Coaching Influences on Motivation, Stress, and Personality as Perceived by Student-Athletes

by

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Running Head: COACHING INFLUENCES ON STUDENT-ATHLETES

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Abstract

Much research indicates that the coach-athlete relationship is one of the most crucial determinants of athlete stress and motivation levels. The purpose of this study was to examine the relationship between student evaluations of coaching characteristics, specifically likeability and technical expertise, student-athlete motivation, perceived stress, and achievement striving. One hundred and five high school student-athletes completed measures of personality, achievement striving, stress, and motivation as well as two single-item ratings of coaching likeability and technical expertise. The results indicated that significant relationships existed between coaching technical expertise and emotional stability, interest/enjoyment, competence, and social motivation. Additionally, higher ratings of coach likeability were related to lower levels of perceived stress. These findings are congruent with prior research emphasizing the impact of coaching on student-athletes. Further research should attempt to more narrowly define the particular coaching traits related to increased motivation and performance, including techniques which may aid in this process.

Coaching Influences on Motivation, Stress, and Personality as Perceived by Student-Athletes

Over the past few decades, there has been a dramatic increase in sports participation in the United States. Youth level sports in particular have experienced rapid growth, which is evident in the increasing popularity of organized athletics. In 1995 it was estimated that 5.8 million high school aged students, roughly 40% of all eligible participants, took part in interscholastic sports (Seedfeldt & Ewing, 2000). In 2007 the number of high school sport participants reached a record breaking 7.3 million (NFHS, 2006).

Many reasons have been proposed for this increase, such as the increased sponsorship and implementation of youth sports programs and the passage of legislation allowing for once prohibited groups to participate in athletics (Seedfeldt & Ewing, 2000). Title IX, which came into practice in 1972, states that "No person in the United States shall, on the basis of gender, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance" and has been especially influential in the increased participation of female and minority student-athletes. According to Harrison and Narayan (2003), participation in school-based athletic programs is also increasing because of greater concern over the rise in obesity rates among young people. The increase in athletic involvement may in part be due to additional popular support for health enhancing behavior (Harrison & Narayan, 2003).

The ability of a student to gain acceptance and status among his peers outside the classroom can often be procured through excellence in sports (Donaldson & Ronan, 2006). Because adolescence is a vital time for students to seek out belonging and social interaction (Donaldson & Ronan, 2006), it is natural that many young people will be attracted to athletic participation. Athletics can provide the foundations for peer group affirmation and are considered a strong social asset among students today (Donaldson & Ronan, 2006). An increase in athletic participation has also produced the need for an estimated 3.5 million coaches in order to train these young athletes (Turman, 2003). The interactions between coaches and their athletes are strong determinants in continued athletic participation, and according to Turman (2003), coaches, much like teachers, help foster positive environments for youth.

Benefits of Sport Participation

Research has reported significant personal benefits from increased participation in athletics. According to Mageau and Vallerand (2003, p.1), few activities exist that "are more benefiting…to induce interest, enjoyment and excitement in its participants" than sports. In addition to the obvious physical benefits of physical activity, research also supports the psychological advantages of youth participation in sports. A study by Donaldson and Ronan (2006) emphasized that increased sport participation is associated with positive aspects of emotional and behavioral well-being in children. In this study adolescents participating in high levels of overall sports participation, as determined by both the number of formal sports played and their total years of formal sport participation, reported increased

levels of perceived athletic competence, social competence, and global self-worth as compared with adolescents who reported lower levels of total sports participation (Donaldson & Ronan, 2006). Also, results of this study suggested that scores for certain social and behavioral problems such as aggression and delinquency were significantly lower for youth who indicated more formal sports participation (Donaldson & Ronan, 2006). Although not all emotional and behavioral risk factors for young people have been shown to benefit from athletic participation, students involved in sports have generally have a greater chance of possessing a healthier self-image and less likelihood of experiencing emotional distress, suicidal behavior, family substance abuse, and physical and sexual abuse (Harrison & Narayan, 2003). Furthermore, Nucci and Young-Shim (2005) suggested that sport participation provides critical social benefits, such as the integration of individuals into larger social structures, and encourages moral reasoning and sportsmanship when positive leadership and environments are provided.

Student-Athletes

As the field of sport psychology has gained popularity in research and application, the student-athlete dynamic has been the target of a great deal of investigation (Weinberg & Gould, 2003). The complex nature of being a student-athlete is a phenomenon that has driven researchers to explore the diverse aspects of this unique population (Gaston-Gayles, 2005). Student-athletes are often considered to be a nontraditional population of students, some of whom are highly motivated in athletics but are less motivated in school (Simons, Bosworth, Fujita, & Jensen, 1999).

In order to understand student-athletes, the threat of identity conflicts and stereotypes must be considered (Yopyk & Prentice, 2005). Students who participate in athletics experience "competing identities," and whether a student-athlete assumes the role of the athlete or the student depends on whether he or she is performing an academic or athletic task (Yopyk & Prentice, 2005, p. 329). Engstrom and Sedlacek's (1991) study of college professors' perceptions led them to suggest that conflicting stereotypes are in play when evaluating the abilities of student athletes. Their identity as college students leads others to naturally assume the existence of high academic excellence and motivation, while their distinction as athletes often indirectly implies the absence of these same qualities (Engstrom & Sedlacek, 1991). A study of the perceptions of student-athletes suggests that both professors and fellow students frequently view student-athletes negatively in regards to academics, and these attitudes are often accompanied by verbal comments and treatment implying these discrepancies (Simons et al., 2007). Certain accommodations, such as extra tutoring, early course enrollment, and special advising, that are meant to aid in the success of student-athletes are often viewed by faculty and fellow students as undeserved special privileges (Simons et al., 1999). This stigma may be due in part to the media's representation of athletes, often hailing their abilities in their sport, while depicting them as intellectually inadequate and academically incompetent (Walter & Smith, 1990). Simons et al. (2007) suggests that the "dumb jock stereotype" is often based on "media portrayal and experience with underprepared athletes whose behavior conforms to the stereotype" (p. 253).

The athletic component of student-athletes' lifestyles requires a unique set of standards that distinguishes them from the traditional student population (Peltier, Laden, & Matanga, 1999). While being expected to perform exceptionally in their individual sport, this group of students must also struggle constantly to maintain academic eligibility (Peltier, et al., 1999). This can become quite the task when factoring in the time and effort it takes to excel in both. Practice and performance times significantly limit the time and energy that can be put toward studying and fulfilling academic obligations (Peltier, et al., 1999). Accoring to Coakley (1978) student-athletes' often necessary separation from the general student body may also be a contributing factor to the conflict between the roles of student and athlete. It is important, therefore, to recognize the inconsistencies among expectations that may prevent rather than encourage an athlete from achieving academic success.

Student-athletes are often seen as living in a kind of "fishbowl" environment in which a vast amount of time is spent together, producing "common goals and values generated by their experiences as athletes," (Peltier, et al., 1999). Their behavior is in turn constantly scrutinized, not only through their sport but in their academic and social aspects as well (Peltier et al. 1999).

Stress and Expectations

Due the complex dynamic of being a student-athlete, management of stress in this population has become a very important issue. Stress is defined as physical, mental, or emotional tension (Weinberg & Gould, 2003), and although exercise and athletic participation is often praised for its benefits on mental health and

psychological well-being, research suggests that a student's participation in athletics can itself become an additional source of stress (Wilson & Pritchard, 2005). Athletes often struggle with the stress of being unable to cope with their environmental demands (Lazarus & Folkman, 1996). Performance anxiety, self-doubts about talent, team selection, and coaching leadership are also causes of stress for student-athletes (Weinberg & Gould, 2003). Although it is important to recognize that athletic status may serve as a buffer against certain sources of stress, such as body satisfaction and specific social conflicts (Wilson & Pritchard, 2005), the addition of factors such as the pressure to win, excessive anxiety, or injuries can create an interaction of multiple stressors that have a negative effect on the student-athlete's well-being. Many athletic participants also experience negative physical symptoms due to stress-related concerns such as fatigue, headaches, continuous lack of sleep, and digestive problems (Wilson & Pritchard, 2005).

Student-athletes are required to maintain certain levels of academic excellence if a college athletic career is to be an option. According to current NCAA standards (www.ncaa.org), Division I college student-athletes must complete 14 high school core courses with a specified minimum grade-point average and earn an SAT or ACT score that matches their GPA on the test score sliding scale. For example, a student with a grade-point average of a 2.4 would need to score at least an 860 on the SAT to be eligible for participation in collegiate sports. These standards were established by the NCAA to help high school athletes prepare for the rigors of college coursework and to encourage academic achievement among student-athletes. Although these

regulations are in place, many higher education institutions still have special admittance programs in which students are allowed to enroll even if they do not meet admission criteria, and studies have shown that a large percent of the students admitted under these programs are in fact athletes (Lucas & Lovaglia, 2002). One view is that by doing this, sports participation is increasing the opportunity for some disadvantaged students to go to college (Lucas & Lovaglia, 2002). However, more research evaluating the graduation levels of athletes is now being done to investigate the assumption that the offer of college education is simply a vehicle for continued participation in athletics. According to Peltier et al. (1999), congress responded to these concerns by passing the Student Right to Know and Campus Security Act of 1990 (Public Law 101-542). This act expresses concern and promotes awareness about the academic performance of student-athletes by requiring all higher education institutions to publish and make available their student-athlete graduation statistics. In addition, the NCAA has attempted to combat these issues, emphasizing the importance of academic excellence with their public service statement, "Almost all student-athletes are going pro in something other than sports" (Guide for the College Bound Student-Athlete, 2008, p.4).

Motivation

According to Peltier et al. (1999), the most general assumption for a high school athlete is that his participation will pay off by means of a college education. In the United States, athletic achievement is often used as a vehicle for students to explore career options through their sport rather than by means of academic

accomplishment (Lucas & Lovaglia, 2002). It is of some concern, however, that although a relatively large number of student-athletes expect to continue in their sports for career purposes, only a very small percentage of the most elite athletes ever truly have this option (Lucas & Lovaglia, 2002). This may imply that higher education is one of the major motivating factors of a high school student to participate in athletics. This also calls into question the distinction between attending a college or university for the academic advantages or for athletic career aspirations.

It is easy to see, therefore, why the complexities of being a student-athlete have driven researchers to explore the motivation of this population in relation to other more traditional student populations (Gaston-Gayles, 2005; Lucas & Lovaglia, 2002). Much of the research suggests that student-athletes possess uneven degrees of academic and athletic motivation (Simons et al., 1999). The institutional demands of a student-athlete's sport may make it very difficult to maintain adequate levels of motivation both scholastically and athletically. Of some particular concern is that research suggests that the greater commitment a college-athlete shows to the sport, the lower the university GPA will be (Simons et al., 1999). Gaston-Gayles (2005) found that athletic commitment is negatively related to college grades when motivation is used as a non-traditional measure of performance. Additionally, the Academic Motivation (AM) section of the Student Athletes' Motivation towards Sports and Academics Questionnaire (SAMSAQ) showed significant predictive validity of college grade point average (Gaston & Gayles, 2005). These results

demonstrate the importance of investigating specifically what variables affect specific kinds of motivation among the student-athlete population.

Although it is important to recognize the role of learning specialists and academic advisors in increasing student-athletes' academic motivation (Gaston-Gayles, 2005), some studies are now exploring the coach-athlete relationship to consider what types of motivation may be affected specifically by coaching (Schinke & Tabakman, 2001; Amorose & Horn, 2001; Mageau & Vallerand, 2003). Physical educators and coaches have critical roles in the motivation of their athletic participants, and even a coach's indirect behavior may have significant consequences for participants' motivation, mood, and effort (Weinberg & Gould, 2003).

Coaching

According to Mageau and Vallerand (2003), the coach-athlete relationship is one of the most crucial determinants of an athlete's level of motivation. Both intrinsic motivation, which arises from doing a certain activity for personal pleasure and satisfaction, and extrinsic motivation, which arises from external outcomes, can be significantly affected by coaching behaviors (Mageau & Vallerand, 2003). For example, coaches frequently use strategies such as challenging players, verbal feedback, and nonverbal communication in an effort to increase their athletes' motivation levels (Hansen et al., 2003). Giving technical suggestions is also another important way that coaches attempt to increase athletic effort (Schinke & Tabakman, 2001). Amorose and Horn (2001) found strong support for the relationship between student-athletes' opinions of their coaches' behavior and intrinsic motivation, and

more specifically coaches who were perceived to provide higher levels of positive feedback and training-instruction while practicing a democratic leadership style produced higher intrinsic motivation levels in their athletes.

Although significant research has been done to analyze the motivation of student-athletes' toward academics and their sport (Simons et al., 1999; Gaston-Gayles, 2005), few studies have explored the student-athlete's motivation specifically toward being a student-athlete and toward the possibility of becoming a career-athlete. Even less has been done to define the coach's influence on these particular areas of motivation. In addition, the coach-athlete relationship has been largely unexamined among high school athletes.

High school is often viewed as a volatile and formative time in a young person's life, and coaches can be an "integral part in the development of those who participate in sports, especially younger athletes" (Turman, 2003, p. 74). Just as studies indicate the relationship between a teacher's academic expectations and the subsequent performance of students, research also suggests that athletic performances can be predicted by the coaches' expectations (Weinberg & Gould, 2003). Research also suggests that the coach-athlete relationship has a considerable effect on satisfaction, performance, and overall quality of life (Frey et al., 2006). Coaches are often encouraged to consider their athletes' level of competition, whether it be recreational, high school, or professional, when determining what motivational strategies are best suited to affect motivation and performance (Hansen et al., 2003). According to Roberts (1993) motivation is a combination of "personality factors,

social variables, and/or cognitions that are assumed to come into play when a person undertakes a task at which he or she is evaluated, enters into a competition with others, or attempts to attain some standard of excellence" (p. 406), Therefore, since coaches often equate motivation with effort, it is important to consider athletes' regulation over their own achievement striving potential (Hansen et al., 2003).

Based on the preceding discussion, this study examined the relationship between student evaluations of coaching characteristics, specifically likeability and technical expertise, student-athlete motivation, perceived stress, and achievement striving. Specifically, it was hypothesized that coach likeability would positively relate to student athletes' motivation and would negatively relate to perceived stress. It was also hypothesized that coach technical expertise would be positively related to specific motivational variables such as competence, fitness, student-athletic, and career athletic motivation. In addition, it was proposed that coach likeability and expertise would moderate the relationship between athlete motivation and both perceived stress and self-reported skill (see Figure 1).

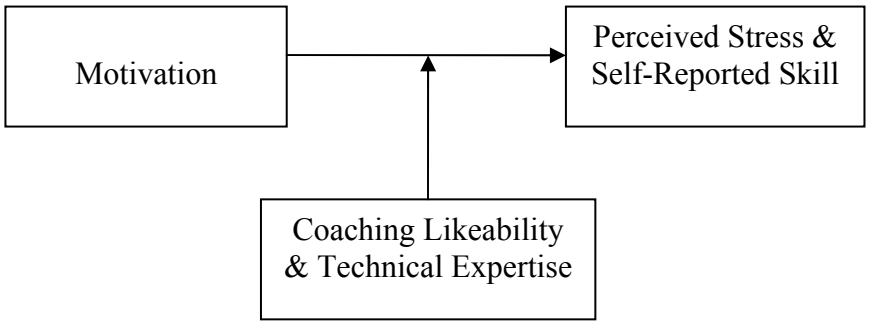

Figure 1. Model of the relationship between coaching characteristics and student-athletes motivation and perceived stress outcomes

Method

Participants

One hundred and five students from a high school in the southeastern United States participated in this study. Of these students 51 (48.6%) were female and 52 (49.5%) were male with two (1.9%) not reporting their gender. The majority of participants were white (n=74, 70.5%) followed by black (n=18, 17.1%), Hispanic (n=4, 3.8%), American Indian (n=1, 1%), and 4 participants (3.8%) who indicated 'Other.' Ages ranged from 14 to 17 years (M=15.6, SD=.80). Since the survey was conducted during the last week of the school year, only freshmen (n=27, 25.7%), sophomores (n=45, 43.8%), and juniors (n=15, 14.3%) were available to participate (16.2% no report).

Measures

Participants responded to a survey packet. Each survey packet contained two parts. Part I contained measures of personality and achievement striving. Part II contained measures directed specifically toward student-athletes in addition to two single item ratings of coaching likeability and technical expertise. General background information and athlete-directed background information were also collected.

For consistency all items (except evaluations of coaches) were administered using a 7-point Likert-type format. This required several scales to be modified from their original form. Where changes were made, it is indicated in the description of the specific measure below. For all measures one was the lowest score and seven

represented the highest agreement (e.g. 1=strongly disagree, 7=strongly agree). All scale items are included in the appendix.

Personality. Personality was assessed using the 50 item measure of the Big Five Personality traits available from the International Personality Item Pool (2001). The individual factors of the measure all demonstrated acceptable reliability: extraversion (α=.79), agreeableness (α=.80), conscientiousness (α=.68), emotional stability (α=.74), and openness to experience (α=.70). (See Allik & McCrae, 2002; Barrick, Mount, & Judge, 2001, for a detailed discussion of the five-factor model of personality.)

Achievement Striving. Achievement striving was assessed using the 10-item scale available from the International Personality Item Pool (2001). It was modified to use a 7-point Likert scale (α=.79).

Perceived Stress Scale. Cohen, Kamarck, and Mermelstein's (1983) Perceived Stress Scale was utilized to measure general life stress. The scale includes 10-items and was modified to utilize a 7-point Likert-type response format (α=.74).

Student Athletes' Motivation toward Sports and Academics Questionnaire (SAMSAQ). The SAMSAQ (Gaston-Gayles, 2005) includes 30 items and was administered using a 7-point Likert-type response format. The SAMSAQ evaluates three variables: Student-athlete motivation (α=.77), career athlete motivation (α=.68), and academic motivation (α=.23).

Motives for Physical Activities Measure-Revised (MPAM-R). The 30 item MPAM-R was revised from its original form to utilize a 7-point Likert-type response

format. The characteristics assessed by this measure are interest/enjoyment (α=.54), competence (α=.91), appearance (α=.87), fitness (α=.85), and social motives (α=.72).

Coaching Characteristics. Coaching measures included two separate single-item ratings of coach likeability and technical expertise as perceived by the student-athlete. Participants were asked to rate their primary coach on a one to five scale with one being very poor likeability/technical expertise and five being very high likeability/technical expertise. When students indicated participation in more than one sport, they were instructed to rate their present or most recent coach.

Procedure

Survey packets were distributed among participants by a graduate research assistant. Since the surveys were to be anonymous, students were asked not to indicate any personally identifying information on the packets. All measures were preceded by an informed consent form, providing the participants with instructions and a brief description about the nature of the research. Participants were instructed that the survey was completely voluntary and provided with the appropriate contact information for directing questions or requesting a research report. All surveys were completed at the time of distribution. No compensation was offered for participation in this study.

Results

Correlation analysis

Descriptive statistics and zero-order correlations between achievement striving, perceived stress, personality, and athlete motivation as compared with coach

technical expertise and likeability are shown in Table 1 below. In total, six significant relationships were found. Emotional stability (r=.21), interest/enjoyment (r=.23), competence (r=.19), fitness (r=.32), and social (r=.19) ratings were found to be significant (p<.05) in relation to coach technical expertise. In addition, perceived stress was found to be significantly negatively related (p<.05) to coach likeability (r= -.25). Although not related to any hypothesis in this study, for completeness, correlations among all variables are provided in Appendix B.

Table 1. Correlations

	M	*SD*	Coach Technical Expertise		Coach Likeability	
Achievement Striving	49.94	9.48	-0.01		0.11	
Perceived Stress	38.25	9.45	-0.14		-0.25	*
Extraversion	47.34	10.67	-0.13		0.11	
Agreeableness	49.05	10.09	-0.02		0.02	
Conscientiousness	43.21	8.89	0.00		0.05	
Emotional Stability	41.44	9.90	0.21	*	0.17	
Openness to Experience	45.77	8.59	-0.01		0.08	
Interest/Enjoyment	42.06	11.46	0.23	*	0.12	
Competence	40.28	8.81	0.19	*	0.14	
Appearance	30.53	8.86	0.13		-0.03	
Fitness	28.39	6.16	0.32	**	0.19	
Social	25.99	5.22	0.19	*	0.06	
Student Athletic Motivation	38.03	0.85	0.18		0.10	
Career Athletic Motivation	21.50	6.28	0.16		0.16	
Academic Motivation	68.58	7.76	0.04		0.04	

*p<.05. **p<.01

Regression Analysis

Moderated regression analyses were used to assess the interaction of coaching likeability and technical expertise to the relationship between student-athlete motivation and perceived stress outcomes, as illustrated below in Figure 1.

In order to assess moderation, in Step 1 we entered control variables (student athlete motivation, career athlete motivations, academic motivation, appearance fitness, social, interest/enjoyment, competence, coach likeability, and coach technical expertise) and the dependent variable (analyses were run separately for perceived stress and self-reported skill). In Step 2 we entered cross-product terms to examine the change in R^2 to test for significant predictions of perceived stress and self-reported skill.

Table 2 below contains full results of the regression analysis. Only significant results are discussed. In total four interactions were found to be significant ($p<.05$). Each of the four significant interactions involved moderation of self-reported skill: Fitness X Coach Likeability ($\Delta R^2= .06$), Social X Coach Likeability ($\Delta R^2= .05$), Social X Coach Technical Expertise ($\Delta R^2= .07$), and Competence X Coach Likeability ($\Delta R^2= .05$). No significant results were found for the prediction of student-athletes' perceived stress.

Table 2. Summary of Regression Analysis for Variables Predicting Perceived Stress and Skill

		Perceived Stress		Self-Reported Skill	
Predictors		ß	ΔR^2	ß	ΔR^2
Step 1					
	Student Athlete Motivation (SAM)	.04	.15	-.05	.24
	Career Athlete Motivation (CAM)	.13		.20	
	Academic Motivation (AM)	-.12		.17	
	Appearance	.16		.09	
	Fitness	.12		.19	
	Social	-.14		.28	
	Interest/Enjoyment	.09		.08	
	Competence	-.16		-.43 *	
	Coach Likeability	-.21		.27	
	Coach Technical Expertise	-.10		-.25	
Step 2a	SAM X Coach Likeability		.03		.00
	SAM X Coach Technical Expertise		.03		.00
Step 2b	CAM X Coach Likeability		.02		.00
	CAM X Coach Technical Expertise		.00		.01
Step 2c	AM X Coach Likeability		.02		.01
	AM X Coach Technical Expertise		.00		.00
Step 2d	Appearance X Coach Likeability		.01		.05
	Appearance X Coach Technical Expertise		.02		.02
Step 2e	Fitness X Coach Likeability		.02		.06 *
	Fitness X Coach Technical Expertise		.05		.05
Step 2f	Social X Coach Likeability		.01		.05 *
	Social X Coach Technical Expertise		.01		.07 *
Step 2g	Interest X Coach Likeability		.02		.03
	Interest X Coach Technical Expertise		.01		.03
Step 2h	Competence X Coach Likeability		.02		.05 *
	Competence X Coach Technical Expertise		.02		.04

*$p < .05$

Figure 1 below is a graphical representation of the significant relationship between self-reported skill and student-athlete fitness motivation as moderated by coach likeability. Specifically, at low levels of fitness motivation, student-athletes reported high skill when high ratings of coach likeability were indicated. At high levels of fitness motivation, no difference was reported for skill level across all levels of coach likeability.

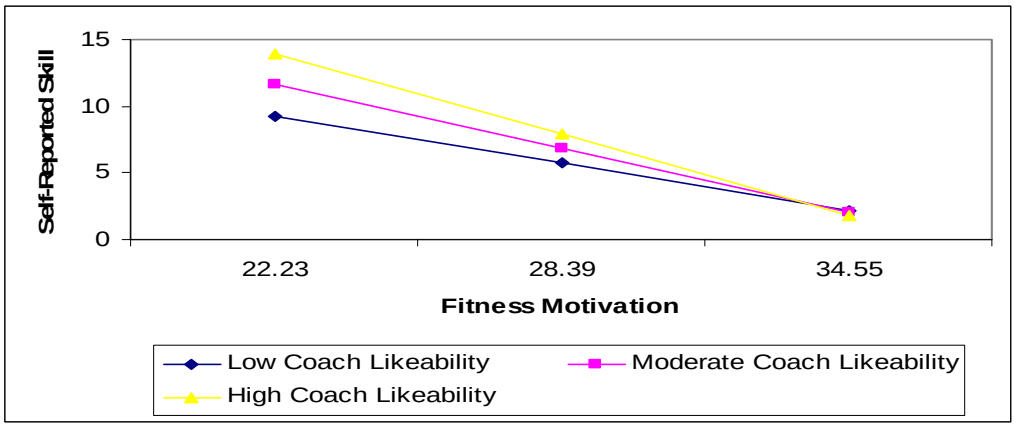

Figure 1. Significant interaction between fitness motivation and coach likeability in predicting self-reported skill.

Figure 2 graphically represents the significant relationship between self-reported skill and student-athlete social motivation as moderated by coach likeability. At low levels of social motivation, student-athletes reported higher skill when higher coach likeability was indicated. At high levels of social motivation, no difference was reported for skill level across all levels of coach likeability.

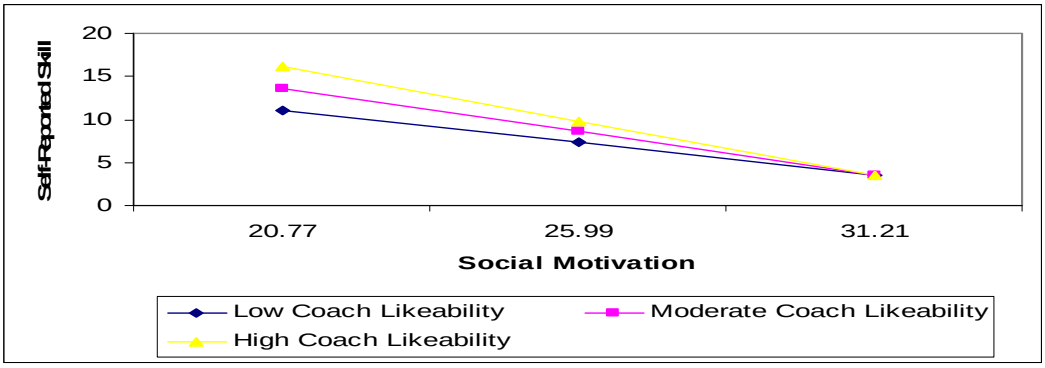

Figure 2. Significant interaction between social motivation and coach likeability in predicting self-reported skill.

Figure 3 represents the significant relationship between the self-reported skill and student-athlete competence motivation as moderated by coach likeability. Here the graph indicates that at lower levels of competence motivation, student-athletes reported higher levels skill when high coach likeability was indicated. At high levels of competence motivation, no difference was reported for skill level across all levels of coach likeability.

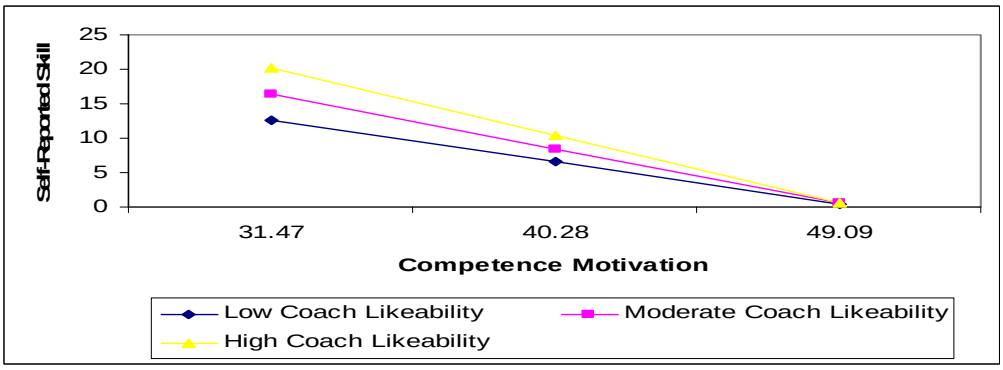

Figure 3. Significant interaction between competence motivation and coach likeability in predicting self-reported skill.

Figure 4 shows the graphical representation of the significant interaction between self-reported skill and student-athlete social motivation as moderated by coach technical expertise. Specifically, at higher levels of social motivation, student-athletes reported higher levels of skill when low levels of technical expertise were indicated. When social motivation was low, however, no difference was reported for skill level across all levels of coach technical expertise.

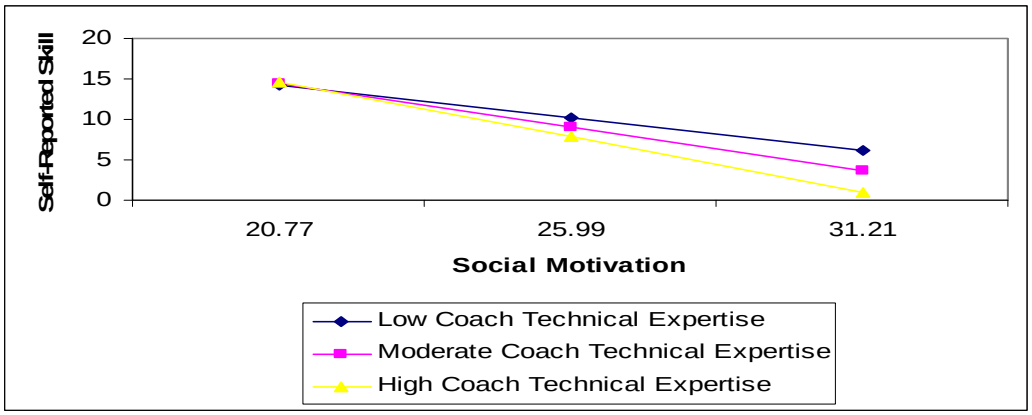

Figure 4. Significant interaction between social motivation and coach technical expertise in predicting self-reported skill.

Discussion

The purpose of this study was to examine the relationship between student-athletes self-rated personality, stress, and motivation and their ratings of coaching likeability and technical expertise. Several of the variables examined were significantly correlated. Student-athletes who reported their coaches as having higher levels of technical expertise reported higher levels of emotional stability, interest/enjoyment, competence, fitness and social motivation. Lower levels of

perceived stress were reported by student-athletes who rated their coaches as being more likeable. Regression analyses indicated that some relationships between motivational variables and coaching characteristics can significantly predict student-athletes' self-reported skill.

This study provides partial support that a relationship between student-athlete motivational variables and coaching likeability and technical expertise exists. Our finding that higher coaching likeability is correlated with lower levels of perceived stress in student-athletes is to an extent supported by some of the literature suggesting that student-athlete anxiety is lower when they have a more compatible relationship with their coach and possess more positive views of their coach's overall behaviors (Kenow & Williams, 1999). This is also supported by research indicating that coaching feedback and behaviors can be a significant factor causing athlete anxiety (Dunn & Nielsen, 1996). The fact that we did not find significant correlations between coaching likeability and student-athlete motivation is unexpected when considering that prior studies propose athletes who indicate higher levels of motivation are often associated with coaches who practice democratic, encouraging, and positive coaching behaviors (Amorose & Horn, 2000). In addition, Amorose and Horn (2000) suggest that this is especially true when considering intrinsic motivation, which is often associated with aspects such as enjoyment, fun, and social motivation. Our findings suggested strong positive relationships between coaching technical expertise and several motivational factors including interest/enjoyment, competence, fitness, and social. These findings are consistent with research advocating that

coaches who provide higher levels of technical training instruction are typically associated with higher levels of athletes' perceived competence and intrinsic motivation (Amorose & Horn, 2001).

An interesting finding from the regression analyses indicates that at low levels of fitness, social, and competence motivation, higher levels of coach likeability predicted higher levels of self-reported skill. We may be able to assume from these results that when a student is highly motivated, coach likeability has less impact on how skill level is self-assessed. A student who is more motivated initially may be less influenced by the likeability of the coach, and several studies emphasizing the importance of the intrinsic motivation of student-athletes provide support for these findings (Amorose & Horn, 2001; Mageau & Vallerand, 2003) Therefore, a positive, autocratic coach-athlete relationship may, under some circumstances be necessary to facilitate higher student-athlete self perceptions of skill. These results suggest that coaching behaviors have considerable implications for the amount of skill student-athletes feel they possess. Since a student-athlete's perception of her own skill and competence are often a reflection of motivation, it is important to recognize the significance of these results.

Another noteworthy finding is the number of significant predictions indicated when considering social motivation and skill. It appears from our results that when student-athletes are motivated to participate in sport for more social reasons, they will perceive themselves to possess more skill when they feel their coach rates lower in technical expertise. Some support for this finding may come from research suggesting

that student-athletes "are not put off by what might seem to be negative coaching strategies" and that autocratic coaching behaviors are not always threatening and, in some cases, may be more efficient (Turman, 2003, p.82). When student-athletes are primarily motivated to participate for social purposes, they may feel more skilled when their coach displays little technical knowledge about the sport. One assumption is that this may be due to the fact that the student-athlete actually prefers to receive less technical advice when they are participating in the sport for social causes, and a coach's high level of technical expertise may be threatening to the social enjoyment the student-athlete is seeking.

It is also interesting to note that no predications can be made concerning student-athletes perceived stress levels when considering the interaction between motivational variables and coaching characteristics. This may be due to the fact that student-athletes often experience unique sources of stress and combinations of athletic and academic stressors that are often difficult to measure and hence to predict (Heller et al., 2005; Wilson & Pritchard, 2005).

Limitations and Future Research

This study has a number of limitations that must be considered when interpreting the results and pointing toward further research. All participants were students from a southeastern public high school, and the results of this study can, therefore, only be reasonably generalized to a comparable population. Potential application of these results may be increased by including a larger number of total participants and especially a larger number of black participants, who were

particularly underrepresented in this study. Since this survey was distributed during the last week of the school year, seniors were not able to participate. We were forced, therefore, to limit the overall number of participants and exclude a potentially significant population of student-athletes. The inclusion of data from seniors may have made the significance of motivational factors more likely, particularly when considering career athlete motivation.

Another limiting factor was that we did not take into account the particular sport of each participant when evaluating their ratings. Doing so may have allowed us to compare various sport populations with each other instead of simply implying relationships for the total population of high school student-athletes.

Another limitation was that only two coaching characteristics were evaluated by the participants. Research suggests that a number of other variables such as criticism, feedback, and coaching philosophy may affect the levels of stress and motivation perceived by student-athletes (Schinke & Tabakman, 2001). Increasing the number of more specific measures of coaching characteristics may allow for more inferences to be made regarding coaching influences on student-athletes. In addition, further research should consider including an additional section of the survey specifically for coaches. This may allow for the correlation between student-athletes' perceptions of coaches and coaches' opinions of their own coaching behaviors or how they feel that their athletes perceive them.

Practical Implications

It is important to consider the practical implications of this study. Since it has been reported that participation in athletics is continuing to grow at an exceptional rate, it is essential to explore students' motivation for choosing to engage in athletic activities that have often been cited as inducing undue stress, pressure, and anxiety on students. However, the physical, psychological, and social benefits of involvement in sport are numerous, and a complex interaction of mediating variables may be critical for the motivation student-athletes need for continued participation. Attempting to understand this dynamic combination of variables is necessary for furthering knowledge in the field of sport psychology in an attempt to aid in the success of this unique population. This is particularly true in among high school student-athlete populations where significantly less research has been done.

From a specific practical standpoint, it is important for coaches to recognize the potential implication of their behaviors on their athletes and to make an effort to tailor certain behaviors explicitly toward particular athletes in an effort to positively influence motivation levels in both athletics and academics. On the other hand, it is just as crucial for student-athletes to recognize how their own attitudes and behaviors play a part in their view of their coaches. Both the areas of sport and academia can benefit from this study and from future studies that continue to expand on the methodology and knowledge used to enhance the opportunities and successes of both athletes and their coaches.

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Appendix A

Big Five Personality Scale (IPIP, 2001)

Instructions

On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes ***you***. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of your same sex, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then fill in your response that corresponds to the number on the scale.

Response Options

1	2	3	4	5	6	7
Very Inaccurate		Neither Inaccurate nor Accurate			Very Accurate	

1	I am the life of the party.
2	I feel little concern for others.
3	I am always prepared.
4	I get stressed out easily.
5	I have a rich vocabulary.
6	I don't talk a lot.
7	I am interested in people.
8	I leave my belongings around.
9	I am relaxed most of the time.
10	I have difficulty understanding abstract ideas.
11	I fell comfortable around people.
12	I insult people.
13	I pay attention to details.
14	I worry about things.
15	I have a vivid imagination.
16	I keep in the background.
17	I sympathize with others' feelings.
18	I make a mess of things.
19	I seldom feel blue.
20	I am not interested in abstract ideas.
21	I start conversations.

22	I am not interested in other people's problems.
23	I get chores done right away.
24	I am easily disturbed.
25	I have excellent ideas.
26	I have little to say.
27	I have a soft heart.
28	I often forget to put things back in their proper place.
29	I get upset easily.
30	I do not have a good imagination.
31	I talk to a lot of different people at parties.
32	I am not really interested in others.
33	I like order.
34	I change my mood a lot.
35	I am quick to understand things.
36	I don't like to draw attention to myself.
37	I take time out for others.
38	I shirk my duties.
39	I have frequent mood swings.
40	I use difficult words.
41	I don't mind being the center of attention.
42	I feel others' emotions.
43	I follow a schedule.
44	I get irritated easily.
45	I spend time reflecting on things.
46	I am quiet around strangers.
47	I make people fell at ease.
48	I am exacting in my work.
49	I often feel blue.
50	I am full of ideas.

50 Items; 5 Facets; 7 point Likert-type scale

<u>Personality</u>
Extraversion: 1, 6, 11, 16, 21, 26, 31, 36, 41, 46 (Reverse coded: 6, 16, 26, 36, 46)
Agreeableness: 2, 7, 12, 17, 22, 27, 32, 37, 42, 47 (Reverse coded: 2, 12, 22, 32)
Conscientiousness: 3, 8, 13, 18, 23, 28, 33, 38, 43, 48 (Reverse coded: 8, 18, 28, 38)
Emotional Stability: 4, 9, 14, 19, 24, 29, 34, 39, 44, 49 (Reverse coded: 4, 14, 24, 29, 34, 39, 44, 49)
Openness to Experience: 5, 10, 15, 20, 25, 30, 25, 40, 45, 50 (Reverse coded: 10, 20, 30)

Achievement Striving (IPIP, 2001)

Please indicate how well the following statements describe you using the following scale

very strongly disagree	strongly disagree	disagree	Neither agree nor disagree	agree	strongly agree	very strongly agree
1	2	3	4	5	6	7

_____ 1. I continue on a project until everything is perfect.
_____ 2. I always go straight for the goal.
_____ 3. I never give up.
_____ 4. I take control of things.
_____ 5. I try to lead others.
_____ 6. I try to outdo others.
_____ 7. I try to surpass others' accomplishments.
_____ 8. I want to be in charge.
_____ 9. I want to be the very best.
_____ 10. I am not highly motivated to succeed.

10 Items; 7 point Likert-type scale

Achievement Striving: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (Reverse coded: 10)

Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983)

never	almost never	sometimes	occasionally	fairly often	very often	all the time
1	2	3	4	5	6	7

_____ 1. In the last month, how often have you been upset because of something that happened unexpectedly?

_____ 2. In the last month, how often have you felt that you were unable to control the important thins in your life?

_____ 3. In the last month, how often have you felt nervous and "stressed"?

_____ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?

_____ 5. In the last month, how often have you felt that things were going your way?

_____ 6. In the last month, how often have you found that you could not cope with all the things you had to do?

_____ 7. In the last month, how often have you been able to control irritations in your life?

_____ 8. In the last month, how often have you felt that you were on top of things?

_____ 9. In the last month, how often have you been angered because of things that were outside of your control?

_____ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

10 Items; 7 point Likert-type scale

Stress: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 (Reverse coded: 4, 5, 7, 8)

Student Athletes' Motivation towards Sports and Academics Questionnaire (Gaston-Gayles, 2005)

very strongly disagree	strongly disagree	disagree	Neither agree nor disagree	agree	strongly agree	very strongly agree
1	2	3	4	5	6	7

_____ 2. Achieving a high level of performance in my sport is an important goal for me this year.
_____ 3. It is important for me to learn what is taught in my courses.
_____ 4. I am willing to put in the time to earn excellent grades in my courses.
_____ 5. The most important reason why I am in school is to play my sport.
_____ 6. The amount of work required in my courses interferes with my athletic goals.
_____ 7. I will be able to use what is taught in my courses in different aspects of my life outside of school.
_____ 8. I chose to play my sport because it is something that I am interested in as a career.
_____ 9. I have some doubt about my ability to be a star athlete in my sport.
_____ 10. I chose (or will chose) my college major because it is something that I am interested in as a career.
_____ 11. Earning a high grade point average (3.0 or above) is not an important goal for me this year.
_____ 12. It is important to me to learn the skills and strategies taught by my coaches.
_____ 13. It is important for me to do better than other athletes in my sport.
_____ 14. The time I spend engaged in my sport is enjoyable to me.
_____ 15. It is worth the effort to be an exceptional athlete in my sport.
_____ 16. Participation in my sport interferes with my progress towards completing my education.
_____ 17. I get more satisfaction from earning an "A" in a course than winning in my sport.
_____ 18. During the years I compete in my sport, completing a college degree is not a goal for me.
_____ 19. I am confident that I can be a star performer in my sport this year.
_____ 20. My goal is to make it to the professional level or the Olympics in my sport.
_____ 21. I have some doubt about my ability to earn high grades in some of my courses.

_____ 22. I am confident that I can make it to an elite level in my sport

(Professional/Olympics)

_____ 23. I am confident that I can earn a college degree.

_____ 24. I will be able to use the skills I learn in my sport in other areas of my life outside of sports.

_____ 25. I get more satisfaction from winning in my sport than from getting an "A" in a course.

_____ 26. It is not important for me to perform better than other students in my courses.

_____ 27. I am willing to put in the time to be outstanding in my sport.

_____ 28. The content of most of my courses is interesting to me.

_____ 29. The most important reason why I am in school is to earn a degree.

_____ 30. It is not worth the effort to earn excellent grades in my courses.

30 Items; 3 Facets; 7 point Likert-type scale

Student-Athlete Motivation: 2, 12, 13, 14, 15, 17, 25, 27
Career Athlete Motivation: 8, 9, 19, 20, 22
Academic Motivation: 1, 3, 4, 5, 7, 10, 11, 17, 18, 21, 23, 25, 26, 28, 29, 30 (Reverse coded: 5, 25)

MPAM-R (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997)

The following is a list of reasons why people engage in physical activities, sports and exercise. Keeping in mind your primary physical activity/sport, respond to each question (using the scale given), on the basis of how true that response is for you.

	not at all true for me			very true for me		
1	2	3	4	5	6	7

_____ 1. Because I want to be physically fit.
_____ 2. Because it's fun.
_____ 3. Because I like engaging in activities which physically challenge me.
_____ 4. Because I want to obtain new skills.
_____ 5. Because I want to look or maintain weight so I look better.
_____ 6. Because I want to be with my friends.
_____ 7. Because I like to do this activity.
_____ 8. Because I want to improve existing skills.
_____ 9. Because I like the challenge.
_____ 10. Because I want to define my muscles so I look better.
_____ 11. Because it makes me happy.
_____ 12. Because I want to keep up my current skill level.
_____ 13. Because I want to have more energy
_____ 14. Because I like activities which are physically challenging.
_____ 15. Because I like to be with others who are interested in this 1ctivity.
_____ 16. Because I want to improve my cardiovascular fitness.
_____ 17. Because I want to improve my appearance.
_____ 18. Because I think it's interesting.
_____ 19. Because I want to maintain my physical strength to live a healthy life.
_____ 20. Because I want to be attractive to others.
_____ 21. Because I want to meet new people.
_____ 22. Because I enjoy this activity.
_____ 23. Because I want to maintain my physical health and well-being.
_____ 24. Because I want to improve my body shape.
_____ 25. Because I want to get better at my activity.
_____ 26. Because I find this activity stimulating.
_____ 27. Because I will feel physically unattractive if I don't.
_____ 28. Because my friends want me to.

_____ 29. Because I like the excitement of participation.
_____ 30. Because I enjoy spending time with others doing this activity.

30 Items; 5 Facets; 7 point Likert-type scale

Interest/ Enjoyment: 32, 37, 41, 48, 52, 56, 59
Competence: 33, 34, 38, 39, 42, 44, 55
Appearance: 35, 40, 47, 50, 54, 57
Fitness: 31, 43, 46, 49, 53
Social: 36, 45, 51, 58, 60

Appendix B

Table B1. Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Achievement Striving	**	-0.13	0.19	0.11	0.37 **	0.02	0.33 **	0.44 **	0.54 **	0.17	0.41 **	0.39 **	0.21 *	0.12	0.32 **
2. Perceived Stress	-0.13	**	0.01	0.00	-0.20	-0.52 **	-0.27 **	-0.05	-0.09	0.08	0.03	-0.12	-0.07	-0.00	-0.20 *
3. Extraversion	0.19	0.01	**	0.19	-0.17	-0.02	0.14	0.15	0.19	0.14	0.19	0.08	0.18	0.17	0.05
4. Agreeableness	0.12	0.00	0.19	**	0.20	-0.02	0.35 **	0.25 *	0.19	0.01	0.19	0.03	0.06	-0.27 **	0.24 *
5. Conscientiousness	0.37 **	-0.20	-0.17	0.20	**	-0.08	0.30 **	0.11	0.14	-0.15	0.02	0.12	0.06	-0.06	0.30 **
6. Emotional Stability	0.02	-0.52 **	-0.02	-0.02	-0.08	**	0.04	0.09	0.04	-0.03	-0.03	0.03	0.09	-0.04	0.09
7. Openness to Experience	0.33 **	-0.27 **	0.14	0.25 **	0.30 **	0.04	**	0.25 *	0.35 **	-0.03	0.24 *	0.20	0.07	-0.13	0.37 **
8. Interest/Enjoyment	0.44 **	-0.05	0.15	0.25 *	0.11	0.09	0.25 *	**	0.65 **	0.36 **	0.55 **	0.53 **	0.31 **	0.16	0.49 **
9. Competence	0.54 **	-0.09	0.19	0.19	0.14	0.04	0.35 **	0.66 **	**	0.32 **	0.68 **	0.50 **	0.40 **	0.25 *	0.27 **
10. Appearance	0.17	0.08	0.14	0.01	-0.15	-0.03	-0.03	0.36 **	0.32 **	**	0.60 **	0.46 **	0.22 *	0.25 *	0.04
11. Fitness	0.41 **	0.03	0.19	0.19	0.02	-0.03	0.24 *	0.55 **	0.68 **	0.60 **	**	0.54 **	0.31 **	0.13	0.14
12. Social	0.39 **	-0.12	0.08	0.03	0.12	0.03	0.20	0.53 **	0.50 **	0.46 **	0.54 **	**	0.38 **	0.21 *	0.29 **
13. SAM	0.21 *	-0.07	0.18	0.06	0.06	0.09	0.07	0.31 **	0.40 **	0.22 *	0.31 **	0.38 *	**	0.64 **	0.25 *
14. CAM	0.12	-0.00	0.17	-0.27 **	-0.06	-0.04	-0.13	0.16	0.25 *	0.25 *	0.13	0.21 *	0.64 **	**	-0.00
15. AM	0.32 **	-0.20 *	0.05	0.24 *	0.30 **	0.09	0.37 **	0.49 **	0.27 **	0.04	0.14	0.30 **	0.25 *	-0.00	**

*p< .05 **p< .01

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