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Comparison Of Endurance Running Performance Of Varsity Males With And Without Face Mask-A Field Based Analysis.

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Abstract

Research in Physical Education and Sports is going on since centuries back. Scientists are engaged in unveiling various facets of sports training. Apart from biomechanics, sports psychology, sports training and many others exercise physiology occupies a significant position. Research related to various bodily organs and systems and their relationship with physical activities has been attracting the researchers continuously. So far, the recent studies in the field of Physical Education and Sports Science are concerned a good number of scholars are focusing towards the area of pollution and their impact on the health and fitness of athletes. Some are suggesting for use of face mask during sports training, particularly when the athletes are getting much more exposed to areas with higher air pollution. The use of mask became more prevalent and crucial during the 2020 pandemic. Men started thinking more about the use of face masks, their positive as well as ill effects as a whole. At this juncture the scholar being an athlete by passion and physical educationist by profession settled with the topic comparison of endurance running of varsity males with and without mask. Purpose: The key purpose of the study was to locate the difference on endurance performance running of varsity male with and without face mask. Methodology: To accomplish the study the scholar selected 30 varsity males between the age group 20 to 25. So far, the design of the study it was experimental in nature composed of a pretest followed by a post one. The scholar incorporated Cooper Test i.e. 12 mins run and walk to assess the endurance performance of the subjects. As an ethical part the scholar also prepared a consent form and got filled by the subjects prior to their taking part in the experimentation. Conclusion: From data analysis it was revealed that the average distance covered by the varsity males wearing mask was 2223.30 mts. and the average distance covered by them without mask was 2366.63 mts respectively. The scholar further computed inferential statistics and from which it was discovered that the performance of the boys was significantly better without mask.

Keywords: Endurance, Face Mask

Introduction:

Research in the field of Physical Education and Sports Science is one of the most prominent areas so far explorations and inventions in the areas of science. Technology, social science and humanities are concerned. It is also worth mentioning that sphere of research in the territory of Physical Education and Sports Science is vivid and widely spread encompassing number of interdisciplinary subjects. Among the subjects Exercise Physiology or Sports Physiology is one of the most common. Relationship between Human Physiology and human physical abilities is mostly experimented. Keeping in view the area of experimentation and at the same time to look into something new the scholar planned to conduct the study entitled: Comparison of endurance running performance of varsity males with and without mask.

Running with mask the physiology behind:
When you wear a mask, it acts as a barrier to help prevent respiratory droplets from traveling into the air and onto other people. These droplets go airborne when you sneeze, talk, cough, or raise your voice, which we all do at some point during the day.
And since most cloth masks are breathable, Dr. Joshua Scott, primary care sports medicine physician at Cedars-Sinai Kerlan-Jobe Institute in Los Angeles, says it should not limit oxygen intake or cause a buildup of carbon dioxide.
To keep the likelihood of transmission low, Scott says running in crowded areas is not wise without a mask. He also points out that running in groups or drafting off of other runners can increase the likelihood of more virus exposure. In those situations, runners need to wear a mask in order to minimize the risk.
As with any barrier that may make it harder to breathe, Scott says a mask may make your workout harder than usual. “Like running on an incline or at increased altitude, most healthy people will adapt to this over time,” he said. However, you may fatigue more quickly while wearing the mask.
Scott points out that properly fitting face masks can increase the work of breathing.
s aerobic activity increases, he says wearing a mask while running can affect airflow and may increase your perceived workload and heart rate.

Some literature: Nonetheless, as of March 2021, the World Health Organization (WHO) recommended that individuals not wear masks while exercising as it may limit the ability to breathe.
Face masks have been recommended for preventing the spread of viruses (Chu et al., 2020; Hendrix et al. 2020).
The potential for spread of infections may be exacerbated during exercise due to heavy breathing, especially indoors such as in fitness (Jang et al., 2020; Lendacki et al., 2021) and sport centres (Atrubin et al., 2020).
While some propose the use of a mask may increase carbon dioxide rebreathing, leading to hypercapnic hypoxia and subsequently decreased tissue oxygenation (Chandrasekaran & Fernandes, 2020), others suggest no impact on exercise (Shaw et al., 2020).
An expert narrative review recently concluded wearing face masks had minimal impact on physiological function during exercise (Hopkins et al., 2021).

Purpose: The key purpose of the study was to compare endurance running performance of varsity males with and without mask.
Significance: The author is of the view that the outcomes of the study will be able to establish a knowledge base regarding use of mask during endurance running performance. It will help the coaches to acquire understanding related to use of mask by the athletes its advantages and disadvantages.

Methodology: With respect to methodology at the very outset the scholar randomly selected 30 varsity males as subjects of his study with an average age of 26.6 yrs. After recording the age of the subjects, the scholar estimated the height and body weight of them as personal data with the help of standard equipment. So far, the design of the study it is experimental in nature composed of a pretest followed by a post one. As an ethical part the scholar also prepared a consent form and got filled by the subjects prior to their taking part in the experimentation.
Result and discussion: In this part of the monograph the scholar tried to depict the results derived from the statistical analysis.

Table 1. Descriptive statistics of age height and weight of the subjects.

	N	Minimum	Maximum	Mean	Std. Deviation
AGE yrs	30	22	35	26.60	3.450
HEIGHT(CM)	30	152	183	168.27	6.721
WEIGHT(KG)	30	50	82	62.33	8.172
Valid N (listwise)	30				

Fig. No. 1 Column chart showing the Mean and SD of Age Height and weight

The results of descriptive statistics related to personal data i.e. age height and weight of the subjects have been presented in table No. 1 and the bar diagram showing the vertical spread of the same values are presented in fig. No.1.

Table No. 2 descriptive statistics of endurance running performance with and without mask

	N	Minimum	Maximum	Mean	Std. Deviation
12 MINUTES RUN AND WALK WITHOUT MASK(METER)	30	1700	2950	2366.63	335.729
12 MINUTES RUN AND WALK WITH MASK(METER)	30	1570	2940	2223.30	328.765
Valid N (listwise)	30				

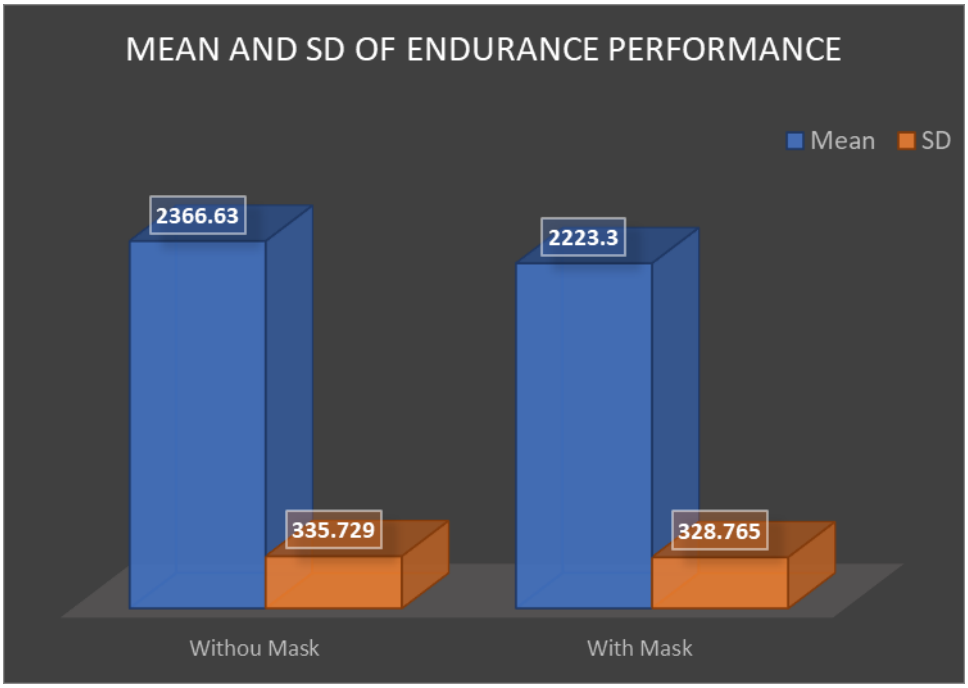

Fig. 3. Mean and SD of endurance performance

From table 2 and the bar diagram presented in fig. no. 2 it is somehow clear that the performance of the subjects vary while running with and without mask. It is also clear that the performance is better without mask. To prove the degree of difference between the means to determine whether the difference is significant or not the scholar further computed paired samples T test.

Table No. 3 Paired Samples Test Result

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	12 MINUTES R AND W W/M (mts) - 12 MINUTES R AND W WO/M (mts)	-143.333	128.257	23.416	-191.225	-95.441	-6.121	29	.000

From the results of paired samples test it is evident that the endurance performance of the subjects without mask is significantly better than that of with mask.

Conclusion:

From the findings of likeminded scholars, it is somehow clear that individuals feel some sort of uneasiness due to the additional mask fitted on the face which probably leads to some physiological as well as psychological changes. WHO also recommends use of mask during exercise is not suitable. Some of the physiological like restricted pulmonary ventilation, carbon dioxide rebreathing, may be hindering performance as well as ease to exercise. From the above discussion it is clear that use of mask though help in protecting athletes from unwarranted pollution and some other biological factors it is better to avoid mask during sports training or performance except in some special cases like epidemic pandemic or environmental conditions.

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