DISCUSSION

The acquisition of expert performance has been studied for decades across a range of human performance domains. One of the major interests of talent development researchers in recent years has been the efforts to identify significant factors that contribute towards the attainment of eventual excellence in sports and academics (Williams & Ericsson, 2008). Exceptional levels of performance have been documented in a wide range of human performance domains (Ericsson & Smith, 1991). Expertise in sport is highly prized and world-class sports performers have captured the attention of global audiences for decades. As a consequence, reaching elite status is a major life purpose for many athletes who commit years towards achieving this accolade (Abbott, Collins, Martindale, & Sowerby, 2002; Stambulova, 2009; Vaeyens, Gullich, Warr, & Philippaerts, 2009).

Ericsson et al. (1993) proposed a theoretical framework termed the theory of deliberate practice to account for the characteristics and developmental experiences of individuals who acquire exceptional levels of performance in any discipline. This theory proposes that acquiring expertise across any domain is the result of undertaking an extensive acquisition period of approximately ten years involving the accumulation of thousands of hours of physically and mentally demanding practice regimes whilst overcoming effort, motivational and resource constraints that serve as barriers to the attainment of elite performance (Hayman, 2012). Ericsson and Smith (1991) proposed a three stage framework for the study of expertise which they referred to as the Expert Performance Approach (Ericsson, 2003). This approach suggested how the nature of expert performance should be initially captured in a laboratory setting using representative tasks that identify reliably superior performance. In the second stage, process-tracing measures are then employed to determine the mechanisms that mediate expert performance on the task and finally, the specific types of activities that lead to the acquisition and development of these mediating mechanisms are identified in the third stage.

Several studies have challenged environmentalist approach to developing excellence by claiming that the acquisition of exceptional sporting abilities are best
explained genetically (Anderson, Schjerling, & Satlin, 2000; Manning & Taylor, 2001; Rice et al., 2002; Taubus, 2000). A key finding of these studies is the suggestion about how world class status in any discipline is dependent upon a multitude of variables including innate ability, initial interest, excellent instruction and appropriate practice regimes.

Considering this framework researchers have well established how quantity and quality of practice are crucial to the development of expertise and teachers and coaches should carefully consider the micro-structure of practice sessions to maximise learning opportunities (Deakin & Cobley, 2003; Ericsson, 2003). In emphasising this point, Farrow (2012) stated “practice should be a continual striving to lift performance to a new skill level such that plateaus in learning do not occur.”

Using a quantitative questionnaire, the aim of Ford, Ward, Hodges, and Williams (2009) was to examine domain specific activities experienced by three groups. Findings revealed no significant differences between the amounts of sports played and mean hours of engagement in the three groups.

Durand-Bush and Salmela (2002) interviewed ten former world and Olympic champions and found that the psychological factors associated with the development and maintenance of expert athletic performance included self-confidence, motivation and perseverance.

The research undertaken by Holt and Dunn (2004) which examined the psychosocial competencies and environmental conditions associated with achieving elite adolescent success in soccer also emphasises the importance of psychological skills and behaviours in talent development. This study which utilised academy level Canadian and English soccer players revealed four major psychosocial competencies which appear to be critical for success in elite youth soccer. They were classified as discipline, resilience, commitment and social support. International standard youth soccer players also displayed high levels of discipline, commitment and dedication to pursuing a professional soccer career, a willingness to sacrifice elements of their adolescent lifestyles, the ability to overcome personal and contextual obstacles and the ability to utilise available sources of social support.
A range of studies within academia (Zimmerman, 1986, 1998, 2002, 2006) and sport (Cleary & Zimmerman, 2001; Jonker, Elferink-Gemser, & Visscher, 2010; Jonker, Elferink-Gemser, Toering, Lyons, & Visscher, 2010; Petlichkoff, 2004; Toering, Elfering-Gemser, Jordet, & Visscher, 2009) reveal how experts take greater responsibility for their own development, self-monitor their progress, manage their emotions, focus on self-improvement, are aware of their strengths and limitations, set realistic goals to make progress in terms of performance, seek assistance from peers when necessary and score higher on aspects of self-regulation of learning including reflection and effort when compared with non-experts.

Toering et al. (2009) who examined the relationship between self-regulation and performance level in 11 to 17 year old soccer players at elite and non-elite levels of performance found elite youth soccer players employed reflective skills more often and exerted greater levels of effort into executing their performance correctly than non-elite counterparts.

Keeping in view the above facts, it was therefore decided to study excellence and its correlates, gender and group differences among students with academic and sports excellence.

The primary aim of the present investigation was to study the role of Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence in Excellence in Academics and Sports. The sample was studied with respect to Grit and its dimensions viz., Perseverance of Effort and Consistency of Interest; Perfectionism and its dimensions viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism; Self-Efficacy; Flow and its dimensions viz., Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience and Emotional Intelligence.

The total sample comprised of 200 students (100 in the field of academics and 100 in the field of sports) within the age range of 20-26 years, out of which 91 were males and 109 were females. While gender equality was not maintainable in the sample because of the ground reality, a proportionate representation had been adhered
to. Whereas in the academic field, the top rankers comprised of more females than males, in the sports it was the males who outnumbered the females in top positions. Eventually, 100 students in the field of academics were taken, out of which 18 were males and 82 were females and 100 students in the field of sports were taken, out of which 73 were males and 27 were females. In the field of academics, only the top rankers at the university level, in their respective disciplines were selected. In the field of sports, the university players who top in their respective games were selected. Players were selected from individual games as it highlighted the individual level of excellence. Purposive sampling technique was used. The sample was collected from three universities-Panjab University (Chandigarh), Punjabi University (Patiala) and Guru Nanak Dev University (Amritsar). All the subjects were explained about the nature and aim of the study and their role in the study. Informed consent was obtained before they were enrolled as subjects in the study.

To measure Grit, the Short Grit Scale developed by Duckworth and Quinn (2009) was used, which has two dimensions viz. Perseverance of Effort and Consistency of Interest.

The Multidimensional Perfectionism Scale by Hewitt, Flett, Turnbull-Donovan and Mikail (1991) was used to measure three types of Perfectionism viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism.


Emotional Intelligence was measured by using The Emotional Intelligence Questionnaire, developed by Mohan, Malhotra and Mangla (2003).

The raw scores were analyzed using appropriate statistical analyses viz. Descriptive statistics, t- test, Analysis of Variance (2X2 ANOVA), Inter-Correlation analysis and Stepwise Multiple Regression analysis.
A) **Group Comparisons (comparing students with academic excellence and students with sports excellence)**

1. No differences were expected among students with sports excellence and students with academic excellence on Grit and its dimensions viz., Perseverance of Effort and Consistency of Interest, Self-Efficacy and Emotional Intelligence.

2. Students with academic excellence were expected to score higher on Perfectionism and its dimensions viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism in comparison to students with sports excellence.

3. Students with sports excellence were expected to score higher on Flow and its dimensions viz. Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience in comparison to students with academic excellence.

A glance at t-ratios table (Table 2.1) comparing the students with academic excellence and students with sports excellence, revealed that **Students with academic excellence scored higher** than **students with sports excellence** on Perfectionism dimensions viz. Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Total Perfectionism, Self-Efficacy, Flow dimensions viz. Clear Goals, Concentration on Task at Hand, Sense of Control and Emotional Intelligence. **Students with sports excellence scored higher** than **students with academic excellence** on Grit dimension viz. Perseverance of Effort, Flow dimensions viz. Challenge-Skill Balance, Action-Awareness Merging, Unambiguous Feedback, Loss of Self-Consciousness, Transformation of Time and Total Flow.

A perusal of Analysis of Variance tables (Table 3.1 to 3.19) revealed the following:

F-ratios for the following variables to be significant: Consistency of Interest, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Total Perfectionism, Action-Awareness Merging, Concentration on Task at Hand, Loss of Self-Consciousness, Total Flow and Emotional Intelligence.
Thus the hypotheses were upheld in majority of the cases.

Parker and Mills (1996) found statistically significant results based on gender, with females being more likely than males to be healthy perfectionists and males being more likely than females to be non-perfectionists. They also found that some components of perfectionism in gifted middle school students were higher for boys than for girls (as cited by Thoresen, 2009).

Stoll, Lau, and Stoeber (2008) investigated how perfectionism during training affects performance and performance increments in a series of trials with a new basketball training task with 122 undergraduate athletes. Two aspects of perfectionism were examined: striving for perfection and negative reactions to imperfection. Results showed that striving for perfection during training predicted higher performance in the new task. In contrast, negative reactions to imperfection predicted lower performance when athletes attempted the task for the first time, once the positive influence of striving for perfection on task performance was partialled out. However, negative reactions to imperfection did not undermine performance in the consecutive trials. On the contrary, athletes with both high levels of striving for perfection and high levels of negative reactions to imperfection showed the greatest performance increments over the series of trials.

Stoeber et al. (2009) suggested that elite triathletes who strive to achieve high personal standards, demonstrate performance approach goals, and set themselves challenging goals for competition achieve superior performance.

According to Stoeber (2012) studies on perfectionism and academic performance shows that perfectionistic strivings are positively associated with academic performance: students with higher levels of perfectionistic strivings show higher exam performance, higher individual grades, and a higher GPA than students with lower levels of perfectionistic strivings.

Swann, Keegan, Piggott, and Crust (2012) completed comprehensive literature search of SPORT discus, Psyc INFO, SAGE journals online, INGENTA connect, and Web of Knowledge in August, 2011, and yielded 17 empirical studies published between 1992 and 2011. Findings indicated that: (i) some flow dimensions
appear to be experienced more consistently than others; (ii) key factors were consistently reported to induce or inhibit flow occurrence; and (iii) the perception that flow experiences could be controllable to some extent, and are not merely ‘coincidental’. Additionally, it is appears that physiology is also relevant in flow, and these experiences may be psycho-physiological.

Yelkikal et al. (2012) studied the emotional intelligence levels of university students in the context of emotional intelligence extents; the difference in terms of demographic qualities of students and the majors they study and the relationship between emotional intelligence of students and their academic achievements. The results of the research revealed that there is a significant relationship between the emotional intelligence and academic achievement and that almost 11% of change in academic achievements can be explained by emotional intelligence.

Duckworth and Eskreis-Winkler (2013) stated that participants who scored high on grit score on average, lower on IQ scores than those who scored low on grit. Duckworth hypothesized that talented children have fewer opportunities to develop a resilient approach to setbacks and failures compared with highly gritty children due to their less frequent encounter with negative outcome.

Lawrence and Deepa (2013) studied the relationship between emotional intelligence and academic achievement of high school students with reference to the background variables. Survey method was employed. Two tools were used in this study namely self-made Trait Emotional Intelligence Questionnaire Short Form (TEIQue SF) and the Achievement Test Questions. The finding showed that there was no significant difference between emotional intelligence and academic achievement of high school students.

Strayhorn (2014) tested the importance of a noncognitive trait, grit, to predicting grades for a sample of Black males attending a predominantly White institution. Using multivariate statistics and hierarchical regression techniques, results suggested that grit was positively related to college grades for Black males and that background trait, academic factors, and grit explain 24% of the variance in Black male’s college grades. Grit, alone, added incremental predictive validity over and
beyond traditional measures of academic success such as high school grade point average and American College Test scores.

A study was conducted by Batinić, Švaić, and Babić, (2014) to establish differences in emotional competence level between individual and team sports athletes. Results showed that there are no significant differences between individual and team sports athletes in emotional competence level either in total or in each subscale independently (p>0.05). They considered that, sport and physical exercise increase the ability of athletes to govern emotions regardless of the type of the activity.

Ledezma et al. (2015) conducted a study comparing the profiles of the academic self-efficacy perceived in ‘Social’ and ‘Health’ Sciences University students. The total sample comprised of 1113 subjects; 524 from Health Sciences and 589 from Social Sciences, with an average age of 18.20 years (DS= 0.72) and 18.24 years (DS=0.74) respectively. The approach adopted in the research was framed into a quantitative approach with a descriptive design, survey type. The results showed that self-efficacy resulted to be more predictive of academic performance than other cognitive variables (Bandura, 1982b), which predicts further success (Ornelas et al., 2012; Bandura, 1997) and that it is an important cognitive mediator of competence and performance (Vera, Salanova & Martín-del-Río, 2011) as it favors the cognitive processes (Ornelas, Blanco, Rodríguez, & Flores, 2011; Carbonero & Merino, 2008).

B) Gender differences (comparing males and females with academic and sports excellence)

1. Females with academic excellence were expected to score higher on Grit and its dimensions viz., Perseverance of Effort and Consistency of Interest; Perfectionism and its dimensions viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism; Self-Efficacy; Flow and its dimensions viz., Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience and Emotional Intelligence in comparison to males with academic excellence.
2. Males with sports excellence were expected to score higher on Grit and its dimensions viz., Perseverance of Effort and Consistency of Interest; Perfectionism and its dimensions viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism; Self-Efficacy; Flow and its dimensions viz., Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience and Emotional Intelligence in comparison to females with sports excellence.

3. Females with academic and sports excellence were expected to score higher on Grit and its dimensions viz., Perseverance of Effort and Consistency of Interest; Perfectionism and its dimensions viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism; Self-Efficacy; Flow and its dimensions viz., Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience and Emotional Intelligence in comparison to males with academic and sports excellence.

Intelligence. **Males with sports excellence scored higher** than females with sports excellence on Flow dimensions viz. Concentration on Task at Hand.

A glance at **Analysis of Variance** tables (Tables 3.1 to 3.19) revealed the following:

Analysis of Variance for Gender revealed significant F-ratios for the following variables: Perseverance of Effort, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Total Perfectionism, Challenge-Skill Balance, Action-Awareness Merging, Unambiguous Feedback, Concentration on Task at Hand, Loss of Self-Consciousness, Transformation of Time, Total Flow and Emotional Intelligence.

**Thus the hypotheses were upheld in majority of the cases.**

**Review of earlier studies also revealed similar trends.**

**Pajares, Miller and Johnson (1999)** investigated the nature of gender differences in the writing self-beliefs of elementary school students. The sample comprised of students in Grades 3, 4, and 5 (n=363). Girls were judged superior writers and also expressed that they were better writers than were other boys or girls in their class or in their school to a greater degree than did boys. Results showed that writing self-efficacy beliefs and aptitude predicted writing performance in a path model that included writing apprehension, self-efficacy for self-regulation, and perceived usefulness of writing. Self-efficacy mediated the effects of aptitude and self-efficacy for self-regulation on performance.

**Pajares and Valiante (2001)** undertook an investigation to determine whether gender differences in the writing motivation and achievement are a function of gender-stereotypic beliefs rather than of gender. The sample comprised of middle school students (n=497). Results found that girls reported stronger writing self-efficacy, writing self-concept, self-efficacy for self-regulation, value of writing, and task goals, and they received higher grades in language arts. Boys reported stronger performance-approach goals. Findings suggested that a feminine orientation was adaptive in the area of writing, whereas a masculine orientation was beneficial when escorted by a feminine orientation.

**Britner and Pajares (2001)** studied whether the science motivation beliefs of middle school students (n=262) vary as a function of their gender or race/ethnicity
and to determine whether science self-efficacy beliefs predict science achievement when motivation variables shown to predict achievement in other academic areas are controlled. Girls reported stronger science self-efficacy and self-efficacy for self-regulation, and they received higher grades in science. Boys had stronger performance-approach goals. White students had stronger self-efficacy and achievement, and African American students reported stronger task goals. Self-efficacy was the only motivation variable to predict the science achievement of girls, boys, and White students. Self-efficacy and self-concept predicted the science achievement of African American students.

Kawamura, Frost, and Harmatz (2002) conducted a study which was an extension of past research. It examined the relationship between perceived parental characteristics and perfectionism in both men and women from two ethnic groups. The study also included an examination of the relationship between perfectionism and academic achievement. One-hundred and Forty-five Asian-American and 192 Caucasian-American college students participated in the study. In general, harsh and authoritarian parenting styles were related to maladaptive, but not adaptive, components of perfectionism in Caucasian-American men and women and Asian-American women. The adaptive component of perfectionism was related to higher grade-point averages for women in both ethnic groups but not for the men.

Snyder (2003) stated in an article in The Philadelphia Inquirer entitled “Girls Edge Boys at Head of the Class”, that local female valedictorians outnumbered male valedictorians nearly 2 to 1.

Parker et al. (2004) examined the relationship between emotional intelligence and academic achievement in high school. They found that the main effect for gender was significant for the intrapersonal and interpersonal, with girls scoring higher than boys.

Chee, Pino and Smith (2005) indicated that female college students are more likely to have higher academic ethics than male students, which are characterised by higher academic attainment. They found it interesting to observe the similarity between ‘grinds’ and students having higher academic ethics in these studies and both
Discussion

groups being likely to include more female students than male students. More specific
to the focus of this particular study, females and males were often reported to adopt
different approaches and behaviours in studying languages. Girls are usually
characterised by more positive attitudes and higher motivation in language learning
(Ozek 2000) and report employing a richer repertoire of language learning strategies,
especially those involving metacognition.

Parker, Duffy, Wood, Bond and Hogan (2005) examined the impact of
emotional intelligence (EI) on the successful transition from high school to university.
The short form of the Emotional Quotient Inventory (EQ-i) was completed by 1,426
first-year students attending four different universities within the first week of classes
(September). At the end of the academic year (May), the students’ cumulative GPA
was used to identify two groups of students: academically successful (i.e., GPA of 3.0
or better; \( n = 590 \)) and academically unsuccessful (i.e., GPA of less than 2.0; \( n = 289 \))
students. It was found that academically successful students had significantly higher
levels of several different emotional and social competencies. Results also showed
that the main effect for gender was significant, with women scoring higher than males
on overall level of emotional intelligence.

Britner and Pajares (2006) investigated the degree to which A. Bandura's
(1997) hypothesized sources of self-efficacy predict the science self-efficacy beliefs
of middle school students (\( n=319 \)), to replicate previous findings that science self-
efficacy predicts science achievement, and to explore how science self-efficacy and
its antecedents differ by gender. Significant correlations were found between mastery
experiences, vicarious experiences, social persuasions, physiological arousal, and self-
efficacy. Only mastery experiences significantly predicted science self-efficacy. Girls
reported stronger science self-efficacy than did boys. Findings support and extend the
theoretical tenets of Bandura's social cognitive theory.

Duckworth and Seligman (2006) reported that girls outperformed boys in
every course subject, including both basic and advanced math. In contrast, gender
differences favoring girls on a standardized achievement test were more modest and
not statistically significant. And, contrary to their expectation that girls and boys
would do equally well on an IQ test, the mean IQ score for girls was about half a 
standard deviation lower than that for boys.

To observe emotional intelligence levels of undergraduate male and female 
college students (n=200) (100 males and 100 female) in the age range of 17-20 years, 
Nasar and Nasar (2008) have made an attempt and the results ensures the presence 
of higher emotional intelligence in the adolescent girls students in comparison to the 
boys. Brackett, Mayer and Warner (2004) have also reported in their study among 
330 college students that women scored significantly higher in emotional intelligence 
than men.

Anshel, Kim and Henry (2009) re-examined the dimensions of perfectionism 
in sport as a function of gender among 322 former high school athletes (142 males, 
180 females), ranging in age from 18-31 years (M = 22.5 years, SD = 6.32) who 
attended one of two universities in Middle Tennessee. Exploratory factor analysis 
(EFA) was applied to 41 items that related to competitive sport taken from the 
existing perfectionism in sport literature. Four factors, not predetermined prior to the 
analysis, were obtained. These included, respectively, parental expectations/criticism 
(PE/C), self-criticism (SC), neatness/organization (N/O), and coach expectations/ 
criticism (CE/C). Both SC and N/O are factors contrary to existing dimensions in the 
related sport literature. The results of MANOVA indicated a significant gender effect 
for the linear combination of four factors. Follow-up univariate ANOVAs indicated 
gender differences for PE/C (Factor 1). Female athletes scored significantly higher 
than male athletes on Factor 1 (PE/C). However, male athletes scored significantly 
higher than female athletes on N/O (Factor 3). The other factors (SC & CE/C) showed 
no significant gender differences.

Duckworth and Quinn (2009) reported that the Grit–S scores did not differ 
significantly by gender, but were significantly associated with age.

In a study, Tittanen (2014) reported that women showed significantly lower 
direct effects between grit and PWB (Psychological well-being) than men did. 
Therefore, this indicates that for women being gritty is not as strongly related to high 
PWB as it is for men. This moderated effect by gender is interesting, and may suggest
that women do not gain equal benefits from being gritty on the level of their psychological well-being than men do.

Findings of Li, Lan, and Ju’s (2015) study indicated that there was no significant difference in the scores of perfectionism and achievement motivation between males and females, suggesting that all of them are important sources of subjective well-being for both males and females. However, males scored higher than females on achievement motivation.

4. Correlates of Excellence

1. Grit and its correlates

1.1 Perseverance of Effort and Consistency of Interest were expected to be positively related with excellence in academics.

1.2 Perseverance of Effort and Consistency of Interest were expected to be positively related with excellence in sports.

A glance at inter-correlations tables (Tables 4.1, 4.2, 4.5, 4.8 and 4.9) revealed that for total sample, Grit was positively and significantly related to Consistency of Interest, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence.

Among Students with Academic Excellence, Grit was positively and significantly related to Consistency of Interest, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Autotelic Experience, Flow and Emotional Intelligence.

Grit was positively and significantly related to Consistency of Interest, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence and negatively and
significantly related with Concentration on Task at Hand among Students with Sports Excellence.

In Females with Academic and Sports Excellence, Grit was positively and significantly related to Consistency of Interest, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control and Emotional Intelligence.


A perusal of Stepwise Multiple Regression Equations (Tables 5.1, 5.6, 5.11, 5.16 and 5.21) revealed that among Total Sample, three variables turned out to be relevant and were retained as predictors. These variables were Other-Oriented Perfectionism, Unambiguous feedback and Self-Efficacy. Regression analysis for Students with Academic Excellence revealed that three variables turned out to be relevant and were retained as predictors. These predictors were Other-Oriented Perfectionism, Socially Prescribed Perfectionism, and Emotional Intelligence. For Students with Sports Excellence, Self-Efficacy, Other-Oriented Perfectionism, and Challenge-Skill Balance significantly predicted Grit. Regression analysis for Females with Academic and Sports Excellence revealed that three variables turned out to be relevant and were retained as predictors. These predictors were Other-Oriented Perfectionism, Unambiguous Feedback, and Clear Goals. For Males with Academic and Sports Excellence predictors were Self-Efficacy, Challenge-Skill Balance, and Other-Oriented Perfectionism.

Thus the hypotheses were upheld in majority of the cases.

Review of earlier studies also revealed similar trends.

Jaeger, Freeman, Whalen and Payne (2010) studied grit in engineering students at Northeastern University. The researchers asked two main research
Discussion

questions: 1) Is grit correlated to student characteristics, such as gender, academic level and SAT scores? 2) Does grit develop in students over time when grit scores of freshmen are compared to upperclassmen? The results of their study showed significant differences in Grit-S score only by gender, with female students possessing more grit than males. There was no significant mean difference in grit score by different academic levels, and SAT scores were not correlated with higher grit levels. Level of grit was also examined by students’ concentration within the engineering field, honor students and student athletes in the engineering program. The results showed that Chemical Engineering and Mechanical Engineering students had the highest grit scores, while Computer Engineering students possessed the lowest grit scores. No significant difference in grit was observed among honors and non-honors engineering students and athlete and non-athlete engineering students. However, non-honors and student athlete engineering students exhibited more grit than honors and non-athlete engineering students. The researchers planned to track this cohort of students to study the relationship between grit and academic success as these students progress through the engineering program.

Steele-Johnson and Leas (2013) examined the importance of race and gender in predicting academic performance at a Midwestern university. The researchers concluded that gender was not a predictor of college GPA, but race was a significant predictor of GPA in college.

Chang (2014) examined the importance of a non-cognitive trait, grit, in predicting first year academic performance, as academic performance has been found to be the best indicator of students persisting through graduation. The secondary data obtained from the first year students at a highly selective private institution was analyzed using Hierarchical Multiple Regression analysis. The results of the study showed that gender, SAT scores, race, and the perseverance subscale score of grit measured by the Grit-S were found to be significant in predicting first year GPA.

Lawrence (2014) found in a study that culturally relevant education, valuing education, academic resilience, self-efficacy beliefs, conative intelligence, grit and goal achievement, religious beliefs and practices, strong support systems, and teacher expectations all contribute to the high academic achievement of economically disadvantaged, African American students.
Strayhorn’s (2014) study was centered on Black males attending a Predominately White Institution (PWI), and his results showed that grittier Black males had higher GPAs in college, higher HSGPAs, and higher ACT scores compared to less gritty Black males.

2. **Perfectionism and its correlates**

2.1 Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism were expected to be positively related with excellence in academics.

2.2 Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism were expected to be negatively related with excellence in sports.

A glance at inter-correlations tables (Tables 4.1, 4.2, 4.5, 4.8 and 4.9) revealed that Perfectionism was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Clear Goals, Sense of Control and Emotional Intelligence for total sample.

Among Students with Academic Excellence, Perfectionism was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Autotelic Experience, Flow and Emotional Intelligence.

For Students with Sports Excellence, Perfectionism was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Flow and Emotional Intelligence and negatively and significantly related with Concentration on Task at Hand.

In Females with Academic and Sports Excellence, Perfectionism was positively and significantly related to Perseverance of Effort, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Clear Goals, Unambiguous Feedback, Sense of Control and Emotional Intelligence.
Perfectionism was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Sense of Control, Autotelic Experience and Emotional Intelligence and negatively and significantly related with Loss of Self-Consciousness for Males with Academic and Sports Excellence.

A perusal of Stepwise Multiple Regression Equations (Tables 5.2, 5.7, 5.12, 5.17 and 5.22) for Total sample revealed that three variables turned out to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Self-Efficacy and Transformation of time. Among Students with Academic Excellence, Emotional Intelligence and Self-Efficacy turned out to be relevant and were retained as predictors. For Students with Sports Excellence Self-Efficacy significantly predicted Perfectionism. For Females with Academic and Sports Excellence, Emotional Intelligence, Perseverance of Effort, Action-Awareness Merging and Unambiguous Feedback turned out to be relevant and were retained as predictors. Among Males with Academic and Sports Excellence two variables turned out to be relevant and were retained as predictors. These predictors were Self-Efficacy and Unambiguous Feedback.

Thus the hypotheses were upheld in majority of the cases.

Review of earlier studies also revealed similar trends.

Braver (1996) examined the relationship between achievement and the revised Almost Perfect Scale (the APS-R) in undergraduate students. The personal standards score was found to be positively related to GPA and SAT scores, as well as significantly predicting academic achievement (as cited by Slaney, Rice, & Ashby, 2002). Flett, Sawatzky and Hewitt (1995) also found an association between high personal standards and high academic achievement at school.

In a study Accordino et al. (2000) found that high personal standards was positively and significantly associated with GPA, and supports the idea that students with adaptive forms of perfectionism tend to have higher levels of achievement.

Arthur and Hayward (1997) found that socially-prescribed perfectionism in first year tertiary students was associated with lower academic achievement. Conroy (2003) has suggested that a fear of failure in perfectionists has been associated with
problems in achievement. **Kottman et al. (1999)** suggested that maladaptive perfectionists may be more inclined to use social comparison as a measure of achievement, and be motivated by a fear of failure, which may negatively affect academic importance (as cited by **Slaney et al., 2002**).

According to **Blankstein and Dunkley (2002); Burns and Fedewa, (2005)**, self-oriented perfectionism has been associated with a number of positive adaptive qualities, including achievement striving, positive affect, high self-esteem, self-efficacy, self-actualisation, resourcefulness, perceived control, adaptive coping with stress, positive appraisals of personal projects, adaptive learning strategies, good academic performance, and positive interpersonal characteristics, such as self-assurance, assertiveness, and altruistisch social attitudes.

**Stoeber and Otto (2006)** noted that perfectionist strivings indicate a tendency to set high personal standards or an inner drive to achieve excellence. If the tendency to reach high performance goals is not followed by perfectionistic concerns, perfectionistic strivings per se represent an adaptive personality disposition. In contrast, perfectionistic concerns represent a maladaptive form of perfectionism that implies constant concern over mistakes, fear of failure, harsh self-criticism, sense of self-worth dependent on performance, and negative emotional reactions to discrepancies between self-imposed expectations and actual performance (**Enns & Cox, 2002; Stoeber & Otto, 2006**).

**Flett, Blankstein, and Hewitt (2009)** found socially prescribed perfectionism to negatively predict students’ performance in a classroom exam involving a multiple choice test. In contrast, self-oriented perfectionism showed the expected positive effect on exam performance.

Several empirical findings have shown that perfectionistic strivings are positively associated with internal attribution of success (**Stoeber & Becker, 2008**), positive emotional reactions to sports success (**Sagar & Stoeber, 2009**), competitive self-confidence (**Stoeber et al., 2007**), and approach goal orientations (**Stoeber et al., 2008**).

**Stoeber et al. (2009)** measured perfectionistic strivings and perfectionistic concerns one day before athletes competed in a race. In addition, they measured
Discussion

athletes’ achievement goals for the race following the 2 X 2 model of achievement goals. The model has two dimensions: definition and valence. Definition captures the content of achievement goals differentiating performance and mastery. Valence captures the orientation of achievement goals differentiating approach and avoidance. Hence the 2 X 2 model distinguishes four goals: performance-approach (striving to do better than others), performance-avoidance (avoiding doing worse than others), mastery-approach (striving to master the task or to do better than one has done before), and mastery-avoidance goals (avoiding not being able to master the task or doing worse than one has done before). They found that perfectionistic strivings predicted better race results. Moreover, the effect of perfectionistic strivings was mediated by athletes’ achievement goals: Athletes high in perfectionistic strivings showed higher levels of performance-approach goals relative to performance-avoidance goals when compared to athletes low in perfectionistic strivings, and the difference between performance-approach and -avoidance goals mediated the positive effect of perfectionistic strivings on race performance.

According to Stoeber (2011), while perfectionistic strivings and concerns influence athletes’ behaviors, they are not directly observable. Perfectionism is in the mind. Thus, individual differences in perfectionistic strivings and perfectionistic concerns mainly manifest themselves in athletes’ thoughts (e.g., perceptions, evaluations, beliefs).

Gotwals and Spencer-Cavaliere (2014) explored perfectionistic athletes’ perspectives on achievement in sport. Male and female intercollegiate athletes whose Sport Multidimensional Perfectionism Scale 2 (Sport-MPS-2; Gotwals & Dunn, 2009) subscale profile reflected healthy perfectionism (n = 7) or unhealthy perfectionism (n = 11) were purposefully sampled and interviewed. Content analysis of the interview data revealed three themes: personal expectations, coping with challenge, and role of others. Although these themes were common to both healthy and unhealthy perfectionists, the content generally represented a dichotomy of positive and negative interpretations, respectively.

Stoeber, Haskew and Scott (2015) investigated whether achievement goals mediate the positive relationship between perfectionistic strivings and exam performance. 100 university students completed a measure of self-oriented
Discussion

perfectionism and socially prescribed perfectionism (Hewitt & Flett, 1991a) and received a chapter from a textbook to study for 2-4 days. Then they returned to the lab to complete a measure of achievement goals following the 3X2 model (Elliot, Murayama, & Pekrun, 2011) and sit a mock exam testing their knowledge of the chapter. Multiple regressions showed that socially prescribed perfectionism negatively predicted exam performance when the overlap with self-oriented perfectionism was controlled for. In contrast, self-oriented perfectionism—a defining indicator of perfectionistic strivings—positively predicted exam performance. Moreover, task-approach goals mediated the positive relationship between self-oriented perfectionism and exam performance.

3. **Self-Efficacy and its correlates**

   3.1 Self-Efficacy was expected to be positively related with excellence in academics.

   3.2 Self-Efficacy was expected to be positively related with excellence in sports.

A glance at inter-correlations tables (Tables 4.1, 4.2, 4.5, 4.8 and 4.9) revealed that in the total sample, **Self-Efficacy** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence.

Among **Students with Academic Excellence**, **Self-Efficacy** was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of control, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence.

**Self-Efficacy** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-
Discussion

Consciousness, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence and negatively and significantly related with Concentration on Task at Hand for Students with Sports Excellence.

In Females with Academic and Sports Excellence, Self-Efficacy was positively and significantly related to Perseverance of Effort, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Transformation of Time, Flow and Emotional Intelligence.


A perusal of Stepwise Multiple Regression Equations (Tables 5.3, 5.8, 5.13, 5.18 and 5.23) for Total sample revealed six variables to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Transformation of Time, Other-Oriented Perfectionism, Perseverance of Effort, Sense of Control, and Challenge-Skill Balance. For Students with Academic Excellence, Socially Prescribed Perfectionism, Transformation of Time, Other-Oriented Perfectionism, and Perseverance of Effort significantly predicted Self-Efficacy. For Students with Sports Excellence seven variables turned out to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Transformation of Time, Sense of Control, Clear Goals, Autotelic Experience, Other-Oriented Perfectionism and Socially Prescribed Perfectionism. For Females with Academic and Sports Excellence, Transformation of Time, Socially Prescribed Perfectionism, Sense of Control, Perseverance of Effort and Emotional Intelligence were the predictors of Self-Efficacy. For Males with Academic and Sports Excellence, seven variables turned out to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Consistency of Interest, Transformation of Time, Other-Oriented Perfectionism, Perseverance of Effort, Challenge-Skill Balance and Sense of Control.
Thus the hypotheses were upheld in majority of the cases.

Review of earlier studies also revealed similar trends.

Pintrich and De Groot (1990) found that academic self-efficacy was related both to cognitive strategy use and to self-regulation through the use of metacognitive strategies. Academic self-efficacy also correlated with semester and final year grades, in-class seatwork and homework, exams and quizzes, and essays and reports. The researchers concluded that self-efficacy played a “facilitative” role in the process of cognitive engagement, that raising self-efficacy might lead to increased use of cognitive strategies and, thereby, higher performance, and that “students need to have both the ‘will’ and the ‘skill’ to be successful in classrooms.”

According to Craft, Magyar, Becker, and Feltz (2003) self-confidence prior to and during competitions is usually associated with low competitive anxiety. Moreover, and more importantly, self-confidence shows positive relationships with sports performance.

Lane, Devonport, Milton and Williams (2003) reported self-efficacy factors significantly correlated with performance. Results further indicated that 80 per cent of failing students could be correctly classified from self-efficacy scores. Findings of the research lend support to previous research that shows self-efficacy can significantly predict academic performance.

Lane, Lane and Kyprianou (2004) investigated relationships between self-efficacy, self-esteem, previous performance accomplishments, and academic performance among a sample of 205 postgraduate students. Participants completed measures of past performance accomplishments, self-esteem, and self-efficacy at the start of a 15-week course. Each student's average grade from modules studied was used as the performance measure. Correlation results indicated significant relationships between self-efficacy and self-esteem. Multiple regression results indicated that self-efficacy mediated the relationship between performance accomplishments and academic performance.

Ayiku (2005) did a research to determine if there were relationships among college, academic and athletic self-efficacy in African American male student-athlete as measured by the College Self-Efficacy Scale, the College Academic Self-Efficacy
Discussion

Scale and the Trait-Sport Self Confidence Scale. Data for this study were collected from African American male student-athletes (n=37) participating in football at a mid-size, MidAtlantic, comprehensive, public institution. The study found statistically significant relationships among college, academic, and athletic self-efficacy for African American male student-athletes participating in football.

Hardy, Hall, Gibbs, and Greensdale (2005) examined the effects of instructional and motivational self-talk on the performance of a sit-up task. The sample comprised of forty-four undergraduates who completed a modified crunch test on three occasions. After performing a baseline sit-up task, participants were assigned to three groups, instructional self-talk, motivational self-talk, and control. Examination of the manipulation protocol revealed that the intended groups were not formed. In particular, more than half participants in the instructional self-talk group reported using in addition some form of motivational self-talk, and most of the participants in the control group reported using some form of self-talk. The results indicated that self-talk was related to self-efficacy. In addition, it was further found that self-efficacy was positively related to performance and hence acted as a facilitator in increasing the level of performance.

Hatzigeorgiadis, Zourbanos, Goltsios and Theodorakis (2008) examined the effects of motivational self-talk on self-efficacy and performance. Participants included 46 young tennis players. The experiment was completed in five sessions. In the first session, participants performed a forehand drive task. Subsequently, they were divided into an experimental and a control group. Both groups followed the same training protocol for three sessions, with the experimental group practicing self-talk. In the final session, participants repeated the forehand drive task, with participants in the experimental group using motivational self-talk. Results revealed significant group differences by time interactions for self-efficacy and performance. Follow-up comparisons showed that self-efficacy and performance of the experimental group increased significantly, whereas self-efficacy and performance of the control group had no significant changes. Furthermore, correlation analysis showed that increases in self-efficacy were positively related to increases in performance.
Ornelas et al. (2012) found that university women report in general, lower levels of academic self-efficacy in the ‘communication factor’ than in the factors of ‘attention’ and ‘excellence’; Behaviors related to the ‘communication’ factor represent an opportunity area for University women as well as University women at the first year.

Diseth, Meland, and Breidablik (2014) investigated the relation between self-esteem, self-efficacy and implicit theories of intelligence (entity and incremental) in a sample of 6th and 8th grade Norwegian students (n=2,062) in order to test the factor structure of these variables, how they may differ according to gender and grade level, and how they may predict academic achievement level. The results showed positive relations between self-esteem, self-efficacy and incremental theories of intelligence, and a negative relation between entity and incremental theories of intelligence, but this latter relation was significantly stronger among 8th graders. Despite better academic achievement among 8th grade girls, they had lower levels of self-esteem, self-efficacy, and incremental views of intelligence than boys.

In a cross-sectional sample of 89 college students, Feldman and Kubota (2015) administered the Hope Scale, Domain Specific Hope Scale (academic subscale), General Self-Efficacy Scale, Academic Self-Efficacy Scale, Life Orientation Test-Revised (optimism), among others. They tested a pathanalytic model where academic-specific expectancies (e.g., academic hope, academic self-efficacy) have direct paths to GPA, and generalized expectancies (e.g., general hope, general self-efficacy) have paths to these academic-specific variables. Generalized hope predicted academic-specific hope and academic self-efficacy, both of which then predicted GPA. Optimism and general self-efficacy did not predict academic-specific expectancy variables nor GPA.

In a study Ledezma et al. (2015) reported that students from ‘Health Sciences’ perceived themselves significantly better than ‘Social Sciences’ students in ‘Attention’ factor and without significant differences in ‘communication’ while comparing self-efficacy profiles from Health Sciences students with the profiles of self-efficacy from students of Social Sciences. In relation to the indicators of the studied factors (Attention, Communication and Excellence), the study assumed that perceived self-efficacy in academic behaviors was very similar among them, this
result agrees with those reported by a very similar study of self-efficacy perceived in University students.

**Schnell, Ringeisen, Raufelder and Rohrmann (2015)** tested the Schwarzer's theory of self-regulatory goal attainment processes (1998), with a sample of adolescent German school students (n=783). Students completed measures on goal setting, school-related self-efficacy, test anxiety, task persistence, effort investment, and current academic performance. Multigroup structural equation modeling was used to test for differences between boys and girls and between high and low test-anxious students in the interplay of these variables. Results indicated no gender differences, but revealed slight differences in the structural relations among these variables between students with high and low test anxiety.

4. **Flow and its correlates**

4.1 Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience were expected to be positively related with excellence in sports.

4.2 Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience were expected to be negatively related with excellence in academics.

A glance at inter-correlations tables (Tables 4.1, 4.2, 4.5, 4.8 and 4.9) revealed that in the total sample, Flow was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience.

Among Students with Academic Excellence, Flow was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-

**Flow** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Emotional Intelligence for **Students with Sports Excellence**.

In **Females with Academic and Sports Excellence**, **Flow** was positively and significantly related to Perseverance of Effort, Consistency of Interest, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Emotional Intelligence.

For **Males with Academic and Sports Excellence**, **Flow** was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Self-Oriented Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Emotional Intelligence.

A perusal of **Stepwise Multiple Regression Equations** (Tables 5.4, 5.9, 5.14, 5.19 and 5.24) for **Total sample** revealed that four variables turned out to be relevant and were retained as predictors. These predictors were Self Efficacy, Other-Oriented Perfectionism, Consistency of Interest and Perseverance of Effort. For **Students with Academic Excellence** three variables predicted Self-Efficacy. These variables were Other-Oriented Perfectionism, Emotional Intelligence, and Perseverance of Effort. For **Students with Sports Excellence** only one variable turned out to be relevant and was retained as predictor. The predictor was Self-Efficacy. Among **Females with Academic and Sports Excellence** regression analysis revealed that Self-Efficacy and Consistency of Interest significantly predicted Flow. For **Males with Academic and**
**Discussion**

**Sports Excellence**, regression analysis revealed that three variables predicted Flow. These variables were Consistency of Interest, Perseverance of Effort and Other-Oriented Perfectionism.

**Thus the hypotheses were upheld in majority of the cases.**

**Review of earlier studies also revealed similar trends.**

**Kuhl (1994)** proposed that individuals who are action or state oriented would show different behavioral patterns when dealing with failure, decision-making, and performance. In sport, action-oriented athletes keep a positive, task-focused state of mind after failure, whereas state-oriented athletes ruminate and reflect on past actions for extensive periods of time, which can negatively affect their experience and performance.

**Jackson and Roberts (1992)** investigated relationships among peak performance, flow, goal orientation, and perceived ability in an attempt to ascertain possible conceptual bases to peak performance. Collegiate athletes (n=200) answered a questionnaire that assessed mastery and competitive goal orientations, perceived ability, flow, and experience in best and worst competitive performances. It was hypothesized that the psychological process of flow underlies peak performance and is associated with a mastery oriented focus and high perceived ability. These predicted relationships were supported by both quantitative and qualitative analyses. Analysis of athletes' best performances indicated a total focus on performance, and other characteristics of flow were key to the perception of a superior state of functioning. In contrast, over-concern with the outcome, reflecting a competitive orientation, was often associated with athletes' worst performances.

Using canonical correlation analysis, **Jackson, Kimiecik, Ford and Marsh (1998)** found that perceived sport ability, intrinsic motivation-stimulation, and anxiety accounted for 19% of the variance in dispositional flow and 15% in state flow in masters athletes. He extended this line of research, examining self-concept and psychological skills as correlates of flow in sport competitions. Significant canonical correlations showed that self-concept and psychological skills explained 30% of the variance in dispositional flow, and 15% of the variance in state flow. Hierarchical regression analyses indicated that self-concept and psychological skills accounted for
Discussion

A large amount of shared variance, 64%, in flow, but each predictor only accounted for small amounts of unique variances, 6% and 10%, respectively.

Adamson (2003) examined the relationship between reported flow state, individual goal orientation, and changes in reported flow state among Equestrian athletes involved in the sport of dressage. The study found that the athletes in the experimental group showed significant change when their competitive outcome was better than their expectations.

Kaufman, Glass, and Arnkoff (2009) assessed how Mindful Sport Performance Enhancement (MSPE), a new 4-week program, affected flow states, performance, and psychological characteristics of 11 archers and 21 golfers from the community. Participants completed trait measures of anxiety, perfectionism, thought disruption, confidence, mindfulness, and flow. They additionally provided data on their performances and state levels of mindfulness and flow. Analyses revealed that some significant changes in dimensions of the trait variables occurred during the training. Levels of state flow attained by the athletes also increased between the first and final sessions.

Schüler and Brunner (2009) aimed to shed light on the relationship between flow experience and performance in sports using a marathon race as an example. They hypothesized that flow influences the marathon race performance by an indirect rewarding effect. They also assumed that the positive quality of flow experience rewards the pre-race running activity and thereby enhances training behavior which again leads to high race performance. Three studies with marathon runners were conducted. The results confirmed the hypothesis showing that flow during a marathon race was related to future running motivation, but was not directly linked to race performance. Instead, race performance was predicted by pre-race training behavior which again was fostered by flow during the training. The descriptive flow courses of the retrospective and the experience-sampling flow measures were comparable but also showed important differences.

Mustafa et al. (2011) investigated the role of achievement need in predicting flow in high school students. The study used a preliminary data involving 94 high school students aged sixteen attending two different secondary schools. Students
responded to a questionnaire set consisting of a subscale measuring flow and another measuring achievement need. Simple linear regression analysis found that for high school students in this study, achievement need significantly predicts flow. When examined in detail, standard multiple regression analysis found that only two out of three dimensions of achievement need significantly predict flow: commitment and competition. Accomplishment was not found to be a significant predictor to high school students’ academic engagement.

Liu, Ji and Watson (2015) studied whether differences exist in one’s ability to experience flow based upon factors such as cultural background, gender, years of specialized training, skill level, and sport event type. The English and Chinese versions of the Dispositional Flow Scale-2 were used to assess trait flow in American (n =160) and Chinese collegiate athletes (n=341). Using a one-way ANOVA analysis, the flow scores of American participants were found to be higher than those of Chinese participants. The flow scores of male athletes were higher than those of female athletes within the Chinese sample. The flow scores of university athletes were higher than those of national team level athletes within the Chinese sample. Flow scores for athletes in skill-showing events were higher than those of athletes participating in physical ability-showing events for the American participants. This study suggests that individual differences exist in the psychological characteristics of athletes’ trait flow.

5. Emotional Intelligence and its correlates

5.1 Emotional intelligence was expected to be positively related with excellence in academics.

5.2 Emotional Intelligence was expected to be positively related with excellence in sports.

A glance at inter-correlations tables (Tables 4.1, 4.2, 4.5, 4.8 and 4.9) revealed that in the total sample, Emotional Intelligence was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Clear goals, Unambiguous Feedback, Sense of Control, and Autotelic
Experience and Flow and negatively and significantly related with Perseverance of Effort and Loss of Self-Consciousness.

For **Students with Academic Excellence**, **Emotional Intelligence** was positively related to Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Autotelic Experience and Flow.

Among **Students with Sports Excellence**, **Emotional Intelligence** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Flow and negatively and significantly related with Concentration on Task at Hand.

In **Females with Academic and Sports Excellence**, **Emotional Intelligence** was positively and significantly related to Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Clear Goals, Unambiguous Feedback, Sense of Control, Transformation of Time and Flow.

**Emotional Intelligence** was positively and significantly related to Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Clear Goals, Unambiguous Feedback, Sense of Control, Autotelic Experience and Flow and negatively and significantly related with Loss of Self-Consciousness for **Males with Academic and Sports Excellence**.

A perusal of **Stepwise Multiple Regression Equations** (Tables 5.4, 5.9, 5.14, 5.19 and 5.24) for **Total sample** revealed that five variables turned out to be relevant and were retained as predictors. These predictors were Self-Efficacy, Other-Oriented Perfectionism, Perseverance of Effort, Clear Goals and Socially Prescribed Perfectionism. For **Students with Academic Excellence** five variables predicted Emotional Intelligence. These predictors were Other-Oriented Perfectionism, Sense of
Discussion

Control, Consistency of Interest, Concentration on Task at Hand, and Socially Prescribed Perfectionism. Among Students with Sports Excellence, Self-Efficacy, Action-Awareness Merging, Sense of Control, and Transformation of Time significantly predicted Emotional Intelligence. For Females with Academic and Sports Excellence five variables turned out to be relevant and were retained as predictors. These predictors were Self-Efficacy, Other-Oriented Perfectionism, Consistency of Interest, Clear Goals and Transformation of Time. Among for Males with Academic and Sports Excellence, Self-Efficacy, Loss of Self-Consciousness, Autotelic Experience and Transformation of Time significantly predicted Emotional Intelligence.

Thus the hypotheses were upheld in majority of the cases.

Review of earlier studies also revealed similar trends.

Mathur, Dube and Malhotra (2003) have studied the relationship between emotional intelligence and academic achievement. Data was collected on a sample of 83 adolescents (boys and girls) from a local public school. Results revealed that emotional intelligence corroborates and compliments academic achievement. The data also exhibits that, adolescents who have higher level of responsibility do better on scholastic performance, make better adjustments and are more confident.

Barchard (2003) had examined the ability of emotional intelligence to predict academic achievement, in a sample of undergraduate psychology students using year-end grades as the criterion. The predictive validity of emotional intelligence was compared with the predictive validity of traditional cognitive abilities and the Big-five dimensions of personality. In addition, the incremental predictive validity of each of these three domains was assessed. Only some measures of emotional intelligence predicted academic success, and none of these measures showed incremental predictive validity for academic success over and above cognitive and personality variables.

Parker et al. (2004) in a study of 667 high school students gave students an emotional intelligence assessment and compared those scores to their yearend grades. Participants in the study were asked to complete an EQ inventory between the first and second semesters of the academic year. At the end of the year, each EQ response...
Discussion

was matched with the student’s final grade point average. Students were then divided into three groups based on their grade point percentiles: highest achievement (80th percentile and above); lowest achievement (20th percentile and below) and middle (between the 80th and 20th grade point percentiles). The following results were observed, Students in the highest achievement group also demonstrated greater interpersonal competency, adaptability, and stress management than students in the other groups. Students in the middle percentile group scored significantly higher than the 20th percentile group for interpersonal competency, adaptability, and stress management.

**Aremu, Tella, and Tella (2007)** investigated the relationship among emotional intelligence, parental involvement and academic achievement of 500 Senior Secondary School Students in Ibadan, Nigeria. The participants ranged in age between 14 and 18 years (M=16.5, SD. = 1.7). Results showed that both emotional intelligence and parental involvement could predict academic achievement. Similarly, there were significant positive relationship between emotional intelligence and academic achievement; and between parental involvement and academic achievement.

To explore the relationship of spiritual intelligence and emotional intelligence with science achievement of higher secondary male students, **Bansal (2007)** have done a study among a sample of 200 male students of the age group of 15 to 18 years, studying in eleventh class of the intermediate colleges of Mathura city. Results showed that, high positive correlation was found between science achievement and emotional intelligence.

Another study examining the influence of emotional intelligence on academic self-efficacy and achievement was reported by **Dey (2009)**, among 150 undergraduate students (age=18-20 years). The result demonstrated that emotional intelligence and academic self-efficacy significantly correlated with academic achievement.

**Lane, Thelwell, Devonport (2009)** investigated relationships between emotional intelligence and memories of mood states associated with optimal and dysfunctional performance in competitive sport and academic situations. Results indicated that mood states associated with optimal and dysfunctional performance
were situation-specific. Differences in mood states between optimal and dysfunctional performance were more pronounced for athletic situations, thereby suggesting mood states were associated with performance.

Radfar, Aghaie, Motashaker-Arani, Noohi, and Saburi (2013) conducted a cross-sectional study on medical students of Baqiyatallah University of Medical Sciences between 2010 and 2011 who had completed at least two academic semesters. The sample comprised of one hundred-fifty medical students who were enrolled (mean age 23.17 ± 2.17 years and all were male). Results revealed that there was a significant correlation between EI score and academic achievement. Problem solving ability, stress tolerance and self-awareness from all fields showed significant relation with academic achievement.

Laborde, Dosseville, Guillén, and Chávez (2014) used a path analysis approach to explore if trait Emotional Intelligence was related to performance satisfaction through stress appraisal and coping behaviors. 2, 291 athletes completed the trait emotional intelligence questionnaire (TEIQue). Moreover, with a recent competition in mind, they completed the Coping Inventory for Competitive Sports, as well as items on perceived intensity of stress, perceived controllability of stress, challenge and threat appraisals, coping effectiveness, and performance satisfaction. Results revealed that showed that trait EI was related to performance satisfaction through stress appraisal and coping variables.

In the realm of research findings and tracing the supporting studies in literature, it is essential that the importance of results is greater than highlighting the historical evidence. The results of the present study clearly provide evidence of differences on various psychological constructs between students with academic and students with sports excellence. The age old wisdom as well as the data establishes gender differences in almost each group. Significant correlates of excellence were also found. The real importance of the study lies in the fact that correlates of excellence can help researchers, academicians, coaches and other stakeholders to identify and make appropriate programmes for enhancing these correlates to train the students to achieve his/her full potential.
SUMMARY

The main aim of the present investigation was to study the role of Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence in Excellence in Academics and Sports. The sample was studied with respect to Grit and its dimensions viz., Perseverance of Effort and Consistency of Interest; Perfectionism and its dimensions viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism; Self-Efficacy; Flow and its dimensions viz., Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience and Emotional Intelligence.

The total sample comprised of 200 students (100 in the field of academics and 100 in the field of sports) within the age range of 20-26 years, out of which 91 were males and 109 were females. While gender equality was not maintainable in the sample because of the ground reality, a proportionate representation had been adhered to. Whereas in the academic field, the top rankers comprised of more females than males, in the sports it was the males who outnumbered the females in top positions. Eventually, 100 students in the field of academics were taken, out of which 18 were males and 82 were females and 100 students in the field of sports were taken, out of which 73 were males and 27 were females. In the field of academics, only the top rankers at the university level, in their respective disciplines were selected. In the field of sports, the university players who top in their respective games were selected. Players were selected from individual games as it highlighted the individual level of excellence. Purposive sampling technique was used. The sample was collected from three universities-Panjab University (Chandigarh), Punjabi University (Patiala) and Guru Nanak Dev University (Amritsar). All the subjects were explained about the nature and aim of the study and their role in the study. Informed consent was obtained before they were enrolled as subjects in the study.
To measure Grit, the Short Grit Scale developed by Duckworth and Quinn (2009) was used, which has two dimensions viz. Perseverance of Effort and Consistency of Interest.

The Multidimensional Perfectionism Scale by Hewitt, Flett, Turnbull-Donovan and Mikail (1991) was used to measure three types of Perfectionism viz., Self-Oriented, Other-Oriented and Socially Prescribed Perfectionism.


Emotional Intelligence was measured by using The Emotional Intelligence Questionnaire, developed by Mohan, Malhotra and Mangla (2003).

The raw scores were analyzed using appropriate statistical analyses viz. Descriptive statistics, t-test, Analysis of Variance (2X2 ANOVA), Inter-Correlation analysis and Stepwise Multiple Regression analysis.

INTER-CORRELATION ANALYSIS

Inter-correlation analysis was carried out to assess the correlation between Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence and various variables for the Total sample, Students with Academic Excellence, Students with Sports Excellence, Females with Academic and Sports Excellence and Males with Academic and Sports Excellence. Many significant correlations have been found between Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence and various variables.

In the total sample, Grit was positively and significantly related to Consistency of Interest, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-

Perfectionism was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Clear Goals, Sense of Control and Emotional Intelligence.


Flow was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time and Autotelic Experience.

Emotional Intelligence was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Clear goals, Unambiguous Feedback, Sense of Control, and Autotelic Experience and negatively and significantly related with Perseverance of Effort and Loss of Self-Consciousness.

Among Students with Academic Excellence, Grit was positively and significantly related to Consistency of Interest, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Autotelic Experience, Flow and Emotional Intelligence.

Perfectionism was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially

**Self-Efficacy** was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of control, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence.

**Flow** was positively and significantly related to Perseverance of Effort, Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Emotional Intelligence.

**Emotional Intelligence** was positively and significantly related to Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control, Autotelic Experience and Flow.

Among **Students with Sports Excellence**, **Grit** was positively and significantly related to Consistency of Interest, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence and negatively and significantly related with Concentration on Task at Hand.

**Perfectionism** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially

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222
Prescribed Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Flow and Emotional Intelligence and negatively and significantly related with Concentration on Task at Hand.

**Self-Efficacy** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience, Flow and Emotional Intelligence and negatively and significantly related with Concentration on Task at Hand.


**Emotional Intelligence** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Flow and negatively and significantly related with Concentration on Task at Hand.

In **Females with Academic and Sports Excellence**, **Grit** was positively and significantly related to Consistency of Interest, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Unambiguous Feedback, Concentration on Task at Hand, Sense of Control and Emotional Intelligence.
Summary

**Perfectionism** was positively and significantly related to Perseverance of Effort, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Clear Goals, Unambiguous Feedback, Sense of Control and Emotional Intelligence.

**Self-Efficacy** was positively and significantly related to Perseverance of Effort, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Transformation of Time, Flow and Emotional Intelligence.

**Flow** was positively and significantly related to Perseverance of Efforts, Consistency of Interest, Self-Efficacy, Challenge-Skill Balance, Action-Awareness Merging, Clear Goals, Unambiguous Feedback, Sense of Control, Loss of Self-Consciousness, Transformation of Time, Autotelic Experience and Emotional Intelligence.

**Emotional Intelligence** was positively and significantly related to Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Challenge-Skill Balance, Clear Goals, Unambiguous Feedback, Sense of Control, Transformation of Time and Flow.


**Perfectionism** was positively and significantly related to Consistency of Interest, Grit, Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Self-Efficacy, Sense of Control, Autotelic Experience and Emotional Intelligence and negatively and significantly related with Loss of Self-Consciousness.
Summary


Emotional Intelligence was positively and significantly related to Consistency of Interest, Grit, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Clear Goals, Unambiguous Feedback, Sense of Control, Autotelic Experience and Flow and negatively and significantly related with Loss of Self-Consciousness.

REGRESSION ANALYSIS

The main objective of the present study was to derive regression equations to delineate the significant predictors for the criterion variables i.e. Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence in Excellence. Hence, with Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence as the criterion, regression equations were run for the Total sample, Students with Academic Excellence, Students with Sports Excellence, Females with Academic and Sports Excellence and Males with Academic and Sports Excellence.

Grit

In the Total Sample three variables turned out to be relevant and were retained as predictors. These variables were Other-Oriented Perfectionism, Unambiguous feedback and Self-Efficacy. Regression analysis for Students with Academic Excellence revealed that three variables turned out to be relevant and were
retained as predictors. These predictors were Other-Oriented Perfectionism, Socially Prescribed Perfectionism and Emotional Intelligence. For Students with Sports Excellence, Self-Efficacy, Other-Oriented Perfectionism, and Challenge-Skill Balance significantly predicted Grit. Regression analysis for Females with Academic and Sports Excellence revealed that three variables turned out to be relevant and were retained as predictors. These predictors were Other-Oriented Perfectionism, Unambiguous Feedback, and Clear Goals. For Males with Academic and Sports Excellence predictors were Self-Efficacy, Challenge-Skill Balance and Other-Oriented Perfectionism.

Perfectionism

Regression analysis for the Total sample revealed that three variables turned out to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Self-Efficacy and Transformation of Time. Among Students with Academic Excellence, Emotional Intelligence and Self-Efficacy turned out to be relevant and were retained as predictors. For Students with Sports Excellence, Self-Efficacy significantly predicted Perfectionism. For Females with Academic and Sports Excellence, Emotional Intelligence, Perseverance of Effort, Action-Awareness Merging and Unambiguous Feedback turned out to be relevant and were retained as predictors. Among Males with Academic and Sports Excellence, two variables turned out to be relevant and were retained as predictors. These predictors were Self-Efficacy, and Unambiguous Feedback.

Self-Efficacy

Regression analysis for the Total sample revealed that six variables turned out to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Transformation of time, Other-Oriented Perfectionism, Perseverance of Effort, Sense of control and Challenge-Skill Balance. For Students with Academic Excellence, Socially Prescribed Perfectionism, Transformation of time, Other-Oriented Perfectionism and Perseverance of Effort significantly predicted Self-Efficacy. For Students with Sports Excellence, seven variables turned out to be
relevant and were retained as predictors. These predictors were Emotional Intelligence, Transformation of Time, Sense of Control, Clear Goals, Autotelic Experience, Other-Oriented Perfectionism and Socially Prescribed Perfectionism. For **Females with Academic and Sports Excellence**, Transformation of Time, Socially Prescribed Perfectionism, Sense of Control, Perseverance of Effort and Emotional Intelligence were retained as the predictors of Self-Efficacy. For **Males with Academic and Sports Excellence** seven variables turned out to be relevant and were retained as predictors. These predictors were Emotional Intelligence, Consistency of Interest, Transformation of Time, Other-Oriented Perfectionism, Perseverance of Effort, Challenge-skill Balance and Sense of Control.

**Flow**

Regression analysis for the **Total sample** revealed that four variables turned out to be relevant and were retained as predictors. These predictors were Self Efficacy, Other-Oriented Perfectionism, Consistency of Interest and Perseverance of Effort. For **Students with Academic Excellence**, three variables predicted Flow. These variables were Other-Oriented Perfectionism, Emotional Intelligence, and Perseverance of Effort. For **Students with Sports Excellence**, only one variable turned out to be relevant and was retained as predictor. The predictor was Self-Efficacy. Among **Females with Academic and Sports Excellence**, regression analysis revealed that Self-Efficacy and Consistency of Interest significantly predicted Flow. For **Males with Academic and Sports Excellence**, regression analysis revealed that three variables predicted Flow. These variables were Consistency of Interest, Perseverance of Effort and Other-Oriented Perfectionism.

**Emotional Intelligence**

Regression analysis for the **Total sample** revealed that five variables turned out to be relevant and were retained as predictors. These predictors were Self-Efficacy, Other-Oriented Perfectionism, Perseverance of Effort, Clear Goals and Socially Prescribed Perfectionism. For **Students with Academic Excellence**, five variables predicted Emotional Intelligence. These predictors were Other-Oriented
Perfectionism, Sense of Control, Consistency of Interest, Concentration on Task at Hand, and Socially Prescribed Perfectionism. Among **Students with Sports Excellence**, Self-Efficacy, Action-Awareness Merging, Sense of Control and Transformation of Time significantly predicted Emotional Intelligence. For **Females with Academic and Sports Excellence**, five variables turned out to be relevant and were retained as predictors. These predictors were Self-Efficacy, Other-Oriented Perfectionism, Consistency of Interest, Clear Goals and Transformation of Time. For **Males with Academic and Sports Excellence**, Self-Efficacy, Loss of Self-Consciousness, Autotelic Experience and Transformation of Time significantly predicted Emotional Intelligence.

**GROUP COMPARISONS**

**t-ratios**


**ANOVA**

Analysis of variance was conducted with groups and gender as independent variables. 2x2 ANOVA was employed with two levels of gender viz. males and females and two levels of groups viz. academic excellence and sports excellence. The effect of these two variables was singly and jointly analyzed for all the variables.

**Analysis of Variance for the Groups**

Analysis of Variance for the Groups revealed significant F-ratios for the following variables: Consistency of Interest, Self-Oriented Perfectionism, Other-
Summary

Oriented Perfectionism, Perfectionism, Action-Awareness Merging, Concentration on Task at Hand, Loss of Self-Consciousness, Total Flow and Emotional Intelligence.

**GENDER COMPARISONS**

**t-ratios**

A comparison of the means, standard deviations and t-ratios comparing females with academic and sports excellence and males with academic and sports excellence revealed that significant differences emerged between the genders on the following variables: Grit dimensions viz. Consistency of Interest, Perfectionism dimensions viz. Self-Oriented Perfectionism, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Self-Efficacy, Flow dimensions viz. Challenge-Skill Balance, Sense of Control, Transformation of Time and Emotional Intelligence.

A comparison of the means, standard deviations and t-ratios comparing students with Academic Excellence revealed that significant differences emerged between the genders on the following variables: Perfectionism, Flow dimensions viz. Action-Awareness Merging, Loss of Self-Consciousness, Transformation of Time and Total Flow.

A comparison of the means, standard deviations and t-ratios comparing students with Sports Excellence revealed that significant differences emerged between the genders on the following variables: Consistency of Interest, Perfectionism dimensions viz. Self-Oriented Perfectionism, Perfectionism, Flow dimensions viz. Action-Awareness Merging, Concentration on Task at Hand and Emotional Intelligence.

**Analysis of Variance for Gender**

Analysis of Variance for Gender revealed significant F-ratios for the following variables: Perseverance of Effort, Other-Oriented Perfectionism, Socially Prescribed Perfectionism, Perfectionism, Challenge-Skill Balance, Action-Awareness Merging,
Unambiguous Feedback, Concentration on Task at Hand, Loss of Self-Consciousness, Transformation of Time, Total Flow and Emotional Intelligence.

The present study offered some divergence and convergence in the findings, which might contribute to the understanding of Excellence among the top performers in the field of academics and sports. Significant group and gender difference were found in the present study. Grit, Perfectionism, Self-Efficacy, Flow and Emotional Intelligence were significantly related.