

Sources of sports confidence and contextual factors among university athletes

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Abstract:

Sport confidence is a critical mental attribute that influences sport performance. Research on sources of sport confidence among athletes is largely inconclusive. This study postulated that the sources of sport confidence among the athletes are not mediated by selected contextual demographic factors such as gender, level of study, type of sport and playing experience. A cross-sectional research design was used to examine the sources of sport confidence among randomly selected university athletes ($n = 183$). Data were collected using the Sources of Sport Confidence Questionnaire as articulated in Vealey model, and the values converted into percentage of maximum possible scores. Among the highest rated sources of sport confidence were coaches' leadership (63.31 ± 17.22), vicarious experience (63.11 ± 9.44), mastery (62.93 ± 19.00) and demonstration of ability (61.60 ± 17.54). Athletes differed significantly across gender in vicarious experience ($p < .03$), with males recording higher scores. Social support also yielded significant difference ($p = .02$) across year of study with finalists having lower scores. Mastery, physical and mental preparation, social support and vicarious experience showed significant difference ($p < .01$) in favour of those who had longer playing experience. Findings of the study have practical implications for student-athlete preparation for sport competition. Management of university sports should consider the implications of the diverse demographics in order to optimise sport confidence among student athletes.

Key Words: University sports, self-efficacy, Vealey model.

Introduction

Self-confidence is a person's belief in own ability to carry out life tasks, and relates to someone's competences and self-esteem (Moritz, Hall, Martin & Vadocz, 1996; Vealey & Chase, 2008). Sports practitioners, theorists and researchers alike have for long considered self-confidence as a critical mental skill and psychological attribute that influences sport performance (Moritz et al., 1996; Vealey & Chase, 2008). Indeed, a positive relationship between self-confidence and athletic performance has been reported in sport psychology literature (Edwards & Hardy, 1996; Weinberg & Gould, 2003; Woodman & Hardy, 2003). Athletes' confidence has generally been studied from two perspectives; self-efficacy theory (Bandura, 1997), and the sport confidence model (Vealey, 1986; Vealey & Chase, 2008). Bandura (1997:3) defined self-efficacy as "beliefs in one's capabilities to organize and execute courses of action required to produce given attainments". According to the theory of self-efficacy, sources of confidence include enactive mastery experiences, vicarious experience, verbal persuasion and physiological and affective states experiences (Bandura, 1997; Hays, Maynard, Thomas & Bandura, 2007). Feltz and Reissinger (1990) applied the self-efficacy theory and found that performance accomplishments was the most significant source of self-efficacy among athletes, followed by physiological states, verbal persuasion and vicarious experiences. It is understood that low self-efficacy could affect athletes' self-esteem and lead to low sport confidence, implication of which is low sport performance.

Theoretical framework

Sport confidence is defined as the beliefs in individual's capability to be successful in sport (Vealey, 1986). In this regard, Vealey (1986) developed the sport-confidence model in which nine sources of sport confidence were identified. These include mastery, demonstration of ability, physical or mental preparation, physical self-presentation, social support, coaches' leadership, vicarious experience, environmental comfort, and situational favourableness. Mastery occurs when sport confidence is derived from proficiency or improvement of skills. Demonstration of ability is a source of confidence when athletes compare their ability to that of their opponents or demonstrate superiority over opponents. Physical or mental preparation reflects the feeling of being physically and mentally prepared with an optimal focus for performance. Physical self-presentation indicates an athlete's perception of his/her physical self. Social support involves perceiving support or positive feedback and encouragement from significant others in sport such as teammates, coaches and family. Coaches' leadership is based on the athlete's belief in the coach's decision-making skills, while vicarious experience involves gaining

confidence from watching others such as teammates or friends perform successfully. Environmental comfort is a source of sport confidence that comes from feeling comfortable in a competitive environment where competition will be held such as the particular field, gymnasium or pool. Situational favourableness involves gaining confidence by feeling that the breaks of the situation are going in ones favour.

Based on the Vealey's theoretical model a multitude of studies have been carried out on the sources of sport confidence among athletes but the findings are largely inconclusive and conflicting (Clark, 2013; Hays et al., 2007; Krane & Williams, 1994; Lirgg, 1991; Machida, Ward & Vealey, 2012; Michael, 2011; Vargas-Tonsing & Bartholemew, 2006; Wilson, Sullivan, Myers & Feltz, 2004; Woodman & Hardy, 2003). Some of these studies such as Machida et al. (2012) and Vealey et al. (1998) proposed that the stability of sport confidence was a function of the sources upon which individuals base their beliefs. These include controllable sources such as mastery and physical/mental experiences which would facilitate stable confidence beliefs, and uncontrollable sources such as environmental comfort and physical self-presentation that would create less stable and weaker perceptions of sport-confidence (Machida et al., 2012; Vealey et al., 1998). Therefore, it appears that the sources of information that athletes use to judge their abilities are critical factors in developing and maintaining a stable level of confidence (Bandura, 1997; Machida et al., 2012; Vealey et al., 1998).

A number of studies indicate that the sources of sport confidence can change due to individual and contextual factors. For instance, while some studies have reported that male athletes demonstrate higher levels of confidence than females on sources of sport confidence (Krane & Williams, 1994; Lirgg, 1991; Meyers, LeUnes & Bourgeois, 1996; Vargas-Tonsing & Bartholemew, 2006), other investigations did not find gender differences on the sources of sport confidence (Cox & Whale, 2004; Perry & Williams, 1998). According to Lirgg (1991), female athletes relied on physical self-preservation and social support as more important sources of confidence than male athletes. Similarly, Vealey et al. (1998) reported that social support was a more significant source of confidence for female athletes than it was for their male counterparts but indicated that demonstration of ability was a more important source of confidence among male high school athletes. In Kingston, Lane and Thomas (2010) reported that female athletes relied more on mastery, physical self-presentation, social support, environmental comfort and coach leadership as sources of sport confidence than male athletes. Hays et al. (2007) found that females derived confidence from the coaches' encouragement and positive feedback whereas males' derived confidence more from a belief that the coach would set an appropriate training programme for performance enhancement. From the above studies, it appears that male athletes' sources of confidence centred on competition outcomes, while for female athletes good personal performance was a strong motivating factor. In this regard, researchers have contended that the gender differences in social support could be attributed to social approval cues that influence the confidence of female athletes. Therefore, it is important to establish the sources of sport confidence among university athletes and examine whether it could differ based on gender and other contextual factors. Such information will be quite salient to coaches and technical officials who manage university athletes.

Vealey et al. (1998) found that high school and college athletes gained most of their confidence in sport from physical and mental preparedness, social support, mastery, demonstration of ability and physical self-presentation factors. Machida et al. (2012) also reported that the highest rated in terms of importance sources of sport confidence for the athletes were social support, mastery, physical/mental preparation, coaches' leadership and demonstration of ability among college athletes. However, college athletes placed a greater emphasis on their physical self-presentation than high school athletes. In another study, Demaine and Short (2007) found among collegiate basketball players that the five most popular sources of sport confidence were social support, coaches leadership, physical and mental preparation and mastery. Furthermore, the sources of sport confidence among the players did not differ according to sport involvement factors of age, total years playing, playing time and athletic scholarship.

Studies have shown that the sources of sport confidence are likely to vary based on the athletes' level of competition. Vealey et al. (1998) reported that college athletes who participated in an intensely competitive environment may depend more on ability and sources of information to judge their sport confidence, whereas college recreational athletes operate in a different organizational structure with less pressure to win and don't require coaches. Hays et al. (2007) found nine sources of confidence and six types of sport confidence of skill acquisition, achievement, physical factors, psychological factors, superiority to opposition and tactical awareness, among successful world class athletes. Wilson et al. (2004) examined sources of sport confidence and their relationship to trait sport confidence with master athletes and reported that physical/mental preparation and mastery were the highest ranked sources among the athletes. In their study, Mahoney, Gabriel and Perkins (1987) found that elite athletes had higher and more stable levels of self-confidence than non-elite athletes. In this regard, Edwards and Hardy (1996) and Fletcher, Hanton and Mellani (2006) observed that the organizational culture of world class sport differs from that of high school sport in that elite athletes face more intense organizational stressors such as rigid competition and training schedules.

The sources of sport confidence may vary based on the type of sport, i.e. individual and team sport. In this context, Clark (2013) found that individual athletes placed significantly more importance on mastery of tasks than team athletes. In their meta-analysis on the link between cognitive anxiety, self-confidence and

performance in individual and team sports athletes across different levels of play, Woodman and Hardy (2003) found that a positive relationship existed between self-confidence and performance.

Studies have reported that sources of sport confidence are also influenced by other factors such as athletes playing position (Michael, 2011), injury (Magyer & Feltz, 2003), age (Wilson et al., 2004) and innate factors (Hays et al., 2007). Therefore, the purpose of this study was to unearth the sources of sport confidence among Kenyan university athletes. This was apt as university teams provide the bulk of players who represent the country in sports such as rugby, hockey, and basketball. Conducting the study in a university setting presents an opportunity to examine how the athletes cope with the competing demands of academic studies and sports participation, which could lead to higher levels of stress. This is especially so when one considers the sources of stress in athletes such as pressure from family, coaches, and athletes' personal relationships (Rintaugu, Litaba, Muema & Monyeki, 2014). Furthermore, there is a dearth of information regarding sources of sports confidence among Kenyan athletes. In view of the above background, we hypothesised that the sources of sport confidence among Kenyan university athletes will not differ based on specific contextual variables such as gender, level of study, type of sport and playing experience. Findings of the study could have practical implications for student-athlete preparation for sport competition. Specifically, coaches and technical officials may gain insight into the relationships between demographic factors and sources of sport confidence among the athletes, which could be harnessed to maximise competitive sport performance.

Material & methods

Study design and Participants' characteristics

A cross-sectional research design was used in the study, in which 183 university athletes (97 females and 86 male) aged between 19 and 25 years were selected by stratified sampling from a group of athletes participating in an interuniversity sports championships held in Kenyatta University, Nairobi, Kenya. The athletes who volunteered to participate in the study were handball (n = 40), volleyball (n = 39), soccer (n = 26), netball (n = 44) and hockey (n = 34) players. They belonged to the following age categories: 16-18 (3.9%), 19-21 (38%), 22-24 years (46.7%) and 24 years and older (10.6%). Regarding players' experience, 77.1% had been participating in their sport since secondary school and 63.3% belonged to the first team. Distribution of the players according to year of study indicated that 10.2%, 26.1%, 42.6%, 18.2% and 2.9% of them were in their first to fifth years of study respectively.

Study Instrument

Data were collected using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1988). The SSCQ assesses athletes' sources of sport confidence. It consists of 41 items that represent nine sources of confidence in sport: Mastery (five items) demonstration of ability (five items), mental and physical preparation (six items), physical self-presentation (three items), social support (six items), coach's leadership (five items), vicarious experience (five items), environmental comfort (three items) and situational favourableness (three items). The items are scored on a Likert scale ranging from 'not at all important' to 'very important' to assess the importance of each source to the participants in the sport context. Its initial support for content and construct validity was established for high school and college athletes (Vealey et al., 1988). To examine the SSCQ's reliability in the local context a pilot test was done among Kenyan university athletes which yielded a Cronbach's alpha coefficient of .825. After actual data collection, the Likert values for each of the sources of confidence in sport were converted into percentage of maximum possible (POMP) scores to facilitate parametric analyses as recommended by Cohen, Cohen, Aiken and West (1999).

Data collection procedures and ethical considerations

The study included student athletes who were competing in university sport championships. Permission to conduct the study among the university athletes was granted by the Director of Sports and Games at Kenyatta University, after which the athletes were informed about the objectives and procedures of the study. They were also informed that participation in the study was voluntary, that their responses would be anonymous and that they could withdraw from the study at any stage or decline participation without repercussion. Only athletes who gave signed informed consent were included. The SSCQ was subsequently administered to the athletes after the league matches. The targeted sample size was 215 but only 183 completed questionnaires were usable and included in the analysis, thus yielding a return rate of 81.12%, which was considered adequate for the study.

Data analyses

Data were coded and analysed with Statistical Package for Social Sciences (SPSS) version 20 and reported in frequencies, means and percentages. Independent t-test was used to examine differences in the athletes' sources of sport confidence defined by gender and playing experience in their sport, while one-way analysis of variance (ANOVA) was used to test for differences among student-athletes defined by type of sport and year of study. Any significant differences from ANOVA were subjected to Tukey honestly significant difference (HSD) post hoc test. For all data analysis, a probability level of $p \leq .05$ was taken to indicate significance.

Results

The summary scores of the athletes on the sources of sport confidence POMP scores are presented in Table 1. The scores indicate that the highest rated sources of confidence in terms of importance for the athletes were coaches' leadership, vicarious experience, mastery and demonstration of ability. However, situational favourableness, social support, physical and mental preparation appear to be the weaker sources of sport confidence among the athletes.

Table 1; Percentage of Maximum Possible (POMP) scores (means and standard deviations) for the various sources of sport confidence (N = 183).

Source	M	SD
Coaches Leadership	63.31	17.22
Vicarious Experience	63.11	9.44
Mastery	62.93	19.00
Demonstration of Ability	61.60	17.54
Physical and Mental Preparation	61.32	18.17
Environmental Comfort	61.18	18.56
Physical Self-Presentation	61.15	17.94
Social Support	59.63	20.26
Situational Favourableness	58.77	17.48

The influence of gender on the sources of sport confidence among university athletes are shown in Table 2. The results showed that there were non-significant differences ($p > .05$) in the sources of sport confidence between male and female athletes except for vicarious experience ($t = -2.09$, $df = 181$, $p = .03$), in which the male athletes had higher mean scores than female athletes. ANOVA results on year of study were significant concerning social support ($F_{4, 171} = 2.84$, $p = .02$). Tukey post hoc test revealed that athletes who were in their fifth year of study differed significantly from those who were in the first year of study. In this scenario, the first and fifth years had the highest and lowest mean scores, respectively. Regarding the type of sport, significant differences were found for all the sources of sport confidence with soccer and hockey players differing from netball, volleyball and handball players ($p < .05$). Soccer and hockey players had the lower means in all the sources of sport confidence in comparison to other categories of athletes.

Table 2; Comparison of POMP mean scores (t-Test) for the various sources of sport confidence across gender (N = 183; Female = 97, Male = 86).

Source	Gender	M	SD	t	df	Sig.
Mastery	Female	63.80	19.91	0.83	181	.425
	Male	61.56	17.71			
Demonstration of Ability	Female	59.65	16.98	-1.58	181	.132
	Male	63.55	17.97			
Physical and Mental Preparation	Female	61.27	18.74	0.07	181	.992
	Male	61.24	17.67			
Physical Self-Presentation	Female	60.04	18.04	-0.89	181	.421
	Male	62.18	17.84			
Social Support	Female	60.11	22.08	-0.40	181	.691
	Male	58.91	18.15			
Coaches Leadership	Female	62.77	17.64	-0.30	181	.767
	Male	63.52	16.53			
Vicarious Experience	Female	59.32	18.07	-2.09	181	.031*
	Male	67.38	16.34			
Environmental Comfort	Female	59.94	18.85	-0.99	181	.321
	Male	62.68	18.32			
Situational Favourableness	Female	58.17	16.71	-0.43	181	.665
	Male	59.30	18.43			

*Significant at $p < .001$

The influence of playing experience (whether the participants were high school athletes or not) on the athletes' sources of sport confidence is presented in Table 3. The t -test results showed that in all the sources of sport confidence, athletes who had competed at secondary school level had higher mean scores than those who were not high school athletes. However, athletes who competed at high school had significantly superior scores in the following sources of sport confidence: mastery ($t = -2.28$, $df = 177$, $p = .029$), physical and mental preparation ($t = -3.10$, $df = 177$, $p = .003$), social support ($t = -2.53$, $df = 177$, $p = .015$) and vicarious experience ($t = -2.057$, $df = 177$, $p = .041$).

Table 3; Comparison of POMP scores (t-Test) for the various sources of sport confidence across athletes' playing experience (N = 179).

Source	Played the sport in high school	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>Sig.</i>
Mastery	No	41	57.49	15.87	-2.196	177	.029*
	Yes	138	64.71	19.18			
Demonstration of Ability	No	41	58.68	15.81	-1.302	177	.195
	Yes	138	62.69	17.74			
Physical and Mental Preparation	No	41	54.18	17.70	-3.059	177	.003**
	Yes	138	63.82	17.69			
Physical Self-Presentation	No	41	62.25	15.41	0.339	177	.735
	Yes	138	61.17	18.53			
Social Support	No	41	52.96	14.46	-2.461	177	.015*
	Yes	138	61.71	21.33			
Coaches Leadership	No	41	61.81	12.73	-0.629	177	.530
	Yes	138	63.71	18.04			
Vicarious Experience	No	41	60.56	8.60	-2.057	177	.041*
	Yes	138	63.96	9.50			
Environmental Comfort	No	41	57.72	15.91	-1.426	177	.155
	Yes	138	62.43	19.22			
Situational Favourableness	No	41	59.23	15.65	0.068	177	.946
	Yes	138	59.02	18.11			

*Significant at $p < .05$, **Significant at $p < .01$

Discussion

This study examined the sources of sport confidence among Kenyan university athletes. Unearthing the sources of sports confidence among varsity athletes could enable them to sustain participation in sports and enhance their performance. Coaches will also find the information useful in enhancing confidence levels of university athletes. This could be salient in encouraging athletes to derive confidence from different sources. As university athletes are not essentially a homogeneous group, it is prudent to understand how selected demographics and sports specific factors influence their sources of sports confidence. Findings of the study indicated that coaches' leadership, vicarious experience, mastery and demonstrations of ability were the highly rated sources of sport confidence among the athletes. These findings support those reported in previous studies (Balagner et al., 2004; Demaine & Short, 2007; Hays et al., 2007; Machida et al., 2012; Vealey et al., 1998; Wilson et al 2004). According to Demaine and Short (2007), the most popular sources of confidence among collegiate basketball players were social support, coaches leadership, physical and mental preparation, mastery and demonstration of ability. Conversely, situational favourableness, social support, physical and mental preparation appeared to be the weaker sources of sport confidence.

Previous research had indicated that sources of sport confidence are mediated by personal and organizational cultural indicators such as gender, age and type of sport (Krane & Williams, 1994; Lirgg, 1991; Vargas-Touring & Bartholomew, 2006; Vealey, 2001). For example, Krane and Williams (1994) found that male and female high school athletes reported that physical self-presentation was the least important source of confidence. However, the present findings did not yield any substantial differences in the sources of sport confidence based on the athletes' gender except for vicarious experience where male athletes had higher mean scores than their female counterparts. Therefore, it appears that males gain more confidence after observing teammates or friends perform successfully. This is supported by socio-psychological literature which attests that males gain more confidence from significant others in their socialization into sport (Rintaugu, 2005). These findings, however contradict those of Vealey et al. (1998) which indicated that gender differences in social support was a significant source of confidence for female athletes. Other studies have shown that male athletes demonstrate higher level of confidence than their female peers (Krane & Williams, 1994; Lirgg, 1991). These findings are supported by results of the present study in which male athletes had higher mean scores than females in most sources of sport confidence, except for mastery, physical and mental preparation and social support. Hays et al. (2007) reported that females place a greater emphasis on preparing well and identifying good personal performance as a source of confidence compared with males.

Consistent with the assumption that sources of sport confidence could vary based on the year of study, the findings of this study showed significant differences in social support as a source of sport confidence. Specifically, the athletes in the first year of study had higher mean scores than the other year groups regarding social support, while the fifth year students had the lowest scores. Low scores on social support in the fifth years may be an indication of growing sense of independence as the students get closer to graduation and exiting the university. By contrast, high scores on social support among athletes in the first year may be indicative of social dependence of the students who have just enrolled in the university. This could also be attributed to the fact that first year athletes may receive a lot attention from the coaches and their teammates and at the same time they may be keen on perfecting their skills in order to be selected into the university team. However, it is difficult to

comprehend how the first year athlete return high scores on social support yet they are operating away from their parents who could be a major source of support to them. Rintaugu, Mwisukha and Amusa (2012) had opined that the first year students are faced with numerous challenges and stressors such as balancing academic and athletic lives, regimented schedules, time constraints, fatigue, commitment to attend practice sessions and games and expectations from significant others. These stressors are more likely to affect the first year students who are trying to settle down in the university (Rintaugu et al., 2014). Multiple sources of information, e.g. social comparison, goal attainment, improvement, social evaluation and support from parents and coaches are used by youth and high school athletes as bases for their perceptions of competence (Rintaugu, 2005; Williams, 1994). Consequently, it can be argued that those same factors are also central to augmenting sports confidence among university athletes.

In the present study, the sources of sport confidence were similar for soccer and hockey players in contrast to netball, handball and volleyball players. Clark (2013) had found that athletes in individual sports placed more premium on mastery than those in team sports. Michael (2011) opined that sources of sport confidence could differ based on athletes' playing positions. The commonalities between soccer and hockey involve the number of players, formations, popularity and related techniques. On the other hand, the other sports i.e. netball, handball and volleyball are played in a smaller area, with the dominant use of the hands. Therefore, similarities between netball and handball in terms of skills cannot be overemphasized, and may justify the lack of significant differences in the sources of sports confidence among these categories of athletes.

This study hypothesised that the sources of sport confidence would vary based on players' years of experience in their respective sports. The athletes who had participated in competitive sports while in secondary school had higher means in all the sources of sport confidence than those who had not played sport at high school. The differences were evident in the components of mastery, physical and mental preparation, and social support. This is understandable as the more time an athlete spends in a sport, the more they are likely to have diverse sources from where they derive their sport confidence.

Conclusions and Recommendations

Findings of the study revealed that the athletes' sources of confidence are both from controllable and uncontrollable sources. University sports coaches should be privy of this information and create an environment which takes cognizance of the role of significant others in enhancing confidence. Female athletes had a weak source of sport confidence through vicarious experience. Coaches need to create an environment where female athletes can see others in action so that they can be motivated to excel in sport competition. The younger athletes had higher mean scores on social support as a source of confidence. It is imperative to appreciate that freshmen are settling in a new environment and therefore yearning for social support, of which mostly come from teammates and coaches in as far as sports settings are concerned. Consequently, coaches need to enhance cohesiveness among their teams. In order to diversify the sources of sport confidence among athletes, there is need to create an environment that is conducive for transfer of learning from one sport to the other. It is also necessary for coaches to develop individualized training programmes for experienced and non-experienced players. Future studies should compare the sources and implications of sport confidence of athletes in individual and team sports, as well as across different level of sports achievement in university sports competitions. Furthermore, examining how other organizational factors such as playing positions, team leadership, selection and performance interact with sources of sport-confidence could also provide salient information.

Conflict of interests: The authors declare that they do not have any conflict of interest.

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