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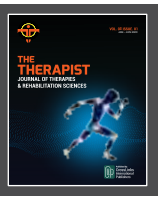

Commentary

Causes, Precautions and Management of Risk Factors Associated with Dehydration among Athletes

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Adequate intake of water is essential concerning the upkeep of body function. Water also hydrates discs between the vertebrae in the spine and foils tendons, ligaments, and muscles from becoming tight and stiff. Insufficient water intake may cause health problems, such as kidney stones and urinary tract infections (UTIs) in women, poor physical and psychological performance, improper salivary gland function, dehydration, etc. This commentary aims to unpin the facts about the causes, precautions, and management of risk factors associated with dehydration among athletes. Previous epidemiological studies have shown that exercise causes sweating and resultant loss of fluids, affecting an athlete physically and psychologically. In addition, previous studies have also demonstrated that dehydration negatively influences performance and causes high body temperature or glycogen use and the consequent reduction in muscle reserves. Likewise, the studies also showed that dehydration caused pain in joints and muscles, slowed the healing rate, and increased the chances of injuries. Based on the conclusion of previous studies, dehydration should be rehabilitated by fulfilling the fluid level in the body by consuming clean water, clear broths, ice pops and sports drinks. In severe conditions, oral rehydration therapy, intravenous (IV), is also suggested. The human body comprises 75% water inside cells, blood vessels and between the cells. Without water, living things cannot survive sufficient intake of water help the body to maintain its functions. Likewise, the body loses water throughout the day, as when we breathe, sweat, urinate, and defecate; the body restocks the water by drinking fluids. The body sometimes leads to a state of dehydration when intake is lower than consumption of the body, which causes headaches, lethargy, and constipation. Dehydration is a common problem concerned with fluid and electrolytes among the elderly. Frequently loss of water causes dehydration. Age-related changes in total body water, thirst perception, renal concentrating ability, and vasopressin effectiveness probably caused dehydration among the elderly. In addition, other health problems such as infection, high-protein tube feedings, cerebral vascular accidents, and medication-related hypodipsia are also associated with ageing and are particularly relevant for elderly patients. Proper patient treatment for dehydration depends

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upon the water deficiency assessment [1]. Dehydration is a state of the body when the body loses more fluids than intake [2, 3]. Insufficient water intake upsets the balance of minerals such as sugar and salt and thus affects the body's functions. Water makes up over two-thirds of the healthy human body. In addition to sweating, vomiting and diarrhea, diuretics (water pills) can result in increased urination, which causes body dehydration [4, 5]. Dehydration may be categorized into three types: hypotonic (primarily a loss of electrolytes such as sodium potassium chloride, calcium, magnesium, phosphate, and bicarbonate are electrolytes in blood and other body fluids that carry an electric charge, hypertonic (An imbalance between water and salt in the body it occurs when the body loses too much water while excessive or too much salt is in the fluid outside the cells) and isotonic (there is an equal loss of water and Sodium, commonly caused by vomiting and diarrhea) [6-9]. There are many reasons for dehydration, such as lack of time, avoiding safe drinking water, travelling, hiking or camping. In addition, diarrhea, vomiting, fever, excessive sweating and increased urination [10, 11]. Dry mouth, absence of tears while crying, sunken eyes and cheeks, no wet diapers for three hours etc., are the main signs & symptoms of dehydration. The main signs and symptoms include dry mouth and tongue, no tears when crying, no wet diapers for three hours, sunken eyes and cheeks, a sunken soft spot on top of the skull and littleness' or irritability [11]. Dehydration problem is commonly found among children. Intravenous (IV) therapy and oral rehydration therapy (ORT) are effective ways of treating dehydration [12]. Intravenous (IV) therapy is a method of managing fluids directly into veins. Thus these procedures enable different substances such as water, medication, blood, or nutrients to access the body quickly through the circulatory system [13]. Likewise, ORT is a method of managing fluids for preventing and preventing patients with diarrhea [14]. Likely it involves drinking water with modest amounts of sugar and salts, specifically Sodium and potassium. A nasogastric tube can also give oral rehydration therapy [15-18]. The nasogastric tube, also called the NG tube, is a medical tube that passes through the patient's nose; thus, for a limited duration, food substances and medications are delivered to the stomach or to draw the implications out [19-21]. The problem of dehydration is also found in players. The dehydration rate is low among the players in badminton despite of moderate sweat rate. Likewise, the badminton players were adequately hydrated during the game, and thus the dehydration attained was low. In addition, badminton did not cause fatigue and significantly increased the prevalence of proteinuria, leukocyturia and erythrocyturia [22]. Proteinuria, also known as albuminuria, is evaluated protein in the urea; it is not a disease that sometimes affects kidneys. A high protein level in urea means that the kidney's glomeruli filter is not working correctly, allowing too much protein to escape into the urine. When the glomeruli are damaged, the condition is called nephritis or glomerulonephritis. Other conditions can lead to nephritis, including hypertension, heart disease and diabetes, as well as different types of kidney disease [23, 24]. Leukocyturia (LU) indicates the presence of leukocytes in urine, and UL may be due to urinary infections or non-infectious factors. In some conditions, such as chronic renal failure, heart failure, and diabetes mellitus, bacteriuria (BU) without LU can be encountered [25]. Erythrocyturia indicates impaired renal function and strongly predicts poor renal outcomes in patients with known renal disease [26]. The problem of dehydration is found among players of aerobic and anaerobic activities [27, 28]. Dehydration negatively impacts cardiovascular stability, and psychological status did not significantly affect anaerobic performance [29, 30]. Muscle cramps are aching, spasmodic, and involuntary skeletal muscle contraction during and after exercise and have no causal metabolic, neurological, or endocrine pathology [31]. Nocturnal or cramps associated with metabolic abnormalities are not considered exercise-associated muscle cramps (EAMC). In addition, the problem of several types of cramps is considered linked with EAMC [32, 33]. Dehydration caused physical exertion. Change in body mass is associated with the volume and intensity of exercise, and thus, awareness among children about dehydration is also helpful in cognitive and physical performance [34]. Similarly, understanding a balanced diet and promising strategies for health is also essential for athletic performance; likewise, the intake of fluids also influences athletes' performance and recovery [35]. Physical training causes dehydration from consuming fewer water and mislaid through sweating, which affects an athlete physically and psychologically [36]. Exercise causes sweating and resultant loss of fluids, affecting an athlete physically and psychologically. In addition, previous studies have also demonstrated that dehydration negatively influences performance and causes high body temperature or glycogen use and the consequent reduction in muscle reserves [37].

CONCLUSIONS

Previous epidemiological studies have shown that exercise results in ingesting fewer drinks and fluids lost through sweating, which affects an athlete physically and psychologically. In addition, previous studies have also demonstrated that dehydration-related decreases in performance may have several causes, such as increased body temperature or glycogen use and the consequent reduction in muscle reserves. Likewise, the studies also showed that dehydration caused pain in joints and muscles, slowed the healing rate, and increased the chances of injuries. Based on the conclusion of previous studies, dehydration should be treated by fulfilling the fluid level in the body by consuming clean water, clear broths, ice pops and sports drinks. In severe conditions, oral rehydration therapy,iintravenous (IV), is also suggested.

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Conflicts of Interest

The authors declare no conflict of interest.

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