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Physical Health Program to Metabolic Syndrome Prevention via Some Psychological, Biochemical and Physical Variables in a Female Sample of 19-22 Years Based Vienna Test System

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Abstract **– The metabolic syndrome (MS) or such called insulin resistance syndrome or syndrome X is a constellation of interconnected physiological, biochemical, clinical and metabolic factors that directly increases the risk of cardiovascular disease, type 2 diabetes mellitus, and all-cause mortality. It is not a disease but a group of characteristics that include obesity, high blood pressure, elevated blood sugar levels and high fat in blood. This work proposed a physical-health program to MS prevention based female samples of 19 to 22 years implementing some blood tests. Several factors that constitute the blood test are represented by hemoglobin, leukocytes and psychological stress. Herein, the experimental research methodology for one experimental group is used for a group of females, for the period from July 17, 2018 to October 18, 2018. It is noticed that any changes occur in the variables resulting changes in the level of hemoglobin, white blood cells and accompanied by psychological stress. On one hand, the test is achieved by implementing particular tests and other psychological measures for each individual of the sample. That occurs by using Vienna Test System (VTS) technique, which is utilized to measure foiling threshold and the endurance of stress and tension by applying tests and measures of verifying the ratio of the bio- chemical status of (hemoglobin and white blood cells). The result has been talked statistically by using SPSS program for social sciences, issue (V24). The researchers conclude that it is probable to protect body from metabolism syndrome by conducting (healthy & psychological) prophylactic program rather than relying on the bio-chemical, psychological and physical changes for the female sample.**

Keywords **– Metabolic Syndrome, Vienna Test System, Physical-Health Program, Prophylactic Programs.**

I. INTRODUCTION

No doubt, health programs play very significant role nowadays in the lives of people. It is noticed that the variety of prophylactic programs have become vital and essential for healthy life in societies [1]. Hence, sport medicine has gained the utmost importance in rehabilitating the individual on psychological and physical levels. For instance, unhealthy individual cannot be integrated in the society whatever skills he or she has because physical fitness is considered as an essential factor to make the individual takes part effectively in the society [2]. Thus, the use of prophylactic programs is one of the crucial factor in medical sciences and these programs consist of sport exercises, kinetic treatment which aims to develop the kinetic range, giving flexibility to joints and strength to tendines, enhance the balance of the movement, jumping exercises, essential balance, fulfillment of dynamic stability [3]. Thus, this work sheds light on the importance of implementing Healthy & Psychological Prophylactic Program to reduce number of psychological, biochemical and physical changes for female sample of 19 to 22 years old. There is indication to statistic significant differences between pre and post-test to the individuals of the sample to side of post-test to number of psychological bio-chemical and physical changes for the implemented female sample.

Sport exercises in healthy and psychological prophylactic program are very significant in developing muscles

and making them in good condition. Philips et al. [18] theorizes that there must be a harmony between the requirements of the activities that should be exist and effect in the means of health preparation, supported by the utmost degree of exercises. Most of stomach exercises in the prophylactic program incline to employ most of the strength of the individual in the sample in order to develop muscles and joints in order to elevate the capability of movement and muscle strength. That is achieved in a way to match with psychological and physical status of the sample in order to fulfill suitable protection. The exercises of the conducted program lead to involve a huge number of movement units accompanied by fast responses to overcome muscular activities [19]. By stretching exercises, individual can increase the speed movement units and strengthening the involved muscles in which the researcher views that the session of prophylactic program includes several of information concerning alleviation from psychological stress and following healthy nutrition [20]. Besides, the researchers clarifies that unhealthy nutrition and abandonment of exercises lead to cause MS accompanies with cardio-vascular diseases. Effectiveness of programs as part of primary prevention demonstrated on the example of cardiovascular diseases and the metabolic syndrome. The Health Technology Assessment (HTA) report is a study, which deals with the primary prevention of cardiovascular diseases. Experts theorizes that 90% of the diseases are product of psychological stress which play main role in elevating the level of cortisol leading to deform bio-chemical interaction. Whereas the increase in the level of cortisol results decrease in the ratio of white blood cells which are responsible for protecting the body from cancer. Furthermore, the researchers find out that the main cause of the increase of blood viscosity (PVC) is attributed to failure of health and psychological prophylactic program, which results to elevate foiling threshold, pressure endurance and stress such symptoms lead to increase heart rate and blood viscosity. Such health problems can increase the risk of hemorrhage or stroke [21].

It is known that there is an increase in the number of those who suffer from MS, which consists of three or more dangerous factors on human health. According to National program of cholesterol, such factors cause hypertension, an increase in triglycerides and decrease in the ratio of positive cholesterol [4 - 6]. The researchers theorize that we can protect the body from MS by preparing healthy and psychological program for those who suffer from this health problem; furthermore, the researcher argue that such program brings back to the MS's patients confidence and psychological stability [7]. For that reason, the researchers attempt to explore the physical and psychological associated with MS and studying the changes occurred on psychological bio-chemical and physical levels (by scrutinizing the psychological stress, white blood cells, hemoglobin, strength, endurance and stretching). So, the work tackles all factors which take part in healing patients of the sample from metabolic syndrome and produce a healthy individual by following healthy and psychological rehabilitation program in field of sport. According to previous studies, the researchers find out that it is important to conduct a study facilitating the process of protecting people from MS, which has negative effect (psychological, bio-chemical and physical) on the patients. Such kinds of study is classified as economical and providing easy solutions to serious health problems associated with negative changes in bio chemical, psychological and physical levels. This work aims to shed light on the level of intense exercises for the adults. The second aim is to clarify the relationship between the various intensities of exercises and MS, which can be the main cause of cardio diseases and diabetes. The significance of the study is to clarify the positive effect of sport exercises and sport psychology on the body performance and physiology. Moreover, the research attempts to identify the easiest instrument to deal with the systematic difficulties concerning MS, and to check how the psychological, biochemical and physical changes has an impact on the implemented female sample.

II. METABOLIC SYNDROME (MS)

Metabolic syndrome is a common metabolic disorder that results from the increasing prevalence of obesity [7, 8]. It is defined as a mixture of health disturbances result weight increase and probable symptoms of heart and arteries diseases as well as the second type of Non-insulin-dependent diabetes mellitus (NIDDM) from which the patient suffers of deficiency of body cells in responding to insulin [9]. In broader sense, such disturbances that make the individual prone to heart diseases and diabetes. These disturbances include hypertension, an increase in the ratio of glucose in blood, high level of triglycerides, high-density lipoprotein (HDL) cholesterol and finally an increase in the circumference of the waist due to the increase of fat.

2.1 *Reasons for the MS*

MS means that number of diseases interrelated because one of them can be the direct or indirect cause of the other. Many opinions attribute MS to different factors. However, the researchers have reviewed number of sources and records containing opinions of different physicians concerning the reason behind the MS. It turns out that there are many factors which cause MS; one of them the resistance of cells to insulin which is responsible for decreasing the level of glucose in blood. So, if the body resists insulin, MS occurs. Moreover, the symptoms of MS is complicated but the research mentions some of them and the most important factors causing it. Such as overweight, genetic reasons, reduction in physical exercises and increase in consuming calories [10] and the increase in the level of uric acid resulted from fructose [11].

2.1.1 *Psychological Stresses*

The word stress is defined as disturbance occurred to an individual that causes emotional or mental tension or pressure as a reaction to what is exerted on the individual. Psychological stress happens when an individual is affected by external factors; for instance, receiving a huge amount of negative information that results emotional tension [12]. When the individual gains tension or exposed to exacerbated feeling of psychological tension resulting imbalance and leading to changes in his or her behavior and personality. So, the psychological stress is considered as a state of psychological pressure or tension making the individual in a state of loss in equilibrium and disturbance in behavior in all field of life. Especially these days life has many complications that we should comply with. According to many medical media, psychological stress has an essential role of causing many age diseases such as heart attack, hypertension and gastrointestinal tract [13]. The researcher views that psychological stress is product of various physiological responses occur to an individual due to external factors causing imbalance on physical or psychological levels.

2.1.2 *White Blood Cells*

White blood cells have very essential role in protecting human body from various types of diseases. They are classified into different types; each type has a certain function to protect body from diseases or resisting certain types of diseases. According to modern studies, scientists notice that the increase of white blood cells with MS. They theorize that the increase of white blood cells and the red blood cells can cause insulin resistance; besides, the number of white blood cells has relationship with the function of Cytokines system the energizer in the body, which can participate in increasing WBC and insulin resistance [14].

2.1.3 *Blood Viscosity*

There are certain measures used to specify the ratio of blood viscosity. Such measures help to study the resistance of the flowing blood in the arteries and veins white functioning to transfer oxygen and food to all the tissues of the body. Also, the level of blood viscosity clarifies the internal connection between the molecules of the blood. So, high viscosity of the blood causes hypertension while decrease in blood viscosity causes hypotension. Besides, temperature is one of the essential factors which affect the amount of blood viscosity; high temperature is inversely proportional to level of blood viscosity while low temperature increases the blood viscosity. The ratio of blood viscosity is connected to plasma viscosity measured by the quantity of water and other components of the molecules. Consequently, the factors which affect the viscosity of the blood is the concentration of protein molecules, plasma and other types of protein existing in blood. However, the factors above, which participate in blood viscosity, have less impact on the body than the effect of hematocrit, i.e. the percentage of the amount of blood cells. It is known that 40% to 54% is the ratio of blood cells in male's blood, while 37% to 45% in female's blood and 36% to 44% for kids [15].

III. Results and Discussion

There are statistically significant differences between the tribal and remote measurement of the members of the research sample for the benefit of telemetry in some psychological, biochemical and physical variables in a female sample aged 19-22 years. Herein, a statistical survey was conducted to record the data for number of people who suffer from a combination of health disorders or such called the metabolic syndrome, one of which is a direct or indirect cause of the other disease. Thus, the causes of infection varied, but when the researchers investigated and heard the views of many doctors, they discovered that there are several factors help the infection like, Insulin resistance refers to reducing the effect of insulin in lowering the level of blood glucose. Insulin resistance is the main component of MS. As a result, obesity reflect a major cause of that by that increases the risk of cardiovascular disease and type 2 diabetes. However, it can be highlighted that the causes of multiple sclerosis are very complex but can be explained in parts with the most important causal factors.

The patients suffer from a lack of cell response to insulin, high blood sugar levels, high-level of triglyceride, low-level of HDL and increased waist circumference due to the fat accumulation [16]. This work held with the help of Iraqi health ministry for two years. A computerized valid and reliable system based Vienna test system (VTS) of psychological assessment and diagnosis is utilized to analyze the collected data of various sport psychology-related constructs, which reflected a significant increase in the number of those who suffer from MS based on our conducted experiment. The VTS is widely used to conduct psychological testing in different sport settings [17]. Whereas, there are comparatively few published work that involved the use of VTS in a sport psychology setting, which reflect a crucial gap in the literature. It is known that the VTS has the potential to provide sport psychology researchers with an alternative assessment tool to augment current measures. Moreover, the VTS contains various test types and diagnostic measures like the alternative tests and measures for specific tools or devices, conducting tests and measures require computer programs, tests require reliable figures on computer programs is rather than traditional drawing them by using pen and paper and many more [16]. The data obtained of measurements and tests, tribal and remote, which were conducted on the sample is shown in Table 1 below.

Table 1. Test results, tribal and remote measurement, and the statistical processes

Variable	Test		Post-test		T-test		Various Significance Level	
					Calculated	Table		
Backbone flexibility of stand (cm)	10,923	4,746	18,385	4,610	7,46	13,917	2,18	moral
Abdominal muscles and thighs Strength	38,77	17,22	47,92	12,91	9,84	11,243	2,18	moral
The threshold of frustration and stress and fatigue	41,7	7,916		7,4057		4,211	00,02	moral
Hemoglobin	13,69	1,37	14,40	2,04		0,87	0,51	NS
White blood cells	10,87	0,47	10,46	0,85		0,26	0,56	NS

*Not significant (NF)

IV. Conclusion

Based on the obtained result, several principles are recommend such as; the adults to invest a minimum of 150 minutes for moderate to strong physical activities. Each session of activity should be 10 minutes or more. Studies refers that physical activity for intervals not less than 10 minutes provides body enhance the health. In addition, it is required to discuss the advantages of sporadic physical activity. Moreover, we need to know whether moderate physical activity has more benefit for individual health!

This experiment specifies the syndrome of metabolism rom the changes occurred in the body and blood. Thus, the results of the study theorizes that the Iraqi adults need to do exercises at least 30 minute per day which is considered 27% of the total physical activities. Besides, there should be 2 minutes moderate to strong activity per day. The study leads to conclusion that should have at least 16 minutes per day for actual physical activity (The Relationship between Sporadic Physical Activity, Physical Activity and Syndrome of Metabolism for Iraqi Adults). We can consider the effecting factors, where the activity of the body is very important for health and protecting body from various types of diseases. In the other words, the increase in body activity has positive effect on enhancing health. If all people practice sport exercises daily, there will be enhancement in the health of all population resulting economy in health care systems.

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