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Problem of weight control

Dr. Feroj Banebhai Sayyed
Associate Professor & Head, Deptartment of Physical Education and Sports, Shri Muktanand College, Gangapur, Chhatrapai Sambhajinagar, Maharashtra, India

Abstract
This article is a theoretical and multidisciplinary perspective on the issue of weight control. The issue has physiological, psychological, and social dimensions, with particular attention to both general health and athletic contexts. It emphasizes that effective weight control is not merely an individual responsibility but a broader societal challenge requiring awareness, education, and sustainable interventions. The study concludes that long-term and safe weight management can be achieved systematically and, in this respect, balanced nutrition, proper training, regulated fluid intake, stress management, and supportive healthcare and social systems while discouraging extreme and unhealthy weight-loss practices. Athletes often attempt to remain in lower weight categories, as differences between weight divisions can be as high as 8-10% of body weight, encouraging practices of rapid weight reduction prior to competitions.

Keywords: Weight control, obesity, lifestyle, nutrition, physical activity, mental health

Introduction

In the contemporary world of competitive sports, weight control has become a major public health concern. Changes in lifestyle, dietary habits, physical activity, and psychological stress are causing imbalance between calorie intake and energy expenditure. This shift is the cause of rising rates of overweight, obesity, underweight conditions, and eating disorders. Body weight management has become a decisive factor in aesthetic sports. Uncontrolled body weight is a major cause of worry for athletes participating in wrestling, boxing, as well as weight-lifting. Excess of poundage is considered as the first enemy in competitions. Generally, heavier weights give advantage to the athletes. When an athlete's weight approaches the immediate upper weight class, they try to be in the lighter category so as to avoid competing in his normal weight class. The difference in the various weight divisions in wrestling, for example, is about 8 to 10% of the body weight.

Causes of Weight Control Problems

1. Unhealthy Dietary Patterns: In the past people consumed

Nowadays, athletes eat highly processed and calorie-dense foods. The modern-day diet consists of fast food, sugary beverages, refined carbohydrates, and excessive fats. They have high energy but low nutritional value.

2. Sedentary Lifestyle

Mechanization has led to reduction in physical activity. Today's desk-based occupations, and digital entertainment has reduced energy expenditure. Sedentary behaviour disturbs metabolic efficiency, causing muscle weakness, and increases weight. Excessive screen time and limited outdoor activities also reduce physical activity.

3. Psychological Stress and Mental Health

Weight gain and weight loss problems are associated with chronic stress. Cortisol, when present in excess amount, adds to abdominal fats. Binge eating and dependence on comfort foods gives rise to obesity. Anxiety and depression may suppress appetite and affect weight issues.

4. Genetic and Biological Factors

Body composition, fat distribution, and metabolic rate are influenced by genetic factors. Thyroid disorders and polycystic ovary syndrome (PCOS), hormonal imbalance also affects weight control efforts.

5. Socio-cultural and Environmental Factors

Social norms, cultural beliefs, and environmental conditions affect weight-related behaviour. Limited access to healthy foods, lack of recreational spaces, and aggressive marketing of unhealthy products lead to poor weight management.

Health Consequences of Poor Weigh Control

1. Physical Health Implications

Obesity is strongly associated with disorders such as coronary heart disease, type 2 diabetes, hypertension, musculoskeletal disorders, and respiratory problems. Overweight causes strain on vital organs, physical endurance and life expectancy. Underweight causes nutritional deficiencies, weakened immune function, osteoporosis, infertility, and delayed growth and development.

2. Psychological and Social Effects

Weight related issues creates low self-esteem, body dissatisfaction, anxiety, and depression. It negatively impacts mental health and social participation. It sometimes leads to eating disorders such as anorexia nervosa and bulimia.

Strategies for Effective Weight Control

1. Balanced Nutrition

Balanced diet is crucial in long-term weight control strategy. It should include whole grains, fruits, vegetables, lean proteins, healthy fats, and adequate hydration. Mindful eating practices is also recommended.

2. Regular Physical Activity

It enhances energy expenditure, improves metabolic health, and supports psychological well-being. Aerobic exercises, strength training, and flexibility exercises provide fitness benefits.

3. Psychological and Behavioral Interventions

Stress management techniques such as meditation, yoga, adequate sleep, and counselling play a vital role in weight control. Behavioral therapy helps individuals identify unhealthy patterns and develop sustainable lifestyle changes.

4. Education and Policy Interventions

Public health education programs, school-based initiatives, and supportive government policies are crucial in promoting healthy lifestyles. Creating environments that encourage physical activity and provide access to nutritious foods can significantly improve population-level weight control.

Conceptual Framework of Weight Control

Weight control is based on energy balance, which refers to calorie intake through food and calorie expenditure through basal metabolism and physical activity. If energy intake exceeds expenditure, more calories are stored as fat causing weight gain. On the other hand, when expenditure exceeds intake, weight loss occurs. There are multiple regulating factors: genetic predisposition, hormonal balance, age, gender, metabolic rate, and lifestyle behaviours. Therefore, it is no possible to explain weight control simply by caloric calculations. Psychological aspects such as stress, emotional eating, and motivation also play a critical role in influencing eating and activity patterns.

There are three proven methods for weight control:

1. Proper training to prevent storage of fat under the skin and in the abdominal cavity;
2. Adequate diet and adjusted fluid intake; and/or
3. Excess weight reduction before the competitions and especially the last 3 to 5 days prior to competition before weighing-in.

The above mentioned three programmes can be elaborated as given below:

1. Proper Training

Normally weight gain is directly proportionate to intake of food. Weight increases when the intake is greater than the energy output. With regard to the three ways, the experience says that the regular, proper training is the proven way to manage extra fat to be accumulated on the body. It depends on the intensity of training and selection of exercises.

2. The Diet and Fluid intake

Proportion of physical exertion and its intensity are crucial factors. Athletes need a good amount of strength and energy to perform the activity. They consume more protein and carbohydrate. Under normal conditions protein has a very limited value for athletes as an energy releasing food. Carbohydrate is the main source of energy. Organism prefers to burn carbohydrates first for energy purposes during muscular activity. Body first utilizes carbohydrates and fat reserves. Once they are exhausted, then the protein of body tissue is consumed for energy. Since the carbohydrates are the great energy producing foods, the athletes have to consume more carbohydrates. But carbohydrate-rich-meals cause weight gain due to fat accumulation. Carbohydrates is transformed into fat when large quantities of carbohydrates are taken in of this quantity. A part of it is stored as glycogen in the liver and muscle tissues for the use of immediate future. The transformation of glycogen into fat takes place only when the glycogen stores are filled. Most of the athletes consume unlimited quantity of carbohydrates due to ignorance or for hefty appearance. The accumulated fat inhibits their performance to a great extent. They prefer not to include fact in the diet which is certainly unnecessary. Though fat makes no contribution to muscular performance, they burn protein. Limited presence of fat in the body is necessary.

The programme of weight reduction should be uniformly extended over 8 to 10 weeks. Sudden reduction adversely affects the performance. This diet programme should contain mainly protein like boiled or grilled chicken, boiled fish with lemon, kabab preparation, about 200 gms of cow-back steak, sheep liver, limited quantity of full boiled eggs, sour fruit juice, a glass of milk without fat and so on. Menu and quantity depend on the volume and intensity of physical load individually. Sour fruits control the sugar quantity (carbohydrates). Common salt is to be used carefully as it makes more athletes thirsty. Control on water intake may increase psychic problems and hinder performance. Controlled consumption of carbohydrates and fluids over an extended period adapts the blood and muscle tissues of athletes. They can efficiently tackle psychic as well as physical load.

The best method of weight control is to avoid consumption of carbohydrates. But it may be harmful. Carbohydrates is stored in liver, muscle and blood tissues in the form of glucose. Blood transports glucose between the storing and working organs. When the body experiences loss of energy, the glucose is supplied to the working and tired muscles from the liver-storage. Sometimes, the required quantity of carbohydrate is not supplied by the liver and in that case the muscles get exhausted and ultimately would cease to work. Therefore, liver-storage must have constant supply of glycogen (carbohydrates) so as to avoid deficiency in case of emergency. The recovery period of the athlete depends on the liver function too.

Modern competitions generally last from 3 to 5 days. Weighing takes place every day. So, the wrestlers have to follow strict diet during the whole period of the tournament. Wrestlers have to work under anaerobic conditions. Energy loss in anaerobic condition is proved to be 13 times higher. Controlling of the carbohydrates means rapid running down of the energy reserves. This loss of energy can be restored with oral consumption of glycogen. When administered orally, it may increase the thirst. A thirsty athlete often faces psychological. Therefore, they inject glucose directly into the blood stream. This method is important wrestlers and boxers have to fight more than one bout due to limited rest in between. There are two methods in terms of adequate physical activity and the control of diet and fluid intake. They are used as preventive measures. But some athletes still feel the need of a last-moment-touch by doing further reduction in the body weight.

3. Fast unnatural weight reduction

Coaches often complain that most of the players approaching training camps are overweight and so the

coaches have very limited options. Secondly, the coaches have limited time disposal to lose their excess weight. Therefore, they are unable to establish their best physical condition during the training programme. Coaches are left with a few choices. They recommend strict fasting without intake of fluid of any kind and losing maximum fluid from the body. This disturbs the normal training programme of the athletes. Also, this kind of irregular physical condition and an unevenness in the weight affects the overall performance.

Athletes are aware of the hardships involved in fast weight reduction method. But only a few wrestlers/boxers remain strict about their diet and exercise programme. Speaking from the Indian context, most sportspersons are unaware of these factors. They play a decisive role in giving the performance in the competitions.

Changes in The Human Body

It is important to study the changes in the human body during such fast and unnatural weight reduction. It is also necessary to see if this method ensure optimum physical efficiency. The coaches look forward to a loss of 1 to 2 Kgs. However, reduction in the range of 5 to 6 Kgs is quite unusual in such a short time. By reducing food and water supplies, loss of weight is accomplished. This is a slow process. It is not possible to accomplish the desired result in a day or an hour before the weighing-in starts. Another drawback is that starvation affects the working capacity and the athletes are not able to tolerate it for long time. As such, sportsman replaces high calorie food by a low-calorie diet. They considered it as a safe option for quite a considerable period. The benefit is that athlete is not hunger bitten and their nervous system is not impaired. This is also true to the fluid intake. Sudden cut of water supply leads to dehydration, which the athletes tolerate for a very short time. The continuous feeling of thirst certainly affects the psychological condition of the athlete-even more than the feeling of hunger and also his working capacity. The fact is that 70% of the body weight is of the fluid in the body. The best alternative in fast reduction method of body weight is to lose the weight mainly by sweating. An athlete also loses through evaporation on the surface of the skin every day. Almost the same amount is released through excretion of urine under normal conditions. This is without considering the condition of perspiration-or excess sweating. They have to compensate this loss of nearly 2 litres. So 200 c.c. of fluid goes in through the solid food. The rest about 1.20 litres -is made up with extra fluids. Perspiration is a natural reaction of a human body to regulate the skin temperature. This phenomenon is accelerated along with rise in temperature. This may be caused by physical activity or external heat. Normal human body temperature is $+36.5^0$ to $+37.5^0$ centigrade. But the skin has lower temperature standing at approximately $+33^0$ centigrade. When the outer temperature reaches $+33^0$c a sportsperson assimilates heat and feels hot. Their physical condition is disturbed following metabolic changes in the body. It causes the loss of working efficiency.

There are over 2 million sweat glands under the surface of the human skin. They help cooling down the skin and the blood circulating through the superficial blood vessels. In order to stimulate sweating, the body must be overheated and to have more perspiration more heating of the body is required. This can be achieved by increasing the physical activity. Doing of physical exertion might bring fatigue to the working muscles. The athletes take advantage of increasing the temperature of the surrounding atmosphere. The application of SAUNA (hot bath) is very common outside India. It can be dry as well as humid.

Due to humid heat the wrestlers experience difficult breathing because the amount of oxygen carried to the lungs and blood is less. It means the heart has to produce an extra effort and the blood vessels and the lungs to face the same difficulty. Extra efforts create strain on the body due to effort of reducing weight. On the contrary, body sweat evaporates rapidly in the dry heat. The skin might look complete dry. Application of palm or a cloth will make us realise how much sweat is eliminated. It is easier to breath and thus the assimilation of oxygen is better in the lungs. This facilitates heart's function. This is the most important feature as considerable changes occur in the blood during forced weight reduction. Physiological studies show that the glands sweat out at the rate of approximately 1.7 litres per hour in $+35^0$ C in dry heat as compared to 3.5 litres in humid heat. This difference is almost double. It means the humid heat helps perspiration to a greater extent causing greater loss of weight, but it is to be noted that it brings more strain on the heart than in the dry heat method. It is hard to say which of the two systems is more effective.

Sweat Elimination and Consumption of Fluid

It is important to study how much amount of sweat can be safely eliminated per day and how much fluid should be consumed to restore balance. The available scientific data shows that a person can release about 10 litres of sweat per day in dry heat of $+40^0$ to $+49^0$C. But excess loss of fluid might result in dehydration which is considered to be a serious state. Loss in plasma volume up to 37% which increases in the viscosity of blood. It shows down the blood circulation. To maintain a normal blood circulation, speed the heart has to work harder. The heart muscles contracts fast; the pulse rate accelerates too. This creates a condition called hypoxia causing weakness and disturbed co-ordination due to tremendous muscular fatigue.

Symptoms of Dehydration

The preceding discussion has dealt with cause of dehydration and how it affects the human organism and on mind. Sometimes an athlete unknowingly crosses the limit and experience the state of dehydration. A determined athlete sometimes tends to work hard in order to reduce few more pounds. It negatively affects health and so study of the symptoms of dehydration assumes importance.

Generally, dehydration starts with a feeling of depression and tiredness. A wrestler finds it difficult to produce great efforts and he or she may not be anxious to win. They lose appetite and thirst and their skin becomes dry. The pulse reaches about 120 per minute at rest while the respiration frequency increases to 44 per minute. They feel sleepy and experience leg trembling. If loss of fluid still continues they get cramps and feels sick and dizzy. Ultimately, they feel feverish. These symptoms are caused by hypoxia. There is a simple remedy to overcome this difficulty. It is recommended to remove a person to a cooler place and the body temperature drops down. All symptoms will then gradually disappear.

Conclusion

The concept of weight control is a multidimensional issue and has dimensions like dietary habits, physical activity levels, psychological factors, genetics, and socio-environmental conditions. Overweight and underweight conditions pose serious challenge in the life of an athlete. Experts recommend holistic and long-term approach which include balanced nutrition, regular physical activity, mental health support, education, and policy measures. Therefore, the aim of sustainable weight control should be overall health and well-being. Weight reduction programme may not affect health condition of the athletes directly. But it certainly disturbs their performance efficiency. It is recommended that the body should grow accustomed to loss of fluid in the tissues and reducing the intake of fluid and salt should be done at a slow even rate. In adults the most advisable result should be a loss of 1 to 2 kgs in case of fast reduction. In planned programme of 8 to 10 weeks, this rate should not be more than 1 to 2 pounds per week. Rapid loss of excess weight, especially in very young athletes, is harmful and should absolutely be avoided.

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