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Psychological Skills of Ethiopian Male Athletes

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Abstract

During the last few decades, coaches and athletes from a wide variety of sports have begun to realize the importance of the mental side of athletic performance. More specifically, individuals involved with organized sport now understand that for athletes to perform at their peak level of efficiency, they must possess and use a number of psychological skills. The purpose of the present study was to examine the psychological skills of Ethiopian athletes and explore whether there is significant difference across athletes in different running events; i.e., between short, middle and long distance runners. A total of 62 male athletes participated in the study. Among them (n=19) were short distance runners, (n=22) were middle distance runners and (n=21) long distance runners. Psychological variables were assessed for each athlete by using the Athletic Coping Skills Inventory-28 (ACSI-28; Smith, *et al.*, 1995). The ACSI-28 is a self-report questionnaire developed using exploratory and confirmatory factor analysis. Mean and standard deviations of the seven subscales of psychological skills of athletes described according to running event category. The mean differences in psychological skills between short, middle and long distance runners were determined by using one way ANOVA. Data was analyzed by Statistical package for scientific solution (SPSS version 20.0 for windows). The level of statistical significance was set at 0.05 level. It was found that, long distance runners have significantly greater strength in the psychological skills than short and middle distance runners. And middle distance runners on the other hand, significantly found to be greater than short distance runners. Ethiopian runners, regardless the event, have greater strength in their psychological skills compared to the norm.

Keywords: psychological skills, running events, athletes

1. Introduction

Ethiopian athletes started their successful debut in athletics when Abebe Bikila showed up unforgettable sight running along the ancient Appian Way during that warm Roman evening in the 1960 Olympics Game. Afterwards, they have dominated the middle- and long-distance events in athletics and have exhibited comparable dominance with their neighbor Kenyan athletes in international cross-country and road-racing competition. According to Sanja (2010)^[9] Ethiopian runners have won 24 out of 54 possible World Championship medals for distance running since 2001 (World IAAF Championships in Edmonton) until 2005 (Helsinki). Along with Kenyan athletes; Ethiopian runners hold over 90% of all-time world records and 8 of the current top-10 positions in world event rankings for middle and long distance running (Wilber and Pitsiladis, 2012)^[13].

There has been an attempt to provide scientific evidences outlining the factors contributing to why distance running events are dominated by countries from East Africa, in particular Ethiopia and Kenya. When studying physiological advantage, Hamilton (2000)^[6] reflected upon possible reasons for the East African dominance. Living at altitude, body shapes and differences in Achilles tendon have been studied as the possible explanations for African long distance runners' success, yet no clear consistent explanation for their success has been identified (Hamilton, 2000)^[6].

According to Wilber and Pitsiladis (2012)^[13] the reason for the extraordinary success of the Ethiopian and Kenyan middle and long distance runners includes genetic predisposition, development of a high maximal oxygen uptake as a result of extensive walking and running at an early age, relatively high hemoglobin and hematocrit, development of good metabolic "economy/efficiency" based on somatotype and lower limb characteristics, favourable skeletal-muscle-fiber composition and oxidative enzyme profile, traditional Ethiopian/Kenyan diet, living and training at altitude, and need to achieve economic success. Some of these factors have been examined objectively in the laboratory and field, whereas others have been evaluated from an observational perspective.

Besides to the physical and physiological factors; considerable research evidence also attests to the role of psychological factors as determinants of elite performance. Orlick and Partington (1988) [8], for example, identified psychological “success factors” (e.g., high level of commitment, long and short term goals, imagery, focus, pre- and in-competition plans) that distinguished successful athletes from their less successful counterparts. Supporting these findings, Gould and colleagues found that successful Olympic athletes were more committed and focused, and engaged in more extensive mental preparation than less successful performers (Gould, *et al*, 2002) [5]. Further support for this contention comes from Durand-Bush and Salmela’s work (2002) [2] with Olympic and World champions. They identified, among others, self-confidence and motivation as salient psychological characteristics of these elite athletes. In addition, these champions employed imagery and self-talk to both prepare for competition and to remain focused during high-level performances.

However, according to our knowledge, there is no much comprehensive and systematic researches have been conducted so far regarding the psychological skills of Ethiopian athletes. Therefore, the purpose of the present study was to examine the psychological skills of Ethiopian athletes and explore whether there is significant difference across athletes in different running events; i.e., between short, middle and long distance runners.

2. Methods and Materials

2.1 Subjects: According to Frankel, Wallen and Hyun (2012) [3], there are few guidelines that they would suggest with regard to the minimum number of subjects needed for descriptive studies, a sample of at least fifty is deemed necessarily to establish the existence of the relationship. In the present study therefore, a total of 62 male athletes (n=19 SDR, n=22 MDR and n=21 LDR) were selected purposively. Athletes participated in the study were those who had been successful in athletics championships held at the national and regional level. The participation was voluntarily. The information about the profile of the athletes was obtained from Ethiopian athletics federation, athletics clubs, athletics academies, coaches, athletes, Medias, and IAAF webpage.

2.2 Instrumentation: Psychological variables were assessed for each athlete by using the Athletic Coping Skills Inventory-28 (ACSI-28; Smith, Schutz, Smoll & Ptacek, 1995) [10]. The ACSI-28 is a self-report questionnaire developed using exploratory and confirmatory factor analysis. The questionnaire measures seven sport specific psychological coping skills as well as a total personal coping resource score. Specifically, the ACSI-28 provides indices of seven psychological coping skill subscales:

1. Coping with Adversity
2. Peaking under Pressure
3. Goal Setting and Mental Preparation
4. Concentration
5. Freedom from Worry
6. Confidence and Achievement Motivation
7. Coachability.

The scales then summed to yield a Personal Coping Resources score, which should reflect a multifaceted psychological skills construct. Individuals athletes were asked to respond to each statement by indicating how often they experience different situations using a 4 point scale (“0”=

almost never to “3”= almost always). The subscales were found to be a total (personal coping resources) scale alpha of 0.86 as reported in Smith *et al.*, (1995) [10]. The big assumption underlined in the present study was that the subjects respond truthfully to the psychological skills assessment.

2.3 Procedures: athletes were fully informed of all the procedures before giving their written informed consent to participate. The packet containing a five-page psychological inventory was provided to the sample athletes. All 28 statements are formatted on a four point Likert type scale with response choices being "Almost Never", "Sometimes", "Often", and "Almost Always". On the front page of the questionnaire, subjects were instructed and requested to fill out a brief demographic summary.

A cover letter, which explained the nature and purpose of the study, along with instructions as to how to complete and return the inventory and consent forms, was included in the packet. The packet had also includes club’s consent forms, pencils, a paper containing the instructions and the survey questions. The design and appearance of the cover letter, and the psychological Inventory questions were in a fashion which could possibly encourage the thoughtful participation of the subjects. The assessment packages was distributed and collected within cross sectional time plan.

2.4 Statistical analysis: Mean and standard deviations of the seven subscales of psychological skills of athletes described according to running event category. The mean differences in psychological variables between short, middle and long distance runners were determined by using one way ANOVA. Data was analyzed by Statistical package for scientific solution (SPSS version 20.0 for windows). The level of statistical significance was set at 0.05 level.

3. Results

The descriptive analysis of psychological skills (coping with adversity, peaking under pressure, goal setting and mental preparation, concentration, freedom from worry, confidence and achievement motivation, coachability and the sum total of all psychological skills) of athletes regarding with their respected running events, i.e., short distance runners (SDR), middle distance runners (MDR) and long distance runners (LDR) is given in Table-1.

Table 1: Mean Values and Standard Deviation of Psychological Skills of Athletes

Types of Measures	SDR (N=19)		MDR (N=22)		LDR (N=21)	
	Mean	SD	Mean	SD	Mean	SD
Coping with Adversity	9.84	.688	9.95	1.704	10.05	1.499
Peaking under Pressure	9.89	1.150	10.18	1.943	10.71	1.271
Goal setting and Mental Preparation	9.05	1.840	9.86	2.054	11.05	1.024
Concentration	9.21	1.273	8.18	1.842	9.67	1.197
Freedom from Worry	6.21	1.475	6.95	2.035	7.52	1.504
Confidence and Achievement Motivation	7.68	2.358	9.59	1.623	10.43	.926
Coachability	9.53	1.073	10.14	1.207	10.90	1.044
Total ACSI Score	61.42	3.702	64.86	6.461	70.33	3.454

The result of Table-1 indicates that, long distance runners exhibited higher mean value in all subscales and in the total ACSI score than middle and short distance runners. Middle distance runners again scored higher mean values of total ACSI score and each of the subscales except concentration scale than short distance runners (it is noted that long distance runners possessed higher mean value than middle distance on concentration subscale). However, considering the purpose of the study mean and standard deviation were described for the statistical treatment of the psychological data and the obtained data were treated with analysis of variance (ANOVA) for finding out statistical

significant difference between groups. When the obtained 'F' ratio found to be significant at 0.05 level, LSD test was used as Post Hoc test to further find out the significant mean differences between each groups. Table-2 presented the result of the group variance in coping with adversity, peaking under pressure, goal setting and mental preparation, concentration, freedom from worry, confidence and achievement motivation, coachability and Total ACSI Score. Here "between group variance" is calculated with degrees of freedom =2 and "error variance" is calculated with degrees of freedom =59.

Table 2: Analysis of Variance of Psychological Skills among Male SDR, MDR and LDR

Variables	SS _B	SS _w	MS _B	MS _w	F	p
Coping with Adversity	.422	114.433	.211	1.940	.109	.897
Peaking under Pressure	6.991	135.348	3.495	2.294	1.524	.226
Goal setting and Mental Preparation	40.493	170.491	20.247	2.890	7.007*	.002
Concentration	24.903	129.097	12.451	2.188	5.691*	.005
Freedom from Worry	17.246	171.351	8.623	2.904	2.969	.059
Confidence and Achievement Motivation	78.208	172.566	39.104	2.925	13.370**	.000
Coachability	19.137	73.137	9.568	1.240	7.719*	.001
Total ACSI Score	813.998	1361.889	406.999	23.083	17.632**	.000

* $p < 0.01$, ** $p < 0.001$

Table-2 describes the statistical attributes of the psychological data of the groups of athletes. From the results of ANOVA, highly significant differences were noted in the goal setting and mental preparation subscale, concentration subscale and coachability subscale ($p < 0.01$). In confidence and achievement motivation subscale and in the Total ACSI Score very highly significant differences ($p < 0.001$) were observed. In rest of the athletic coping skills (coping with adversity subscale, peaking under pressure subscale and

freedom from worry subscale) no significant differences were observed among short, middle and long distance runners. Since significant differences were obtained, additional explorations of the differences among means was required in order to provide specific descriptions on which means are significantly different from each other. Thus, the data were further subjected to statistical treatment and post hoc LSD test was applied (see Table-3).

Table 3: Post-Hoc Test of Psychological Skills between Male SDR, MDR and LDR

Variables	Mean Differences (SDR Vs MDR)	Mean Differences (SDR Vs LDR)	Mean Differences (MDR VS LDR)
Coping with Adversity	-.112	-.206	-.093
Peaking under Pressure	-.287	-.820	-.532
Goal setting and Mental Preparation	-.811	-1.995*	-1.184*
Concentration	1.029*	-.456	-1.029*
Freedom from Worry	-.744	-1.313	-.569
Confidence and Achievement Motivation	-1.907*	-2.744*	-.838
Coachability	-.610	-1.378*	-.768*
Total ACSI Score	-3.443*	-8.912*	-5.470*

*. The mean difference is significant at the 0.05 level.

The result of the post-hoc test in Table-3 indicated that long distance runners possessed significantly higher goal setting and mental preparation, confidence and achievement motivation, coachability than short distance runners. And also they have significantly higher concentration, and coachability than middle distance runners. Middle distance runner on the other hand, exhibited significantly higher confidence and achievement motivation than short distance runners; and short distance runners rather shown significantly higher concentration than middle distance runners. However, regarding Total ACSI Score, long distance runners have significantly greater strength in the psychological skills than short and middle distance runners. And middle distance runners on the other hand, found to have significantly greater psychological skills than short distance runners. Comparison of the psychological skills of Ethiopian athletes with the norm set from a study by Smith & Christensen (1995) [11] is presented in Table-4.

Table 4: Means and Standard Deviations for Ethiopian Athletes and Norms

ACSI-28 Subscale	Ethiopian Athletes (n=62)		*Smith (n=104)	
	Mean	SD	Mean	SD
Coping with adversity	9.95	1.37	7.55	2.48
Peaking under pressure	10.27	1.53	8.66	2.29
Goal setting and mental preparation	10.02	1.86	6.56	2.84
Concentration	9.00	1.59	8.40	2.10
Freedom from worry	6.92	1.76	7.24	2.72
Confidence and achievement motivation	9.29	2.03	9.51	1.95
Coachability	10.21	1.23	10.28	1.72
Total ACSI Score	65.66	5.97	58.2	9.3

*Smith & Christensen (1995)

As shown in Table-4, Ethiopian athletes scored higher mean value in total ACSI score than the norm. According to Smith et.al, (1995) ^[10] scores range from a low of 0 to a high of 12 on each subscale, with higher scores indicating greater strengths on that subscale. The score for the total scale ranges from a low of 0 to a high of 84, with higher scores signifying greater strength in psychological skills. Therefore it shows, Ethiopian athletes possessed greater strength in psychological skills than the norm set from a study by Smith & Christensen (1995) ^[11].

4. Discussion

Research in peak performance and ideal sports performance is still in its relative infancy. However, there is sufficient evidence from retrospective studies to suggest that a number of psychological skills may contribute to peak performance (Goulds, et.al. 1981, Mohaney et.al. 1987, Vealey, 1988) ^[4, 7, 12]. Smith & Christensen (1995) ^[11] evaluated the role of psychological and physical skills in predicting performance and survival in sport, in 104 minor league professional baseball players, and the findings indicate that psychological skills account for significant amounts of athletic performance variance. Various research on elite athletes shows that most successful athletes differ from less successful ones because they have better concentration, higher confidence, more task-oriented thoughts, lower anxiety, more positive thoughts and images, more determination or commitment and etcetera. It is not self-evident that the relation between psychological skills and performance level is similar for different types of sports. Studies have indicated, for example, that differences exist in psychological skills between individual and team sports (Cox *et al.*, 1996) ^[1]. A similar sentiment was noted from the present study in a way that differences exist in psychological skills even between runners in various running events. Besides, as shown in Table-4, Ethiopian male athletes, regardless of the event, scored greater strength in psychological skills than the norm set from a study by Smith & Christensen (1995) ^[11]. And it could possibly be interpreted in successful performance of the study samples.

5. Conclusions

Long distance runners have significantly higher in psychological skills than short and middle distance runners. Middle distance runners on the other hand, significantly found to be higher in psychological skills than short distance runners. Ethiopian runners, regardless the event, have greater strength in their psychological skills compared to the norm.

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