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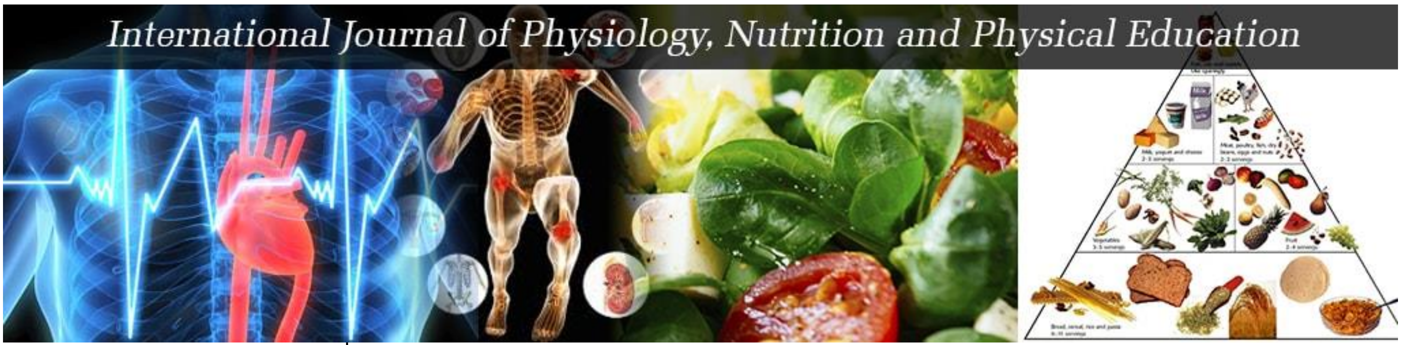

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A study on multidimensional variables of cricket players to develop talent identification model for cricket in Nepal

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Abstract
Background: Identification of talent is most important to enhance the sports performance and multidimensional variables plays vital role to identify. Very few studies have been conducted on talent identification in cricket. The main aim of the study is to identify multidimensional variables of cricket players for developing talent identification model.
Methods: The study is a descriptive study. The convenient sampling method is used to select the subjects. Standard tools and test have been used to collect data of total 200 male cricket players of age (14-17 years).
Results: Results of the study showed that multidimensional variables are very important to develop talent identification model for cricket.
Conclusion: On the basis of result, it is found that seven multidimensional variables should be taken instead of taking too much variables while identifying talent in cricket.

Keywords: multidimensional approach, factor analysis, talent identification, eigen value, variance

Introduction
Identification of most talented individual of various fields has been taking place from its existence and sport was not exception to this. But, the approach and methods towards talent identification have been modernized throughout the years' especially due to ever increasing professionalism, competitiveness to win in various national and international level competitions, to economically use scarce but valuable resources, and broad scale commercialization of sports. Sports authority of the countries, sports organizations, physical educationists and coaches are always in search for identifying most talented and suggesting most objective and scientific criteria to address the issue in early childhood in different sports. Present study endeavors to focus on developing objective, scientific and parsimonious talent identification criteria based on multidimensional approach in cricket.
Sports performance as well as talent is a multi dimensional and dynamic concept this problems cannot be solved unidemsionally, so it becomes crucial to give due importance to the multidimensional and dynamic aspects of sports and talent while developing a talent identification model for any particular sports (Russell, 1989; Williams & Reilly, 2000; Vaeyens *et al*. 2008) [18].
Sport talent identification is the process of recognizing current participants with the potential to become elite players. It entails predicting performance over time by measuring physical, physiological, psychological and social attributes as well as technical abilities, either in isolation or in combination (Williams & Reilly, 2000) [18]. It is well generalized and published in various journals recently, that the sports events are mostly dependent on the Physique of an individual (Rico-Sanz, 1998) [14].
In this study, the researcher intended to find out the required multidimensional variables for cricketers to develop talent identification model.

Rationale of the Study
Sport talent identification is the process of recognizing current participants with the potential to become elite players. Multidimensional variables are broadly used to identify the talent for a

particular sport. So, it is very important to find out multidimensional variables required for cricketers. Hence, in the study, the researcher tries to find out multidimensional variables to develop talent identification model for cricket.

Methods

The study is a descriptive study. The sample consists of 200 junior cricket players from ten different cricket academies (20 from each) of Nepal. The convenient sampling method was used to select the subjects. Standard tools and test were used to collect the data for selected total 31 anththrometric (14), physiological (5), bio-motor (9) and game skill variables (3).

Reliability and Validity: Reliability of the tests and Testers competency was evaluated together by test- retest method and result was obtained by Product Moment Correlation (Gogia 2002; Dubey 2006) [20].

Before starting data collection, the researcher introduced himself and explained the purpose of the study to the players. Then researcher demonstrated the 31 test items of the research. Subjects were instructed to follow the activities for each test and the score was noted on the score card.

Statistical Analysis

Factor analysis was applied on the data obtained on junior cricket players to find out the factors and the variables with highest factor loading to develop a model. Factor analysis is used to measure latent/unobservable construct or constructs by focusing on large number of observable instances.

Results

Table 1: KMO and Bartlett's Test of sphericity when all the factors taken together

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.824
Bartlett's Test of Sphericity	Approx. Chi-Square	5562.992
	Df	465
	Sig.	0.000

Table 1 reported KMO value, along with Bartlett's test. The KMO value (.824) was found more than .05, which concluded that the sample size taken for the present study& for applying factor analysis was sufficient. If the value of KMO test found less than .05 than the null hypothesis might be rejected and the inference could be drawn that number of samples were not sufficient. Further Bartlett's test of sphericity revealed significance value (p value).000 was significant at .05 level of significance, which concluded that identity matrix different to that of the correlation matrix which ascertained the reliability of the model.

Table 2: Total Variance Explained by multidimensional factors

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative%	Total	% of Variance	Cumulative%
1	9.021	29.100	29.100	9.021	29.100	29.100
2	3.870	12.485	41.586	3.870	12.485	41.586
3	2.205	7.114	48.700	2.205	7.114	48.700
4	1.817	5.862	54.561	1.817	5.862	54.561
5	1.364	4.399	58.960	1.364	4.399	58.960
6	1.305	4.211	63.171	1.305	4.211	63.171
7	1.131	3.649	66.819	1.131	3.649	66.819
8	1.120	3.612	70.432	1.120	3.612	70.432
9	.999	3.222	73.654			
10	.892	2.879	76.532			
11	.884	2.851	79.383			
12	.822	2.651	82.035			
13	.773	2.493	84.527			
14	.656	2.118	86.645			
15	.589	1.899	88.544			
16	.546	1.762	90.305			
17	.511	1.647	91.953			
18	.424	1.367	93.319			
19	.371	1.197	94.516			
20	.308	.994	95.510			
21	.288	.930	96.440			
22	.234	.754	97.194			
23	.209	.674	97.868			
24	.192	.619	98.488			
25	.142	.458	98.946			
26	.114	.369	99.315			
27	.105	.340	99.655			
28	.051	.163	99.818			
29	.039	.125	99.943			
30	.017	.053	99.996			
31	.001	.004	100.000			
Extraction Method: Principal Component Analysis.						

The table 2 showed eigenvalues for each variable, the extracted factors and the amount variance these factors explained. As one can see in the table the eigenvalue for first eight factors was more than 1, hence eight factors were retained as their eigenvalue was more than 1. It can also be seen that after rotation the first factor explained 29.100%, second factor 12.485%, third factor 7.114%, fourth factor 5.862%, fifth factor 4.399%, sixth factor explained 4.211%, seventh factor 3.649 and the last eighth factor explained 3.612% of the total variance. Thus all the factors taken together explained 70.432% of the total variance.

Table 3: Component Matrix unrotated factor solution on multidimensional factors

	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Body weight	.928	.068	-.239	-.157	-.101	.025	-.006	.000
Standing Height	.787	.032	.046	.316	-.004	.042	.033	.011
Arm Length	-.322	.762	.141	.050	-.092	.066	.000	.034
Leg Length	.475	.475	.186	.171	-.118	.151	-.106	.236
Upper Arm Girth	.545	.632	.141	.128	.009	-.041	-.093	-.024
Fore Arm Girth	.807	.255	-.068	.027	.108	-.004	.042	-.112
Thigh Girth	.823	.406	-.075	.098	.007	-.042	-.022	-.032
Calf Girth	.606	.376	.228	.303	.040	.033	-.232	.086
Chest Girth	.899	.128	-.123	.083	.036	.016	-.006	-.029
Wrist Diameter	.265	.068	.608	-.358	-.035	.222	.094	.050
Elbow Diameter	.128	-.021	.657	-.410	.093	.082	-.062	.016
Knee Diameter	.534	-.191	.367	-.358	.033	-.080	.083	-.007
Ankle Diameter	.465	-.147	.567	-.432	.017	-.033	-.017	-.011
Body Mass Index	.748	.056	-.364	-.368	-.132	-.027	-.071	-.001
Resting Pulse Rate	.239	.257	.103	.066	.272	-.329	.149	.322
Percent Body Fat	.626	-.253	-.398	-.285	-.135	.202	-.017	-.045
Basal Metabolic Rate	.949	.063	-.155	-.003	-.072	.034	.010	.004
Skeletal Muscle Mass	.909	.154	-.156	-.136	-.100	-.022	-.010	.024
VO2 MAX	.252	.102	.063	.046	.020	-.457	.486	-.033
Hand Grip Strength	-.092	.481	-.033	-.074	.116	-.320	.319	-.355
Standing Broad Jump	-.063	.272	-.114	-.109	.472	.251	.224	-.244
Push Ups	-.138	.314	.222	.396	.225	.473	.089	.034
Fore Arm Plank	.256	-.094	.172	.257	-.076	.249	.596	-.053
Right Leg wall sit test	.497	-.688	.085	.097	.132	.054	.081	-.249
Left Leg wall sit test	.506	-.734	.108	.180	.139	.020	.019	-.148
Speed	-.444	.429	-.059	-.326	-.191	.130	.170	.196
Flexibility	.098	-.058	.256	.134	.352	-.519	-.338	.021
Agility	.325	-.537	.122	.248	-.041	.142	.029	.390
Batting Towards Target	.246	-.173	-.253	-.037	.675	.134	.020	.294
Bowling in Line and Length	.182	-.102	.346	.421	-.342	-.022	-.134	-.430
Throwing and Catching	.122	-.309	.057	.187	-.341	-.259	.293	.440
Extraction Method: Principal Component Analysis.								

Table 3 showed loadings of the 31 variables on the extracted eight different factors. The higher the value of factor loading would be the more the factor will contributes to the variable. Here 31 variables has been divided into eight factors according to the most important variable with similar response in factor one and simultaneously into factor 2, 3,4,5,6,7and eight respectively. Since it resulted from an un-rotated factor solution, consequently some of the variables showed their role exceeding one factor. This problem was sorted out using varimax rotation to get the final corrected rotated solution.

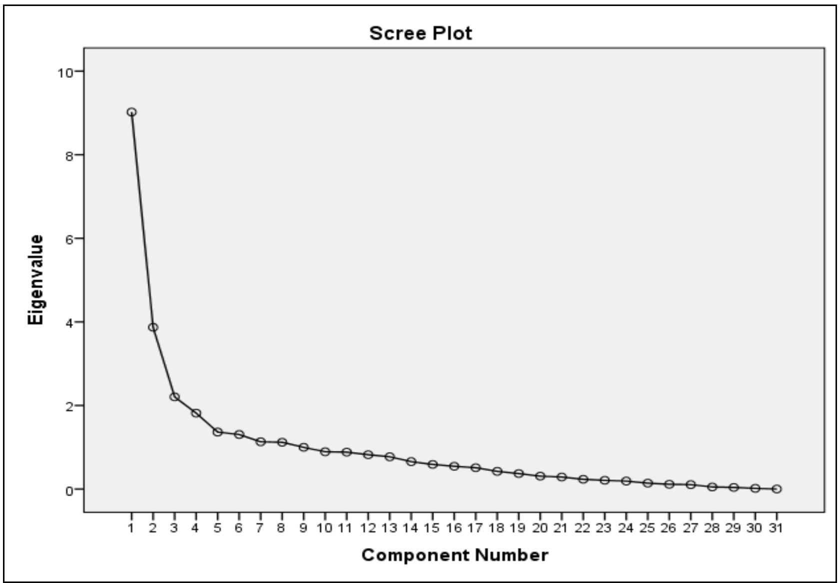

Fig 1: Scree Plot for multidimensional factors

Figure 1 above showed eigenvalues for multidimensional factors plotted on y-axis against the factors on x-axis. Plot showed the clear picture regarding number of variables to be retained; Single factor was retained before elbow bent as having eigenvalue more than 1. Note: curve started flattening after factor eight and also all the factors after eight having eigenvalue below one hence could not be included for the final analysis**.**

Table 4: Rotated Component Matrix for multidimensional factors

	Component							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Body weight	.912	.183	.067	-.245	.023	.079	-.149	-.005
Standing Height	.749	.292	.003	.217	.129	-.087	.046	.068
Arm Length	-.051	-.772	-.015	.287	-.138	-.127	.036	.051
Leg Length	.606	-.300	.127	.315	.163	-.065	.068	-.106
Upper Arm Girth	.708	-.337	.090	.216	-.106	-.127	.199	.089
Fore Arm Girth	.831	.102	.063	.032	-.147	.030	.025	.136
Thigh Girth	.913	-.057	.004	.058	-.059	-.028	.076	.109
Calf Girth	.688	-.084	.092	.332	.056	-.135	.297	-.091
Chest Girth	.894	.212	.013	.002	-.013	.032	.004	.052
Wrist Diameter	.162	-.047	.757	.136	.015	-.036	-.109	-.011
Elbow Diameter	-.006	-.002	.786	.041	-.051	-.016	.107	-.052
Knee Diameter	.344	.275	.597	-.169	.057	.034	.021	.124
Ankle Diameter	.271	.195	.781	-.126	.035	-.037	.080	.034
Body Mass Index	.752	.077	.047	-.472	-.032	.145	-.180	-.065
Resting Pulse Rate	.266	-.146	.066	.117	.161	.297	.333	.334
Percent Body Fat	.548	.343	-.005	-.380	-.016	.145	-.372	-.189
Basal Metabolic Rate	.924	.234	.051	-.098	.060	.028	-.092	.022
Skeletal Muscle Mass	.912	.101	.107	-.198	.042	.051	-.081	.033
VO2 MAX	.210	.023	.031	-.058	.116	.001	.060	.678
Hand Grip Strength	.030	-.341	-.064	-.048	-.381	-.092	.053	.557
Standing Broad Jump	.004	-.080	-.012	.224	-.566	.287	-.134	.146
Push Ups	-.033	-.156	-.029	.739	-.151	.017	-.063	-.096
Fore Arm Plank	.165	.258	.091	.413	.129	-.076	-.415	.360
Right Leg wall sit test	.205	.869	.143	-.036	-.002	-.065	-.055	.036
Left Leg wall sit test	.204	.901	.117	.001	.106	-.049	.034	-.009
Speed	-.270	-.655	.061	-.047	.002	.135	-.292	.015
Flexibility	.030	.148	.082	-.048	.001	.003	.751	.089
Agility	.130	.523	.079	.180	.522	.128	-.038	-.160
Batting Towards Target	.175	.319	-.070	.123	-.126	.726	.128	-.073
Bowling in Line and Length	.127	.247	.029	.187	.028	-.734	.086	-.002
Throwing and Catching	.012	.162	-.028	-.045	.721	.000	-.069	.241
Extraction Method: Principal Component Analysis.								

Table 4 provided final rotated solution after applying varimax rotation, which enables the variables to appear in one factor only. The variables were to be identified in eight factors on the basis of this final rotated solution obtained, in the present problem investigator has identified the variables with loadings >.7 into factor one to seven and 6.78 into factor eight. BW, SH, TG, UAG, FAG, CHG, BMR, SMM were selected into factor one RLWST and LLWST in factor two, ED and AD in factor three, PU in factor four, TC in factor five, BTT and BLL in factor six, flexibility was selected in factor seven and Vo2 Max in factor eight. Owing to the given criteria, criterion variables were grouped in each of the eight factors as shown in table 4.6.6-4.6.12**.**

Identification of variables into different extracted factors

Table 5: Factor 1: Anthropometric factor

S. No.	Items	Loadings
1	Basal Metabolic Rate	.924
2	Thigh Girth	.913
3	Body weight	.912
4	Skeletal Muscle Mass	.912
5	Chest Girth	.894
6	Fore Arm Girth	.831
7	Standing Height	.787
8	Body Mass Index	.748

As presented in table 5 the variable body mass index, thigh girth, fore arm girth, chest girth, Body weight, basal metabolic rate, skeletal muscle mass and standing height were loaded on factor one. The variables extracted on factor one were having significantly higher loading >7.48, thus these variables extracted sufficient variance in explaining the factor termed as "anthropometric factor".

Table 6: Factor 2: Leg strength

S. No.	Items	Loadings
1	Right Leg wall sit test	.869
2	Left Leg wall sit test	.901

The factor 2 in the table 6 above contained variables right leg wall sit test and left leg wall sit test, thus was named as factor "Leg Strength Factor". All the variables loaded on this factor showed sign0ificantly higher factor loading i.e. >.8and thus extracts sufficient variance in explaining the factor.

Table 7: Factor 3: Skeletal diameter

S. No.	Items	Loadings
1	Elbow Diameter	.786
2	Ankle Diameter	.781

The factor 3 in the table 7, above contained variables elbow diameter and ankle diameter that measures joint diameter hence the factor was named as “Skeletal diameter factor”. All the variables loaded on factor grip strength showed significantly higher factor loading i.e. >.780 and thus extracts sufficient variance in explaining the factor.

Table 8: Factor 4: Core strength

S. No.	Items	Loadings
1	Push Ups	.739

The factor 4 in the table 8, above contained variable push up that measures core strength hence the factor was termed as “Core strength factor”. It showed significantly higher factor loading in explaining the factor well.

Table 9: Factor5 & 6: skill factor

S. No.	Items	Loadings
1	Throwing and Catching	.721
2	Batting Towards Target	.726
3	Bowling in Line and Length	-.734

The factor5 & 6 in the table 9, above contained variables batting towards target, bowling in line and length on the and throwing and catching that measure cricket playing ability and basic skill, of cricket, hence was named as “skill factor”. All the variables loaded on game skill variables showed factor loadings i.e. >.7 and thus interpreted the factor well.

Table 10: Factor 7: Flexibility

S. No.	Items	Loadings
1	Flexibility	.751

The factor 7 in the table 10 above contained one variable flexibility, hence was termed as “Flexibility Factor”. The variable loaded >.7 as it explained the factor well.

Table 11: Factor 8: Aerobic power

S. No.	Items	Loadings
1	VO2 MAX	.678

The factor 8 in the table 11 above contained one variable vo2 max hence was termed as “Aerobic power Factor”. The variable was selected into factor based on interpretability as it explained the factor well.

Table 12: Multiple variables extracted based on factor analysis Talent Identification criteria on the basis of Multidimensional Factor

S. No.	Items	Loadings
1	Basal Metabolic Rate	.924
2	Thigh Girth	.913
3	Body weight	.912
4	Skeletal Muscle Mass	.912
5	Left Leg wall sit test	.901
6	Chest Girth	.894
7	Right Leg wall sit test	.869
8	Fore Arm Girth	.831
9	Standing Height	.787
10	Elbow Diameter	.786
11	Ankle Diameter	.781
12	Flexibility	.751
13	Body Mass Index	.748
14	Push Ups	.739
15	Batting Towards Target	.726
16	Throwing and Catching	.721
17	VO2 MAX	.678
18	Bowling in Line and Length	-.734

Table 12 showed finally extracted eighteen different multidimensional characteristics body mass index, fore arm girth, Standing height, , Fore arm girth, Vo2 max, Batting towards target, Bowling in line and length, Throwing and Catching, Left leg Wall sit test, Right Leg Wall sit test, Push up, Elbow diameter, Ankle diameter, Body weight, Chest Girth, Basal metabolic rate, Skeletal muscle mass and Flexibility are most important and sufficient in explaining group characteristics based on multidimensional factors (anthropometrical, bio motor, physiological and game skill) factors. These extracted eighteen variables explained 77.376% of the total variance in defining the latent construct talent. To further reduce the redundancy and to ensure that the results on the variables were consistent, these extracted variables were subjected to the calculation of cronbach’s alpha.

Reliability analysis

Reliability analysis on extracted eighteen variables based on factor analysis, done by Calculating Cronbach’s Alpha, Guttman split half and Spearman brown coefficient, to ascertain whether the findings on the variables were consistent.

Table 13: Reliability analysis on multiple variables extracted based on factor analysis

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Body weight	1920.59	8827.952	.918	.523
Standing Height	1807.70	9270.736	.839	.546
Fore Arm Girth	1952.34	9786.847	.731	.572
Thigh Girth	1926.24	9504.043	.729	.558
Chest Girth	1893.43	9278.377	.843	.547
Elbow Diameter	1969.21	9996.877	.061	.582
Ankle Diameter	1969.03	9965.637	.366	.580
Body Mass Index	1955.88	9746.930	.695	.570
Basal Metabolic Rate	687.86	1686.989	.822	.750
Skeletal Muscle Mass	1929.57	9205.503	.883	.543
VO2 MAX	1911.15	9885.535	.232	.577
Push Up	1933.97	10170.949	-.164	.594
Right Leg wall sit test	1923.28	8753.409	.507	.530
Left Leg wall sit test	1926.43	8609.915	.482	.527
Flexibility	1960.19	9955.358	.071	.580
Batting Towards Target	1971.31	9966.726	.226	.58028

Bowling in Line and Length	1971.58	9968.858	.176	.58041
Throwing and Catching	1971.06	9988.535	.109	.581
Model revealed alpha coefficient of .793 increased from .574				

Investigator had calculated item wise total statistics, to ascertain the influence of each variable on the alpha coefficient. Item total statistics showed that if the items marked in bold (Throwing and Catching, Bowling in line and length, Flexibility, Push up, VO2 max, Basal metabolic rate, Body mass index, Ankle diameter, Elbow diameter, Thigh Girth, Fore arm girth and flexibility) are deleted, it leads to the increase in the value of Cronbach's Alpha, which further increases reliability of the talent identification model and more consistent results among the variables could be found. Thus the results were found more consis tent on final seven (Left and Right Leg wall sit test, standing height, Body weight, Chest girth, Skeletal Muscle Mass and Batting towards target) variables to define the latent construct talent identification in cricket and to develop a most comprehensive and economic multidimensional talent identification model revealed alpha coefficient of .793 increased from.

Table 14: Spearman-brown &Guttman Coefficient

Spearman-Brown Coefficient	0.948
Guttman Split-Half Coefficient	0.921

Further investigator has also calculated split half reliability by dividing total variables into two groups. 'Group a' included body weight, standing height, skeletal muscle mass and right leg wall sit test, whereas 'group b' included left leg wall sit test, batting towards target and chest girth. The value of split-half reliability for Spearman-brown and Guttman coefficient was above .9 revealed high reliability of the talent identification model when (Throwing and Catching, Bowling in line and length, Flexibility, Push up, VO2 max, Basal metabolic rate, Body mass index, Ankle diameter, Elbow diameter, Thigh Girth, Fore arm girth and flexibility) variables were deleted, following seven variables were retained after testing the consistency of results on each variables.

Talent Identification Model Based on Multidimensional factors

Table 15: Talent Identification Model

S. No.	Items
1	Body weight
2	Standing Height
3	Chest Girth
4	Skeletal Muscle Mass
5	Right Leg wall sit test
6	Left Leg wall sit test
7	Batting Towards Target

Table 15 above showed the criteria to identify talent in early age in cricket. It was evident from the model that the criteria for talent identification must be based on multidimensional characteristics ranges from anthropometrical, bio-motor, physiological to skill factors. The subjects showed much consistent results on the variables given in the model. At last factor analysis was administered on the finally selected seven variables given in the above table 15 to test the extent to which the selected variables/factors define the latent construct talent in cricket.

Table 16: Factor analysis on Talent Identification Model in Cricket

Factor-1 Physical Factor	Factor-2 Anthropometric Factor	Factor-3 Skill Factor
Right Leg wall sit test = 0.935	Chest Girth = 0.836	Batting = 0.128
Left Leg wall sit test = 0.952	Body weight = 0.927	
Standing Height = 0.693		
Skeletal Muscle Mass = 0.929		
Variability = 23.12	Variability = 53.62	Variability = 0.38
Total Variance explained by seven variable model=77.139%		

Factor analysis was again conducted on finally selected seven variables and was presented in above table 16 revealed that the developed talent identification model explained 77.139% of the total variance in defining the talent in cricket, which meant if an individual is selected to cricket considering above model of talent identification there is 77.139% probability that individual will rightly be selected as talented, showed validity of the model in defining the talent in cricket. The model suggested that four factors physical (right leg wall sit test, left leg wall sit test, standing height and skeletal muscle mass) 23.12%, anthropometric (Body weight & chest girth) 53.62% and skill factor batting towards target 0.38 extracts sufficient variance in defining talent in cricket and hence should be considered while identifying talent in cricket. It was clearly evident after a comprehensive statistical analysis of 31 different anthropometric, bio-motor, physiological and game skill variables, that the variables can be reduced to a minimum of seven variables extracted into three different physical, anthropometric and game skill factors. Thus were defining the latent construct talent in cricket and suggested that these seven variables to be focused rather than studying too many redundant and insignificant variables.

Discussion

Present research endeavor was focused to develop an objective and most parsimonious multidimensional variables based talent identification criteria in cricket. Investigator had thoroughly studied and statistically analyzed, 31 different anthropometric, physiological, bio-motor and game skill variables and found seven variables were most important in explaining group characteristics based on multidimensional, instead of studying too many number of variables. The model so developed comprehensively included all different measurements i.e. ranging from aerobic power to body composition and thus explains 88.168%. of the total variance in defining talent based on physiological variables.

Total 31 variables were subjected to factor analysis and found that, the variables could be loaded onto eight different factors based on factor loading of the variables on the factor, correlation matrix among the variables and explainability of the factor in mind. In factor one, eight variables body weight, thigh girth, basal metabolic rate, skeletal mucle mass, chest girth, fore arm girth, standing height and body mass index have been retained as these variables showed factor loading of >.7 in explaining 'anthropometric factor'. Two variables LLWST and RLWST were retained in factor two, as the variables showed factor loading of .8 in explaining 'leg strength factor'. Elbow and ankle diameter were clubbed into factor three named as 'skeletal diameter factor' because of their loading on the factor was >.7 thus satisfactorily explained the factor. Single variable push up was taken in factor four "core strength endurance factor" because of having factor loading < .7. Game skill variables clubbed into a factor named as 'skill factor' batting towards the target, bowling in line and length and throwing and catching were extracted based on their ability to interpret the factor, further these variables showed loading >.7 and were correlated to each other and insignificant. Flexibility with loading of .751 was extracted into seventh factor named as 'flexibility'. Finally, vo2 max with loading .678 was extracted into eighth factor "aerobic factor".

Investigator had calculated internal consistency on finally extracted eighteen variables to ascertain that the obtained results were consistent across different variables for an individual. This determines if an individual is good at one variable, then must be good at another, meant if one shows potential on one variable must show potential on another and revealed seven variables body weight, chest girth, standing height, LLWST, RLWST and batting towards the target were most consistent and reliable in identifying talent.

The result of the present study was in line with the study of Asteya (2015) [19] a talent identification model to identify talent in squash and revealed anthropometric variables calf circumference, arm length and hip width, bio-motor variables back strength and flexibility and physiological variable body fat percentage were important to identify squash talent. In the same way (Bril 1980; Volkov & Filin 1983; Koley, Ayra-Petyan 1991; Bishop *et al*., 2016; Koley *et al*., 2012) [1, 17, 0] found that multidimensional variables are important to identify talent. The present study also supports those studies. The developed model will help to identify talent in cricket.

Conclusion

Sport talent identification is the process of recognizing current participants with the potential to become elite players. Physiological variables are broadly used to classify an individual and to identify the talent for a particular sport. So, it is very important to find out multidimensional variables required for cricketers. From result of this study, it was found that multidimensional variables are very important to identify talent in cricket and seven variables included in the model (body weight, standing height, skeletal muscle mass, right leg wall sit test, left leg wall sit test, batting towards target and chest girth) explains 77.139%. of the total variance in defining talent based on multidimensional variables.

Limitations of the Study

The present study consist 200 subjects which is small sample size for generalizing the results. Hence, future study could be on a large sample size. In the present study, convenient sampling method was used which will limit the generalization.

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