Appendix 1

Informed Consent Form for Experimental Research

Professional Course Football Players are the group of individuals for whom this informed consent form is written.

*The title of our research project "***EFFECT OF YOGIC PRACTICES AND PHYSICAL FITNESS TRAINING ON PERFORMANCE OF COLLEGE FOOTBALL PLAYERS***"*

Name of Principal Investigat : Poornabodha V Kadagadakai
Name of the Guide : Dr. Balaram Pradhan

About the Project

This study deals with 'effect of selected yogic practices and physical fitness training on performance of college football players. All Information obtained during the study will be kept Confidential and individual report of the test will be given.

1 Your ward can withdraw from the study at any point of the time unconditionally.
2 In case the Study does cause any adverse effects, the institution is not liable.
3 The Medical officer of the institute will be available during the intervention.

I hereby have understood the above and consent voluntarily to participate in the study.

Name of Participant_____ Signature of Participant _____
Date _____

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.
Name of Researcher/person taking the consent: Poornabodha V Kadagadakai
Signature of Researcher /person taking the consent_____

Date _____
Day/month/year

स्वामी विवेकानन्द योग अनुसंधान संस्थान
Swami Vivekananda Yoga Anusandhāna Samsthāna
(Declared as Deemed-to-be University under Section 3 of the UGC Act, 1956)
Eknath Bhavan, # 19, Gavipuram Circle, Kempegowda Nagar, Bangalore - 560 019
Ph: 080 - 2661 2669, Telefax: 080 - 2660 8645
E-mail: svyasa@svyasa.edu.in Website: www.svyasa.edu.in

RES/IEC-SVYASA/81/2016 June 27, 2016

To,
Dr. Balaram Pradhan
Assisstant Professor,
Division of Yoga and Physical Science,
S-VYASA University,
Bengaluru.

Reference:

"Effect Of Yogic Practices And Physical Fitness Training On Performance Of College Football Players". - Committee Approval of the above mentioned study.

Dr. Balaram Pradhan,

We have received from you the following study related documents vide your letter dated August 16, 2016

1	Project Proposal
2	Informed consent form

Ethics committee meeting was held on April 23, 2016 at 2:00 PM to 5:00 PM at Eknath Bhavan, Bangalore. Above documents were examined and discussed in the meeting. After due consideration, the committee has decided to approve conducting the aforementioned study.

APPROVED
Subramanyam
INSTITUTIONAL ETHICS COMMITTEE
SVYASA, BANGALORE

स्वामी विवेकानन्द योग अनुसंधान संस्थान
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E-mail: svyasa@svyasa.edu.in Website: www.svyasa.edu.in

This is to confirm that neither Dr. Balaram Pradhan nor any staff participating in this study were involved in the voting procedures and decision making.

The Institutional Review Board / Independent Ethics Committee (IEC) are expected to be informed about the progress of the study / any changes in the protocol and patient information / informed consent. The investigators are also expected to submit a copy of the final report to IEC for records.

This approval is valid up to the completion of the study at the site.

Please submit to the IEC, the status report of the study as per the SOPs.

The IEC is organized & operates according to the requirements of ICH-GCP, Indian Council of Medical Research Guidelines & Schedule Y.

Best Wishes,

Subramanya P

Dr. Subramanya P,
Member Secretary,
Institutional Ethics Committee,
S-VYASA, Bangalore.

A2a. Plagiarism check Certificate

URKUND

Urkund Analysis Result

Analysed Document:	Poornabodha V Kadagadakai Thesis v1.docx (D42315259)
Submitted:	10/9/2018 11:31:00 AM
Submitted By:	plagiarismcheck@svyasa.edu.in
Significance:	2 %

Sources included in the report:

PROJECT SETTING.docx (D21256106)
Maruthupandi. J-Thesis. PEd. 11-04-2018.doc (D37484839)
V.Savitha Ph.D Thesis Reg No 675.doc (D38328077)
Yuvaraj_Phd._I_to_V.pdf (D37200085)
Swathipriya K.docx (D32943483)
http://www.kheljournal.com/archives/2015/vol1issue6/PartC/1-6-3.pdf
https://www.ncbi.nlm.nih.gov/pubmed/22592178
https://capmh.biomedcentral.com/articles/10.1186/1753-2000-7-37
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4699502/
http://www.centralcougars.org/pehedr/phyeduindex_files/Skill-related%20components.pdf
http://ijlpr.com/admin/php/uploads/298_pdf.pdf
http://www.svyasa.edu.in/

Instances where selected sources appear:

20

Physical fitness components raw data of Treatment group

		Muscular Strength		Muscular Endurance		Cardiovascular Endurance		BMI		Flexibility	
Sl.No		**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
1	EXP_1	70	75	25	30	98.04	101.35	24.30	23.67	2	5
2	EXP_2	77	80	46	45	113.64	125	19.26	19.61	4	6
3	EXP_3	70	70	50	52	119.05	122.95	20.24	20.57	1	5
4	EXP_4	40	45	22	25	135.14	137.61	19.49	19.20	12	15
5	EXP_5	38	40	33	30	93.17	98.04	15.82	17.36	3	8
6	EXP_6	80	90	25	30	112.78	118.11	25.10	24.38	15	15
7	EXP_7	78	80	30	30	114.5	120	23.59	23.23	14	13
8	EXP_8	75	75	30	35	96.77	102.04	18.17	18.50	8	10
9	EXP_9	65	62	35	35	81.08	92.02	22.76	22.76	16	15
10	EXP_10	60	65	20	25	81.97	83.8	24.68	24.31	3	6
11	EXP_11	50	55	18	20	163.04	168.54	16.90	17.58	6	9
12	EXP_12	40	45	11	15	161.29	164.84	20.69	21.05	9	10
13	EXP_13	55	55	26	30	100	108.7	22.04	22.04	1	5
14	EXP_14	48	50	30	33	150	153.06	17.93	18.65	5	8
15	EXP_15	42	45	25	30	103.45	107.91	23.45	22.79	0	8
16	EXP_16	56	60	20	25	93.17	94.94	19.03	19.38	1	6
17	EXP_17	50	55	29	30	129.31	133.93	17.69	18.59	2	7
18	EXP_18	55	55	50	52	98.04	106.38	20.48	19.82	3	5
19	EXP_19	73	75	21	22	92.02	94.94	21.71	21.36	11	16
20	EXP_20	62	60	20	25	103.45	109.49	19.03	19.38	5	8
21	EXP_21	56	60	25	25	148.51	151.52	20.15	19.84	12	15
22	EXP_22	50	52	25	28	140.19	159.57	20.42	20.76	10	14

23	EXP_23	60	65	25	30	102.74	104.17	16.46	17.51	6	9
24	EXP_24	70	68	20	25	100	107.14	19.47	19.79	4	8
25	EXP_25	85	90	50	55	86.21	89.29	26.53	24.97	8	10
26	EXP_26	70	72	25	30	136.36	144.23	22.99	22.99	7	6
27	EXP_27	70	70	20	25	103.45	100	19.60	19.96	8	7
28	EXP_28	85	90	25	24	81.52	83.8	22.76	23.11	1	6
29	EXP_29	52	55	50	55	93.17	95.54	21.47	21.80	1	5
30	EXP_30	80	90	50	55	102.04	104.9	20.66	20.98	-4	1
31	EXP_31	90	92	25	30	107.91	113.64	20.15	20.76	0	4
32	EXP_32	88	90	25	28	93.17	99.34	22.39	22.05	17	16
33	EXP_33	56	60	25	29	90.36	94.94	19.72	20.80	-5	2
34	EXP_34	73	75	25	25	108.7	116.28	22.41	22.06	3	4
35	EXP_35	60	65	20	25	111.11	117.19	19.72	20.76	6	8
36	EXP_36	58	60	22	25	107.14	111.11	19.15	19.15	3	6
37	EXP_37	54	58	22	26	136.36	140.19	19.15	20.11	5	9
38	EXP_38	78	82	25	28	159.57	170.45	21.97	21.97	4	8
39	EXP_39	62	65	20	25	119.05	120.97	23.03	23.38	3	6
40	EXP_40	60	68	22	25	120	121.95	21.14	21.47	-2	4
41	EXP_41	65	70	20	24	109.49	114.5	21.51	21.87	5	8
	MEAN	**63.02**	**66.07**	**27.93**	**31.00**	**110.43**	**115.37**	**21.29**	**21.46**	**6.05**	**8.98**
	SD	**13.72**	**14.07**	**10.05**	**9.87**	**22.46**	**23.44**	**2.38**	**1.95**	**5.14**	**3.89**

Football Skill components raw data of Treatment group

		Dribbling in sec.		Dribbling scores		Lofted Passing		Shooting		Passing		Juggling in sec.		Juggling in scores	
Sl. No		**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**post**
1	EXP_1	35	32	150	180	100	120	50	80	50	100	8	15	100	120
2	EXP_2	31	30	190	200	150	200	100	120	150	150	7	8	100	100
3	EXP_3	40	35	100	150	330	350	100	130	50	100	4	16	50	120
4	EXP_4	40	38	100	120	120	200	70	100	50	100	4	9	50	100
5	EXP_5	36	33	140	170	150	250	150	170	0	100	11	14	120	120
6	EXP_6	36	32	140	180	120	200	150	170	150	150	5	20	50	120
7	EXP_7	40	34	100	160	140	250	160	190	100	100	60	50	200	180
8	EXP_8	38	31	120	190	140	180	110	120	250	250	2	15	50	120
9	EXP_9	32	30	180	200	180	250	150	150	100	150	7	14	100	120
10	EXP_10	42	38	80	120	130	150	120	120	100	100	12	19	120	120
11	EXP_11	40	40	100	100	120	180	50	100	150	150	10	22	100	140
12	EXP_12	46	43	40	70	280	330	150	150	100	100	9	18	100	120
13	EXP_13	40	36	100	140	330	350	120	120	50	50	23	20	140	120
14	EXP_14	42	40	80	100	160	180	70	100	50	100	4	12	50	120
15	EXP_15	36	35	140	150	170	220	150	150	0	50	8	14	100	120
16	EXP_16	42	38	80	120	100	200	170	120	50	100	4	16	50	120
17	EXP_17	36	37	140	130	130	180	160	160	0	100	5	8	50	100
18	EXP_18	45	40	50	100	160	200	70	100	50	100	12	10	120	100
19	EXP_19	35	35	150	150	170	150	80	100	150	150	40	50	160	180
20	EXP_20	35	32	150	180	130	120	100	90	50	50	5	10	50	100
21	EXP_21	38	33	120	170	140	200	120	130	100	100	12	15	120	120
22	EXP_22	42	37	80	130	160	180	150	150	100	100	10	16	100	120
23	EXP_23	38	34	120	160	160	150	120	150	100	150	4	12	50	120

24	EXP_24	37	35	130	150	120	160	110	120	50	100	5	10	50	100
25	EXP_25	40	36	100	140	350	330	80	100	50	100	32	30	160	140
26	EXP_26	29	28	210	220	150	180	60	100	50	100	9	20	100	120
27	EXP_27	34	31	160	190	120	160	120	120	50	150	8	15	100	120
28	EXP_28	39	35	110	150	150	160	100	100	100	50	31	28	160	140
29	EXP_29	36	33	140	170	330	350	80	100	50	50	10	16	100	120
30	EXP_30	31	29	190	210	190	200	120	120	150	100	32	31	160	140
31	EXP_31	33	28	170	220	150	200	150	150	50	100	16	20	120	100
32	EXP_32	35	31	150	190	120	180	80	100	50	150	15	20	120	100
33	EXP_33	33	28	170	220	160	190	100	120	100	50	20	15	120	120
34	EXP_34	33	30	170	200	130	150	80	80	50	100	10	24	100	140
35	EXP_35	36	31	140	190	120	160	110	120	50	100	8	21	100	140
36	EXP_36	38	33	120	170	150	180	60	90	100	50	9	16	100	120
37	EXP_37	33	30	170	200	120	150	60	100	50	50	12	17	120	120
38	EXP_38	31	30	190	200	130	160	110	120	100	100	11	18	120	120
39	EXP_39	42	39	80	110	180	200	80	100	100	50	10	15	100	120
40	EXP_40	42	41	80	90	150	250	100	120	50	0	8	8	100	100
41	EXP_41	44	42	60	80	180	240	80	100	100	100	8	10	100	100
	MEAN	**37.34**	**34.22**	**126.59**	**157.80**	**165.12**	**204.63**	**106.10**	**120.24**	**79.27**	**100.00**	**12.68**	**17.98**	**101.46**	**120.98**
	SD	**4.16**	**4.09**	**41.63**	**40.90**	**64.19**	**61.04**	**33.98**	**26.12**	**48.70**	**43.30**	**11.46**	**9.19**	**36.92**	**18.41**

Physical fitness components raw data of Control group

		Muscular Strength		Muscular Endurance		Cardiovascular Endurance		BMI		Flexibility	
Sl. No		**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
1	CON_1	60	62	18	20	120.97	129.31	18.94	19.59	5	6
2	CON_2	65	63	16	18	132.74	130.43	20.28	20.96	2	3
3	CON_3	56	60	15	15	125	119.05	19.38	19.71	4	2
4	CON_4	70	65	18	15	121.95	123.97	21.97	21.97	8	8
5	CON_5	64	62	20	20	129.31	129.31	16.92	17.24	7	6
6	CON_6	68	65	21	20	148.51	145.63	21.05	21.05	6	7
7	CON_7	66	65	19	20	148.51	140.19	20.42	20.76	4	5
8	CON_8	62	64	16	18	164.84	151.52	22.05	21.72	4	6
9	CON_9	50	62	17	16	129.31	130.43	22.39	21.72	5	6
10	CON_10	55	60	15	15	98.04	99.34	18.91	19.26	5	4
11	CON_11	45	50	20	20	112.78	113.64	22.66	22.76	5	6
12	CON_12	50	45	22	18	118.11	114.5	22.31	22.68	2	4
13	CON_13	38	40	18	15	104.9	111.94	20.55	21.26	4	3
14	CON_14	42	40	15	15	108.7	104.17	22.77	23.14	8	7
15	CON_15	50	45	18	20	120.97	120	18.34	18.69	7	8
16	CON_16	55	55	20	20	132.74	129.31	20.31	20.66	6	5
17	CON_17	60	55	22	20	125	123.97	19.94	20.28	4	4
18	CON_18	42	45	15	18	121.95	130.43	24.84	23.80	4	6
19	CON_19	44	50	20	16	129.31	131.58	24.61	23.88	5	5
20	CON_20	48	50	18	15	148.51	145.63	19.36	19.72	5	4
21	CON_21	45	45	22	20	148.51	148.51	21.30	20.94	4	6
22	CON_22	50	48	25	22	161.29	153.06	20.66	21.01	6	6
23	CON_23	55	50	20	20	129.31	128.21	20.76	21.45	5	4
24	CON_24	45	50	18	17	98.04	92.02	20.72	20.72	4	6

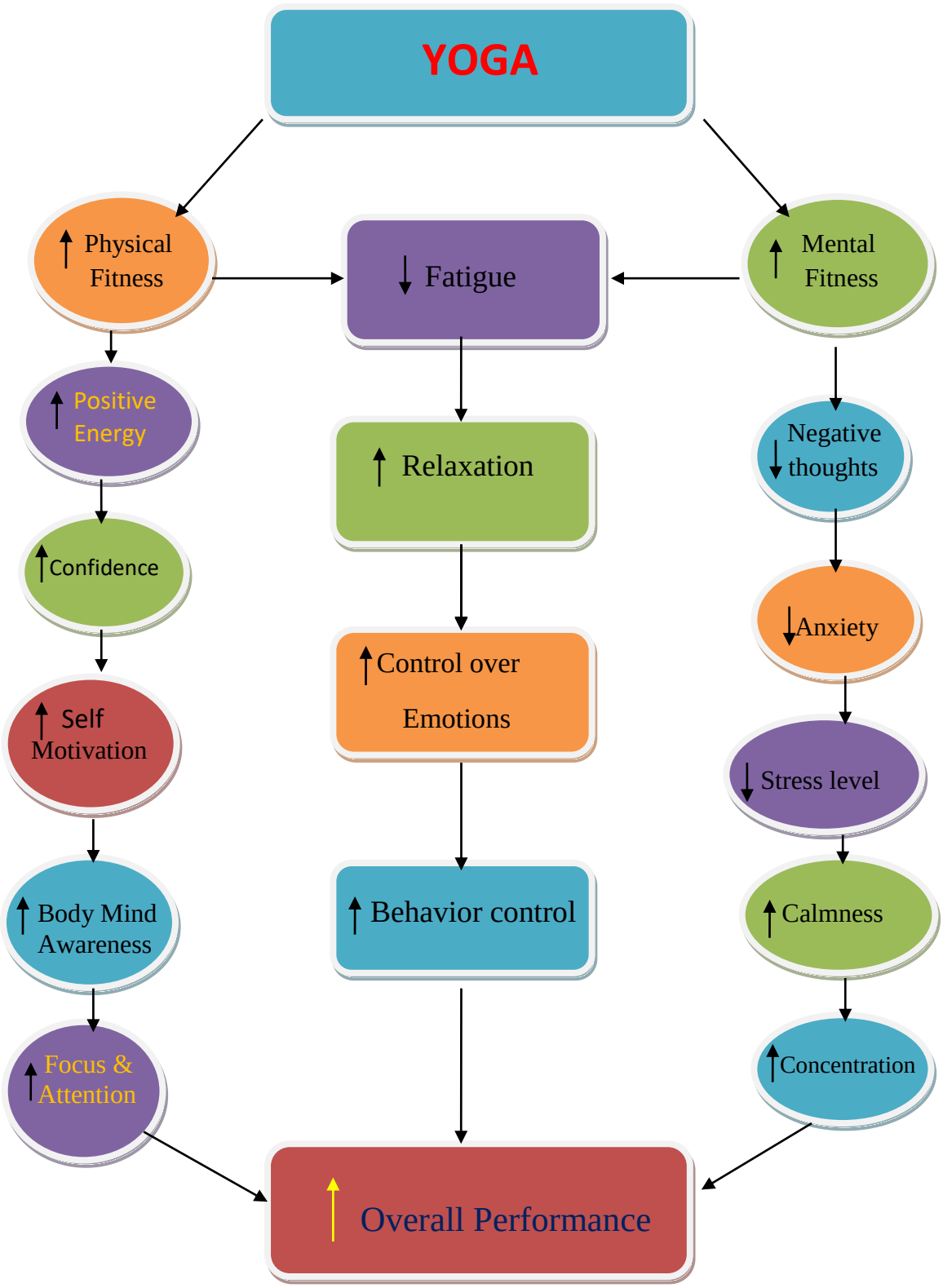
25	CON_25	60	55	19	20	112.78	108.7	20.52	20.52	5	4
26	CON_26	55	50	17	19	118.11	118.11	20.07	20.42	7	6
27	CON_27	50	50	21	20	104.9	107.14	21.01	21.01	6	7
28	CON_28	60	55	25	22	108.7	112.78	21.61	21.97	8	5
29	CON_29	50	55	20	21	127.12	131.58	20.76	21.11	4	4
30	CON_30	77	79	20	25	99.34	104.17	24.77	24.11	8	8
31	CON_31	60	64	22	27	90.36	93.17	24.68	23.95	7	6
32	CON_32	65	65	25	29	119.05	123.97	24.24	23.88	2	5
33	CON_33	52	50	25	26	90.91	93.75	23.18	23.53	3	5
34	CON_34	55	52	25	27	92.59	94.34	23.38	23.38	2	6
35	CON_35	60	65	18	20	110.29	114.5	22.32	22.68	13	13
36	CON_36	62	65	20	23	85.71	87.72	22.23	22.23	6	8
37	CON_37	80	85	22	25	111.11	125	25.18	25.83	3	5
38	CON_38	58	60	30	35	153.06	157.89	22.84	22.84	5	8
39	CON_39	61	65	16	20	130.43	130.43	23.26	22.91	15	15
40	CON_40	75	80	25	25	157.89	163.04	17.86	18.91	4	6
41	CON_41	60	63	25	24	107.14	112.78	20.72	20.38	3	7
	MEAN	**56.33**	**57.02**	**20.57**	**21.00**	**120.00**	**120.62**	**21.93**	**22.04**	**6.21**	**6.81**
	SD	**9.70**	**10.22**	**3.51**	**4.32**	**20.27**	**18.79**	**2.00**	**1.76**	**2.61**	**2.36**

Football Skill components raw data of Control group

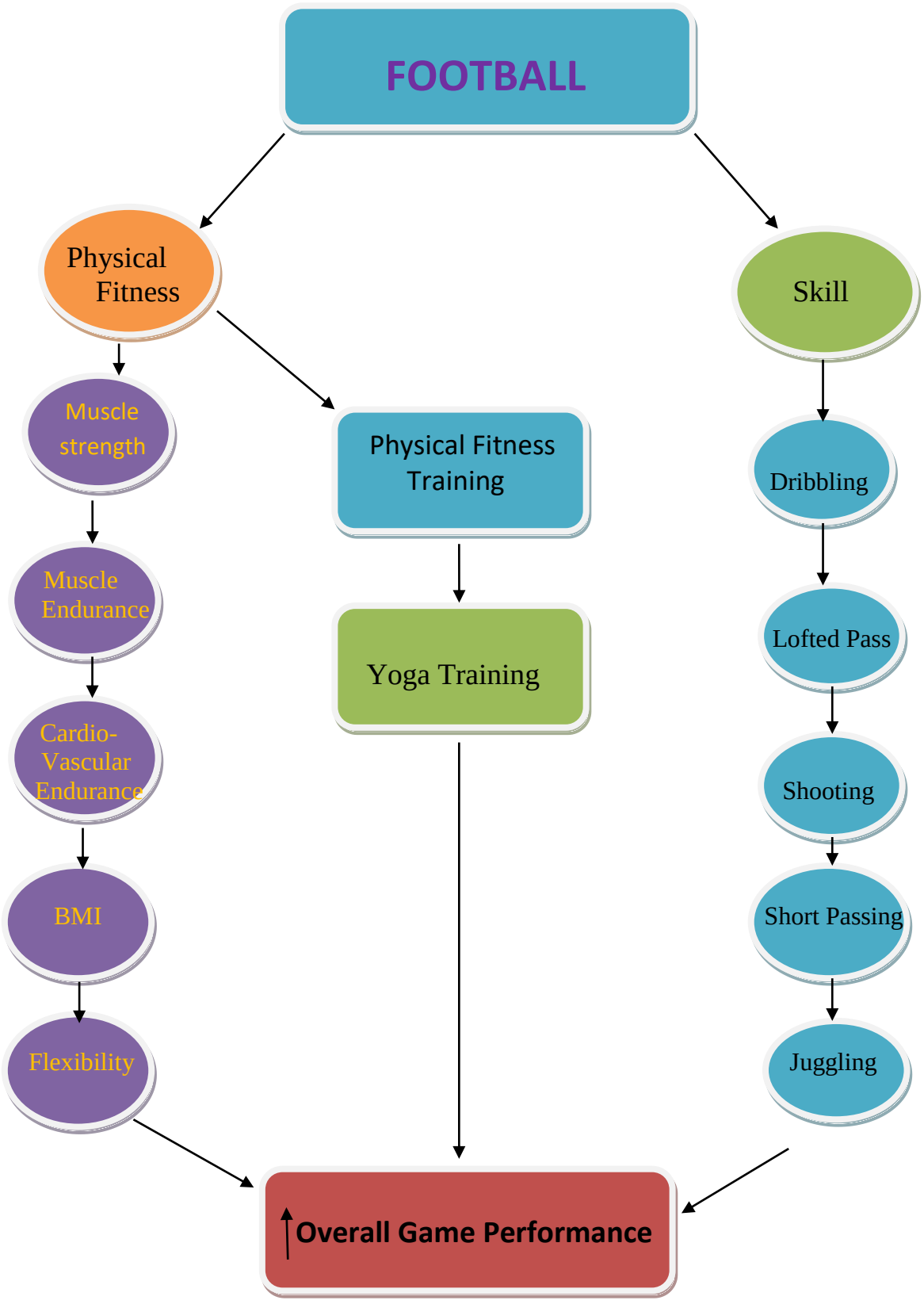
		Dribbling in sec		Dribbling in scores		Lofted Passing		Shooting		Passing		Juggling in sec.		Juggling in scores	
Sl. No		**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**	**Pre**	**Post**
1	CON_1	41	43	90	70	150	160	150	120	100	100	15	8	120	100
2	CON_2	38	40	120	100	180	160	60	80	100	100	16	15	120	120
3	CON_3	43	41	70	90	200	180	50	60	50	50	5	10	50	100
4	CON_4	42	42	80	80	160	180	100	120	150	100	10	12	100	120
5	CON_5	45	44	50	60	150	160	60	80	100	150	7	10	100	100
6	CON_6	42	45	80	50	190	200	160	150	0	100	9	8	100	100
7	CON_7	43	44	70	60	100	120	150	140	100	50	20	16	120	120
8	CON_8	32	38	180	120	80	80	70	80	50	100	14	15	120	120
9	CON_9	46	45	40	50	80	100	120	110	0	50	12	14	120	120
10	CON_10	39	43	110	70	120	100	150	120	100	50	15	20	120	120
11	CON_11	38	37	120	130	100	120	150	120	100	100	15	8	120	100
12	CON_12	40	41	100	90	80	100	60	80	50	100	16	15	120	120
13	CON_13	36	38	140	120	120	100	50	60	50	50	5	10	50	100
14	CON_14	41	40	90	100	100	80	100	80	150	50	10	12	100	120
15	CON_15	35	38	150	120	80	100	60	100	100	100	7	10	100	100
16	CON_16	39	36	110	140	150	130	160	150	0	50	9	8	100	100
17	CON_17	40	38	100	120	110	120	150	120	100	50	20	16	120	120
18	CON_18	38	40	120	100	120	120	70	80	50	100	14	15	120	120
19	CON_19	37	40	130	100	160	150	120	130	0	50	12	14	120	120
20	CON_20	41	42	90	80	170	180	150	150	100	50	15	20	120	120
21	CON_21	42	40	80	100	200	200	100	100	50	100	15	10	120	100
22	CON_22	45	42	50	80	180	200	60	80	100	100	16	12	120	120
23	CON_23	38	40	120	100	160	150	160	160	50	0	5	15	50	120

24	CON_24	39	40	110	100	120	130	150	180	50	0	10	8	100	100
25	CON_25	42	39	80	110	130	140	70	80	100	50	7	5	100	50
26	CON_26	41	38	90	120	160	150	120	140	150	100	9	8	100	100
27	CON_27	38	38	120	120	180	180	150	130	0	50	20	10	120	100
28	CON_28	37	36	130	140	150	160	100	100	50	50	14	12	120	120
29	CON_29	39	40	110	100	170	160	80	100	100	50	12	10	120	100
30	CON_30	34	31	160	190	150	150	50	80	50	100	15	24	120	140
31	CON_31	38	33	120	170	130	160	60	100	50	50	10	16	100	120
32	CON_32	40	36	100	140	140	150	30	80	50	0	9	18	100	120
33	CON_33	35	32	150	180	90	150	60	80	250	250	35	40	160	160
34	CON_34	38	33	120	170	100	100	50	80	100	100	20	20	120	120
35	CON_35	43	42	70	80	150	220	80	90	50	50	2	6	50	100
36	CON_36	37	34	130	160	120	150	60	80	50	100	5	9	50	100
37	CON_37	42	38	80	120	100	200	110	130	100	150	15	21	120	140
38	CON_38	42	36	80	140	150	250	120	150	50	150	18	25	120	140
39	CON_39	40	39	100	110	120	200	110	150	100	100	20	26	120	140
40	CON_40	45	42	50	80	120	150	120	160	50	150	4	18	50	120
41	CON_41	49	45	10	50	140	150	60	80	150	100	5	9	50	100
	MEAN	**40.00**	**39.24**	**100.00**	**107.56**	**135.61**	**149.76**	**98.54**	**108.78**	**76.83**	**81.71**	**12.49**	**14.10**	**103.66**	**113.41**
	SD	**3.44**	**3.56**	**34.35**	**35.55**	**34.14**	**39.02**	**40.53**	**31.56**	**50.12**	**47.11**	**6.19**	**6.68**	**27.09**	**17.83**

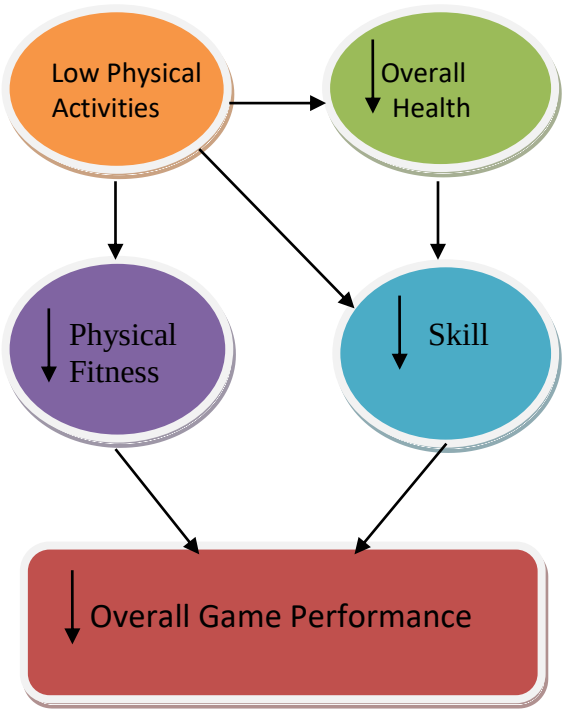
Flow chart of Yoga on Overall Performance



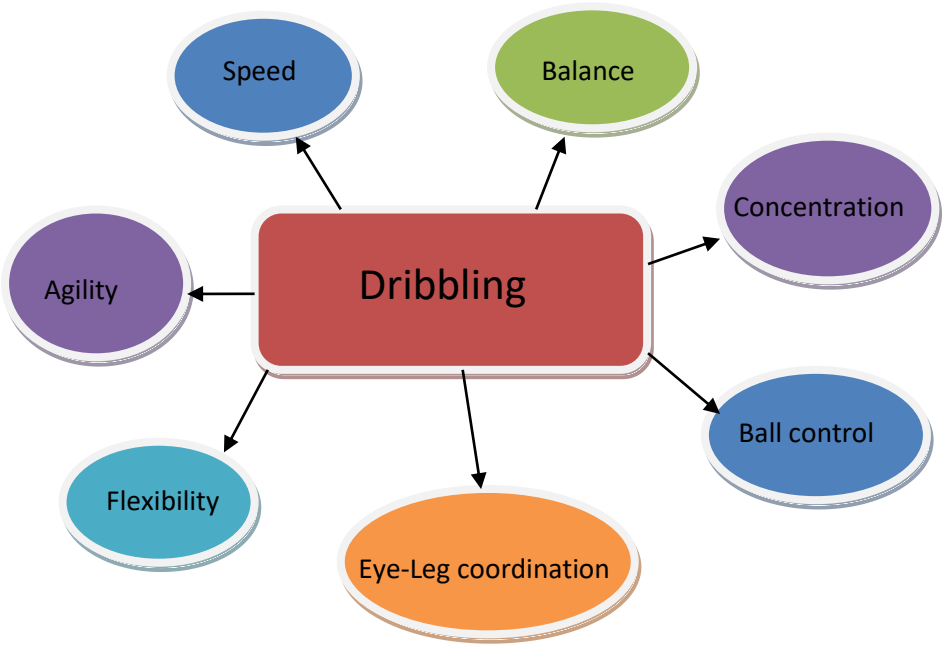
Flow chart of football on performance



Impact of low physical fitness on football players



Football Skills



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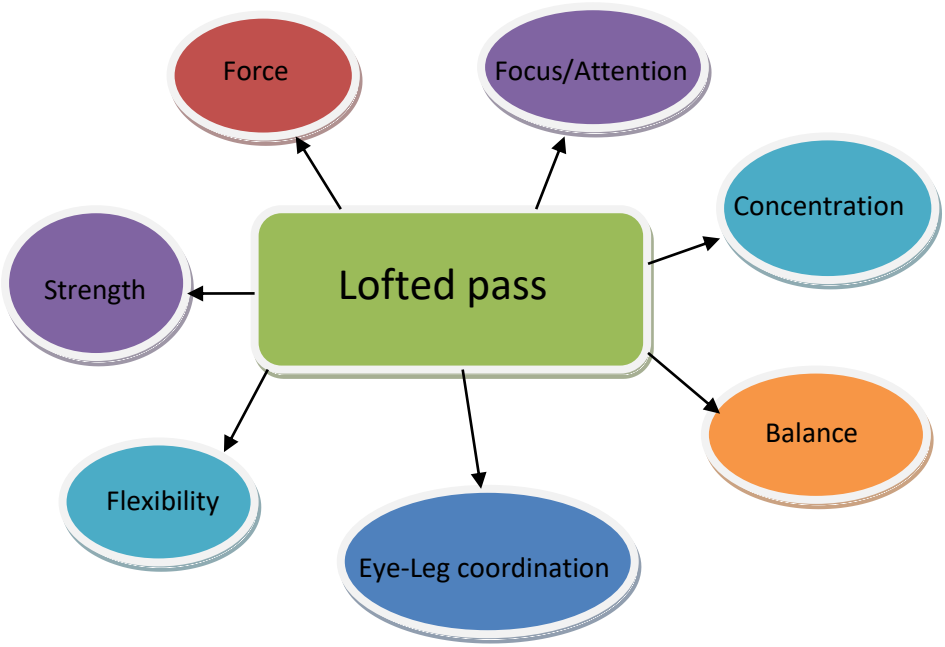

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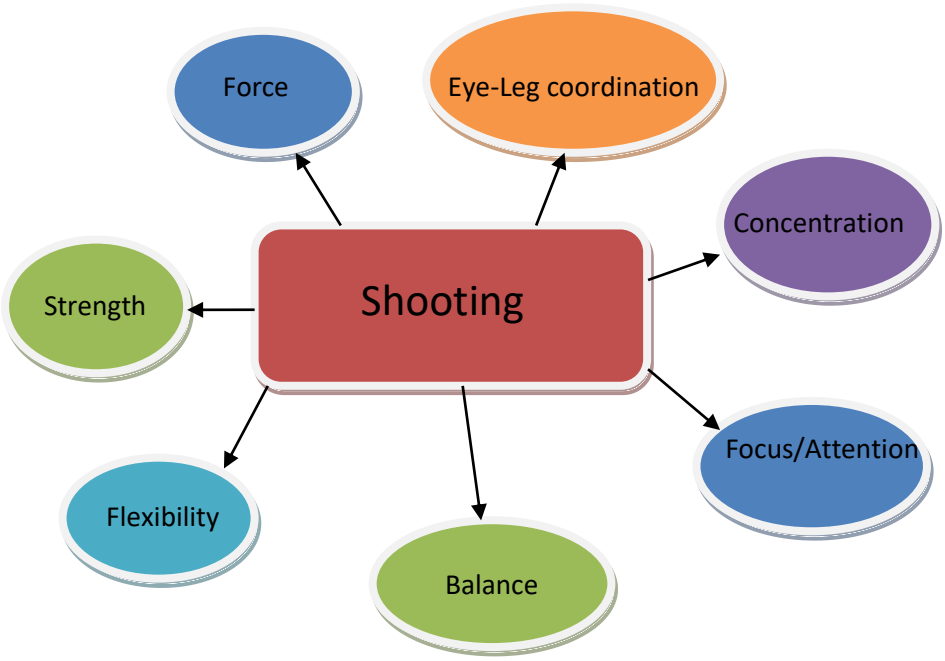

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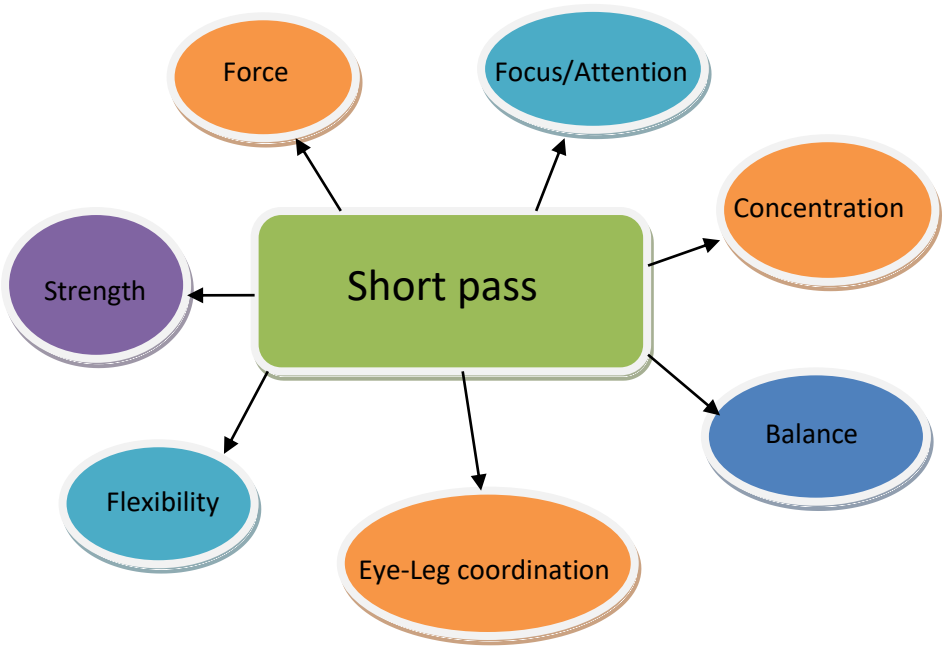
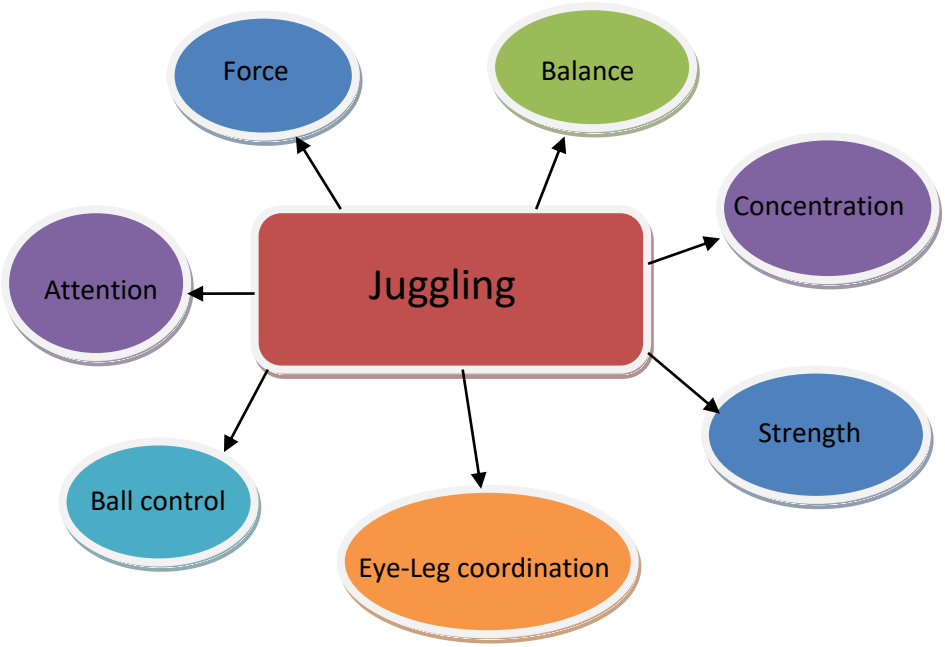


Football Skill



Some of the Physical Fitness Photos

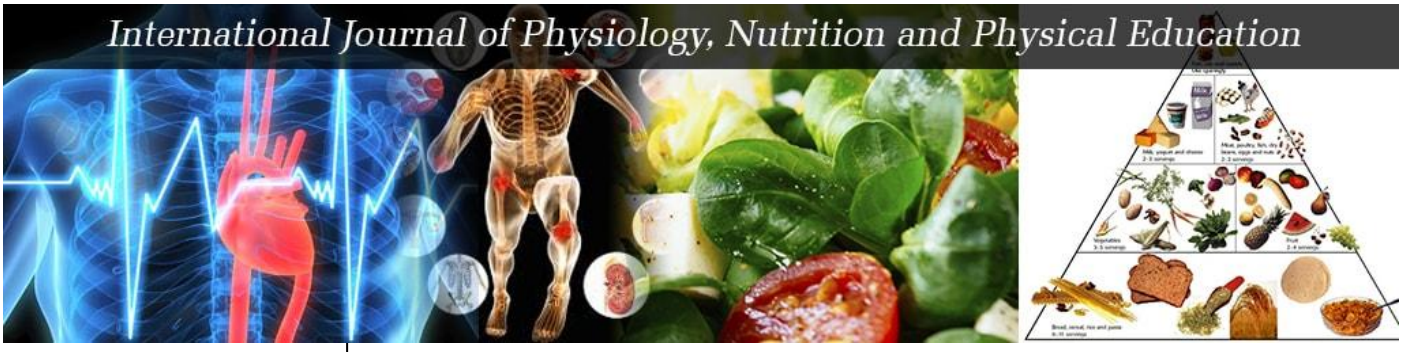

GIT MULTI GYM & FITNESS

Some of the Yogic practice photos


DINESH
4

LIST OF PUBLICATIONS FROM THIS DOCTORAL THESIS

Sl. No.	Publication of papers
1	Association of physical fitness and soccer skills in diploma college soccer players.
2	Study of physical fitness and technical skills on college soccer players playing positions.
3	Effect of fitness training and yogic practices on football passing skill.



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Association of physical fitness and soccer skills in diploma college soccer players

Poornabodha V Kadagadakai and Balaram Pradhan

Abstract
Purpose: To find out the relation between physical fitness components and soccer skills among diploma college soccer players.
Methods: Forty one diploma college soccer players were selected for the study. They were assessed through physical fitness tests on muscle strength (hand grip), Sit-up, Harvard step-up, height and weight, sit and reach. The soccer skill tests dribble, lofted-pass, shooting, short pass, and juggling were evaluated.
Results: The BMI was found negative correlation with dribbling ($r= -0.309$, $p \leq 0.05$).
Conclusion: This study found that, there is a relation between physical fitness components with soccer skills.

Keywords: Soccer, fitness, endurance, BMI, dribbling, passing, correlation

Introduction

Soccer is a multifaceted game, involve the reappearance of various contrasting actions, and quite a few tests are at present being used to evaluate the physical ability of players (Rampinini *et al*., 2007) [1]. For example, aerobic capability can be assessed by means of the Yo-Yo test (Krustrup *et al*., 2003) [2], simple running tests can be used to examine speed, agility and repetitive sprint performance, and countermovement jump can be used to evaluate leg power. Previous studies found that, the players of the best group carry out more short passes in official games than players of worst teams (Rampinini *et al*., 2007) [1]. Also it was observed that, the number of short passes reduces in the subsequent half as compare to initial. These most likely points out towards fatigue, which indicate the deficiency of fitness (Enoka *et al*., 1992) [3].

During the 90 minute game, players run approximately at an average intensity of 10 kilometers comes closer to the anaerobic doorstep (80-90%of maximal heart rate). Within this endurance background, frequent short-tempered activities required including tackling, turning, sprinting, jumping, kicking, heading, balancing against forceful contractions and control over the ball against defensive pressure. In this game situation, all the players are anticipated to be competent of retaining high aerobic fitness and anaerobic power all along excellent agility (Sheppard *et al*., 2006) [5].

Skill is 'the reliable creation of goal-oriented actions, which are cultured and specific to the task' (McMorris, 2004) [6]. The improvement of match performance is normally observed in learning strategic and scientific skills and their assimilation into the game situation (Mitchell *et al*., 2006; Grehaigne *et al*., 2005) [7]. The motor skillfulness required to effectively control, pass, dribble and shoot the ball at goal are basic skills of the soccer player (Ajmal Ali, 2010) [8]. In the game, the player becomes useless if he does not use proper skill at the right time even though he was a skillful player (Knapp, 1977) [9]. An additional impact on skill is the player's capability to uphold their technique as tiredness sets in during different phases of the game (Mohr *et al*., 2003) [10]. Hence, this study was undertaken to know the correlation among fitness components and soccer skills. The previous study (Rampinini *et al*., 2008) [11] suggests that, the greater the fitness level, the lesser the fatigue experienced by the players for a given unconditional intensity, which in turn results in less decline in technical skill ability.

Methods and Subjects

Participants: Forty one diploma college soccer players volunteered for the study. The scheduled was five days a week and about 2 hours duration. The soccer training consisted of general warm up, physical fitness, technical and tactical skills followed by cool down. The institutional Ethical committee protocol was followed and written informed consent was received. Prior to study, the detailed information about the benefits and risk of the investigation was given to the subjects. Five physical fitness tests and five soccer skill tests were included in the study.

Handgrip Strength Test: The subject was asked to hold the dynamometer in one hand. Then, he was instructed to squeeze the dynamometer with all out efforts. Body movements are not allowed. Tester shall record the score. This test measures the hand grip strength of forearm.

Sits up Test: The participant asked to lie down on the mat with the bent knees at right angles. The feet shall be hold by the partner. The fingers interlocked behind the neck. After the 'start' command, the subject raises his upper body from the trunk region towards knee and then returns back on the floor. Successful counts shall be recorded.

Harvard step test: This test is a type of cardiac stress test for finding cardiovascular endurance. The platform or a stool is kept in front of the subject at a height of about 50 cm or 20 inches. On the command 'start', the subject steps up and down on a platform with the rhythm for which metronome instrument was used. The subject will continue the exercise for five minutes. Immediately after exercise, the subject was asked to lie-down on back. After one minute rest, start counting the pulse from one to one and half minute, two to two and half minute and three to three and half minute. Physical efficiency Index = duration of exercise in sec. x 100/2 x sum of pulse during recovery.

Body Composition: The height in meter and weight in kilogram was recorded in the record sheet. The body mass index (BMI) was calculated as per the weight of a person in kilogram divided by height in meter squared.

Sit and Reach Flexibility Test: The subject was asked to sit on the floor with bare feet and instructed to put the feet flat against the closed end of the box through the open end of the box with the knees fully extended. The subject then extends his both arms ahead as far as possible along with the measuring scale which was fixed on the top of the box. The distance covered is measured and recorded.

Dribbling: The subject was asked to dribble the ball around each cone in a zigzag manner. After clearing the final cone, the player has to run along with the ball towards end line as shown in fig. 1. The subject scores 200 points for finishing the test in 30 seconds. 10 additional points shall be scored for every second under and 10 points shall be deducted for every second over 30.

Lofted pass: This test is designed to develop accuracy. Every subject has 4 attempts. The subject was asked to push the ball towards designated marker as shown in the fig. 2. If the ball passes at the center without bouncing, 100 points shall be given. The subject is allowed to attempt with weaker foot and double points shall be given if the attempt is successful. Total 4 attempt scores shall be recorded.

Shooting: This test is useful for measuring accuracy in shooting. As shown in fig. 3, the subject was asked to push the ball towards goal post. Every subject will be given 4 attempts and score shall be recorded within 15 seconds.

Passing: This test promotes the subject to use his feet for passing a short distance. As shown in fig. 4, the subject starts passing the ball to the designated distance and takes next attempt with alternate leg. Each successful pass shall be given 50 points. If the subject able to pass all 4 attempts successfully, he shall be given 50 bonus points.

Juggling: This test measures the skill of controlling the ball off the air. The subject was asked to hold the ball in air as long as possible. If the ball was hold in air for 5 seconds, 50 points shall be given. 6-10 seconds, 100 points shall be given. Further, for each 10 seconds, 20 additional points shall be given and total scores shall be recorded.

Statistical analysis

The data were analyzed by using Pearson product moment correlations to determine the relationship between physical fitness components and soccer skills.

Results

The BMI was found significant negative correlation with dribbling ($r= -0.309$, $p\leq0.05$). However, the results shows positively related to Juggling ($r=.281$, $p=0.075$) as shown in Table 1.

Table 1: Correlation between physical fitness and soccer skills in Diploma football players

	Strength	Sit ups	Index	BMI	flexibility	Dribbling	Lofted Passing	Shooting	Passing
Strength									
Sit ups	.215								
Index	.094	.055							
BMI	.022	.166	-.307						
Flexibility	.100	-.273	-.049	.053					
Dribbling	.173	.174	.299	-.309*	.022				
Lofted Passing	.047	.049	.264	-.217	.114	.239			
Shooting	-.058	-.115	.254	-.248	.107	.126	.102		
Passing	.042	.017	-.221	-.103	-.029	.073	-.222	-.196	
Juggling	-.098	.084	.086	.281	-.125	-.282	-.174	.146	.221

* $p<0.05$

Discussion

In the present research, diploma college soccer players went through physical fitness and soccer skill tests. There is a significant negative moderate correlation was found between body mass index with dribbling. Also, we found that, BMI is significant (borderline) positively correlated with juggling.

The previous findings showed that, Loughborough Soccer Passing Test total performance (LSPT TP) found significant positively correlated with various sprint distance times, Agility, dribbling and Illinois agility test and seems to be more effective factors. Negative correlations were found significantly between LSPT TP and squat jump and counter movement jump. Also, previous findings disclose that, the motor fitness components such as speed, muscular strength endurance and cardiovascular endurance were significantly associated with skill performance (Baljinder Singh *et al*., 2016) [13]. Kicking in soccer is related to the strength and power of the kicking foot, dribbling the ball and tackling are very much associated with speed and agility of the player.

Conclusion

BMI had significant negative correlation with dribbling. Other components showed insignificant. Hence, the further study kept open to find higher correlation in physical fitness and soccer skill tests.

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Study of physical fitness and technical skills on college soccer players playing positions

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Abstract
The aim of this study was to evaluate performance factors of college soccer players as per their playing position. A total of 82 college soccer players were selected and classified into goalkeeper (n=8), defender (n=20), midfielder (n=19) and forward (n=35) positions. All subjects were assessed tests on Handgrip, Sit-up, Harvard step-up, height and weight, sit and reach. The dribble, lofted-pass, shooting, short pass, and juggling tests were for soccer skills. Harvard test score was significantly differing but not in soccer's skills test score based on player position.
Further, it was found significantly greater in midfielders as compare to forward players (P<0.05). Hence, we suggest that, all the players must have proper physical fitness and specific skills need to improve based on player's position to attain better performance.

Keywords: soccer, playing position, soccer skills, physical fitness components

Introduction
Soccer is the game which involves various skills, strategies, tactics and physical elements which are required for better performance. To enhance these conditions, specialized training shall be given to the players. Finding the gap in the opponent's defense and quick judgment for movement are the qualities of forward player. The midfielder requires more agility, short and long passing abilities. A defending player shall be able to jump high and be effective at heading and tackling skill [1]. Endurance is one of the most important factors of football players. Midfielders cover maximum distance while acting as a connection between attack and defense [2]. The somato type components and physical abilities of soccer players were found equal by playing position [3, 4]. In contrast, the size and physical ability were differing according to player's position [5]. This may be due to the different training program were adopted by the previous researcher, need future study to clarifying this limitation.
The previous findings report that, anaerobic exercise capacity higher in the midfielders [6]. But in another study, forwards had significantly higher anaerobic exercise capacity [7, 8]. Also, earlier reports states that, there was no significant difference in the performance on the physical test between the various playing positions except for squat jump among youth soccer players. The central defenders and forwards showed higher values in squat jump and counter movement jump (CMJ) than full back and mid fielders. The full back and midfielders performed well in sprint and Yo-Yo IE2 test but difference were no significant. Agility mean values were reasonably similar in all positional roles [9]. Deepak Shendkar, Shimal H Hamad [10] showed that, there was significant difference between cardiovascular endurance, Explosive strength and speed among the play position of soccer players. The study revealed that there was no significant difference in flexibility and agility between the positions of the soccer players.
Overall soccer skills influence by the anaerobic capacity based on the above finding. This controversial issue has greater implications on soccer performance. Dribbling, shooting, passing and juggling had similar score based on playing position [11]. Another study shows that, defender had stronger long distance kick power (Lee *et al*. (2013) [12]. The recent study found that, dribbling skill was significantly differ compare to other players (Joo & Seo, 2016) [7].
These variations recommend that, the influencing element shall not be only the degree of difference in physical training based on position. Earlier findings have no significant difference in bodily trained ability by position. The soccer players usually follow regular workout schedule to a certain extent without proper practice of specific exercises for particular positions. In this regard, additional investigation shall be useful to develop considerable bodily skills in soccer player's classification by their playing positions.

Methods
Subjects
The study was incorporated for 82 college football players; eight goalkeepers, twenty defenders, nineteen midfielders, and thirty five forwards selected for the study. Table 1 shows the physical characteristics of subjects.

Table 1: The physical fitness components and related tests

Sl. No	Variable	Training	Test	Criterion Measures
1	Muscular strength	Push-ups /Sand Training	Hand Grip Dynamometer	Kilograms
2	Muscular Endurance	Pull ups / Squat thrust	Sit ups (Bent knees)	Counts
3	Cardiovascular Endurance	Circuit training	Harvard step test	Fitness Index (T_e*100/H_b*2)
4	Body Composition		BMI	Formula
5	Flexibility	Rhythmic exercise	Sit and reach	Centimeters

Handgrip Strength Test
The subject was asked to hold the dynamometer in one hand. Then, he was instructed to squeeze the dynamometer with all out efforts. Body movements are not allowed. Tester shall record the score. This test measures the hand grip strength of forearm.

Sits up Test
The participant asked to lie down on the mat with the bent knees at right angles. The feet shall be hold by the partner. The fingers interlocked behind the neck. After the 'start' command, the subject raises his upper body from the trunk region towards knee and then returns back on the floor. Successful counts shall be recorded.

Harvard step test
This test is a type of cardiac stress test for finding cardiovascular endurance. The platform or a stool is kept in front of the subject at a height of about 50 cm or 20 inches. On the command 'start', the subject steps up and down on a platform with the rhythm for which metronome instrument was used. The subject will continue the exercise for five minutes. Immediately after exercise, the subject was asked to lie-down on back. After one minute rest, start counting the pulse from one to one and half minute, two to two and half minute and three to three and half minute. Physical efficiency Index = duration of exercise in sec. x 100/2 x sum of pulse during recovery.

Body Composition
The height in meter and weight in kilogram was recorded in the record sheet. The body mass index (BMI) was calculated as per the weight of a person in kilogram divided by height in meter squared.

Sit and Reach Flexibility Test
The subject was asked to sit on the floor with bare feet and instructed to put the feet flat against the closed end of the box through the open end of the box with the knees fully extended. The subject then extends his both arms ahead as far as possible along with the measuring scale which was fixed on the top of the box. The distance covered is measured and recorded.
Bobby Charlton soccer skill tests were used for the present soccer skill analysis as shown in Table-2.

Table 2: Football skills and Bobby Charlton's soccer sports tests.

Sl. No	Variable	Test	Criterion Measures
1	Dribbling	Ball control at pace	Seconds
2	Lofted Pass	Accuracy pass	Scores
3	Shooting	Shooting accuracy	Scores
4	Short Passing	Passing over short distance	Scores
5	Juggling	Ball control in air	Seconds

Dribbling
The subject was asked to dribble the ball around each cone in a zigzag manner. After clearing the final cone, the player has to run along with the ball towards end line as shown in fig. 1. The subject scores 200 points for finishing the test in 30 seconds. 10 additional points shall be scored for every second under and 10 points shall be deducted for every second over 30.

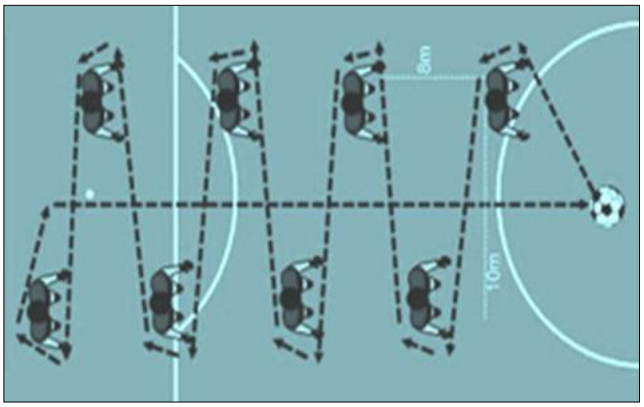

Fig 1: Dribbling test

Lofted pass

This test is designed to develop accuracy. Every subject has 4 attempts. The subject was asked to push the ball towards designated marker as shown in the fig. 2. If the ball passes at the center without bouncing, 100 points shall be given. The subject is allowed to attempt with weaker foot and double points shall be given if the attempt is successful. Total 4 attempt scores shall be recorded.

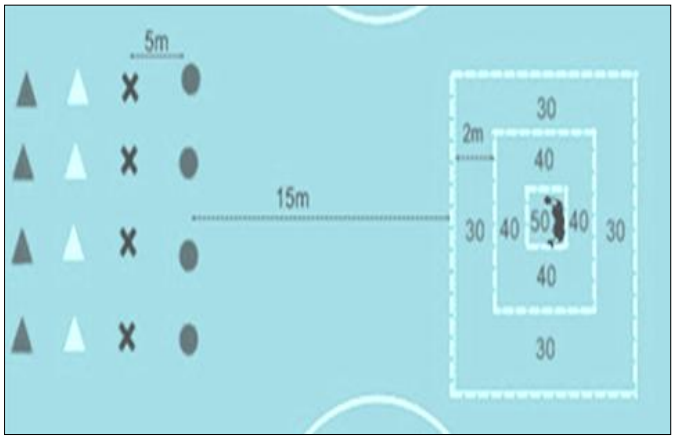

Fig 2: Lofted pass test

Shooting

This test is useful for measuring accuracy in shooting. As shown in fig. 3, the subject was asked to push the ball towards goal post. Every subject will be given 4 attempts and score shall be recorded within 15 seconds.

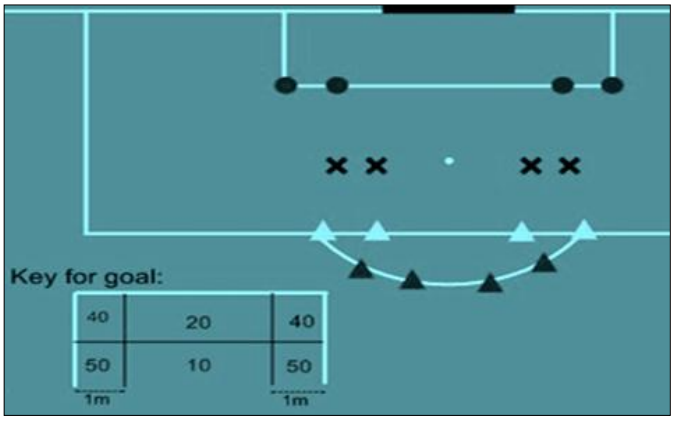

Fig 3: Shooting test

Passing

This test promotes the subject to use his feet for passing a short distance. As shown in fig. 4, the subject starts passing the ball to the designated distance and takes next attempt with alternate leg. Each successful pass shall be given 50 points. If the subject able to pass all 4 attempts successfully, he shall be given 50 bonus points.

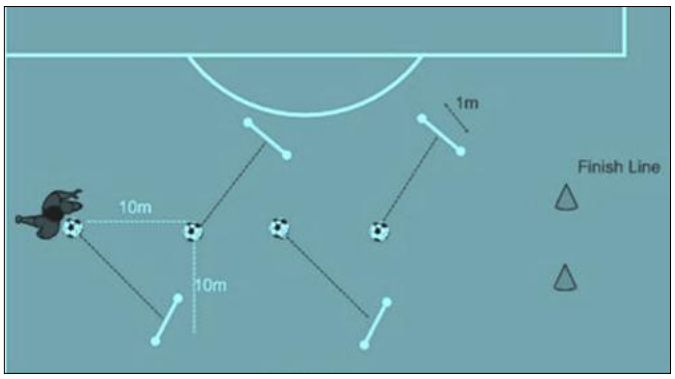

Fig 4: Passing (short) test

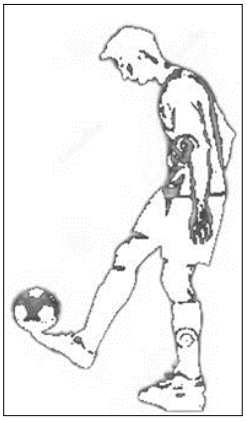

Fig 5: Juggling or ball control test

Juggling

This test measures the skill of controlling the ball off the air. The subject was asked to hold the ball in air as long as possible. If the ball was hold in air for 5 seconds, 50 points shall be given. 6-10 seconds, 100 points shall be given. Further, for each 10 seconds, 20 additional points shall be given and total scores shall be recorded.

Statistical analysis

Data were analyzed using a one-way analysis of variance to evaluate significant differences in the measures of physical fitness and soccer skills among the playing positions of soccer players. The post hoc Tukey test was administered to evaluate pair wise differences. The $P<0.05$ norm was used to designate statistical significance.

Results

Fitness

Physical fitness abilities of each position (Table 3), cardio-vascular endurance measured by the Harvard step up test showed significant differences ($P<0.05$) in terms of midfielders as compare to forward players ($P<0.05$) as shown in Table-3. The results reveal similar outcome in other component of physical fitness in play position of college soccer (football) players.

Table 3: Comparison of the physical fitness components and football skills among player's position by using SPSS software analysis.

	Defenders	Forward	Goal Keepers	Mid Fielders	F test	P value
	20	35	8	19		
Hand grip Strength	59.45±12.20	60.91±11.75	58.50±14.08	60.11±13.51	0.111	0.953
Muscular endurance (sit up)	24.65±10.09	24.37±8.44	18.38±3.29	24.32±7.46	1.275	0.289
Cardio-vascular endurance	119.11±24.73	110.00±18.09	117.75±14.23	127.44±24.20	2.906	0.04*
BMI	21.22±2.62	20.96±2.19	21.31±1.89	21.30±2.06	0.133	0.94
Flexibility	3.90±2.81	5.06±3.13	6.88±4.32	6.47±5.92	1.822	0.15
Dribbling	39.20±4.20	38.06±4.28	40.25±3.49	38.58±3.55	0.795	0.5
Lofted Passing	144.50±45.13	155.14±62.75	146.25±37.39	149.47±50.16	0.187	0.905
Shooting	108.50±44.28	102.29±36.55	102.50±31.51	95.79±34.85	0.367	0.777
Passing	75.00±57.35	80.00±50.29	75.00±59.76	78.95±34.62	0.054	0.983
Juggling pre	109.50±30.17	99.14±29.44	106.25±24.46	100.00±41.77	0.674	0.513

Skills

There were no significant differences in terms of dribbling, lofted pass, shooting, short passing and juggling in different playing position. Particularly, goal keepers showed better dribbling skill than other positional players which was not anticipated. Forward players showed lower shooting skill and grater lofted passing skill as compare to defenders. Defenders and goal keepers showed higher juggling skill as compared to other positional players.

Discussion

In the present study, 82 college soccer players of different positions were evaluated in terms of their physical fitness ability and technical personality. There was no significant variation in aerobic exercise. Other studies reported that, midfielders have greater aerobic abilities than others [13, 14, 15, 16]. The present outcome varies from earlier [17] in which defenders run faster than others in the Yo-Yo test. As per the above mentioned results, irrespective of playing position, each player need to have better physical fitness to perform well. To fulfill these criteria, different kinds of fitness program need to introduce to improve their physical fitness in terms of aerobic and anaerobic power. But, the drawback of the study is less number of goal keepers, similar fitness and skills with other positional players.

In the present case, midfielders showed significantly higher cardiovascular endurance as compared to the forward players [1]. Whereas, different studies showed different kind of playing position in their exercises test e.g. peak power exercise test. A study showed that, peak power of forwards highest followed by defender and mid fielders. Other studies found that, center defender have greater than mid fielder [18]. In this respect, different playing position player need to have specific kind of fitness. For example, Goal keepers and defender must be able to execute explosive power. Midfielders trained to improve aerobic power and agility. Forwarders shall improve anaerobic capacity.

Soccer skills

No significant differences in terms of dribbling, lofted pass, shooting, short passing and juggling in different playing position. Whereas, similar results were observed in terms of passing, shooting [7]. But, the results of dribbling differ as compare to other playing position which is quite opposite of our findings though the number of goal keepers were almost similar [7].

Every positional player requires unlike specific fitness and skillful qualities because, every position plays an important role in the game. To get success in the match, suitable players have to be placed by the proper players. Implementation of systematic conditioning and fitness programs will be more effective relatively than regular inadequate fitness and techniques. The practice of stills, strategies and tactics shall be more useful if it is executed in the game effectively.

Conclusion

This study found certain differences in physical fitness abilities and skills by playing position in college soccer players. First, there were no significant differences in physical fitness components like muscular strength, muscular endurance, BMI and flexibility. Second, cardio-vascular endurance was significantly greater in midfielders as compare to forward players (P<0.05). Third, greater dribbling skill than other position such as defenders, midfielders, and forwards which was not anticipated. Forth, forward players showed lower shooting skill and grater lofted passing skill as compare to defenders. Hence, a variety of conditioning, training programs shall be useful for college soccer players to enhance their physical fitness, technical and tactical skills to become successful in the game.

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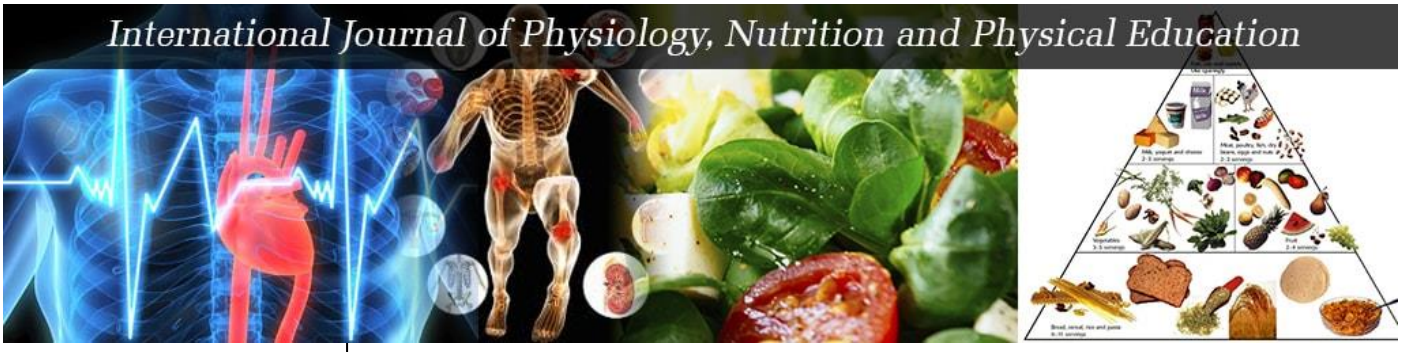

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Effect of fitness training and yogic practices on football passing skill

Poornabodha V Kadagadakai and Balaram Pradhan

Abstract
The aim of the study is to find out the effect of fitness training along with yogic practices on the passing skill of football players. Eighty two male college football players divided randomly into treatment and control group with the age range from 18-24 years. Each player underwent Bobby Charlton passing skill test before and after intervention period of 4 months. The results shows significant pre-post improvements in the treatment group Passing (P) (p< 0.006) variable where as control group showed insignificant. In conclusion, the short period training program of fitness exercises along with yogic practices is helpful in enhancing the skill level of football players.

Keywords: Football skill, fitness training, yogic practices

Introduction
Physical fitness is the ability to carry out day to day actions with no excessive tiredness. The health related physical fitness components enhance the regular health and also fitness level, if an individual take part regularly in the fitness activities. Poor physical fitness and inactive living habits will lead to a negative impact of both health and daily living. The regular practice of yoga shall improve one's health and also keep fit for day to day activities. The measurement of skillfulness is hardly ever built-in when the fitness of players is monitored. Soccer is a complex sport, requiring the repetition of many disparate actions, and several tests are currently being used to assess the physical ability of players (Rampinini *et al*., 2007) [1]. For example, aerobic capacity can be assessed using the Yo-Yo test (Krustrup *et al*., 2003) [2], simple running tests can be used to monitor speed, agility and repeated sprint performance, and countermovement jumps can be used to assess leg power. The development of game performance is generally seen in learning tactical and technical skills and their integration into the game context (Mitchell, Oslin, Griffin, 2006; Grehaigne, Richard & Griffin, 2005) [3]. Skill is the sportsman's ability to perform the proper techniques in proper time, successfully with less effort. It is the ability to carry out physical or intellectual tasks with a greatest level of success. A more recent definition of skill is: 'the consistent production of goal-oriented movements, which are learned and specific to the task' (McMorris, 2004) [4]. In order for players to acquire and execute soccer skills adequately, it is important that they are equipped with the fundamental motor skills, such as sprinting, agility, acceleration, etc. (e.g., Strand & Wilson, 1993; Burton & Miller, 1998; Seefeldt, 1980). Fundamental motor skills are seen as essential precursors or related factors to technical skills and therefore excellence in soccer (Moore, Collins, & Burwitz, 1998) [5]. Technical skills are classified as on-the-ball-performance actions and consist of: ball control, passes, crosses, dribbles, tackles, headers, shots, corners, free-kicks and throwing (Rampinini *et al*., 2007; Taylor, Mellalieu, James, & Shearer, 2008) [1, 6]. Technical skills are a prerequisite for playing soccer and are crucial in soccer performance. These crucial moments consist of winning possession of the ball, deceiving an opponent by passing or dribbling, and most importantly to score a goal (Bangsbo, 1994; Reilly *et al*., 2000b; Rienzi *et al*., 2000) [7]. All the sports, to unbalanced extents, occupy the submission of cognitive, perceptual or motor skill (Bate, 1996) [8]. The motor skills required to successfully control, pass, dribble and shoot the ball at goal are fundamental skills of the soccer player (Ajmal Ali, 2010) [9]. Since, the performance in skill tests depends on physical fitness abilities, it is challenging for measurements of skill development.

The passing and dribbling skill tests comprise of extensive amount of running. Hence, the predictors of successful performance in many skill tests have been shown to depend on measured tasks (Malina *et al*., 2005) [10]. In football game, a player might have good patterns of technique (movements) but if he does not perform the right action (skill) at the right time, then he becomes useless player (Knapp, 1977) [11]. The physical fitness training along with yogic practices helps a player to enhance his skill related physical fitness. In this regard, this study was done on male football player's, to know the effect of fitness training along with yogic practices on passing skill of college football players.

Methods

Eighty two male football player's age 18 to 24 years were voluntarily involved in the present study for four months. All the participants were informed about the possible benefits associated with the study and experimental procedures. The informed consent letter was collected from the subjects before the pre test. The subjects were given freedom to withdraw from the study at any point of time. The participants were divided into Treatment group and control group randomly. The physical fitness training of pushups, squat thrust, bench dips, sit ups, back extension, step up and shuttle run training was given to the treatment group along with dynamic Suryanamaskar, asana, breathing practices, Kapalabhati and pranayama for 4 months. The control group was not provided any training.

Assessment

Bobby Charlton's passing test is intended to encourage the use of both feet by passing over short distance.

Experimental design

The physical fitness training along with yogic practices was planned for four months to the college football players from Monday to Friday for one hour. The pre-test was taken for both treatment (n=41) and control (n=41) group before start of the intervention. The subjects were allowed to take 20 min warm up including jogging, stretching and football specific exercises every day. Squat thrust, bench dips, sit ups, back extension, step up and shuttle run training were included in the intervention to measure the possible changes or improvement in the football passing skill. The physical fitness components, training methods, related tests and its criterion measures are as shown in table 1.

Table 1: Football skills and Bobby Charlton's soccer sports tests.

S. No	Variable	Test	Criterion Measures
1	Short Passing	Passing over short distance	Scores

Statistical Analysis

At base line there was no significant difference between groups for passing (p = 0.824). Repeated measures anova difference between pre-post scores, and group-time interaction scores for football skill variables are as shown in Table 2.

Table 2: Comparison of the Tests Executive Functions of Treatment and Control group by using SPSS 23 version software.

	Treatment (n=41)				Control (n=41)				Pre vs pre	Post vs post	Group* time
	Pre	Post	P values (% cha)	%	PRE	POST	P values (% cha)	%			
	Mean ± SD	Mean± SD			Mean ± SD	Mean ± SD					
Passing (score)	79.27± 48.70	100.00± 43.30	0.006	26.15	76.83± 50.12	81.71± 47.11	0.505	6.35	0.824	0.071	0.128

Results: Passing showed a difference between times [F (1,80) = 6.185, p= 0.015] but, there is non-significant difference in group-time interaction [F (1,80) = 2.370, p=0.128] as shown in fig.1.

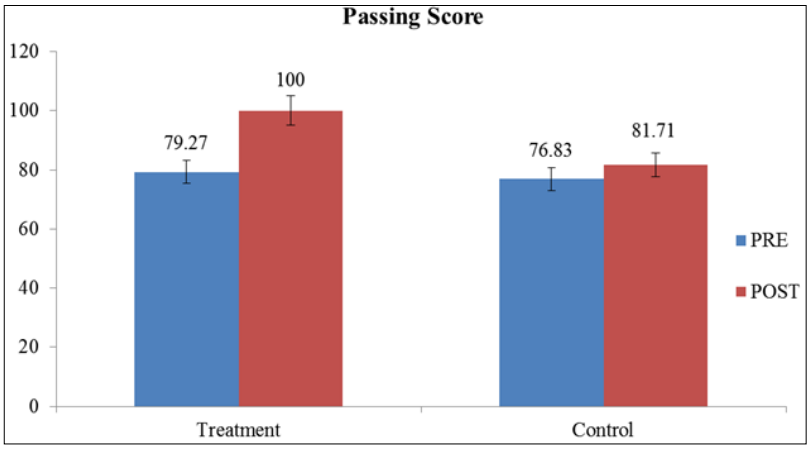

Fig 1: Passing in scores

Significant pre-post improvements were seen in the treatment group in the variable passing (p< 0.006) whereas control group showed insignificant.

Discussion of Findings

The four months intervention program of physical fitness training along with yogic practices was mainly consisting of

the actual performing fitness and yogapractices. The importance was given on specific fitness training of particular fitness components and selected yogic practices. There is a significant improvement on passing. Control group showed no significant gains in passing skill. The significant improvements in accuracy passing by the treatment group may be due to increase in pelvic rotation. Kicking opens the hips, allowing the pelvis to move through a greater range of motion and prolonging ball contact time, which may have positive benefits for accuracy (Barfield, 1998) [12], Lees and Nolan (2002) [13].

Enhancing muscle activation of the Tibialis anterior (TA) and biceps femurs (BF) and reducing gastronomies muscle (GAS) activation may assist players to kick accurately against top targets. In contrast, players who display higher Tibialis anterior (TA) and rectus femurs (RF) activation may be less accurate against a bottom target. It was concluded that muscle activation of the kicking leg represents a significant mechanism which largely contributes to soccer kick accuracy (Athanasios Katis *et al*., 2013) [14].

Conclusions

The treatment group showed significant improvement in passing skill is mainly due to regular physical fitness training of pushups, squat thrust, bench dips, sit ups, back extension, step up and shuttle run training along with dynamic Suryanamaskar, asana, breathing practices, Kapalabhati and pranayama. Rhythmic exercises like asana practice increased the flexibility thereby players are able to rotate pelvic during ball kick which opens the hips, allowing the pelvis to move through a greater range of motion. This will help during kicking, shooting for accuracy (Barfield, 1998) [12]. Therefore the present study shows that, the short time training program of fitness exercises and yogic practices helpful in improving motor related physical fitness components there by enhances passing skill of football players. It is also suggested that, long duration training program may be more effective as compared to short duration by considering high level competitions.

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