

Chapter IV

ANALYSIS OF DATA

AND RESULTS OF THE

STUDY

Chapter IV

ANALYSIS OF DATA AND RESULTS OF THE STUDY

This chapter summarizes the analysis and results of mixed method approach. Firstly the quantitative data analysis and findings (Phase I) were described. Then the qualitative data analysis and findings (Phase II) and finally merging and interpretations (Phase III) were done to arrive at logical and imperative conclusions.

Analysis of Quantitative Data (Phase I)

The purpose of quantitative method was to obtain information concerning current training stress and recovery among athletes of Kerala state. The sample of the study consists of 500 athletes who are training currently, both male and female from different training centers in Kerala state. RESTQ (Recovery Stress Questionnaire) for athletes and Demographic Information sheet were selected as a tool to collect data. The collected data was analyzed using SPSS Version 20. Descriptive statistics was computed to describe the nature of the data, one way ANOVA was used to identify the differences between variables and Tukey HSD post hoc test was used to confirm the differences if any and finally 't' test was used to measure the gender differences with respect to athletes training stress and recovery. The Cronbach's alpha coefficients obtained was .77; the level of significance was fixed at 0 .05 level.

Quantitative Findings

The findings of the descriptive statistics, one way ANOVA, Tukey HSD post hoc test and 't' test on the selected variables are presented in tables from 4.1 to 4.8 and figures from 4.1 to 4.4 respectively.

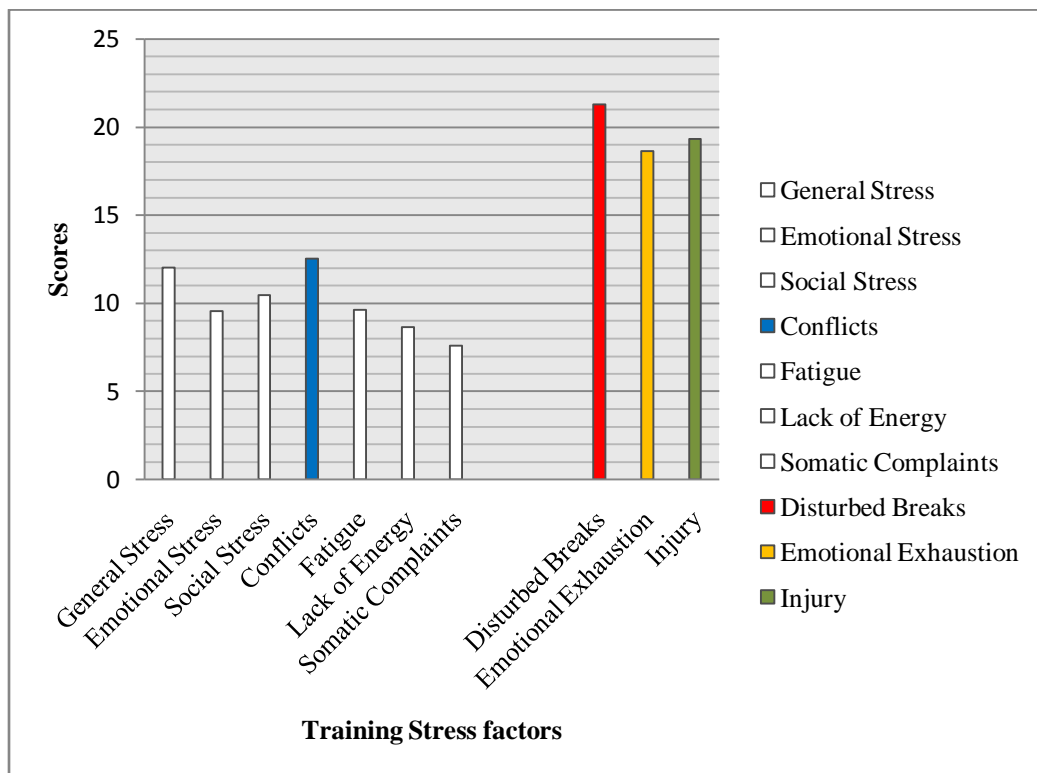
Table 4.1
Descriptive statistics of scores based on Training Stress and Recovery of athletes who are undergoing training currently

	Variables	N	Min.	Max.	AM	SD
General Stress	General Stress	500	4	24	12.02	5.268
	Emotional Stress	500	4	21	9.57	3.157
	Social Stress	500	4	20	10.48	3.471
	Conflicts	500	4	24	12.55	3.605
	Fatigue	500	4	20	9.62	2.804
	Lack of Energy	500	4	19	8.65	2.458
	Somatic Complaints	500	0	19	7.61	3.318
Sports Specific Stress	Disturbed Breaks	500	13	24	21.30	2.110
	Emotional Exhaustion	500	14	24	18.63	1.954
	Injury	500	14	24	19.33	1.810
Overall Training stress		500	101	174	129.75	12.630
General Recovery	Success	500	3	22	13.24	3.961
	Social Relaxation	500	3	24	13.02	3.950
	Somatic Relaxation	500	0	22	10.87	3.611
	General Wellbeing	500	1	24	13.45	4.386
	Sleep Quality	500	2	24	15.29	4.163
Recovery Areas	Being in Shape	500	0	24	10.56	3.701
	Personal-Accomplishment	500	2	22	11.37	3.740
	Self Efficacy	500	1	24	11.24	4.503
	Self Regulation	500	2	22	11.27	3.656
Overall Recovery		500	52	172	110.32	20.168

Table 4.1 shows the scores of overall training stress and overall recovery of athletes who are undergoing training currently, where N = Number of subjects, Min. = minimum score, Max. = Maximum score, AM= Arithmetic mean, SD= Standard deviation.

The overall training stress scores ranged from 101 to 174 with an average of 129.75 and SD 12.630. The greatest training stress factor was ‘disturbed breaks’ (AM=21.30, SD=2.110, range=13 to 24) followed by ‘injury’ (AM=19.33, SD=1.810, range=14 to 24), ‘emotional exhaustion’ (AM=18.63, SD=1.954, range=14 to 24) and ‘conflicts’ (AM=12.55, SD=3.605, range=4 to 24). The bar diagram shows the scores of training stress of athletes who are undergoing training currently. The bars displayed in color refer to the main training stress factors as shown in figure 4.1

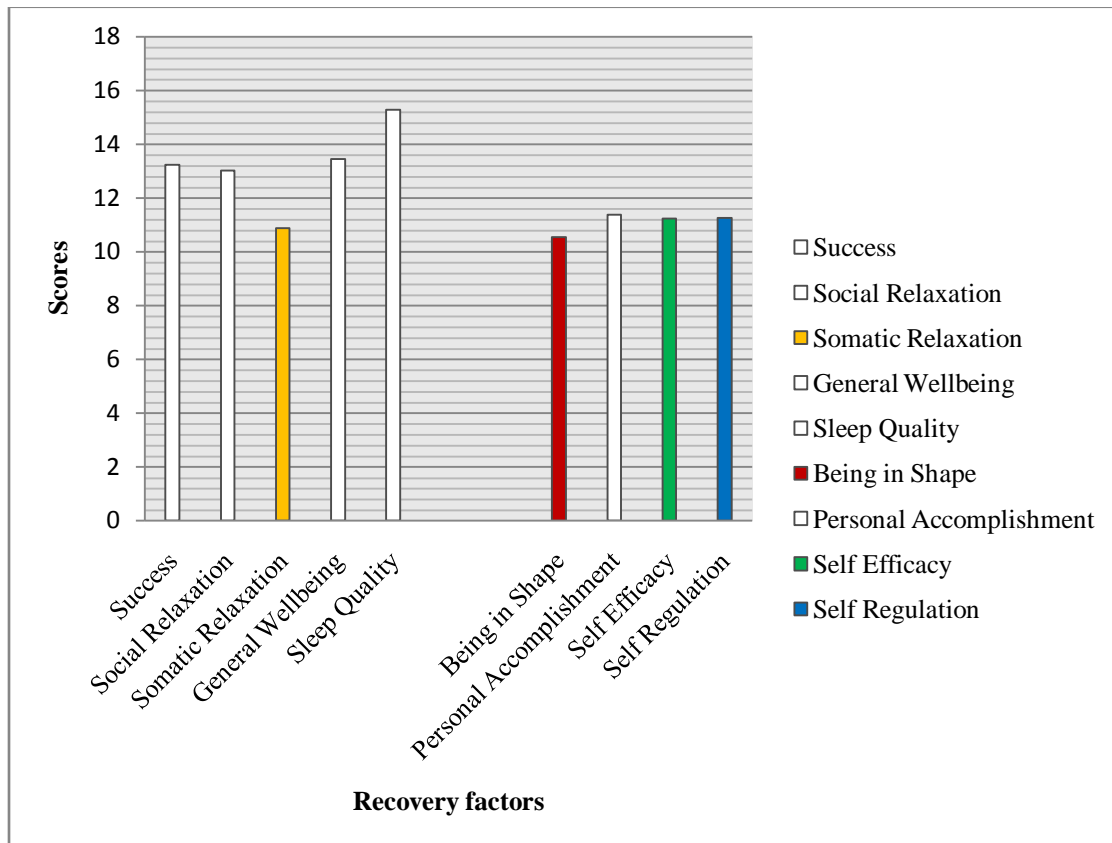
Figure 4.1
Training stress scores of athletes who are undergoing training currently



When compared to overall training stress overall recovery was less in athletes. This indicates that athletes have lesser recovery than what their body requires. When such instances occur frequently, it could be a strong reason that leads the athlete to burnout. The recovery factors that scored lower were ‘being in shape’ (AM=10.56, SD=3.701, range=0 to 24) followed by ‘somatic relaxation’ (AM=10.87, SD=3.611, range=0 to 22), ‘self efficacy’ (AM=11.24, SD=4.503, range=1 to 24) and ‘self regulation’ (AM=11.27, SD=3.656, range=2 to 22). The bar diagram shows the recovery of athletes who are undergoing training currently. The bars displayed in color refer to the lesser recovery factors as shown in figure 4.2

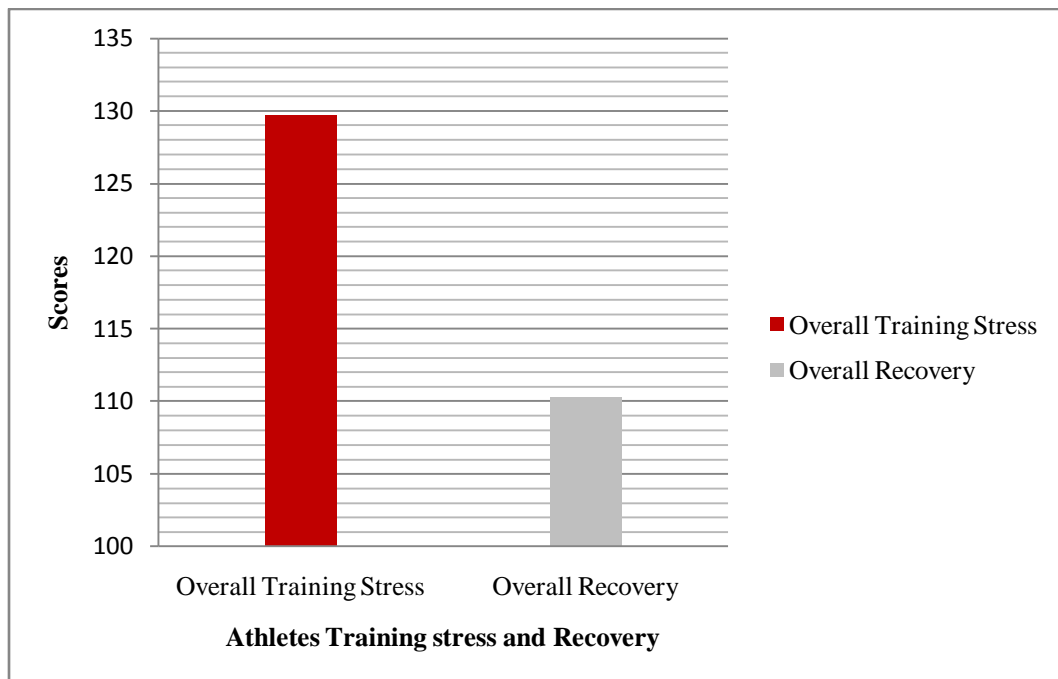
Figure 4.2

Recovery scores of athletes who are undergoing training currently



High score in the stress associated activity scale reflects the subject in stress and low score in recovery oriented scale also reflects subject in stress. Whereas, high score in recovery oriented scales reflects plenty of recovery. The overall training stress was found to be higher than overall recovery, and it ranges from 101 to 174 with an average of 129.75 and SD 12.630. The overall recovery ranges from 52 to 172 with an average of 110.32 and SD 20.168. The bar diagram of overall training stress and recovery of athletes who are undergoing training currently is shown in figure 4.3.

Figure 4.3
Overall training stress scores and overall recovery scores of athletes who are undergoing training currently



The pie diagram shows the Training Stress and Recovery of athletes in percentage from figure 4.4- 4.6

Figure 4.4

Athletes overall Training stress and Recovery scores in percentage

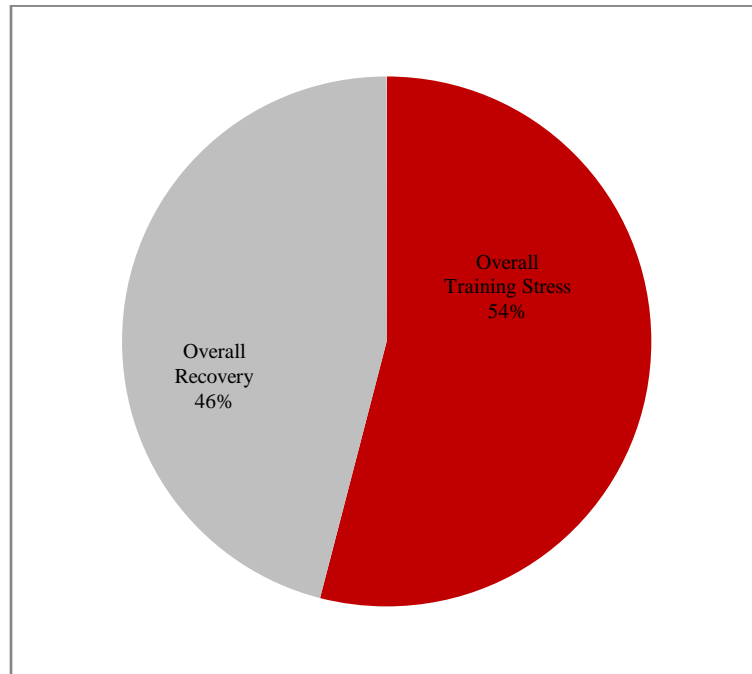


Figure 4.5
Athletes Training Stress scores in percentage

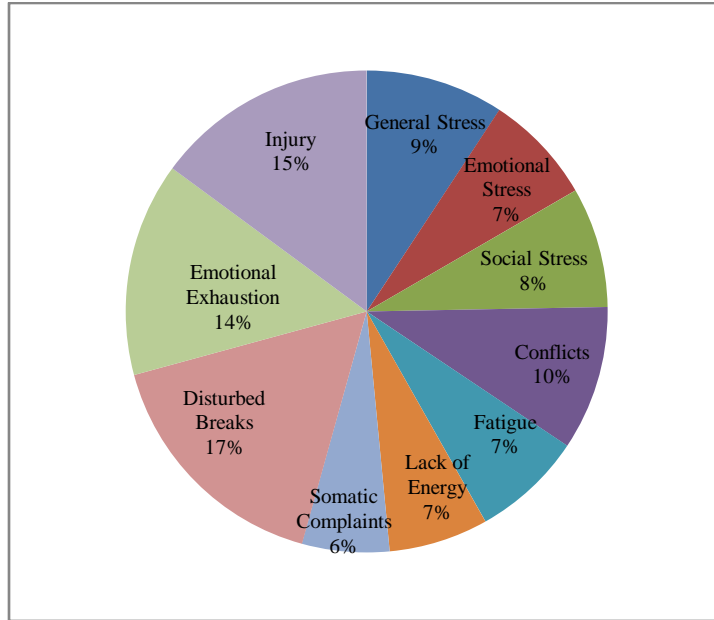


Figure 4.6
Athletes Recovery scores in percentage

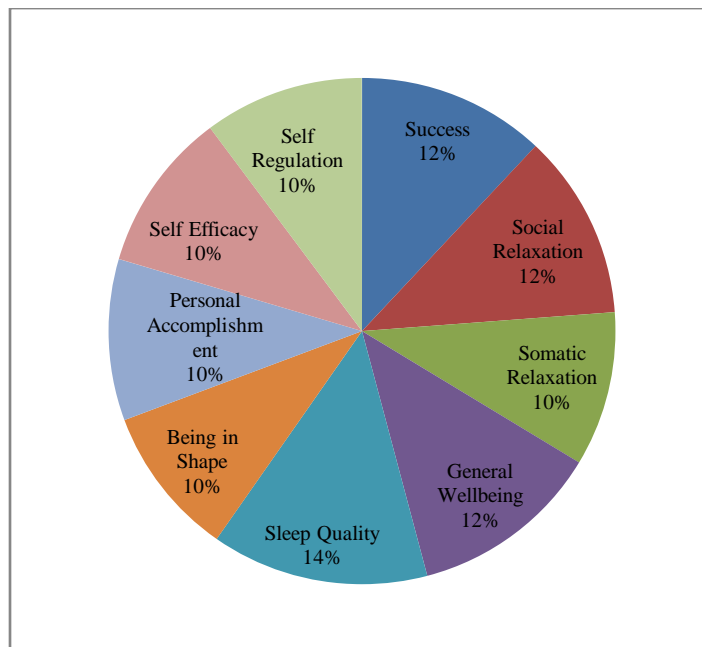


Table 4.2
Data and test of significance (ANOVA) on Demographical variables of athletes with respect to their Training Stress factors

	Source	SS	Df	MS	F	P
Age	Between Groups	51.625	2	25.813		
	Within Groups	79541.117	497	160.042	.161	.851
	Total	79592.742	499			
Training age	Between Groups	682.633	4	170.658		
	Within Groups	78910.109	495	159.414	1.071	.370
	Total	79592.742	499			
Event	Between Groups	1270.071	4	317.518		
	Within Groups	78322.671	495	158.228	2.007	.092
	Total	79592.742	499			
Level of Performance	Between Groups	73.454	3	24.485		
	Within Groups	79519.288	496	160.321	.153	.928
	Total	79592.742	499			
Current competition	Between Groups	232.962	3	77.654		
	Within Groups	79359.780	496	160.000	.485	.693
	Total	79592.742	499			
Training Hours	Between Groups	539.570	3	179.857		
	Within Groups	79053.172	496	159.381	1.128	.337
	Total	79592.742	499			
Injury	Between Groups	491.051	3	163.684		
	Within Groups	79101.691	496	159.479	1.026	.381
	Total	79592.742	499			
Education	Between Groups	2783.501	3	927.834		
	Within Groups	76809.241	496	154.857	5.992	.001*
	Total	79592.742	499			

In order to identify if there was any statistically significant difference between demographical variables on training stress, one way ANOVA was utilized. Based on the scores produced it was found that only education of the athletes shows statistically

significant difference with F value 5.992 and the p value .001 which was lesser than 0.05. All the other variables did not show any statistical significant difference. Since education showed significant difference, Tukey HSD post hoc tests were used to confirm where the level of differences occurred between groups.

Table 4.3
Result of Tukey HSD Post Hoc Tests for Education

Education		Mean difference	Std. error	p	95% Confidence interval	
					Lower bound	Upper bound
High School	Higher Secondary	5.724	1.406	.000*	2.10	9.35
	Graduation	3.493	1.329	.044*	.07	6.92
	Post Graduation	5.925	3.864	.418	-4.04	15.89
Higher Secondary	High School	-5.724	1.406	.000*	-9.35	-2.10
	Graduation	-2.231	1.426	.400	-5.91	1.44
	Post Graduation	.200	3.899	1.00	-9.85	10.25
Graduation	High School	-3.493	1.329	.044*	-6.92	-.07
	Higher Secondary	2.231	1.426	.400	-1.44	5.91
	Post Graduation	2.432	3.872	.923	-7.55	12.41
Post Graduation	High School	-5.925	3.864	.418	-15.89	4.04
	Higher Secondary	-.200	3.899	1.00	-10.25	9.85
	Graduation	-2.432	3.872	.923	-12.41	7.55

Table 4.3 shows the post hoc analysis of education. Significant differences were noticed among high school and higher secondary with p value .000 which was less than 0.05, high school and graduation with p value of .044 was also less than 0.05. There was no significant difference among post graduation and high school, post graduation and higher secondary, post graduation and graduation.

Table 4.4
Data and test of significance (ANOVA) on Demographic profile of
Athletes with respect to their Recovery factors

	Source	SS	Df	MS	F	P
Age	Between Groups	903.305	2	451.653		
	Within Groups	202068.767	497	406.577	1.111	.330
	Total	202972.072	499			
Training age	Between Groups	4834.657	4	1208.664		
	Within Groups	198137.415	495	400.278	3.020	.018 *
	Total	202972.072	499			
Event	Between Groups	2990.426	4	747.607		
	Within Groups	199981.646	495	404.003	1.850	.118
	Total	202972.072	499			
Level of Performance	Between Groups	5050.950	3	1683.650		
	Within Groups	197921.122	496	399.035	4.219	.006*
	Total	202972.072	499			
Current competition	Between Groups	4267.259	3	1422.420		
	Within Groups	198704.813	496	400.615	3.551	.014*
	Total	202972.072	499			
Training Hours	Between Groups	909.319	3	303.106		
	Within Groups	202062.753	496	407.385	.744	.526
	Total	202972.072	499			
Injury	Between Groups	673.186	3	224.395		
	Within Groups	202298.886	496	407.861	.550	.648
	Total	202972.072	499			
Education	Between Groups	351.633	3	117.211		
	Within Groups	202620.439	496	408.509	.287	.835
	Total	202972.072	499			

In order to identify if there was any statistically significant difference between demographical variables on recovery, one way ANOVA was utilized. Based on the scores produced it was found that training age with F value 3.020 and the p value .018 which

was less than 0.05, level of performance with F value 4.219 and the p value .006 which was less than .05 and current competition with F value 3.551 and the p value .014 which was less than 0.05. All the other variables did not show any statistically significant difference. Since, training age, level of performance and current competition showed significant difference Tukey HSD post hoc tests were used to confirm the results where the differences occurred between groups.

Table 4.5
Results of Tukey HSD Post Hoc Tests for Training age

Training age		Mean difference	Std. error	p	95% Confidence interval	
					Lower bound	Upper bound
Below 2 years	2-4 years	-6.724	2.653	.085	-13.99	.54
	4-6 years	-2.431	2.658	.891	-9.71	4.85
	6-8 years	-7.919	2.858	.046*	-15.74	-.09
	Above 8 years	-7.257	3.135	.142	-15.84	1.33
2-4 years	Below 2 years	6.724	2.653	.085	-.54	13.99
	4-6 years	4.292	2.599	.465	-2.82	11.41
	6-8 years	-1.195	2.804	.993	-8.87	6.48
	Above 8 years	-.534	3.086	1.000	-8.98	7.91
4-6 years	Below 2 years	2.431	2.658	.891	-4.85	9.71
	2-4 years	-4.292	2.599	.465	-11.41	2.82
	6-8 years	-5.488	2.809	.291	-13.18	2.20
	Above 8 years	-4.826	3.090	.523	-13.29	3.64
6-8 years	Below 2 years	7.919	2.858	.046*	.09	15.74
	2-4 years	1.195	2.804	.993	-6.48	8.87
	4-6 years	5.488	2.809	.291	-2.20	13.18
	Above 8 years	.662	3.264	1.000	-8.28	9.60
Above 8 years	Below 2 years	7.257	3.135	.142	-1.33	15.84
	2-4 years	.534	3.086	1.000	-7.91	8.98
	4-6 years	4.826	3.090	.523	-3.64	13.29
	6-8 years	-.662	3.264	1.000	-9.60	8.28

Table 4.5 shows the post hoc analysis of training age. Significant differences can be noticed between, below 2 years and 6-8 years with p value .046 which was less than 0.05. There was no significant difference noticed between other groups.

Table 4.6
Results of Tukey HSD Post Hoc Tests for Level of Performance

Level of Performance		Mean difference	Std. error	p	95% Confidence interval	
					Lower bound	Upper bound
International	National	1.821	4.900	.982	-10.81	14.45
	Inter University	4.722	5.767	.846	-10.14	19.59
	State	8.244	4.890	.332	-4.36	20.85
National	International	-1.821	4.900	.982	-14.45	10.81
	Inter University	2.901	3.595	.851	-6.37	12.17
	State	6.423	1.892	.004*	1.54	11.30
Inter University	International	-4.722	5.767	.846	-19.59	10.14
	National	-2.901	3.595	.851	-12.17	6.37
	State	3.522	3.581	.759	-5.71	12.75
State	International	-8.244	4.890	.332	-20.85	4.36
	National	-6.423	1.892	.004*	-11.30	-1.54
	Interuniversity	-3.522	3.581	.759	-12.75	5.71

Table 4.6 shows the post hoc analysis of level of performance. There was significant difference among national and state level athletes with p value .004 which was less than 0.05. No other significant differences were noticed between other groups.

Table 4.7
Results of Tukey HSD Post Hoc Tests for Current competition

Current competition		Mean difference	Std. error	p	95% Confidence interval	
					Lower bound	Upper bound
International	National	-1.43	7.360	.997	-20.41	17.54
	Inter University	1.988	7.721	.774	-17.92	21.89
	State	5.750	7.156	.853	-12.70	24.20
National	International	1.434	7.360	.997	-17.54	20.41
	Inter University	3.422	3.691	.790	-6.09	12.94
	State	7.184	2.286	.010*	1.29	13.08
Inter University	International	-1.988	7.721	.994	-21.89	17.92
	National	-3.422	3.691	.790	-12.94	6.09
	State	3.762	3.267	.658	-4.66	12.18
State	International	-5.750	7.156	.853	-24.20	12.70
	National	-7.184	2.286	.010*	-13.08	-1.29
	Interuniversity	-3.762	3.267	.658	-12.18	4.66

Table 4.7 shows the post hoc analysis of current competition. There was significant difference among national and state level athletes with p value .010 which was less than 0.05. No other significant differences were noticed between other groups.

Table 4.8
Data and test of significance ('t' test) on Gender of athletes with respect to their Training stress and Recovery

Variables	Group	N	AM	SD	t	p
Training Stress	Male	250	130.38	12.766	1.109	.846
	Female	250	129.13	12.486		
Recovery	Male	250	109.28	20.441	1.145	.614
	Female	250	111.35	19.879		

Table 4.8 reveals the results of 't' test for comparing the training stress of male and female, male mean scores was 130.38 and SD 12.766 that of female was 129.13 and SD 12.486. The calculated 't' value 1.109 with p value .846 which was greater than 0.05. It indicated that there was no statistically significant difference between male and female athletes on training stress.

Table 4.8 also reveals the results of 't' test for comparing the total recovery of male and female athletes. Male mean scores was 109.28 and SD 20.441 and that of female was 111.35 and SD 19.879. The calculated 't' value 1.145 with p value .614 was greater than 0.05. It indicates that there was no statistically significant difference between male and female athletes on recovery.

Table 4.9**Details of the athletes on the basis of Demographic Information Sheet**

Variables	level	N
Age	15-20	421
	21-25	71
	26-30	8
Gender	Male	250
	Female	250
Training age	Below 2 years	109
	2-4 years	119
	4-6 years	118
	6-8 years	89
	Above 8 years	65
Events	Sprinters	145
	Middle Distance	108
	Long Distance	100
	Jumpers	100
	Throwers	47
Level of Performance	International	18
	Inter University	36
	National	217
	State	229
Current Competition	International	8
	Inter University	42
	National	98
	State	352
Training Hours	0-2 hours	26
	2-4 hours	259
	4-6 hours	211
	6-8 hours	4
Injury	Over Training	10
	Sports Field	94
	Other Reasons	20
	No Injury	376
Education	Post Graduation	11
	Graduation	170
	Higher Secondary	138
	High School	181

Table 4.9 shows the demographic details of the athletes who are training currently.

Discussion on Findings

The analysis of the results reveals that the athletes who are training currently are experiencing greater training stress than adequate recovery. The overall training stress with an average of 129.75 with SD 12.630 was found to be higher than overall recovery with an average of 110.32 with SD 20.168. The results indicate that the athletes are experiencing higher training stress than recovery; the greatest training stress factor was 'disturbed breaks' (AM=21.30, SD=2.110, range=13 to 24), followed by 'injury' (AM=19.33, SD=1.810, range=14 to 24), then 'emotional exhaustion' (AM=18.63, SD=1.954, range=14 to 24) and finally 'conflicts' (AM=12.55, SD=3.605, range=4 to 24). The recovery factors that scored low were 'being in shape' (AM=10.56, SD=3.701, range=0 to 24), followed by 'somatic relaxation' (AM=10.87, SD=3.611, range=0 to 22), then 'self efficacy' (AM=11.24, SD=4.503, range=1 to 24) and finally 'self regulation' (AM=11.27, SD=3.656, range=2 to 22). It may be because of the constant pressure to win and to perform consistently at their best. This issue could force the athlete to work harder and harder without proper recovery; lack of adequate recovery will increase the chance of injury. Once the training stress exceeds the tolerance capacity of the athletes, they will feel the negative effect of excessive demand which become a burden that generally leads to extreme training stress and burnout. The results are consistent with the findings from studies given below. Raedeke (1997) examined athlete burnout from a commitment perspective, which suggested that athletes can be involved in sport for a combination of reasons related to sport attraction (want to be involved) and sport entrapment (have to be involved). According to this framework, athletes are likely to experience burnout if they are involved in sport primarily for entrapment-related reasons. Gould and Dieffenbach (2002) found that failure to recover properly from the stress of training produces a state of overtraining, under recovery and burnout. Cresswell and Eklund (2006) conducted a study to examine changes in athlete burnout over a thirty-week "rugby year". Results showed that burnout is associated with injury. Gustafsson (2007) investigated the burnout process using a case-study approach. He found that there appears to be a relationship between overtraining syndrome and burnout, and the study gave support to the notion that burnout is the most severe outcome on the training fatigue continuum. Lack of recovery, too much sports and high external demands were described

as causes of burnout. Coakley (1992) conducted a study on burnout among adolescent athletes: a personal failure or social problem. Most explanations of burnout among young athletes identify chronic or excessive stress as the cause. Trudine (2012) examined differences in stress and recovery between playing positions, he concluded that the backline players experienced increased stress and decreased recovery than forwards players. Altfeld and Kellmann (2014) compared the recovery-stress state of coaches. Results showed that full-time coaches had significantly higher social stress values and lower social recovery than part-time coaches.

Discussion on the Hypotheses

The first hypothesis stated that the athletes who are undergoing training currently will have excessive training stress than appropriate recovery.

According to the results of this study the overall training stress was found to be higher than overall recovery with an average of 129.75 with SD 12.630 and the overall recovery with an average of 110.32 with SD 20.168. This shows that athletes are having high training stress than recovery; the greatest training stress factor was found to be 'disturbed breaks', followed by 'injury', 'emotional exhaustion' and 'conflicts'. Lesser recovery factor was 'being in shape', 'somatic relaxation', 'self efficacy' and 'self regulation'. Hence the hypothesis was accepted.

The results were consistent with the findings from previous studies, Jurimae et al. (2004) investigated the effect of rapidly increased training volume on performance and recovery-stress state over a six-day training camp. Results showed that somatic components of stress like fatigue, somatic complaints and injury had increased and recovery factors like success, social relaxation, sleep quality, being in shape and self-efficacy had decreased. Trudine (2012) examined differences in stress and recovery between playing positions, he concluded that the backline players experienced increased stress and decreased recovery than forwards players. Gustafsson et al. (2008) conducted a study to understand burnout in elite athletes, findings of the study showed that stressors

like multiple demands, too much sport, high expectations and lack of recovery were considered primary causes of burnout.

In the second hypothesis, it was stated that there would be significant difference in demographic variables (age, gender, training age, event, level of performance, current competition, training hours, injury and education) and training stress among athletes.

The findings of the study show that only one demographic variable namely education showed statistically significant difference with training stress. Post hoc test reveals that those athletes who were in high school had significant difference with higher secondary with p value .000 and graduate athletes with p value .044 but not with post graduate athletes. The athletes who were in higher secondary had significant difference with high school with p value .000 but not with graduate and post graduate athletes. Graduate athletes had significant difference with high school with p value .044 but not with higher secondary and post graduate athletes. Post graduate athletes did not have any significant difference with other athletes with different education level. Hence, the research hypothesis was rejected with regards to all the variables other than education. Previous research studies were consistent with the findings of the study; Harris and Ostrow (2008) studied coach and athlete burnout: “the role of coaches’ decision-making style”. Results revealed an inverse relationship between athletes burnout and demographic behaviors. Lackritz (2004) conducted a study on burnout among university faculty: incidence, performance, and demographic issues. Results showed that age is inversely correlated to training stress factors like emotional exhaustion. Purvanova and Muros (2010) conducted a meta-analysis to know the gender differences in burnout. Results showed that gender difference did not vary significantly in male vs female burnout. Cresswell and Eklund (2005) studied Changes in athlete burnout and motivation over a 12-week ‘league tournament’. He summarized that demographic variables like ‘year of experience’ and injury may vary over time. Koustelios (2001) studied burnout among Greek Sport Centre Employees. Results showed that there is no relationship between employee’s gender and age on burnout. Taylor et al. (1990) studied

perceived stress, psychological burnout and paths to turnover intentions among sport officials. Analysis showed that age was negatively related to burnout.

The third hypothesis stated that there would be significant difference in the demographic variables (age, gender, training age, event, level of performance, current competition, hours training, injury and education) and recovery among athletes.

Based on the findings it was established that demographic variables like training age, level of performance and current competition had statistically significant difference with recovery. Post hoc results of training age showed that those athletes who had training age of below 2 years, had significant difference from the athletes who had training age of 6-8 years with p value at .046 but not with other athletes with different training age. The athletes with training age 6-8 years had significant difference from athletes who had below 2 years of training with p value at .046, but not with other training age groups. The athletes with training age 2-4, 4-6 and above 8 years did not show any significant difference from other training age groups.

Post hoc test for level of performance revealed that those athletes who represented national level competitions had significant difference from state level athletes with p value at .004 but, not from international and interuniversity athletes. The state level athletes had significant difference from national level athletes with p value at .004 but not from international and interuniversity athletes. The international athletes did not show any significant difference from national, interuniversity and state level athletes. Similarly interuniversity athletes did not show any significant difference from international, national, and state level athletes.

Post hoc test for current competition revealed that those athletes who are currently competing in national competitions had significant difference from athletes who were competing in the state competitions with p value at .010 but, not from international and interuniversity athletes. The athletes who are currently competing in state competitions had significant difference from athletes who are competing national

competitions with p value at .010 but not from international and interuniversity athletes. The currently competing international athletes did not show any significant difference from national, interuniversity and state competing athletes similar is the case with interuniversity athletes; they also do not show any significant difference from international, national, and state competing athletes. The results partially support hypothesis three, which states that demographical variables like training age, level of performance and current competition have statistically significant difference from recovery. Hence, the research hypothesis was rejected in the case of all the variables other than training age, level of performance and current competition.

The fourth hypothesis stated that sports specific stress would be the most common factor leading to excessive training stress.

Based on the findings and results of this study it could be established that sports specific stress like 'disturbed break' (AM= 21.30, SD=2.110, range=13 to 24), 'emotional exhaustion' (AM= 18.63, SD= 1.954, range=14 to 24) and 'injury' (AM= 19.33, SD= 1.810, range=14 to 24) were higher than other variables. Hence, this hypothesis was accepted.

The results were consistent with the findings from the following studies. Jurimae et al. (2004) investigated the effect of rapidly increased training volume on performance and recovery-stress state over a six-day training camp. Results showed that somatic components of stress like fatigue, somatic complaints and injury had increased. Pastore and Judd (1993) studied gender difference in burnout among coaches of women athletic teams. Results reported that female coaches had higher level of emotional exhaustion than males. Caccese and Mayerberg (1984) also studied gender difference in 'perceived burnout' of college coaches. Findings showed that females scored higher than male in emotional exhaustion. Gustafsson et al. (2010) explored the relationship between hope and burnout in competitive sport. Multivariate analysis showed that low- hope athlete scored high in burnout subscale like emotional exhaustion. Shrier and Halle (2011)

conducted an exploratory study on psychological predictors of injuries in circus artists. Results showed that injury and emotional exhaustion were associated with injury risk.

Analysis of Qualitative Data (Phase II)

The purpose of qualitative method was to gain information about cause and consequences of burnout among athletes who were no longer active (burnt out) and to understand the views of athletic coaches on cause of athlete's burnout. Semi structured interview was conducted with five burnt out athletes and five athletic coaches from different parts of Kerala state. Data was collected through face to face interviews and telephonic interviews (Gustafsson et al., 2008). After verbatim transcription of the interview, a qualitative content analysis was conducted (Graneheim & Lundman, 2004; Hsieh & Shannon, 2005). In the first interview with burnt out athletes, one theme was formulated from the categories and in the second interview with the coaches, another theme was formulated. They were then merged together and one common theme was identified from the interview transcriptions and coding procedure.

Qualitative Results and Discussions

This section summarizes the findings and discussion section together. For a better understanding it is divided in to three parts. The first part has a theme related to causes and consequences of burnout, based on what emerged from the interview with the athletes who were no longer active. In the second part another theme was formulated from the views of coaches on causes of athletes burnout and in the third part one common theme of combined factors associated with burnout was identified from the interview transcripts and coding procedure.

Table 4.10
Causes and Consequences of Burnout

Code (Stage- I)	Sub categories (Stage- II)	Categories (Stage-III)	Theme (Stage- IV)
<ul style="list-style-type: none"> • High external demand • Lack of confidence • Competition gap due to external pressure 	Unusual pressure	Conflicts	Causes and Consequences of Burnout
<ul style="list-style-type: none"> • Vein cramping due to over loading • History regarding injury • Pain at the time of warm up • Stiffness in the body • Lack of confidence • Challenges of rehabilitation 	Feeling that I may get injured during or after competition	Injury	
<ul style="list-style-type: none"> • Drained after training • High pressure due to competition • Lack of energy • Competition outside the state 	Lack of Physical fitness	Somatic complaints	
<ul style="list-style-type: none"> • Coach- athletes relationship • Irritating behaviour from administration side • Aggressiveness • Pressuring parents 	Affected by others behaviour	Social stress	
<ul style="list-style-type: none"> • Off season workouts • Managing training and school works • Exhausted performance in the competitions • Worries about the future 	Deprived of good sleep	Sleep quality	
<ul style="list-style-type: none"> • Lack of motivation • No. of competition • Lack of mental training • Inappropriate goal setting 	Preparing for performance	Self regulation	

Table 4.10 illustrates codes, subcategories and categories that emerged from the interview related to cause and consequences of burnout. The categories formulated were Conflicts, Injury, Somatic complaints, Social Stress, Sleep Quality and Self Regulation.

Cause and Consequences of Burnout

Conflicts/ Pressure

Among the five burnt out athletes three have described conflicts as an important part of their burnt out experience. Participant F stated: “Sometimes there will be unusual pressure at the time of competition due to high external demand.” This external demand created undue pressure on the athletes and could certainly lead to burnout if the athletes are unable to cope up with it properly. Hence, this theme was included based on high external demand or expectations from others. Participant A stated that: “Pressure depends upon the competition gap”. The competition gap occurs when work pressure, or any such commitment forces the athlete to skip certain meets or competitions. Hence, when she is ready to compete again she is unaware of fellow athletes performance level, which adds to her existing pressure. Participant R described: “While looking at other athletes I would lose my confidence and my muscles become stiff.” Appearances of other athletes create some tension and pressure and results in muscle stiffness. There are some literatures which shows conflicts would reduce performance which could lead to burnout. Lautenbach et al. (2015) described athletic performance will decrease during high pressure condition. In a study Siesmaa et al. (2011) identified conflicts as a prominent factor that contributed to child sports dropout. Gustafsson (2007) investigated burnout experience using qualitative interviews where he described that high external demand was considered as one of the main cause for burnout. Kahn’s (1978) said that role of conflicts was positively correlated with stress and burnout.

Injury

All five athletes described injury as a contributing factor to sports drop out. Participant N stated: “If I have pain due to muscle cramping I feel that I may get injured during the competition.” According to participant F, “Due to my previous history regarding a ligament injury, some time I am not able complete my events and once I had withdrawn during the competition”. He had further discussed about the “Rehabilitation issue.” Hence the theme which included both history regarding injury and challenges of rehabilitation is identified as the other theme. Participant A commented: “If I have pain at

the time of warm up I almost always think about an injury.” It shows athletes could lack self efficacy. Participant B stated: “If I am going for the competition with back pain, my body becomes stiff and I will reduce the movements and always think about back pain.” Participant A and B showed lack of confidence due to their previous history regarding injury. It could increase competitive anxiety and it may negatively affect performance. Participant R stated: “I have injury but I do not think about the injury because of my competition pressure”. Because of his early success he was forced to train with his injury and that injury progressed to overused injury in a much more severe manner. Some of the findings have also described that injury could lead to burnout. Ruddock- Hudson et al. (2014) examined psychological responses to injury and they said that psychological factors could be considered as a risk factor for injury. Jurimae et al. (2004) investigated the effect of rapidly increased training volume on performance and recovery stress state. Results showed that somatic component of stress like injury had increased after training. Shrier and Hall (2011) conducted a study to find out relationship between psychological risk factors and injury risk in circus artists and concluded that self efficacy had strongest relationship with injury. Siesmaa et al. (2011) suggested impact of sports injury as a contributing factor to child sports dropout. Rees et al. (2010) identified impact of social support in the injury process as a complicated one and importance should be give to increase social support for injured athletes. Cresswell and Eklund (2006) conducted a study on rugby players and concluded that sports injury was also associated with burnout.

Somatic Complaints

The athletes described different types of stress factors which could lead to burnout of which somatic complain was also a factor.

Participant N stated: “Sometimes I feel drained after training.” the athletes were forced to do training with extremely high intensity and volume because of high pressure on the athlete to win. Participant B commented: “Due to lack of energy I sometimes feel exhausted during the training.” because of high competition demand athletes were exhausted and their strength drained completely. There is an agreement with the literature that exhaustion could be the core dimension of burnout as suggested by Maslach et al.

(2001), Schaufeli and Buunk (2003). Participant A commented: “If I have competition outside the state I feel physically weak before the competition.” Some competition will always create somatic complaints due to some uncontrollable stress factors like food, climate changes and issues related to travelling. An athlete who is stressed will seem tired, lacking energy and without a competitive edge. This finding is supported by Kellmann and Gunther (2000) who explained that lack of energy and somatic complaints would increase the training stress. Filho et al. (2015) examined the relationship between stress factors and performance. He explained that performance would reduce because of increased stress factors. Over training or high competition demands could also lead to burnout. Gustafsson (2007) investigated this area and said that ‘too much training’ and ‘high external demand’ could be causes of burnout. Jurimae et al. (2004) investigated the rapidly increased training volume on performance and recovery stress state. Results revealed that somatic complaints had increased during the time of heavy training.

Social Stress

The athletes described social stress like arguments, fights and irritation concerning others as contributing factors to burnout. Participant B stated: “Yes I am getting affected because of my coach. He does not understanding me.” Poor coach-athlete relationship showed stressful social relation and this lack of social support could be a contributing factor to burnout. Participant F commented: “Sometimes there will be some irritating behavior from some (authorities) administration; it could create pressure and tension in us.” Arguments or fights just before the competition would affect athletes performance as they will lose their self confidence and hope.

According to participant N: “I will take it as a challenge and I will try to show them who I am”. Aggressive behavior can create irritation and tension due to which they may lose their concentration. Concentration is very much critical for an athlete to perform well but due to some social stress factors the athlete would be distracted easily and create a stressful situation. Participant R said: “Parents pressure could also create problems.” feeling of pressure to perform and inappropriate expectations of the parents or peer are also important contributors of burnout. The findings give an idea of how the lack of

social support can contribute to burnout. Research that support this claim are Cresswell and Eklund (2006); Gould et al. (1996). Raedeke and Smith (2004) examined social support and burnout. Their results revealed that social support satisfaction had linked stress mediated relationships with overall burnout levels. Coakley (1992) conducted a study on burnout among adolescent athletes and identified chronic and excessive social stress as the cause for burnout.

Sleep Quality

Sleep quality indicates having trouble falling asleep or interrupted sleep. Participant F stated: “Heavy work load in the off season had created sleep disturbance.” Training in the off- season is significantly high and it is for developing strength and stamina, hence there would be less chance of complete recovery but, insufficient recovery could also lead to maladaptation. Participants N commented: “Heavy training and education worked together to create interrupted sleep.” To excelling in both sports and education was very difficult and can create tension and disturbed sleep. Participant A stated: “After the competition I may not be able to sleep because of an exhausted performance”. After the competition definitely the athletes will be tired because of the exhausted performance. It also showed that athlete’s tiredness could be due to the insufficient recovery. Participant B said: “Some time I will not get sleep because I am thinking of what I should do after my education”. Too much worries about the future could create a very stressful situation, it also contributes to burnout. Gustafsson et al. (2008) conducted a study on athletes who had quit sport due to burnout; findings show that athlete burnout as a multidimensional syndrome in those stressors like lack of recovery was considered as one of the primary cause of burnout. Jurimae et al. (2004) investigated the effect of rapidly increased training value on performance and recovery. Stressed state results showed that a recovery factor like sleep quality had decreased after the training. Gustafsson (2007) investigated the prevalence of burnout among competitive athletes in which he concluded that lack of recovery was also considered as one of the causes for burnout.

Self-regulation

Self- regulation refers to the psychological skills training, when an athlete is preparing for the competition.

Participant A stated: “Lack of motivation had affected my performance”. Some athletes were very well motivated at the beginning after which their motivation slowly decreased and finally disappeared completely. Lack of motivation when experiencing burnout is consistent with earlier research namely Cresswell and Eklund (2005a); Gould et al. (1996) their findings indicated a process from being highly motivated to progressively losing motivation and eventually the athletes experienced a devaluation of sport and finally left it entirely. Participant R stated: “It depends on the number of competitions”. If the competitions are more, athletes may not get enough time to prepare well, if there are only limited numbers of competitions then the athletes could prepare mentally and physically in such a way that they can perform well. Lack of psychological skill training may have also resulted in the stressful situation. Trudine (2012) also suggested the same opinion. Participant F commented: “Not able to set my goals due to my injury”. If an athlete had previous history of injury they may not be able to set their goals because they have the tension that they may get injured again during the competition and chances of losing hope in that kind of situation are very high. Earlier research also supported these factors. Gustafsson et al. (2010) examined the relationship between hope and athlete burnout. The result revealed that a characteristic of low hope athlete might pose a risk factor on athlete burnout.

Table 4.11
Views of Coaches on Cause of Athlete Burnout

Coaches	Coaches opinion
Coach 1- A	<ul style="list-style-type: none"> • Unscientific method of training • Overtraining
Coach 2- S	<ul style="list-style-type: none"> • Lack of physical fitness • Lack of social support • Starting of new relationship
Coach 3- N₁	<ul style="list-style-type: none"> • Overtraining • Reaching maximum performance at school age itself • Injury due to wrong technique
Coach 4- N₂	<ul style="list-style-type: none"> • Less talent
Coach 5- P	<ul style="list-style-type: none"> • Overtraining

Table 4.11 illustrates the opinion of the five athletic coaches that emerged from the interview on cause of athlete burnout. The opinions include Unscientific method of training, Overtraining, Lack of Physical fitness, Lack of social support, Starting of new relationship, Reaching maximum performance at school age itself, Injury and Less talent.

Views of coaches on cause of athletes burnout

Unscientific Method

Coach A discussed about unscientific method of training. According to her opinion unscientific method was also a cause for injury and it could lead to athlete burnout. “Some Physical Education Teachers and Coaches are still following the old methods of training such as continuous running for everybody; if an athlete is good in jumping, they should not train him/her for too much continuous running because they

could lose their bounding capacity it should be very much relevant for a jumper to perform well especially for triple jumpers and high jumpers”.

Training should be based on the specific event of the athlete. According to each and every event, there should be specific training, due to such unscientific training athletes are failing to master the correct technique. Ping & Yunfa (2013) conducted a study on symptoms of knee pain. Results showed that knee pain symptoms have something to do with the unscientific training and failing to master the correct technical essentials. Ran et al. (2006) analyzed common part of athletic injury on badminton players. Result showed that attack rate of injury was 78.84% and the type of injuries was acute and chronic injury of the wrist and shoulder. The main cause of injury was unscientific action. He concluded that it was necessary to learn and master correct sports technique to make sufficient preparations. Gearity and Murray (2011) studied athletes' experiences of the psychological effects of poor coaching. Five themes were identified from this study and that were poor teaching, uncaring, unfair, inhibiting athletes mental skills and athletes coping.

Overtraining

Coach N stated: “Overtraining at the time of growing age”. Growing age is the time when an athlete can easily adapt to training because of the adequate presence of growth hormones. Hence, the coaches are taking advantage of that period and giving over training during that time because of which the athletes are performing well at the school level and junior level competitions and setting national records. However as time passes, the coaches are not able to increase the training load because the athletes are already reached their peak performance according to their age and body weight. Therefore, they are forced to continue their old training and hence results in plateau or decreased performance. Lemyre et al. (2007) studied elite athlete's symptoms of over training and said that over training is linked to signs of burnout. Lormes et al. (1996) also conducted a study among elite rowers on long term over training. Result showed that an athlete requires complete regeneration to avoid succumbing to over training syndrome.

Participant A stated: “Overtraining because of the competition between the institutions.” Some district level competitions are tougher than state level competitions because of the stiff competition between the institutions. Just for the sake of ego the institution will keep the talented athletes with themselves and force them to do all the competitions with them. Hence there would be high chance of developing injuries. The institution will always be focused on their names not necessary for the wellbeing of the athletes. Hence, those athletes are masking the signs and symptoms of maladaptation and continue their training without sufficient rest. This is consistent with findings of Cresswell and Ekland (2006) in rugby players in which an ‘anti rest’ culture was associated with burnout.

Coach P said that: “Weight loading without considering age or weight would also lead to burnout”. Some coaches are increasing the training load without considering athletes age or body weight. Hence that athlete may not be able to adapt to that training and start showing over training syndrome. There was a significant relationship between overtraining syndrome and burnout. According Gustafsson (2007) over training syndrome can directly create stressful situations which have both psychological and physiological consequences. Silvas (1990) also analyzed the training stress syndrome in competitive athletes and said that negative training stress can lead to burnout. Kellmann (2010) conducted a study on preventing overtraining in athletes in high-intensity sports. Results showed that overtraining, fatigue and injury were the barriers for improving quality and quantity of training.

Lack of Physical Fitness

Coach A stated: “Due to lack of physical fitness athlete could have dropped out from the field”. Some of the athletes may not have enough physical fitness to continue in sports. Today’s competitions are much tougher; very high intensity and exhaustive performances requires high degree of physical fitness, if the athlete is lacking in physical fitness to compete, they could develop training stress and it can lead to burnout. Kellmann and Klaus-Dietrich (2000) in their study associated lack of energy with increased stress factors.

Lack of Social Support

Coach A described: “Both lack of social support and social stress as contributing factors to burnout”. Lack of social support like lack of parental support, lack of friends and lack of coach’s support could create stressful situation. Coach and athlete relationship is an important factor; poor communication between them could create conflicts. Parents and peer groups also play a major role in athletes burnout. Defreese and Smith (2013) examined relationship of teammate social support and burnout. Results showed that perception of support availability from teammates was an important correlation of burnout. Coakley’s (1992) explained burnout as a social problem. French and Smith (2006) explained combination of parent, peer group and friendship relationship as critical to full understanding of social relationship.

Starting of New Relationship

Coach S stated: “Burnout can also happen because of athletes entering in to new relationships like love affairs”. Due to teenage attractions, some of the athletes were losing their discipline and starting new relationship like love affairs which could be an unwanted distraction if they are unable to handle it properly. Some athletes get affected negatively due to it and training suffers, as they become lazy and this could affect their sleep too. Because of such combined effects, there are high chances for them to get burn out.

Reaching Maximum Performance at School Age Itself

Coach N₁ stated: “Reaching maximum performance at school age itself.” This clearly shows the evidence of over training. Maximum number of athletes would be there in school till higher secondary level, after which they have to leave the school. Hence the coaches in such schools force those athletes to reach their maximum performance at the school age itself. The athletes while leaving the school are on the verge of dropping out, injured or with some psychological problems. The institutions or coach would not take care of those problems as they would no longer be with them. Further, they have the attitude that institution’s name is more important than the athletes progress. Because of this attitude a number of talented athletes are dropping out from their sports. Sohal et al.

(2013) studied about organizational stress, experimented on Indian elite female athletes and the impact on their psychological well being, on the basis of interview, most commonly cited stress factor was lack of support from the organization and limited access from support staff. Fraser-Thomas et al. (2008) examined adolescent sport dropout, early training or early peak performance was described as one of the reasons for drop out.

Injury Due to Wrong Technique

Coach N₁ stated: “Injuries occurring due to the wrong practice of the technique.” Skill perfection is very much essential for an athlete to execute correct movement but if an athlete is practicing with wrong technique, he or she could easily get injured due to lack of proper technical knowledge. Some coaches may not able to correct the techniques and that could result in athlete injury. Beneka et al. (2007) studied the injury incident rates and its reasons. Results showed that wrong technique was an important injury factor among sportspersons. Saragiotto et al. (2014) also conducted a quantitative study to know the opinion of runners about risk factors associated with running injuries, most cited reasons was ‘not stretching’, ‘not warming up’ and ‘wearing wrong shoes’. The later could also lead to running injuries. Ran et al. (2006) investigated relative factors of wrist and shoulder injuries in badminton. His results suggested that, to prevent wrist and shoulder injury the athlete had to learn and master correct sports technique.

Less Talent

Coach N₂ stated: “Due to decreased talent athletes were dropping out.” Ability and talent plays an important part in athletes success. Pearson et al. (2006) said that talented athletes are more suited for sports. Due to lack of talent, some athletes may not be able to adapt to the training load. This could lead to creation of training stress and ultimately result in sports burnout.

Factors Associated with Burnout

Findings from the first two sections reveal some common themes as factors associated with burnout, which were identified from the interview transcriptions and coding procedure.

When the burnt out athletes and coaches were asked which factor had mainly contributed to burnout, 10 common factors emerged. They were Conflicts, Injury, Somatic Complaints, Sleep Quality, Self Regulation, Unscientific Method, Overtraining, Starting of New Relationship, Reaching Maximum Performance at School Age Itself and Less Talent.

Merging Quantitative and Qualitative Results (Phase III)

Quantitative results conclude that athletes who are training currently had excess of training stress than recovery. Greater training stress factors were 'disturbed breaks', 'injury', 'emotional exhaustion' and 'conflicts'. Decreased recovery factors were 'being in shape', 'somatic relaxation', 'self efficacy' and 'self regulation'. Demographic variables like education had impact on training stress. Training age, level of performance and current competition also show significant difference on recovery of athletes. Based on the results of the interview it could be concluded that the cause of burnout are the following 10 common factors, namely Conflicts, Injury, Somatic Complaints, Sleep Quality, Self Regulation, Unscientific Method, Overtraining, Starting of New Relationship, Reaching Maximum Performance at School Age Itself and Less Talent. This indicates that training stress would have direct influence on burnout because common training stress factors and cause of burnout are almost same.

Interpreting the Results

The present results suggest that athletes who have high training stress will have significant chance to burnout from the field. There is some literature which show training stress could significantly influence burnout. Gustafsson (2007) investigated the burnout process using a case-study approach and the study gave support to the notion that burnout is the most severe outcome on the training fatigue continuum. He also investigated the

burnout experience using qualitative interviews. Lack of recovery, too much sports and high external demands were described as causes of burnout. Coakley (1992) also conducted a study on burnout among adolescent athletes. Most explanations of burnout among young athletes identified chronic or excessive stress as the cause and were explained as a social problem. Gustafsson et al. again conducted a study in 2008 to understand burnout in elite athletes. Stressors like multiple demands, too much sport, high expectations and lack of recovery were considered as primary causes of burnout. Flor (1996) conducted a study to find out the relationship between personality, hardness, stress and burnout. He concluded that stress will increase the level of emotional exhaustion, depersonalization and reduce level of personal accomplishment. The present results are also in agreement with Kahn's hypothesis (1978) that role conflict is positively associated with stress and burnout.

Figure 4.7

Graphical Representation of the Interpretation

