]. Medicine refers to chemical or natural substances which we use for the purpose of prevention, treatment and rehabilitation of injuries, illness, and diseases [2]. Exercise is a primary preventive measure which plays a significant role in reducing the morbidity and mortality of chronic diseases such as cardiovascular, type 2 diabetes (T2D), hypertension, cancer, obesity, depression, solid organ transplantation and others [3]. Cardiovascular diseases are the primary cause of death in developed countries of the world. It is shown by the different research evidence that excess body weight and adiposity are associated with increased cardiovascular diseases risk. Furthermore, intervention studies have shown that weight loss has beneficial effects on cardiovascular disease's risk factors and would, therefore, be expected to prevent cardiovascular diseases risk [4]. The author further indicated that exercise and medicine are very closely related to each other and thus exercise work as medicine for different chronic diseases as well as psychiatric diseases such as depression to cancer, cardiovascular, metabolic, pulmonary, and musculoskeletal diseases.

Dietary calorie restriction (CR) and endurance exercise training both can cause energy deficits and weight loss, therefore consequently improve cardiovascular disease's risk factors [5]. It is further indicated that exercise promotes health and help in decreasing health risk indicators by promoting the physical as well as the functional capacity of the body. Regular exercise strengthens the muscles of the heart and lungs. It enables the cardiovascular system to carry more oxygen to the body and the pulmonary system to increase the maximum amount of oxygen that the lungs can take in [6].

Galen in his theory stated that if the non-natural things were observed and practiced in moderation, health would

be the result. But if not followed, performed in excess or put into imbalance, disease or illness would result [7]. According to Berryman “we die by the way we live” it means that maintenance and promotion of health are largely influenced by one’s personal action e.g. by eating right, breathing fresh air and getting enough sleep and exercise [8].

Exercise or physical activity is indisputably effective therapy. Regular exercise or participating in physical activities enables all the systems of the body function well and accordingly. Majority of health complaints among the masses are generally considered the result of physical inactivity. Exercise program promotes general health, build endurance and reduce or slow the gaining process. Regular participation in sports and exercise programs not only improve physical health but also boost emotional well-being [9].

However, eating alone will not keep a man well. The author says that if you want to keep yourself healthy than it is evident to do regular exercise or physical activities. It means that lacking exercise may cause health risks such as hypertension, obesity and other cardiovascular problems [10]. Research evidence showed that “exercise is medicine”. It is also indicated that exercise helps to prevent chronic diseases such as depression, cancer, cardiovascular, metabolic, pulmonary and musculoskeletal diseases, etc. [11]. Exercise helps in preventing predominant musculoskeletal disorders such as mechanical low back pain, neck and shoulder pain and reducing the risk of increasing coronary heart disease, hypertension, diabetes, osteoporosis, and obesity and colon cancers [12].

Physical inactivity may cause various health problems due to its growing global prevalence and also has economic, environmental and social consequences [13]. For avoiding the chance of health incidence, regular physical activities may be encouraged on a regular basis. Mons, et al., stated that exercise plays a vital role in shaping and maintaining one’s health and personality [14]. Many chronic health problems such as hypertension, obesity, and heart problems are mainly caused by physical inactivity.

Participation in physical activities or exercise has long term physical as well as mental benefits. Along with physical and mental benefits, it also helps in reducing some chronic diseases such as heart disease, diabetes, high blood pressure, and balance problems, etc. [9].

Exercise helps to reduce the chances of chronic diseases but exercise must be performed according to the approach of the body. If the level of activity is increased than the approach of the body, it may cause health problems. According to the World Health Organization adults aged (18-64) years should throughout the week perform at least [13];

- 150 minutes of moderate intensity aerobic PA or 75 minutes of vigorous-intensity aerobic PA or an equivalent combination of moderate and vigorous intensity PA
- Aerobic PA should be performed in bouts of at least 10 minutes duration
- For additional health benefits do more-up to twice, and
- Muscle-strengthening activities should be done on 2 or more days a week involving major muscle groups [12]

### **Purpose and Justification of the Study**

A huge number of complaints regarding chronic health diseases were reported every day to health care centers. Heart problems, hypertension, and obesity all are listed in the health complaints of daily life. The main factors which are always diagnosed are lack of exercise and physical activities. Therefore the health experts always recommend a different kind of exercise to the patients. Why chronic health diseases occur and what is the perception of masses regarding the role of exercise in the prevention and treatment of chronic health diseases. To discover the fact, the researchers intend to conduct a survey study whether “exercise is more important than medicine, an approach of clinical patients”.

### **MATERIALS AND METHODS**

The below procedures were adopted by the researcher for reaching certain findings and conclusion.

#### **Participants of the Study**

As this research study was associated with the relationship between exercise and medicine as well as its role in preventing health problems. Therefore patients admitted in District Head Quarter (DHQ) Dera Ismail Khan Kp Pakistan were taken as participants of the study.

### Sample and Sample Size

As for official record of District Head Quarter (DHQ), Dera Ismail Khan Kp Pakistan June 2018, 30 patients with different chronic health problems (heart diseases, hypertension, and obesity) were admitted. Due to the infinite size of the participants, the researcher selected the whole participants as a sample of the study.

### Mode for Data Collection

During the visit for data collection, 20 patients were found in hospital and the data were collected. Similarly, for data collection, 10 patients visited in their homes as per official permission from hospital authority.

### Tool for Data Collection

For the collection of data, the researcher developed a Likert type scale comprising of 2 sections

- Section A: Questions about causative factors of chronic health problem
- Section B: Questions about the level of satisfaction among the patients

### Validity and Reliability of Scale

A 12-items Likert type scale was developed with the help of previous literature and experts opinions. The developed scale was administered to 20 filed experts (sports sciences and physical education). The responses of the experts were gathered and calculated the inter-item correlation on items, and the coefficient alpha on the whole scale. The Cronbach-alpha of the scale was measured as 0.87 which is highly reliable.

### Data Analysis

The collected data were analyzed by applying Student's t-test using SPSS (version 21.0 Inc., Chicago, IL, USA).

## RESULTS

Table 1 shows that lack of exercise significantly predicted cardiovascular fitness  $\beta=0.7881$ ,  $t=10.97$ ,  $p<0.01$

The lack of exercise explained a significant proportion of variance in cardiovascular fitness  $R^2=0.986$ ,  $F=30.87$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ . Lack of balance diet significantly predicted cardiovascular fitness  $\beta=0.792$ ,  $t=23.15$ ,  $p<0.01$ . The Lack of balance diet explained a significant proportion of variance in cardiovascular fitness  $R^2=0.799$ ,  $F=29.34$ ,  $p<0.01$ .

**Table 1 Causative factors of chronic health problems (hypertension, obesity, and cardiovascular disorders) reported during the visit of health care centers**

Testing Variable	R	R <sup>2</sup>	F	T	B	Sig.
Lack of exercise	0.897	0.986	30.87	10.97	0.7881	0.000
Lack of balance diet	0.786	0.799	29.34	23.15	0.792	0.001
Heredity	0.775	0.781	43.78	44.18	0.733	0.001
Nature of job	0.675	0.716	54.34	34.14	0.669	0.003
Socio-cultural conditions	0.548	0.556	12.32	26.12	0.610	0.002
Psychological problems	0.675	0.689	11.45	21.65	0.711	0.002
Self-medication	0.787	0.779	33.89	31.77	0.790	0.001

\*Significant at  $\alpha=0.01$

Table 2 shows that there is a significant difference between the satisfaction of patients regarding the use of exercise

and medicine for the treatment of chronic health problems. The patients who perform the exercise ( $M=4.33$ ,  $SD= \pm 0.431$ ) assumed more satisfied than those patients who use medicine ( $M=3.21$ ,  $SD= \pm 0.654$ ) for the treatment of cardiovascular health problems (Table 2). Hence, it was concluded that there is a significant difference ( $p=0.004$ ) between the satisfaction of patients of chronic diseases regarding cardiovascular rehabilitation using exercise and medicine (Table 2).

**Table 2 Level of satisfaction among the patients about exercise and medicine regarding chronic health problems**

Subjects	Testing Variable	Mean	S.D ( $\pm$ )	df	T cal:	T tabu:	Sig.
Patients of chronic diseases	Exercise	4.33	0.431	28	3.897	2.04841	0.004
	Medicine	3.21	0.654				

## DISCUSSION

Based on the analysis, the researcher found out that regular exercise helps one's to prevent cardiac problems. Such emerging concept is supported by Cancelliere, et al., by indicating that the majority of the experts suggest exercise as a basic tool for preventing much cardiovascular health problem [15]. The study of Devos, et al., found that the heart is the most important organ that needs regular exercise to stay healthy [16]. The author further stated that regular exercise also helps to keep arteries and other blood vessels flexible, ensuring smooth blood flow and normal blood pressure.

Obesity is a serious health problem and the majority of the health professional suggest exercise for avoiding this serious health issue. This finding is supported by Sturm that exercise is the basic tool for promoting health and reducing the chances of developing obesity [17]. The findings of the study reveal that exercises, as well as a sporting event, play a key role in controlling the problems of obesity among adults. Therefore their findings are also parallel to the present research findings. The findings of the study conducted by Lofrano-Prado, et al., showed that multi-therapy approach intervention may be more effective than the individual approach of reducing obesity among the children as well as among the adult [18].

Our study found that patients feel more satisfied with exercise for reducing chronic health problems. Such emerging concept is supported by Trost, et al., who indicated that daily exercise helps in strengthening of heart muscles. It helps in maintaining desired cholesterol levels [19]. Daily physical activity reduces one's chances of stroke and the risk of heart disease. Regular exercise lowers blood pressure and improves blood circulation. Exercise helps in the reduction of excess body weight leading to lower blood pressure [19]. The findings of the study revealed that some of the patients felt satisfaction with use of medicine for preventing themselves from chronic health problems. Wilmore, et al., found that proper medication should be used for the prevention and treatment of chronic health problems [20].

## CONCLUSION

After analysis, the researcher arrived at the conclusion that exercise is the sister art of medicine which plays a significant role in preventing different health problems such as heart diseases, hypertension, and obesity.

### Limitations and Recommendations Future Studies

The sample size of this study was small caution should be taken when generalizing the results. Based on the conclusion the researcher recommended that patients, as well as healthy people, may be encouraged to perform daily exercise. Awareness programs may be organized for promoting the level of awareness among the masses about exercise and its benefits. In educational, in medical centers exercise centers may be established.

## DECLARATIONS

### Authors' Contributions

AK conceived of the study, developed the research design, completed data collection, performed statistical analyses, SK contributed to the literature review and the interpretation of the results, and drafted the manuscript; SUK the contributed to the interpretation of the results and helped in drafting the manuscript. All authors have read and approved the final version of the manuscript and agreed with the order of presentation of the authors.

### Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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