



## PSYCHOLOGICAL SKILLS AS A PREDICTOR OF PERFORMANCE IN SPRINTING OF INDIAN MALE AND FEMALE SPRINTERS

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### ABSTRACT

The purpose of the study was to assess the psychological skills as a predictor of sprinting performance of Indian male and female athletes. A purposive sample of one hundred and thirty male=59 and female=71 National level (sprinters), who participated in 72<sup>nd</sup> All India Inter-university Athletic Meet (M/W) held at Bangalore and 18th Federation Cup National Athletics Championship held at NIS Motibagh, Patiala and 54th National Inter State Athletics Championship held at PAC Ground, Lucknow (U.P.), and volunteered to be the subjects of study. The Athlete Coping Scale Inventory-28 (Smith et al. 1995) is a sport-specific scale consisting of 28 items that measures the psychological characteristics of athletes on seven subscales; coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, and coach-ability was employed. To investigate the psychological skills on seven sub-scales for National level male and female Sprinters, means, standard deviations, Multiple Correlation and Regression analysis were computed. The results of investigation revealed that the selected psychological skills do not predict 100 meter sprinting performance of male sprinters, while these psychological skills do not predict 100 meter sprinting performance of female sprinters.

**Keywords:** Male, Female, Predictability, Sprinting performance, Athletes

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## 1. INTRODUCTION

Numerous factors that are believed to be contributory for an outstanding performance. Psychological factors are influencing more than other factors which is no longer a misnomer but accepted fact. Goal orientation helps an athlete to raise the level of training and competitive performance where as coping skills help protect people from being psychologically harmed by challenging experiences in their lives and finally participation motivation addresses the general questions of how & why athletes become actively involved in sport. Along with many other disciplines, psychology has recognized the importance of fairly representing individual differences such as gender in teaching and research. (Jayashree, Amina and Shailaja,2009).

Psychological skills currently most focused on in sport include arousal, mental imagery, attention, concentration, self-confidence, goal setting and motivation (Wann & Church, 1998; Weinberg & Gould, 2007).

The basic psychological skills like peaking under pressure, self confidence, concentration and motivation are qualities which can affect the player's performance. The tempo of individual and team play is largely dependent upon psychological factors for both beginner and experienced players.

Psychological skill are important determinants of sport performance, and considerable emphasis has been directed at identifying relevant skill and instructing sport consultant, coaches, and athletes in how to teach, learn, and apply them (Williams, 1993). Moreover, there is evidence that psychological skills are related to performance (Gould, Weiss, & Weinberg, 1981; Greenspan & Feltz, 1989; Mahoney, 1989; Gabril, & Perkins, 1987) and injury vulnerability. Finally, psychological skill are often important outcome variables in performance enhancement intervention program, and it is therefore important to be able to assess change in such skills as a means of evaluating program efficacy (Smith, 1980, 1989b).

Branden (1969) defined self-esteem as a standard by which a person judges her/himself, an estimate, a feeling, and an emotion. This self-evaluation is the single most significant key to behavior, which affects the thinking processes, emotions, desires, values, and goals. Self esteem affects the thinking process, emotions, desires, values and goals in a person (Sandra 2009). Positive (high self-esteem) leads to greater happiness or negative (low self-esteem) and self-doubt, potentially leads to depression (Baumeister et al,2003).

Naderi et al.(2009) was observed Gender based Self esteem and level of self esteem. It was found higher in females than their counter parts The elite athletes have a higher self esteem than non athletes. Women have a slightly higher self esteem than men ( Patterson 1993). Significant differences were noticed between male and female students in self-esteem and achievement goals orientation (Rahmani, 2011). Similarity was found between men and women National Volleyball Players in regard to Self esteem Ajeesh,(2013) .Ucan & Caglayan (2012) expressed The elite athletes have a higher self esteem than non athletes. the similarity between self-esteem scores of athletes and non-athletes and between individual & team sport athletes and non-athletes. Individual sports participants have significantly higher self-esteem than participants in team-sports (Omarsson, 2013). Significant difference was observed between males and females self-esteem points (Kolayis and Sari, 2011). Similar significant difference exists between male and female elite wrestlers regarding their self esteem Khan and Ali (2011).

Athletes were more likely to have higher levels of social self-esteem (Pascarella and Smart, 1991). Athletes who have high self-esteem and therefore have a better ability to set goals that better mental preparation are able to choose specific performance goal and objectives (Gyorgy, and Moldovan, 2013). The female student-athlete's self-esteem measures will be significantly higher than the female non-athlete's self-esteem (Heinmiller, 2001). Self-esteem was found to be more positive in younger adolescent basketball players than in older players regardless of gender (Kosarkarjev, Vpliv and Starosti, 2009). Significant positive correlation was noticed between variables of going in for sport and general self-esteem (Gasic-Paviscic, Joksimovic & Janjetovic, 2010).

Male and female athletes preferred similar type of goal-setting (Cash, 2009). Athletes expected differences for the goal setting and anxiety variables between different goal groups and similarity when they performing under the different environmental conditions (Cale, 1991). Higher desire to manage impressions was positively correlated with a higher degree of goal commitment (Chin, 2006). Relationship between self-orientation of goal setting and motivation of athletes for participating in sporting activities was observed significantly positive (Asma, Rahim and Hamid, 2014).

Boroujeni & Ghaheri (2011) observed a correlation between belief in self-talk and performance. Khan and Ahmed (2010) indicated the significant differences in the skills of facing the pressures in sports in favor of the post measure. Zetou, Nikolaos, and Evaggelos (2014) & Hatzigeorgiadis et.al., (2009). The use of instructional self-talk on younger athletes seems to have positive effects on performance and learning improvement during practicing sports skills. It can enhance self-confidence and reduce cognitive anxiety. Specific training of self-talk can improve performance is controversial, Gibson, and Foster (2007) observed that task-specific self-talk appears to have a beneficial effect on physical performance. Successful athletes use more often positive self-talk in comparison to the less successful athletes (Kahrovic et.al., 2014).

In a sporting context, self-confidence is the belief that one has the ability to successfully complete an athletic event like arousal, it is experienced along a continuum. Confidence is essential for choosing a direction in life and tactical decision making in sport and in life. It can be the difference between seizing the sporting opportunity or allowing the moment to pass by (Weinberg & Gould, 2007).

Low levels of self-confidence can be caused by lack of practice, poor self-belief or faulty thought patterns. It can result in a self-fulfilling prophecy, where failure expectancy results in failure (Goldstein, 1994). On the other end of the continuum, overconfidence can cause athletes to become complaisant about their ability and result in them not wanting to practice, not listening to their coaches and not wanting to improve their skills. They may believe they know all there is to know about their sport and do not require further training.

Concentration is the ability to stay mentally in the present tense! Concentration is the ability to focus to relevant cues of the match/practice and to maintain that focus for the duration of the match/practice. Concentration is one of the first sports psychology terms that athletes hear about when they start practicing their chosen sport (Bornemann, 2000).

The athletic performance of a player or a team does not only depend on the good physical and technical preparation, but it is also the result of the combination of physical and psychological factors, perfectly placed in the frame of a training which promotes performance (Martin,Carl & Lehnertz, 2000). According to Lazarus (1991), psychological skills describe the knowledgeable, emotional and behavioral effort of a person trying to face the external and internal demands which lie ahead.

Coping with adversity as a predictor of success in elite athletes is also a substrate of experience and is consistent with previous research (Gould, Eklund, & Jackson, 1992a, Gould, et.al. 1999).

Coach-ability has become a term that coaches of all sports now use when talking about their team and potential student-athletes in regards to the recruiting process. Coach-ability is a very important attribute for any athlete. Coach-ability is listening to constructive criticism, accepting the criticism or suggestions, and using them as pin points on areas of your game that need to be improved upon in order to take you to the next level. Coach-ability is the willingness to learn, accept mistakes, as they happen at every level, and to block out the concept of being stubborn. Coaches often run into the athlete that is a quality player with a high skill set and looking to play in college (Carrozza, 2013)

Achievement Motivation achievement motivation is defined as “ a habitual desire to achieve goals through one’s individual efforts”. Individual vary quite a lot in this motivation. Managers, coaches, and many type of leaders are very keenly interested in how to maximize this type of motivation as it pays rich dividends in terms of high performance and leads to excellence (Thakur, 2014). The purpose of the study was to (a) assess the predictability of psychological skills (b) to assess the sprinting performance of 100 meter and 200 meter male and female sprinters between selected psychological skills.

## **2. METODOLOGY**

### **Selection of Subjects**

A purposive sample of one hundred and thirty male=59 and female=71 National level (sprinters) ,who participated in 72<sup>nd</sup> All India Inter-university Athletic Meet (M/W) held at Bangalore and 18th Federation Cup National Athletics Championship held at NIS Motibagh ,Patiala and 54th National Inter State Athletics Championship held at PAC Ground, Lucknow (U.P.),and volunteered to be the subjects of study.

### **Instrument**

The ACSI-28 -Athlete Coping Scale Inventory-28 (Smith et al. 1995) is a sport-specific scale consisting of 28 items. It is a multidimensional inventory that measures the psychological characteristics/processes of athletes on seven subscales; coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, and coach-ability. The scales are then summed to yield a Personal Coping Resources score, which should reflect a multifaceted psychological skills construct. This measure requires athletes to respond on a 4-point scale (0 = almost never, 1 = sometimes, 2 = often, 3 = almost always) to 28 items regarding psychological skills. Each factor consisted of four items. The ACSI-28 has demonstrated test-retest reliability (.47 to .87) and internal

consistency for the subscales were accepted (from .64 to .81). ACSI-28 demonstrated a full scale internal consistency of .86 with all subscales ranging from .62 to .78 (Smith et al. 1995).

**Statistical Analysis**

To investigate the psychological skills on seven sub-scales for National level male and female Sprinters, means, standard deviations Multiple Correlation and Regression analysis were computed. The level of significant was set at .05 level.

**3. RESULTS**

To assess the zero order correlation coefficients between sprinting performance and psychological skills of 100 meter male athlete were computed, For predictability of psychological skills, regression analysis by enter method was employed. The data has been presented in table 1 to 4.

**TABLE 1**  
**DESCRIPTIVE STATISTICS PSYCHOLOGICAL SKILLS OF 100 METERS MALE SPRINTERS**

S.No.	Variable	Mean	SD
1	(PER)	11.40	0.52
2	(CA)	7.02	2.07
3	(PUP)	7.17	2.99
4	(GS)	7.76	1.83
5	(C)	6.20	1.82
6	(FFW)	5.02	1.98
7	(CAM)	8.46	2.59
8	CAB	8.32	2.34

**TABLE 2**  
**CORRELATION BETWEEN SPRINTING PERFORMANCE AND PSYCHOLOGICAL SKILLS OF 100 METERS MALE SPRINTERS**

S.No.	Variable	PER	CA	PUP	GS	C	FFW	CAM	CAB
		1	2	3	4	5	6	7	8
1	(PER)	1	0.85	0.08	0.013	0.071	0.232	0.091	.323*
2	(CA)		1	0.09	0.068	0.098	0.006	0.044	0.091
3	(PUP)			1	0.337	.600*	0.262	.622*	0.139
4	(GS)				1	0.218	0.067	.648*	.400*
5	(C)					1	0.209	.400*	.372*
6	(FFW)						1	0.114	0.035
7	(CAM)							1	0.085
8	CAB								1

\* Significant at the 0.05 level

Data in table 2 indicated that sprinting performance of male sprinters was significantly correlated only with coach ability (CAB) ( $r=0.32$ ). All other dependent variable had insignificant correlation with 100 meters sprinting performance of male sprinters.

**TABLE 3**  
**MULTIPLE CORRELATION FOR THE PREDICTORS OF 100 METER SPRINTING PERFORMANCE OF MALE SPRINTERS**

Mode	R	R Square	Adjusted Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	Df1	Df2	Sig. F Change
1	448a	.201	.031	.51212	.201	1.184	7	33	.338

**Coefficients**

S.NO.	Variables	B	SEB	$\beta$	t	Sig
1	Performance(time in seconds)	10.614	0.578		18.361	.000
2	Coping with adversity	0.019	0.040	0.076	.475	.638
3	Peaking under pressure	-0.019	0.041	-0.109	-.461	.648
4	Goal setting & mental preparation	-0.053	0.590	-0.187	-.901	.374
5	Concentration	0.011	0.058	0.039	.190	.850
6	Freedom from worry	0.043	0.483	0.164	1.003	.323
7	Confidence and achievement motivation	0.028	0.053	0.141	.531	.599
8	Coach Ability	0.081	0.040	0.363	1.999	.054

a. Dependent Variable: Performance

The multiple correlation Coefficient (R) using all the predictors simultaneously, is 45 ( $R^2=0.20$ ) and the adjusted  $R^2$  is 0.03, meaning that only a negligible 0.03 % of variance in 100 meter sprinting performance of male sprinters can be predicted from selected psychological skills.

**TABLE 4**  
**ANOVA FOR REGRESSION ANALYSIS FOR 100 METERS MALE SPRINTERS**

Model	df	Sum of Squares	Mean Square	F-ratio
Regression	2.175	7	0.311	1.184*
Residual	8.655	33	0.262	
Total	10.829	40		

\* Insignificant at .05 level

The ANOVA in table 4 shows that  $F=1.184$  is statically insignificant at 0.05 level indicating that combination of predictors i.e. selected psychological variable did not significantly predict 100 meter sprinting performance of male sprinters.

**4. DISCUSSION**

Analysis of data of 100 meter male sprinters on sprinting performance and psychological skills indicated that sprinting performance of male sprinters was significantly correlated only with coach ability (CAB) ( $r=0.32$ ). All other dependent variable had insignificant correlation with 100 meters sprinting performance of male sprinters.

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## 5. CONCLUSIONS

With in the limitations of present study following conclusions were drawn.

1. The selected psychological skills do not predict 100 meter sprinting performance of male sprinters
2. The selected psychological skills do not predict 100 meter sprinting performance of female sprinters

## REFERENCES

- Ajeesh, P.T. (2013).** A Study on Self Esteem among Men and Women Volleyball Players. *International Journal of Behavioral Social and Movement Sciences*, 2 (3), 56-63.
- Asma, Yadegarlu., Rahim, Najafzadeh Mohammad and Hamid, Jnani.(2014).** The Relationship between Goal Setting and Participation Motivation of Iranian Women's Futsal League Players in Sport Activities. *Indian Journal of Fundamental and Applied Life Sciences*, 4 (3), 1440-1447.
- Boroujeni , Shahzad Tahmasebi and Ghaheri, Banafsheh.(2011).** “The Effect of Motivational Self-talk on Reaction Time. *Social and Behavioral Sciences*, 29, 606 – 610.
- Bornemann (2000),** Tennis Course Volume 2, Lesson and Training, Baron Educational, Jerman Branden, N.(2011). “The Psychology of Self-esteem. New York: Bantam, 1969 cited in Parisa Rahmani, The Relationship between Self-esteem, Achievement Goals and Academic Achievement among the Primary school Students. presented in International Conference on Education and Educational Psychology, Proceeding - Social and Behavioral Sciences, 29, 803 – 808.
- Baumeister, et.al.(2003).** Does High Self-esteem Cause Better Performance, Interpersonal Success, Happiness, or Healthier Lifestyles?. *Psychological Science in The Public Health*, 4 (1), 112-119.
- Cale, Andrew. (1991).** Goal Setting, Multidimensional Anxiety and Performance. Unpublished Doctoral dissertation, Loughborough University. ,
- Cash, Erin (2009).** Motivation and Goal-Setting in College Athletes. (Unpublished Doctoral Dissertation, Retrieved from etd-04032009-124054.
- Chin, Weiman R. (2006).** The Role of Impression Management in Goal Setting. .Unpublished Master’s Thesis, University of Waterloo Ontario, Canada.
- Carrozza, Frank. (2013).** Coach-ability – What is it, and do I have it?. *NSCAA Soccer Journal*, 56 (4), 64.
- Gyorgy, Manuela and moldovan, Traian (2013).** “Self Esteem and Coping Strategies in Team Sport” *Academica Science Journal*. 2 (3), 41-56.
- Gasic-Pavisc, S., Joksimovic S. & Janjetovic D.(2010).** General Self-esteem and Locus of Control of Young Sportsmen. A Project of Education for knowledge-based society (2006-2010), Institute for Educational Research, Belgrade, Ministry for Science and Environmental Protection Republic of Serbia. 385-399.
- Goldstein, E.B.(1994).** *Psychology*: Pacific Grove, California: Brooks & Cole Publishing Company.

- Gibson, Alan St. C. and Foster, Carl.(2007).** The Role of Self-Talk in the Awareness of Physiological State and Physical Performance. *Sports Medicine*, 37 (12), 1029-1044.
- Gould, et.al. (1999).** Factors Affecting Olympic Performance: Perceptions of Athletes and Coaches from more and Less Successful Teams. *The Sport Psychologist*, 13, 371-394.
- Gould, D., Eklund, R.C., & Jackson, S.(1992).** Coping Strategies used by more versus less Successful Olympic Wrestlers. *Research Quarterly for Exercise and Sport*, 64, 83-93.
- Heinmiller, Kathryn C.(2001).** The Relationship between Self-esteem of Females and Participation in College Athletics. Unpublished Master's Thesis, Michigan State University.
- Hatzigeorgiadis, et.al. (2009).** Mechanisms Underlying the Self-talk–Performance Relationship: The Effects of Motivational Self-talk on Self-confidence and Anxiety. *Psychology of Sport and Exercise*, 10, 186–192
- Jayashree, Acharya., Amina S and Shailaja, Mohan(2009).** Gender based Analysis of Sport Goal Orientation, Coping Skills and Participation Motivation of Athletes in Kerala. The 12thISSP World Congress of Sport Psychology Marrakesh - June 17- 21.
- Kolayis, M. H., and Sari, Ihsan (2011).** Anxiety, Self-esteem and Competition Ranking of Judokas. *Science of Marital Arts*, 7(1), 11-15.
- Khan, Kabir Shah and Ali, Dilshad.(2011).** Assessment of Self-Esteem among Elite Male and Female Indian Universities Wrestlers –A Comparative Analysis. *Variorum, Multi-Disciplinary e-Research Journal*, 2 (1), 1-4.
- Khan, Z. S., and Ahmad, N. (2010).** “Sports Achievement Motivation among Asian Players. *AMASS Multilateral Research Journal*, 2(2), 7-9.
- Kosarkarjev, S., Adolescenci, V.V. and Starosti, Spolain. (2009).** Self-esteem in Adolescent Basketball Players: Gender and Age Involvement. *Kinesiologia Slovenica*, 15 (1), 43–49.
- Kahrovic, et.al. (2014).** Effects of Self-talk Strategy in Mental Training of Athletes. *Facta Universitatis*, 12 ( 1), 51-58.
- Lazarus, S. (1991).** Emotion and adaptation. New York: Oxford University Press.
- Mahoney, Michael J., Gabriel, Tyler J. & Perkins, Scott T.(1987).** Psychological Skills and Exceptional Athletic Performance. *The Sport Psychologist* 1 (3), 181-199.
- Martin, D., Carl, K., Lehnertz, K. (2000).** Coaching manual. Connecting theory to practice. Komotini: ñlfavito.Smith, R.E. & Christensen, D.S. (1995). Psychological skills as predictors of performance and survival inprofessional baseball. *Journal of Sport and Exercise Psychology*, 17, 399-415
- Naderi H, Rohani A, Tengku Aizan H., Jamaluddin S & Kumar, V. (2009).** Creativity, age and gender as predictors of academic achievement among undergraduate students. *Journal of American Science*, 5(5), 101-112.
- Omarsson, B. P. (2013).** “Effects of Sport Participation on Adolescent Self-esteem and Body-Image: Differences in Gender and Types of Sports Explored”. Unpublished Bachelor thesis, Reykjavik University, Haskolinn.
- Patterson, R.F. (1993).** New Webster's Dictionary. Miami: P.S.I & Associates, Inc.
- Pascarella, E. T. & Smart, J. C.(1991).** Impact of Intercollegiate Athletic Participation for African American and Caucasian Men: Some further Evidence. *Journal of College Student Development*, 32, 123-130.



- Rahmani, Parisa (2011).** The Relationship between Self-esteem, Achievement Goals and Academic Achievement among the Primary School Students” presented in International Conference on Education and Educational Psychology, Proceeding - Social and Behavioral Sciences, 29, 803 – 808.
- Smith, R.E. (1980).** A cognitive-affective approach to stress management training for athletes.In C.H. Nadeau,W. Halliwell, K.M. Newell, & G.C. Roberts (Eds.), Psychology of motor behavior and sport-1979 (pp. 54-72). Champaign,IL: Human Kinetics.
- Smith, R.E. (1989a).** Conceptual and statistical issues in research involving multidimensional anxiety scales. *Journal of Sport & Exercise Psychology*, 11, 452-451.
- Smith, R.E. (1989b).** Effects of coping skills training on generalized self-efficacy and locus of control. *Journal of Personality and Social Psychology*, 56, 228-233.
- Smith, et.al. (1995).** Development and Validation of a Multidimensional Measure of Sports Specific Psychological Skills. The Athletic Coping Skills Inventory-28. *Journal of Sports & Exercise Psychology*, 17, 379-387
- Thakur, Geeta (2014).** Achievement Motivation : A Key Towards Success. *International Journal of Social Science and Humanities Research* , 2 (3), 161-165,
- Ucan, Yilmaz & Caglayan, Nur (2012).** Comparison of Self-esteem Scores of Individual and Team Sport Athletes and Non-athletes. *Journal of Physical Education and Sport Sciences*, 6 ( 3), 279-287.
- Weinberg, R.S., & Gould, D.(2007).** Foundations of sport and exercise psychology (4thed.). Champaign, Illinois: Human Kinetics. 2007
- Williams, Jean M.(1993).** Applied Sports Psychology : Personal Growth to Peak Performance . California : Mayfield Publishing Company.
- Wann, D., & Church, B.(1998).** A Method for Enhancing the Psychological Skills of Track and Field Athletes” Track coach, Retrieved from [www.coachr.org/psychskills.htm](http://www.coachr.org/psychskills.htm).
- Weinberg, R.S., & Gould, D.(2007).** Foundations of sport and exercise psychology (4thed.). Champaign, Illinois: Human Kinetics.
- Zetou, Eleni., Nikolaos, V. and Evaggelos, B. (2014).** The Effect of Instructional Self-talk on Performance and Learning the Backstroke of Young Swimmers and on the Perceived Functions of it\ . *Journal of Physical Education and Sport*, 14 (1), .27 – 35