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Dr. Wazir Singh
Associate Professor, Department of Physical Education, M.N.S. Govt. College, Bhiwani, Haryana, India

Corresponding Author:
Dr. Wazir Singh
Associate Professor, Department of Physical Education, M.N.S. Govt. College, Bhiwani, Haryana, India

Tridosha prakriti and sports performance: A qualitative analysis

Dr. Wazir Singh

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Abstract
Purpose of the present study was to investigate inter relationship between tridosha prakriti and sports performance on the basis of quality. Elements of Vata, Pitta and Kapha are present in people, but with differing degrees of predominance. Each Dosha gives certain characteristic qualities to the person, based on which an individual can be classified as belonging to that particular Dosha type. Charaka and Sushruta recognize seven types or categories into which people can be classified, depending on the dominance of the Doshas in their body.

Sample for the present study consisted of 315 (183 Males and 132 female) athletes in the age group of 17 to 25 years who consented/informed to participate. A factorial design 2×7 was used having two independent variables with two levels of game (Team and Individual) and seven levels of prakriti (V, P, K, VP, KV, KP, VPK). Sports performance was studied in terms of T-score. T-scores are standard scores with its mean as 50 and SD as 10 (Guilford & Fruchter, 1981) of % score of average observed composite score obtained through rating the performance of the athlete by two independent observer on focal player observation method. Finding suggests that Pitta prakriti players were found significantly different from all other prakriti types. Thus, it was concluded that the people with pitta prakriti characteristics are not found to be good in sports as compared to other prakriti types.

Keywords: Tridosha prakriti, vata, pitta, kapha

Introduction
According to ayurveda, our basic constitution is determined at the time of conception. This constitution is called Prakriti. In other words Prakriti is a Sanskrit word and means “nature” creativity or “the first creation”. Prakriti is a set of some physical mental sensory, motor and spiritual character of an individual. These are decided at the time of conception of that individual. Therefore, constitution or prakriti is a highly individual thing, since it is decided at the time of conception as the individual develops in the womb. Accordingly, the individual exhibits certain instincts, certain emotional and response patterns depending upon the combination and predominance of tridosha.

At the time of fertilization Vata, Pitta and Kapha determine the constitution of an individual by their permutation and combination which is called "Prakriti" which means the first creation of the cosmos and that is why every human being is a separate entity, and a unique phenomenon. (Svoboda, 1989, 1996; Ghai, 2004) [7, 2].

“Prakriti is specific for each individual. It is said to be determined at the time of conception (in modern terms, by the recombination of zygotic DNA from sperm and ovum) and remains unaltered over the individual’s lifetime. Prakriti specific treatment, including prescription of medications, diet, and lifestyle, is a distinctive feature of Ayurveda and hypothesized that Prakriti has a genetic connotation that could provide a tool for classifying the human population based on broad phenotype clusters” (Patwardhan *et al*., 2005) [5].

Elements of Vata, Pitta and Kapha are present in people, but with differing degrees of predominance Hankey (2005) [9]; Patwardhan & Bodeker, (2008) [4]. The Ayurvedic classification system classifies all individuals into different prakriti types based on relative proportions of each dosha. Prakriti constitutes the bodily constitution, temperament and fundamental form specific for every individual. In Ayurveda the prakriti classification of individual constitution is based on differences in physical, physiological and psychological characteristics, and is independent of racial, ethnic or geographical considerations (Svoboda, 1996) [8].

Methodology

In order to investigate inter relationship between Tridosha prakriti and sports performance among players of different games, a new kind of methodology was required after due consideration and weighing the prose and cones of different methodologies which could be possibly used in order to investigate the problem and come to accurate and fact based conclusions. It was decided that the methodology should involved electrical, electronic, mechanical and observational methods and thus a fusion of these four approaches as method was created on the basis of which the results were computed. On the basis of present data qualitative analysis was made. For this purpose we took Mean + 1SD T-score as sports performance criterion for higher achiever. There were 49 Athletes above the Mean + I SD sports performance score of different prakriti types in different games.

Sample

Sample for the present study consisted of 315 (183 Males and 132 female) athletes in the age group of 17 to 25 years who consented/informed to participate. The athletes represented following games i.e. Cricket, Volleyball and Basketball (team games) and Wrestling, Boxing and Athletics (Individual games). All the subjects belonged to colleges and universities of Haryana only and reported themselves to be in a good health and were free from any physical ailment.

A quantitative measure of the tridosha level (for vata, pitta, and kapha) was obtained by Joshi (2004) [3] by applying an algorithmic heuristic approach to the exhaustive list of qualitative features/factors that are commonly used by Ayurvedic doctors. A knowledge-based concept of worth coefficients and fuzzy multiattribute decision functions are used here for regression modeling. Statistical validation on a large sample shows the accuracy of this study's estimates with statistical confidence level above 90%. Data sources were 280 persons from among the residents and visitors/training students. Brahmvarchas Research Centre and Shantikuj, Hardwar, India.

Patwardhan *et al*., (2005) [5] Evaluated 76 subjects both for their Prakriti and human leucocyte antigen (HLA) DRB1 types. The genomic DNA was extracted using a standard protocol. Subsequently, HLA DRB1 typing was done by low-resolution polymerase chain reaction sequence specific primers and oligonucleotide probes. They further hypothesized that Ayurveda classifies the whole human population in three major constitutions as Vata, Pitta, Kapha, their possible combinations, and their homologous relation to human genetic structure. They observed a reasonable correlation between HLA type and Prakriti type. The complete absence of the HLA DRB1*02 allele in the Vata type and of HLA DRB1*13 in the Kapha type are significant, with X2 = 4.715 and $p<0.05$. HLA DRB1*10 had higher allele frequency in the Kapha type than in the Pitta and Vata types.

Prakriti typology

According to Ayurveda, there are seven body types which are based on the proportion of the three humours in our constitution. A perfect balanced constitution of the three doshas is *Vata, Pitta* and *Kapha* in equal proportion. Such a person is typed as "*Sannipatika*" (Tridoshic). However Charaka believed that mostly the Prakriti is the combination of three doshas with poorly represented third. Such persons are typed as "Dwandavaja" (Dual Doshic). They exhibit action and behaviour as per the characteristics of two predominant doshas e.g. *Vata-Pattik; Vata-Kaphik* and *Kapha-Pattik*. At the same time there may be three "*pure types*" (Mono doshic) having disproportionately represented single doshas; *Vata type, Pitta type* and *Kapha type*. Thus Ayurvedic theory has a hierarchical structure espoused seven types, three dosha and five bhutas to describe the original form of an individual (Charaka). The proportion of V-P-K makes our body and determines our strengths and weaknesses. There are three pure types and four mixed types (Sastri, 2002) [6].

Whether the qualities of being an outstanding athlete are inborn or acquired, lead us to the unending debate on the role of heredity (Tridosha based Priakriti) and environment as prepotent factors of sports performance. Which of these two forces contributes greater to making an athlete outstanding is an impossible question to answer. However it cannot be denied that some inborn characteristics (body build, (Tridosha body types) anthropometric measurement, morphological structure of the muscles, physiological capacities etc.) are prerequisite, while other qualities such as fitness, skill, tactics, strategies are developed through well planned training programmes under very conducive environment.

Result and Discussion

Table 1: Mean Sports Performance in Different Games in Relation to Different Prakriti Types

Prakriti Type	Different Games	Mean	n
V	BB	49.6952	21
	VB	52.7844	9
	BOX	55.2375	8
	ATH	52.5680	10
	WR	58.9225	4
	CKT	53.3733	6
P	BB	36.7613	15
	VB	47.8393	14
	BOX	45.5129	7
	ATH	48.0240	5
	WR	41.2800	13
	CKT	47.7563	16
K	BB	48.5750	6
	VB	46.4350	4
	BOX	57.9183	6
	ATH	52.5542	12
	WR	52.8683	6
	CKT	51.4236	11

VP	BB	61.9600	1
	VB	46.0583	6
	BOX	50.4480	5
	ATH	54.0100	2
	WR	50.2225	4
	CKT	50.2980	5
KV	BB	52.8680	5
	VB	55.6433	3
	BOX	54.9317	18
	ATH	50.7850	8
	WR	60.0086	7
	CKT	51.1414	7
KP	BB	33.5550	4
	VB	50.9800	2
	BOX	57.9167	3
	ATH	59.9367	6
	WR	50.7250	6
	CKT	43.5300	9
VPK	BB	50.5967	3
	VB	49.3169	13
	BOX	55.1400	3
	ATH	49.2738	8
	WR	51.2317	6
	CKT	50.9775	8
N			315

Table 2: Mean & SD's of Different Types of Prakriti on Sports Performance Scores (T-Score)

Prakriti Types	Mean	SD's	n
V	52.45	9.97	58
P	44.00	10.40	70
K	51.96	8.12	45
VP	50.04	9.20	23
KV	54.26	8.06	48
KP	48.85	13.08	30
VPK	50.43	6.16	41

Table 3: Post hoc DRT, showing mean comparisons for main effect of Prakriti type

Prakriti Type	n	Subset		
		1	2	3
P	70	44.0089		
KP	30		48.8557	
VP	23		50.0413	50.0413
VPK	41		50.4324	50.4324
K	45		51.9604	51.9604
V	58		52.4512	52.4512
KV	48			54.2577

Table 4: Showing Multiple Comparisons of Prakriti Types

Prakriti (I)	Prakriti (J)	Mean Difference (I-J)	Significance levels
P	V	-8.44*	.000
	K	-7.95*	.000
	VP	-6.03*	.008
	KV	-10.25*	.000
	KP	-4.85*	.019
	VPK	-6.42*	.001

*.05 level of significance.

For ascertaining which categories differ significantly the Post hoc analysis was applied with LSD (Least Significant Method) method. The above table indicates that performance of Pitta category differs significantly from the rest of all categories (Significance value less than 0.05 in each case). No difference was found among the performance score of other categories.

It is evident from the table 4.9 (Post Hoc) that, Pitta Prakriti (P) athlete's mean (M = 44.01) was lowest among all the Prakriti types and KV (Kapha-Vata) Prakriti athlete's mean (M = 54.26) was highest among all Prakriti types. KP (M = 48.85), VP (M = 50.04), VPK (M = 50.43), K (M = 51.96) and V (M = 52.45) prakriti type athletes fall in the similar group i.e. subset-2. It shows that the sports performance of these prakriti type athletes was of same level. Athletes of VP (M = 50.04), VPK (M = 50.43), K (M = 51.96), V (M = 52.45) and KV (M = 54.26) prakriti fall in the same group i.e. subset-3. The P (M = 44.01) prakriti athletes are only in their group i.e. subset-1. The Duncan multiple comparison (Table 4.10) shows that pitta prakriti athletes were significantly different from the all other prakriti types. Thus it can be said that pitta prakriti athletes were found to be poor performer in sports in comparison to other prakriti types and KV prakriti type athletes were found to be best performer in sports according to the present study.

Qualitative analysis

On the basis of present data qualitative analysis was made. For this purpose we took Mean + 1SD T-score as sports performance criterion for higher achiever. There were 49 Athletes above the Mean + I SD sports performance score of different prakriti types in different games, out of which 16 players (Athletes) of Vata Prakriti, 14 athletes of Kapha-Vata (KV) Prakriti, 8 athletes of Kapha-Pitta (KP) prakriti, 4 of Kapha Prakriti, 4 of Pitta Prakriti, 2 of Vata-Pitta (VP) prakriti and 1 of Vata-Pitta-Kapha (VPK) were found.

The above results indicate that high performing athletes of different games were falling in different Prakriti types. Out of these 49 athletes, 10 were international, 25 were national

medalist, 8 were national participant, 4 were inter-university level athletes and only 2 were of inter college level. It was further found that out of these 49 athletes 36 athletes belong to individual game and rest belong to team game. It clearly indicates that Vata and Kapha-Vata Prakriti players are more appropriate/probables to excel in sports in comparison to other prakriti types. It was further found that out of 16 vata prakriti athletes, maximum athletes belong to boxing (5) (wt. 48-64 kg), athletics (3) (100 mt-400 mt) and basketball (3) which require speed, quick reaction and quick anticipation which are qualities of vata and minimum athletes belong to wrestling. Out of 14 KV athletes maximum belong to boxing (8) (wt. 51-90 $^{+}$kg) and wrestling (4) (wt. 59-66 kg). They were found equally good in strength and speed, where strength is the quality of kapha and speed is the quality of vata. From 8 KP athletes 4 belong to athletics (3throwers and one sprinter). It indicates that throwers require explosive strength which is the quality of kapha. Throwers also require some aggression at the time of throw, which is the quality of pitta. Only one athlete belongs to VPK prakriti, which is a balance of all three Dosha. In Ayurveda VPK prakriti persons were considered healthiest persons in relation to general health but in sports they were not found as good as in general health.

From the qualitative analysis it can be concluded that maximum 30 athletes out of 49 were from V and KV prakriti which shows the importance of vata and kapha in sports. Vata provides speed in movements and kapha provides strength to them. The present study also found that KV prakriti athletes are good in sports. As we know that most of the sports require both speed and strength to perform good in sports. According to Ayurveda speed is the quality of vata and strength is the quality of kapha. Further it can be concluded that Kapha predominance provides biological strength; vigour and stability to the athletes and Vata predominance provides the short bursts of speed and agility to the athletes. KV Prakriti is a combination of Kapha & Vata predominance. So, it can be said that such persons had a combination of strength, stamina, stability (From Kapha) and speed and agility (from Vata predominance) which is required in most of sports.

Findings of the study

Finding suggests that Pitta prakriti players were found significantly different from all other prakriti types. Thus, it was concluded that the people with pitta prakriti characteristics are not found to be good in sports as compared to other prakriti types. It also indicates that athletes of individual games of all prakriti except “Pitta” performed better than their counterpart athletes of team games.

Conclusion

The findings of the present study support the hypothesis with respect to different tridosha Prakriti. Results indicated that there was significant main effect of prakriti type on sport performance. Thus, Prakriti type was found to be a significant source of variation for sports performance among athletes. The maximum mean difference (10.25) for performance was found between P (M= 44.01) and KV (M =54.26) prakriti; and least mean difference (0.39) on performance was found between VP (M =50.04) & VPK (M =50.43) further the results indicated that mean of KV Prakriti (M =54.26) was highest among all the prakriti types on sports performance and mean of P Prakriti (M =44.00) was lowest among the Prakriti types on sports performance. The perusal of mean indicates that the KV Prakriti athletes were better in sports in comparison to Pitta Prakriti. It also indicates that Pitta Prakriti athletes are not as good in sports as all other Prakriti types.

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