



# IMPACT OF GRIT PERSONALITY AND PSYCHOLOGICAL MINDSET AMONG THE FEMALE VARSITY FOOTBALL PLAYERS

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## Abstract

A study was conducted to find out the “IMPACT OF GRIT PERSONALITY AND PSYCHOLOGICAL MINDSET AMONG THE FEMALE VARSITY FOOTBALL PLAYERS”. The purpose of the study was to determine the grit with mind set on female varsity football players. A population of 15 female varsity players within the range of age 18-23 were selected from Susil Kar Colleges in The University of Calcutta, Kolkata, West Bengal, India. For conducting the research, A questionnaire on of Short Grit Scale (Duckworth, A.L, & Quinn, P.D. (2009) & Mindset (Carol Dweck’s book “Mindset: The new psychology of success.” (Dweck, 2006) by Lucinda Poole) was used to find out the relation and status among them. After analysing the data, it was found that there is significant association of Grit and Mindset on female varsity.

**Keywords:** Grit, Mindset, varsity female football players.

**Introduction:** Soccer (football) is one of the most widespread sports in the world, played globally by amateurs and professionals, in addition to being the most viewed sport on television.<sup>1</sup> Football is still a male-dominant sport, but there has been a good development in female football over the last 10 years, especially regarding match-day attendance and TV audience.<sup>2</sup> However, there is still little research conducted on female football players compared to male. In a recent article, Kirkendall<sup>3</sup> examined the history of research in football and found that only 25% of academic papers included female participants. Kirkendall also showed that the discrepancy between the number of male and female participants in peer-reviewed articles has increased over the past 10 years. Historically women in sports have been side-lined and given little attention compared to men. Most literature concerning sports and factors affecting performance in sporting contexts consists of male samples. Grit, and mindset have previously been investigated in relation to performance among male football players. Thus, this study aimed to explore whether there were group differences in grit, and mindset among female football players across the top series. In addition, the study investigates associations between grit, and mindset for the group as a whole. The sample consisted of 15 participants in total, whereas all were women. Each participant was tested for the Grit-S (Duckworth et al., 2007), and mindset (Dweck et al., 1995)

## Grit

Grit is a construct that can be defined as “perseverance and passion for long-term goals” (Duckworth et al., 2007, p. 1087). It is divided into two components: perseverance of effort and consistency of interest over time (Duckworth & Quinn, 2009). Gritty individuals typically stay in course even when disappointment or boredom happens. They tend to

work hard towards challenges while maintaining interest and effort over a more extended period of time. Gritty individuals keep going when others change course or give up (Duckworth et al., 2007). Grit has gained a lot of theoretical support over the years, yet, it has existed since the earliest days of psychology. During the late 1800s, Galton collected information concerning abilities and success. He emphasized that abilities alone did not lead to success and proposed that “self-denial” was an essential factor in that matter (Galton, 1869, in Duckworth & Gross, 2014). Today, “self-denial” is referred to as “self-control” and is often said to be the same as grit. However, Duckworth et al. (2007) propose that grit differs from self-control in its emphasis on stamina.

According to the theory of Costa McCrae (1992), the Big Five, self-discipline is a facet under the personality trait of conscientiousness. Even though grit has been said to differ from the construct self-discipline, a study shows that they are highly correlated  $r = .6$  (Duckworth et al., 2007). Self-discipline, or self-control, has later been defined as “being a capacity to regulate attention, emotions, and behaviour in the presence of temptation” (Duckworth & Gross, 2014, p. 319). Another difference between the two constructs is their effect on goals, where grit might be related to higher goals than self-control (Duckworth & Gross, 2014). Also, there have been found correlations between grit and personality traits. Duckworth and colleagues (2007) found in their study a correlation between conscientiousness and grit  $r = .77$ ,  $p < .001$ . However, the correlations with the other traits were low compared to conscientiousness (Duckworth et al., 2007). Seemingly grit overlaps with the achievement aspect of conscientiousness but differs in perseverance or stamina of pursuing long-term goals (Duckworth et al., 2007). Based on the high correlations between grit and conscientiousness, some studies argue that grit could be a facet in the personality trait conscientiousness (Credé et al., 2017). Interestingly, grit can at times correlate negatively to neuroticism  $r = -.38$ . An argument for this could be that emotional stability is an important factor when pursuing longterm goals and being resilient towards setbacks and challenges (Duckworth et al., 2007).

Early on, Duckworth (2017) found that grit predicted higher levels of education, fewer career changes, and retainment in the U.S. Military, West Point. The fascination around the fact that some individuals worked for years to get into prestige colleges or West Point and then “give up” when facing difficulties or complex challenges was a key factor when developing the Grit Scale (Duckworth, 2017, p. 10). Also, why some individuals accomplish more than others of equal intelligence was of interest to address further (Duckworth et al., 2007). While some traits seem more critical than others in particular settings and careers, Duckworth et al. (2007) suggested that grit is that one quality that is shared among those that are successful. A gritty individual will keep interest despite failure and plateaus in progress. They tend to keep their course when others give up or change their path (Duckworth et al., 2007). Others may say that these individuals have talent and tend to be surprised when those who seemed gifted at first did not end up in the upper end of their field. Similarly, Galton found that ability alone did not lead to success in any field. He, like Angela Duckworth, believed that ability had to be combined with the capacity to work harder than others (Duckworth et al., 2007).

Multiple studies involving grit point out its association with high achievement. Also, studies have shown that high scores in grit could be associated with lower chances of dropping out than those with low grit-score (Duckworth et al., 2007). As some individuals depend on the level of challenge when developing skills or higher achievement, gritty individuals will continue their work and try to reach their goals even if the level of challenge is suboptimal (Duckworth & Quinn, 2009). Grit has also shown an association with happiness, and some studies suggest that gritty individuals are more likely to seek happiness through engagement than less gritty individuals (Von Culin et al., 2014). Their study assumed that lower grit scores were correlated to pleasure and therefore led to losing interest over time. However, the association between grit and engagement was driven by the perseverance of effort. Consequently, they argued that engagement might promote grit (Von Culin et al., 2014). Duckworth et al. (2007) assumed that grit could be as important as IQ to high achievement. IQ tests are often recommended to test intelligence or general mental capacity.

However, multiple studies indicate that IQ might not be the best measure for success or achievement. While IQ is important, it appears to be an underlying factor for success. Students who scored higher on the grit scale than their peers also showed higher GPA results (Duckworth et al., 2007). In that matter, grit might be the tenacity and resoluteness which conduce to success and higher achievement. On that note, Duckworth and colleagues (2007) created a scale that measured an individual's level of grit. The Grit Scale, or Grit-O, was developed as a self-report questionnaire. The scale consisted of a two-factor structure with 12 items, which compromised stamina in both perseverance of effort and interest over time (Duckworth & Quinn, 2009). The Grit Scale measured grit with a 5-point Likert scale. Later, Duckworth and Quinn (2009) developed a shorter version of the original Grit Scale. This scale, the Grit-S, was meant to be a more efficient measure. Grit-S consists of the same two factor structure as the Grit-O but has fewer items and improved psychometric properties. The number of items was reduced from 12 to 8, with four items per subscale (Duckworth et al., 2007). Duckworth and Quinn (2009) presented evidence for test-retest stability,

consensual validity, internal consistency, and predictive validity for the Grit-S. Both scales measure the consistency of interest and perseverance of effort, with a correlation of  $r = .96$  (Duckworth & Quinn, 2009).

## Mindset

In this thesis, mindset will be viewed from positive psychology. Yet, it is important to note that mindset has several conceptualizations. If we look at cognitive psychology, a mindset can be understood as the sum of active cognitive processes during a given task (French, 2016). However, in positive psychology, Dweck (2012) defines mindset “as a set of beliefs of our own attributes.” According to Dweck (2016), there are two types of mindset: growth mindset and fixed mindset. A growth mindset is a belief that talent isn’t “set” and that through deliberate practice and support from others, they can develop. On the contrary, some believe that talents are innate and often consider them as a gift. Individuals with this mindset tend to achieve less and have a fixed mindset (Dweck, 2016). Typically, individuals with a growth mindset tend to worry less about what others think about them and spend more time and energy on learning, according to Dweck (2016). Due to an increase in research on mindset, there are still some misconceptions concerning the concept. Some believe that they have always had a growth mindset. However, a growth mindset is not something you have. A pure growth mindset is generated through action and effort (Dweck, 2016). To stick with the idea that a growth mindset will lead to achievements requires risk-taking and willingness to develop. Some might confuse growth mindset with other qualities like being open-minded or flexible, which are good qualities, but not the same as growth mindset (Dweck, 2016). Like many other psychological factors, growth mindset is not an independent factor. According to Dweck (2016), support and opportunities are important elements for progress. Also, she claims that rewards matter, both as motivation and for reaching goals. Research has shown that mindset does play a key role in both motivation and achievement. Whereas fixed mindset has been linked with vulnerability to negative feedback and helplessness (Dweck et al., 1995; Mangels et al., 2006), growth mindset has been associated with well-being and endurance when meeting challenges (Dweck et al., 1995; Howell, 2016). Research concerning mindset has mainly been done using questionnaires and self-report measures. However, recent studies have tried to see if mindset has any associations with different brain areas (Ng, 2018). These types of neuroscientific studies could be an important contribution to the already existing questionnaires. According to Ng (2018) and the neuroscientific findings in their study, growth mindset is associated with the particularly anterior cingulate cortex (ACC), a part of the dorsal regions of the brain. ACC is related to learning and control, and growth mindset seems to be related to both dorsal and ventral striatal connectivity with dorsal ACC (Myers et al., 2016). Further, Ng (2018) found that both growth mindset and intrinsic motivation were related to ACC and ventral stratum. Intrinsic motivation has been found to be associated with mid-brain regions as well. Next, Ng (2018) claimed that individuals with a growth mindset could be more efficient in error-monitoring and handle corrective feedback in a good manner. Moser et al. (2011) had the same assumptions about individuals with a growth mindset and their ability to handle corrective feedback. This type of biological focus and neuroscientific approach could contribute with valuable information next to the already existing questionnaires and self-report measures.

According to Dweck and Duckworth, grit and growth mindset are essential factors to achievement, learning, and success (Hochandel & Finamore, 2015). Traditionally, academic institutions tend to use intelligence tests and scores to predict achievement. However, that only reflects one’s inborn abilities for learning and success. Grit and growth mindset seem to improve individuals’ achievement. A growth mindset could contribute to persistence, thus become grittier and overcome challenges they face. Duckworth suggests that by having a growth mindset, grit could develop. As a result, one becomes more persistent and changes their thoughts about intelligence being fixed (Hochandel & Finamore, 2015). Both grit and growth mindset appear to facilitate long-term goals and could be factors that contribute to great performances and achievement. For instance, Albert et al. (2019) found that athletes who endorsed growth mindset and believed that ability was malleable and could be improved through hard work reported higher grit levels. On the contrary, fixed mindset did not positively predict athletes’ level of grit (Akin & Arslan, 2014; Albert et al., 2019).

Grit and mindset have over multiple studies shown their relevance to one another. However, whether grit is a function of growth mindset or whether a growth mindset is a function of grit is still to be answered (Polirstok, 2017). They are important for learning and adapting different strategies to improve performance and willingness to take academic risks early at school, students may be more well-equipped. Teachers can contribute to their development to better learning by implementing strategies, like behaviour strategies, cognitive strategies, or technological strategies to help strengthen students and how they see themselves as learners (Polirstok, 2017). Polirstok (2017) assumes that students believe in themselves and become more successful learners by implementing such strategies. Also, students may be grittier and develop a growth mindset. By having this focus from a young age and developing grit and mindset among students, their learning ability and faith in their strengths may be greater. Next, adolescents could have a greater chance to become successful and give those on the cusp of failure a chance to achieve their goals (Polirstok, 2017).



Further, Akin and Arslan (2014) found grit positively related to learning-approach goal orientations and negatively related to performance goal orientations. While it's important to implement learning strategies and help students achieve their goals, their approach to learning is also important. Students eager to learn new skills, improve their understanding and competence, and keep on going despite failure have a so-called learning-approach goal orientation. This type of orientation is, as mentioned, positively related to grit. Learning approach goal orientation has also shown relation to motivation advantages (Akin & Arslan, 2014). On the contrary, performance-approach goal orientation has been positively related to the absence of grit, increased anxiety, and other maladaptive behaviours (Akin & Arslan, 2014).

Similar to grit, mindset has also demonstrated relations to motivation, goals, and effort. A fixed mindset is assumed to predict helplessness attributions, poorer self-reported grades, and fewer academic goals. Next, fixed mindset were predictive of disengagement and self-handicapping. In contrast, growth mindset is likely related to motivation and engagement (De Castella & Byrne, 2015). Furthermore, mindset could seem to buffer against demotivation in the face of setbacks and lead to better achievements (Aditomo, 2015). A growth mindset about academic ability encouraged the adoption of effort attribution and mastery goals. Hence, this buffered against demotivation in the face of academic setbacks and lead to better academic achievement (Aditomo, 2015). However, Yu and McLellan (2020) found four distinct mindset profiles in their study, where the students' mindset varied with mastery goals, effort believes, self-handicapping, and perseverance. In addition to the traditional view on growth mindset and fixed mindset, two profiles displayed other combinations; growth-competitive and disengaged. Those with a growth-competitive mindset embraced both mastery goals and performance goals, and the results showed that they even outperformed the students with a traditional growth-focused mindset. Those with a disengaged mindset did not endorse performance goals, like others with a fixed mindset tend to do (Yu & McLellan, 2020).

In academic settings, both growth mindset and grit have demonstrated their importance. Their relevance in sport has also been explored in different studies. Albert et al. (2019) investigated the relationship between grit and psychosocial factors such as mindset, goal orientation, and motivational climates. Their results revealed that athletes' growth mindset and task goal orientation related to their grit level. Interestingly, their study presented findings that different goal orientations, task-orientated or ego orientated, mattered to how gritty the athletes were. However, the task-involving motivational climate was not a

significant predictor of grit, contrary to their prior beliefs (Albert et al., 2019). Grit has also been associated with deliberate practice in sport (Tedesqui & Young, 2017). Their findings suggest that perseverance of effort predicted weekly amounts of deliberate practice and engagement in both optional and mandatory practice contexts.

Conversely, consistency of interest showed associations with threats to athletes' sport commitment (Tedesqui & Young, 2017). The study supports the assumptions about gritty individuals and how their hard work toward long-term goals enables them to persist with their activity engagement (Duckworth et al., 2007; Duckworth & Quinn, 2009; Hocandel & Finamore, 2015). Further, others have revealed that grittier athletes tend to spend significantly more time in sport-specific activities, such as training, competitions, and indirect involvement (Larkin et al., 2016).

Mostly, grit has been associated with solely beneficial outcomes and as a positive trait. However, some studies indicate that grit also comes with drawbacks. While individuals with a low level of grit tend to give up when tasks are too complicated or meet failure, being gritty can also have disadvantages. Some studies imply that grit could lead to harmful outcomes (Lucas et al., 2015). It seemed that grittier individuals not only persisted at a cost to themselves, but they also managed fewer tasks than those who are not so gritty. Additionally, grittier individuals were more likely to keep fighting a losing battle when they could quit and increased their effort when they lost a game (Lucas et al., 2015). Even though gritty individuals don't seem to suffer from this handicap. Their inclination to persevere on more difficult problems over completing many problems does not seem to impact their ability to succeed (Lucas et al., 2015). Furthermore, gritty individuals seem to surpass less gritty individuals in education and employment settings (Duckworth, 2017; Duckworth et al., 2007). Mindset has also shown how it can be both beneficial and harmful, depending on whether individuals hold a growth mindset or a fixed mindset (Dweck et al., 1995; Dweck, 2012; Dweck, 2016). In association with high achievement and excellent performances mindset among gifted students in China have been examined. They were classified as non-perfectionists, healthy perfectionists, and unhealthy perfectionists. According to the study, those who was unhealthy perfectionists scored the highest on the measure of fixed mindset (Chan, 2011). The characterization of the unhealthy perfectionists mentions how they are occupied with avoiding mistakes and don't feel that their efforts are good enough (Chan, 2011), similarly to how those with a fixed mindset might evaluate themselves and their performance. In contrast, healthy perfectionists seemed to score higher on the measure of growth mindset (Chan, 2011).

Given the above, grit and mindset could lead to both harmful and beneficial outcomes. Equally, the traditional view on passion as harmonious or obsessive could contribute to similar outcomes (Mageau et al., 2009; Vallerand et al., 2003). The two types of passion distinguish from each other in how they internalize one's identity. Harmonious passion develops through an autonomous internalization of an activity. The individual sees the activity as important to them and accepts its internalization in their life and identity (Vallerand et al., 2003). The internalization contributes to a motivational force and a willingness to pursue the activity. With harmonious passion, individuals freely chose to engage themselves and spend their time voluntarily. Additionally, individuals with this type of passion spent time on activities, in a matter where it's in harmony with other aspects of their lives (Vallerand et al., 2003). Conversely, obsessive passion has a more controlled framework, and internalization originates from intrapersonal and interpersonal pressure. These feelings and contingencies are what drives the person to continue the activity engagement. The individuals' engagement is not elective, as those with harmonious passion have. In connection to this, the individual continues to be engaged and committed as the activity controls the person (Vallerand et al., 2003). Further, the activity tends to take disproportionate space in the person's life and identity, leading to conflicts with other aspects and activities in the person's life (Vallerand et al., 2003). Most of the population is moderately passionate about an activity during their lifespan (Stenseng, 2008; Vallerand et al., 2003). Individuals tend to spend many hours per week over several years dedicated to a specific activity. Therefore, such passion seems to be persistent. Even though harmonious passion and obsessive passion seem to have different internalizations to one's identity and life, they both have been found to positively predict the engagement in demanding task activities, such as deliberate practice (Vallerand et al., 2007; Vallerand et al., 2008). A study found that only harmonious passion predicted long-term persistence in an activity. On the contrary, obsessive passion positively predicted maladaptive outcomes (Bonneville-Roussy & Bouffard, 2015). However, harmonious passion seems to protect against negative outcomes (Mageau et al., 2011). Both harmonious passion and obsessive passion can be associated with persistence, and their internalization into one's identity appears to affect differently. On the one hand, harmonious passion is associated with autonomy and will. Individuals will be able to quit the activity if it becomes harmful or leads to negative outcomes. On the other hand, obsessive passion is expected to lead to continued engagement because the activity controls the person (Vallerand et al., 2003). While persistence is important to success and performance, positive and healthy engagement is equally important. It follows that persistence itself will not develop new skills. Activity engagement without positive outcomes or results will most likely not give greater achievements. Although, athletes who dedicate their whole life stay persistent in the activity to reach higher goals or results like the Olympics (Ericsson et al., 1993). Hence, obsessive passion could be a requirement to become a professional athlete. However, since obsessive passion may lead to engagement no matter the circumstances, such persistence might lead to physical injuries or mental staleness that potentially could harm optimal performance (Vallerand et al., 2003). Because harmonious passion could lead to a more flexible psychological state that enhances better focus, less anxiety, and pressure, it might still lead to equally high levels of achievement and performance. Also, the risk of physical injuries is less likely (Vallerand et al., 2003).

## 2. Significance of the Study

- ✓ The present study may be highlighted some idea regarding the Grit of varsity female football players.
- ✓ The study may help to understand about the grit and mindset of varsity female football players as a whole.

## 3. Material and Methodology

The methodology adopted in the present study has been described.

### 3.1 Selection of the subject

Total fifteen (15) varsity female football players were selected by the researcher within the range of age 18-23 from Susil Kar Colleges in The University of Calcutta, Kolkata, West Bengal, India.

### 3.2 Selection of the variable

The variables, selected for this study are:

- ✓ Grit
- ✓ Mindset

### 3.3 Criterion measures

- ✓ To measure the Grit of a subject, a questionnaire on of Short Grit Scale (Duckworth, A.L, & Quinn, P.D. (2009) is used.
- ✓ To measure the mindset of a subject, a questionnaire on Mindset (Carol Dweck's book "Mindset: The new psychology of success." (Dweck, 2006) by Lucinda Poole).

### 3.4 Data Interpretation and Analysis

The statistical analysis of data on Grit and Mindset respectively were computed by one-way t-test used in Excel. All the scores of grit questionnaire and mindset questionnaire of each subject were converted into standard score.

The results of the present study with discussion and presented in the tabular for

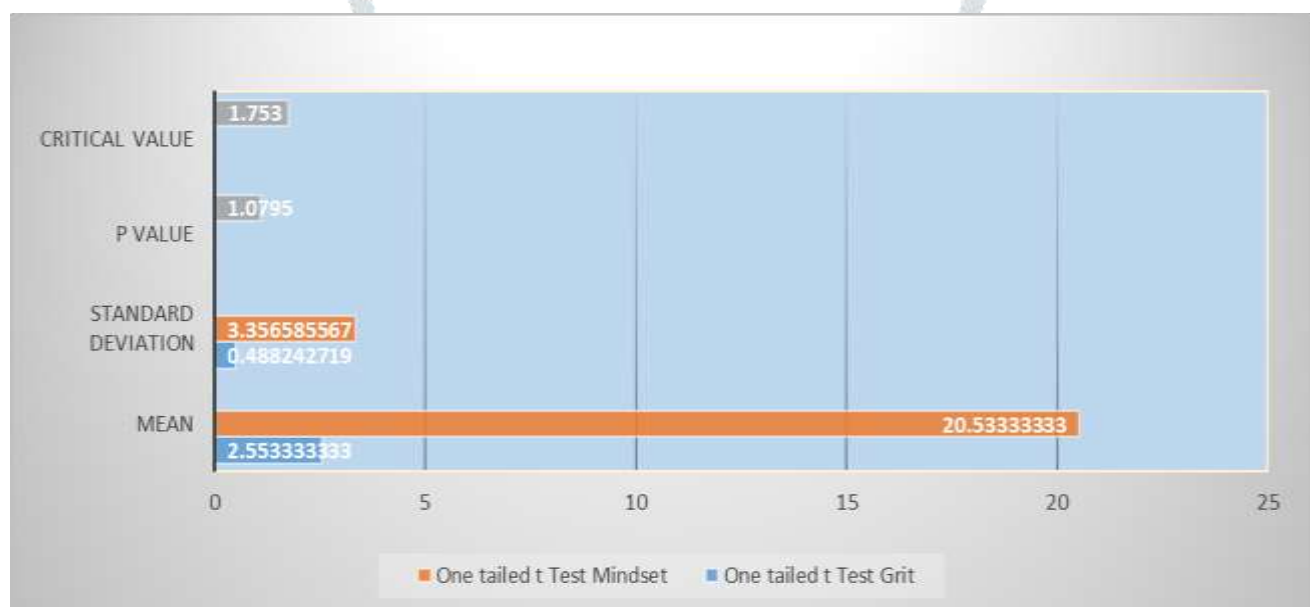
**Table –I**

One tailed t Test			
	Grit	Mindset	
Mean	2.553333333	20.53333333	
Standard Deviation	0.488242719	3.356585567	
df			14
P value			1.0795
Critical value			1.753

**Table Value at .05 level**

From the above table it was evident that the Mean scores of grit and mindset were 2.553, 20.533, SD were 0.488, 3.356 respectively and the p value is 1.079 and critical value is 1.753. It indicates that there was a relationship between grit and mindset of the varsity female football players (p value 1.079 < Table value 0.5).

Fig.: – 1.



**Discussions:** This study focused on mindsets, grit, and their relation to football female players at the varsity level. Recent literature on self-theories recommends using domain-specific instruments to predict varsity achievement. We used the mindsets scale Dweck's (1999) original mindsets scale and the grit scale developed by Duckworth & Quinn, 2009. Their relations with football performance achievement were examined. Results showed that there was a direct effect of mindset on football performance achievement. The direct effect of mindset on football performance achievement mediated by grit was positive and significant; As Dweck (1999) and Duckworth (2016) emphasized self-theories can be critical in explaining individual differences in football performance achievement. Follow-up studies could consider other self-theories, such as goal orientation, self-regulation and individual differences in football performance achievement as well as sports achievement.

In their validation of the grit scale, Duckworth & Quinn, 2009 found significant relations between grit and all of the outcome variables, including self-reported academic achievement, GPA, life satisfaction, and school satisfaction. However, they cautioned against self-reported measures of success. The current study utilized a valid and reliable measure of achievement and confirmed their findings.

An important contribution of this study has been to show the effect of grit between mindset and sports achievement as well as football performance. It suggests that the reason a mindset can improve sports achievement or football performance is that this mindset is able to enhance grit. Knowing about mindsets can change the way students see



themselves and put forth more effort to success. when students have mindset they tend to become more self-directed and autonomous. They can pursue their interests in the face of temptations and this increases their overall grit. The mindset development can start in the family. When parents let children take their own academic decisions, solve their own problems and when they allow mistakes they create a growth mindset environment in the family. In terms of sports, families can encourage their children to work harder in sports. Once students acquire a sports mindset, their grit will likely increase and it would be easier for them to reach their sports related academic goals.

#### 4. Conclusions:

The current study exhibited the positive effect of grit on Sports achievement and also, direct effects of mindsets in a sample of varsity female plyers. The findings of this study draw attention mindsets and grit, which are relatively understudied constructs in varsity settings. varsity-based mindset and grit interventions as well as practical classes Although the current study provides evidence of significant associations among Sports mindsets, grit, and Sports achievement.

#### 5. Recommendations

- ✓ It is recommended that the study may be repeated by selecting subjects from different disciplines.
- ✓ It is recommended that the study may be conducted by using other parameters.
- ✓ A similar study might be conducted with large number of subjects for generalization of the result.
- ✓ A similar study might be conducted with other state and other nations of varsity female players.
- ✓ This type of study may be conducted on both male and female players.
- ✓ Similar study may be conducted on the other profession also.

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