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Science [Nursing]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 1 - 3
ISSN 2319 - 8168

"A STUDY ON THE NEED AND FEASIBILITY OF IMPLEMENTING SMART CARD IN SELECTED HOSPITAL AT MANGALORE"

The hospital is an institution, where the technology plays a vital role in advance patient care ***Smart card-based healthcare*** is one such technology. A Smart Card is a credit-card-sized hardware device used in a Cryptographic Authentication System. Smart card-based technology offers a way to significantly reduce hospital administrative costs while maintaining or increasing quality of care and customer service. Smart card technology can help hospitals achieve: better patient identification, administrative efficiencies, better medical records management, Quality of care, Privacy, security and confidentiality, Mobility support, Clinical decision support, Easy and wide accessibility.

OBJECTIVES

1 To study the need of smart card in Selected Hospital.

2. To study the feasibility on the implementation of smart card in Selected Hospital.

OPERATIONAL DEFINITIONS

1. **Need:** In this study, it refers to the requirement of smart card in the hospital.
2. **Feasibility:** In this study, it refers to the possibility of using smart card in the hospital.
3 **Implementation:** In this study, it refers to the usage of smart card in the hospital.
4. **Smart card:** In this study, it refers to chip card or integrated circuit card (ICC) which provides identification, authentication, storage and application processing the patients data and also the importance of its use in the hospital.

METHODS:

Exploratory study design is used. It includes collection of information of the current system; awareness, attitude, implementation and opinion directly from the subjects through questionnaire method.

SAMPLE AND SAMPLING TECHNIQUE

A sample of size 30 doctors and 10 staffs from medical record department and 9 administrative, having minimum one year of clinical experience in the Hospital are selected for the study based on simple random sampling techniques. All the people in the management board will also be considered for the study.

Inclusion criteria: Doctors with more than one year of experience are considered.

METHOD OF DATA COLLECTION

A structured questionnaire was administered to the selected sample to collect the data regarding the current system of managing medical records.

Questionnaire consists of implementing smart card and awareness, attitude and opinion towards the implementation of smart card.

TOOLS AND TECHNIQUES

A structured questionnaire was administered to 30 doctors and 10 staffs from medical record department and 9 administrative, having minimum one year of clinical experience in Hospital.

The questionnaire designed had 6 parts

Part 1, question 1 to 3 - Deals with demographical data.

Part 2, question 4 to 7- Deals with current system of managing medical records.

Part 3, question 8 to 12 -Deals with awareness of the subject on Smart Card system, for recording patient medical records.

Part 4, question 13 to 21- Deals with attitude towards Smart Card.

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Part 5, question 22 to 27 - Deals with opinion of implementing smart card.

PILOT STUDY

Pilot study was conducted for sample size of 10 doctors and 5 medical personals in order to assist the feasibility of the tool and finally the necessary corrections were made in the tool.

PLAN FOR DATA ANALYSIS

Collected data was analyzed by Frequency, Percentage, Mean, and Standard deviation and percentage.

ORGANISATION OF THE FINDINGS

The data collected from the hospital staffs are organized, analysed and presented under the following the headings:

Section 1: Deals with the demographic Profile of the samples selected for the study.

Section 2: Deals with opinions regarding the current System followed in the Hospital.

Section 3: Deals with opinions regarding the awareness of the subject on Smart Card system for recording patient medical records.

Section 4: Deals with attitude towards Smart card documentation.

Section 5: Deals with the opinions of the subjects regarding the implementation of a smart card system.

RESULTS

General demographics

As per the study 20.4% of those respondents had worked less than 2 year in their respective department, that 32.65% have been there between 2-5 years, and that 12.24% have been working here for 6-10 years and 34.69% for more than 10 years

Current system

- 83.67% of those polled said that the current system of patient file management is not adequate.
- 71.42% of surveyed said that the current system of patient file management overworks the staff.
- 79.6% of those questioned said that the present system of file management is not easy to handle.
- 95.91% those questioned said that errors occur in the present system of file management.

Awareness

- 91.83% of the respondents were aware of the use of Smart Card based medical records system.
- 94.87% of the respondents were aware that the patient files can be augmented by each department and that these additional can be viewed by any department.
- 84.61% of the respondents were aware that patient prescription can be sent through smart card to prevent errors in medication allocation.
- 92.30% of the respondents were aware that the smart cart to store images and reports from different diagnostics sections of the hospital all in one place.
- 84.61% of the respondents were aware of billing of a patient's expenses may be kept on record along with their file to enable the ease of creating a comprehensive bill upon discharge of the patient.

Attitude

- 100% of the respondents prefer smart card based medical records, over the present paper documentation system.

OPINION ON IMPLEMENTING:

- 57.14% responded that smart card can reduce their workload to great extent and 32.65% responded that smart card can reduce their workload to small extend.
- 76.92% of the respondents were of the Option that smart card is help full for medical Research most of the time.
- 53.06% of the respondents were of the Option that they would definitely prefer an integrated Smart Card medical system in the hospital.
- 40.81% of the respondents were of the opinion that it will be slightly difficult to adapt to changes in the present system of recording patient information system to Smart Card.
- 42.85% said that it would happen in the next three years.
- 69.38% of the respondents were of the opinion that the proposed system on a whole would be better than the present system.

INTERPRETATION

The data above show that positive 89.64% of Awareness, 78.89% of Attitude, 70.69 on Implementation and 91.4% towards the need of

implementing smart card in Selected Hospital respectively.

The study reveals that majority of the Administratives, Doctors and Medical Records Department personals have strong positive willingness towards implementation of smart card based medical records.

FUTURE DIRECTION FOR THE STUDY

Cost-based study: It is important to identify cost and benefit factors, which can be categorized as follows:

1. Development costs; and
2. Operating costs.

This is an analysis of the costs to be incurred in the system and the benefits derivable out of the system.

Time-based study: This is an analysis of the time required to achieve a return on investments. The future value of a project is also a factor.

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Science [Nursing]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 4 - 9
ISSN 2319 - 8168

ASSESSMENT OF PRO'S, CON'S, RISK'S ABOUT BREAST CANCER AND EARLY BREAST CANCER DETECTION PRACTICES AMONG WOMEN IN TIRUPATI, ANDHRA PRADESH, INDIA.

"Cancer is a difficult thing to talk about in the space of a singly news story". Niederdeppe said. "Science values repetition, which the media values novelty those two concepts naturally but heads, which can confuse people". Breast cancer is one of the most comments cancers affecting women. Statistics reveal that, the incidence of breast cancer is rapidly increasing in India and has over taken the cancer of cervix. It is estimated that, one in 22 Indian women is likely to develop breast cancer during their lifetime. Breast cancer is a disease of old age with the peak incidence in the fifth and sixth decades but, in India the disease is sum a decade earlier, because of shorter longevity of life in India women. A data was obtained from 100 women and the sample was selected by using stratified random sampling technique. The tool used for the study was a structured and standard pre-tested questionnaire. The data was analyzed and interpreted by using simple descriptive and differential statistics. Findings shows that, among 100 woman, 61percent were having adequate health beliefs about breast cancer and early cancer detection practices. Out of 100 women, 34 percent were having moderate level of cancer worry or fear of getting breast cancer. Understanding peoples health beliefs thoroughly and then bringing a meaningful change is essential to improve the whole situation.

Keywords: Breast cancer, Health beliefs, Cancer worry.

Introduction:

Where cancer was concerned, a large population of our rural and semi-urban population is having increased rate of cancer and is highest in the world. Breast cancer is one of the most commonest cancers affecting women. The disease is not so common in India, but it is not as uncommon as once thought. Statistics reveal that, the incidence of breast cancer is rapidly increasing in India and has over taken the Cancer of Cervix. Indian Counsel of Medical Research shows that, breast cancer is the commonest cancer to affect Indian women in metropolitan cities.[2] It is estimated that, one in 22 Indian women is likely to develop breast cancer during their lifetime. Breast cancer is a disease of old age with the peak incidence in the fifth and sixth decades but, in India the disease is seen a decade earlier, probably because of shorter longevity of life in Indian women.[2]Cancer begins in cells, the building blocks that make up tissues. Tissues make up breasts and other parts of the body. Normal cells grow and divide to form a new cell as the body needs them. When normal cells grow old or get damaged, they die and new cell take their place.[3]

Literature does show correlation of smoking, alcohol drinking and high fat intake to the causation of breast cancer, and this probably explains its etiological relationship to a modern life style and environment. This probably also explains the increased incidence of breast cancer among women residing in metropolitan cities of India, where a western lifestyle seems to be taking hold.[4]When we move in to a difficult cultural situation and begin to understand people's beliefs in health or other areas, we often face difficulties in teaching new ideas. Perhaps one of the first principles to remember is that there is much good in every culture, and simply because something is different from our ways it is not necessarily wrong.[5]

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"Cancer is a difficult thing to talk about in the space of a singly news story". Niederdeppe said. "Science values repetition, which the media values novelty those two concepts naturally but heads, which can confuse people".[6] The incidence of breast cancer is rising in every country of the world especially in developing countries such as India. This is because more and more women in India are beginning to work outside their homes, which allows the various risk factors of breast cancer to come into play. These include, late age at first childbirth, fewer children and shorter duration of breast feeding. Of these, the first is the most important.[7]

Early age at menarche and late age at menopause add to the risk to some extent. Family history of breast cancer increases the risk as follows. If a woman has a mother who has suffered from breast cancer, her risk increases about 3 fold while having a sister with cancer, the risk increases by about 2-3 fold. About 5% of breast cancers are hereditary, i.e., due to a gene being transmitted either from the father or from the mother.[7]The incidence varies between urban and rural women; the incidence in Mumbai is about 27 new cases per 1,00,000 women per year while in rural Maharastra it is only 8 per 1,00,000.[2] In India, the incidence of breast cancer is increasing, with an estimated 80,000 new cases diagnosed annually. The incidence of breast cancer increased approximately by 50% from 1965 to 1985. Much of this increase may be associated with greater urbanization and improved life expectancy.[1]Just five years ago, the breast cancer ranked second after the cervix in the developing countries. The burden of new cases between 1975 and 1990 has gone up by 47%.[8] In India, it is the second most common cancer after cervix, accounting for 19% of the total cancer burden in women.[8]

The important risk factors implicated since long, in several epidemiological studies are earlier age at menarche, later age at first full-term pregnancy, low parity and late age at menopause. The increase in risk with these reproductive factors has been attributed to the pattern of exposure to estrogen, obesity, and high fat diet, increased and extended use of hormonal replacement therapy.[12] Other associated risk factors are excessive alcohol intake and exposure to ionizing radiation. Family history of breast cancer increases the risk of 2 to 3 fold, and the role of some genes, viz BRCA-1 and BRCA-2 in the predisposition to the disease has been identified.[12] Regular screening of women between the ages of 45 and 59 could substantially reduce breast cancer mortality in India.[13]It has been clearly shown that the size of tumor at the time of starting treatment is directly related to the ultimate result, 20 years survival is found in more than 20% of patients with a tumor diameter of up to 1 cm. Whereas, this comes down to only 50%, if the tumor diameter is 3 cm are more. This clearly shows the importance of early detection of tumour.[11]Cancer tumors can be detected in the asymptomatic stage, when the person does not have any complaint regarding the tumor, by following regular screening protocols.

METHODS AND MATERIALS:

Study area and design: A facility based, cross sectional study was conducted in selected areas of Tirupati (Nehru Nagar, Girupuram, Bhagatsingh Colony, Indira Nagar and Sanjaya Gandhi Colony), Andhra Pradesh, India.

Study population: Sample consists of 100 women between the age group of 20 to 60 years and living in selected areas of Tirupati at the time of data collection

Sampling technique and data collection: As the selection of sample depends on availability of women, stratified random sampling technique was adopted based on inclusion criteria. Formal permission was obtained from the Municipal Corporation, Tirupati for conducting the study. A structured and standard pre-tested questionnaire was employed to collect information on variables like socio demographic factors, health beliefs, pros, cons, and fear of breast cancer. The questionnaire was developed in English and translated into telugu and again translated in to English for its consistency. The data collection has taken 30 minutes for each participant. The data were checked for completeness, accuracy, clarity, and consistency before analysis.

Data analysis: Descriptive statistics like frequency, percentage were used to assess demographic variables and health beliefs about breast cancer. Chi-

square tests were used to identify the association between the health beliefs, cancer worries and demographic variables. One-way analysis of variance was used for the comparison of mean variances between demographic variables with health beliefs, and cancer worries about breast cancer and cancer screening practices. Coefficient correlation method was used to assess the correlation between health beliefs, cancer worries and beliefs about breast cancer and early breast cancer detection practices

Ethical considerations: Ethical clearance was secued from the ethical clearance committee of Sri Venkateswara Institute of Medical Sciences University, Tirupati and permission was obtained from Municipal corporation, Tirupati, Andhra Pradesh, India. Informed written consent was obtained from the study participants before interview. At the end of the interview a self-instructional module was given to the participants, which has the complete information about Breast Cancer and early breast cancer detection practices.

Results and Discussion:

Socio demographic variables:

36% of women belonged to the age group of 31-40 years and 31% were in the group of 20-30 years. 93% of them were Hindus and 74% were married. 51% of women had school education and 19% were illiterates. 56% of them were employees and 28% of their monthly family income is <Rs.3000/-, 85% belong to nuclear family and 79% of were living in urban areas. 51% were having two children and only 17% of them had one child. 86% had breast fed their children and 14% of them have not given breast feeding. 84% have not practiced BSE ever and only 16% of them had a practice of BSE. 82% did not have a family history of breast cancer and 18% of them had a family history of breast cancer. 46% of had excellent support from their family for cancer screening. 34% has mild fear of breast cancer and 31% of them had no fear about breast cancer. 87% do not follow any cultural ritual practices for the prevention of breast cancer.**(Table-1)**

Table: 1- Socio demographic variables
(N=100)

S. No.	Demographic Variables	Frequency	Percentage
1.	**Age in Years**		
	(a) 20-30	31	31
	(b) 31-40	36	36
	(c) 41-50	21	21
	(d) > 50	12	12
2.	**Religion**		
	(a) Hindu	93	93
	(b) Muslim	6	6
	(c) Christian	1	1
3.	**Marital Status**		
	(a) Married	74	74
	(b) Not Married	18	18
	(c) Widow	8	8
4.	**Education**		
	(a) Illiterate	19	19
	(b) School Education	51	51
	(c) Intermediate	4	4
	(d) Degree	13	13
	(e) Post Graduation	13	13
5.	**Occupation**		
	(a) Employee	56	56
	(b) Business	18	18
	(c) House Wife	12	12
	(d) Coolie / Cultivation	3	3
	(e) Retired	3	3
	(f) Others	8	8
6.	**Family Monthly Income**		
	(a) < Rs.3000/-	28	28
	(b) Rs. 3001 – 5000/-	23	23
	(c) Rs.5001 – 7000/-	15	15
	(d) Rs.7001 – 9000/-	9	9
	(e) > Rs.9000/-	25	25
7.	**Type of family**		
	(a) Nuclear Family	83	83
	(b) Joint Family	16	16
	(c) Extended Family	1	1
8.	**Habitance**		
	(a) Urban	79	79
	(b) Rural	15	15
	(c) Sub-urban	6	6
9.	**Number of Children**		
	(a) One	17	17
	(b) Two	51	51
	(c) Three	13	13
	(d) More than three	12	12
	(e) Nulliparous	7	7
10.	**Did you breast feed your baby?**		
	(a) Yes	86	86
	(b) No	14	14
11.	**Did you ever practiced breast self examination?**		
	(a) Yes	16	16
	(b) No	84	84
12.	**If yes, When did you had?**		
	(a) 20 years back	2	2
	(b) 10 years back	2	2
	(c) 7 years back	1	1
	(d) 3 years back	1	1
	(e) 2 years back	2	2
	(f) 1 year back	1	1
	(g) 3 months back	1	1
	(h) Every month	5	5
	(i) Some times	1	1

13.	**Do you have a family history of breast cancer?**		
	(a) Yes	18	18
	(b) No	82	82
14.	**If yes, relationship to the patient?**		
	(a) Relatives	3	3
	(b) Siblings	4	4
	(c) Children	4	4
	(d) Parents	7	7
15.	**How much support do you get from your family to have breast cancer screening**		
	(a) No support	10	10
	(b) Little support	18	18
	(c) Adequate support	26	26
	(d) Excellent support	46	46
16.	**Do you have fear about breast cancer?**		
	(a) No fear	31	31
	(b) Mild fear	34	34
	(c) Moderate fear	20	20
	(d) Severe fear	15	15
17.	**Do you follow any cultural practices and beliefs regarding prevention of breast cancer?**		
	(a) Going to temple and praying	9	9
	(b) Others	4	4
	(c) None	87	87

Pro's of Cancer Screening Beliefs among Women:

59% of women agree that, cancer screening can find cancer early. 51% of women agree that routine cancer screening gives them peace of mind. 50% of women agree that their family members will feel good, if she do routine cancer screening. 47% of women were willing to do cancer screening for themselves and their families. 58% of women agree that, cancer screening is a way to show that they care for their families. 49% of women agree that, if found early and treat early the cancer survival rate is very high. (table-2)

Table: 2 – pro's of cancer screening beliefs (N=100)

S. No.	Cancer Screening Beliefs Pro's	Strongly Agree		Agree		Unknown		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	F	%
1.	A cancer screening can find cancer early	25	25	59	59	13	13	2	2	1	1
2.	Routine cancer screening gives me peace of mind	11	11	51	51	10	10	18	18	10	10
3.	My family members will feel I care my health if I do routine cancer screening	36	36	50	50	6	6	3	3	5	5
4.	I am willing to do routine cancer screening for my family and for my health	37	37	47	47	4	4	5	5	7	7
5.	I think routine cancer screening is a way to show I take care of my family	28	28	58	58	4	4	6	6	4	4
6.	If found early and treat early the cancer survival rate is very high	40	40	49	49	3	3	4	4	4	4

Con's of Cancer Screening Beliefs among Women:

43% of women stated that, it is too much trouble to obtain a cancer screening. 34% of women agree that, they do not want to know if they have cancer. 59% of women agree that they don't want spend time on cancer screening. 43% of women agree that unless they have symptoms or feel unconformable they will not go for screening. 37% of women stated that, they rather not know if they have cancer. 68% of women agree that they do not have time to obtain cancer screening.(table-3)

Table: 3 – Con's of screening beliefs **(N=100)**

S. No.	Cancer screening beliefs Con's	Strongly Disagree		Disagree		Unknown		Agree		Strongly Agree	
		F	%	F	%	F	%	F	%	F	%
1.	It is too much trouble to obtain a cancer screening	5	5	24	24	18	18	43	43	10	10
2.	I do not want to know if I have cancer	17	17	15	15	7	7	34	34	27	27
3.	I do not want to spend time on cancer screening	4	4	11	11	8	8	59	59	18	18
4.	Unless I have symptoms or feel uncomfortable, I will not go screening	12	12	43	43	13	13	21	21	11	11
5.	I rather not know if I have cancer	16	16	13	13	13	33	37	37	21	21
6.	Do not have time to obtain cancer screening	21	21	68	68	5	5	3	3	3	3

Risk's of Cancer Screening Beliefs among women:

32% of women disagree that, they have possibility of getting breast cancer. 64% of women agree that it is possible for them to get cancer in their life time. 33% of women disagree that, their chance of getting breast cancer is higher than other people in their age.(table-4)

Table: 4 – Risks of cancer screening beliefs **(N=100)**

S. No.	Cancer screening beliefs Risks	Strongly Agree		Agree		Unknown		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	F	%
1.	I think I have possibility of getting caner	4	4	4	4	29	29	32	32	31	31
2.	It is possible for me to get cancer during my life time	17	17	64	64	9	9	9	9	1	1
3.	I feel my chance of getting cancer is higher than other people in my age	8	8	18	18	25	25	33	33	16	16

In comparison of mean variances, among the health beliefs about breast cancer beliefs about early breast cancer detection practices (Pro's, Con's, Risk's) and Champion's Cancer Fear Scale with the demographic variables, the occupation had obtained 'F' value of 2.79 (M=118.79) in Champion's Cancer Fear Scale which is significant at $p<0.05$. Habitance had obtained `F' value of 3.46 (M=81.18) in Con's of screening beliefs, which is significant at $p<0.05$. Family support had obtained `F' value of 3.14 (M=14.51) in risks of screening beliefs which is significant at $p<0.05$. Finally, cultural practices has got the `F' value of 8.37 (M=218.76) in health, beliefs and 3.29 (M=77.52) in Con's of screening beliefs which are significant at $p<0.05$ and the remaining variable are nil significant. There is a well defined positive correlation is identified for Health beliefs with Con's and Champion's fear scale with the 'r' values of 0.256, 0.432 which are significant at $p<0.05$ and $p<0.01$, and a negative correlation was seen among Pro's and Risk's with the 'r' values of -0.226, -0.197 which are significant at $p<0.05$ and $p<0.01$. Pro's of cancer screening beliefs and Risk's were correlated positively with the 'r' values of 0.256 and the Con's, Health beliefs about breast cancer were correlated negatively with the 'r' values of -0.226, -0.396 which are significant at $p<0.05$ and $p<0.01$. A positive correlation was identified between the Con's of screening beliefs and Health beliefs about breast cancer with the 'r' values of 0.256 and a negative correlation was identified between Con's, Pro's and Risk's with the 'r' values of 0.396, -0.333 which are significant at $p<0.05$ and $p<0.01$. Risk's of cancer screening beliefs are positively correlated with Pro's with the 'r' values of 0.256 and negatively correlated with Con's of screening beliefs with the 'r' values of -0.197, -0.333 which are significant at $p<0.05$ and $p<0.01$.

Conclusion: If traditional beliefs are….. Helpful: Encourage them. Harmful: Identify the root of the problem. Seek some non-offensive means of

change. Start from where they are now. Neither helpful nor harmful: Ignore them.

Acknowledgements: I am gratefully thankful to the SVIMS University, Tirupati, India and my research guide Ms. Nagarathnam,(M.Sc.,Ph.D) for her support and work contribution and the study participants for their willingness to participate in the study.

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Science [Maths]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 10 - 12
ISSN 2319 - 8168

METHOD OF SOLVING FUZZY ASSIGNMENT PROBLEM BY HUNGARIAN METHOD AND ROBUST'S RANKING TECHNIQUE USING TRIANGULAR AND TRAPEZOIDAL FUZZY NUMBER

In this paper Ones Assignment Method is adopted to solve Fuzzy Assignment Problem (FAP). In this problemCi j , denotes the cost for assigning the n jobs to the n workers and Ci j , has been considered to be triangular and trapezoidal number denoted by Ci j , % which are more realistic and general in nature. For finding the optimal assignment, we must optimize total cost this problem assignment. In this paper first the proposed fuzzy assignment problem is formulated to the crisp assignment problem in the linear programming problem (LPP) form and solved by using Ones Assignment Method [1] and using Robust's ranking method [4] for the fuzzy numbers. Numerical examples show that the fuzzy ranking method offers and effective tool for handling the fuzzy assignment problem (FAP) with imprecise render and requirement condition. The algorithm of this approach is presented, and explained briefly with numerical instance to show its efficiency.

Keywords: Assignment Problem, Hungerian Assignment Algorithm, Fuzzy Number, Robust's ranking Method., Triangular And Trapezoidal Fuzzy Number

Introduction : The assignment problem (AP) is a special type of linear programming problem (LPP) in which our objective is to assign number of jobs to number of workers at a minimum cost (time). The mathematical formulation of the problem suggests that this is a 0-1 programming problem and is highly degenerate all the algorithms developed to find optimal solution of ransportation problem are applicable to assignment problem. However, due to its highly degeneracy nature a specially designed algorithm, widely known as Hungarian method proposed by kuhn [1], is used for its solution. In this paper, we investigate more realistic problem & namely the assignment problem, with fuzzy costs Since the objectives are to minimize the total cost or to maximize the total profit, subject to some crisp constraints, the objective function is considered also as a fuzzy number. The method is to rank the fuzzy objective values of the objective function by some ranking method for fuzzy number to find the best alternative. On the basis of idea theRobust's ranking method (3) has been adopted to transform the fuzzy assignment problem to a crisp one so that the conventional solution metyhods may be applied to solve assignment problem. The idea is to transform a problem with fuzzy parameters to a crisp version in the LPP from and solve it by the simplex method. other than the fuzzy assignment problem other applications & this method can be tried in project scheduling, maximal flow, transportation problem etc.Lin and wen solved the AP with fuzzy interval number costs by a labeling algorithm (4) in the paper by sakawa et.al (2), the authors dealt with actual problems on production and work force assignment in a housing material manufacturer and a sub construct firm and formulated tow kinds of two level programming problems. Chen (5) proved some theorems and proposed a fuzzy assignment model that considers all individuals to have same skills. Wang (6) solved a similar model by graph theory. Dubois and for temps (7) surveys refinements of the ordering of solutions supplied by the max-min formulation, namely the discrimin partial ordering and the leximin complete preordering. Different kinds of

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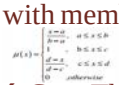
transportation problem are solved in the articles (8,10,12,14,15). Dominance of fuzzy numbers can be explained by many ranking methods (9,11,13,16) of these, Robust's ranking method (3) which satisfies the properties of compensation, linearity and additivity. In this paper we have applied Robust's ranking technique (3).

Preliminaries : Zadeh [18] in 1965 first introduced Fuzzy set as a mathematical way of representing impreciseness or vagueness in everyday life.

Definitions :

Fuzzy Set: A fuzzy set is characterized by a membership function mapping element of a domain, space, or the universe of discourse X to the unit interval [0, 1] i.e. $A=\{(x,\mu_A(x));x\in X\}$ .Here μ $_A$: X '! [0, 1] is a mapping called the degree of membership function of the fuzzy set A and μ A (x) is called the membership value of x" X in the fuzzy set A. These membership grades are often represented by real numbers ranging from [0, 1].

Triangular fuzzy number : For a triangular fuzzy number A(x), it can be represented by A (a,b,c;1) with membership function μ(x) given by

Trapezoidal fuzzy number: For a trapezoidal fuzzy number A(x), it can be represented by A (a,b,c,d;1) with membership function μ(x) given by

á-Cut: The á-cut of a fuzzy number A (x) is defined as $A(\alpha)=\{x/\mu(x)\geq\alpha,\alpha\in[0,1]\}$

Arithmetic operations between two triangular and trapezoidal fuzzy numbers fuzzy numbers: Addition and Subtraction of two triangular fuzzy numbers can be performed as

$\tilde{A}+\tilde{B}=(a_1+b_1,a_2+b_2,a_3+b_3)$

$\tilde{A}-\tilde{B}=(a_1-b_1,a_2-b_2,a_3-b_3)$

Addition and Subtraction of two trapezoidal fuzzy numbers can be performed as

$\tilde{A}+\tilde{B}=(a_1+b_1,a_2+b_2,a_3+b_3,a_4+b_4)$

$\tilde{A}-\tilde{B}=(a_1-b_1,a_2-b_2,a_3-b_3,a_4-b_4)$

Robust's Ranking Techniques : Robust's ranking technique [8] which satisfies costs, linearity, and additives properties and provides results which are consistent with human intuition. Give a convex fuzzy number ã. the Robust's Ranking Index is defined by , R (ã) $\int_0^1 0.5$ (a^{L}x ,a^{L}u) dá, where (a^{L}x ,a^{L}u) is the á – level cut of the fuzzy number ã.In this paper we use this method for ranking the objective values. The Robust's ranking index R (ã) gives the representative value of the fuzzy number ã. It satisfies the linearity and additive property

Robust's Ranking Techniques – Algorithms

Works

Persons	1	2	…	j	…	n
1	$\tilde{c}_{11}$	$\tilde{c}_{12}$	…	$\tilde{c}_{1j}$	…	$\tilde{c}_{1n}$
2	$\tilde{c}_{21}$	$\tilde{c}_{22}$	…	$\tilde{c}_{2j}$	…	$\tilde{c}_{2n}$
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
i	$\tilde{c}_{i1}$	$\tilde{c}_{i2}$	…	$\tilde{c}_{ij}$	…	$\tilde{c}_{in}$
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
n	$\tilde{c}_{n1}$	$\tilde{c}_{n2}$	…	$\tilde{c}_{nj}$	…	$\tilde{c}_{nn}$

Mathematical formulation of fuzzy assignment problem

Mathematically, the fuzzy assignment problem in table I can be stated as:

$$\text{Min } \tilde{z}=\sum_{i=1}^{n}\sum_{j=1}^{n}\tilde{c}_{ij}x_{ij}, i=1,2,\ldots\ldots,n$$

subject to

$$x_{ij}=\begin{cases}1 \text{ if } i^{th} \text{ person is assigned } j^{th} \text{ work}\\ 0 \text{ otherwise}\end{cases}$$

$\sum_{i=1}^{n}x_{ij}=1$ (one work is done by the i^{th} person, i=1,2,……n) and

$\sum_{j=1}^{n}x_{ij}=1$ (only one person should be assigned the j^{th} work, j=1,2,….n)

where x_{ij} denotes that j^{th} work is to be assigned to the i^{th} person.

Numerical Example

Numerical Example

Let us consider a Fuzzy Assignment Problem with rows representing four persons W, X, Y, Z and columns representing the four jobs, Job1, Job2, Job3 and Job4 with assignment cost varying between 0$ to 50$. The cost matrix [C~ij] is given whose elements are linguistic variables which are replaced by fuzzy numbers. The problem is then solved by Hungarian method to find the optimal assignment

	1	2	3	4
W	*extremelylow*	*low*	*fairlyhigh*	*extremelyhigh*
X	*low*	*verylow*	*high*	*veryhigh*
Y	*medium*	*extremelyhigh*	*verylow*	*extremelylow*
Z	*veryhigh*	*low*	*fairlylow*	*fairlylow*

Solution: The Linguistic variables showing the qualitative data is converted into quantitative data using the following table. As the assignment cost varies between 0$ to 50$ the minimum possible value

is taken as 0 and the maximum possible value is taken as 50.

Extremely low	(0,2,5)
Very low	(1,2,4)
Low	(4,8,12)
Fairly low	(15,18,20)
Medium	(23,25,27)
Fairly High	(28,30,32)
High	(33,36,38)
Very High	(37,40,42)
Extremely High	(44,48,50)

The linguistic variables are represented by triangular fuzzy numbers

$$\begin{array}{c} \\ W \\ X \\ Y \\ Z \end{array} \begin{array}{c} \begin{array}{cccc} 1 & 2 & 3 & 4 \end{array} \\ \begin{pmatrix} (0,2,5) & (4,8,12) & (28,30,32) & (44,48,50) \\ (4,8,12) & (1,2,4) & (33,36,38) & (37,40,42) \\ (23,25,27) & (44,48,50) & (1,2,4) & (0,2,5) \\ (37,40,42) & (4,8,12) & (15,18,20) & (15,18,20) \end{pmatrix} \end{array} \quad \ldots(3)$$

Now ,we calculate Y(0,2,5) by applying the Robust's Ranking Method.

The membership function of the triangular fuzzy number (0,2,5) is

$$\mu(x) = \begin{matrix} \frac{x-0}{2-0}, 0 \le x \le 2 \\ \frac{x-5}{2-5} 2 \le x \le 5 \end{matrix}$$

The á " cut of the fuzzy number (0,2,5) is $(c_{\alpha}^{L}, c_{\alpha}^{U})$ = (2á ,5 "3á) for which

$$R(c\tilde{}_{11})=R(0,2,5)= \int_0^1 0.5(c_\alpha^L, c_\alpha^U)d\alpha = \int_0^1 0.5(2\alpha+5-3\alpha)d\alpha = 2.25$$

Proceeding similarly, the Robust's indices for the costs $c\tilde{}_{ij}$ are calculated as:

R($c\tilde{}_{12}$) = 8, R ($c\tilde{}_{13}$) = 31, R ($c\tilde{}_{14}$) = 47.5, R ($c\tilde{}_{21}$) = 8, R ($c\tilde{}_{22}$) = 1.75, R ($c\tilde{}_{23}$) =81.5, R ($c\tilde{}_{24}$) = 79.5, R ($c\tilde{}_{31}$) =25, R ($c\tilde{}_{32}$) = 47.5, R ($c\tilde{}_{33}$) =1.75, R ($c\tilde{}_{34}$) = 2.25, R ($c\tilde{}_{41}$) = 79.5, R ($c\tilde{}_{42}$) = 8, R ($c\tilde{}_{43}$) = 35.5, R ($c\tilde{}_{44}$) = 35.5.

We replace these values for their corresponding $c\tilde{}_{ij}$ in (3) and solve the resulting assignment problem by using Hungarian method.

	Performing row reductions	Performing column reductions	The optimal assignment matrix is
$\begin{pmatrix} 2.25 & 8 & 31 & 47.5 \\ 8 & 1.75 & 35.75 & 39.75 \\ 25 & 47.5 & 1.75 & 2.25 \\ 39.75 & 8 & 17.75 & 17.75 \end{pmatrix}$	$\begin{pmatrix} 0 & 5.75 & 28.75 & 45.25 \\ 6.25 & 0 & 34 & 38 \\ 23.25 & 45.75 & 0 & 0.5 \\ 31.75 & 0 & 9.75 & 9.75 \end{pmatrix}$	$\begin{pmatrix} 0 & 5.75 & 28.75 & 44.75 \\ 6.25 & 0 & 34 & 37.5 \\ 23.25 & 45.75 & 0 & 0 \\ 31.75 & 0 & 9.75 & 9.25 \end{pmatrix}$	$\begin{pmatrix} 0 & 5.75 & 19.5 & 44.75 \\ 6.25 & 0 & 24.75 & 28.25 \\ 32.5 & 55 & 0 & 0 \\ 31.75 & 0 & 0.5 & 0 \end{pmatrix}$

The optimal assignment schedule is W '!1, X '!2,Y '!3,Z '!4.

Conclusion: In this paper, the assignment costs are considered as imprecise numbers described by fuzzy numbers which are more realistic and general in nature. Moreover, the fuzzy assignment problem has been transformed into crisp assignment problem using Robust's ranking indices (3). Numerical examples show that by using method we can have the optimal assignment as well as the crisp and fuzzy optimal total cost. By using Robust's(3) ranking methods we have shown that the total cost obtained is optimal. Moreover, one can conclude that the solution of fuzzy problems can be obtained by Robust's ranking methods effectively. This technique can also be used in solving other types of problems like, project schedules, transportation problems and network flow problems.

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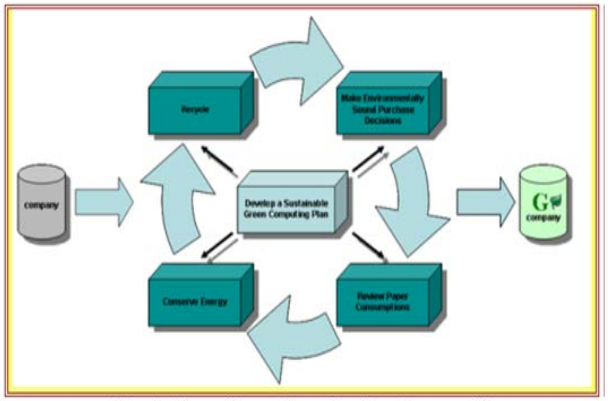
Science [Computer]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 13 - 15
ISSN 2319 - 8168

GREEN COMPUTING : AN OVERVIEW

Green computing requires that we compute in a way that preserves our health, the ability of unborn children to be healthy, and the Earth to be healthy as it flourishes and supports us.Here is the conventional definition of green computing. **"Green computing is the environmentally responsible use of computers and related resources."**But "responsible use" goes far. Otherwise you look only at the surface. These days everybody wants to claim to be green, but there is no measuring stick. Is it green if your laundry soap or computer damages the environment 5% less, but people still die or grow sick from the environmental damage? We suggest that **to be green, an action must support humanity and Mother Earth to thrive.** Green computing is the environmentally responsible use of computers and related resources. Such practices include the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as reduced resource consumption and proper disposal of electronic waste (e-waste).

One of the earliest initiatives toward green computing in the United States was the voluntary labeling program known as **Energy Star**. It was conceived by the Environmental Protection Agency (EPA) in 1992 to promote energy efficiency in hardware of all kinds. The Energy Star label became a common sight, especially in notebook computers and displays. Similar programs have been adopted in Europe and Asia.

"Greening" your computing equipment is a low-risk way for your business to not only help the environment but also reduce costs. Making a conscious decision to go green in the workplace, not only improves your bottom line, but also reduces your carbon footprint. It's a win-win no matter how you look at it",



(Fig 1: Green Computing migration framework)

Need for Green Computing:

The following points would clear why should a company promote green, or energy efficient computing?

***Climate Change*:**

First and foremost, conclusive research shows that CO2 and other emissions are causing global climate and environmental damage. Preserving the planet is a valid goal because it aims to preserve life. Planets like ours, that supports life, are very rare. None of the planets in our solar system, or in nearby star systems have m-class planets as we know them.

***Savings*:**

Green computing can lead to serious cost savings over time. Reductions in energy costs from servers, cooling, and lighting are generating serious savings for many corporations.

***Reliability of Power*:**

As energy demands in the world go up, energy supply is declining or flat. Energy efficient systems helps ensure healthy power .

Computing

Computing Power Consumption has Reached a Critical Point: Data centres have run out of usable power and cooling due to high densities.

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Activities Of Green Computing:

Here's is some basis for green computing which shows how designers plan to make future computer more eco-friendly across its entire life span, from manufacture to recycling:

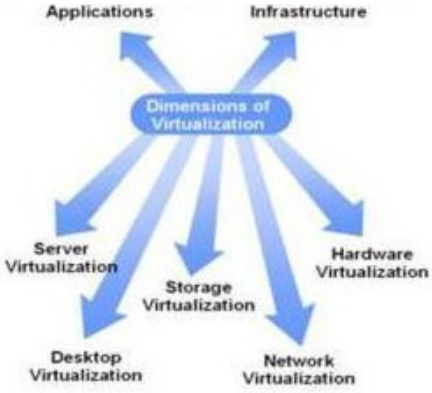
- Energy-intensive manufacturing of computer parts can be minimized by making manufacturing process more energy efficient.
- Landfills can be controlled by making best use of the device by upgrading and repairing in time with a need to make such processes (i.e., up-gradation and repairing) easier and cheaper.
- Avoiding the discarding will not only control e-waste out of dumps but also save energy and materials needed for a whole new computer.
- Power-sucking displays can be replaced with green light displays made of OLEDs, or organic light-emitting diodes.
- Use of toxic materials like lead can be replaced by silver and copper.

Developing a Green Machine

Activating the power management features on your computer saves energy and money while helping the environment. Your computer's SLEEP and HIBERNATE settings are two of the most effective ways for you to make your computer more environmentally friendly. You can activate these functions manually or through your operating system's pre-set power management settings.

Sleep Mode: Sleep or standby mode conserves energy by cutting off power to your display, hard drive, and peripherals. After a pre-set period of inactivity, your computer switches to a low power state. When you move your mouse or press any computer key, you exit sleep mode and your computer takes you back to its previous operating state. Sleep mode is an especially effective way to conserve battery power in a laptop computer.

Hibernate Mode: Hibernate mode saves energy and protects your work by copying system data to a reserved area on your hard drive and then completely turning off your computer. It also reduces wear and tear on your components. When you turn power back on, your files and your documents appear on your desktop just as you left them. Be sure to set your system to automatically go into hibernate mode any time your battery power reaches a critically low level.



(Fig 3: Virtualization : The key to Green Computing)

Virtualization : Instead of having one computer for each service or set of services, you can instead consolidate each server onto a larger virtualized system that uses its resources to the fullest, and has a much smaller energy footprint.

This benefits in several ways:

a) It reduces the total amount of hardware used in your environment
b) Idle Virtual servers can be powered off
c) The virtualized server will have much less idle time and waste less
d) The total volume of space, air, and rent will be reduced. Data centers can use up to 100 times the energy per square foot of typical office space.
e) Some power companies pay rebates for conversion to virtualized systems.

Video card :

A fast GPU may be the largest power consumer in a computer. Energy efficient display options include:

- No video card - use a shared terminal, shared thin client, or desktop sharing software if display required.
- Use motherboard video output - typically low 3D performance and low power.
- Select a GPU based on low idle power, average wattage or performance per watt.

Display

CRT monitors typically use more power than LCD monitors. They also contain significant amounts of

lead. LCD monitors typically use a cold-cathode fluorescent bulb to provide light for the display. Some newer displays use an array of light-emitting diodes (LEDs) in place of the fluorescent bulb, which reduces the amount of electricity used by the display. Fluorescent back-lights also contain mercury, whereas LED back-lights do not.

Advantages :

- Reduced energy usage from green computing techniques translates into lower carbon dioxide emissions, stemming from a reduction in the fossil fuel used in power plants and transportation.
- Conserving resources means less energy is required to produce, use, and dispose of products.
- Saving energy and resources saves money.
- Green computing even includes changing government policy to encourage recycling and lowering energy use by individuals and businesses.
- Reduce the risk existing in the laptops such as chemical known to cause cancer, nerve damage and immune reactions in humans.

Green computing is the practice of using computers and related technology in an environmentally responsible manner. It aims at radically changing the way we go about computing, using the electronic devices and following strict energy conservation guidelines, so as to minimize the damage caused to the environment by computers. This activity is not just limited to saving electricity, but also takes a holistic approach towards environment-friendly use of computers. Devising innovative and environment-conscious techniques for energy generation is also one of its.

Disadvantages:

Green computing could actually be quite costly.

Given that there has been a green process that the computer will have gone through in order to make the computer in the first place; there will usually be some kind of added cost when the computer has been finished. Green computing takes a lot of new technology, and hence, you may find that you will have to pay a premium price for your new green computer.

A perfect example is that the greenest modern computers today are Mac books and Mac book Pros. These computers are hardly inexpensive - they're actually some of the most expensive computers in the market.

Some computers that are green may be considerably underpowered. Some people may need incredibly power-consuming and powerful computers to deal with the tasks that they need them to do. This is another disadvantage that many people who have high-powered computers believe to have with green computers.

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investors more confidence while investing in the company. However, This does not always deliver value to shareholders.

7. Resource Transfer : resources are unevenly distributed across firms (barney 1991) and the interaction of target and acquiring firm resources can create value through either overcoming information asymmetry or by combining scarce resources.
8. Vertical Integration : Vertical Integration occurs when an upstream and downstream firm merge (or one acquires the other). There are several reasons for this to occur. One reason is to internalize an externality problem. A common example of such an externality is double marginalization. By merging the vertically integrated firm can collect one deadweight loss by setting the upstream firm's output to the competitive level. This increases profits and consumer surplus. A merger that creates a vertically integrated firm can be profitable.
   However, on average and across the most commonly studied variables acquiring firms' financial performance does not positively change as a function of their acquisition activity. Therefore includes additional motives for merger and acquisition the may not add value of shareholders.
9. Diversification : While this may hedge a company against a downturn in an individual industry it fails to deliver value since it is possible for individual shareholders to achieve the same hedge by diversifying their portfolios at a much lower cost than those associated with a merger.
10. Manager's Confidence : It increases confidence of managers but manager's overconfidence about expected synergies from M&A may result in overpayment for the target company.
11. Empire Building : Managers have larger companies to manage and hence more power.
12. Manager's Compensation : In the past certain executive management teams had their payout based on the total amount of profit of the company instead of the profit per share which would give the team a perverse incentive to buy companies to increase the total profit while decreasing the profit per share (which hurts the owners of the company the shareholders) although some empirical studies show that compensation is linked to profitability rather than mere profits of the company.
    - The economics of scale can be gained with a larger base.
    - to reduce competition and product diversification.
    - To expand by establishing their presence in the host country.
    - To adopt the technologies from other companies rather then spending time and money in developing it themselves.
    - To reduce foreign exchange.
13. Other objectives : In addition to above M&A Serves following following purposes :

Classification Of M&A :

Accounting Standard 14 classifies amalgamations (also referred as business combination) into two categories for the purpose of accounting : (A) amalgamation in the nature of merger and
(B) amalgamation in the nature of purchase.
As 14 provides that in case of amalgamation in the nature of merger pooling of interest method is to be applied whereas for other cases purchase method is to be applied. This standard is applicable only if two or more entities are merged to from a new entity. In case of takeover of majority interest which does not yield to formation of a new merged entity As 14 Is not applicable.

Prerequisites of M&A

In order to apply pooling of interest method (in case of merger scenario) five conditions have to be fulfilled i.e.

(A) Transfer of all assets and liabilities to transferee company
(B) 90% of shareholders of Transferor Company should become shareholder of Transferee Company.
(C) Consideration for purchase should be paid by issue of equity share of Transferee Company.
(D) Continuation of business of the acquired company and
(E) No adjustment to be made for assets and liability

taken over.

Human Resource Issues

The investor analyses the average salary of the employees ratio of outsourced employee to total employees salary range vis a vis industry trend and chances of salary increase to be made. The investor also tries to find out whether any Golden Parachute has been issued to senior management which has to be borne by the merged entity. The results of due diligence exercise help to unearth startling facts and assist the investment banker to revise the valuation. From the acquirer's perspective some change management problems can be avoided by solving them before the deal closes. For example if the due diligence reveals that the workforce of the target company is inflated then he may insist for its rationalization as a precondition to deal closure.

M&A by Indian Multinationals at Foreign Turf surpass Domestic Takeovers

The first nine months of 2010-11 (April-December) have witnessed more than threefold increase in value terms in the Merger & Acquisitions growing from US$ 13.54 billion in the corresponding period to US$ 58.73 billion. The study undertaken by the Associated Chambers and Industry of India (ASSOCHAM) says the number of deals also rose to 222 from 12.7 during the same period last year.

The major mergers and acquisitions occurred in telecom followed by energy metal & mining pharmaceutical and BFSI sectors. During the first nine months of FY 2010-11 eleven sector topped the list with 28.26 per cent share of the total valuation of M&A deals that took place in India followed by energy sector accounted for 23.59 per cent metal & mining sector accounted for 23.19 per cent while pharmaceutical and BFSI sector accounted for 8.20 per cent and 5.74 per cent respectively.

The number of M&A activities in the past nine months shows that that Indian telecom sector is all set to take on the global markets. There were 10 inbound outbound and domestic M&A deals which took place in telecom sector during April-December 2010 valuing to US$ 16.60 billion; representing 28.26 per cent share in total valuation of the M&A deals that occurred during the period.

Other sectors like IT/ITES Auto/Auto components hospitality steel consumer durable real estate media & entertainment logistics consumer non durable and healthcare which witnessed 146 M&A deals for an amount totaling to US$ 6.48 billion contributing only 11.04 per cent share in total M&A deals.

The cross border inbound outbound and domestic M&A deals occupied 16.63 per cent 41.96 per cent and 41.41 per cent share in total deals with 21,98 and 103 number of deals respectively during the period April-December 2010.

Telecom Sector

The major merger and acquisition outbound deal in telecom sector was India's leading telecommunications service provider Bharti Aritel acquire zain's African mobile services operations in 15 countries. The deal involved a transaction of US$ 10700 million. In another one deal Bharti Airtel acquired 100 per cent stake of Telecom seychelles Ltd for US$ 62 million.

Energy Sector

The biggest domestic M$A deal in energy sector was Anil Dhirubhai Ambani Group's (ADAG's) gas transportation company Reliance Natural Resources Ltd (RNRL) merged with its sister firm Reliance Power (R-Power) for US$ 10686 million. Weitzerland based ABB Ltd the leading power and automation technology increase the stake in its Indian subsidiary from 52.11 per cent to 75 per cent for the US$ 965 million.

There were only 6 deals that took place during April-December 2009 in energy sector for a value of US$ 40.69 million which increased to 13 outbound and domestic deals for US$ 13847.94 million representing 23.59 per cent share of the total deals occurred during April-December 2010.

Other major deal in energy sector Indian's most valuable company Reliance Industries (RIL) picked up 45 per cent stake in Texas US based Pioneer Natural Resources Co. for US$ 1320 million and 60 per cent stake in the Marcellus Acreage in the US for US$ 392 million India's major Power producer JSW Energy agreed to buy Canada's CIC Energy Corp for C$422 million (US$ 414.5 million).

In another deal India's SBI Macquarie Infrastructure

Fund acquired 12 per cent stake in Adhunik Power and Natural Resources for US$ 26.93 mullion. Oil and gas logistics provider Aegis Logistics acquired shell Gas (LPG) India for an undisclosed amount and simpex realty Ltd buys 100 per cent share in simplex renewable resources Pvt. Ltd.

Metal & Mining

A total of 7 deals occurred during April- December 2009 in the metal & mining sector that valued US$ 832.86 million which increased to 11 deals for US$ 13618.29 million representing 23.19 per cent share of the total deals that took place during April-December 2010.

The major M&A deal that took place in metal & mining sector India's largest nonferrous metals and mining company Vedarta Resources Plc acquires 62.4 percent stake in Cairn Energy's Indian subsidiary for US$8480 million and in other one deal Vedanta Resources Plc agreed to pay Anglo American Plc US$ 1338 million for zinc mines in Africa and Ireland.

Pharmaceutical Sector

A total of 5 deals occurred during April-December 209 in the pharmaceutical sector that valued US$ 949.6 million which increased to 16 deals for US$ 4815.07 million representing 8.20 per cent share of the total deals that took place during April-December 2010.

The major M&A deal that took place in pharmaceutical sector was USA based drug maker Abbot Laboratories (ABT) made a major push into the Indian healthcare market and acquired the generics drug unit of Primal Healthcare for US$ 3720 million.

BFSI Sector

In Banking Financial Service and Insurance (BFSI) there were 26 M&A deals that took place during April-December 2010 for US$ 3273.14 million contributing a share of 5.74 per cent.

The major M&A deal that occurred in the BFSI sector was India's Hinduja Group acquired Luxembourg-based KBL European Private Bankers SA for US$ 1690 million (US$1.69 billion) to expand its wealth-management business in Europe. Other deal in BFSI sector India's largest private sector bank ICICI Ltd. acquired Bank of Rajasthan for US$ 648 million.

Conclusions

With the increasing number of Indian companies opting for mergers and acquisitions India is now one of the leading nation in the world in terms of mergers and acquisitions. Till few years ago rarely did Indian companies bid for American European entities. Today because of the buoyant Indian economy supportive government policies and dynamic leadership of Indian organizations the world has witnessed a new trend in acquisitions. Indian companies are now aggressively looking at North American and European markets to spread their wings and become global players. Almost 85 per cent of Indian firms are using Mergers and Acquisitions as a core growth strategy. Thus we can say that M&A has become a day to day transaction nowadays.

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Management
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 23 - 27
ISSN 2319 - 8168

ROLE OF HRD CLIMATE ON JOB PERFORMANCES : A THEORETICAL STUDY

HRD [human resource development] climate engages the employees to acquire the capabilities required to perform various functions which is associated within their present or future expected roles and also developing their skill for organizational development. Performance of these roles purely depends upon the individual's perception regarding the effectiveness of performing the role with regard to various organizational factors. Better HRD climate and higher role efficacy leads in developing a positive attitude towards work which further leads to a better job satisfaction. HRD in the organizational context is a process by which the employees of an organization are helped in a continuous, planned way to acquire or sharpen capabilities required to perform various functions associated with their present or expected future roles. HRD mechanisms measure the extent to which HRD mechanisms are implemented seriously. These mechanisms include Performance appraisal Potential appraisal Career planning Performance rewards Feedback and counseling Training Employee welfare for quality work-life and Job rotation This paper deals with the concept of HRD, Concept of Job Performance, role of HRD Climate on Job performance and some theoretical studies on HRD Climate.

Introduction

HRD [human resource development] climate engages the employees to acquire the capabilities required to perform various functions which is associated within their present or future expected roles and also developing their skill for organizational development. Performance of these roles purely depends upon the individual's perception regarding the effectiveness of performing the role with regard to various organizational factors. Better HRD climate and higher role efficacy leads in developing a positive attitude towards work which further leads to a better job satisfaction. To find to motivate the employees in order to become effective contributors to the goals of an organization, we need to have a clear view of what an effective contribution would look like. The use of personal capacities can be very helpful in describing the way in which an effective employee should operate and behave, but there can be no general prescription of an effective employee. Effectiveness will differ with organizational context, and on whose perspective we are adopting. The matter of what, finally, makes an effective employee is a combination of personality, natural capabilities, developed skills, experience and learning. The process of enhancing an employee's present and future effectiveness is called development.

Training has gained considerable attention in recent year's .Learning and development has been increasingly devolved by the employee to their line managers. But still there exists little published empirical research that measures the behaviors of line managers or examines the linkages between line managers' and employee performance. This theoretical study will evolve about the perceived behaviors of supervisors and their respective employees to examine supervisory coaching behavior in an industrial context and to assess its association with employee job satisfaction and performance. Implications for research and practice are presented.

HRD culture & climate

Denison (1996) suggested that 'Culture' refers to the

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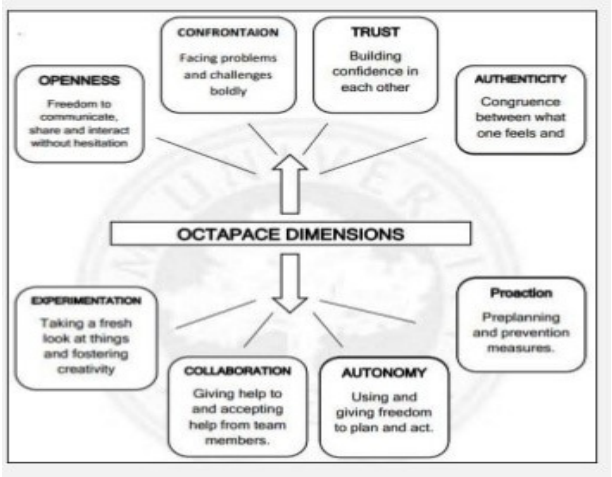
deep structure of organizations, which is rooted in the values, beliefs and assumptions held by organizational members. In contrast, 'Climate' refers to those aspects of the environment that are consciously perceived by organizational members. HRD in the organizational context is a process by which the employees of an organization are helped in a continuous, planned way to acquire or sharpen capabilities required to perform various functions associated with their present or expected future roles. HRD mechanisms measure the extent to which HRD mechanisms are implemented seriously. These mechanisms include Performance appraisal Potential appraisal Career planning Performance rewards Feedback and counseling Training Employee welfare for quality work-life and Job rotation. Organizational or corporate culture is the pattern of values, norms, beliefs, attitudes and assumptions that may not have been articulated but shape the ways in which people in organizations behave and things get done. 'Values' refer to what is believed to be important about how people and organizations behave. 'Norms' are the unwritten rules of behavior.

The OCTAPAC items deal with the extent to which are Openness Confrontation Trust Autonomy Pro-activity Authenticity and Collaboration valued and promoted in the organization. Openness is there when employees feel free to discuss their ideas, activities and feelings with each other. Confrontation is bringing out problems and issues in open with a view to solving them rather than hiding them for fear of hurting or getting hurt. Trust is taking people at their face value and believing what they say.



HRD climate is characterized by the tendencies such as •Treating employees as the most important resources •Perceiving that developing employees is the job of every manager •Believing in the capability of employees •Communicating openly •Encouraging risk taking and experimentation.Making efforts to help employees recognize their strengths and weaknesses •Creating a general climate of trust •Collaboration and autonomy supportive personnel policies, and •Supportive HRD practices An optimal level of development climate is essential for facilitating HRD activities

Meaning of HRD climate

HR means employees of the organization, who work to increase the profit and growth of the organization and **developmen**t, it is acquisition of capabilities that are needed to do the present job, or the future expected job. After analyzing Human Resource and Development we can simply stated that, HRD is the process of helping people to acquire competencies. **Climate**, this is an overall feeling that is conveyed by the physical layout, the way employees interact and the way members of the organization conduct themselves with outsiders. (It is provided by an organization.) "Organizational climate is a set of characteristics of an organization which are referred in the descriptions employees make of the policies, practices and conditions which exist in the working environment".

Essentials To Develop Organizational Climate

An organization is complete by including all the employees working in it .development at an organisation is the joint effort of both ,people working at the senior management level to the lower management level . Bottom level workers should have loyal mind-set towards their organisation. and should work with dedication, Where as people at the senior management level should emphasize on proper implementation of decision by adopting various controlling technique. Mangers play a very important role , that is the role of a motivator for the employee. They share their expertise and experience with the employees and in turn help the employees to develop there competencies .Employer should trust the employees that they will work for the wellbeing of

the organisation.

Clear communication process will help to establish the HRD Climate. Which is possible by increasing employee engagement , improving company competitiveness and building stronger teams . There must be feeling of belongingness among the employees, and also willingness to work as a team. Feedback should be taken on regular basis to know the drawbacks in system. It will in turn help the employees to gain confidence and there by building there trust on the management. Management need to avoid those practices which lead to favouritism. Any kind of partial behaviour should be avoided. Employees should be motivated by giving them authority to take decision. It will help to develop confidence in employees mind.

Components of HRD Climate

Organizational Structure- An organization's structure defines about its work processes. The structure enables the people's energy to be focused towards goal achievement. Employee must have a clear idea about the role he has to perform in the organization . If the structure and the role is not clear, people will not know what the work process is, who is responsible for what, whom to go for help and decision, and who can Assist in solving problems that may arise.

HR Processes- HR Process should be impartial, so as to retain employee's faith in the organization . The HR system of an organization should be comprehensive enough to take care of employees from the time they join till the time they leave the organization.

Organizational Culture- Organizational culture is the pattern of beliefs, knowledge, attitudes, and customs that exists within an organisation. The most effective work culture is one that supports the organizations, HR strategies by aligning behaviors, processes and methods with the desired results. It is not just achieving results but the method through which they are achieved that are critical to long-term success.

Measuring HRD Climate

Economic condition –The more prosperous an organisation is the more it can afford to spend on research and the more it can afford to risk and be adventurous.

Managerial values and ethos- The feeling of managers about norms and values what is good and what is poor as management practice. There are few dimensions on which it can be checked. They are – self-awareness, risk-taking, participation, bureaucracy, equity, employee's security and growth.

Organisation size- An small organizations there are few levels of management, these are generally more amenable to democratic and participative functioning than big organisations. More open communication system in small organisations. Hence these organisations have a different type of climate than what are in big organizations

Job Performance

John P. Campbell describes job performance as an individual level variable, or something a single person does. This differentiates it from more encompassing constructs such as organizational performance or national performance which are higher level variables. Despite the emphasis on defining and predicting job performance, it is not a single unified construct. There are vastly many jobs each with different performance standards. Therefore, job performance is conceptualized as a multidimensional construct consisting of more than one kind of behavior. Campbell (1990) proposed an eight factor model of performance based on factor analytic research that attempts to capture dimensions of job performance existent (to a greater or lesser extent) across all jobs.

1. The first factor is **task specific behaviors** which include those behaviors that an individual undertakes as part of a job. They are the core substantive tasks that delineate one job from another.
2. On the other hand, **non-task specific behaviors**, the second factor, are those behaviors which an individual is required to undertake which do not pertain only to a particular job. Returning to the sales person, an example of a task specific behavior would be showing a product to a potential customer. A non-task specific behavior of a sales person might be training new staff members.

3. Written and oral **communication** tasks refer to activities where the incumbent is evaluated, not on the content of a message necessarily, but on the adeptness with which they deliver the communication.
4. An individual's performance can also be assessed in terms of **effort**, either day to day, or when there are extraordinary circumstances. This factor reflects the degree to which people commit themselves to job tasks.
5. In jobs where people work closely or are highly interdependent, performance may include the degree to which a person **helps out the groups and his or her colleagues**. This might include acting as a good role model, coaching, giving advice or helping maintain group goals.
6. Many jobs also have a **supervisory or leadership component**. The individual will be relied upon to undertake many of the things delineated under the previous factor and in addition will be responsible for meting out rewards and punishments. These aspects of performance happen in a face to face manner.

Measuring Job Performance

Decisions to retain, promote, or fire people have to be made in every organization. Classically, these decisions were made through patronage and nepotism, where personal relationships within the organization had a large impact on promotion and firing decisions. While personal relationships are still important today, many industries try to systematically assess worker performance, in order to increase productivity (and ultimately, profits).

Personnel Data

Another way of attempting to objectively measure job performance is to use information from the employees personnel file. Training Session attendance and performance, outside education sought, suggestions to improve productivity made, number of complaints made against, number of work related accidents, are all possible pieces of information that might be found within a personnel file.The most commonly used personnel index used, however, is employee absenteeism. The assumption is that the employee who works eight hours a day, day in and day out, will be more productive (and cost the company less in health insurance), than an employee who is frequently absent. Although it seems simple enough, how absenteeism is defined will have a major impact on employee ratings.

Absenteeism as a measure of job performance

Landy and Farr (1983) have identified over 40 different operational definitions of absenteeism.Total numbers of days missed, average length of absence, frequency of absence, dividing absence into voluntary and involuntary, are just a few days to define absenteeism. How this concept is defined will greatly affect job performance ratings, since these measures are usually only moderately related.The second major problem with using absenteeism is it does not seem to be a normally distributed work performance variable. The majority of workers miss very few days of work each year, while a small minority of workers are frequently absent.

The Construct of Job Performance: Work samples, measures of absenteeism, production counts, all capture only a part of what we consider to be total job performance. Recently, research efforts have focused on exactly what good job performance is.

Two major Factors of the Job Performance Construct

1. Performance on specific individual tasks that are part of each workers job description.

2. Behaviour which are necessary for the organization to function smoothly: cooperation and communication skills.

The second category is not captured in any of the three "objective" measures of assessing job performance. This is one of the primary reasons for the overwhelming use of subjective measures of job performance within industry. Judgemental measures are used about 80 % of the time as the sole of major determinant of job performance. Two general types of judgements can be made:

1. Rankings, in which workers are compared to one another and rank ordered.

2. Ratings, in which a workers performance is compared to some set standard.

Ranking Techniques

Forced Distribution: Dividing up the workforce into categories: High Performance, Average

Performance, Low Performance. The distribution is forced in that only a small percentage of workers can receive high or low rankings.

Full Ranking: Instead of sorting workers into general categories, you do a complete rank ordering of all employees, so that no two workers are at the same level of job performance.

Pair-Comparison Method: The supervisor rank orders workers by comparing each worker to every other worker, forcing the supervisor to make relative judgements

Comparison of Ranking Methods: Depends upon how much effort you want to put into the rankings, and depends upon how you want to use rankings(For deciding who to lay off, a forced distribution may be most appropriate)

Rating Scales: The single most common way of evaluating worker performance.

Graphic Rating Scales: The supervisor makes a direct judgement about the quality of each workers performance on a specific response scale. Graphic Scales are simple to use, and allow for computation of scores to compare workers on overall job performance.

Mixed Standard Scale (MSS): Good, average and poor performance is assessed with respect to specific job related behaviours**.** A number of different items are used to assess each performance dimension. For example, an MSS for police officers might measure the dimensions of Judgement, Relations with Others, and Job Knowledge.

Behaviourally Anchored Rating Scales : Similar to graphic rating scales, but uses specific behaviours to anchor the scale. The development of BARS requires extensive input from supervisors in order to determine which behaviour's are task relevant and assess some important aspect of job performance. The care taken in developing the BARS helps to reduce across supervisor variability. Behavioural Observation Scales (BOS) : The BOS was developed by Latham & Wexley (1977) who believed that both graphic rating scales and BARS require supervisors to make vague judgements.

IMPORTANCE OF HRD IN JOB PERFORMANCE

HRD is needed to be developed as per the change in external environment of the organization, hence, HRD helps to adapt such changes through the development of existing human resource in terms of skill and knowledge which in turn will improve there performance level .

The importance or significance of HRD can be explained as follows:

1. HRD Develops Competent HR
2. HRD Creates Opportunity For Career Development
3. Employ Commitment
4. Job Satisfaction
5. Change Management
6. Opportunities For Training And Development

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intensely to leads the story they share those inner conflicts with others so he says Shakespearean Tragedy" We observe one sidedness, a predisposition in some particular direction; a total incapacity in certain circumstances, of resisting the force which draws in this direction, a fatal tendency to identify the whole being with one interest, object, passion or habit of mind "So he wants to say that above is a fundamental tragic trait of Shakespearean hero or protagonist so his interest, passion or particular habit of mind is their tragic flaw which is

Key feature for his tragedies and they are:

(1) Hamlet: brooding on one subject (2) Othello: jealousy (3) King Lear: predominant self will (4) Macbeth: over ambition

Hamlet:-Bradley in his essay mentioned one folly of Shakespeare in his play Hamlet he says "The mysteriousness of life is one thing, the psychological unintelligibility of a dramatic character is quite another "So his point is we feel strange that in Hamlet strength and weakness mingled in one soul and this soul doomed to such misery and apparent failure.

Othello:-

Now Bradley turns to Othello and for him it is Shakespearean Tragedy the most painfully exciting and the most terrible of Shakespeare's tragedies. "though it is not highly as the other tragedies and less symbolic but the emotional pull is strong. The suffering of Desdemona is the most nearly intolerable thing that Shakespeare offers us. Her suffering is like„The most loving of dumb creatures tortured without cause by the being he adores. Bradley correctly ranks Iago on the top of Shakespeare's evil characters because the greatest intensity and subtlety of imagination have gone into his making. In terms of psychological complexity, Bradley suggests he is equaled only by Hamlet but goes on to argue that the tragedy of Othello is in a sense his tragedy too. It doesn't shows us a violent man, like 'Richard III' who spends his life in murder, but a thoroughly bad, cold man, who is at least tempted to let loose the forces within him, and is at once destroyed.

King Lear:- Turning to King Lear Bradley echoes Lamb: "The play as a whole is imperfectly dramatic, and there is something in its very essence which is at war with the senses, and demands a purely imaginative realization "So this play is overpowered to the purely tragic emotions and physical horror works as stimulus to pity which appalled essence of the tragedy to excite. Bradley correctly compare Shakespeare with Greek philosopher Empedocles who believed that all matter is composed of particles of fire, water, air and earth, where as Shakespeare regards Love and Hate as the two ultimate forces of the universe for this play. Shakespearean Tragedy

Macbeth:-

For Macbeth he writes "Shakespeare no longer restricts the action to purely human agencies "So in this play many actions takes place and further he compares Lady Macbeth with Iago and mentioned about the tone of the play which shows dark and bloody environment in words of Bradley "It is as if the poet saw the whole story through an ensanguined mist, and as if it, stained the very blackness of the night "Of Macbeth and Lady Macbeth, Bradley writes that 'there is egoism a dues' Means they have no separate ambitions and they remain tragic till end, even grand. In the short notes on 'Shakespearean Tragedy' Bradley addresses number of specific quotations like Did Lady Macbeth really faint? then about Duration of the action in Macbeth, Macbeth's age and so on and with his arguments he tries to define answers.

Conclusion:-

Thus through his minute observation and thorough study on Shakespearean tragedies Bradley brought variety of dimensions in the way of reading Shakespeare in 19thcentury which affects the later time periods and he also justified himself by putting concrete arguments. In the conclusion I would like to quote two scholars' opinion on Bradley's work. In the words of Terence Hawks, Shakespearean Tragedy"Bradley s Shakespearean Tragedy is one the most influential texts of our country…which remains a key and vastly formative work "Gary Taylor observes that, "In Bradley's hands, Shakespearian criticism become a philosophical novel"- Jay Rampur

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Arts [English]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 37 - 38
ISSN 2319 - 8168

GITANJALI: FULL OF MYSTICAL ELEMENTS

Mysticism is a word derived from "Mystes"**. 'Mystes' comes from Greek word** "Muein"**. It means to keep silence. Mysticism is the belief that knowledge of God and of real truth is independent of the mind and senses. One can get this knowledge through spiritual insight. The best minds of India have held mysticism to be the source and ultimate proof of the teachings of philosophy and religion. The fathers of Hindu religion were mystics who embodied in inspired words what they saw in mystic vision. Rabindranath Tagore is a mystic poet. He has an inner vision. Usually, a mystic believes that the ordinary word of sense perception is not real and behind this visible world there is a more real world which can be apprehended spiritually and not through the senses. Swami Adiswarananda of the Ramakrishna-Vivekananda Center of New York, in his preface to 'Tagore: The Mystic Poets' writes,** "The inner-seeking spirituality of India infused all of Tagore's writing. He wrote in many genres of the deep religious milieu of Hinduism. The values and core beliefs of the Hindu scriptures permeated his work." **Says the Swami: "Rabindranath Tagore's philosophical and spiritual thoughts transcend all limits of language, culture, and nationality. In his writings, the poet and mystic takes us on a spiritual quest and gives us a glimpse of the infinite in the midst of the finite, unity at the heart of all diversity, and the Divine in all beings and things of the universe."**

Function of Mysticism: **All functions of mysticism are based on the belief that direct knowledge of God, of spiritual truth and of ultimate reality, is attainable through immediate intuition, insight or illumination.**

The love of the mystic can only find its consumption is worship. The song no. 59 illustrates: *"yes, I know, this is nothing, but thy love, O beloved of my heart - this golden light that dances upon the leaves, these idle clouds sailing across the sky, this passing breeze leaving its coolness upon my forehead."*

The divine love is so enervating and exalting and comforting that makes everything beautiful. *"The morning light had flooded my eyes - this is thy message to my heart. Thy face is bent from above, thy eyes look down on my eyes, and my heart has touched thy feet."*

The second stanza of the song, unmistakably, records the human soul with the divine soul. Every man aims at finding what is in him, which is the truth, which is his soul, the key with which he opens the gate of the spiritual life. The nearer we reach our real selves, the more harmonious our life becomes but the end is sure and it will definitely come. Song No. 12 is an example: *"The time that my journey takes is long and the way of it long."*

"I came out on chariot of the first gleam of light and pursued my voyage through the wilderness of worlds leaving my track on many a star and planet -

It is most distant course that comes nearest to thy self:

The traveler has to knock at every alien door to come to his own, and one has to wander through all the outer worlds to reach the innermost shrine at the end:

"My eyes strayed far and wide before!

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Shut them, and said, "Heartiest thou!"

The intensity of quest and rapture of realization are beautifully depicted in the last stanza: "The question and the cry 'Oh, where?' melt into tears of a thousand 'streams and deluge the world with the flood of the assurance, I am! **Thus this 'Gitanjali' song illustrates the mysticism of R. N. Tagore.**

Mystical Elements in Gitanjali

We see that Tagore's mysticism consists in looking at the world with a pure soul and his vision of life is an attempt at the purification of the soul and the realization of the inherent unity is all. According to S. B. Mukherjee, *"It is a mysticism of limpid clarity, a vision made concrete, even sensuous, Nature's mystery, mystery of primordial unison of the soul with her the joy and wonder of it all are woven into the texture of the poems and vivified with an imagination that can externalize an intuitive vision with symbol and images startingly new."*

Really mysticism is a striking feature in Tagore's y 0'Gitanjali', in which he had the vision of unity in all things, of the one inseparable phenomena of the universe, R. N. Tagore was a seer, and a mystic, besides being a poet. He lived a life of inward excitement and passion. His emotional excitement was due to his mystic or spiritual experience. Here we see him quite different from the Western mystics, who lived in wildness, in a world which was devoid of aim and meaning and god. So his poetry has a spiritual significance and it can't be ignored by the modern world.

The following excerpt from his "My Reminiscences" is interesting and instructive also; "I had so long viewed the world with external vision only….. when all of a sudden from some innermost depth of my being, a ray of light found its way out, it spread over and illuminated for me the whole universe….. This experience seemed to tell me of the steam of melody issuing from the very heart of the universe, and spreading over space and time, re - echoing thence as waves of joy which flow right back to the source….. And as we become aware, our love goes forth, and ourselves are moved from their mooring and would fain float down the stream of joy to its infinite goal. This is the meaning of the longing which stirs within us at the sight of beauty ….. **The stream which comes from the infinite and flows towards the finite….. That is the Truth. This shows in his poetry the genesis of mysticism.**

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Arts [Sociology]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 39 - 45
ISSN 2319 - 8168

"TRADITIONAL HAAT SYSTEM IN RATHWA TRIBE"

(1) Introduction :

One of the different groups a huge group in Indian society is of the tribal.

In the Gujarat state's eastern belt, from Banaskantha at Gujarat Rajasthan border to Dang-Ahwa district at Gujarat Maharashtra border; the tribal population is maximally scattered. In which Gujarat and tribal east belt and in the center of Vadodara District, in east belt different tribal casts are also dwelling. Which included Tillakwada, Sankheda, Naswadi, Pavi-Jetpur, Jambughoda, Chhota-Udepur, and Kawant taluka places, and maximum tribal live in these taluka places. This entire area is known as 'Rath-Vistar' or 'Paal-Pradesh'. Here rathwa tribe's population is maximum, therefore this area is known as 'Rath-Pradesh'. Besides rathwas, tadvi, bhil, nayak (nayaka), koli, baria, bariakoli, dhebaria koli, vasava etc. tribals are also living in this area.

S.V. Punaleker's study of "Haat in tribal address" is very popular. Due to modern factors there are various changes coming in haat. Haat is closed at many places. However, which specialty is there in haat, which is visible in contemporary time. Still, haat is considered as important part of trible life. Till today, in tribal areas haat is being traditionally going on since years, and once in a week at different places goes on and visible. It is very important to know how the arrangement of haat was in past and is in the present time. In such haat for trible business (buy-sell) is not only important thing, but it is also important economical social, religious and cultural point of view in their life. Tribal believes haat as festival, and fair.

The population of Rathwas in this area is maximally found in Chhota-Udepur and Kawant taluka. It is believed that the evolution of Rathwa tribe is from Rathod, Rashtriya or Rashtrakud. Rathwa tribe is mainly found in forests and hilly region in scattered form. Live factors of water, land and forest reflect in art, music, dance and rituals of Rathwa society. They are living a primary level's life. There is more superstition also found in Rathwa tribes. Their life is simple and intricate. They seem to be simple from external side, but it is a society having intricate culture. They still stick with their tradition and living traditional life. The people of Rathwa tribes are strong and strength. This tribal are still living conflicted life.

There is not much importance of regular markets in the economic life of Rathwa tribe community of Rathvistar, but weekly or by-weekly haat take place near their dwelling region, play a role of market in their life. There are no fix or stable markets in tribal society. So, buy the things of their living goods and doing business of economic things that they want to sell.

Men have evolved different arrangements to run own life intercourse. In which for self security police or army, for health, hospitals and for household tings market like organizations are evolved. In which any person of society can fulfill his interests, aims and necessities. As in contemporary and modern society fulfill different life necessaries men evolved different market or mall's arrangement and in it any person can fulfill own things of life necessary by exchange of things, the tribal society has also evolved market for fulfill their own life necessary things. The tribal society has also evolved market for buy and selling their goods and fulfills their own life necessary things in their own way. This is traditional system. Tribal know this as 'haat' (weekly market).

In many regions of Gujarat and Madhya-Pradesh

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weekly haat take place. On particular day, particular village, particular time and particular place haat take place from morning to evening. Many special features can be found in behaviors, cloths, traditions etc. of tribal. In the same way haat is also a special part of their life, which shows their culture.

In ancient time haat was taken place on the full moon day. Haat take place at present, continues till noon and after that the people who came in haat, scatters. Haat before 'holi festival' is called 'Bhangoriyo Haat'. This haat is very important in tribal. Big shopping is being done for celebration of holi. As the holi comes nearer, they dance in haat by playing dhol (drum), plate, flute, kartal.

(2) Definition of haat :

i. "Haat is a special type of weekly market, take place at particular time, particular day and particular place in tribal regions, tribal know it as 'haat".

ii. Marmkod: "by the geographical viewpoint, market is network, economical group, stage of social work and unity's interesting and complete symbol."

iii. "Haat is a center point of social, cultural and economic intercourses of tribal and non-tribal."

The term haat came from Sanskrit word 'hat'. That is also called 'haatwada' or 'haat bajar'. Haat means, a market for buying and selling at particular day and particular place. When there where no transportation in ancient time, the movable market at village or centers were taken place, for interest of exchange of life necessary goods in different areas for trading. Today, in Ahmadabad and Mumbai, gujari (ravivari) and shukrvari (shukkarvari) are the remaining of haat-tradition. In modern time which is known as market, bajar, shopping center or mall.

(3) Origin and history of haat :

Before 150 to 200 years, the people, vendors and workers of developed villages, went to tribal villages to do business and inter-change of services. Afterwards, the traders trade the things by grain, fruits, other soils and many times birds. Between the tribal of interior region and traders, there were no money interchange, but the tradition was of things in retaliation of other thing, which is known as barter system.

As the time passes, this vendors increase close contact with tribal and achieve the trust of tribal and this tribal need the traders, who buy agricultural products and forest products. When this need increases, this traders feel that their efforts of visit and staying at that place, earns good benefit and then to satisfy each other's needs traders and tribal meet together and haat came in to existence. This wendors made unity and decided to meet on a particular day of a week in a particular village. In this way haat was taking place before A.D. 1800. And Vyrara (Dist. Surat-Gujarat) is the oldest and taking place approximately since A.D. 1740.

(4) Types of haat :

The tribal of this region, goes to nearer weekly market, to sell the self produced grains and to buy the necessary goods. Haat is woven in tribal life in such a way that tribal even recognize the names of seven days by different haat.

No.	Day	Play	Regional name (identity)
1.	Sunday	Panvad (Ditvar), Ghoghamba, Chibhadkaath.	Panvadiyo haat, Ditwar, Ditwariyu
2.	Monday	Tejagadh, Kawant	Kawantiyo haat, Bhabhriyo, Rajpuriyo
3.	Tuesday	Motivada, Bhabhira, Ambaborzar	Dodiyo, Pandudiyo, Panvadiyo, Junlo
4.	Wednesday	Rangpur (Gujro haat), Pandor, Chandpur, Jambughoda	Gujari, Gujarohaat
5.	Thursday	Devhaat, Rohina, Bhikhapura, Zoz, Sukhlav, Kathivada	Devno haat
6.	Friday	Zoz (Junlo, Juniyo), Sukhlav, Kathivada	Junlo, Juniyo, Udapariyo
7.	Saturday	Chhota-Udepur (Thavar, Navlo)	Thavar, Thavariyo, Udapariyo

(5) Importance of haat in tribal life :

As per the population of tribal, Africa is first and India comes second. In India, tribal are found residing scatter and residing in remote, and forest, vallies, hills or riverbank away from urban society. Because of

that before many years, there was no existence of regular markets, at that time for the reason of employment, or benefit, it starts by hawker system in tribal villages and slowly and gradually tribal market came in to existence in the form of haat.

Even today, in life of traditionally living tribal, haat is economically, socially, religiously or politically very important.

Haat is tribal's market. The tribal and people of other region and castes came here for their business and economical purpose. Here tribal trade different type of every small and big things of daily and life necessary use. So, they fulfill their economical goal by income and expense.

The tribal of Gujarat living far away in forests and mountains, so they meet their relatives by such haat and get the opportunity to meet them. They also fulfill different social work by such haat. So, by social view-point there is prominent important of haat in tribal society.

In the rathwas of Gujarat, haat is considered as a center place to take revenge of traditional enmity of their family. They pay off their traditional debt on the haat's day. They keep in mind the person who hearts their family, and on the haat's day they attack with weapons and kill the rival and take revenge.

Rathwa tribe is depended on forest and agriculture, so after selling the agricultural product such as grain, vegetables, fruits and other products, they can get butter-bred or extra income, moreover the tribal doesn't need to travel for villages for trading things, because of which they can save their time, energy and money.

Moreover, the government offices attend haat to propagandize government program. There is fair like atmosphere in haat so it is easy to display and advertise. Usually due to illiteracy, tribal can not read, newspaper, but they acknowledge social and political events by haat.

Thus, in tribal of India-Gujarat, haat is very important by economical, social, religious, cultural and political view point. It is woven with their life. Haat is a symbol of tribal culture.

(6) Necessity of haat tradition in contemporary time :

Indian village system is separated in two parts, 1) village, and 2) urban. Even village society is also separated in two parts 1) non-tribal (centered villages) society, and 2) tribal (scattered villages) society. In modern India, because different factors there is huge changes at different areas of village level. Due to culturization, urbanization, westernization, education, reservation system, political awareness and partnership etc. there are upcoming changes in their different aspects in tribal. Because of this, due to new generation's awakening and education, civil migration is increasing. As a result of latest and variety, they hesitate to go in haat, because of migration they can not participate and fewer amounts found in haat and there is lack of modern-things in haat.

Haat is inseparable part of Indian tribal's culture. Haat is identity of tribal-ness. Tribal and their regions are still far away from cities. So, in modern time the necessity of haat tradition is important.

7 to 8 percent of total population in India and 14 percent of total population of Gujarat is tribal population. The tribal population is maximum in eastern belt in Gujarat. Even today, in any form the haat take place in these regions. What is the necessity of haat in contemporary time? Why? to know this and to think about it is also important.

i. Approximate 76% people of India lives in villages. It is important that tribal get their life necessary things at haat, near house, village center or taluka center. Because of it their time and money is being saved. If haat doesn't take place or lost then they have to go in town that is not affordable to illiterate, backward, and poor tribal, so haat is important.
ii. India is an agricultural country, so their prominent market is necessary. Because of which culture can be protected.
iii. Haat is also necessary for thousands of Indian villages' tribal to get the things at door-step.
iv. The products and things of good quality of villages would be available to villagers at reasonable price

is also necessary. Otherwise, grains, milk, vegetables and other things would be in town and return with high price. By haat, the thoughts of village development by Ghandhiji are refreshed. Ghandhiji said, "the raw material of villages should complete in village" and "think globally, but act locally."

v. Necessary to maintain ancient tradition and to keep stable the country's culture.

vi. The people tradition like haat is as important as mother tongue, dialects, handloom art and rock-sculpture.

vii. Haat tradition is necessary to keep living different of forests and social life.

viii. Though the form of haat tradition is changed, then also haat tradition stay there is very necessary.

(7) Traditional form of haat :

The rathwa's population is approximately 90% percent found in Vadodara district's Sankheda, Naswadi, Tillakvada, Pavi-Jetpur, Chhota-Udepur an Kawant of eastern belt. As other tribal of Gujarat and India, in the tribal of this region haat takes place from tradition. By such haat tribal culture can be viewed. In the life of tribal traditionally coming down haat has economical social, religious, cultural and political importance.

Tribal of this region wake-up early morning at 4-5 o'clock for trading in the haat, and take the meal with them, because they have to walk 10-15 k.m. to market.

In this region haat means prepare market. That is proposed as word 'hatanu' in non-tribal society and regions. Even today barter system is found in tribal society's haat. Thing exchange is a trait of haat. That is visible even today.

When this rathwa and other tribal, leave from the house to haat, then the tribal of village-street went in group. Youngsters and men usually drink the juice of regional tree that is palm-tree and by drinking that they became happy. In this tribal, haat is believed as a type of fair, occasion or event. Moreover, it is also evaluated as trading economic purpose as well as joy and entertainment's event for them. Many youngsters sing occasional songs in their regional rathwi (rath) language and play flute (piho). Young boys and girls, men-women wear new clothes and dance in folk dance, timli, with gathuli, aantiya, vavyu, dhamiyu, dholki, dhol, kundi, plate, sharnai, pawa (pihi,piha). In timli tribals dance by imitating the instruments and playing piswa (sugta), while women play kartal and every one together dance in group.

In this tribal, haat is believed as festival. Tribal men-women went in haat by wearing new clothes because it is also an event to meet relatives and people of society. In which, women prepare themselves by ghaghro with red stripes, colorful blouse, odhni on head, red bant or red baheriyu on body, tanali or coined hansdi in neck, aaganiyu at elbow, red turmeric powder at forehead etc. and men prepare themselves by paghadi on head, body protector (angrakhu) and lungi or dhoti, colorful or long striped shirt (paheran), colorful kohadi (kohado) at waist, red or orange fento at head, pearl necklace, silken handkerchief, silver bhoriya in wrist, kadu on elbow etc. while going in haat.

Taluka place, town or from far, for trading, people of different caste, religion and region specially tribal, harijan, or muslim in hawkers, vendors, agents or tradesmen's form make deals with tribals. Small shops of different types found in haat. In which tribal and vendors make deals of trading. In such haat normally men buys paghdi, fento, angrakhu, shirt (paheran), lungi, dhoti, silken handkerchief, while women buy ghaghro (chaniyo), blouse, angrakhu, odhani, bant, baheriyu and kanthi, kandoro, juro (jura), vinti, chain, zanzar, kan-kundal, kalla (kadala), hansdi, coined hansdi, red turmeric powder, chandla, pin-ribbun, bangals etc. from hawkers or vendors. Even to buy the daily domestic usable vessel like tavla, tavi, bhutvo, handle, bath, vatka, gagar, kodiyu, pankiyu (pochiyu) etc. they comes in haat.

They pray their Gods Khatri, Village's God, Pitharo etc. In prayer they kill chickens or goat as sacrifice and eat as a holy food (Prasad). Many 'bhagat' people stay away from non-veg., liquor or suspicions. For prayer of their Gods they also buy horces, eliphent, camle or tiger of clay. They also buy different wooden things such as idol, chatvo, kathrot, door-windows, bed, chair, toys, plough and karab from farming instrument etc. from haat only. In things of pearl

kidiya's butty, kidiya's garland, in the things made of wool chumbel, ghumsa for boys head, ghumsa of boy's handkerchief, kahada to tie up at waist, in the things made of bamboo, barrel for grain (mohti), topla, supada, flute (piho), tools of iron, in weapons and tools spears, bow-arrow, paliya, dhariyu, sickle, gofan and incense stick, bhindi, toys, balloons, different things of plastic, shoes, broom, sadodi's rops, chilies, grains, spices etc. also buy from haat.

Moreover, along with purchasing they also earn by selling. In fruits they sell guava, sitaphal, mango, rose-apple (jambuda), sweet-tamarind, bor, chanibor, papaya, watermelon, cucumber, chibhadu, palm fruit, leaf of timru in forest regions (for make bidi), roots, herbs, different types of vegetable from their farms in the form of piles at 5.00 Rs. each. They sell maize, juar, bajri, wheat in grain, and in pulse black beans, green gram, math etc. They also sell hens, goats, dear-rabbits, fish, bumla (dry fish), eggs, partridge, and mahuda, datan, kanji's datan, piles of dry wood, gum, gugal, honey, sealing-vex, palm, palm juice, niro, siklu mado of palmtree (to hang milk-curd's pot) etc. and earn brad-butter.

When clash take place in village and society, then for giving justice a person is appointed as patel, badavo or dayo and he solve it by giving justice.

Young boys and girls especially girls draw different types of tattoo by machine on hand, forehead and chaste in village. In which they draw God, Godess, or boy-girls name, and some of them draw a tattoo of Krishna, Swastic, Aum etc.

Haat's trait, that is chief and attracts everyone is haat's dealings, the tribal men-women are found in both roles of buyers and sellers by barter system, which is not found in normal society, which means tribal themselves buy as customer and sale as seller. Since long tradition general society hindu, muslim, tourists, students, foreigners come at haat to study, enjoy, and to trade.

(8) Changing traditional form of haat (fore coming changes in haat tradition) :

Change is continuous process. For any religious caste or region change is important factor. In contemporary time the effects of education, English skills, people contact, and Christian missionaries' activities. Panchayat rule, legalization, transportation and telecommunication (mass media), urbanization and industrialization, co-operative activities, government law and plans, reservation system, etc. changing factors make effect on every factor of tribal life. In which haat is not remained. Due to effect of changing factors, awareness comes in tribal. There is slowly and gradually improvement happens in good times because of state and central government's different schemes.

Because of educational factors there is improvement in their, traditional rath (rathwi) language, speaking style and speech-behavior. They wear modern clothes and ornaments instead of traditional clothes and ornaments in haat.

In modern age India, everywhere as a result of professional competition different life necessary things of tribal are at door-step by hawkers, traders and agents at villages. They avoid going in haat, because they get their necessary and liking things at door-step. As a result it seems that the crowd's level is decreasing day-by-day.

The culture of tribal also found in haat. Today it seems that the use of their regional, traditional and self made instrument is decreasing. They found to use radio, t.v, c.d. player. The different things made from forest regions are also less visible and instead of wonderful things, modern things have taken place.

In earlier times tribal wake-up early and after walking more than 8-10 k.m. comes in haat, but nowadays by increasing transportation facility jeep, chhakada, bus or track are coming in haat.

Nowadays tribal, to do hatanu or to purchase comes to taluka place, then to maintain the expense they found to sell vegetables, fruits, dry wood's bundles etc. in streets and society.

Now from the district place Vadodara the Tebatan people comes to haat and sell sweater, jacket, t-shirt, pant and other things and tribal even buy it.

In the former haat there was only limited things were sold but today average traders also sale the furniture in haat. Moreover, the showroom people, dealers etc. of town, found in haat with different things, motor cycle, four wheelers' tents or showrooms of their company. They come to advertise and sell their own

products. Side-by-side the selling of toys, watches, home appliances of china market is also available in haat, because of which haat is going away from tradition and reality.

By increasing near taluka place and town's contact and transportation it seems awareness in their life. There is an increment of new things is available and it is gradually increasing more and more. The people of other castes are also joining the haat.

In haat of modern Gujarat, any incident of robbery or murder doesn't take place for this reason the safety is arranged by nearest police center, which is counted attracted matter.

Since tradition present modern age's tribal is economically and in other way exploited and cheated in haat by hawkers, traders, agents, sellers and buyers, because of illiteracy, lack of awareness and lack of contacts with society.

In haat their culture is visible through illiterate tribal young boys, girls, men and women, but in literate young boys and girls haat culture seems to be lost.

The mentionable matter is that where haat take place, by making of shopping center, hank, cutlery store, provision and other shops, restaurant and by increment of it, haat's prevalence and reality is decreasing. If it happens in a same way then as a part of tribal culture traditional haat may lost. So, haat stay existed and its importance may increased that type of efforts would not be more.

(9) Couses-factors of haat tradition lost :

On the map and land of world India is know by village India, tribal culture, land of saints etc. Different cultures of tribal found living in tribal regions of village India. Haat is also identify and a part of their culture. But, the effects of education, English skill, panchayat rule, reservation tradition, transportation and communication, mass-media, urbanization, culturization, westernization, missionary activities, generosity affects to different castes, culture of country-world, and the tribal of India and Gujarat is not stay remained. Above changing factors effects is there on the life and culture of tribal. By the reason haat is vanishing. It's prevalence in tribal and other people is decreasing day-by-day and on the edge of being lost. To check the reasons-factors of lost of haat tradition in contemporary time, it is necessary to understand tribal culture and make and make efforts to save haat tradition. The main reason factors of haat tradition's lost is as below:

i. Haat is old and inseparable organ of tribal culture. Educated and migrated tribal and tribal living in towns believes haat tradition as old. So haat's prevelance is decreasing day-by-day.
ii. Many tribal feel shy, hesitation and minority in visiting haat. So, there is gradual decline of amount in haat.
iii. The things of good quality are not available in haat. Also because of this haat's importance is decreasing.
iv. Even the things with attractive packing or high quality are also not available in haat.
v. The price of goods is also high in other open market or Khetivadi Utpanna Bajar Samiti than haat, so the barter of goods instead of good is lost. Because tribal are poor and backward, the lack of money is also found, so they trade by barter system. Because of lost of barter system, it effects on haat.
vi. By effect of mass-media and transportation and increment of its prevalence facility, fashion, newness and visits of town is increased. Tribal people of village also believe it as status symbol, so visit in haat is opposed it. As result haat tradition is vanished from tribal culture.
vii. The basic form of haat is losing, as other ancient tradition is vanishing.
viii. Due to increase of contact with town, villages buy the things of daily need from town.
ix. For goods/things comes in haat for sell, a prejudice of low quality decrease the importance of haat.

(10) Suggestions and remedies to maintain haat tradition :

There is revolution in agriculture, irrigation, animal feeding, transportation, mass communication, and education etc. in contemporary time. In all this all sectors as a result of state and central government's different plans, there are upcoming development, progress and change. It affects tribal region and their life and culture. In tribal villages, regions, as a result

of state and central government's schemes, grants, subCD etc. diversity and newness is visible. That's effects can be seen directly on haat tradition. Due to various changing factors importance haat tradition is reduced day by day and haat is being lost. As a part of village India and identity, an organ of tribal culture, that is haat and it is also important to maintain it, because its direct benefit is maximum for tribal. To maintain this losing tribal haat tradition here are many suggestions and remedies as below.

i. For maintaining haat tradition, the prejudices related to quality should be kept away.
ii. The validation of weigh tool should be happen time to time in presence of people, because of which the level of cheating would reduced and customer also get enough quality in substitution of money.
iii. The awareness of food control network would also successful as a remedy.
iv. Local/outsider traders should be helped by enough money on less interest rate from government to improve haat market.
v. Ther should be a panch made up of non-controversial people in haat market at local level and they keep an eye on the traders and goods of haat without any honourarium.
vi. Non Government Organizations (N.G.Os) has also go to haat and aware the customer about the quality, then also haat can be saved.
vii. Haat co-operative committee should be established.
viii. It is necessary to do its marketing by government, N.G.Os and different department.
ix. Co-operation of N.G.Os for maintain and developing haat is necessary. If it happens then the tradition of haat would be maintain and enhance the progress.
x. It is necessary to sell handloom ornaments and different things made by simple but completed arts in haat.
xi. The efforts should be done to bring awareness about consumer safety and human rights in tribal.
xii. Particular rules should be created and on that government's control should be there. And by breaching of it, there should be punishment by legal procedure.
xiii. Village haat should planned in big towns once in a month, because of which the things that doesn't available in towns would available by this also haat is promoted.
xiv. The selling is important of the things which become necessary in the villages, though it is modern.
xv. There must be some rules-regulation in barter system because in haat art, time, energy and hard work of tribal does never cheated by others.
xvi. For encouragement to haat and its development, haat control and development officer should be appointed and the different programs related to haat should be entered.
xvii. Different competition such as elocution competition, essay writing competition, painting competition, debate should be planned on the topic of haat in different educational institutes, because of which haat get some publicity. Moreover it should be included in news papers, magazines, books and syllabus and also by its advertisement, haat can be maintained.

11. Conclussion :

The Gujarat's tribal have special tradition and culture as India's other tribal have. In Tilakvada, Nasavadi, Sankheda, Pavi-Jetpur, Chhota-Udepur and Kawant talukas of rath (Pal) region along with rathwa tribe there are Tadavi, Koli, Nayaka etc. tribal also living. Haat is economic center for tribal's buying and selling. For tribal, haat is as important as fair, festival or occasion. For them it is entertainment, enjoyment, encouragement's event. In their mind it has important as social, religious, cultural and political view poin.

Today, due to change in arrangement and tradition of haat is also changing. New type of market instead of original haat can be found. Due to different factors similar with tribal culture and organ haat is being closed; its reality is being vanished.

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કુતરાવાળી ભૈરવની આ પ્રતિમા ખૂબ સુંદર છે.

રાણી ઉદયમતિની બેનમુન આરસી પ્રતિમા :–

રાણકીવાવમાંથી રાણી ઉદયમતીનીસુંદર પ્રતિમા પણ મળી આવી છે. આ મૂતિ પચ્ચીસ આગળ ઉંચી સોળ આંગળ પહોળાઈવાળી છે. આ મહારાણી રાજયશન પર બિરાજમાન છે. સિંહાસન ઉપર જમણો પગ વાળેલો અને ડાબો પગ લાંબો ધરતીને એકલો જણાય છે. ઉદયમતિની સુંદર પ્રતિમા મળી આવવાથી એક નવું જ આકર્ષણ ઉભુ થાય છે. આ પ્રતિમા વડોદરા લઈ જવાઈ હતી અને જાણવા મળેલ છે. રાણકીવાવની સૃષ્ટિ અદ્રિતિય છે. તેની બેનમૂન મુતિઓનું કોતરકામ ભારતમાં જ દર વર્ષે અહિં સેંકડો પરદેશીઓ રાણકીવાવની મુલાકાત આવે છે. આ વાવ પવિત્ર છે. એક જ જગ્યાએ આટલા મર્યાદિત પ્રદેશમાં અઢળક સૌદર્ય ઠાલવામાં આવ્યું છે. કુદરત જેમ માણસને રૂપ બક્ષે છે. તેમ શિલ્પીઓએ પણ નિર્ભવ પથ્થરને સવાયુરૂપ બક્ષીને આ વાવને કલાત્મક બનાવી છે.

રાણકીવાવને `વર્લ્ડ હેરીટેજ' માં સ્થાન મળ્યું છે. આમ, રાણકીવાવે આખા વિશ્વમાં ભારત, ગુજરાત અને પાટણને ગૌરવ પ્રાપ્ત કરાવ્યું છે. ગુજરાત સરકારના પ્રવાસન વિભાગ ધ્વારા ગુજરાતના બ્રાન્ડ એમ્બેસેટર અમિતાભ બચ્ચન ધ્વારા `ખુશ્બુ ગુજરાતકી' એડ ફિલ્મ ધ્વારા વિશ્વનાં અને ભારતના પ્રવાસીઓને આકર્ષયા છે.

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Arts [ECONOMICS]
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 71 - 74
ISSN 2319 - 8168

ગુજરાતમાં જળસંગ્રહ અને ભૂગર્ભજળ રિચાર્જિંગ

પાણીને પૃથ્વીનું અમૃત ગણવામાં આવે છે. જેને આપણે નીર, પાણી કે વારિ, વોટર તરીકે ઓળખીએ છે. આપણા ગુજરાતમાં એક કહેવત છે કે "પાણી અને વાણી બન્ને વિચારીને વાપરવા જોઇએ" જેવી કહેવતો પાણીનું દરેક જીવ માટે કેટલું મહત્ત્વનું છે, તેની પ્રતીતી કરાવે છે. દરેક જીવ સૃષ્ટિના વિકાસને જોડતી કડી એટલે પાણી. પાણી માત્ર વિકાસ માટે જ મહત્વનું નથી પરંતુ આપણા અસ્તિત્વ માટે પણ પાયાની જરૂરીયાત છે. આપણા દેશમાં દરેક સ્થળે સારો અને નિયમિત રીતે વરસાદ મળે તે માટે વૈદિક રાષ્ટ્રગીતમાં પણ "નિકામે નિકામે નમ: પર્જન્યો વર્ષ તું" કહીને પાણી માટેની યાચના કરવામાં આવી છે. હવે ગુજરાત માટે આવી યાચીકા કરવાનો સમય આવી ગયો છે.

❖ જળ સમસ્યા :-

ગુજરાત રાજયનાં ઝડપી આર્થિક વિકાસને કારણે ઔદ્યોગિકરણ અને હરિયાળી ક્રાંતી થવાથી નવી ઉત્પાદન પદ્ધતિઓ દ્વારા ઉત્પાદન થતું હોવાને કારણે પાણીની માંગમાં એકધારો વધારો થતો રહ્યો છે. અને ગુજરાતમાં કુલ સિંચાઇ વિસ્તારનાં ૮૦ ટકા વિસ્તારમાં ભૂગર્ભજળનો ઉપયોગ વધારે પ્રમાણમાં થતો હોવાથી ભૂગર્ભજળનું ખેચાણ ખુબ જ વધી ગયું છે. પરિણામે ભૂગર્ભજળનાં સ્તર સતત નીચા જતા જાય છે. આ ઉપરાંત ભૂગર્ભજળમાં અનેક પ્રકારની અસુદ્ધિઓ ભળી ગઇ છે. ગુજરાતમાં ૧૯૮૭/૮૮ માં ૧૮૦૦૦ ગામડાંઓ માંથી ૧૨૦૦૦ જેટલા ગામો પાણીની અછતનો સામનો કરતા હતા. સૌરાષ્ટ્રની વાત કરીએ ભૂગર્ભમાં જેટલુ પાણી રિચાર્જ કરવામાં આવે છે તેના કરતા વધુ પાણી પાછું ખેચી લેવામાં આવે છે.

ગુજરાતમાં પાણીની વધતી જતી માંગ અને જરૂરીયાતને ધ્યાનમાં રાખવામાં આવે, તો આવનારા વર્ષોમાં પાણીની તીવ્ર અછત ઉભી થાય તો નવાઇ નહિ. ગુજરાતમાં દરિયા કિનારાને કારણે ભૂગર્ભજળનાં સ્તર નીચા જવાને કારણે દરિયાનાં પાણી ભૂગર્ભમાં આગળ વધી રહ્યા છે. આના પરિણામે ૨૫ લાખ એકર જમીન અને ૪૩૦૦૦ કુવાઓમાં ખારાશ આવી ગઇ છે. ઉત્તર ગુજરાતમાં ભૂગર્ભજળની સમસ્યા વધુ ઘેરી બનતી જાય છે.

ગુજરાતનાં જુદા-જુદા વિસ્તારોમાં પાણીની ઉપલબ્ધી કેટલી છે, અને તેની સામે પાણીની જરૂરીયાત કેટલી છે. તેની માહિતી કોષ્ટક-૧માં દર્શાવવામાં આવી છે.

કોષ્ટક-૧ (ઘન મિલિમીટર)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	૧૩,૧૦૦	૯,૭૪૦	૩,૩૬૦	--------
[illegible]	૧૬,૪૦૦	૧૦,૪૦૦	૬,૦૦૦	-------
[illegible]	૧૪,૩૯૦	૨૪,૭૫૦	-------	૧૦,૩૬૦

(સ્ત્રોત:- અર્થસંકલન જાન્યુઆરી,૨૦૧૦)

ઉપરનાં કોષ્ટક-૧ માં દર્શાવવામાં આવેલ માહિતીનો અભ્યાસ કરતા જણાય છે, કે સૌરાષ્ટ-કચ્છ અને ઉત્તર ગુજરાતમાં પાણીની જરૂરીયાત કરતા વપરાશમાં લઇ શકાય તેવો ઉપલબ્ધ પાણીનાં પુરવઠાનું પ્રમાણ ઘણું આછું છે. જયારે દક્ષિણ ગુજરાતની વાત કરીએ તો પાણી ની જરૂરીયાતની સામે તેનો પુરવઠો ઘણો વધારે છે. અને જો આવી અસમાનતા ચાલુજ રહેતો ભવિષ્યમાં આવનાર સમયમાં ઘણી ગંભીર સમસ્યા ઊભી થઇ શકે છે.

આથી ગુજરાતનાં જે વિસ્તારમાં પાણીની અછત છે, તેવા વિસ્તારમાંથી પાણી લઇ જે વિસ્તારમાં પાણીની ખુબ જ તંગી હોય, તેવા વિસ્તારમાં માટા તળાવ કે માટા આજવા સરોવર જેવા તળાવ બનાવીને પાણીની સમસ્યાને દુર કરી શકાય છે. આ રીતે જો પ્લાનીગ કરવામાં આવે તો ચોક્કસ રીતે સૌરાષ્ટ્ર - કચ્છ

* એસોસીયેટ પ્રોફેસર, (ઈકોનોમિકસ), એમ.કે. કોલેજ ઓફ કોમર્સ, ભરૂચ

તેમજ ઉત્તર ગુજરાતમાં જે પાણીની સમસ્યા જોવા મળે છે, તેનું નિવારણ લાવી શકાય છે.

❖ **ગુજરાતમાં સિંચાઇ :-**

(લાખ હેકટર)

કુલ જમીન	ખેતીલાયક જમીન	સરફેસ વોટર	ગ્રાઉન્ડ વોટર	સરદાર સરોવર યોજના	સિંચાર સુવિધા વગરની જમીન
૧૯૬	૧૨૫	૨૨	૨૫	૧૮	૬૦

❖ **ભૂગર્ભજળ :-**

ડૉ. જી. આર. નાંબિયારે ગુજરાતનાં જળસ્ત્રોત્રનાં સંદર્ભમાં ૧૯૭૫ માં અભ્યાર કર્યો હતો. અને તેઓ એવુ તારણ આપેલુ ક આવનારા ૨૫ થી ૩૦ વર્ષ પછી આજે જે રીતે પાણીનો વપરાશ અને બગાડ થઇ રહ્યો છે, તે જોતા જો પાણીનાં વપરાશ અને તેનાં સંગ્રહ માટે યોગ્ય વ્યવસ્થાપન કે આયોજન કરવામાં નહી આવે તો ભૂગર્ભજળની સપાટી નીચી જશે, જે વિધાન આજે સાચુ સાબીત થઇ રહ્યું છે. વર્તમાન સમયમાં જો દક્ષિણ ગુજરાતને બાદ કરીએ તો દરેક વિસ્તારમાં પાણીનો પ્રશ્ન ચર્ચાનો વિષયનો બની ગયો છે. સૌરાષ્ટ્રમાં સિંચાઇ માટે પાણી મળી રહે તે માટે ૧૧૫ જેટલા નાનાં માટાં બંધ ભરવાની જાહેરાત કરવામાં આવી છે. અને તેનાં માટે વર્ષ ૨૦૧૩/૧૪ નાં બજેટમાં ૧૦૦૦ કરાડ રૂા.ની જોગાવઇ કરવામાં આવી છે.

ભૂગર્ભજળનાં વધારે પડતા ખેચાણથી કેટલીક સમસ્યાઓ પણ ઊભી થાય છે.

૧. પાણીનાં પુરવઠામાં ઘટાડો થવાને કારણે વીજળીનું ઉત્પાદનમાં ઘટાડો થવાને કારણે વીજ પુરવઠો સમયસર અને પુરતા પ્રમાણમાં મળતો નથી.
૨. પાણીની અછતનાં કારણે જમીનની સીમાન્ત ઉત્પાદકતામાં ઘટાડો થવાનાં કારણે ખેમજૂરો અને નાનાં ખેડૂતોની આવકમાં ઘટાડો થયો છે.
૩. ઝડપી ઔદ્યોગિકરણનાં પરિણામે આજે શહેરી વિસ્તારોમાં શુદ્ધ પીવાનાં પાણીને લગતા પ્રશ્નો સર્જાયા છે.
૪. પાણીનાં વધારે પડતા ખેચાણને કારણે સિંચાઇ માટેનાં પ્રશ્નો ઊભા થાય છે. આજે કુલ ખેડાણ હેઠળની જમીન માટી ૬૦ ટકા જેટલી જમીન પાણી વિહોણી છે. આને પરિણામે અન્ન અને ઘાસ ચારાની તંગી ઊભી થાય છે.

❖ **ભૂગર્ભજળ રિચાર્જ કરવા માટેનાં ઉપાયો :-**

૧. કુવા રિચાર્જ પદ્ધતિ દ્વારા:-

ગુજરાતમાં ભૂગર્ભજળનો ઉપયોગ સૌથી વધારે પ્રમાણમાં થાય છે, તેમજ વરસાદ ઓછો અને અનિયમિત થવાને કારણે ભૂગર્ભજળનાં પાણીની સપાટી ખુબ જ નીચી જતી રહી છે. આ ઉપરાંત કેટલાક કુવાઓ ખારાશ વધી જવાને કારણે બિન ઉપયાગી બની ગયા છે. પરંતુ આ કુવાઓમાં વરસાદી પાણીને જો ભૂગર્ભમાં ઉતારવામાં આવે તો, આનાથી ઘણો ફાયદો થવાની પુરેપુરી શકયતાઓ રહેલી છે. આ પદ્ધતિની મદદથી જયારે વરસાદી પાણીને જમીનમાં ઉતારતી વખતે કેટલીક બાબતોને ધ્યાનમાં રાખવી પડતી હોય છે, જેમ કે પાણીને જયારે જમીનમાં ઉતારવામાં આવે છે, ત્યારે પાણીની સાથે જમીન ઉપર પડેલ કચરો, નાના પથ્થર તેમજ માટી કુવામાં ઘશી ન પડે તેની તકેદારી રાખવી પડે છે. આ પાણીની સાથે ભૂગર્ભમાં ઉતરી જાય તો રિચાર્જ પ્રક્રિયા બધં પડી જાય છે. આ સમસ્યા ઊભી ન થાય તે માટે કુવાથી થાડા અંતરે એક કુંડી બનાવી તેના તળીયાથી ૧ થી ૨ ફુટના અંતરે કાણાવાળી પાયપ લગાવી પછી જ કુવામાં પાણી ઉતારવું જોઇએ. આમ, આ રીતે વરસાદી પાણીને જમીનમાં ઉતારી બૂગર્ભજળનું રિચાર્જ કરવાથી નીચા ઉતરી ગયેલા પાણીનાં સ્તરને ઉપર લાવી શકાય છે. અને આ રીતે પાણીની સમસ્યાને હલ કરી શકાય છે.

૨. તળાવ રિચાર્જ પદ્ધતિ દ્વારા:-

ગુજરાતનાં ગ્રામીણ વિસ્તારોમાં તળાવો માટી સંખ્યામાં આવેલા છે. અને તેમાં વરસાદનાં પાણીનાં પાણીનો સંગ્રહ કરવામાં આવતો હોય છે. અને પાણી પશુઓનાં પીવા માટે તેનો ઉપયાગ કરવામાં આવે છે. આ ઉપરાંત ઘણી જગ્યાએ સિંચાઇ માટે પણ તેનો ઉપયોગ કરવામાં આવે છે. તળાવમાં ભરાવાને કારણે તેની આજુ-બાજુ વૃક્ષોનો સારા પ્રમાણમાં ઉછરેલા હોય છે. જે પર્યાવરણનાં પ્રદૂષણને રોકવામાં મદદરૂપ થતા હોય છે. આની સાથે સરકાર ગ્રામીણ વિકાસની યોજનામાં (મનરેગા) આવા પ્રકારનાં તળાવો બનાવવા જોઇએ , જેનાથી રોજગારીની તકો પણ ઊભી થશે અને તેની સાથે સાથે દેશમાં એક પ્રકારની કાયમી અસ્કયામતોનું પણ સર્જન થશે. અને તેમાં વરસાદી પાણીનો સંગ્રહ પણ થશે, જેનાથી પાણી સમસ્યાને દુર કરવામાં પણ મદદરૂપ થઇ શકે છે. આ રીતે આયોજન કરવામાં આવે તો તેનાથી ઘણાં ફાયદા થાય છે, જેમ કે

(૧) ગ્રામીણ વિસ્તારોમાં રોજગારી મળી રહે.
(૨) દેશમાં એક પ્રકારની ટકાઉ અસ્કયામતોનું સર્જન થાય છે.
(૩) વરસાદનું જે ૬૦ ટકા જેટલું પાણી દરિયામાં બિન જરૂરી વહી જાય છે, તેને અટકાવી સકાશે.
(૪) તળાવમાં પાણીનો સંગ્રહ થવાથી ભૂગર્ભમાં પાણીનાં સ્તર ઉપર આવે છે.
(૫) પાણીનો સંગ્રહ થવાને કારણે ખેતીમાં સિંચાઇ માટે પાણીનો પુરવઠો પણ વધે છે, જેથી કરીને કુવાઓ ઉપરનું ભારણ ઘટી જાય છે.
(૬) સિંચાઇ વધવાથી રાજયમાં આવક, રોજગારીમાં અને અનાજનાં ઉત્પાદનમાં પણ વધારો થાય છે.

આમ, તળાવની મદદથી જયારે પાણીનો સંગ્રહ કરીને રિચાર્જ કરવામાં આવે છે, ત્યારે કેટલીક બાબતો ધ્યાનમાં રાખવી જેમ કે, તળાવનું તળીયુ વધારે ઊંડા રાખવા. જેનાંથી પાણીનું રિચાર્જ યાગ્ય રીતે સતત ચાલુ રહે. તળાવનાં પાળા ઊચા રાખવા અને આની ઉપર વૃક્ષો ઊગાડવા જેથી પાળાનું ધોવાણ અટકાવી શકાય

છે. આ ઉપરાંત જયાંથી વરસાદી પાણીનાં પ્રવેશ માટેનો દરવાજો મુકવામાં આવ્યો ત્યાં એક દિવાલ બનાવવી જોઇએ, જેથી તળાવમાં નકામો કચરો પ્રવેશી શકે નહી.

૩. વૃક્ષોનાં આવરણ દ્વારા પાણીનું રિચાર્જ :-

ગુજરાતમાં ઘણો વિસ્તાર પથ્થરીયો વિસ્તાર છે, જેથી ચોમાસામાં વરસાદનું ઝડપથી નદીનાં માર્ગે દરિયામાં વહી જાય છે. અને પાણીનું બીલકુલ શોષણ થતું નથી. પરંતુ જો આવા પહાડી વિસ્તારોમાં ઓછા ઊંડાં મુળીયા વાળા વૃક્ષોનું રોપાણ કરીને પાણીને દરિયામાં જતુ અટકાવી શકાય છે. તેમજ કોઇ ટેકનોલોજીનો ઉપયાગ કરી પથ્થરમાં ૩૦૦ થી ૪૦૦ ફુટનાં બાર કરવા જોઇએ, જેથી પાણીને જમીનમાં ઉતારી શકાય. જંગલ વિસ્તાર વધવાથી ચોમાસાની અનિશ્ચિતા અને અચોક્કસતામાં સુધારો થાય છે. આમ, આ રીતે પ્લાનીગ કરવામાં આવે તો, પાણીનો સંગ્રહ તો વધશે પરંતુ તેની સાથે સાથે વરસાદનું પ્રમાણ પણ વધી શકે છે.

૪. ચેકડેમ રિચાર્જ પદ્ધતિ દ્વારા :-

ગુજરાતમાં ઘણાં વિસ્તારોમાં ખારપાટ વાળી જમીન છે, જે સપાટ મેદાનો છે. તો આવા વિસ્તારોમાં નાનાં ચેકદેમ દ્વારા વરસાદી પાણીનો સંગ્રહ કરી શકાય છે. તેમજ પહાડી વિસ્તારોમાં જે નાની નાની ખીણ જેવો વિસ્તાર હોય છે, તેમાં પાણીનાં વહેણને તપાસી જરૂરી પહોળાને ધ્યાનમાં રાખીને પહોળી દિવાલો બનાવવી જોઇએ. આનાથી પાણીનો સંગ્રહ વધારે પ્રમાણમાં કરી શકાય છે. અને પાઇપ લાઇન દ્વારા અછત વાળા વિસ્તારમાં લઇ જઇ શકાય છ. આમ, આ રીતે પણ ભૂગર્ભજળ ઉપરનું દબાણ ઘટાડી શકાય છે. અને પાણીની કટોકટીની પરિસ્થિતિ હળવી કરી શકાય છે.

૫. ખેત તલાવડી રિચાર્જ પદ્ધતિ દ્વારા :-

ખેત તલાવશીમાં વરસાદી પાણીને ખેતરનાં એક છેડે, કે જે વિસ્તારનું લેવલ નીછું છે. ત્યાં બનાવવામાં આવે છે. જેથી કુદરતી રીતે પડતું પાણી આવા નીચાણ વાળા વિસ્તારમાં બનાવવામાં આવતી ખેત તલાવડીમાં સંગ્રહ કરવામાં આવે છે. અને જયારે વરસાદ ઓછો પડે છે, ત્યારે તળાવ દ્વારા જે રીતે પાણીનો સંગ્રહ કરવામાં આવે છે. તેવી જ રીતે ખેતતલાવડી દ્વારા પાણીનો સંગ્રહ કરવામાં આવે છે. અને જયારે વરસાદનું પ્રમાણ ઓછું હોય તેવા સંજોગામાં ખેતતલાવડીનાં પાણીનો ઉપયાગ કરીને પાકનું નુકશાન થતું અટકાવી શકાય છે.

આમ, ખેતતલાવડીની મદદથી વરસાદમાં જે બિન જરૂરી રીતે વહી જતા પાણીનો સંગ્રહ કરી શકાય છે. ખેતતલાવડી દ્વારા જે વિસ્તારમાં સિંચાઇ કરવા માટે બીજા કોઇ વિકલ્પ ઓછા હોય, તો આની મદદથી સિંચાઇનું પ્રમાણ વધારી શકાય છે. અને પાકનું ઉત્પાદન પણ વધારી શકાય છે. આ ઉપરાંત ગુજરાતમાં બીજા ઘણાં એવા વિસ્તારો આવેલા છે, કે જયાં ભૂગર્ભજળમાં ક્ષારનું પ્રમાણ ખુબ જ વધી ગયું છે. તેના કારણે ખેતીમાં સિંચાઇનાં ઉપયોગમાં લઇ શકાતું નથી. તેવા વિસ્તારોમાં ખેતતલાવડી ઉત્તમ ઉપાય છે.

ખેતતલાવડી બનાવતી વખતે કેટલીક બાબતોને ધ્યાનમાં આખવી પડે છે.

૧. સરકાર જમીનમાંથી પસાર થતાં વહેણ કે નાળાનાં પાણી એત્રિત થતા હોય અને પાણીમાં રહેલ માટી ઠરતી હોય તેવા સ્થળની પસંદગી કરવાથી ઓછા ખર્ચે ખેતતલાવડી બનાવી શકાય છે.

૨. જે દિશામાંથી પાણી ખેતતલાવમાં આવતું હોય, તે વિસ્તારમાં ઘાસને ઉગાડવું જોઇએ. કે જેથી કરીને પાણીનાં વહેણની સાથે આવતો કાંપ અટકે અને ખેતતલાવડીનું પુરાણ થતું અટકે.

૩. ખેતતલાવડી અને કુવા નજીકમાં રાખવા જોઇએ, કે જેથી ખેતતલાવડીનું ઝમણ થયેલ પાણીનો રિચાર્જિંગ પદ્ધતિ દ્વારા કુવાઓમાં જઇ શકે અને કુવાનાં પાણીનાં સ્તરને ઉપર લાવી શકે.

❖ **ખેતતલાવડીનું માપ :-**

સ્ત્રાવ વિસ્તાર (હેકટરમાં)	ખેતતલાવડીનું માપ(ચો.મી)	તલાવડીનાં માપો	અંદાજિત રકમ રૂ।	સંગ્રહ શકિત ઘ.મી(લિટર)	સ્ત્રાવ વિસ્તાર (હેકટરમાં)	ખેતતલાવડીનું માપ(ચો.મી)
૧ હેકટર સુધી	૧૦૦	૧૦	૬	૩	૬૦૦૦	૧૯૨
૧થી૨ હેકટર સુધી	૧૪૪	૧૨	૪	૫	૧૦,૦૦૦	૩૨૦
૨થી૩ હેકટર સુધી	૧૯૬	૧૪	૬	૫	૧૪,૫૦૦	૫૦૦
૩ હેકટરથી વધુ	૨૨૫	૧૫	૭	૧	૧૮,૦૦૦	૬૦૫

(સ્ત્રોત: અર્થસંકલન જુલાઇ, ૨૦૧૦)

❖ ખેતતલાવડીથી થતા લાભો :-

૧. ખેતતલાવડીથી મનુષ્ય તેમજ દરેક પશુ પક્ષી માટે પીવાનાં પાણીની સગવડમાં અથવા પાણીનો પુરવઠામાં વધારો કરી શકાય છે.

૨. ખેતતલાવડીનાં કારણે વરસાદની અછતથી થતા પાકોનાં નુકશાનને અટકાવી શકાય છે

૩. ખેતતલાવડીની પાણી સંગ્રહ કરવાની કેપીસીટી વધારે હોય તો, બીજાને સિંચાઇ માટે પાણીને આપી આવક પણ મેળવી શકાય છે.

૪. ખેતતલાવડીનાં કારણે ભૂગર્ભજળઊંચા આવવાને કારણે પાણીનાં સ્તરને ઉપર લાવી શકાય છે.

૫. પાણીનાં વહેણની સાથે જે કાપ આવે છે, તેનાથી જમીનમાં ઉપયોગ કરવામાં આવે તો જમીનની ફળદ્રુપતા વધે છે.

૬. જે બિનપિયત શિયાળુ પાકોમાં જો એક પિયત આપવામાં આવાટી ઉત્પાદનમાં ૨૦ થી ૪૦ ટકાનો વધારો થવાની સંભવનાં રહેલી છે.

૭. ખેતતલાવડીમાં સૌથી મહત્વની બાબત એ છે, કે તેને બનાવવાનાં ખર્ચા કરતા તેમાંથી થતા લાભોનું પ્રમાણ વિશેષ છે.

❖ ઉપસંહાર :-

આજે પાણીની સમસ્યા માત્ર ગુજરાત કે ભારત પુરતી જ નથી, પરંતુ સમગ્ર વિશ્વની સમસ્યા છે. સમગ્ર વિશ્વમાં વરસાદની અનિયમિતતા સાથે સાથે પાણીનાં ઉપયોગ અંગેનાં આયોજનનાં અભાવને કારણેપાણીની ગંભીર સમસ્યા ઊભી થઇ છે. સરકાર દ્વારા પાણીનાં યોગ્ય ઉપયોગ અને તેના સંગ્રહ માટે ઘણી બધી પદ્ધતિઓનો ઉપયાગ કરવામાં આવે છે. જોકે બોરી બંધ, આડ બંધ, ચેકડેમ ,તળાવ દ્વારા રિચાર્જ કરવા, કુવાઓ રિચાર્જ કરવા, બદીઓનું એકત્રિકરણ જેવા અનેક વિધ પ્રયત્નો દ્વારા સરકાર તરફથી કરવામાં આવી રહ્યા છે.

આમ આ રીતેવરસાદી પાણીનો શકય હોય એટલો સંગ્રહ કરી તેનુ યોગ્ય આયોજન કરી તેનો કરકસરપૂર્વક ઉપયોગ કરવામાં આવે તો ભૂગર્ભજળનાં સ્તરને નીચા જતા અટકાવી શકાય છે. એટલુ જ નહી પરંતુ સપાટી પરનાં પાણીનાં સંગ્રહના લીધે તેનો નિતાર થતાં ભૂગર્ભજળ નીચા ગયા હશે, તો તે પણ ધીમે ધીમે ઉચા આવશે.

આમ,પાણીનું યાગ્ય સંચાલન કરી ભૂગર્ભજળનાં ઉચા સ્તર લાવી કૃષિ અને ઉદ્યોગોની જરૂરીયાતો સંતોષી શકાય છે. આમ ભાવિઉચા આર્થિક વિકાસ સિધ્ધ કરવા માટે જળસંપત્તિ અનેક રીતે ઉપયોગી થઇ શકે તેમ છે.

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Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 75 - 77
ISSN 2319 - 8168

શિક્ષક ગણિત વિષય ભણાવે તે પહેલા, દરમિયાન અને પછી વિષયના સંદભ માં ધોરણ–૧૦ નો વિદ્યાથી ઓના ચિન્તન ન કરવાના કારણો

પ્રાસ્તાવિક :

સ્વાભાવિક રીતે એવું કહેવાયુ છે કે, મનુષ્યની જન્મથી મૃત્યુ પર્યત અધ્યયન કરતો હોય છે. તેમાં પણ અધ્યયનને સફળ બનાવવા માટે અધ્યાપનની ભુમિકા મહત્વની છે. વાણી અને કર્મ માત્ર ચિતને જ અનુસરે છે. કર્મ અંગેનું ચિન્તન એ સૌથી ઉંચી આરાધના છે. કર્મ કરતા પહેલા, કરતી વખતે અને કર્યા પછી તે અંગેના ચિંતન કરવાથી કાર્ય સિધ્ધિ વધે છે. વિદ્યાર્થીઓ શિક્ષક ભણાવે તે પહેલા,દરમિયાન અને પછી જેમ વિચારે છે. તેમ તેમની જ્ઞાનાત્મક ક્ષમતા વધે છે. તેનો ખ્લાલ હોવા છતાં વિદ્યાર્થીઓ શિક્ષક ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિંતન શા માટે નહી કરતો હોય તેના કારણો જાણવા પ્રસ્તુત અભ્યાસ અભ્યાસક્ર દ્વારા હાથ ધરવામાં આવ્યો.

સમસ્થયા કથન :

પ્રસ્તુત અભ્યાસની સમસ્યા આ પ્રમાણે શબ્દબધ્ધ કરવામાં આવી હતી.

"ધોરણ–૧૦" ના વિદ્યાર્થીઓ શિક્ષક ગણિત વિષયને ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિંતન ન કરવાના કારણો."

પ્રસ્તુત અભ્યાસમાં ધોરણ–૧૦ ના વિદ્યાર્થીઓ ગણિત ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિંતન ન કરવાના કારણો જાણવા મોલિયા (૨૦૦૨) રચિત ચિન્તાનાત્મકતા માપદંડ વડે નમુનાનાં પાત્રો પાસેથી માહિતીનું એકત્રીકરણ કરવામાં આવ્યુ હતું. પ્રાત્પ માહિતીનું ગુણાત્મક પુથકકરણ કરવમાં આવ્યુ હતુ.

અભ્યાસના હેતુઓ :

પ્રસ્તુત અભ્યાસના હેતુઓ આ પ્રમાણે હતા.

(૧) ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો જાણવા.

(૨) ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે દરમિયાન વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો જાણવા.

(૩) ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવી લીધા પછી વિષય વસ્તુના સંદર્ભમાં ચિંન્તન કરવાના કારણો જાણવા.

અભ્યાના પ્રશ્નો :

પ્રસ્તુત અભયાસને હેતુઓને ધ્યાનમાં રાખીને અભ્યાસકે નીચે પ્રમાણે પ્રશ્નોની રચના કરી હતી.

(૧) ધોરણ–૧૦ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા વિષય વસ્તુના સંદર્ભમાં ચિંન્તન ન કરવાના કારણો શું હશે ?

(૨) ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે દરમિયાન વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો શુ હશે ?

(૩) ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવી લીધા પછી વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો શુ હશે ?

સંશોધનનું ક્ષેત્ર :

પ્રસ્તુત અભ્યાસ શ્રેણી દસના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો જાણવાનો હતો. તે માર્ગદર્શન અને સલાહને લગતું હોવાથી આ અભ્યાસનું ક્ષેત્ર માર્ગદર્શન અને સલાહનું હતું.

સંશોધનનો પ્રકાર :

સંશોધનના મુખ્ય ત્રણ પ્રકાર : મુલગત, વ્યાવહારિક અને પ્રક્રિયાત્મક પૈકી પ્રસ્તુત સંશોધન ક્રિયાત્મક પ્રકારનું હતું. સંખ્યાત્મ અને ગુણાત્મક સંશોધનમાં ગુણાત્મક પ્રકારનુ હતું.

વ્યાપવિશ્વ:

ગુજરાત રાજય માધ્યમિક શિક્ષણ બોર્ડ દ્વારા લેવાયેલી S.S.C. ની પરિક્ષા પાસ કરીને હાલ ધોરણ અગિયારમા અભ્યાસ કરતા ભાવનગર શહેરની ઉચ્ચતર માધ્યમિક શાળાના વિદ્યાર્થીઓ પ્રસ્તુત અભ્યાસનું વ્યાપવિશ્વ હતું.

નમુનો :

વ્યાપવિશ્વમાંથી ભાવનગર શહેરની ઉચ્ચતર માધ્યમિક શાળાઓ પૈકી બે કુમારો અને બે કન્યાઓની શાળાઓમાંથી વિજ્ઞાન, વાણિજય અને વિનયનના એક–એક વર્ગના વિદ્યાર્થીઓના નમુના તરીકે પસંદ કરવામાં આવ્યા હતા. જેમાં કુમારો ૧૦૦ અને કન્યાઓ ૧૨૫ મળીને કુલ ૨૨૫ વિદ્યાર્થીઓ હતા. શાળા અને

* અધ્યાપકશ્રી, શ્રી સ્વામિનારાયણ કોલેજ ઓફ એજયુકેશન, ભાવનગર.

વર્ગની પસંદગી સહેતુક અને વિદ્યાર્થીઓની પસંદગી ઝુમુખા પધ્ધતિથી કરવમાં આવી હતી.

સંશોધન પધ્ધતિ :

સંશોધનની ત્રણ પધ્ધતિ : ઐતિહાસિક, વર્ણનાત્મક અને પ્રાયોગિક પૈકી પ્રસ્તુત અભ્યાસ વર્ણનાત્મક સંશોધન પધ્ધતિમાં સવે ક્ષણ પધ્ધતિથી હાથ ધરવામા આવ્યો હતો.

ઉપકરણ :

પ્રસ્તુત અભ્યાસમાં ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો જાણવા મોલિયા (૨૦૦૨) રચિત ચિન્તાત્મક માપદંડનો ઉપયોગ કર્યો હતો.જેમાં શિક્ષક ગણિત વિષય ગણિત વિષય ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિન્તન કરવા અંગેના ત્રણ પ્રશ્નો આ દરેક પ્રશ્નની સામે 'હા' અને 'ના' તથા નીચે ખાલી જગ્યા આપવામાં આવી હતી. 'હા' કે 'ના' ખાનામાં વિદ્યાર્થીઓએ નિશાની કરવાની હતી. જો વિદ્યાર્થીઓ 'ના' ના ખાનામાં નિશાની કરે તો તે દરેક પ્રશ્નની નીચે આપેલ ખાલી જગ્યામાં તે ચિન્તન ન કરવાનાં કારણો તે વિદ્યાર્થીઓ એ જણાવવાના હતા.

માહિતીનુ એકત્રીકરણ :

સંશોધકે શાળામાં રૂબરૂ જઈને જમુના પાત્રો પાસે ચિન્તનાત્મકતા માપદંડ ભરાવીને માહિતીનું એકત્રીકરણ કર્યુ હતું.

માહિતી પૃથ્થકરણની પ્રવિધિ :

પ્રસ્તુત અભ્યાસમાં ચિન્તનાત્મકતા માપદંડ નમુનાનાં પાત્રોએ આપેલા પ્રતિચારોનું ગુણાત્મક પૃથકકરણ કરવામાં આવ્યું હતું. માહિતીનું સ્વરૂપ ઓળખઅંક માપ પધ્ધતિમાં હતું.

માહિતીનુ પૃથ્થકકરણ અને અર્થ ઘટન :

પ્રસ્તુત અભ્યાસમાં હેતુઓ પરથી રચેલા પ્રશ્નો અનુસાર માહિતીનું પૃથકરણ અને અર્થઘટન કરવામાં આવ્યું હતું.

૧.ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો શુ હશે ? આ પ્રશ્નના ઉતર માટેના નમુનાના બધા જ પાત્રોએ ચિન્તનાત્મક માપદંડમાં આપેલ પ્રતિચારોના ગુણાત્મક પૃથ્થકરણને અંતે ધોરણ–૧૦ ના વિદ્યાર્થીઓન શિક્ષક ભણાવે તે પહેલા વિષયવસ્તુના સંદર્ભમાં ચિન્તન ન કરવાનાં કાણો આ પ્રમાણે હતા.

૧ શિક્ષક ગણિત વિષય ભણાવે તે સમજાતુ ન હોવાથી.
૨ વર્ગમાં ગોખીને ભણાવતા હોવાથી.
૩ ગણિતમાં આવતા કોઈપણ મુદાને વ્યવસ્થિત શીખવ્યો ન હોવાથી.
૪ શિક્ષકની વિષય ભણાવવાની રીત સારી ન હોવાથી.
૫ શિક્ષક પોતાના કાર્યમાં પોતાની ફરજ સારી રીતે બજાવતા નથી, વેઠ ઉતારતો હોવાથી.
૬ શિક્ષકનું ગણિત વિષયમાં છિછરાપણું જોવા મળ તું હોવાથી.
૭ શિક્ષકને પૂછેલા પ્રશ્નોના સંતોષકારણ જવાબ ન મળવાથી.
૮ ગણિત શિક્ષક ટયુશન કરતા હોવાથી તેને વર્ગમાં ભણાવવાનો રસ પડતો નથી.
૯ શિક્ષક વિષય બહારની જ વાતો કરતા હોવાથી.
૧૦ શિક્ષકે પુછેલા પ્રશ્નોના જવાબ ન આવડતા તે વર્ગખંડમાં અપમાન કરતા હોવાથી.
૧૧ શિક્ષક વિષયને બિન જરૂરી અઘરો કરીને ભણાવવાના કારણે.
૧૨ ભુમિતિના પાયાની સંકલ્પના ન સમજાવવાના કારણે.
૧૩ શિક્ષક ભણાવવાના જ હોવાથી.
૧૪ અગાઉ દાખલા ગણી ગયા પછી શિક્ષક દાખલા ગણાવતી વખતે ભુલ કરે તે સુધારતા શિક્ષક ઉતારી પાડે તે માટે.
૧૫ શિક્ષકના ઘરે ટયુશનમાં જતા વિદ્યાર્થીઓ પ્રત્યે શિક્ષકના રૂચિને કારણે.
૧૬ શિક્ષક વિષયને ભણાવતી વખતે વર્ગ વ્યવહાર સારો ન હોવાથી.
૧૭ શિક્ષકને માત્રને માત્ર ટયુશનમાં જ રસ પડતો હોવાથી.
૧૮ વધારે પડતુ વિષયનુ ગૃહ કાર્ય હોવાથી.
૧૯ શિક્ષકને કયારેક વિષયને લગતા પુર્વજ્ઞાન ચકાસતા ન હોવાથી.
૨૦ અભ્યાસ પરત્વે આળસના કારણે.
૨૧ વિષયનું પુરતા પ્રમાણમાં ઘરે પુનરાવર્તન ન થવાથી.
૨૨ ટી.વી./રમત પર જીવ હોવાથી.
૨૩ અગાઉથી વિચારેલ હોય તો શિક્ષક ભણાવે ત્યારે રસ ન રહેતો હોવાથી.
૨૪ મારી અને શિક્ષકની વિચારવાની રીત અલગ પડતી હોવાથી.
૨૫ અગાઉથી જવાબ આપી દઈએ તો શિક્ષકને ગમતુ ન હોવાથી.
૨૬ શાળામાં અનિયમિતતાને કારણે ઘણું બધું ચાલી ગયુ હોવાથી.
૨૭ પારિવારિક કામકાજને કારણે વિષયનું પુનરાવર્તન થતુ ન હોવાથી.

આમ, ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના જુદાં–જુદાં ૨૭ જેટલા કારણો આપે છે.

૨. ધોરણ–૧૦ વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે દરમિયાન વિષય વસ્તુ સંદર્ભમાં ચિંન્તન ન કરવાના કારણો શુ હશે ? આ પ્રશ્નના ઉતર માટે નમુનામાં બધા જ પાત્રો ચિંન્તાત્મક આપેલ પ્રતિચારોના ગુણાત્મક પૃથ્થકરણને અંતે ન કરવાનાં કારણો આ પ્રમાણે હતા.

(૧) શિક્ષકની ગણિત વિષયને ભણાવવાની રી અને પધ્ધતિ ફાવતી ન હોવાથી.
(૨) શિક્ષણ ભણાવવાનો મુદો ખુબ જ ઝડપથી પુરો કરતા હોવાથી.
(૩) શિક્ષક તૈયારી કરીને ન આવતા હોવાથી અમુક માહિતી ખોટી

રજુ કરતા હોવાથી.
(૪) મેં અગાઉથી ગણેલુ હોય તે પ્રમાણે ભણાવતા ન હોવાથી.
(૫) શિક્ષક ગણીત વિષય ભણાવતી વખતે માત્ર પુસ્તકને જ વળગી રહેતા હોવાથી.
(૬) શિક્ષકની ભુલ હોય અને સુધારતાં શિક્ષકના અપમાનજનક વર્તનના કારણે.
(૭) શિક્ષકના વર્તન વ્યવહાર પરત્વેનો અણગમો હોવાથી.
(૮) અભ્યાસમાં રસ ન હોવાથી.
(૯) શિક્ષક ગણિત જેવા ગણન વિષયને માત્ર વાંચીને જ ભણાવતા હોવાથી.
(૧૦) શિક્ષક ભણાવે તેમાં એકાગ્રતાથી ધ્યાન આપવા માટે.
(૧૧) અભ્યાસ દરમિયાન ચિંન્તન કરતાં મનમાં કંઈ પ્રશ્ન થાય અને શિક્ષકએ પ્રશ્નનું સંતોષકારક નિવારણ ન કરી શકે તો મનને ખલેલ પહોંચતી હોવાથી.
(૧૨) શિક્ષક ગણિત જેવા વિષયને વ્યાખ્યાન દ્વારા ભણાવતો હોવાથી.
(૧૩) શિક્ષક વિષયના માત્ર બોર્ડ પર લખે પરંતુ સમજાવે નહીં.
(૧૪) શિક્ષક ભણાવે ત્યારે સમજવામા ધ્યાન આપવાથી.
(૧૫) અન્ય સાથે વાતચિત કરતા હોવાથી.
(૧૬) ધ્યાન બિજા વિષયમાં હોવાથી.
(૧૭) શિક્ષકનો તાસ કંટાળા જનક હોવાથી.
(૧૮) વિષય પરત્વે અણગમો હોવાથી.
(૧૯) શિક્ષકને વિષયાંગને ભણાવતી વખતે કરવામાં આવતુ કથન નબળુ હોવાથી.
(૨૦) વર્ગનું ઘોંઘાટીયુ વાતાવરણ.
(૨૧) શિક્ષક ઘણુ જ ધીમુ બોલતા હોવાથી સંભળાતુ ન હોવાથી.

આમ, ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત ભણાવે તે દરમિયાન વિષય વસ્તુના સંદર્ભમાં ચિંન્તન કરવાના જુદા જુદા ૨૫ જેટલા કારણો આપે છે.

૩. ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવી લીધા પછી વિષય વસ્તુના સંદર્ભમાં ચિંન્તન ન કરવાના કારણો શુ હશે ? આ પ્રશ્નના ઉતર માટે નમુનાના બધા જ પાત્રોએ ચિન્તનાત્મક માપદંડમાં આપેલ પ્રતિચારના ગુણાત્મક પૃથ્થકરણને અંતે ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવી લીધા પછી વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાના કારણો આ પ્રમાણે હતા.

(૧) શિક્ષકે ગણિત વિષયમાં ભણાવ્યુ તે સમજાતુ ન હોય તો ગોખી શકાતું ન હોવાથી.
(૨) શિક્ષક ગણિત વિષયમાં એક પણ મુદો વ્યવસ્થિત ન શિખવ્યો હોવાથી.
(૩) વિષય પ્રમાણમાં અઘરો હોવાથી.
(૪) શિક્ષક ભણાવતા હોય ત્યારે ધ્યાન બીજે હોવાથી.
(૫) શિક્ષક ગણિત જેવા વિષયને ખુબ જ રસપ્રદ રીતે ભણાવતા હોવાથી તે તાસમાં જ યાદ રહી જતું હોવાથી.
(૬) વિદ્યાર્થીની સમસ્યા પરત્વે શિક્ષકનું નકારાત્મક વલણ હોવાથી.
(૭) શિક્ષકની રીત અને પાઠય પુસ્તકની રીતમાં ભિન્નતા હોવાથી.
(૮) ટયુશન કલાસમા ચાલ્યુ ન હોવાથી.
(૯) અગાઉના તાસમાં શિક્ષક ગણિત વિષયનું જે કંઈ ભણાવ્યું હોય તે પછીના તાસમાં પુનરાવર્તન સ્વરૂપે પુછતા જ ન હોવાથી.
(૧૦) શિક્ષક કયારેક વિષયને લગનુ પુર્વજ્ઞાન ચકાસતા ન હોવાથી.
(૧૧) ઘરમાં અભ્યાસમય વાતાવરણ ન હોવાથી.
(૧૨) શાળાએથી છુટીને ટયુશનમાં જવાનું હોવાથી સમય ન રહેવાના કારણો.
(૧૩) આળસુ સ્વભાવ અને અન્ય પ્રવૃતિમાં રસ હોવાથી.
(૧૪) ઘરકામ તથા નાના ભાઈ–બહેનને સાચવવાના હોવાથી.
(૧૫) ટીવી/રમતમાં વધું ધ્યાન હોવાથી.

આમ, ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષકે ગણિત વિષય ભણાવી લીધા પછી વિષય વસ્તુના સંદર્ભમાં ચિંન્તન ન કરવાના જુદા–જુદા ૨૦ જેટલા કારણો આપે છે.

અભ્યાસના તારણો :

પ્રસ્તુત અભ્યાસના હેતુઓને અનુરૂપ પ્રાપ્ત થયેલી માહિતીના ગુણાત્મક પૃથકકરણ અને અર્થઘટનના અંતે મળેલ તારણ આ પ્રમાણે છે.

ધોરણ–૧૦ ના વિદ્યાર્થીઓને શિક્ષક ગણિત વિષય ભણાવે તે પહેલા, દરમિયાન અને પછી વિષય વસ્તુના સંદર્ભમાં ચિન્તન ન કરવાથી જુદા જુદા નુક્રમે ૨૭, ૨૫, ૨૦ જેટલા કારણો આપે છે.

શૈક્ષણિક ફલિતાર્થો :

પ્રસ્તુત અભ્યાસના શૈક્ષણિક ફલિતાર્થો આ પ્રમાણે છે.

૧. શિક્ષકે પોતાના કારણે વિદ્યાર્થીઓ ગણિત વિષયનું ચિન્તન ન કરતા હોય તે કારણોના ઉકેલની વિચારણા કરવી જોઈએ.

૨. શાળાએ વિદ્યાર્થીઓના ચિન્તન કરવાના કારણો પરત્વે વાકેફ થઈ તેના ઉકેલ માટેના કાર્યક્રમો કરવા જોઈએ.

૩. વાલીએ પોતાનુ બાળક ચિન્તન કરતું થાય તે સંદર્ભમાં વ્યવસ્થા કરવામાં સહભાગી બ ન વ ું જોઈએ.

સંદર્ભો

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Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 78 - 81
ISSN 2319 - 8168

A STUDY OF EMOTIONAL INTELLIGENCE OF SECONDARY SCHOOL TEACHERS

"We now understand that higher-level thinking is more likely to occur in the brain of a student who is emotionally secure than in the brain of a student who is scared, upset, anxious or stressed."

-Mawhinney and Sagan

The main aim of education is the all round holistic development of students. In the pursuit of this goal teachers play a significant role. Emotionally intelligent teachers serve as role models to the students. Emotional intelligence plays a vital role in everybody's life. Teaching is a profession which demands much more emotional intelligence and motivation. Highly motivated and emotionally intelligent teachers can perform their responsibility for the student and society in effective and successful manner, wherein they handle their negative feelings in authentic, real and healthy way. The present study was an attempt to study the emotional intelligence of the higher secondary school teachers. The stratified random sampling method was used. The sample consisted of 100 teachers. The emotional intelligence scale developed and standardized by Hyde and Pethe (2001) was used for data collection. Independent t-test was used for data analysis. The result shows that emotional intelligence was independent of gender, age and length of experience. The level of emotional intelligence was found to be high with regard to the above group.

Keywords Emotional intelligence, secondary school teachers.

Introduction

Emotion plays a vital role in human life. It is emotions that control our activities. Our working capacity, adjustment with working environment and our reactions in worse situations all these things depend on emotions. It all began 2000 years ago when Plato wrote, "All learning has emotional base." Since then educators and scientists have been trying to configure the relation of emotions and learning.

Emotions are personal and subjective feelings that arise from complex glandular activities, cognitive and conditional variables. The Oxford English Dictionary defines Emotion as, "Affection of mind (Example-love, pity) which comes and go according to one's personality experience and bodily state; A mental feeling. It gives us guidelines to complete our task. If emotions are managed in a proper way, it may be a strong tool for bringing success and happiness in the life of human beings. But if it is not managed or cannot be controlled then it may be dangerous for human beings.In day to day life, they affect our relations with other member of family, society , nation, our self image ,and overall our performance . For a good performance our cognitive process must be in control of emotions. So that they work for, rather than against. It was assumed that cognitive abilities had some links to a persons emotions which together brought success to him. Here comes the importance of emotional intelligence. The famous psychologist E.L Thorndike through his concept of social intelligence, laid the foundation of emotional intelligence in 1920.The term emotional intelligence appears to have originated with Charles Darwin in 1872, who theorized about a broader emotional social intelligence necessary for human survival and adaptation. The concept of emotional intelligence was first brought into scientific terms in 1990 by Mayer

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and Salovey (1995). Mayer and Salovey (1997) viewed emotional intelligence as a true form of intelligence that needed to be scientifically measured. They later went on to develop a four branch model to illustrate their findings. Daniel Goleman (1995), proposed a theory on emotional intelligence that centered around five traits. In fact emotional intelligence motivates a person to capture their unique potential and purpose and activates inner most potential values and aspirations, transforming them from things they think about, to what they do. It also help to minimize the negative impact of emotions on failure. By this we can understand the importance of emotional intelligence.

The quality of any educational institution depends mainly on the professional competence and emotional stability of teachers because emotional stability of teachers affects that of pupils. Unhappy, frustrated, dissatisfied teachers cannot help their pupils to become happy, well adjusted young people. Emotionally stable teachers are able to find out their own short comings and try to remove them so that the students may be saved from the adverse influence of their unbalanced personality. The Teacher is the most important factor in the development of any nation. Enlightened and motivated teachers lead the community and nation. Teachers are the torch bearers in creating social cohesion and national integration. In the National curriculum framework for quality teacher education (1998), it has been stated that "Liberate the teachers and teacher educator from the prescribed pedagogical transactional strategies and evaluation principles. It would lead to greater innovativeness, self assurance and self confidence on their part." So it is very necessary to make a comfortable and tension free environment for teachers in which they can make their maximum efforts for uplifting the students, society and the nation.

A teacher having high level of emotional intelligence can handle their students with love and care, with balanced personality, improved motivation, by the effective use of time and other resources ,with a good leadership quality ,with high level of performance etc. Hence, it is quite necessary to pay keen attention and gather information about EI of the teachers. The present study aims at "A Study of Emotional intelligence of higher Secondary School Teachers."

OBJECTIVES OF THE STUDY

- To study the level of emotional intelligence of secondary school teachers.
- To compare the mean scores of emotional intelligence of male and female secondary school teachers.
- To study relationship between the emotional intelligence and age of secondary school teachers.
- To study the relationship between the emotional intelligence and length of experience of secondary school teachers.

Hypothesis

- There is no significant difference in mean scores of emotional intelligence of male and female teachers.
- There is no significant correlation between the emotional intelligence and age of secondary teachers.
- There is no significant correlation between the emotional intelligence and length of experience of secondary school teachers.

Delimitation of the study

- The study was delimited to Bhavnagar district, Gujarat.
- The study was delimited to only three variables with respect to emotional intelligence viz. age, gender and experience.

Operational definitions

a. Emotional Intelligence: Emotional intelligence refers to emotional reasoning. It points to the ability to express one's emotions, understand one's own and others emotions, regulate one's own emotions and manage emotions of others. Here in the present study the scores obtained on the Emotional Intelligence Scale is considered as emotional intelligence of a teacher.

b. Secondary School Teachers: It refers to the teachers teaching in std 9th and 10th of Bhavnagar district.

Methodology

Population and sample

In this study, all secondary school's teachers of Bhavnagar district were considered as population.

After these 100 secondary school teachers were selected as sample on the random basis. In this sample, there were 43 male and 57 female teachers.

Tool

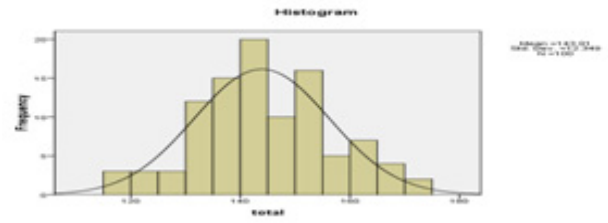
The instrument used to achieve the objectives was Emotional Intelligence Scale developed and standardized by Akukool Hyde,Sanjyot Pethe & Upinder Dhar (English version). This tool contains 34 items and each item scored 5 for strongly agree, 4 for agree, 3 for uncertain, 2 for disagree and 1 for strongly disagree. Reliability of the tool was determined by split-half reliability coefficient and was found to be 0.88 whereas the validity was indicated high on account of being 0.93.

Procedure

Scale of emotional intelligence was administered to the teachers after obtaining prior permission from the Principals of schools of Bhavnagar district. The data collected was analysed with the help of statistical techniques like Microsoft excel and SPSS.

Results and Discussion

The first objective was to measure the emotional intelligence of higher secondary school teachers. It was found that the value of emotional intelligence of the secondary school teachers was 84.11% and thus high.



The second objective was to compare the mean score of emotional intelligence of male and female teachers. The results are given in table 1.

Gender	N	Mean	Std.Deviation	t value	inference
M F	43 57	142.70 144.82	11.102 13.234	0.852	NS

Table 1. shows that mean emotional intelligence scores for male secondary school teachers is 142.70 and for female secondary school teachers, it is 144.82. The value of t-ratio (=0.852) is not significant at 0.05 level. It means that null hypothesis is not rejected. So, it can be inferred that male and female secondary school teachers do not significantly differ from one another with respect to emotional intelligence.

The third objectisve was to study the relationship of emotional intelligence and age of secondary school teacher. Pearson correlation was calculated and it was found to be 0.067 which very low.

The fourth objective was to study the relationship of emotional intelligence and experience of secondary teachers. Pearson Correlation was calculated which was found to be 0.032 which is very low correlation. It is clear that the correlation calculated to study the relationship of emotional intelligence and age of secondary teachers is not significant. Therefore the null hypothesis that, "There is no significant correlation between the emotional intelligence and age of secondary teachers", is not rejected. Hence there is no correlation between emotional intelligence and age of secondary teachers. Moreover it is found that the correlation calculated to study the relationship of emotional intelligence and length of experience of secondary teachers is not significant. Therefore the null hypothesis that, "There is no significant correlation between the emotional intelligence and length of experience of secondary school teachers", is not rejected. Hence there is no correlation between emotional intelligence and length of experience of a secondary teacher

Conclusion

Introducing emotions in schools would be a radical change! Yet schools do not change so readily. Those well-meaning people who have tried to introduce innovations in schools have come up against considerable resistance from teachers, students and parents alike. Yet without their active participation, no such far-reaching change is possible. It is concluded from the findings that the emotional intelligence of teachers at secondary school in Bhavnagar District is high. They should be sublimated through constructive activities. Emotions should be concentrated or directed towards some good object or healthy idea. Such a direction and concentration can lead to development like justice, patriotism and other moral qualities. The emotional competencies of the secondary school teachers can be further enhanced by conducting various training sessions

which in turn helps them to develop the same among their students. Inspirational subjects like art, literature, poetry and music help in developing an appreciation of the beautiful and sublime emotions in life. They should be included in the teacher education curriculum. Religious beliefs and an abiding faith in God help in tolerance and stability of emotions. Sports, games, dramatics, and other co-curricular activities are of great value. Skill, confidence and involvement in work as well as a healthy sense of humour are basic to emotional intelligence. Such a direction and concentration can lead to development like justice, patriotism and other moral qualities. Strategic competency in teaching can be developed in teachers by means of emotional intelligence. The concept of emotional intelligence may be incorporated in the teacher education curriculum to revitalize teacher education programme.

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Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 82 - 84
ISSN 2319 - 8168

ભાવનગર જિલ્લાના અનુસ્નાતક વિદ્યાર્થીઓના અનુકૂલનનો અભ્યાસ

આજે ૨૧મી સદીમાં જ્ઞાનની ક્ષિતિજો વિસ્તરતી જાય છે. શિક્ષણ પણ સમાજને જ્ઞાન આપનારું ક્ષેત્ર છે. આજના શિક્ષણનો શ્રેષ્ઠ ગ્રાહક એ વિદ્યાર્થી છે. વિદ્યાર્થી પોતાના જીવનમાં અનુકૂલન સાધી પ્રગતિની એક નવી દિશામાં આગળ વધી શકે તે માટે અભ્યાસક દ્વારા અનુકૂલનનો અભ્યાસ હાથ ધરાયો છે.અનુસ્નાતક ક્ષેત્રે અભ્યાસ કરતો વિદ્યાર્થી પરિપકવતાની કક્ષા પ્રાપ્ત કરી ચુકયો હોવાથી પોતાના જીવનમાં અનુકૂલન સાધી શકે અને ભાવિમાં તેને કરવાના કાર્યોમાં સફળ થઈ શકે તે હેતુથી પ્રવર્તમાન સમયમાં ગળાકાપ હરિફાઈના યુગમાં વિદ્યાર્થી અનુકૂલન સાધશે તો જ એ એક વિદ્યાર્થી તરીકે, સારા નાગરિક તરીકે શ્રેષ્ઠ ભૂમિકા ભજવી શકશે. આથી અભ્યાસ દ્વારા ભાવનગર જિલ્લાના અનુસ્નાતક વિદ્યાર્થીઓના અનુકૂલનનો અભ્યાસ હાથ ધર્યો છે. જેની વધુ વિગતે માહિતી આ ચર્ચા દ્વારા મેળવીશું.

ચાવીરૂપ શબ્દો : અનુકૂલન, અનુસ્નાતક વિદ્યાર્થીઓ, ભાવનગર જિલ્લો

ભૂમિકા

પૃથ્વી પર અસ્તિત્વ ટકાવી રહેતા તમામ સજીવો શિક્ષણને આભારી છે. દરેક વ્યકિત જીવનભર શીખતી રહે છે. શિક્ષણના સંદર્ભમાં વિદ્યાર્થીઓ શી રીતે શીખે છે, કેવા વાતાવરણમાં શીખે છે એ જાણવા અનેક મનોવૈજ્ઞાનિકો અને કેળવણીકારોએ અથાગ પ્રયત્નો કર્યા છે. તે તેની અગત્ય પુરવાર કરે છે. ફેલ્ડર અને સ્પર્લીન (કમુચે ૨૦૦૫ દ્વારા ઉલ્લેખિત) જણાવે છે કે વર્ગખંડમાં વિદ્યાર્થીની અધ્યયનશૈલી અને શિક્ષકની અધ્યાપનશૈલી વચ્ચે સુમેળ ન હોય ત્યારે વિદ્યાર્થીને અધ્યયનમાં કંટાળો આવે છે. બેધ્યાન રહે છે, હતાશા અનુભવે છે અને આખરે શાળા પણ છોડી દે છે.

આ સુમેળ અર્થાત્ જ અનુકૂલન. અનુકૂલન આપણી જરૂરિયાતોને સંતોષવા માટે આપણી માંગોને પહોંચી વળવા માટે તેમજ અન્ય સાથે સંતોષકારક સંબંધો બાંધવા માટે આપણામાં અને આપણા વાતાવરણમાં થતા પરિવર્તનોનો નિર્દેશ કરે છે (શાહ, ૧૯૯૯). સાંપ્રત સમયમાં વિજ્ઞાન અને ટેકનોલોજીના વિકાસે વિદ્યાર્થી જીવનમાં આરામ–સગવડો વધાર્યા છે. પરંતુ બીજી બાજુ વિદ્યાર્થીમાં વ્યગ્રતા, હતાશા, તાણ, અજંપોએ પણ પગદંડો જમાવ્યો છે. અનુકૂલનના અભાવે વિદ્યાર્થી જીવનના અનેક ક્ષેત્રોના વિકાસથી વંચિત રહી જાય છે (પવાર, ૧૯૮૩). સંશોધનો પણ સંકેત કરે છે કે અનુકૂલનની સમસ્યાથી વિદ્યાર્થીઓના અસંતોષમાં વધારો જોવા મળ્યો હતો (વિરેશ્વર, ૧૯૭૯).

ભાવનગર જિલ્લાના શિક્ષણ વિભાગમાં અનુકૂલન પર થયેલા અભ્યાસ (મોદી, ૧૯૯૧) પર નજર કરીએ તો (ઝાલા, ૧૯૭૬)એ અનુકૂલનનો અભ્યાસ કરેલો. સંશોધનમાં જાતીયતા, વિસ્તાર, વર્ષ અને અનુભવ પરની અસરોનો અભ્યાસ કરાયેલો. આ ઉપરાંત (ધનકોટ, ૧૯૮૨)એ ઉચ્ચતર માધ્યમિક શાળાના ધો.૧૧ના વિદ્યાર્થીઓના કૌટુંબિક અને સામાજિક અનુકૂલનનો અભ્યાસ કરેલો. સંશોધનમાં જાતીયતા, વય અને શાળા પરની અસરોનો અભ્યાસ કરાયેલો તેમજ (પવાર,૧૯૮૩)એ માધ્યમિક શાળાના આદિવાસી વિદ્યાર્થીઓના સામાજિક અને કૌટુંબિક અનુકૂલનનો અભ્યાસ કરેલો. સંશોધનમાં જાતિ, ધોરણ અને વય પરની અસરોનો અભ્યાસ કરેલો. આમ, ભાવનગર જિલ્લાના સંદર્ભમાં શિક્ષણ વિભાગમાં અનુસ્નાતક વિદ્યાર્થીઓના સંદર્ભે અનુકૂલન સંદર્ભે નહિવત્ સંશોધનો થયા છે. વળી, અનુસ્નાતક વિદ્યાર્થીઓ ભાવિ જીવનમાં ભજવવાની ભૂમિકામાં સફળ થઈ શકે તે માટે અભ્યાસક દ્વારા આ વિષય હાથ ધરવામાં આવ્યો છે.

શબ્દોની વ્યવહારુ વ્યાખ્યા

અનુકૂલન. ડૉ. દેસાઈ રચિત અનુકૂલન સંશોધનિકા પર વિદ્યાર્થીઓ દ્વારા મેળવેલા હકારાત્મક અને નકારાત્મક પ્રતિચારોની કુલ માત્રાને અનુકૂલન તરીકે ઓળખવામાં આવે છે.

અનુસ્નાતક વિદ્યાર્થીઓ. સ્નાતક થયા બાદનો ઉચ્ચ અભ્યાસમાં અભ્યાસ કરનાર વિદ્યાર્થીઓને અનુસ્નાતક વિદ્યાર્થીઓ તરીકે ઓળખવામાં આવે છે.

અભ્યાસના હેતુઓ

પ્રસ્તુત અભ્યાસના હેતુઓ નીચે મુજબ હતા.

૧. વિદ્યાર્થીઓના અનુકૂલનની કક્ષા નકકી કરવી.
૨. વિદ્યાર્થીઓના અનુકૂલન પર તેમની જાતિની અસર તપાસવી.
૩. વિદ્યાર્થીઓના અનુકૂલન પર તેમના વિસ્તારની અસર તપાસવી.
૪. વિદ્યાર્થીઓના અનુકૂલન પર તેમની જાતીયતા અને વિસ્તારની અસર તપાસવી.

* પી.એચ ડી. વિદ્યાર્થી, શિક્ષણશાસ્ત્ર ભવન, એમ.કે. ભાવનગર યુનિવર્સિટી, ભાવનગર.

અભ્યાસની ઉત્કલ્પનાઓ

પ્રસ્તુત અભ્યાસની ઉત્કલ્પનાઓ નીચે મુજબ હતી.

૧. કુમારો અને કન્યાઓના અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકો વચ્ચે સાર્થક તફાવત નહીં હોય.

૨. ગ્રામ્ય અને શહેરી વિસ્તારના વિદ્યાર્થીઓના અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકો વચ્ચે સાર્થક તફાવત નહીં હોય.

૩. અનુસ્નાતક વિદ્યાર્થીઓની જાતિ અને વિસ્તારની આંતરક્રિયાની સાર્થક અસર અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકો પર નહીં હોય.

અભ્યાસના ચલો

પ્રસ્તુત અભ્યાસમાં સ્વતંત્ર ચલ તરીકે જાતિ અને વિસ્તાર લેવાયેલ હતા. જયારે પરતંત્ર ચલ તરીકે અનુકૂલન કસોટીના પ્રાપ્તાંક લેવામાં આવ્યા હતા.

અભ્યાસની મર્યાદા

પ્રસ્તુત અભ્યાસની મર્યાદા નીચે મુજબ હતી.

૧. પ્રસ્તુત અભ્યાસ ભાવનગર જિલ્લાના વિનિયન ભવન પૂરતો જ મર્યાદિત હતો.

૨. પ્રસ્તુત અભ્યાસ શૈક્ષણિક વર્ષ ૨૦૧૦–૧૧ પૂરતો જ સીમિત હતો.

અભ્યાસનું મહત્ત્વ

પ્રવર્તમાન સમયમાં સુખ અને શાંતિપૂર્ણ જીવન જીવવા માટે અને વિદ્યાર્થીઓનાં અધ્યયન અંગેના પ્રશ્નોના નિવારણ માટે અનુકૂલનની આવશ્યકતા રહે છે. આ અભ્યાસમાં સમાવિષ્ટ અનુસ્નાતક વિદ્યાર્થીઓ સ્નાતક થયા બાદ હવે ભાવિ જીવનમાં ભૌતિક વાતાવરણ સાથે અનુકૂલન સાધી શકે અને વિકાસ કરી શકે તેમ હોવા છતાં વિદ્યાર્થીઓ અમુક પરિસ્થિતિમાં અનુકૂલન સાધી શકશે કે નહિ ? અપાનુકૂલિત વિદ્યાર્થીઓ પર ઉપચારાત્મક અને નિદાનાત્મક કાર્યક્રમ કઈ રીતે યોજવો ? તે તપાસવામાં આ અભ્યાસ ઉપયોગી ગઈ પડશે કારણ કે અનુસ્નાતક થયા પછીનો એક તબકકો સ્થિરતાનો આવશે. જે સમયે ભાવિ પરિસ્થિતિ સાથે અનુકૂલન સાધી જીવનના દરેક તબકકે પ્રગતિ કરવી પડશે. તેથી આ અભ્યાસનું મહત્વ જેટલું આંકીએ એટલું ઓછું છે.

પ્રસ્તુત અભ્યાસમાં અનુસ્નાતક વિદ્યાર્થીઓના અનુકૂલનનો અભ્યાસ થતો હોવાથી પ્રાધ્યાપકોને પણ તેમના અનુકૂલન વિશે માહિતી મેળવી તેમના ભાવિ માટે યોગ્ય માર્ગદર્શન પૂરું પાડવામાં મદદ મળી રહેશે અને આ અંગે સંશોધન માટે આવશ્યક પ્રેરણા મળી રહેશે.

સંશોધન યોજના

વ્યાપવિશ્વ અને નિદર્શ. આ અભ્યાસમાં વ્યાપવિશ્વ તરીકે ભાવનગર જિલ્લાના વિનયન પ્રવાહના અનુસ્નાતક વિદ્યાર્થીઓની પસંદગી કરવામાં આવી હતી.

નિદર્શની પસંદગી માટે ભાવનગર જિલ્લાના ગ્રામ્ય અને શહેરી વિસ્તારના અનુસ્નાતક ભવનના ૯ ભવનોમાંથી ૧૧૭ છોકરાઓ અને ૧૧૬ છોકરીઓ એમ કુલ ૨૩૨ વિદ્યાર્થીઓની પસંદગી ઝૂમખાં નમૂના પદ્ધતિ દ્વારા કરવામાં આવી હતી. વળી, જાતિ મુજબ છોકરા અને છોકરીઓ પ્રમાણે સહેતુક વર્ગીકરણ કરવામાં આવ્યું હતું.

સંશોધનની પદ્ધતિ. પ્રસ્તુત અભ્યાસમાં વિદ્યાર્થીઓના અનુકૂલનને જાણવા સર્વેક્ષણ પદ્ધતિનો ઉપયોગ કરાયો હતો.

ઉપકરણ. પ્રસ્તુત અભ્યાસમાં વિદ્યાર્થીઓના અનુકૂલનને તપાસવા માટે ડૉ. કે.જી. દેસાઈ રચિત અનુકૂલન સંશોધનિકાનો ઉપયોગ કરવામાં આવ્યો હતો. જેમાં ૧૦૦ વિધાનો હતા જે મિનેસોટા મલ્ટિફેઝિક પર્સનાલિટી ઈન્વેન્ટરીના ગુજરાતી રૂપાંતરમાંથી પસંદ કરવામાં આવી છે. આ સંશોધનનિકાનો વિશ્વસનીયતા માનાંક ૦.૦૬૯ જોવા મળ્યો હતો. આ સંશોધનિકામાં વિદ્યાર્થી દ્વારા 'હા' કે 'ના'માં ઉત્તરોને આધારે વિભાજન થયું છે.

માહિતી એકત્રીકરણ

માહિતી એકત્રીકરણ કરવા પ્રત્યેક અનુસ્નાતક ભવનની રૂબરૂ મુલાકાત લઈ અભ્યાસક દ્વારા વિદ્યાર્થીઓને અનુકૂલન સંશોધનિકા આપી તેમના પ્રતિચારો મેળવવામાં આવ્યા હતા. વિદ્યાર્થીઓએ આપેલા પ્રતિચારોનું કસોટી રચયિતાએ જણાવ્યા પ્રમાણે ગુણાંકન કરી પ્રત્યેક પાત્ર પસોથી કુલ ગુણ મેળવવામાં આવ્યા હતા.

માહિતીનું વિશ્લેષણ

પ્રસ્તુત અભ્યાસમાં માહિતી વિશ્લેષણ માટે વર્ણનાત્મક આંકડાશાસ્ત્રનો ઉપયોગ કરવામાં આવ્યો હતો. મળેલ પ્રાપ્તાંકોને અભ્યાસના હેતુઓના સંદર્ભમાં વર્ગીકરણ આવૃત્તિ વિતરણ તૈયાર કરી તેના પરથી સરાસરી, પ્રમાણવિચલન, પ્રમાણભૂલ, ક્રાંતિક ગુણોત્તરનું મૂલ્ય અને F મૂલ્ય શોધી શૂન્ય ઉત્કલ્પનાઓની ચકાસણી કરવામાં આવી હતી. માહિતીનું પૃથકકરણ અને અર્થઘટનના આધારે તારણો તારવવામાં આવ્યા હતા.

તારણો

૧. અનુકૂલન

અનુકૂલનની કક્ષા અનુસાર ૫૦.૮૬ ટકા વિદ્યાર્થીઓ મધ્યમ અનુકૂલન ધરાવે છે. એટલે કે મધ્યમ અનુકૂલન ધરાવનાર વિદ્યાર્થીઓની સંખ્યા વિશેષ હતી.

૨. અનુકૂલનની કક્ષા

સમગ્ર નિદર્શના સૌથી વધુ વિદ્યાર્થીઓ મધ્યમ અનુકૂલન (કક્ષા–B) ધરાવતા હતા, જયારે સમગ્ર નિદર્શના સૌથી ઓછા વિદ્યાર્થીઓ નિમ્ન અનુકૂલન (કક્ષા–C) ધરાવતા હતા.

૩. છોકરાઓ કરતાં છોકરીઓમાં નિમ્ન અનુકૂલનની કક્ષાનું પ્રમાણ વધુ જોવા મળે છે. છોકરીઓ કરતાં છોકરાઓના મધ્યમ અનુકૂલનની કક્ષાનું પ્રમાણ વધુ જોવા મળ્યું હતું. છોકરાઓ કરતાં છોકરીમાં ઉચ્ચ અનુકૂલનની કક્ષાનું પ્રમાણ વધુ જોવા મળ્યું હતું.

૪. અનુકૂલન પર જાતિની અસર : છોકરાઓ અને છોકરીઓના અનુકૂલનમાં સમાનતા જોવા મળે છે.

૫. અનુકૂલન પર વિસ્તારની અસર :

શહેરી અને ગ્રામ્ય વિસ્તારના વિદ્યાર્થીઓના અનુકૂલનમાં સમાનતા જોવા મળે છે.

૬. અનુકૂલન પર જાતિ અને વિસ્તારની આંતરક્રિયાની અસર : ગ્રામ્ય વિસ્તાર અને શહેરી વિસ્તારના છોકરાઓ અને છોકરીઓના અનુકૂલનના સરાસરી પ્રાપ્તાંકો પર તેમની જાતિ અને વિસ્તારની આંતરક્રિયા પર તેમની જાતિ અને વિસ્તારની આંતરક્રિયા વચ્ચે કોઈ સાર્થક તફાવત જણાતો નથી. એટલે તેમાં સમાનતા જોવા મળે છે.

પરિણામો

૧. અનુકૂલન સંશોધનિકામાં વિદ્યાર્થીઓના અનુકૂલનની ત્રણ કક્ષાઓ પૈકી કુલ ૬૧ (૨૬.૨૯ %) વિદ્યાર્થીઓ ઉચ્ચ અનુકૂલન, ૧૧૮ (૫૦.૮૬ %) વિદ્યાર્થીઓ મધ્યમ અનુકૂલન અને ૫૩ (૨૨.૮૪ %) વિદ્યાર્થીઓ નિમ્ન અનુકૂલન ધરાવતા હતા. એટલે કે મધ્યમ અનુકૂલન ધરાવનાર વિદ્યાર્થીઓની સંખ્યા વધુ જોવા મળી હતી.

૨. છોકરાઓ અને છોકરીઓના અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકોના સંદર્ભે તફાવતની શૂન્ય ઉત્કલ્પનાની ચકાસણીના ક્રાંતિક ગુણોત્તરનું મૂલ્ય ૧.૦૪ હતું જે મૂલ્ય સારણી મૂલ્ય કરતાં ઓછું હતું. આથી અનુસ્નાતક છોકરાઓ અને છોકરીઓના અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકો વચ્ચે ૦.૦૫ કક્ષાએ સાર્થક તફાવત જોવા મળ્યો ન હતો. આથી આ ઉત્કલ્પનાનો અસ્વીકાર થયો ન હતો.

૩. ગ્રામ્ય અને શહેરી વિસ્તારના અનુસ્નાતક વિદ્યાર્થીઓના અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકોના સંદર્ભે તફાવતની શૂન્ય ઉત્કલ્પનાની ચકાસણીના ક્રાંતિક ગુણોત્તરનું મૂલ્ય ૧.૩૫ હતું, જે મૂલ્ય સારણી મૂલ્ય કરતાં ઓછું હતું. આથી ગ્રામ્ય અને શહેરી વિસ્તારના વિદ્યાર્થીઓના અનુકૂલન કસોટીના સરેરાશ પ્રાપ્તાંકો વચ્ચે ૦.૦૫ કક્ષાએ સાર્થક તફાવત જોવા મળ્યો ન હતો. આથી આ ઉત્કલ્પનાનો અસ્વીકાર થયો ન હતો.

૪. વિદ્યાર્થીઓના અનુકૂલનના સરેરાશ પ્રાપ્તાંકો પર તેમની જાતીયતા અને વિસ્તારની આંતરક્રિયાના સંદર્ભે શૂન્ય ઉત્કલ્પનાની ચકાસણીના F ગુણોત્તરનું મૂલ્ય ૦.૯૯ હતું, જે મૂલ્ય સારણી મૂલ્ય કરતાં ઓછું હતું. આથી કહી શકાય કે વિદ્યાર્થીઓના અનુકૂલનનાસરાસરી પ્રાપ્તાંકો પર તેમની જાતિ અને વિસ્તારની આંતરક્રિયાની કોઈ સાર્થક અસર જોવા મળી ન હતી. આથી આ ઉત્કલ્પનાનો અસ્વીકાર થયો ન હતો.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 85 - 87
ISSN 2319 - 8168

AN ANALYSIS OF SPORT MANAGEMENT INTERNSHIPS: A QUALITATIVE STUDY

Higher Education Institutions (HEIs) face a variety of challenges in their effort to deliver the best educational experience to their students. Traditionally. higher education was delivered through a lecture- centric approach. However, in the current higher education scenario this approach appears to have limitations with regard to the preparation of students for the workplace. In their quest to develop the whole person, many HEIs included an experiential learning component to their curricula. Experiential learning includes elements such as field-based coursework internships, service learning, guest speakers and site visits. In the professional preparation of sport management personnel experiential learning commonly exists as field experience in the form of internships. Very little research, particularly in South Africa, has been conducted on sport management internships. This study explores the sport management internship through a qualitative process focusing on the perceptions of sport management interns. A qualitative and exploratory approach was used to access information from interns regarding sport management internships. Using purposive sampling, ten informal one-on-one semi-structured interviews lasting about 30-40 minutes with five male and five female students who had just finished their internship in the past 12 months were conducted. A priori dimensions identified from the literature were used to seek information regarding the internship experiences of interns. The results indicate that interns benefited overall from the internship both at a professional as well as at a personal level. There were some concerns raised by interns that warrant the attention of HEIs. Recommendations in this regard were made.

Introduction

Higher Education Institutions (HEIs) face a variety of challenges in their effort to deliver the best educational experience to their students. Traditionally, higher education was delivered through a lecture centric approach. However, in the current higher education scenario this approach appears to have limitations with regard to the preparation of students for the workplace. As a result HEIss are forced to modify their approach to meet the demands of industry. In their quest to develop the whole person, many HEIs included an experiential learning component to their curricula Experiential learning includes elements such as field-based coursework, internships, service learning, guest speakers and site visits. In the professional preparation of sport management personnel experiential learning commonly exists as field experience in the form of internships. Several benefits have been associated with internship. In contrast to the theoretical learning that takes place in lecture environments, it promotes a deeper understanding of concepts learnt in the lecture environment and creates the platform for the application of theoretical knowledge. It provides the opportunity to apply and reinforce concepts learnt in lecture settings into professional practice, enhance personal growth and development and broaden horizons through exposure in the workplace. Internship programmes also enhances personal development (for example, self-confidence, communication skills, social interaction skills, sense of professionalism), academic development (for example, cognitive skills such as

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problem solving, critical thinking, analysis and synthesis, relating theory to practice) and career development (for example, career planning skills, developing job acquisition skills, testing career options). Most HEIs in South Africa have recognized the importance of experiential learning in their programmes and have included internship as an integral component of the programme. Very little research, particularly in South Africa, has been conducted on sport management internships. In response to the dearth in the literature, especially in South Africa, this study attempts to explore the sport management internship through a qualitative process focusing on the perceptions of sport management interns.

Methods

An extensive literature study which included both national and international sources was conducted on experiential learning in general, as well as internships of sport management students in particular. In addition, a qualitative and exploratory approach was used to access information from interns regarding their perceptions of sport management internships. Using purposive sampling, ten informal one-on-one semi-structured interviews lasting about 3040 minutes with five male and five female students who had just finished their internship in the past 12 months and were in the process of handing in their logbooks were conducted to gather data regarding their internship. A priori dimensions identified from the literature were used to seek information regarding the administration of the internship, the relevance and applicability of the coursework for their internship, working conditions, development, expectations of the interns of their internship and interns suggestions to improve their internship experience. Salient points specifically referring to the a priori dimensions were then extracted from the transcripts of the interviews and conclusions drawn. For the purposes of objectivity and trustworthiness, the information gathered with regard to each dimension was first analysed by each of the researchers before being sent to a third independent senior researcher for comment. This was done to increase the range of meaning given to the data and reduce the possibility of bias.

Results

Most of the interns (n=6) period of internship was six months full-time, while the balance of the interns internship period was five months. The main jobs that the interns performed during their internship was fitness instructor (n=4), sports coordinator (n=2), sport administrator (n=1), general duties (n=1) and facility management (n=2). All interns had male mentors. The results indicate that interns benefited overall from the internship both at a professional as well as at a personal level. There were some concerns raised by interns that warrant the attention of HEIs. There were inconsistencies regarding the number of visits that were made to the interns during the internship. Interns complained about the lack of contact that they had had with their instructors during their internship, and the lack of visits to the internship sites by the instructors. All interns indicated that although they had covered certain sections theoretically, those sections were not done in depth, and they were found lacking in those tasks that required in depth knowledge. Generally, the interns did not know what to expect from their internships beside the fact that they were going to be in the workplace. Most of the interns complained that they had to complete their internship at locations far away from their homes or university. This resulted in prolonged travel time, as well as increased costs, placing a heavy financial burden on them. Interns indicated that they developed professionally because they were working in the organisation. The majority of the interns (n=8) had a more realistic view of themselves. They became more aware of the wide range of opportunities and the demands of different tasks that were assigned to them.

The proliferation of Sport Management programmes at HEIs necessitates studies to be conducted to examine, among other things, sport industry requirements and specific course offerings, especially the internship component to prepare sport management students for the various jobs in sport. HEIs have the responsibility to produce graduates who can not only compete in the job market, but also make meaningful contributions in a field that is growing at a tremendous pace. Jt is important that a

commitment to integrating the internship into the sport management programme in terms of time, budget, human tesources and assessment is developed both in the institution as well as the academic running the programme. It should not be seen as an add-on to the programme, but rather an integral element that adds value to the programme. Since it is compulsory for an intern to complete an internship in order to graduate, institutions should make every attempt to prepare the student for internship so that the intern is aware of all possibilities, as well as how the internship could be made meaningful for the student. This can be done through workshops conducted internally where various organizations that take on interns, are able to make presentations. This not only helps interns in making a wiser choice, it also helps them prepare for the internship. Academics in charge of running the programmes should be afforded the opportunity to develop specialized skills to be effective in identifying appropriate placement for students, maintaining effective public relations within and outside the university settings, counseling students regarding their internship, and assessing students during their internship. At the institutional level, it is important that the institution embraces the concept of internships and supports programme coordinators with the resources necessary to meet the internship demand of the programme, especially monitoring students.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 88 - 89
ISSN 2319 - 8168

HUMAN RESOURCE MANAGEMENT IN SPORT

Sport organizations throughout the world and their Managers are mainly concerned with several issues related to their operations. Management of human resources takes a centre stage for mainly reasons. The quality management depends on quality human resource engaged in the production of goods and services of human beings assembled and associated for the collective efforts and goals.

The production and consumption occur at interface of clients and employees. Most of the sports organizations produce services. The management of human resources is a critical concern of Sports Managers. A clear cut understanding of the dynamics of human resources and their management is necessary to be an effective manager. The efficient people implement the organizational policies and procedures and help the organization achieve it's goals. Sport and physical education organizations are largely concerned with production of the best services to consumers in community/society.

Human Resource Management practices are job design, staffing, Leadership, performance evaluation, reward systems and organizational justice. The types of human resources are volunteers, paid, nominated, elected, appointed, professionals and clients/ consumers. Human Resource Management practices should result in sound satisfaction of all involved and in their commitment to the organization as well as its enhancement. A clear cut understanding of the dynamics of human resources and their management is necessary to be an effective manager. The efficient people implement the organizational policies and procedures and help the organization achieve it's goals. Sport and physical education organizations are largely concerned with production of the best services to consumers in community/society.

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Commitment

Satisfaction of our human resources is an important outcome variable, in case of sport and physical activity or game organization. Organizational commitment is equally important outcome variable. To 'commit" or commitment refers to "the act of pledging or engaging oneself to something or somebody. The fact is that unless members of an organization are, committed to the organization and it's goals and processes, they are not likely to whole heartedly participate in organizational activities and to discharge their duties to the best of their abilities. Organizational commitment is a partisan affective attachment to the goals and values of an organization. The emphasis here is on the goals and values of the organization and the individual's role in relation to those goals and values Buchanan (1974). It can be categorized by at least three factors (a) a strong belief in and acceptance of the organization's goals and values. (b) a willingness to exert considerable effort on behalf of the organization and (c) a strong desire to maintain membership in the organization.

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Bases of Commitment

There are three distinct components in terms of the organizational commitment; affective commitment, continuance commitment, and normative commitment (Mayer ad Allen, 1997). ORailly and Chatman (1986) defined Affective commitment, the degree to which an individual is psychologically attached to an employing organizations through feelings such as loyalty, affection, warmth, belongingness, fondness, happiness, pleasure and so on. The supervisors leadership and the social and task relations within the workgroup facilitate this emotional attachment.

Continuance commitment Backer's (1960) refers to one's attachment to an employing organization based on the degree to which an individual experiences. Some authors call it the calculative commitment (Mathieu and Zajac (1990).

The third component of organizational commitment, normative commitment is the degree to which an individual is psychologically attached through its initialization of its goals, values and missions. This differs from affective commitment because it reflects a sense of duty, an obligation or calling to work in an organization, but not necessarily emotional attachment. It differs from continuance commitment. E.g. A worker may identify with the organizational goals and take it as a duty or obligation to work in that organization and facilitate the achievement of those goals.

Organizational commitment is a collection of commitments such as: Management, Supervisor(s), work unit, co-workers unit, owners and clients/ consumers. This type of commitment is called as systematically integrated services from all levels of employees, right from basements to top (Co-workers clients to owners/management including Supervisor/ Executives.

Occupational commitment can be to the organization, leadership, workgroup, co-workers or organizational goals etc. Occupational commitment refers to a persons belief in an acceptance of the values of his/ her chosen occupation or line of work and to a willingness to maintain membership in that occupation (Vandernberg and Scarpello, 1994). A sense of loyalty to their profession characterizes - professionals the loyalty - differs and changes from person to person in an organization. Hence, occupational commitment and organizational commitment conceivably can be contradictory to each other. Managers can facilitate the development of organizational commitment through organizational practices that support to members, create a sense of fairness among members, enhance members' competence and foster feelings of personal importance among members. Organizational commitment is related to all members' commitment in works closely associate with organizational goals. The relationship between organizational commitment and different commitments of members is stronger.

Managers need to be concerned with developing organizational commitment among their members .Job satisfaction is an immediate reaction to the job experiences and is variable as the job situation changes. Organizational commitment is a global attitude that takes time to develop and is stable overtime. Although job involvement contributes to higher and quality performance, the ideal worker is one who has a high level of both job involvement and organizational commitment. The least desirable worker is one who has a low level of both attributes.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 90 - 92
ISSN 2319 - 8168

EFFECT OF YOGIC EXERCISES INTERVENTION ON THE STRENGTH DEVELOPMENT OF ATHLETE

Yogic exercises not only increase the general strength but also tone up the muscles because these exercises stretch out the muscles and due to their slow stretch and hold nature along with breathing mechanism improves the muscular tone and strength of the muscles. To achieve the purpose of the study six weeks yoga training was administered and Kraus–Weber test is framed to find out the minimum muscular strength required to participate in the training programme and also to find out theim provement in muscular strength after the training programme. The 40 athletes (Boys) who represented Rajkot district in the state level athletic meet ranging from 15-17 years of age were drawn as subjects. The results clearly indicated that the six weeks yoga training was improved muscular strength. Hence it isconcluded that there is a positive and significant effect of yogic exercises in the improvement of muscular strength of athletes. **Key words:** *Yogic Exercises, Muscular strength.*

Introduction

The person who is physical fit will be able to carry out the essential of his job without undue fatigue. Fitness is characterized by man's ability to function efficiently with in his potentialities. Fitness implies not only the acquisition of certain physical skills but also the ability to withstand the emergency demands training and competitions.

High level of strength is essential to good performance in all-athletic games and in some events strength is of almost important. Greater strength often results in better performance. Its relative significance varies depending on the nature of the particular activity. A person having muscular fitness can carry out his daily routine efficiently and effectively with least effort and strain. Muscular fitness plays an important role in all aspects of athlete's performance improvement. Yogic practices not only make the internal organs fit but also strengthen the muscles. Yogic exercisesincrease the general strength and tone up the muscles because these exercises stretch the muscles, due to their slow movement and held position with breathing mechanism improves the muscle tone.

The word "Training' has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years.

Methodology

The Kraus- Weber test consists of six tests; the first five tests were used to find out the muscular strength and the last one to indicate the flexibility. All the six tests, namely Abdominal Psoas (A+), Abdominal minus Psoas (A-), Psoas and lower abdomen (P), Upper Back (UB), Lower Back (LB) and Length of back & hamstring muscles (BH) are modified and were used to test 40 athletes ranging from 15 to 17 age group Rajkot district. The modified Kraus-Weber test were conducted on the athletes, the pre training performance of athletes is recorded. After the training again the Kraus-Weber test was administered to find out the improvement in the muscular strength of the athletes.

Test Administration

In order to assess the muscular strength of the subjects the modified Kraus-Weber tests were

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administered are given below.

Tests

Abdominal Plus Psoas muscles (A+),Abdominal Minus Psoas muscles (A-)Psoas and Lower abdomen (P)Upper Back (UB)Lower Back (LB)Back and Hamstring (BH)Apparatus Wrestling mat

Stop watch

Yogic exercises

The yogic training consists of the following selected yogic exercises, Sitting yogic exercises,Paschimotanasana (The Posterior Stretch),Ardha Matsyendrasanas,Padmasana (The lotus Posture),Sawankasana (The Hare Posture),Standing yogic exercises,Talasana (Palm Tree posture),Trikonasana (The Triangle Posture),Padahastasana (The Feet and Hands Posture)Utkatasana

Procedure

The modified Kraus-Weber Tests were administered to the athletes. The each test item is demonstrated correctly to the athletes and then asked them to do the same. The yogic exercises are also demonstrated correctly and asked them to do the same.

Training Schedule

WEEKS	MORNING	EVENING
1st week	Sitting yogic exercises 30 minutes	Sitting yogic exercises 30 minutes
2nd week	Sitting yogic exercises 40 minutes	Sitting yogic exercises 40 minutes
3rd week	Sitting & Standing yogic exercises 50 minutes	Sitting & Standing yogic exercises 50 minutes
4th week (6 days)	-do-	-do-
5th week (6 days)	Sitting & Standing yogic exercises 40 minutes	Sitting & Standing yogic exercises 40 minutes
6th week (Alternate one session each day)	Sitting & Standing yogic exercises 40 minutes	Sitting & Standing yogic exercises 40 minutes

Statistical Technique

Mean, Standard deviation and t-value were used to compute the data.

Results And Discussions

From the data obtained the flowing are tabulated for analysis.

Table-1

Pre and Post-training performance of athletes

Training		A+ (in 1mt.)	A- (in 1mt.)	P (in secs)	UB (in secs)	LB (in secs)	BH (in secs)
Pre-training	**M**	24	29	12	13	11	13
	SD	3.4	4.1	2.8	3.1	2.6	3.1
Post-training	**M**	31	37	15	16	13	16
	SD	4.9	4.6	3.4	3.9	3.3	4.2
t - value		**9.7***	**10.78***	**5.65***	**5.00***	**3.95***	**4.77***

**Significance at 0.05 level*

Table-1 and graph shows the mean scores of pre and post training performance in modified Kraus-Weber test. It clearly shows the significance difference in the performance of the athletes in two conditions. It

means that the yogic asanas introduced to the athletes are responsible for bringing improvement in themuscular strength. The effect of yogic exercises intervention training the muscular strength in the athletes is proved.

Conclusions

The selected yogic exercises intervention improved the strength (muscular strength) among the athletes. The positive and significant effect of yogic exercises on the muscular strength of the athletes.

The selected yogic exercises because of their slow movement and held position improve the muscular tone. This improved muscle tone of the abdominal, lower back, upper back and back & hamstrings is responsible for the improvement of muscular strength of the athletes.

Recommendations

The results of the survey taken of the muscular fitness of the athletes should be great concern to thecoaches and trainers in the welfare of the athletes.

The results bring out the weakness of the athletes and also suggest the importance of including suitable yogic exercises for the improvement of muscular fitness.

A larger sale of study may be conducted on state, national and international athletes and also on different genders for longer periods.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 93 - 95
ISSN 2319 - 8168

EFFECT 0F RESISTANCE AND ENDURANCE TRAINING ON LEG STRENGTH AND CARDIO-RESPIRATORY ENDURANCE

The purpose of the present study was to find the effect of resistance and endurance trainings on leg strength and cardio-respiratory endurance. For this purpose, forty five Male players from the Mahadev Desai Sharirik Shikshan Mahavidyalaya, Sadra. Dist. Gandhinagar. of Gujarat Vidyapeeth representing in various games and sports in the age group of 18 – 25 years were selected. They were divided into three equal groups, each group consisted of fifteen subjects, in which group – I underwent resistance training, group – II underwent endurance training and group – III acted as control group who did not participate in any special training and underwent their regular respective training sessions. The training period for this study was three days in a week for twelve weeks. Prior to and after the training period the subjects were tested for leg strength and cardio-respiratory endurance. Leg strength was assessed by using dynamometer and cardio-respiratory endurance was assessed by administering Cooper's 12 minutes run/walk test. The result of the study has shown that the resistance training group has significantlyimproved the leg strength but not in cardio-respiratory endurance and endurance training group has significantly improved their cardio-respiratory endurance and also in leg strength after twelve weeks of training when compared with the control group. Moreover, there was a significant difference has occurred between the training groups on leg strength in favor of resistance training.

Keywords:- Resistance training, Endurance Training, Leg Strength and Cordio-respiratory Endurance

Introduction

Human beings have consistently tried to run faster, jump higher and exhibit greater strength, endurance and skill. We are naturally competitive and ambitious of excellence in athletic performances. As a result of practical experience, observation and scientific experimentation, old method of conditioning, though fascinating and rich in tradition, have been discarded and replaced by new methods based on insight and understanding. For centuries, this evaluation towards better methods of conditioning was slow, but in the recent years the dramatic changes that have taken place have brought about some astounding results in performance.New advances in science make it possible to run faster and jump higher than ever before. Plyometrics is a form of exercise, which links strength with speed of movement. There are two phases of muscle contraction during the running or jumping motion. Muscles go through a stretch phase, and then a contraction phase. Plyometric exercises are designed to shorten the cycle time between the two phases.A rapid cycle time allows maximum energy transfer between stretch and contraction phases. The new frontal platform shoes have been shown to dramatically improve the efficiency of plyometric exercises.

Training in frontal platform shoes is increasingly becoming the method of choice for serious sprinters and jumpers. No other method develops as quickly, the specific muscle groups and neural connections essential for running, speed and jumping height. Strengthening one's muscles through resistance

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training offers many benefits and makes it easier to do one's daily routine. One can find that carrying your briefcase, doing laundry and hauling groceries becomes easier when one's arm and chest muscles are toned.Leg strength is very essential for sports persons, especially athletes. The strength of a muscle is related to its cross sectional area or girth. The larger the muscle, the muscle, the stronger it is. Strength training increased the contractile protein that gives the muscle its pulling power. By comparing strength to performance, it is possible to determine if more strength is needed. If an athlete's performance improves with increased strength then strength training is to be recommended.

Cardio-respiratory endurance is the ability work close to one's maximum aerobic capacity for a prolonged period of time. To increase one's endurance is depend upon increasing the ability to work at high, relative work load for extended periods of time.

Materials And Methods

This study under investigation involves the experimentation of resistance and endurance training on leg strength and cardio-respiratory endurance. Only forty-five Male players from various games and sports those who were studying in the Mahadev Desai Sharirik Shikshan Mahavidyalaya, Sadra. Dist. Gandhinagar. of Gujarat Vidyapeeth from various classes and aged between 18 and 25 years were selected as subjects. The selected forty-five subjects were randomly divided into three groups of fifteen each, out of which group - I (n = 15) underwent resistance training, group – II (n = 15) underwent endurance training and group - III (n = 15) remained as control, which did not participate any special activities. The training programme was carried out for three days per week during morning session only (6 am to 8 am) for twelve weeks. Leg strength was assessed by using dynamometer and cardio-respiratory endurance was assessed by administering Cooper's 12 minutes run/walk test. The analysis of covariance (ANCOVA) was used to findout the significant difference if any, between the experimental groups on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since, there were three groups involved, the Scheffé S test was applied as post hoc test.

Analysis Of Data

The data collected prior to and after the experimental periods on leg strength and cardio-respiratory endurance on resistance training group, endurance training group and control group were analysed and presented in the following table - I.

Table – I:

Analysis of Covariance and 'F' ratio for Leg strength and Cardio-respiratory endurance for Resistance Training Group, Endurance Training Group and Control Groups

Variable Name	Group Name	Resistance Training Group	Endurance Training Group	Control Group	'F' Ratio
Leg strength (in kgs.)	Pre-test Mean ± S.D	46.31±1.86	45.81±2.16	46.11±1.861	1.019
	Post-test Mean ± S.D.	48.883±1.98	47.11±1.193	45.86±1.123	5.112*
	Adj. Post-test Mean	49.121	47.86	45.32	12.883*
Cardio-respiratory Endurance (Meters)	Pre-test Mean ± S.D	1286.3±25.12	1281.9±30.71	1287.6±29.55	1.598
	Post-test Mean ± S.D.	1289.5±26.88	1301.5±28.26	1288.9±27.46	9.213*
	Adj. Post-test Mean	1288.71	1312.65	1286.198	21.923*

*Significant at .05 level of confidence. (The table value required for significance at .05 level of confidence with df 2 and 42 and 2 and 41 were 3.22 and 3.23 respectively).

Table – II:
Scheffé S Test for the Difference Between the Adjusted Post-Test Mean of Selected Criterion Variables

Adjusted Post-test Mean on Leg Strength				
Resistance Training Group	**Endurance Training Group**	**Control Group**	**Mean Difference**	**Confidence interval at .05 level**
49.12		45.32	3.806*	2.18
49.12	47.86		1.23*	1.82
	47.86	45.32	2.545*	2.18

Adjusted Post-test Mean on Cardio-respiratory Endurance				
Resistance Training Group	**Endurance Training Group**	**Control Group**	**Mean Difference**	**Confidence interval at .05 level**
1288.71		1286.2	2.51	18.37
1288.71	1312.65		23.94*	18.37
	1312.65	1286.2	26.452*	18.37

*Significant at .05 level of confidence.

Results:

Table – I showed that there was a significant difference among resistance training group, endurance training group and control group on leg strength and cardio-respiratory endurance.

Table – II shows that the Scheff S Test for the difference between adjusted post-test mean difference in leg strength between resistance training group and control group (3.806), endurance training group andcontrol group (2.545) and resistance training group and endurance training group (1.23) were significant at .05 level of confidence. Table – II also shows that the Scheff S Test for the difference in Cardio-respiratory endurance between adjusted post-test mean of resistance training group and endurance training group (23.94) and endurance training group and control group (26.452), which were significant at .05 level of confidence. And there was no significant difference between resistance training group and control group (2.51) on cardio-respiratory endurance after the training programme.

Discussion on Findings:

Based on the results of the study, the following findings were drawn:

Both the training groups have significant increase in leg strength when compared with control group. Moreover, the resistance training group has better improvement in leg strength than the endurance training group. This result is in line with the findings of K. Spanos et al (2007), and W.J. Kraemer et al(2001) were found that there was a significant increase in leg strength after the resistance training. Hennesay and Watson (1994) have found that combined training (resistance and endurance training) have improved the strength significantly.

There was a significant improvement in cardio-respiratory endurance after the endurance training when compared with resistance training and control groups. But there was no significant improvement in cardio-respiratory endurance after the resistance training. This result is in line with the findings of Raja(1992) and Uppal (1980) found that there was a significant improvement in cardio-respiratory endurance after the endurance training.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 96 - 99
ISSN 2319 - 8168

EFFECT OF YOGIC ACTIVITIES AND AEROBIC EXERCISES TRAINING PROGRAMME ON BODY MINERALS AND BLOOD RELATED COMPONENTS: A STUDY

Aim of this study is to examine effects upon minerals components and blood related components through Yogic activities and aerobic exercises training program. For this purpose students of North Gujarat University, Patan affiliated Smt. C.C. Mahila Arts and Sheth C.N. Commerce college, Visnagar 17 to 22 years groups age total 60 students have been selected through random system as a subject characters. And they all provided per week five days training programs of Yogic activities and aerobic exercise training up to 12 weeks period. In this research minerals components i.e. sodium, Potassium, calcium and phosphorous in our body are selected as a subject where blood related components hemoglobin, glucose and creatine are selected in this research. During study before training and after training while making figures analysis of collected data whatever result is take place according to that Hemoglobin and Glucose upon these two component for Yogic activities and Aerobic exercise effectual effects were found out. This means for this component the hypothecation is being effectual. Whereas Sodium, Potassium, Calcium, Phosphors and creatine no any effectual effect is found of Yogic Activities and Aerobic exercise, therefore for this component hypothecation is not being effectual.

Introduction

In modern science age through new techniques and researches have made life of man more prosperous and well equipped and full of conveniences. And all these physical development have saved man from unnecessary trouble some hard workings. And also made him absolute free from human body well being. Therefore along with daily routine works which exercises is received to do this workings and some time purpose to maintain body health some research physical exercises are to be manage, and in today life style this become essential.

In society people are being associated with various types of exercise oriented activities due to curiosity of body maintenance, people become conscious and alert towards his own body. In this various activities Yoga is one more popular activity, and in country as well as in foreign countries it proves effective activities and gain wide spread fame. Along with traditional physical exercises, now a days people are being active doing aerobic exercises in which along with rhythms of music harmony movement of body organs are made in difference types manners.

In our body all organs are working orderly and in its systems and works blood, oxygen, various difference chemical, minerals, hormones, rang sutras etc. plays their important role. In human body specific organs and their working are excessively impressed with all these components. In body lifetime day and night some specific types of action are constantly continued i.e. heart beats, respiration, food digestion, creation disposal of waste etc. In all these functions these components contributed active contributions. Various types of minerals in our body also reflect effects upon functions of various organs of body in some extent. Aim of this study is to examine effects upon minerals components and blood related components through Yogic activities and aerobic exercises training program.

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Methodology

For the purpose of this study 60 male students of North Gujarat University, Patan affiliated Smt. C.C. Mahila Arts and Sheth C.N. Commerce College, Visnagar were selected as the subjects on the basis of random system. Subject's age was ranging from 17 to 22 years. Subjects are divided in three groups of twenty subjects in each group, two experimental groups (A-yogic activity group, B-aerobic exercise group) and one control group(C). And they all experimental groups provided per week five days training programs of Yogic activities and aerobic exercise training up to 12 weeks period. In this research minerals components sodium, Potassium, calcium and phosphorous in our body are selected as a subject where blood related components hemoglobin, glucose and cretin are selected in this research.

For this study purpose in initial stage pre to this training and after training period of 12 weeks selected variables data collection works taken blood samples of subject characters and after making test examination of blood samples before Government recognized pathology laboratory who are holding degree of M.B.B.S., M.D. with expert doctors these all were duly examined and thus data collection is carried on. Purpose to make analyses of collected data Analysis of Variance method the "F" ratio is implemented to prove its verification of 0.05 level evaluations is verified.

Result and Discussion

The data collected were analyzed statistically and the outcome generated is given below.

Data analysis of Sodium

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	137.20	136.10	137.70	BG	26.80	2	13.40	2.02
				WG	377.20	57	6.62	
Post Test	138.10	136.85	138.50	BG	29.63	2	14.82	2.42
				WG	349.35	57	6.13	
Ad. Po. T	137.96	137.47	138.02	BG	3.40	2	1.70	0.56
				WG	170.27	56	3.04	

For sodium two experimental groups 'A' and 'B' and one control group 'C' its pre test mean is find respectively 137.20, 136.10 and 137.70 and its "F" ratio is 2.02 is found. That is very far from standard of effectual. Post tests three groups mean respectively 138.10, 136.85 and 138.50 is found. And its "F" ratio is 2.42. And at 0.05 level tabulated "F" ratio is nearest to 3.17. But that is not effectual. Corrected mean "F" ratio is 0.56 and at 0.05 level that is not effectual.

Data analysis of Potassium

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	4.35	4.04	4.34	BG	1.24	2	0.6207	5.61
				WG	6.31	57	0.1106	
Post Test	4.42	4.09	4.40	BG	1.35	2	0.6732	7.73
				WG	4.96	57	0.0871	
Ad. Po. T	4.33	4.25	4.32	BG	0.06	2	0.028	1.87
				WG	0.85	56	0.015	

Potassium two experimental group 'A' and 'B' and one control group 'C' its pre test mean is found respectively 4.35, 4.04 and 4.35 and its "F" ratio is found 5.61, that shows effectual difference. Post test three groups mean respectively 4.42, 4.09 and 4.40 is found and its "F" ratio is 7.73, that is effectual. Corrected mean "F" ratio is 1.87 and at 0.05 level that is not being effectual.

Data analysis of Calcium

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	09.99	10.00	10.10	BG	0.16	2	0.08	0.21
				WG	21.37	57	0.37	
Post Test	10.07	10.15	10.11	BG	0.06	2	0.03	0.11
				WG	16.99	57	0.30	
Ad. Po. T	10.10	10.17	10.05	BG	0.13	2	0.07	1.17
				WG	3.20	56	0.06	

Calcium two experimental group 'A' and 'B' and one control group 'C' its pre test mean is found respectively 9.99, 10.00 and 10.10 and its "F" ratio is found 0.21, that is not effectual Post test three groups mean respectively 10.07, 10.15 and 10.11 is found and its "F" ratio is 0.11, that is not effectual. Corrected mean "F" ratio is 1.17 and at 0.05 level that is not being effectual.

Data analysis of Phosphorous

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	3.75	3.87	3.72	BG	0.26	2	0.13	1.27
				WG	5.78	57	0.10	
Post Test	3.82	3.95	3.79	BG	0.28	2	0.14	1.38
				WG	5.71	57	0.10	
Ad. Po. T	3.84	3.87	3.84	BG	0.0083	2	0.004	0.15
				WG	1.51	56	0.027	

Phosphorous two experimental group 'A' and 'B' and one control group 'C' its pre test mean is found respectively 3.75, 3.87 and 3.72 and its "F" ratio is found 1.21, that is at 0.05 level at tabulated "F" ratio less then 3.17 at level of effectual standard that is far. Post test three groups mean respectively 3.82, 3.95 and 3.79 is found and its "F" ratio is 1.38, that is at 0.05 level at tabulated "F" ratio less then 3.17, so not being effectual. Corrected mean "F" ratio is 0.15 and at 0.05 level that is not being effectual.

Data analysis of Hemoglobin

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	13.46	13.34	13.50	BG	0.28	2	0.14	0.13
				WG	60.18	57	1.06	
Post Test	13.72	13.52	13.56	BG	0.42	2	0.21	0.21
				WG	57.95	57	1.02	
Ad. Po. T	13.69	13.61	13.50	BG	0.38	2	0.189	5.07
				WG	2.09	56	0.037	

Hemoglobin two experimental group 'A' and 'B' and one control group 'C' its pre test mean is found respectively 13,46, 13.34 and 13.50 and its "F" ratio is found 0.13, that is at 0.05 level at tabulated "F" ratio less then 3.17 at level of effectual standard that is far away. Post test three groups mean respectively 13.72, 13.52 and 13.56 is found and its "F" ratio is 0.21, that is at 0.05 level at tabulated "F" ratio less then 3.17, so not being effectual. Corrected mean "F" ratio is 5.07 and at 0.05 level at tabulated "F" ratio 3.17 that is excess hence that is being effectual. To examine hemoglobin correct mean purpose to test its effectuality Post Hock test (LSD) was attached. In these revolutionary difference is found 0.12, in these three group, in

pair of two mean difference is found respectively at 0.08, 0.19, and 0.11 and from these among group "a" and group "k" corrected mean difference is 0.19 is found. That was more then revolutionary difference; this means in this effectual difference was recorded.

Data analysis of Glucose

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	84.70	76.75	80.75	BG	632.03	2	316.02	1.03
				WG	17441.7	57	305.99	
Post Test	83.50	74.35	79.10	BG	837.63	2	418.82	1.50
				WG	15881.35	57	278.62	
Ad. Po. T	79.74	78.13	79.08	BG	25.49	2	12.74	3.32
				WG	214.92	56	3.84	

Glucose two experimental group 'A' and 'B' and one control group 'C' its pre test mean is found respectively 84.70, 76.75, and 80.75 and its "F" ratio is found 1.03, that is at 0.05 level at tabulated "F" ratio less then 3.17 at level of effectual standard that is far away. Post test three groups mean respectively 83.50, 74.35 and 79.10, is found and its "F" ratio is 1.50, that is at 0.05 level at tabulated "F" ratio is less then 3.17, so not being effectual. Corrected mean "F" ratio is 3.32 and at 0.05 level that is effectual. And purpose to check and verify evaluation of corrected mean for glucose a Post Hock test (LSD) was implemented. IN that revolutionary difference is found 1.24. Among three groups in pairs of two difference of mean is respectively found 1.61, 0.66 and 0.95. Among these "Group-a" and 'Group-b" difference of corrected mean is found 1.61, that was excess to revolutionary difference. This means between them effectual difference is found.

Data analysis of Creatine

Means	Group A	Group B	Group C	S.V.	S.S	d.f	M.S.S	F ratio
Pre Test	0.86	0.93	0.85	BG	0.08	2	0.038	4.19
				WG	0.52	57	0.0091	
Post Test	0.82	0.87	0.82	BG	0.03	2	0.0152	1.72
				WG	0.50	57	0.0088	
Ad. Po. T	0.83	0.83	0.84	BG	0.0015	2	0.0008	0.17
				WG	0.26	56	0.005	

Creatine two experimental group 'A' and 'B' and one control group 'C' its pre test mean is found respectively 0.86, 0.93 and 0.85 and its "F" ratio is found 4.19, that is at 0.05 level at tabulated "F" ratio is excess then 3.17 hence that is effectual. In Post test three groups mean respectively 0.82, 0.87 and 0.82 is found and its "F" ratio is 1.72, that is at 0.05 level not being effectual. Corrected mean "F" ratio is 0.17, that is at 0.05 level Tabulated "F" ratio is found less then 3.17 hence that is not effectual.

Conclusion

During study before training and after training while making figures analysis of collected data whatever result is take place according to that Hemoglobin and Glucose upon these two component for Yogic activities and Aerobic exercise effectual effects were found out. This means for this component the hypothecation is being effectual. Whereas Sodium, Potassium, Calcium, Phosphors and cretins no any effectual effect is found of Yogic Activities and Aerobic exercise, therefore for this component hypothecation is not being effectual.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 100 - 102
ISSN 2319 - 8168

A COMPARATIVE STUDY OF HEIGHT & ACHIEVEMENT MOTIVE OF INDOOR AND OUTDOOR GAMES PLAYERSV

The present study "A Comparative study of height Achievement Motive of Indoor and outdoor games players" was under taken with the following board Objectives:- 1. To study height of indoor games and outdoor games players 2. To study achievement motive of indoor and outdoor games players.The sample comprised of 120 players (60 outdoor and indoor games players of inter Collegiate level and 60 outdoor and indoor game players of inter university level). All the players were contacted by the investigator at the ground/court during the Tournament period. Height of both group at inter collegiate level was similar but it was found different at the inter- university level Analysis of variance, SEM,C,O, and C.V. were calculate to find out the statistical significance of the results.

Introduction

Every individual is Concerned with health from the cradle to the grave. The life spam can be lengthened if we acquire a little knowledge of how we can maintain it. So it is important to understand the meaning of health. The word health first appeared in English language approximately the year 1000 A.D. as a means of referring to the quality of soundness and wholeness of body in a very board sense.

To be a good animal is the first requisite to success in life and to be a good animal the first condition to national prosperity. Again it has been said. if healthy is lost something is lost. If Character is lost everything is lost healthy mind rests only in a healthy body. Man's happiness in life depends upon good health, vigor and vitality. Life without health is a misery a virtual death, (Herbert Spencer).

The definition has been frequently criticized but also praised and on occasions used as a tool for innovative change. It presents a triad of dimension:-

(a) Physical
(b) Mental and
(c) Social well being

In addition other aspects which have not been included, Such as spiritual well being and holistic health, merit attention. The who definition lends to scientific investigation: However, it is exits within a spiritual context, which is viewed in highly individual ways.

Studies review

Ruhal & pal (1997) conducted a study on the relationship of biomechanical variables with the performance of female swimmers using different types of starts. Their findings are as under:-

(a) In grab start the relative position of C.G. has significant relationship with the Performance of swimmer at take go mark position.
(b) Angle of left ankle and knee joint has significant relationship with the performance at take off position in track start.
(c) In grab start angle of right knee joint has shows significant relationship with the performance at take position.
(d) In conventional start og right hip and shoulder joint have significant relationship with the performance of swimmers.

Jose and Rangnathan, (1987) in their study conclude that the volley ball players have significantly higher self concept regarding their health and physique. There is no difference between the temperamental

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qualities among them volley balers and footballers showed the more or less concept regarding their academic status. In case of intellectual abilities the study showed no difference between players of volleyball and football. Habits and behavior seems to be alive for volleyball and football players of this study. Both of them are heaving the same concept regarding emotional tendencies.The volleyball players and having significantly higher self concept their mental health. The self concept regarding socio economic status of volleyball and football players showed no difference in this study.

Objectives

1. To study physical health of inter collegiate outdoor and indoor games, players
2. To study physical health of inter university outdoor and indoor games, players
3. To study psychological health of inter collegiate outdoor and indoor games, Players.
4. To study psychological health of inter university outdoor and indoor games, Players.

Method

Sample : It consisted of 120 players (60 outdoor and indoor players) outdoor and indoor players were selected from university and colleges affiliated to M.L. Sukhadia University, Udaipur. Players participated at inter college level and inter university level were also included the sample.

Design : A comparative study of psycholo physical health of indoor and outdoor games players

Sample	Inter college	Inter University	Total
I.D.G.P	30	30	60
O. D.G.P	30	30	30
Total	60	60	120

Tools

Height machine was used to measure the height. Achievement motive test was used to measure the achievement motive of players.

Result

(A) Physical Health of Players

1. Height of inter college and inter university indoor and outdoor games players.

A Physical Health :

Table A – 3 : Height of indoor and outdoor games Players

Source	S.S.	D.F.	M.S.	F Cal
Group	28.07	3	9.358	0.392 (NS)
Error	2765.63	116	23.842	--
Total	2798.70	119	--	--

The observation of the above table shows that anova was not found significant for height.

TABLE OF MEANS

Indoor/outdoor players and mean height

Group	Range	Mean	S.D.	S.E.	C.V.%
ICOP	160-177.5	171.417	4.765	0.870	2.780
ICIP	162.5-177.5	170.583	4.486	0.819	2.680
IUIP	160.177.5	171.583	5.021	0.917	2.920
IUOP	160-177.5	170.500	5.228	0.954	3.066

It Is Clear above table that the mean different in the case of inter collegiate players was not found significant between indoor and outdoor players similarly the difference was not found significant in the case of inter university level players.

TABLE B -3 : achievement Motive of indoor and outdoor game Players.

Source	S.S.	D.F.	M.S.	F Cal
Group	619.49	3	206.497	8.220
Error	2914.10	116	25.122	--
Total	3533.09	119	--	--

That annva was in the case of achievement motive, ANOVA was significant at. 01 level

TABLE OF MEANS

Outdoor and indoor Players amd mean achievement Motive

Group	Range	Mean	S.D.	S.E.	C.V.%
ICOP	10-27	17-767	4.289	0.783	24.138
ICIP	12-34	22.767	5.929	1.082	26.042
IUIP	15-35	23.00	4.646	0.848	20.200
IUOP	15-38	23.283	5.036	0.919	21.674

Above table indicate the mean difference in the case of inter collegiate was found significant between indoor and outdoor players. However the difference was not found significant in the case of inter university level players.

Discussion

In the present study the psycho-physical health of indoor/outdoor games players was assessed

comparison was also made between the health of inter university and inter collegiate players. Categories in the case of physical health were height. Psychological health included achievement motive in the case of inter-university players the height was found more of outdoor players them indoor players such difference was not found significant at the inter collegiate level players.

Implication

The finding of the present study will be use full it throws light on those aspects of psycho-physical health and other important issues with are relatively less explored and are of paramount important in view of the inter-collegiate and inter university players and theoretical and piratical point of view to deal with the psycho-physical health of indoor out outdoor game players of inter collegiate and inter-university.

Conclusion

The sample comprised of 120 players (60 outdoor game players of inter collegiate level and 60 outdoor and indoor game players of inter university level the players were contracted by the investigator at the ground/court during the tournament period.The statically technique anova and means was used and the result revals that.

1. Height was found almost similar at both levels and among both the groups.
2. Indoor players at inter collegiate level were found to have more achievement motive than outdoor players. However such difference was not observed at the inter university level players.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 103 - 106
ISSN 2319 - 8168

UNDERSTANDING AND MANAGING DRUGS IN SPORT

This article addresses some social and management issues relating to the subject of drugs in sport (doping). It begins with an overview of recent and prominent cases before developing a comparative approach that sets doping against other forms of drug use in society. The outcomes and implications of this comparison establish the basis for a discussion of how doping might be dealt with by the relevant authorities. The concluding points show that interventions towards education and prevention face the challenges of understanding and responding to the highly specific nature of the elite athlete.

INTRODUCTION

High profile cases of sports stars using drugs, whether for performance or for 'recreational use' continues to plague the world of elite, international sport. A recent case in question is that of the American tennis star, Andre Agassi who recently admitted using crystal methamphetamine during his playing career (Agassi 2009). While such confessions are rare, we do know enough about specific instances of doping behaviour to surmise that it has been prominent in many sports. The most infamous of these have been the THG/ Balco scandal (Fainaru-Wada and Williams 2006); the 1998 Festina scandal during the Tour de France that exposed the systematic doping of professional cyclists (Voet 2002); the organized doping of Canadian athletes that led to Ben Johnson's positive test after winning the 100m final during the 1988 Olympics (Francis and Coplon 1991); and the Government sponsored doping of athletes in the former GDR and USSR (Spitzer 2006). Less well known, though are individual cases like Werner Reiterer who used steroids throughout the 1990s without ever being detected (Reiterer 2000). Other cases have been more complex and show how challenging anti-doping policy and procedures can be. For example, when the Danish cyclist Michael Rasmussen was taken out of the 2007 Tour de France after a journalist exposed the fact he had missed out-of-competition tests, the scandal reverberated around the world. He was castigated as a cheat and once again the future of professional cycling was questioned. However, recent research has shown that he did not actually break any of the World Anti-Doping Agencies (WADA) rules and therefore has been harshly treated (Møller 2010). Another example might be that of Shoaib Akhtar and Mohammed Asif who tested positive for nandrolone in tests conducted by the Pakistan Cricket Board in 2006. Their initial ban was over-turned on appeal leading to complaints from WADA and the involvement of the Court of Arbitration for Sport (CAS) which had no authority to impose WADA's code at the time which would have upheld the bans (Cricinfo, July 2, 2007). The case also prompted the International Cricket Council to complain about 'inconsistencies in the Pakistan Cricket Board's anti-doping processes and regulations' (London Evening Standard, 7 December 2006). Such cases reflect some of the other cases that have been adjudicated through the CAS, where there are very delicate judgements to be made over the punishments to be given for doping when athletes can provide circumstantial reasons for testing positive or for missing out-of-competition tests or when there are disputes over jurisdiction and variation in regulations (see McLaren 2001; Connolly 2006). Nonetheless, most doping scandals reveal the

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underlying assumptions of sports and ethics. Media coverage and general condemnations emonstrate the on-going concern many people have with the use of drugs in sport. The feeling remainswidespread that sports men and women are role models for clean living and healthy lifestyles. Such a position is exemplified by Thomas Murray (2004), who claimed in the World Anti-Doping Agency's in-house magazine that doping undercuts the foundation of what gives sport its meaning and value, the integrity of the athlete and the ethics of competition. While this is not necessarily a perspective shared by academic researchers (i.e. Kayser, Mauron and Miah 2007; Møller 2010) it is one that governs policy making agendas and shapes the scope for athletes' decision-making. In this article, I wish to explore two distinct but related questions. The first is how drug use in sport can be seen as similar to and different from other forms of drug use. Following that, I want to outline some challenges facing education, prevention and policy decisions within sports organisations.

COMPARATIVE CONTEXTS

There are some obvious similarities between drug use within a sporting context and other social contexts. Sports stars are just as fallible as other people and can become addicted to drugs, leading to other forms of unhealthy behaviour. Such examples include the tragic Italian cyclist Marco Pantani who used both performance enhancing and recreational drugs and who committed suicide in a hotel room after apparently severe depression (Rendell 2007). The connection between emotional and psychological problems and a reliance on drugs can affect people in all walks of life. Indeed, some of the earliest rationales for anti-doping policy in the 1960s referred directly to the 'moral degradation' associated with all forms of drugs (Dimeo 2007) and were connected, if loosely, to broader societal trends that sought regulation of tobacco, alcohol, amphetamines, cannabis and other drugs. While the past two to three decades have seen a distinction drawn between performance enhancing and recreational drug use, research shows that some groups in society use steroids for body-image in order to pursue hedonistic lifestyles where recreational drugs are common (see Møller, McNamee and Dimeo 2009). In other words, while performance oriented athletes can become addicted to the relevant drugs, there are many examples where performance-enhancing drugs are also used in combination with other drugs. A second similarity is that drugs pose significant health risks. Many of the female athletes who were given male hormone drugs in the former East Germany suffered from a host of ill-effects including excess hair growth, excess sexual impulses, deepening voices, acne, masculinisation of skeletal features, psychological trauma, gynaecological problems and many had children born with deformities (Berendonk and Franke 1997; Ungerleider 2001). Some well known athletes have suffered from early deaths that have been linked, even if indirectly, to drug use. For example, the case of Birgit Driessel is described in horrific detail by John Hoberman (1992). More recent instances include that of Florence Griffith-Joyner and the number of professional cyclists who died soon after EPO became available as a performance enhancing drug (Noakes 2006). Although the full scale of fatalities, reduced mortality and the onset of serious illnesses related to doping are not known, there are enough forms of evidence and individual cases to suggest that athletes are taking serious risks with their health if they choose to use banned drugs (Mottram 2010). These risks are accentuated by the fact that athletes might overdose because they seek more of the performance enhancing effects, and that black market suppliers cannot be trusted to ensure products are not contaminated (Donati 2007). There are also many differences between the use of drugs by sports people and those used in everyday life. What is illegal in sport can be legal in society, while there are vital distinctions in sport between drugs that can be considered medical/therapeutic, those which are performance enhancing, and those which are used for recreational purposes. The first category might include pain relief drugs, anti-inflammatories, remedies for sickness or colds, and so on, which might be used by athletes to keep themselves fit and healthy. Some of these, like ephedrine are banned because they contain stimulants, while others might be abused, i.e. if an athlete is injured he/she should

rest not take pain killers and keep playing. Moreover, the list of banned substances includes drugs which are not directly intended to boost performance but can be used to hide or 'mask' such drugs. So, for example, the Australian cricket Shane Warne was banned for one year in 2003 for taking diuretics hydrochlorothiazide and amiloride that are on the list because they can be used as masking agents (Independent, 22 February 2003). The second category includes steroids, EPO, growth hormone, amphetamines, blood doping and others; drugs that help athletes to improve their long or short term performances. Not all of these are banned: blood spinning is a complicated technique that aids recovery by replacement plasma cells but is not yet banned. The third category includes cocaine, heroin, cannabis and other social drugs that athletes are not supposed to take but will not enhance their performance.

Perhaps the key difference between sports and the rest of society is the strict and highly definitive set of rules that have beenlaid down for athletes. There is an extensive list of banned substances controlled by WADA that grew out of the lists created and implemented in the 1960s and 1970s by such international sports organizations at the International Olympic Committee (Dimeo 2007). Indeed, the very existence of a single unifying organization that aims to ensure compliance and consistency of regulations and punishments makes sport almost unique in its approach to drug use. The punishments are severe: up to two year bans for infringements. Supporting this list is a testing mechanism that analyses competitors' urine and blood samples that they are compelled to prove when requested. Even more draconian is the surveillance system for outof-competition testing that – akin to bail conditions or being on the sex offenders register – requires the athlete to provide details of where they will be every day so that unannounced testing can take place. This has led to some concerns about civil liberties violations: 'This practice seriously impinges on personal privacy and is unacceptable in any other setting except, perhaps, imprisonment' (Kayser et al 2007: 2). Moreover, athletes are given the opportunity to miss three tests over 18 months before they face punishment. Some stringent anti-doping campaigners believe this to be too lenient, while liberalists do not consider the system to be morally correct. In between these positions are the athletes who feel under pressure to comply, but when they miss tests there is great uncertainty over whether they are being deliberately deceitful or it was due to a genuine accidental reason (Hanstad and Loland 2009). In other words, there is a complex, sophisticated, globalised system of policies, rules, and penalties that have come to present difficult legal situations where athletes' careers and reputations are at stake. Associated with all of this is the highly complex scientific underpinning of testing athletes' urine and blood samples, which has to be completed with absolute accuracy. There have been cases, such as that of the English track and field athlete Diane Modahl, where errors in the laboratory led to an accusation of doping which took years to refute and probably ended her career (McArdle 1999).

DEALING WITH THE PROBLEM

There are some interesting consequences of these similarities and differences. The historical development of drug use in modern sport can be traced to the 1880s (Dimeo 2007). While this suggests there is some inherent about competitiveness that leads people to search out new techniques for winning, the circumstances and meanings attached to performance-enhancing drugs have changed over time. During the first half of the 20th century, scientists and policy makers could not agree over what constituted 'doping' and how it should be controlled. Anti-doping statements were published by the IAAF in 1928 and the IOC in 1938, but these were not supported by a system of testing or punishment. It was during the 1960s that the international sports organizations took a more collective and systematic approach. This was in response to rising numbers of incidents involving drug use in certain sports such as cycling and the apparent (if unproven) widespread use of steroids in Olympic and other sports. Since then the suppliers and the testers have been locked in battle. When a new drug becomes available some athletes will experiment, so the testing procedures have to be constantly refined and updated. Most

athletes who take drugs are seen as deliberately trying to cheat. The policy structures are akin to criminalisation, reminiscent of a 'war on drugs' approach rather than an empathetic one. Athletes are considered to be responsible for everything in their diet, and thus the legal concept of strict liability is applied by the World Anti- Doping Agency. There is very little legal scope for an athlete to offer an explanation as to how the banned substance came to be in their system (David 2008). All of which leads on to questions around the preventative measures of education and policy – how best might a system be develop to pre-empt cases of doping whether they are deliberate, accidental or the consequence of trusting the wrong people? It is vital that athletes are fully aware of all possible ways in which they might test positive, otherwise cases of inadvertent' doping will rise while the legal framework assumes guilt if an athlete tests positive. Despite the situation outlined above, little research has yet been conducted that explains how athletes learn about doping and anti-doping, and how sports agencies can ensure adequate levels of information and education. A recent systematic review of literature (Backhouse et al 2007) showed that only a handful of studies have been conducted about education and other forms of intervention and training. The authors argue that, 'Existing research suggests that a considerable proportion of athletes lack doping knowledge, in terms of effects, legal issues or sources of information. This may increase their risk for damaging their health or inadvertently committing a doping offence' This is highly significant in light of the application of strict liability. If athletes do not always know what is banned, what their legal rights are, or which sources of information can be trusted, then how they can always be held responsible for a positive test? An interesting example of such a situation arose in 2004 when the British tennis player Greg Rusedski tested positive for the banned substance nandrolone. It transpired that the Association of Tennis Professionals, the governing body for the sport, had recommended that their coaches distribute electrolyte tablets to some players that had been contaminated with small traces of the banned drug. During the legal case, the prosecutors tried to argue that 'Rusedski could be held to be positive as he must be taken to have known that he should not take substances given to him by the ATP'. However, Rusedski's innocence was upheld as he was assumed correct to have trusted the ATP who did not act in accordance with anti-doping guidelines. But given the strict liability ruling favoured by the World Anti-Doping Agency, Rusedski was fortunate to have avoided a two year ban. Education strategies that are currently in place are primarily about avoiding testing positive, clarifying some 'grey areas' and explaining the mechanisms of testing. Most of this material is available on-line and athletes are encouraged to access it for themselves. This is also problematic as a pedagogical technique; as it does not take account of the athlete's willingness to read information carefully, their ability to understand, or their appreciation of its wider context. Indeed, it could be argued that the current provision is simplistic and one-dimensional.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 107 -108
ISSN 2319 - 8168

COMMON KNEE INJURIES

In 2010, there were roughly 10.4 million patient visits to doctors' offices because of common knee injuries such as fractures, dislocations, sprains, and ligament tears. Knee injury is one of the most common reasons people see their doctors. Your knee is a complex joint with many components, making it vulnerable to a variety of injuries. Many knee injuries can be successfully treated with simple measures, such as bracing and rehabilitation exercises. Other injuries may require surgery to correct.

Anatomy

The knee is the largest joint in the body, and one of the most easily injured. It is made up of four main things: bones, cartilage, ligaments, and tendons.

Different views of the normal anatomy of the knee.

· **Bones.** Three bones meet to form your knee joint: your thighbone (femur), shinbone (tibia), and kneecap (patella).

· **Articular cartilage.** The ends of the femur and tibia, and the back of the patella are covered with articular cartilage. This slippery substance helps your knee bones glide smoothly across each other as you bend or straighten your leg.

· **Meniscus.** Two wedge-shaped pieces of meniscal cartilage act as "shock absorbers" between your femur and tibia. Different from articular cartilage, the meniscus is tough and rubbery to help cushion and stabilize the joint. When people talk about torn cartilage in the knee, they are usually referring to torn meniscus.

· **Ligaments.** Bones are connected to other bones by ligaments. The four main ligaments in your knee act like strong ropes to hold the bones together and keep your knee stable.

o **Collateral Ligaments.** These are found on the sides of your knee. The medial collateral ligament is on the inside of your knee, and the lateral collateral ligament is on the outside. They control the sideways motion of your knee and brace it against unusual movement.

o **Cruciate ligaments.** These are found inside your knee joint. They cross each other to form an "X" with the anterior cruciate ligament in front and the posterior cruciate ligament in back. The cruciate ligaments control the back and forth motion of your knee.

· **Tendons.** Muscles are connected to bones by tendons. The quadriceps tendon connects the muscles in the front of your thigh to your patella. Stretching from your patella to your shinbone is the patellar tendon.

Your knee is made up of many important structures, any of which can be injured. The most common knee injuries include fractures around the knee, dislocation, and sprains and tears of soft tissues, like ligaments. In many cases, injuries involve more than one structure in the knee.

Pain and swelling are the most common signs of knee injury. In addition, your knee may catch or lock up. Many knee injuries cause instability — the feeling that your knee is giving way.

Fractures

The most common bone broken around the knee is the patella. The ends of the femur and tibia where they meet to form the knee joint can also be fractured. Many fractures around the knee are caused by high energy trauma, such as falls from significant heights and motor vehicle collisions.

Dislocation

A dislocation occurs when the bones of the knee are

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out of place, either completely or partially. For example, the femur and tibia can be forced out of alignment, and the patella can also slip out of place. Dislocations can be caused by an abnormality in the structure of a person's knee. In people who have normal knee structure, dislocations are most often caused by high energy trauma, such as falls, motor vehicle crashes, and sports-related contact.

Anterior Cruciate Ligament (ACL) Injuries

The anterior cruciate ligament is often injured during sports activities. Athletes who participate in high demand sports like soccer, football, and basketball are more likely to injure their anterior cruciate ligaments. Changing direction rapidly or landing from a jump incorrectly can tear the ACL. About half of all injuries to the anterior cruciate ligament occur along with damage to other structures in the knee, such as articular cartilage, meniscus, or other ligaments.

Posterior Cruciate Ligament Injuries

The posterior cruciate ligament is often injured from a blow to the front of the knee while the knee is bent. This often occurs in motor vehicle crashes and sports-related contact. Posterior cruciate ligament tears tend to be partial tears with the potential to heal on their own.

Collateral Ligament Injuries

Injuries to the collateral ligaments are usually caused by a force that pushes the knee sideways. These are often contact injuries. Injuries to the MCL are usually caused by a direct blow to the outside of the knee, and are often sports-related. Blows to the inside of the knee that push the knee outwards may injure the lateral collateral ligament. Lateral collateral ligament tears occur less frequently than other knee injuries.

Tendon Tears

The quadriceps and patellar tendons can be stretched and torn. Although anyone can injure these tendons, tears are more common among middle-aged people who play running or jumping sports. Falls, direct force to the front of the knee, and landing awkwardly from a jump are common causes of knee tendon injuries.

Treatment of Knee Injuries

When you are first injured, the RICE method — rest, ice, gentle compression and elevation - can help speed your recovery.

Be sure to seek treatment as soon as possible, especially if you:

· Hear a popping noise and feel your knee give out at the time of injury
· Have severe pain
· Cannot move the knee
· Begin limping
· Have swelling at the injury site

The type of treatment your doctor recommends will depend on several factors, such as the severity of your injury, your age, general health, and activity level.

· **Immobilization.** Your doctor may recommend a brace to prevent your knee from moving. If you have fractured a bone, a cast or brace may hold the bones in place while they heal. To further protect your knee, you may be given crutches to keep you from putting weight on your leg.

· **Physical therapy.** Specific exercises will restore function to your knee and strengthen the leg muscles that support it.

· **Non-steroidal anti-inflammatory medicines.** Drugs like aspirin and ibuprofen reduce pain and swelling.

Surgical Treatment

Many fractures and injuries around the knee require surgery to fully restore function to your leg. In some cases - such as many ACL tears — surgery can be done arthroscopically using miniature instruments and small incisions. Many injuries require open surgery with a larger incision that provides your surgeon with a more direct view and easier access to the injured structures.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 109 - 111
ISSN 2319 - 8168

EFFECT OF CIRCUIT TRAINING ON SELECTED MOTOR COMPONENTS AMONG SCHOOL LEVEL STUDENTS

The purpose of this study was to see the effect of circuit training on selected motor components among school level student .For this study The main objectives of the study was to find out the effects of circuit training on selected variables like speed, agility, flexibility, and explosive power . It was hypothesized that the circuit training would significantly improve the speed. It was hypothesized that the circuit training would significantly improve the agility.It was hypothesized that the circuit training would significantly improve the flexibility. It was hypothesized that the circuit training would significantly improve the explosive power. Subjects of the present study were delimited to the school girl's students of Divine life school Vasna, Ahmedabad with age range to 14 to 16 years. The total number of subjects was delimited to forty and each group was consisting of twenty subjects. The period of training programme was delimited to 6 weeks. For the present study randomized group design, which consists of one Experimental Group g and one Control Group, was used to find out the effect of Circuit training on performance of different variables which was selected for the study. Equal numbers of subjects were assigned randomly to both the groups. The Experimental Group exposed to Circuit training for a period of 6 weeks excluding the period utilized for the testing under the personal supervision of the researcher. The Control Group did not involve in any training. The pre test was taken before administrating the Circuit training. At the end of the sixth weeks the post test was taken.To find out the effect of interval training of Ahemdabad girls on 50 yard run, sit and reach test, 10 M shuttle run and standing board jump T" test was applied. . From the Statistical Analysis it is seen that there is significant the effect of circuit training is shown in Experimental Group in 50 yard run, sit and reach, shuttle run and standing board jump

Key word :- circuit training Motor components

Introduction

In the modern life, the scientific development, technological advancement and research findings in every part of life demand fitness to overcome all the barriers of life. Boys and girls must be inwardly motivated to be physically fit. The reason for children and youth being sift in many cases is not only that they do not have the opportunity to achieve physical fitness but they also do not fully appreciate and know why physical fitness is essential to themselves and to their country. Sports training aims at improving the performance of sports persons. Tie sports performance depends on several factors. The performance of sports primarily depends on his performance capacity, such as speed, strength and endurance. All these factors therefore are the principal aims of physical training. Sport training is a physical technical, moral and intellectual participation of with the help of physical exercises. It is a planned process for the participation of athlete and players to achieve top level performance. Circuit training enables a person to develop speed, endurance, strength, agility, neuromuscular skills and coordination of all parts of the body. Circuit training involves a number of simple to complex activities so athlete can develop over all fitness.

Method

Equal numbers of subjects were assigned randomly

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to both the groups. The Experimental Group exposed to Circuit training for a period of 6 weeks excluding the period utilized for the testing under the personal supervision of the researcher. The Control Group did not involve in any training. The pre test was taken before administrating the Circuit training. At the end of the sixth weeks the post test was taken.

Statically analysis

The level of significance chosen to study the significance by means of "T" test the significance standard was set at 0.05 level of confidence, which is considered adequate for the purpose of the study.

Table -1

The difference of the mean of Ahemdabad city Girls Experimental Group and Control Group in the performance of 50 yard running

NO	GROUP	PRE TEST	POST TEST	MEAN DIFFERENCE	" T" ratio
1	EXPERIMENTAL GROUP	9.47	9.43	0.04	6.52*
2	CONTROL	9.72	9.74	0.02	0.13

From table of 50 yard run it seems that Experimental Group mean is **9.47** of pre test and after giving training post test mean **9.43** is and Control Group pre test mean is **9.72** and post test mean is **9.74** .Mean difference of two group is Experimental Group **0.04** and Control Group is **0.02** and "t" ratio of Experimental Group is **6.52** and Control Group is **0.13** This is significant at level 0.05 level Therefore it can be said that there is significant Experimental Group and not significant Control Group's 50 yard running

Table -2

The difference of the mean of Ahemdabad city Girls Experimental Group and Control Group in the performance of sit and reach

NO	GROUP	PRE TEST	POST TEST	MEAN DIFFERENCE	" T" ratio
1	EXPERIMENTAL GROUP	9.35	10.9	1.55	10.06*
2	CONTROL	9	8.86	0.4	1.91

*** Significant level at 0.05 (2.143)**

From table of sit and reach it seems that Experimental Group mean is **9.35** of pre test and after giving training post test mean **10.9** is and Control Group pre test mean is **9** and post test mean is **8.86** .Mean difference of two group is Experimental Group **1.55** and Control Group is **0.4** and "t" ratio of Experimental Group group is **10.06** and Control Group is **1.91** This is significant at level 0.05 level Therefore it can be said that there is significant Experimental Group and not significant Control Group's sit and reach

Table -3

The difference of the mean of Ahemdabad city Girls Experimental Group and Control Group in the performance of shuttle run

NO	GROUP	PRE TEST	POST TEST	MEAN DIFFERENCE	" T" ratio
1	EXPERIMENTAL GROUP	13.65	13.60	0.04	8.17*
2	CONTROL	13.74	13.77	0.03	1.11

*** Significant level at 0.05 (2.143)**

From table of shuttle run it seems that Experimental Group mean is **13.65** of pre test and after giving training post test mean **13.60** is and Control Group pre test mean is **13.74** and post test mean is **13.77** .Mean difference of two group is Experimental Group **0.04** and Control Group is **0.03** and "t" ratio of Experimental Group is **8.17** and Control Group is **1.11** This is significant at level 0.05 level Therefore it can be said that there is significant Experimental Group group and not significant Control Group's shuttle run

Table -4

The difference of the mean of Ahemdabad city Girls Experimental Group and Control Group in the performance of standing board jump

NO	GROUP	PRE TEST	POST TEST	MEAN DIFFERENCE	" T" ratio
1	EXPERIMENTAL GROUP	1.39	1.44	0.04	5.61*
2	CONTROL	1.40	1.37	0.03	0.76

*** Significant level at 0.05 (2.143)**

From table of standing board jump it seems that Experimental Group mean is **1.39** of pre test and after giving training post test mean **1.44** is and Control Group pre test mean is **1.40** and post test mean is **1.37** .Mean difference of two group is Experimental Group **0.04** and Control Group is **0.03** and "t" ratio of Experimental Group is **5.61** and Control Group is **0.76** This is significant at level 0.05

level Therefore it can be said that there is significant Experimental Group and not significant Control Group's standing board jump

Discussion of Finding

Keeping in view the basic limitation, of the research work, the following conclusion were drawn

The "t" ratio of the Ahemdabad city girls Experimental Group group in 50 yard run was **6.25** which was significant at 0.05 levels and Control Group was **0.13** which wasn't significant at 0.05 levels.

The "t" ratio of the Ahemdabad city girls Experimental Group group in sit and reach was **10.06** which was significant at 0.05 levels and Control Group was **1.91** which wasn't significant at 0.05 levels.

The "t" ratio of the Ahemdabad city girls Experimental Group group in shuttle run was **8.17** which was significant at 0.05 levels and Control Group in was **1.11** which wasn't significant at 0.05 levels.

The "t" ratio of the Ahemdabad city girls Experimental Group group in standing board jump was **5.61** which was significant at 0.05 levels and Control Group in was **0.76** which wasn't significant at 0.05 levels.

Keeping in view the basic limitations, of the research work, conclusion shows that there is significant level in the effect of circuit training on Experimental Group in 50 yard run, sit and reach, shuttle run and standing board jump

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 112 - 114
ISSN 2319 - 8168

EFFECT OF INTERVAL TRAINING ON BODY COMPOSITION VARIABLES AMONG SCHOOL LEVEL STUDENTS

This study shows the effect of interval training on body composition variables among school level. The study was confined to the boys studying in 8th, 9th and 10th class of Adharshila schools Valad, Gandhinagar. The study was further delimited to age group of boys . Interval Training exercise like, Speed Drills, Explosive Exercise, Agility Drill and Shuttle Run exercise were taken for the study.. The study was confined to 4 week only.The study was further delimited to test conducted by Tanita Body Composition Analyzer. 24 boys studying in 8th, 9th and 10th class of Aadharshila school Valad, Gandhinagar were selected for the purpose of the study. The age group was between 14 to 16 years. Interval Training Four weeks training schedule was formed and in a week three days that is Monday, Wednesday and Friday training were given. Training timing was in morning from 6.30 am. During training period the intensity was kept to that extent in which the heart beat were 140 per minute. During the training period the intensity was increased from 60% to 90% on regular Taking into consideration, the above reviews, the following physiological aspects were selected for this study. Weight (Kg.) Body Mass Index, Fat (%). Fat Mass Total Body Water After the Interval Training the experimental group showed positive difference in Body Composition Variables.The improvement in Weight, Body Mass Index, Fat (in %), Fat Mass, Total Body Water of the Interval Training Group was seen In the Controlled Group, no noted improvement was seen in the Pre-Test and Post-Test in the Body Composition variables like Weight, Body Mass Index, Fat (in %), Fat Mass, Total Body Water .

Key word :- Body composition Interval training

Introduction

The body is composed of water, protein, minerals, and fat. A two-component model of body composition divides the body into a fat component and fat-free component. Body fat is the most variable constituent of the body. The total amount of body fat consists of essential fat and storage fat. Fat in the marrow of bones, in the heart, lungs, liver, spleen, kidneys, intestines, muscles, and lipid-rich tissues throughout the central nervous system is called essential fat, whereas fat that accumulates in adipose tissue is called storage fat. Body composition is the body's relative amount of fat to fat-free mass. Those with optimal body composition are typically healthier, move more easily and efficiently, and in general, feel better than those with less-than-ideal body composition. Achieving a more optimal body composition goes a long way toward improving your quality of life and overall wellness. Body composition is divided into two separate types of mass: fat-free mass — which is comprised of all of the body's non-fat tissues and body fat. Fat-free mass includes bone, water, muscle, and tissues. Body fat is literally fat located within the body. Some fat is necessary for overall health; it helps protect internal organs, provides energy and regulates hormones that perform various functions in body regulation. However, when someone is overweight or obese, they have an excessive accumulation of body fat. Interval training is a type of discontinuous physical training that involves a series of low- to high-intensity exercise workouts interspersed with rest or relief periods. The high-intensity periods are typically at or close to anaerobic exercise, while the recovery periods may involve either complete rest or

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activity of lower intensity. Interval training can be described as short periods of work followed by rest. The main aim is to improve speed and cardiovascular fitness. Interval training can refer to organization of any cardiovascular workout (e.g., cycling, running, rowing, etc), and is prominent in training routines for many sports. It is a technique particularly employed by runners, but athletes from several backgrounds have been known to use this type of training.

Method

24 boys studying in 8th, 9th and 10th class of Aadharshila school Valad, Gandhinagar were selected for the purpose of the study. The age group was between 14 to 16 years. Before executing the tests, the subjects were taken into the laboratory and were made understand the aim of these tests. Two equally groups were divided between the subjects. One group was Interval Training Group Experimental Group-12 students and another was Control Group.-12 students

Analysis and conclusion

Weight

TABLE – 1

The Difference of the Significance of the Means of Pre Test and Post Test of the Interval Training Group and Control Group in the Performance of Weight

Group	Pre Test	Post Test	Mean Difference	T-Ratio
Experimental	19.25	17.58	1.67	3.87
Control	17.67	19.08	1.42	1.71

*Significant at 0.05% level of confidence t (11) = 2.179

Table-1 indicates that in Interval Training Group, Pre Test Mean is 19.25 and Post Test Mean is 17.58. While mean difference is 1.67. Received "T" ratio of Interval Training Group is 3.87, which is significant at 0.05 levels. Control Group Pre Test Mean is 17.67 and Post Test Mean is 19.08. While mean difference is 1.42. Received "T" ratio is 1.71 which is not significant at 0.05 levels. From above table it is discovered that Pre Test and Post Test of the Interval Training Group is found significant

Body Mass Index

TABLE - 2

The Difference of the Significance of the Means of Pre Test and Post Test of the Interval Training Group and Control Group in the Performance of B.M.I.

Group	Pre Test	Post Test	Mean Difference	T-Ratio
Interval Training	16.43	16.88	0.45	3.81
Control	16.10	16.37	0.27	2.13

*Significant at 0.05% level of confidence t (11) = 2.179

Table - 2 indicates that in Interval Training Group, Pre Test Mean is 16.43 and Post Test Mean is 16.88. While mean difference is 0.45. Received "T" ratio of Interval Training Group is 3.81, which is significant at 0.05 levels. Control Group Pre Test Mean is 16.10 and Post Test Mean is 16.37. While mean difference is 0.27. Received "T" ratio is 2.13 which is not significant at 0.05 levels. From above table it is discovered that Pre Test and Post Test of the Interval Training Group is found significant.

Fat (in %)

TABLE - 3

The Difference of the Significance of the Means of Pre Test and Post Test of the Interval Training Group and Control Group in the Performance of Fat (in %)

Group	Pre Test	Post Test	Mean Difference	T-Ratio
Interval Training	17.50	15.73	1.77	4.03
Control	13.22	12.75	0.47	1.97

*Significant at 0.05% level of confidence t (11) = 2.179

Table - 3 indicates that in Interval Training Group, Pre Test Mean is 17.50 and Post Test Mean is 15.73. While mean difference is 1.77. Received "T" ratio of Interval Training Group is 4.03, which is significant at 0.05 levels. Control Group Pre Test Mean is 13.22 and Post Test Mean is 12.75. While mean difference is 0.47. Received "T" ratio is 1.97 which is not significant at 0.05 levels. From above table it is discovered that Pre Test and Post Test of the Interval Training Group is found significant.

Fat Mass

TABLE - 4

The Difference of the Significance of the Means of Pre Test and Post Test of the Interval Training Group and Control Group in the Performance of Fat Mass

Group	Pre Test	Post Test	Mean Difference	T-Ratio
Interval Training	6.60	6.01	0.59	2.22
Control	4.78	4.57	0.22	1.73

*Significant at 0.05% level of confidence t (11) = 2.179

Table - 4 indicates that in Interval Training Group, Pre Test Mean is 6.60 and Post Test Mean is 6.01. While mean difference is 0.59. Received "T" ratio of Interval Training Group is 2.22, which is significant at 0.05 levels. Control Group Pre Test Mean is 4.78 and Post Test Mean is 4.57. While mean difference is 0.22. Received "T" ratio is 1.73 which is not significant at 0.05 levels. From above table it is discovered that Pre Test and Post Test of the Interval Training Group is found significant.

Total Body Water

TABLE - 5

The Difference of the Significance of the Means of Pre Test and Post Test of the Interval Training Group and Control Group in the Performance of T.B.W.

Group	Pre Test	Post Test	Mean Difference	T-Ratio
Interval Training	21.69	22.59	0.90	7.49
Control	22.39	22.68	0.29	1.71

*Significant at 0.05% level of confidence t (11) = 2.179

Table - 5 indicates that in Interval Training Group, Pre Test Mean is 21.69 and Post Test Mean is 22.59. While mean difference is 0.90. Received "T" ratio of Interval Training Group is 7.49, which is significant at 0.05 levels. Control Group Pre Test Mean is 22.39 and Post Test Mean is 22.68. While mean difference is 0.29. Received "T" ratio is 1.71 which is not significant at 0.05 levels. From above table it is discovered that Pre Test and Post Test of the Interval Training Group is found significant.

The analysis of the data shows that after four week's Interval Training program, improvement was seen in Body Composition of School Students in Interval Training Group. There was no improvement seen in the Controlled Group. Even then little change was seen; the reason of which can be as follows,

" The working mentality seeing others doing the work during the training period. One has the tendency to imitate what others do.

" Since, the actions of the pre-test are repeated in the post-test, one does it without any fear. Hence the possibility is there for improvement.

" During the training period, many physiological changes occur, which help the improvement in the controlled group in the physiological variables.

Conclusion

Keeping in view the basic limitations, of the research work, the following conclusions were drawn. After the Interval Training the experimental group showed positive difference in Body Composition Variables. The improvement in Weight, Body Mass Index, Fat (in %), Fat Mass, Total Body Water and Vital Capacity of the Interval Training Group was seen In the Controlled Group, no noted improvement was seen in the Pre-Test and Post-Test in the Body Composition variables like Weight, Body Mass Index, Fat (in %), Fat Mass, Total Body Water.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 115 - 117
ISSN 2319 - 8168

ASSOCIATION OF TENNIS PROFESSIONALS

INTRODUCTION: The **Association of Tennis Professionals** (**ATP**) was formed in September 1972 by Donald Dell, Jack Kramer, and Cliff Drysdale to protect the interests of male professional tennis players. Drysdale became the first President. Since 1990, the association has organized the worldwide tennis tour for men and linked the title of the tour with the organization's name. In 1990 the organization was called the **ATP Tour**, which was renamed in 2001 as just **ATP** and the tour being called ATP Tour. In 2009 the name was changed again and is now known as the **ATP World Tour** It is an evolution of the tour competitions previously known as Grand Prix tennis tournaments and World Championship Tennis (WCT).

The ATP's Executive Offices are in London, United Kingdom. ATP Americas is based in Ponte Vedra Beach, United States; ATP Europe is headquartered in Monaco; and ATP International, which covers Africa, Asia an Australasia, is based in Sydney, Australia.

The counterpart organization in the women's professional game is the Women's Tennis Association (WTA).

History

Started in 1972 by Jack Kramer, Donald Dell, and Cliff Drysdale, it was first managed by Jack Kramer, as Executive Director, and Cliff Drysdale, as President. Jack Kramer created the professional players' rankings system, which started the following year and continues to this day. From 1974 to 1989, the men's circuit was administered by a sub-committee called the **Men's International Professional Tennis Council (MIPTC)**. It was made up of representatives of the International Tennis Federation (ITF), the ATP, and tournament directors from around the world.

The ATP requested and got the MIPTC to introduce a drug testing rule, making tennis the first professional sport to institute a drug-testing program.

But the tour was still run by the tournament directors and the ITF. The lack of player representation and influence within the MIPTC as well as dissatisfaction with the way the sport was managed and marketed culminated in a player mutiny in 1988 that changed the entire structure of the tour. CEO Hamilton Jordan is credited with the Parking Lot Press Conference on 30 August 1988 during which the ATP announced their withdrawal from the MIPTC (then called the MTC) and the creation of their own ATP Tour from 1990 onwards.This re-organisation also ended a lawsuit with Volvo and Donald Dell..[1] On 19 January 1989 the ATP published the Tour calendar for the inaugural 1990 season. By 1991, the men had their first television package to broadcast 19 tournaments to the world. Coming on-line with their first website in 1995, was quickly followed by a multi-year agreement with Mercedes-Benz.

Lawsuits in 2008, around virtually the same issues, resulted in a restructured tour.

ATP World Tour

The ATP World Tour comprises ATP World Tour Masters 1000, ATP World Tour 500 series, ATP World Tour 250 series and ATP Challenger Tour. The ATP tour also oversees the ATP Champions Tour for seniors. Grand Slams (as well as the Olympic Tennis

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Tournament) do not fall under the auspices of the ATP. In these events, however, ranking points are awarded. Players and doubles teams with most ranking points (collected during the calendar year) play in the season-ending ATP World Tour Finals, which, from 2000-2008, was run jointly with the International Tennis Federation (ITF). The week-long introductory level Futures tournaments are ITF events and they count towards ATP Entry Ranking. The four-week ITF Satellite tournaments were discontinued in 2007. Grand Slam tournaments are overseen by the ITF and they count towards the players' ATP rankings. The details of the professional tennis tour are:

Event category	Number	Total prize money (USD)	Winner's ranking points	Governing body
Grand Slam	4	See individual articles	2,000	ITF
ATP World Tour Finals	1	4,450,000	1100–1500	ATP (2009–present)
ATP World Tour Masters 1000	9	2,450,000 to 3,645,000	1000	ATP
ATP World Tour 500 series	11	755,000 to 2,100,000	500	ATP
ATP World Tour 250 series	40	416,000 to 1,024,000	250	ATP
ATP Challenger Tour	178	35,000 to 220,000	80 to 125	ATP
ITF Men's Circuit	534	10,000 and 15,000	18 to 35	ITF

2009 changes

In 2009, ATP introduced a new tour structure called ATP World Tour consisting of ATP World Tour Masters 1000, ATP World Tour 500, and ATP World Tour 250 tier tournaments. Broadly speaking the Tennis Masters Series tournaments became the new Masters 1000 level and ATP International Series Gold and ATP International Series events became ATP 500 level and 250 level events respectively.

The **Masters 1000** tournaments are Indian Wells, Miami, Monte Carlo, Rome, Madrid, Toronto/ Montreal, Cincinnati, Shanghai and Paris. The end-of-year event, the World Tour Finals, moved from Shanghai to London. Hamburg has been displaced by the new clay court event at Madrid, which is a new combined men's and women's tournament. From 2011, Rome and Cincinnati will also be combined tournaments. Severe sanctions will be placed on top players skipping the Masters 1000 series events, unless medical proof is presented. Plans to eliminate Monte Carlo and Hamburg as Masters Series events led to controversy and protests from players as well as organisers. Hamburg and Monte Carlo filed lawsuits against the ATP and as a concession it was decided that Monte Carlo remains a Masters 1000 level event, with more prize money and 1000 ranking points, but it would no longer be a compulsory tournament for top-ranked players. Monte Carlo later dropped its suit. Hamburg was "reserved" to become a 500 level event in the summer. Hamburg did not accept this concession, but later lost its suit.The **500** level includes tournaments at Rotterdam, Dubai, Acapulco, Memphis, Barcelona, Hamburg, Washington, Beijing, Tokyo, Basel and Valencia.

The ATP & ITF have declared that 2009 Davis Cup World Group and World Group Playoffs award a total of up to 500 points. Players accumulate points over the 4 rounds and the playoffs and these are counted as one of a player's four best results from the **500** level events. An additional 125 points are given to a player who wins all 8 live rubbers and wins the Davis Cup. Additionally, the domain name of the ATP website was changed to "www.atpworldtour.com".

Rankings

Main article: ATP Rankings

ATP publishes weekly rankings of professional players: **Emirates ATP Rankings** (commonly known as the 'world rankings'), a 52-week rolling ranking, and the **Emirates ATP Rankings Race to London**, a year to date ranking.The Emirates ATP Rankings is used for determining qualification for entry and seeding in all tournaments for both singles and doubles. Within the Emirates ATP Rankings period consisting of the past 52 weeks, points are accumulated, with the exception of those for the Barclays ATP World Tour Finals, whose points are dropped following the last ATP event of the year. The player with the most points by season's end is the World Number 1 of the year.

The Emirates ATP Rankings Race To London is a calendar-year indicator of what the Emirates ATP Rankings will be on the Monday after the end of the regular season. Players finishing in the Top 8 of the Emirates ATP Rankings following the BNP Paribas Masters will qualify for the Barclays ATP World Tour Finals.

At the start of the 2009 season, all accumulated ranking points have been doubled to bring them in line with the new tournament ranking system.

Structure

Brad Drewett was the Executive Chairman and President of ATP until he died on 3 May 2013, with Mark Young as the CEO of Americas, Laurent Delanney as the CEO of Europe while Alison Lee leads the International group.

The 7-member **ATP Board of Directors** includes the Executive Chairman & President (a position that has been empty since the death of former position holder Brad Drewett along with tournament representatives, Gavin Forbes, Mark Webster and Charles Smith. It also includes three player representatives with two-year terms, Giorgio di Palermo as the European representative, David Edges as the International representative and Justin Gimelstob as the Americas representative. The player representatives are elected by the ATP Player Council.

The 12-member **ATP Player Council** delivers advisory decisions to the Board of Directors, which has the power to accept or reject the Council's suggestions. The Council consists of four players who are ranked within the top 50 in singles (Roger Federer, acting as President), Kevin Anderson, Jarkko Nieminen and Gilles Simon in 2010–2012), two players who are ranked between 51 and 100 in singles (Robin Haase and Sergiy Stakhovsky), two top 100 players in doubles (Eric Butorac and Mahesh Bhupathi), two at-large members (James Cerretani and André Sá), one alumni member (Brian Gottfried) and one coach (Claudio Pistolesi). The **ATP Tournament Council** consists of a total of 13 members, of which five are representatives from the European region along with another four from the Americas and an equal number from the International Group of tournaments.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 118 - 120
ISSN 2319 - 8168

PERSONALITY AND SELF CONFIDENCE AMONG CRICKETERS

Introduction

Personality has been studied in various forms and has received a lot of recognition in the present day world. Because it is a complex blend of many factors or traits. Personality becomes even more complex because it is neither exclusively biological, nor exclusively social, but depends upon the complex interplay between naturally endowed factors and environmental experiences.

Personality and behavior are a major concern of psychology and modem theories concerning personality and behavior are concerned with the description of individual differences. Though there is a basic form of personality structure in each individual it can be developed according to the environment, society and the individual habits. Cricket coaches are basically interested in the analysis of behavior of cricketers. Personality traits and self confidence of cricketers have been studied in different forms because of the reasons that, there may be a discrete set of personality factors and self confidence existing among cricketers that is related in making them to select cricket and to play in the cricket competitions. The individual characteristics and ways of behaving that, in their organization of patterning account for an individual's unique adjustments to his total environment. A personality characteristic of dimension of personality according to which individuals can be rated or measured. Personality traits are any particular characteristics of any individual which change and develop according to the experience, surroundings and time.

Self confidence is an attitude, which all individuals have positive yet realistic views of themselves and their situations. Self confidence people trust their own abilities have a general sense of control in their lives and believe that, within reason, they will be able to do what they wish, plan, and expect.

Like self esteems, self confidence refers to individual's perceived ability to act effectively in a situation to overcome obstacles and to get things goes all right. Hence self-confidence is believed to increase one's performance. The higher level of confidence generates enthusiasm for the given activity. It is the variation in confidence that makes differences in performance of sports activity. Therefore studying the influence of confidence assumes importance.

The investigator in the present study was interested in knowing if there were any common, specific, unique or dominant personality traits and self confidence among cricketers. The study representing a simple classification-assessment of personality traits and self confidence which may give a brief personality and self confidence sketch of cricketers and the study as such, may be a step leading to further Investigations.

Purpose of the Study

- To study the personality level of cricketers.
- To study the self confidence level of cricketers.
- To analyze the personality and self confidence of cricketers.

Materials and Methods

The purpose of the present investigation was to study the personality traits and self confidence level of cricketers. To achieve the purpose of the study, necessary data regarding the personality traits and self confidence level of cricketers of selected subjects were to be gathered. The investigator has come across many tests that would measure the personality traits or characteristics. After a thorough search and examination of the literature on the various

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psychological tests that would measure personality traits and self confidence level of cricketers, it was decided by the investigator to administer Form 'C' of Cattell's Sixteen Personality Factors Questionnaire and Self confidence Questionnaire (M. Basavanna). One hundred twenty (120) men cricketers, participated in the state level competitions, served as subjects for the present study. These 120 subjects together represented the sample for the present study.

To collect necessary data pertaining to the present study, all the selected subjects were administered to the 'C' form of Cattells Sixteen Personality Factors Questionnaire and Self confidence Questionnaire (M. Basavanna) during the state level cricket tournaments. The data were in the form of answer given by the subjects in response to the various questions of the questionnaire. The subjects completed answering the questionnaire within the stipulated time after which the questionnaires were collected back and the standard scoring key was used to get the score. The scores were later on analyzed with the help of the standardized norms [key] provided in the tabular supplement of sixteen personality factors test manual and self confidence manual.

Analycis and interpretation of Data

The data thus obtained were analyzed according to manual and presented in the following tables.

Table-1

Scores of sixteen personality factors

Sr. No.	16 PF	Stens
1	A	9.12
2	B	8.76
3	C	8.05
4	E	8.53
5	F	8.90
6	G	9.20
7	H	8.35
8	I	3.89
9	L	4.52
10	M	4.24
11	N	5.37
12	O	3.84
13	Q1	5.13
14	Q2	3.23
15	Q3	9.38
16	Q4	5.61

Perusal of Table 1 and Graph shows that the Cricketers as a group have shown a tendency or inclination,

Towards the higher direction or high sten score description in eight out of sixteen personality factors A, B, C, E, F, H and Q3.

Towards the average in four out of the sixteen factors I, N, Q1 and Q4 respectively.

Towards the lower direction or low sten score description in four out of the sixteen personality factors L, M, o and Q2.

Major Findings of personality of cricketers

In factor A (Reserved V/s Outgoing), Cricketers were tends to be good natured, easy going, emotionally expressive, ready to cooperate, attentive to people, soft hearted, kindly and adaptable. They are generous in personal relations, less afraid of criticism, better able to remember names people.

In factor B (Less intelligent V/s More intelligent), Cricketers were tends to be quick to grasp ideas, a fast learner and intelligent. There is some correlation with level of culture and some with alertness.

in factor C (Emotionally less stable V/s Emotionally stable), Cricketers were tends to be emotionally mature, stable, realistic about life, unruffled, possessing ego strength, better able to maintain solid group morale.

In factor E (Humble V/s Assertive), Cricketers were found to be assertive, self assured, and independent minded.

In factor F (Sober V/s Happy- go- lucky), Cricketers were tends to be cheerful, active, talkative, frank, expressive, effervescent, carefree. They frequently chosen as an elected leader. They may be impulsive and mercurial.

In factor C (Expedient V/s Conscientious), Cricketers were tends to be exacting in character, dominated by sense of duty, persevering, responsible, planful, "fills unforgiving minute". They are usually conscientious and moralistic and prefer hard working people to witty companions.

In factor H (Shy V/s Venturesome), Cricketers were tends to be socially bold ready to try new things, spontaneous and abundant in emotional response, There 'thick skinned ness" enables them to face

wear and tear in dealing with people and grueling emotional situations without fatigue.

In factor I (Tough-minded V/s Tender-minded), Cricketers were found to be neither tough-minded nor tender-minded (average).

In factor L (Trusting V/s Suspicious), Cricketers were found to have a tendency to trust, adaptable free of jealousy, easy to get on with, cheerful, uncompetitive, concerned about other people and good team workers.

In factor M (Practical V/s Imaginative), Cricketers were found to be anxious to do the right things attentive to practical matters and subject to the dictation of what obviously possible. Careful conventional, regulated by external realities and sometimes unimaginative.

In factor N (Forthright V/s Shrewd), Cricketers were found to be neither forthright nor shrewd (average).

In factor 0 (Placid V/s Apprehensive), Cricketers were tends to be placid with unshakable nerve. They have a mature, unanimous confidence in themselves and there capacity to deal with things.

In factor QI (Conservative V/s Experimenting), Cricketers were found to he neither conservative nor experimenting.

In factor Q2 (Group-dependent V/s Self- sufficient), Cricketers were prefers to work and make decision with other people, likes and depends on social approval and admiration. They tends to go along with the group may be lacking in individual resolution. They are not necessarily gregarious by choice; rather they needs-S group support.

In factor Q3 (Undisciplined self-conflict V/s Controlled), Cricketers tends to have strong will control of there emotions and general behavior, are inclined to be socially aware and careful, They have "self-respect" and regard for social reputation.

In factor Q4 (Relaxed V/s Tense), Cricketers were found to be neither relaxed nor tense (average). But the obtained value shows a slight deviation from the avenge in a higher direction, which may reveal the tendency of cricketers to be tense, frustrated, driven, and overwrought with high agric tension.

Conclusions

The cricketers were found to be more intelligent (Higher scholastic mental capacity), emotionally stable (Higher ego strength), assertive (Dominance), happy-go-lucky (Surgency), conscientious (Stronger superego strength), venturesome (Parmia). neither tough-minded nor tender-minded, trusting, practical, neither forthright nor shrewd, placid, neither conservative no' experimenting, group dependent, controlled (high self- concept control), neither relaxed nor tense.

The cricketers in a group have shown better consistency in factors A. B. C. E. F. C H. L. M. 0, Q2, Q3 and Q4 these factors are the most common personality traits or features found among cricketers. The cricketers in a group have the high self confidence level.

Recommendations

On the basis of the present study, if may be worthwhile to recommend the following studies to be undertaken for investigation by the future research workers,

A study on the dominance of personality traits and self confidence of cricketers at the different age groups.

A study on the personality traits and self confidence of cricketers at various levels like university, state, national, and international competitions and then a further study to compare the personality (rails of performers and achievers at such different levels.

A study on the personality traits of low level, mediocre and high-level achievers and performers.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 121 - 122
ISSN 2319 - 8168

A COMPARATIVE STUDY OF INDIVIDUAL GAME PLAYERS AND TEAM GAME PLAYERS WITH RESPECT TO EMOTIONAL

Introduction

Sport Psychology is the scientific discipline deals with people and their behaviors in sport contexts. Sport psychologists identify principles and guidelines (hat professionals can use to help adults and children to participate in and benefit from sport and exercise activities in both team and individual environments. Sport psychologists have two objectives in mind (a) to understand how psychological factors affect an individual's physical performance and (b) to understand how participation in sport and exercise affects a person's psychological development, health and wellbeing. Sport psychology deals with increasing performance by managing emotions and minimizing the psychological effects of injury and poor performance. Some of the most important skills taught are goal setting, relaxation, visualization, self-talk, awareness and control, concentration, confidence, using rituals, attribution, training and periodization.

Methodology

The present study was aimed at Individual (Badminton, Tennis and Athletics) game players and Team (Volleyball, Football and Basketball) game players with respect to emotional intelligence. Sample consisted of two hundred of Male and Female (18-21 years and 22-25 years) individual (Badminton, Tennis and tics) game players and Team (Volleyball, Football and Basketball) game players from Maharashtra State.

Tools Used

Anukool Hyde and Sanjyot Pethe Scale

The test is developed and standardized by Anukool Hyde and Sanjyot Pethe the test consisted of 34 items. The subjects were required to respond to each item in terms of 'Strongly Agree', 'Disagree' and 'Strongly Disagree'. The reliability coefficient of the test was Ibund 0.88 with Spearman Brown formula. The validity coefficient was found 0.93.

Procedures of Data Collection

Each of the three instruments are administered in small group for collecting the data. The subjects were called in a small group of 20 to 25 subjects and prior to administration of test through informal talk appropriate rapport was developed.

Analysis of data

Table-1

Table shows the mean S.D. and t value of factors Emotional Intelligence

Players	Mean	N	S.D.	D.F.	't' value
Individual Player	75.58	100	3.71	198	12.58**
Team Player	83.24	100	2.46		

** Significant at 0.01 levels.

Mean of Emotional Intelligence score of the Individual Game Player is 75.58 and that of the Team (Volleyball, Football and Basketball) game players 83.24. The difference between the two mean is highly significant 't' 12.58. df = 198.

Table 2

Table shows the mean S.D. and t value of factors Emotional Intelligence

Players	Mean	N	S.D.	D.F.	't' value
Male & Female individual Player	78.74	100	4.84	198	9.47**
Male & Female Team Player	86.59	100	3.69		

Significant at 0.01 levels.

Mean of Emotional Intelligence score of the Individual

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Male and Female Game Player is 78.74 and that of the Team Male and Female game players 86.59. The difference between the two mean is highly significant 't' = 9.47, df = 198.

Table 3

Table shows the mean S.D. and t value of factors Emotional Intelligence

Players	Mean	N	S.D.	D.F.	't' value
18.21 year Individual Player	74.16	100	3.87	198	10.37**
22-25 year Team player	86.59	100	3.69		

** Significant at 0.01 levels.

The results related to the hypothesis have been recorded. Mean of Emotional Intelligence score of the Individual 18-21 years Game Player is 74.16 and that of the Team 22-25 years game players 84.22. The difference between the two mean is highly significant T = 10.57, df 198.

Results

1. Team (Volleyball. Football and Basketball game players are significantly better in Emotional Intelligence than Individual (Badminton. Tennis and Athletics) game players.
2. Male and Female Team (Volleyball. Football and Basketball) game players are significantly better in Emotional Intelligence than Male and Female Individual (Badminton, Tennis and Athletics) game players,
3. 22-25 year Team (Volleyball, Football and Basketball) game players are significantly better in Emotional Intelligence than 18-21 year (Badminton, Tennis and Athletics) game players.

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Physical Education
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Vol. 3 Issue - (1)
Dec.- 2014 Page - 123 - 125
ISSN 2319 - 8168

RISK MANAGEMENT PRACTICES OF HIGH SCHOOL PRINCIPALS

Physical activity, which usually forms the medium of learning and instruction within the subject life orientation in South African schools, has been the subject of research over several decades. The current study was undertaken to identify key safety concerns in Physical Education at schools and to establish the risk management practices implemented by principals at high schools in South Africa. A questionnaire that was used in a previous study by Gray (1995) was adapted and used to gather data from a purposive sample of 300 principals in three provinces. The questionnaire sought information on S broad aspects; General legal liability, facilities and equipment, legal concepts/aspects, medical aspects, and records and information on athletes. The Cronbach Alpha coefficient for the twenty items reported in the results was 0.946. The results indicate that there are a fair proportion of principals who fail to comply with minimum requirements specified for safety.

Introduction

Schools are in a unique position to provide several opportunities for learners to safely participate in physical activity, and to motivate them to remain physically active during adulthood. South African schools provide students with regular opportunities to participate in compulsory life orientation/physical education (PE). The rationale for the inclusion of physical activities in the form of physical education in the school curriculum is universally established. Although schools are an established health-promotion setting, in most South African public schools formal PB is non-existent Wherever PE was offered, it has been significantly downscaled. This situation can be ascribed to a lack of qualified PB specialists and limited funding available for such low priority, non-examination subjects at schools. Furthermore, the Governments national agenda appears to be focused on promoting elite sport at the expense of PE.

Educators have an ethical and legal obligation to plan and present reasonably safe programmes of physical activities at schools. Prevention is critical, as a wide range of injuries are litigated, and such lawsuits often result in schools and school districts having to pay costly damages to injured parties. In this regard, the principal has to ensure that the relevant educators address the problem of safety when planning and designing their curriculum for life orientation. This requirement should further be ensured by superintendents from the Department of Education. However, this requirement has been ignored for almost two decades in South Africa, as the Department of Education neither had policy, nor specialist supervisory personnel for PE. In South Africa, the large divide between urban and rural schools and formerly black schools, poses its own challenges. Rural and formerly black schools are invariably under-resourced in terms of programmes, finances, facilities, equipment, as well as professionally prepared specialists of PB. To compound these challenges, learners live some distances away from schools and adequate transport for them is very rare.

As the head of the school, the principal is primarily responsible for the human resources function. She has to ensure that educators, coaches, instructors and officials of PB, sport and recreational activities are competent to perform their jobs. This means that physical educators must have appropriate qualifications for teaching in this discipline, and for

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maintaining safety. Principals have to ensure that such staff members receive a thorough orientation to their job and the work environment, appropriate training, and opportunities for continued education and updating of their skills and knowledge.

In addition principals have to ensure that PE facilities and equipment meet the minimum prescribed safety standards. This implies that principals are also responsible for a supervisory role with regard to repairs and maintenance of sport facilities and equipment. They also have to establish policies, rules and regulations relating to the safe use of such facilities in order to protect learners and educators from health risks and hazards. This includes exposure to inclement weather, traffic, unsafe playing surfaces, poor lighting, and poorly-maintained equipment. For schools with swimming poo1s, specialised safety and maintenance procedures and staff trained in life-saving are essential.

Research with a focus on safety around PE activities has been conducted for at least five decades. However, in South Africa little research effort has been devoted to matters of safety and security of the learners participating in PE activities as part of their curriculum.

This study was undertaken to identify the key safety concerns in PE at schools, and to establish what the risk management practices implemented by principals at high schools in selected provinces are. This paper follows the approach that school principals are staff with the highest authority and legal liability for the affairs of learners at schools. The aim was also to highlight the chief problems associated with PE safety and to devise strategies to protect learners by preventing physical injuries and/or mental and emotional harm they may suffer. With this knowledge, it would be possible to increase awareness of educators and other role players about their legal responsibilities for the safety and security of the learners in their care.

Methods

The targeted participants in this study were high school principals. A questionnaire that was used in a previous study by Gray (1995) was adapted and used to gather data from a purposive sample of 300 principals of public schools, private schools and independent schools in three provinces. The questionnaire sought information on 5 broad aspects; General legal liability, facilities and equipment, legal concepts/aspects, medical aspects, and records and information on athletes. The questionnaire made use of a differential sliding scale checklist to assess the various aspects of risks on a 6 point scale, with

1= strongly disagree to 5=strongly agree, and 6=not applicable. Approximately 50% (149) usable questionnaires were returned. Means and descriptives were used to report on the data. The Cronbach Alpha for the twenty items reported in the results was 0.946.

Results

The number of injuries sustained in PE over the past three years ranged from I to 100 per school. Only 1.5% of schools reported complaints about PE injuries to the Department of Education, and in 100% of the schools none of these injuries resulted in court cases. These results reflect a low level of litigation.

While the majority (48%) agreed that PE teachers were evaluated, it is concerning that approximately 20% disagreed that PE teachers were evaluated. This raises serious concerns about how principals in close to one fifth of schools would be controlling the delegated responsibility of safety during PE. At only 12.5% of schools is self-assessments required of PE teachers. This raises concerns over how such educators would be motivated to excel if their performances were not appraised by themselves, as well as their school heads. It is encouraging to note that in the majority of schools (55%) the constitutional imperative of gender equity was addressed during PE, However, approximately 10% of schools discriminated against girls in the provision of PE, violating their Constitutional and educational rights.

Approximately 60% of PE educators are qualified to teach the subject while approximately 20% are not qualified to teach the subject. This raises serious concerns about their competence, especially in providing quality instruction and supervision. It implies that at least one in ten schools, learners participating in PE and sport activities are exposed to risks of injury and harm resulting directly from the incompetence of educators. The question this raises is whether

parents and other stakeholders of education would tolerate this same incompetence in other subject offerings such as Mathematics, Physical Science or Accounting.

In many schools (45%) a written curriculum is used as a guide in PE. It is of concern that in the balance of schools principals were either uncertain whether a curriculum was followed in their schools or disagreed that a curriculum was followed. This is very questionable, particularly as PE and sport are used to meet educational outcomes in schools. It is encouraging that at the majority of schools (73%) there are medical emergency procedures in place. This means that at most schools, learners and educators would know what to do should an emergency arise during PE and sport activities. With a total of 7.9% of principals being uncertain, and 7.8% disagreeing, it indicates that at around 15% of schools there are no medical emergency procedures established. In these schools, principals are clearly exposing themselves to the risk of violating provisions of the Occupational Health and Safety Act (1993).

Most principals were in agreement (66%) that adequate and appropriate maintenance of sport facilities was undertaken. For at least one tenth of schools the maintenance was not up to an acceptable standard. This situation again poses a serious risk to learners who may be exposed to non-inherent risks, purely, because of poor maintenance of sports facilities. Sixty percent (60%) of the principals reported that PE was based on sound educational objectives. This implies that the balance of school principals are either uncertain or disagree that PE is based on sound educational principles.

Written grading procedures of learners in PE are used at approximately only 36% of schools. This implies that at a higher proportion of schools, written procedures in PE do not definitely exist. Written unit and lesson plans are insisted upon by less than half of the principals (45%). With the balance of principals being uncertain or disagreeing that written unit plans and lessons are mandatory, the picture surrounding the low status and poor teaching of PE becomes clear. It is inconceivable how a subject is offered at schools, and yet principals do not insist on supervising lesson plans from their educators.

Recommendations and broad guidelines have been offered to ensure that learners experience a safe and nurturing environment where they may receive the maximum benefit of instruction in and through physical activities.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 126 - 128
ISSN 2319 - 8168

A PAPER ON REHABILITATION OF THE DISABLED PEOPLE

Introduction

Rehabilitation of patient is an indivisible process beginning with the onset of sickness or injury and continuing throughout until final resettlement in the most working and living conditions is achieved. After prevention, diagnosis and treatment, the fourth limb of medical practice is rehabilition. All the economically advanced countries are on peak of rehabilitation programme. They have accepted it is a normal discipline. In 1950, the Economic and social council of United Nation passed a resolution for a coordinated international programmed for the disabled. It is long term, comprehensive, continuous effort to help raise the living standards throughout the world. The programme developed by the working party on rehabilitation of the physically handicapped established by the United Nation explains a new approach to the handicapped.

Evaluation of Disability

Firstly, that the handicapped person is an individual with full human rights which he shares in common with the able-bodied and that he is entitled to receive from his country every possible measure of protection, assistance and opportunity for rehabilitation.

Secondly, that by the very nature of his physical handicap he is exposed to the danger of emotional and psychological disturbance resulting from a deep sense of frustration and that he, therefore, has a special claim on the society for sympathy and constructive help.

Thirdly, that he is capable of developing his residual resources to an unexpected degree, if given the right opportunities of doing so and of becoming in most instances an economic asset to the country instead of being a burden on himself, on his family, and on the state.

Fourthly, those handicapped people have a responsibility to the country to contribute their services to the economic welfare of the nation in any way that becomes possible after rehabilitation and training.

Fifthly, that the chief longing of the physically handicapped is to achieve independence within a normal community instead of spending the rest of his life in a segregated institution, or within an environment of disability.

Sixthly, that rehabilitation of the physically handicapped can only be successfully accomplished by a combination of medical, educational, social, and vocational services, working together as a team

Handicapped Children

The problem of restoration of the physically incapacitated to 'health' has received very little attention in this country. The physically handicapped children, whether they are orthopaedically, or acoustically, or mentally handicapped, require special institutional care "Triple services for the cripple" should be the basis at the special institutions, namely, provision of medical facilities including physiotherapy and occupational therapy, provision of at least primary education facilities with prevocational training and provision of social welfare facilities such as lodging, boarding in a good "home" transporte, etc..

As soon as possible, it is necessary to arrange integrated education for such children, since not only the expenditure is brought down but also it facilities early adjustment to what cannot be cured. Children learn to overcome and live the disability very quickly.

Curative Measures at Hospitals

In the hospitals, more and more facilities for setting up "curative workshops" in the form of occupational therapy and physiotherapy units will have to be

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provided. The fourth limb of medical practice must be made sound and it will be soon realized that it helps in cutting down the hospitalization period of patients and the present overcrowding to a great extent.

Early Diagnosis of Defect

For proper treatment the school health inspection must be made more effective. There is of course, the shortage of doctors and paramedical staff. The problems of an emergent country like ours are very large but a concorted effort will go a long way for rehabilitation of the invalids, the incapacitated, and the so-called disabled. In modem economic life it is the job-ability which is of importance and not a physical defect. It is a challenge which should be accepted.

Medical treatment aims at the arrest and cure of the disease, but one finds that even after the disease is cured, the individual cannot undertake all his original activities immediately. He needs to be assisted and coached up for the final coming back to his original life. Sometimes, it is necessary because of incomplete cure from the disease and the person has to be readjusted to a new employment which he can undertake with his existing physical deficits. All this comes under a very broad term called rehabilitation. In this rehabilitation programme, many different types of persons take part e.g., the treating physician, the physiotherapist, the technical teacher, the vocational council, social worker, employment exchange bureau and the original employing authority. The scheme of rehabilitation will run on the following heads

Treatment

1. Medical, B) Orthopedic , C) Operative
2. Physiotherapy A) Heat B) Massage & Exercise C) Paraffin bath D) Electro-therapy
3. Activities with or without aids A) walking with crunches B) climbing C) crossing a road D) toilet E) Walking caliper F) Artificial limb G) neck collar H) Hearing aid
4. Occupational therapy a) knitting b) typing c)Carpentry d) tailoring e) leather work f) music
5. Employment a) office work b) teaching c) salesmen d) self employment e) sheltered workshop f) industry
6. Restoration to full capacity a) original work reduced capacity c) final recovery

Primary treatment: Rehabilitation starts even during the primary treatment. for example, when the patient is immobilized in the plaster , he is asked to move the joints that are not immobilized in the plaster, so that they do not get stiff

Physiotherapy: A) Heat: heat is used preferably by radiation to increase the blood supply of the part. B) Massage: In paralyzed limbs or in limbs immobilized in plaster, the returning circulation becomes arrested due to nonactivity of muscles. This circulation is assisted by squeezing up-the lymph towards heart after the plaster is removed

C) Passive exercise: In paralyzed limbs, due to nonactivity, the joints get stiff by the time the paralyzed muscles recover. Hence, it is essential to put all the joints through their normal range of motion. This is done by a physiotherapist for the patient, as the patient himself cannot move the joints.

D) Active exercise: Once the muscles start recovering from the paralysis, the muscle fibers can develop only if they are actively used by the patient. During this active exercise, fatigue must be avoided.

E) Hydrotherapy: when the muscles are recovering from paralysis they cannot immediately have the full power to move the limbs against the force of gravity. If a patient is immersed in water supports the limbs against gravity, and now, they can be moved with the available muscle power, and if they arc moved, the muscles start developing.

F) Electrotherapy: After the paralysis due to interference with the nervous system, it takes time for the nerves to recover. This period is long, say, six months by the time the nerves recover and again innervate the muscle. The nerves find the muscle wasted considerably due to disuse and undergone fibrosis. Now, even if the original deficit of nervous system is compensated, the final organ of movement, viz, the muscle, being by this time more or less destroyed, a cure from disease cannot result. To postpone this disuse atrophy of muscle, electrical stimulation of muscle is used. Under this electrical stimulation, the muscle keep on contracting and maintaining their normal activity, circulation and

hence, also their nutrition and size.

Activities of daily life: The most immediate need of the patient is to get back to his activities of daily life, shortly termed as "A.D.L." This consists of standing, walking, eating, driving, etc. This is essential to get back into him a feeling of independence from others in carrying out the routine of the day

Fitting of artificial aids: sometime, it is impossible to recover certain groups of muscle or even a complete limb or a special sense like sight or hearing. Such patients require artificial aids in the form of spinal jacket, walking caliper, artificial limb, correction glasses, hearing aid, etc.

Occupational therapy: Once the patient gets back his activities of daily life, he feels like doing something worthwhile. It may be in the form of his hobby or side business like knitting, carpentry, tailoring, leather work, typing, and etc. Such occupational therapy takes the patient's mind away from the disease and it is considered by him as a great step towards final recovery. This helps him to be mentally rehabilitated

Readjustment and reemployment: It is no use teaching to patient how to knit mats or how to do carpentry unless one can assure him of his inability to work and his inability to feed himself and his family. Hence, he needs reassurance at this stage that one is going to find for him his original employment or a new employment which is suitable for his existing physical deficits.

He may be adjusted to a lighter type of work to start with, and then gradually he may return to fully activity. This read adjustment requires the help of vocational council, social worker, employment exchange and original employing authority. It is usually noticed that the original employing authorities are kind towards their workers and they would give him an alternative job or a lighter type of job only if the worker is a willing one. This process of rehabilitation makes a socially adjusted personality useful to himself, his family and society out of a physically handicapped or otherwise disabled patient.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 129 - 132
ISSN 2319 - 8168

ANTERIOR CRUCIATE LIGAMENT INJURIES IN DIFFERENT SPORTS

ACL injury

One of the most common problems involving the knee joint is an anterior cruciate ligament tear. The anterior cruciate ligament (also called the ACL) is one of four ligaments that are critical to the stability of the knee joint. A ligament is made of tough fibrous material and functions to control excessive motion by limiting joint mobility. Of the four major ligaments of the knee, the ACL injury is the most common knee ligament injury.

Normal function and Anatomical Background of the Act.

The anterior cruciate ligament is the primary restraint to forward motion of the shin bone (tibia). The anatomy of the knee joint is critical to understanding this relationship. Essentially, the femur (thigh bone) sits on top of the tibia (shin bone), and the knee joint allows movement at the junction of these bones. Without ligaments to stabilize the knee, the joint would be unstable and prone to dislocation. The ACL prevents the tibia from sliding too far forward.

The ACL is a broad ligament joining the anterior tibial plateau to the posterior femoral intercondylar notch. The tibial attachment is to a facet, in front of. and lateral to the anterior tibial spine. The femoral attachment is high on the posterior aspect of the lateral wall of the intercondylar notch.

It is composed of multiple non-parallel fibers, which, though not anatomically separate, act as three functionally distinct bundles i.e. anteromedial, posterolateral and intermediate. Owing to their wide attachments, variable fiber lengths and the rotation of the ACL that accompanies flexion, the tension in each bundle varies throughout the range of motion.

Risky Sports Events

Highly Risky Events: Foot Ball, Basket Ball, Soccer, Skiing, Gymnastics, Wrestling, Judo. Volley Ball, Tennis (Singles), Rugby and Hockey (Ice & Field)

Moderate Risky Events: Athletics (Jumps and Throws), Indigenous Games, (Kabbadi & Kho-Kho), Hand Ball, Base Ball and Tennis (Doubles)

Low Risky Events: Running/Jogging and Cycling

Causes of ACL Rupture

The most common cause of ACL rupture is a traumatic force being applied to the knee in a twisting moment. This can occur with either a direct or an indirect force. In practice, about half of the cases of ACL rupture occur without contact, i.e., while side stepping, pivoting or landing from a jump. The other half are associated with some type of contact, whether it be on the football field, on the snow fields or in a motor vehicle accident. For example Skiing injuries usually occur during a fall in the inexperienced skier.

Another interesting factor is that patients with recurvatum tend to be more likely to rupture their ACL and are more difficult to treat. I have also noticed a significant number of patients having ruptured their ACL who also have instability of the shoulder. I believe both these groups have a generalized ligamentous disorder.

Symptoms of ACL Injury

- There may audible pop or crack at the time of injury.
- A feeling of initial instability may be masked later by extensive swelling.
- A torn ACL is extremely painful, in particular immediately after sustaining the injury.

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- Swelling of the knee, usually immediate and extensive, but can be minimal or delayed.
- Restricted movement, especially an inability to fully straighten the leg
- Possible widespread mild tenderness.
- Positive Signs in the anterior drawer test and Lachman's test.
- Tenderness at the medial side of the joint which may indicate cartilage injury.

History

The classic story of a patient cutting, sidestepping or landing from a jump, and the knee giving way, followed by immediate pain and swelling should alert the diagnostician to the most likely diagnosis of ACL rupture. In the practice a "snap' or "pop" was noted by 60% of the patients. Rapid intra-articular swelling following injury is nearly always due to hemarthrosis. An ACL rupture is present in 75% of patients presenting with an acute hemarthrosis and is due to bleeding from vessels within the torn ligament. Differential diagnoses include osteochondral fracture, peripheral meniscal tear, retinacular tear associated with patella dislocation or subluxation, PCL tear or bleeding disorders.

Evaluation

The diagnosis of ACL tear can be confirmed by three tests: the Lachman test, the dynamic extension test and the Pivot Jerk test While the Lachman test and dynamic extension test are helpful in making a diagnosis, particularly in the acute injury, the lateral-pivot jerk test is the most important .

The lateral pivot jerk test reproduces the rotatory subluxation that occurs in ACE deficiency. The test is difficult, to perform and takes residents and fellows in my practice approximately three months of intensive training to be able to adequately perform the jerk test in the unanaesthetised patient. The test is important because the demonstration of the lateral pivot jerk is the replication of the instability that the patient has.

Some authors consider the Lachman test to be the chief confirmation of rupture of the ACL. I do not agree, as a negative Lachman test may be misleading. The ACE commonly heals onto the posterior cruciate ligament producing a falsely negative Lachman test with a fairly firm end point. These patients, however, may still have a positive lateral pivot jerk and clinical instability.

Management of the Ruptured ACL

Once the diagnosis of ruptured ACL is made, management can be divided into conservative and surgical. Correct choice of treatment depends on assessment of three patient factors:

- Age
- Functional disability
- Functional requirements.

A small percentage of the population, perhaps 15%, can survive happily with a ruptured ACE, so a patient profile is important in assessing the indications for surgery. The child, the adolescent, the young adult, the middle aged, and the elderly, represent different surgical problems. Functional disability may vary from an undiagnosed asymptomatic rupture, to the patient whose knee gives way on a daily basis. I believe these differences are Jut to variations in proprioception muscle control about the knee. Functional requirements vary from sedentary patients with low activity requirements, through those patients with an active social sporting life or physically demanding work, to the elite athlete whose fame and fortune depends upon a highly functional knee.**Surgical Techniques**

The development of surgery for ACL instability has been proceeding over the last century. Techniques at the turn of the 20th Century used autograft semitendinosus and gracilis with variable results. Xenografts were employed in Germany in 1912, using Kangaroo tail tendon for ACE substitution. However, results were poor due to problems with infection and graft rejection.

Following the failure of repair techniques to ensure stability, focus became centcrcd on substitution- type intra-articular reconstructions. Various graft materials have been tried including autograft, allograft, xenograft and artificial ligaments.

Artificial ligaments made of fibres such as Dacron or Gortex have also been tried with mixed success. There is an unacceptable failure rate within two years due to either mechanical failure or inflammatory synovitis secondary to breakdown products shed for

the graft.

A ligament augmentation device (LAD, invented by Kennedy in London) has also been widely used. Most studies, however, have not demonstrated that the use of the LAD has any significant advantage over the patella tendon transfer alone.

Rehabilitation

The major goals of rehabilitation following ACL surgery are:

- restoration of joint anatomy;
- provision of static and dynamic stability;
- maintenance of the aerobic conditioning and psychological well being; and
- early return to work and sport.

These have required the development of an intensive rehabilitation program in which the patient has to take an active involvement

The graft undergoes physiological changes during its incorporation, as fibroblastic activity changes the biology of thc graft to become more ligamentous. The graft is weakest between six and twelve weeks post operatively so programs must be designed to protect the graft during this period. On the other hand investigations into ligamentous healing have shown that progressive controlled loading provides a stimulus for healing which improves the quality of graft incorporation. More over, early immobilization has advantages such as maintenance of articular cartilage nutrition and retention of bone mineralization.

In this early phase there is an emphasis on static contraction of the hamstrings and co-contractions of the hamstrings and the quadriceps. Crutch -walking with partial weight bearing is allowed and the usual modalities are used to reduce pain and swelling.

During the second phase, from two to six weeks, the emphasis is on increasing the range of motion, increasing weight bearing and gaining hamstring and quadriceps control. The patient is usually out of the brace by the third to fourth week. During this phase gait re-education and static proprioception exercises commence. This may include balancing on the affected leg, biofeedback techniques and pool work to maintain conditioning and range of motion.

During the third stage, from six to twelve weeks, emphasis is placed on improved muscular control, proprioception and general muscular strengthening. Proprioceptive work progresses from static to dynamic techniques including balance exercises on the wobble board and eventually jogging on a mini-tramp. The patient should have a full range of motion during this stage and gentle resistance work should be added. By the end of this period the patient should be able to cycle normally, swim with a straight leg kick and be able to jog freely on the mini-tramp.

The fourth phase of rehabilitation from twelve weeks to six months involves the gradual re-introduction of sports specific exercises aimed at improving agility and reaction times and increasing total strength.

Conclusions

If the completely ruptured ACL Injuries may recover at a optimum level with Maximum of 5 percentage among the athletes. But they can not reach 100% cure, the players may not perform the Skills in an optimum level, due to Psycho-Physiological factors. The elite athletes can not perform the earlier standard as per the available statistics in sports.

Prevention of ACL Injury

The ACL Injury Prevention Program is a highly specific 15-minute training session that replaces the traditional warm-up. It was developed by a team of physicians, physical therapists, athletic trainers and coaches. The program goal is to teach players strategies to avoid injury by:

1. Avoiding vulnerable positions
2. Increasing flexibility
3. Increasing strength
4. Including plyometric exercises in training
5. Increasing proprioception

Optimally the program should be performed at least 2-3 times per week during the season.

This program consists of a warm-up, stretching, strengthening, plyometrics. and sport specific agility training. It is important to use proper technique during jumping moves (jump straight up and down jumps without excessive side-to-side movement), and aim for soft landings.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 133 - 134
ISSN 2319 - 8168

LEADERSHIP IN PHYSICAL EDUCATION

Sports play an important role in the society. All sports activities are supervised by Physical Educators in all educational institutions. As a physical Educationist we are actively involved in sports & games and we perform wide range of activities such as teaching. coaching/training, administration, organization and research. Sports Management Skills differ from individual to individual. Leadership plays key role in those activities. Sonic Physical Educators are good at teaching and some others are good in organization and so on. As Physical Educationist, we not only prepare students for competition, but also to develop leadership qualities, character building and sportsmanship among them.

Many researchers have done extensive work on leadership in the past. A lot of research activity on the key areas such as the qualities and qualification of a leader, types of leaders and other influencing factors were carried out both on theory as well as practical. For the growth and development of any profession it needs visionary leaders. The real leader will inspire the people and become role model for others.

In the past, we had good number of visionary leaders in Physical Education. In general, majority of Physical Educators are good leaders, but there are few exceptions. This few exceptions will further produce a number of exception people in turn, which will lead to number of ethical problems. This paper attempts to throw light on those ethical issues. Al Cove wrote" Perhaps, but inconvenient truths do not go away just because they are not seen. Indeed, when they are not responded in their significance doesn't diminish it grow". One of the meanings for the word ETHICS is "system of moral codes" and other definition of ethics is given as "principles of moralit' that flows in one's life".

BE SPORTIVE is a famous quotation used commonly by all professional people. As a Physical Educationist, we are actively involved in sports and games. But whether we all are sportive is the question to be answered by us. For example, if we (most of us) are drawing the fixtures for the tournament, we put weaker teams in our pool. Is this a sportsman spirit? A few ethical issues are highlighted hereunder

a. Teaching

- Teaching the entire syllabus within the stipulated time
- Sincerity in setting the question paper
- Honesty in evaluating the answer script
- How second valuation are done in certain institution
- Retired people are to be avoided in examination duties

b. Administration

- Management of various events such as
- Staff selection on the basis of merit. Good sportsman should get appointment
- Selection of players on basis of sports performance
- Purchase of Sports Goods
- DA & TA related issues
- Lobbing of players from one institution to another

c. Organisation

1. Tournaments

- Planning & execution of sports events
- Impartiality in drawing of fixtures
- Best possible grounds are to be prepared
- Players eligibility checking process is to be followed Strictly

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- Misuse of officials to win matches is to be avoided.
- In seminar I conference we have to give adequate time for technical session and more weightage for interaction is to be given
- Session arrangement, programme schedule are to be circulated, well in advance
- The seminar / conference brochure should be professionally prepared
- Norms followed in selecting the Chairperson / Resource person for sessions should be clear
- Accept only quality papers

d. Research

- Quality research works are to be encouraged
- Sincerity in guiding and evaluation of thesis
- Exploitation of the research scholars
- First author, co-author guidelines are to be strictly followed
- Forcing scholar to give gifts to the examiners
- Research in Yoga by physical educators are to streamlined

e. Coaching I training

- Few people coach only the winning team, which is not correct
- Doping related issues
- This paper suggests to include a paper on ethics and leadership in all UG and PG Physical Education curriculum.

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Physical Education
Research Zone India
Vol. 3 Issue - (1)
Dec.- 2014 Page - 135 - 136
ISSN 2319 - 8168

PHYSICAL EDUCATION-A SITUATIONAL ANALYSIS

The centralized national curriculum in Physical Education prescribing the content and learning activities has not been effective because of the vast differences in the overall situation of the schools. Various factors such as the number of students in a class, attitudes of school administrators towards Physical Education, facilities, equipment, finance and other problems are related to this issue. The most general process for curriculum planning begins with the statement of aims and objectives, second comes the selection of content to achieve objectives, the next step is organization of content and finally the evaluation to determine how successful the curriculum has been in achieving these objectives. The curriculum plan is then matched with the context, and it the resources are not available, the required resources are provided and included to cater the specific needs. In India limited resources only available and lack of commitment also there, it is important to analyse the situation in the initial stage before proper and realistic curriculum is planned. The concept of a centralized and common system needs to be reviewed keeping in the mind the entire draw backs. Suggestions have been made to develop a flexible curriculum by giving freedom to the teachers to select and adapt particular components that would match the situation and needs of their schools, and therefore it may be more relevant for teachers and thereby it caters to the needs of the student community. Accordingly four important aspects are identified as effective focus points for action:

Sports and Education

The positive impact of Physical Education and sports on child education has always been an integral component of quality education. Sports helps to promote gender equality, Girls are given opportunities to be leaders, which motivate them to improve their confidence and self-esteem, and to interact with their peers outside the home and beyond family networks. Through such activities, they will have an easy access to linkages and occasions to be more engaged in schools and community life. Another group student with disabilities can also learn skillfully and adopt themselves to any situations by learning Physical Education. They are also a target beneficiary of our country. If they are given proper attention and coaching no doubt sports can shape up them thereby it is taken care that they are not neglected in the society.

Sports and Health

According to the 2002 World Health Report, unhealthy diet and physical inactivity are among the leading causes of major non-communicable diseases. Sports and physical activity are crucial for life-long healthy living, and good habits start early. The important role of Physical Education is demonstrated by the fact that children who exercise are more likely to stay physically active as adults'. It may be signed with IOC for the development of health

Sports and Peace

Our Nation strongly believes that sports can be a vehicle to promote peace, tolerance and understanding by bringing people together to participate in physical activities on neutral ground. The inclusive nature of sports crosses ethnic, cultural and religious boundaries, making it a powerful tool to increase peaceful collaboration. India conducts the 2010 Common Wealth Games at New Delhi. And 2011 world cup cricket also conduct joint with the neighbor countries.

* PTI, St.Francisc, Vapi

Sports and Development

Despite the perception that sports is not a viable economical sector, the potential of sports to generate jobs and wealth should not be discounted, especially if a strategy is 'developed to optimize this potential and supported by a national Sports for All policy. The Nations believes that securing government leadership is essential to ensure that Physical Education and sports are incorporated into the national development and international cooperation policies and agendas.

Points to be considered for the Development of the Physical Education and Sports

This situational analysis brings to focus the basic necessary inputs for a healthy curriculum planning, which ensures an effective are of Physical Education and Sports in schools. The important of Physical education and Sports to students as well as physically challenged are brought out in various criterions thereby creating awareness about the vital role of Physical education and Sports.

- Physical Education and sports should be given recognized as an integral part of quality education and should be a national priority.
- It should be mandatory for every school to provide all students with at least 120 minutes of curriculum Physical Education and sports time each week, and in the longer terms, 180 minutes or more.
- To establish a 10-year strategy to enhance quality Physical Education and sports, comprising two 5-year medium-term plans.
- National strategies should be implemented by sports fitness scholars and professionals, ministerial officials charged with responsibility for Physical Education and sports, as well as network and professional associations at local, national and international levels.
- The scope of the national strategy should include pre-school, primary and secondary.
- school Physical Education and sports programmes, including in-school and out-of-school programmes. professional preparation programmes, and Physical education and sports career paths for young people.
- The contribution of Physical Education and sports towards achieving the goal, especially those addressing poverty, primary education, gender equality and health care, should be an important item on the national strategy.
- Professional preparation of. Physical Education and sports teachers should be an important topic of the national strategy. The focus should place greater emphasis on the body of knowledge of the discipline, school-based professional preparation and inclusion issues, e.g., gender, disability and ethnicity
- Acquiring qualitative data on Physical Education lessons and sports in schools;
- Identifying appropriate knowledge, skills and attitudes students should gain from Physical Education and sports;
- Evaluating the impact of these programmes and lessons;
- Communicating with students, parents, educators and personnel;
- Formulating a rationale for increasing Physical Education and sports budgets;
- Planning for a centralized but flexible curriculum to meet different school requirements;
- Formulating the concept, goal, objective and content of a national curriculum in Physical Education and sports;
- Identifying how the Physical Education curriculum can promote and impart knowledge, skills and attitudes about peace;
- Incorporating a fitness component into the Physical Education curriculum that meets the needs of students in an exciting, relevant, interesting and educationally sound manner:
- Ensuring gender equality in all matters of the Physical Education curriculum; and Ensuring equality in all matters of the Physical Education curriculum for marginalized children and children who are less skilled in sport games.

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