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Relationship between behavioural profiles and gender of elite middle and long distance Kenyan runners

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Abstract

The purpose of this study was to assess behavioral profiles of middle and long-distance Kenyan elite athletes in relation to gender. The study adopted an exploratory research design. This study targeted 600 Kenyan elite runners participating in 800 meters to 10,000 meters. Using a stratified random sampling, 232 athletes (male n=177; female n= 55) participated the study. Demographic questionnaire and a validated DiSC^R Classic Behavioral Assessment Tool were study tools. One- Way Analysis of Variance (ANOVA) was used for data analysis. 76.3% males and 23.7% females participated in the study. ANOVA established no statistical significant difference across gender on the four behavioral profiles of dominance (p=0.349), influence (=0. 075), steadiness (p=.480) and compliance (0.538). In conclusion, more males than female athletes participated in the study. The study suggested strategies to be put in place to motivate more females in middle and long distance running.

Keywords: Dominance, influence, steadiness, compliance, sport psychology

Introduction

Al-Yagon (2012) ^[1] considers behavior as a set of responses that share physical dimensions or functions. In an attempt to analyze behavior, Pear (2001) ^[23] also asserts that it is a scientific study of laws that govern the behavior of human beings and other animals. In the same vein, behavioral sport psychology involves the use of behavior analysis principles and techniques to enhance the performance and satisfaction of athletes and others that are associated with sport (Trachuk and Martin, 2002). Profiles are categories or groups of people that are based on particular characteristics or features such as age and race (Collins Dictionary, 2017). Behavior profiles are portrayed in such traits as Dominance, Influence, Steadiness and Compliance (conscientiousness), hence the acronym, DISC. The science behind DISC Behavioral Styles suggests that all people possess these four basic behavioral tendencies to differing degrees. DISC profiles describe human behaviors used within a focused environment. DISC profiles measure personality through behaviors. DISC is also referred to as four style- based factors that are closely related to effective communication and work skills (Bonnstetter and Suiter, 2007; Witmann, 2008) ^[4].

The origin of DISC is based on the research conducted by an industrial psychologist known as Dr William Mouton Marston in 1928 (Mattern, 2013) ^[16]. This gave rise to the DISC theory that guided the study. Marston concluded that human beings are naturally placed in four profiles (DISC). The dominant profile tends to prioritize getting immediate results, takes action, and challenges as well as others. The influence profile tends to practice expressing enthusiasm, also takes action and encourages collaboration. The steadiness profile prefers giving support and enjoys collaboration. Lastly, the compliance (conscientiousness) profile tends to prioritize accuracy, maintains stability and challenges assumptions. The DISC approach helps people understand their behavior preferences, identifies behavior preferences of others, identifies various organizational environments and most importantly, it enhances productivity. The DISC also helps overcome the belief that only people who are alike are the best choice for work positions or teammates for a school project (Hymoritz, 2004; May and Gueldenzoph, 2003) ^[17].

Behavioral profiling was originally used by corporate organizations to improve teamwork, enhance communication, make wise decisions during hiring employees, understand behavior

differences, build harmonious relations and enhance productivity or performance. It is therefore a relatively young concept in the world of sport. Further, apart from aerobic conditioning and coaching, elite male and female middle and long-distance athletes require behavioral profiling. This is because distance running also expects athletes to appreciate their behavior differences as well as develop harmonious relationships amongst other benefits in order to excel. In the US and Germany to increase sales in their respective companies (Bonnstetter, 2004) ^[4]. It has also been used to arrive at decisions during hiring of new employees and to maximize duties (Furrow, 2000) ^[8]. In school administration, behavior profiling has been used to attract and retain students who possess both social and academic skills needed for their success in a boarding environment (Muraton, Colongelo and Assouline, 2013). In the health sector, the DISC approach has been utilized as a communication that motivates patients to engage in healthy behaviors. Similarly, dental professionals have used it to establish a rapport with dental patients (Scarbecz, 2007) ^[26].

A few studies have shown gender disparity in levels of participation of physical activity (PA). For instance, Telford, Telford, Olive, Cochrane and Davey (2016) investigated the reasons why girls were less physically active than boys. The study targeted 276 boys and 279, s aged 8 and 12 years from 29 schools. Multilevel models were fitted separately for boys and girls to examine effects of individual, family and environmental level. Correlates on pedometer measured physical activity (PA). Individual correlates (cardiorespiratory fitness- multistage run, percentage fat, eye-hand coordination-throw and catch test and perceived competence in physical education questionnaire) were used. At family level, parents support and physical education questionnaire were used. Also, environmental level correlates were school attended and extra (co-curricular) sport participation. Results revealed that girls were 19% less active than boys (9420 vs 11360 steps per day, $p < 0.001$, 95% CI (1844, 2626). It was presumed that lower levels among girls was associated with weaker influences at the school.

More studies have continued to show gender disparity in levels of participation of physical activity (PA). Telford, Telford, Olive, Cochrane and Davey (2016) investigated the reasons why girls were less physically active than boys. The study targeted 276 boys and 279, s aged 8 and 12 years from 29 schools. Multilevel models were fitted separately for boys and girls to examine effects of individual, family and environmental level. Correlates on pedometer measured physical activity (PA). Individual correlates (cardiorespiratory fitness- multistage run, percentage fat, eye-hand coordination-throw and catch test and perceived competence in physical education questionnaire) were used. At family level, parents support and physical education questionnaire were used. Also, environmental level correlates were school attended and extra (co-curricular) sport participation. Results revealed that girls were 19% less active than boys (9420 vs 11360 steps per day, $p < 0.001$, 95% CI (1844, 2626). It was presumed that lower levels among girls was associated with weaker influences at the school, weaker influences at the family, and lower participation in extracurricular sport. In addition, the school attended was responsible for some variation in boys' physical activity (8.4%) but not girls. Similarly, girls had less favourable individual attributes with PA at the age of 8 years. The girls had 18% lower cardiorespiratory fitness (3.5 vs 4.2, $p < 0.001$, CI ((0.5, 0.9), 44 % lower eye-hand co-ordination (11.0 vs 17.3, $p < 0.001$, CI (3.5, 5.7, 9% lower perceived

competence in physical education (7.7 vs 8.4, $p < 0.001$, CI (0.2, 0.9). In conclusion, physical activity (PA) for girls was less favourable and influenced by socio- ecological factors such as individual, family, school attended and environmental levels factors.

Therefore, it was in the opinion of Telford *et al*, (2016) that the gap between boys and girls in physical activity levels could be reduced. The authors further recommended that strategies should be put in place to pay attention to equality of support and opportunities for both boys and girls. However, the present study differed in the purpose of the study (assessment of behavioral profiles-DISC on demographic characteristics, the study design (exploratory descriptive), the sample size (232; n= 177 males, n=55 females), the independent variables (age, type of race and marital status) apart from gender, the dependent variables (dominance, influence, steadiness, compliance), data collection tool (DiSC^R Classic Athlete behavioural Assessment) and data analysis tool (ANOVA). In spite of the differences, the studies have revealed that there is a disparity between boys and girls (males and females), either in the numbers that participate in middle and long-distance races or other prescribed forms of physical activities.

Against this background, it is quite clear that behavior profiling for elite middle and long-distance athletes in Kenya is desirable in the sense that it may motivate athletes during training and eventually, enhance performance in their various championships. Apart from aerobic conditioning and coaching, perhaps behavioral profiling (DISC) could be the best strategy to use that may enable Kenya's elite male and female middle and long-distance athletes gain a more competitive edge. As far as the relationship between gender and behavioural is concerned, scanty information has been documented. However, in the game of Soft ball, DISC Behavioral profiling has been used to create cohesiveness and for athletes to develop self-awareness (Hesse, 2009) ^[11]. The Australian Football League mounted an accreditation Level 2 course for coaches based on the DISC model. It is believed that the coaches were able to appreciate to identify and appreciate athletes' different behavioral profiles. Similarly, the Australian elite rowing team embraced behavior profiling in order to enhance teamwork (Team Dynamics Report, 2008) ^[29].

In Kenya, research has been conducted in areas such as perceived contribution of team sports to psychological satisfaction (Oketch, 2012), sport participation and examination- related stress (Muniu, 2011) ^[18] and psychological factors that influence training and performance of female athletes in sports (Ndambiri, Mwisukha & Muniu, 2013) ^[19, 20]. Other studies have been conducted on motivational orientations in sport (Rintaugu and Nteere, 2011) ^[24], family and its influence on Kenyan athletes' performance by Simiyu, Benoit and Kidi (2017) ^[27] and motivational gender difference in sport and exercise participation (Rintaugu and Ngetich, 2012) ^[25], effects of gender on goal orientation (Mugala, Wamukoya and Njororai, 2016) among others. Yet there is no empirical evidence of studies on behavioral profiles on gender among elite middle and distance athletes outside and within Kenya.

It is hoped that the current study will contribute significantly as a source of reference in understanding behavior profiling in relation to gender, especially among elite middle and long-distance runners in Kenya. The study may establish the relationship between gender and behavior profiles (DISC) of elite distance runners. The target population for this study

comprised of middle and long-distance events ranging from 800 meters to 10000 meters. The study may also serve to expose the gap that exists in the lack of knowledge in assessing behavior profiles on gender of distance runners. Incidentally, the data may enable athletes, coaches, educators and other stakeholders appreciate the importance of DISC as a necessary strategy to enhancing, teamwork, relationships, communication and productivity during training sessions of distance runners. Behavioral profiling of male and female distance athletes may be used in identifying and stratifying athlete behavior for ease of specific mode and styles of training and coaching not only in Kenya but also world over. Ultimately, the current study should form a basis for further studies in the field of applied psychology.

Materials and Methods

This study adopted an exploratory research design and was based within Kapsabet area because of its medium altitude (1,981 m) above sea level, which is appropriate for training (Haverila, 2011; Fluery and Fernet, 2012) [10, 7]. The exploratory research design was appropriate since there is, apparently limited information on the relationship between behavioral profiles (Dominance, Influence, Steadiness, and Conscientiousness) and ages of Kenyan elite middle and long distance athletes. Stratified sampling method provided 235 out of the target population of 600 to participate in the study. However, 232 (98.7%) return rate was realized. There were 177 males and 55 female athletes who participated in the study.

The questionnaire for this study was divided into two sections; section A captured demographic characteristics of athletes. Section B consisted of the validated DiSC^R Classic Behavior Athlete Assessments Tool as the main instrument for data collection. The athletes responded to a phrase or statement that best described the behavior. The phrases were rated on a 5-point Likert psychometric type scales, ranging from strongly disagree, disagree, undecided, agree, and strongly agree (Robbins, Naomi, Heiberger and Richard, (2011) The questionnaire measured four dimensions of athletes' behavior profiles namely; Dominance, Steadiness, Influence and Compliance behavioral categories Dominance and Influence (Interactive) profiles contained 15 statements each while Steadiness and Compliance (Conscientiousness) profiles contained 14 statements each. Data was coded using Statistical Package for Social Sciences (SPSS). Data analysis was done using One-Analysis of Variance (ANOVA).

Results

The study also sought to establish study participants on the

basis of gender. A total of 177(76.3%) males and 55(23.7%) females participated in the current study

Table 1: Gender Distribution of Participants

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	177	76.3	76.3	76.3
Female	55	23.7	23.7	100
Total	232	100.0	100.0	

Source: Field data 2018

The results in figure 1 were used to construct the bar graph in figure 1.

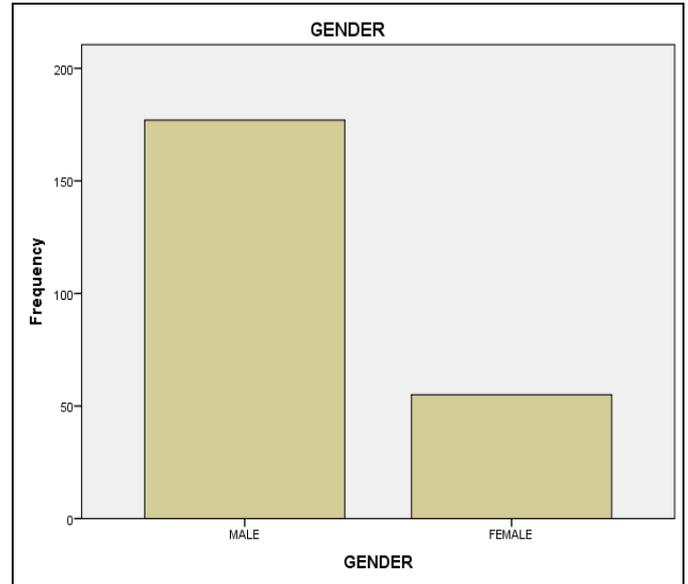


Fig 1: Gender Distribution of Study Participants

This study used one-way Analysis of Variance (ANOVA) to compute the results as shown in table 2. The dominant behavioral profile presented the relationship between genders and within gender as not statistically significant ($=.349$). Information in the table also shows no statistically significant relationship ($p=.075$) between the influence behavioral profiles of elite distance athletes. Similarly, the steadiness behavioral profile revealed no statistical significance ($p=.480$). Ultimately, the relationship between and within groups of gender as compared with the compliance behavioral profile was not statistically significant ($p=.538$). The implication the behavioral profiles (DISC) of elite middle and long-distance Kenyan athletes were similar regardless of gender. Hence, the null hypothesis stating that there is no relationship between gender and the DISC) was accepted.

Table 2: Relationship between Gender and Behavioural Profiles

	ANOVA	Sum of Squares	Df	Mean Squares	F	Sig.
Dominance	Between Groups	.305	1	.305	.882	.349
	Within Groups	79.540	230	.346		
	Total	79.845	231			
Influence	Between Groups	1.483	1	1.483	3.198	.075
	Within Groups	106.638	230	.464		
	Total	108.121	231			
Steadiness	Between Groups	.189	1	.189	.501	.480
	Within Groups	86.703	230	.377		
	Total	86.892	231			
Compliance	Between Groups	.143	1	.143	.381	.538
	Within Groups	86.576	230	.376		
	Total	86.720	231			

Source: Field Data 2018

Discussion

Results in table 2 show great disparity in the numbers of male and female middle and long-distance elite Kenyan athletes who participated in the study. The present study attracted more male participants than females, a scenario that was supported by Arana *et al.* (2009) whose findings revealed that women make up 10% of the running population. Similarly, participation by females was generally low, while men exhibited higher levels of extrinsic motivation to participate in physical activities (Anderson and Wozeciori, 2008); Craft *et al.*, 2014; Stahil *et al.*, 2015; Kubaisy, 2015) [6, 28, 13]. This was due to the fact that they were more affected when it came to choosing between participating in sport and responsibilities such as child care and household chores. It is possible this explanation may match with the present study where males were more than women participants. Similarly, a study by Lauderdale *et al.*, (2015) [14] confirmed a significant gender difference with males responding more positively to intrinsic motivation than the females. This explains why Hands *et al.*, (2016) [9] concluded that differences in physical activity levels between males and females may be a reflection of a human evolution theory (Darwin). Darwin's theory suggested that men were strong, physically fit and courageous in order to compete favourably with other males. In addition, societal expectations played a powerful role in moulding male and female behaviours, although, both genders differed in their attitudes and motivations towards sport and exercise (Lippa *et al.*, 2011; Orgega-Smith *et al.*, 2012) [15, 22]. Therefore, there needs to be consideration of different needs across the lifespan since gender differences fluctuate with age. Hence, future studies should promote gender equity and equality. Increased gender equality decreases the average number of offspring which allows mothers more time for leisure-time physical activity (Balish *et al.*, 2016) [3]. In addition, Rohan *et al.*, (2016) concluded that girls' participation was less favourably influenced by socio-ecological factors at individual, family, school and environmental levels; suggesting future intervention strategies to increase physical activity levels. Specifically, the strategies should focus on equality of support and opportunities for both boys and girls. However, it is possible that the gap between boys' and girls' participation levels can be reduced. Similarly, the differences that were observed in the current study suggest a more distinctive approach to boost sports participation. Although equal opportunities are available for both genders to participate in sports in Kenya, findings of this study suggest more advocacy for increased female participation. Again, it is not clear why more males than females participated in the present study. However, the study proposes further research on gender and behavioural profiles using a different design, different data collection questionnaire as well as a different data analysis tool. For instance, the data collection tool that incorporates either interviews, focus group discussions or one that is structured may reflect adequate reasons for participation in sports. On the contrary, the data collection tool for the present study was limited in this particular regard since it did not capture reasons for participation in middle and long-distance races.

Again, Van Uffelen *et al.*, (2017) revealed that women were more likely to prefer activities that were competitive, vigorous and performed outdoors. Overall, it was concluded that there were marked gender differences suggesting more indoor activities; opportunities that would otherwise enable both males and women to participate easily. A similar view was expressed by Coleman *et al.*, (2008) [5] whose review

study, based in the United Kingdom and other westernized nations, concluded that boys were more likely to participate in sports than girls. Based on this revelation, the gap between the girls and boys was likely to be more pronounced with advanced age. The study suggested provision of opportunities where young people would access a minimum of two hours per week of physical activity (PA), a view that is shared with the present study that recommends provision of adequate facilities that would attract more young people to engage in sports. Furthermore, findings in a study by Thangu (2015) [30] revealed that there were no female participants (aged between 20 to 29 years old) in middle distance races.

On the contrary, an experimental study on differences between men and women in relation to the DISC, showed generally minimal differences between the two genders. For instance, the largest differences were seen on the IS (influence, steadiness) scale whereby gender accounted for 3.7% of the scale variance. Additionally, women tended to score higher after responding to the I (influence), IS (influence, steadiness), S (steadiness) and SC (steadiness, compliance) scales. On the other hand, men tended to score higher on the D (dominance), DI (dominance, I (influence), C (conscientiousness / compliance) and CD (conscientiousness / compliance, dominance) scales (Scullard and Baum, 2015). In conclusion, the current study found that behavioural profiles (DISC) of elite middle and long distance Kenyan athletes were similar regardless of gender.

Conclusion and Recommendation

This study indicated low numbers of elite female middle and long distance athletes. Second, this study also concludes that an interplay between gender and the DISC (dominance, influence, steadiness, compliance or conscientious) yielded results that were not statistically significant. Based on this realization, further research should be conducted on female athletes in order to create an awareness on the importance of elite sports. Finally, strategies should be put in place by the ministry of Youth and Sports that are aimed at increasing female participation in elite sports.

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