

Athletic coping skills variations among sprinters, middle and long distance runners in female athletes

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Abstract

The purpose of the present study was to examine athletic coping skill variations between sprinters, middle and long distance runners. A total of 35 female athletes participated in the study. Among them n=12 were sprinters, n=11 were middle distance runners and n=12 were long distance runners. Psychological variables were assessed for each athlete by using the Athletic Coping Skills Inventory-28 (ACSI-28; Smith, *et al.*, 1995). 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 sprinters, middle and long distance runners were determined by using one way ANOVA. Data was analysed 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, Middle and long distance runners have significantly higher athletic coping skills than sprinters. There is no significance difference between middle and long distance runners in their athletic coping skills.

Keywords: Psychological Skills, Running Events, Successful, Athletes

1. Introduction

Considerable research evidence attests to the role of psychological factors as determinants of elite performance. Orlick and Partington (1988) [7], 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). Further support for this contention comes from Durand-Bush and Salmela's work (2002) [4] 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.

Elite athletes are exposed to a number of intense physical and psychological demands, and they use a set of cognitive and behavioral strategies in order to cope with these challenges and related stress (Crocker, Alderman & Smith, 1988; Gould, Finch, & Jackson, 1993) [3, 5]. If athletes are unable to cope with these demands, it can lead to poor performance, negative affect and drop out of sport (Madden, 1995) [6]. An athlete's use of cognitive or behavioral strategies can further be seen as the core of the coping process (Anshel, Kim, Kim, Chang, & Eom, 2001) [1]. In order to help athletes to cope with stressful events in sport, sport psychology researchers need to understand the causes of stress experienced by athletes and strategies that can be effective to deal with (Crocker & Graham, 1995; Gould, *et al.*, 1993) [2, 5].

However, according to our knowledge, there is no much comprehensive and systematic researches have been conducted so far regarding the variation in athletic coping skill between runners when the intensity of the running event

differs. Therefore, the purpose of the present study was to assess athletic coping skill variations between sprinters (SPR), middle distance runners (MDR) and long distance runners (LDR).

2. Methods and Materials

2.1 Subjects

According to Frankel, Wallen and Hyun (2012), 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 35 female athletes (n=12 SPR, n=11 MDR and n=12 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 in Ethiopia. The participation was voluntarily. The information about the profiles 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). 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; such as: Coping with Adversity, Peaking under Pressure, Goal Setting and Mental Preparation, Concentration, Freedom from Worry, Confidence and Achievement Motivation, Coacheability.

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). 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 sprinters, 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 and Discussion

The descriptive analysis of Athletic coping skills (ACSI) of athletes regarding with their respected running events, i.e., sprinters, middle and long distance runners is given in Table-1.

Table 1: Mean Values and Standard Deviation of Athletic Coping Skills of Athletes

Types of Measures	SPR (n=12)		MDR (n=11)		LDR (n=12)	
	Mean	SD	Mean	SD	Mean	SD
Coping with Adversity	8.50	2.468	9.55	1.036	10.92	.793
Peaking under Pressure	9.92	1.311	10.91	1.300	11.17	1.528
Goal setting and Mental Preparation	9.25	2.094	11.09	1.578	10.67	1.371
Concentration	7.25	2.417	9.27	1.902	10.67	1.155
Freedom from Worry	5.92	2.392	8.09	1.868	8.25	1.815
Confidence and Achievement Motivation	8.08	2.539	9.27	1.679	11.17	.835
Coach ability	8.83	2.623	10.82	.982	11.33	1.435
Total ACSI Score	57.75	10.687	69.00	4.025	74.17	5.844

The result of the Table-1 indicates that, long distance runners exhibited higher mean value in all sub scales and total Athletic Coping Skills (ACSI) score than sprinters and middle distance runners (with the exception that middle distance runners scored higher in goal setting and mental preparation subscale). Middle distances runners have scored higher mean values of total ACSI score than sprinters. According to Smith *et al.* (1995) scores range from a low of 0 to a high of 12 on each subscale, with higher scores indicating greater strengths on that subscale. Figure-1 shows the distribution of mean values out of 12 for each subscale among the three groups of runners.

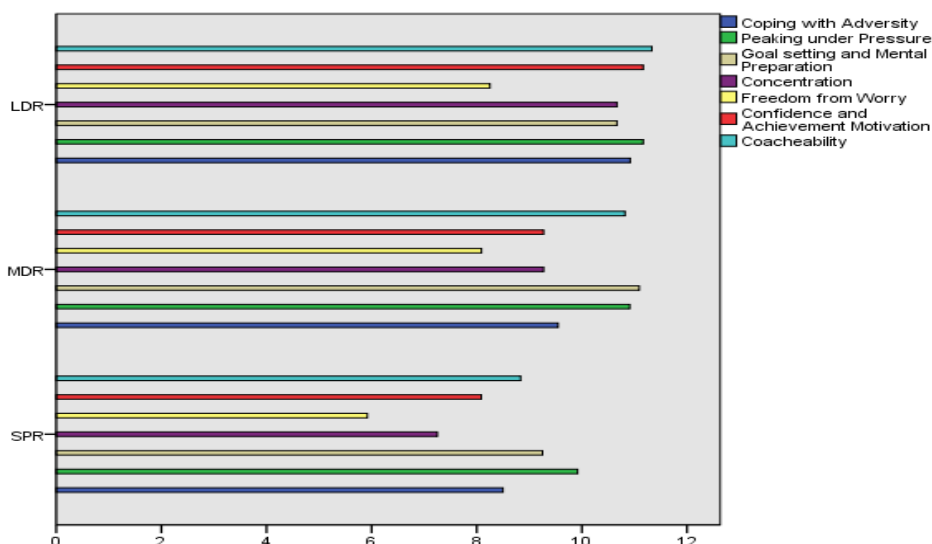


Fig 1: distribution of mean values to the seven subscales of athletic coping skills of athletes

The score for the total ASCI scale ranges from a low of 0 to a high of 84, with higher scores signifying greater strength smith *et al.*, (1995). But it can’t be conclusive unless the differences obtained are statistically significant.

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, coacheability and total ACSI Score. Here “between group variance” is calculated with degrees of freedom =2 and “error variance” is calculated with degrees of freedom =32.

Table 2: Analysis of Variance of Psychological Characteristics among SPR, MDR and LDR

Variables	SSB	SSW	MSB	MSW	F	p
Coping with Adversity	35.242	84.644	17.621	2.645	6.662**	.004
Peaking under Pressure	10.393	61.492	5.197	1.922	2.704	.082
Goal setting and Mental Preparation	21.717	93.826	10.859	2.932	3.703*	.036
Concentration	70.787	115.098	35.394	3.597	9.840***	.000
Freedom from Worry	40.324	134.076	20.162	4.190	4.812*	.015
Confidence and Achievement Motivation	57.978	106.765	28.989	3.336	8.689**	.001
Coacheability	41.573	107.970	20.787	3.374	6.161**	.005
Total ACSI Score	1686.826	1793.917	843.413	56.060	15.045***	.000

*indicates $p < 0.05$, ** indicates $p < 0.01$, ***Indicates $p < 0.001$

Table-2 describes the statistical attributes of the psychological data of female athletes. From the results of ANOVA, significant differences were noted in the goal setting and mental preparation subscale and freedom from worry subscale ($p < 0.05$). In coping with adversity subscale, confidence and achievement motivation subscale and coacheability subscale highly significant differences ($p < 0.01$) were observed. In concentration subscale and in the total ACSI score very highly significances ($p < 0.001$) were observed. In peaking under

pressure subscale no significant differences was observed among sprinters, 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 in Psychological Characteristics between SPR, MDR and LDR

Variables	Mean Differences (SPR V/s MDR)	Mean Differences (SPR V/s LDR)	Mean Differences (MDR V/s LDR)
Coping with Adversity	-1.045	-2.417*	-1.371*
Peaking under Pressure	-.992	-1.250*	-.258
Goal setting and Mental Preparation	-1.841*	-1.417	.424
Concentration	-2.023*	-3.417*	-1.394
Freedom from Worry	-2.174*	-2.333*	-.159
Confidence and Achievement Motivation	-1.189	-3.083*	-1.894*
Coacheability	-1.985*	-2.500*	-.515
Total ACSI Score	-11.250*	16.417*	-5.167

*. 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 higher coping with adversity, concentration, freedom from worry, confidence and achievement motivation and coacheability than sprinters. And also they possessed higher confidence and achievement motivation than middle distance runners. Middle distance runner on the other hand, exhibited higher goal setting and mental preparation, concentration, freedom from worry and coacheability than sprinters; and they possessed higher goal setting and mental preparation than long distance runners. Long distance runners rather exhibited higher confidence and achievement motivation than middle distance runners. However, regarding total ACSI score, middle and long distance runners possessed higher psychological skills than sprinters. Middle and long distance runners on the other hand, have not shown significant differences in the total athletic coping skills. Table- shows the mean plots of athletic coping skills score among sprinters, middle and long distance runners.

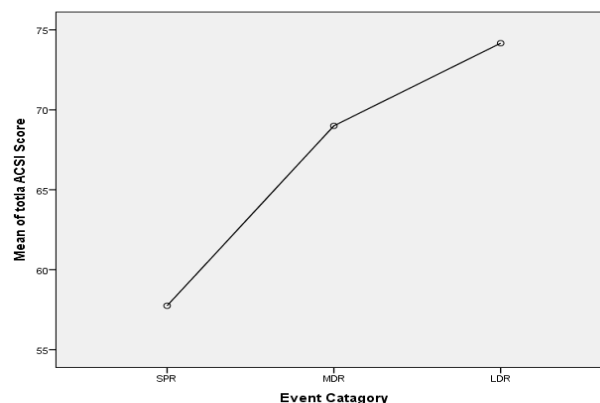


Fig 2: Mean Plots of Total ACSI Score Among Runners of Different Running Category

F. Janet Lawless & Heinrich W. Grobbelaar (2015) [8] conducted a study on sport psychological skills profile of track and field athletes and found that sprinters obtained the highest mean scores for all the sport psychological skills when compared to others. The present study however, contradicted with their study. In the present study, sprinters were found to be the least in mean scores of all psychological skills. This difference might be due to the difference in instruments used. In the present study ACSI-28 developed by Smith *et al.* (1996) was used whereas in Lawless & Grobbelaar study the instrument used was Psychological skill inventory (PSI) developed by Wheaton (1998). Despite the fact, no other literatures found to compare with the present study, the authors feel the result of this study might bridging the gap to the lack of literatures in this regard.

4. Conclusions

In the light of the objectives of the study, the following conclusions could be reached:

- Middle and long distance runners have significantly higher athletic coping skills than sprinters.
- There is no significance difference between middle and long distance runners in their athletic coping skills.

5. References

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