INFLUENCE OF BIOLOGICAL FACTORS ON SPORTS PERFORMANCE (FOCUSING FEMALE ATHLETES)

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Abstract
The motivation behind this study was to look at the accessible writing in context of biological constraints influencing sport performance of the females. Extensive measure of literature is accessible about the factors affecting female participation in spots activities yet exceptionally constrained literature is accessible about the impacts of biological factors upon females' sports participation. An endeavor has been made to investigate those basic biological factors confronted by females in their way to participate in sports activities. Suggestions have been advanced for the change of circumstance with reference to female participation in sports. To get considerable positive change the situation, more work is required and it is trusted that this work will open routes for the future analysts.
Key words:*Influence, Biological, Factors, Sports Participation & Female Athletes*

INTRODUCTION

Sports activities play a vital role in the overall development of society and its participant without any discrimination of gender. In this view, sports share equal opportunities and encourage the participation of both male and female but female are facing numerous problems.

Likewise, lack of participation of women in sports depends upon many factors such as state of origin, religious bane, traditions, parents, family, relatives, body images, physical structure and physical fitness. In this regard, body compositions create hindrance in the way of sports participation among female players (Krane*et al.,* 2004). The author further found in his study that size of the body affects sports activities like jumping, smashing in volleyball and shooting in basketball.

Similarly, there lies a mark difference in the body build of mature males and females. When people of both sexes attain maturity, females are found to be less in high then males. They have less body weight in comparison to males and also have lean body weight than males. These kinds of differences are generally found when people become mature (Deflandre et al., 2001). A more prominent number of superior female competitors were under-weight and they much of the time had a serious longing to get thinner when contrasted with non-competitors. Thus they were more at danger of creating dietary issues like anorexia, bulimia and bulimia nervosa (Steinfeldt et al., 2011) whereas, Gilenstam and Henriksson-Larsénshowed that for some donning codes it is vital to keep up a perfect body weight so as to take an interest in exercises such as paddling and horse dashing. In different games such as running and swimming, low body weight is connected with fruitful execution.

Keeping in view the aforementioned brief discussion, the researcher decided to identify the biological factors influencing female sports participation. The results of the study will help the sports organizers, administration and government to develop programs that will promote female sports participation. Similarly, this study shall bring information on the ground regarding the problems and difficulties faced by female athletes with special reference to biological perspective. It will definitely serve an important role in enabling the coach, trainers and sports managers to plan future sports program that could affectively satisfy the needs of the female athletes.

PROBLEM STATEMENT

From the various studies it is concluded by the experts that performance of female players lag behind in comparison to male in the field of sports and athletics. There might be some factors which influence the performance of female athletes. Hence, the researcher conducted a study to focus upon solely the influence of biological factors upon sport performance of female athletes. This research has significance importance as this study is related to sports participation with reference to the biological problems faced by the female athletes. So, Participation of female elite athletes in sports activities and their approach regarding different biological problems is the focal point of this study. Therefore, it carries special significance in the area of sports sciences and physical education.

LITERATURE REVIEW

Body Composition

Male and females differ in respect of their body composition. Female have a lower absolute lean weight while a higher absolute fat weight in comparison to boys. Male have high levels of androgen hormones because of which they have more lean body weight. In the same way, females have high levels of oestrogen hormones, because of which they have height fat weight. Higher amount of essential fats are found in the mature females. There untruths an imprint distinction in the body manufacture of experienced guys and females. At the point when individuals of both genders achieve development, females are observed to be less in high then guys. They have less body weight in examination to guys furthermore have incline body weight then guys. These sorts of contrasts are for the most part found when individuals get to be develop. For the most part it is seen that amid pre-adult period, a female have if not all the more but rather square with weight and stature in correlation to man, which comes about as a result of the early development of the females. After accomplishment of development, different sorts of changes happen in guys also females. Presently male's shoulders get to be more extensive and their hips get to be tight. Their mid-section additionally gets to be more extensive. This sort of changes additionally happens in females. In correlation to male, female's body bones stay less wide. At the belly, hips and thigh, both the genders have square with bigness in estimation.

Body Build

Generally it is seen that during adolescent period, a female have if not more but equal weight and height in comparison to male, which results because of the early maturation of the females. After attainment of maturity, various kinds of changes take place in males as well females. Now male's shoulders become broader and their hips become narrow. Their chest also becomes broader. This kind of changes also takes place in females. In comparison to male, female's body bones remain less wide. At the abdomen, hips and thigh, both the sexes have equal girth in measurement.

Hormones

Females who take an interest in games regularly encounter deferred menarche and this could have both positive and negative outcomes (Greydanus*et al.,* 2004). Menarche prompts an expansion in coursing elevated amounts of estrogen in a female body.Estrogen is an essential hormonal trigger for expanding bone thickness in youth and keeping up bone thickness in the full grown female. There is inadequate proof analyzing the relationship between deferred menarche in athletic females and bone thickness. Deferred menarche can have beneficial outcomes in that the early onset of menarche has been connected with expanded danger of bosom tumor.

Pregnancy

Early studies argued that females should not be involved in sport, due to the deleterious effects of physical exertion on the frequency of menstruation and the fact that the reproductive organs of female can be affected. These beliefs prevailed for years and later evidence began to prove these early beliefs wrong. Recounted proof demonstrates that pregnancy does not hamper execution of ladies who take an interest in game for the duration of their lives. LeUnes and Nation (1991), contend that Irwin, who was a female competitor, won an Olympic decoration in jumping when she was four months pregnant. Another illustration is that of Hays who effectively finished the big showdown rodeo as a bareback rider when she was eight months pregnant. It likewise gives the idea that competitors come back to top frame rather rapidly in the wake of having had kids.

ATP-PC System

Female players can make use of less phosphagen during exercise because they have smaller total skeletal muscles in comparison to male (Kirkendall & Garrett, 1998). Between male and females, functional capacities of ATP-PC can be compared with the help of performance ratios. It is found from the studies that female sprinters perform well in 100 meter and 200 meter races in comparison to male sprinters. Thus, this proves that there does not exist much difference in the manners of concentration of ATP and PC in males and females. Because female have small total muscle mass, because of which their lies total stores of ATP and PC in them.

Aerobic System

There lies a shortage of maximal aerobic power in the females which can range from 15 to 25 percent. This maximal aerobic power is generally termed as VO2 Max. With increase in age, differences in the amount of aerobic power affect the performance of players. This happens because of the fact that there exists very minimal difference in males and females when expressed in relation to body weight. When maximal aerobic power is being expressed in term of lean body mass, the difference between males and females tend to be minimal.A closer relationship exists between maximal aerobic power and the total body weight of the player. In the most physical activities, movement of the total body weight of the player consists of largest part of the work-load, because of which it is said that male players are in an advantageous position than female players in terms of VO2 Max.

Lactic Acid System

After intense exercise, lactic exercise is found to be in lower quantities in the blood of females in comparison to males, which implies that capacity of lactic acid system is found to be less in females' players. Because females have smaller total mass, this is

an important reason for their lower lactic acid capacity. When female participate in those events which use of lactic acid system, females are found to be in a disadvantageous place than the male players. But, female players can take advantage from the training programs which emphasis the lactic acid system (Buford *et al.*, 2007).

Strength

It is believed that in comparison to females, male are physically stronger. Even during the adolescent periods, females are less strong than males. However, this is a myth and misleading. When individual's values are considered for specific areas of body, it is found that females are stronger than males. However, to a very considerable extent. In terms of upper body strength, males are in a better condition than females. In simple words it can be said that muscular strength in females is round about to third of the males.

Among different muscles groups, strength differences vary. In other words, there does not exist strength differences in all the muscle groups in the same degree. Males have stronger chest, arms and shoulders in comparison to males. To the factors like total body weight, lean body mass and height etc. strength in both sexes relate. In males, isokinetic strength at faster speed of movement is significantly greater than females. However, on both isometric and isokinetic knee extensor strength at low speed of movement, there lies not much difference in males and females fiber (McArdle*et al.*, 2010). When performing fast movement, generally white muscle fibers are recruited. From all these findings, it can be concluded that for females, modified strength training performance should be used (Tomline& Wenger, 2001 &Shephard, 1992).

DISCUSSION

The study has shown that various biological factors have potential effects on the performance of female athletes. After examining the literature review, the data revealed that there exist a considerable difference between male and females whether it is body composition, body shape and body building. These changes influence sports participation of female players. Same stance has been found by (Krane*et al.*, 2004) who affirmed that body composition create hindrance in the way of sports participation among female elite players. The author further found in his study that size of the body affects sports activities like jumping, smashing in volleyball and shooting in basketball. Similarly, Kumar (2007) stated that size of the body of player affects S/his performance in certain specific activities, like various kinds of jumps. He further stated that females have wider pelvis and because of this females are required to shift their pelvis more in order to keep the center of gravity over weight bearing

foot. Consequently, involvement of more muscles required which decrease their mechanical efficiency in running (Balyi, 2013).

Research has also confirmed that the physical wellness of females in game has dependably been addressed in view of an assortment of physiological concerns including the menstrual cycle, propagation, harm to bosoms and privates (Ayduk, 2000 &Babiss&Gangwisch, 2009). Studies contended that females ought not to be included in game, because of the injurious impacts of physical effort on the recurrence of feminine cycle and the way that the conceptive organs of female can be influenced (Baily, 2006). It is a quiet period just before fast assault of youth. The body is experiencing formative changes in the skeletal framework, solid framework and engine improvement.

It is found from various studies that in males and females, concentration of adenosine triphosphate and phosphocreatine is quite similar. Various researches have been conducted by experts in order to find out the answer to the question that whether female players can get any advantage from weight training exercises or not. From the studies it has been found that in the adolescent period of age, one can increase strength to a considerable extent with the help of weight training and muscle of the body do not get any kind of effect with respect of their look because of such training (Camire&Trudel, 2010 ; Camire*et al.,* 2011 &Camire*et al.,* 2013) . With this finding, various females' players can make use of weight training without any king of doubt or fear.Another important question which the experts are dealing is to find whether female can attain same levels of strength as males in all the major parts of the body. From these studies, it is found that same endochoronological differences, it is difficult for the females to attain similar level of strength as of males (Burner *et al,* 2011).

CONCLUSION

Keeping in view the brief ideas and approaches of the reputed experts, it has been concluded that various biological factors have significant effects upon female athletes' in connection to their participation in sports. The study has concluded that body composition, muscle structure, menstruation and hormones of females have potential impact on athletes' performance in sports. Research has confirmed that females feel discomfort in running events because ofwider pelvis girdle, which in turn have impact on running events. Research has also declared that due to large body size and shorter size of limbs, the females athletes are difficult to jump in an efficient and graceful manner. Apart from these, it has also been researched that due to low muscle strength, female are difficult to perform activities like pulling and digging.

RECOMMENDATIONS

Consequently, the researcher recommended that:

1. Proper consideration may be given to biological aspects while selecting female athletes for sports events.
2. Similarly, the physical education teachers, coaches and trainers should be kept in mind the biological needs and requirement while designing sports training for female athletes.

RESEARCH HIGHLIGHTS

The physical education teachers, Coaches and sports trainers should realize the contribution of physically fit athletes and are sparing effort to encourage sport program for cultivating the sportsmen and women. In order to achieve high standard/rank in sports, the concerned authorities of sports may consider the factors affecting their fitness as well as sports performance particularly among female folk.

AUTHORS' CONTRIBUTION AND COMPETING INTERESTS

The author is young energetic guy and greatly bellowed to research presently working as lecturer in the Department of Health & Physical Education,Government Girls Degree College, Punjpir, Swabi, Khyber Pakhtunkhwa, Pakistan. The researcher has published many research papers available at national and international journals.

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