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COACHING

An Exploratory Study of Youth Soccer Players' Participation Motivation and Health-Related Behaviors

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Abstract

Using the Adapted Questionnaire of Soccer Athlete's Motivation and Health Related Behaviors-Chinese Version (AQSAMHRB), this study examined essential factors that motivate youth athletes to participate in soccer practices and competitions. Participants included 98 male soccer athletes (aged 14–15) from 10 middle schools of Jiangsu province, China. Data analysis included descriptive statistics and a 2 (Supporting: By Parents or By School) × 2 (Goal-Setting: For Professional or For Non-Professional) MANOVA. The top three scores from the 18 motivation factors (MFs) in the AQSAMHRB included MF1, high technical content and unique value, M = 4.73; MF4, to meet friends, M = 4.42; and MF2, for fun, M = 4.34. The 2 × 2 MANOVA revealed no significant difference in Supporting, $p > .32$, $\Lambda = .79$, $F = 1.16$, but a significant difference in Goal-Setting, $p < .00$, $\Lambda = .03$, $F = 143.61$. The follow-up MANOVA discovered that 12 of the 18 MF comparisons in Goal-Setting showed significant difference at $p < .05$, with For Professional scoring higher than For Non-Professional (e.g., MF6, to contest winners; MF7, to shape the body; MF9, to become

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a professional; and MF17, to become a coach). In brief, intrinsic and extrinsic MFs significantly affected these soccer athletes' motivations. It did not matter who supported their participation, but it was their Goal-Setting on becoming a Professional or Non-Professional athlete that mattered. On the other hand, for the 27 health-related behaviors in the AQSAMHRB, frequency and percentage data were analyzed and summarized. Findings from this aspect provide firsthand information about the youth soccer athletes' eating habits, nutrition knowledge and status, risk behaviors, and hygiene behaviors. A meaningful discussion from an educational perspective has also been provided.

Soccer is the most popular sport on the earth, especially in Europe and the Americas. There is "early evidence of soccer being played as a sport . . . in China during the 2nd and 3rd centuries BC. In China, it was during the Han dynasty that people dribbled leather balls by kicking it into a net" ("History of Soccer," n.d., para. 1). Long story short, China is turning its attention to the world's most popular sport. If the Chinese can follow through on an ambitious plan pushed by Chinese President Xi Jinping, China could someday become a superpower in the sport of soccer (Baxtert & Kaiman, 2016).

According to Buckley (2017),

> the 48 soccer fields of the vast Evergrande Soccer School in south China seem barely enough for its 2,800 students. Against a backdrop of school spires that seem modeled on Hogwarts, the young athletes swarm onto the fields nearly every day, kicking, dribbling and passing in the hope of soccer glory and riches. (p. 4)

Moreover, Buckley described that with 48 soccer fields, Evergrande Soccer School has become the biggest soccer boarding school on the earth. President Xi Jinping has set his wishes on transforming China into a great soccer power. Remarkably, the principal of Evergrande Soccer School indicated that as more soccer schools are established in China, more youth athletes will be playing soccer and they will grow up into superstars.

The current features about China's soccer status include the following: (1) President Xi declared, "My biggest hope for Chinese soccer is that its teams become among the world's best" (Buckley, 2017, p. 5). (2) The former top division Chinese Football Association

(CFA) Jia-A League was transformed into Chinese Super League (CSL) in 2004. The CSL now runs under the authorization of the CFA. (3) The CSL Company—a commercial branch of the league—is a corporation in which the CFA and all the member clubs act as shareholders. Further, the CFA will finally transfer its share to clubs and a professional union that consists of CSL clubs, and then it will be established as the league's management entity ("Chinese Super League," n.d.). (4) From an economic stand point, Chinese soccer is the largest sport market and business on the earth, and this market can provide the best platform for a new generation of players to achieve their superstar soccer dream.

Generally speaking, according to the literature in youth sports, the goals and reasons for engaging in youth sports practices and competitions include enjoyment, physical health, having fun, fostering self-esteem, friendship, passion or love of the game, and peer acceptance, whereas the first three reasons are similar for those who participate in the dominant recreational activities of Western societies (Cox, 2011; Devine & Lepisto, 2005; Smith, Balagurer, & Duda, 2006; Zeng, Cynarski, Baatz, & Shawn, 2015). Moreover, Miguel and Machar (2007) indicated that motivation supports a successful sport performance, representing one of the most important psychological skills in the game. Based on those findings, we ask whether youth soccer athletes participate in their practices and competitions for those factors or reasons. However, the problem is that previous research studies of youth soccer athletes' participation motivations and health-related behaviors were extremely limited.

From the introduction and youth sports research background, it is clear that some of the reasons for participation are known in general, but little is known about what factors or reasons motivate youth soccer players who have continually engaged in practices and competitions. This study, therefore, explored what factors or reasons motivate youth soccer athletes who play soccer in two types of schools (the youth sport school and the traditional school with soccer as a sport) and have engaged in soccer practices and competitions for years in Jiangsu province, China.

The following hypotheses guided this study: (1) no significant differences would be found on the MFs between the athletes who receive financial Support by School or Support by Parents, and (2) no

significant differences would be found on the MFs between the athletes who set their goal to be a Professional or Non-Professional athlete.

Findings from this research reveal and add a new set of data and firsthand information on the youth athletes literature, especially concerning youth soccer athletes' motivations and related behaviors in their soccer practices and competitions.

The comprehensive theoretical framework of self-determination theory (SDT; Ryan & Deci, 2000) was employed as the theoretical frame of this study. SDT comprises two major branches: the theory of intrinsic motivation and the theory of extrinsic motivation. Ryan and Deci (2000) indicated that humans are motivated by the basic psychological needs of competence, relatedness, and autonomy. Competence in the SDT model is called effectance motivation; relatedness refers to people's need to belong and to feel accepted by others; and autonomy refers to people's need to feel self-determined—it is the source of their own action.

In terms of organismic needs energizing intrinsic and extrinsic motivations, the concept of need is too general and too vague to illustrate the engagement in particular behaviors and to guide empirical research, according to Harter (1981) and Pintrich and Schunk (2002).

Researchers, therefore, developed a few models to describe how different motivations triggered by needs manifest in intrinsic and extrinsic motivation in specific aspects or activities. These models also explain how factors or reasons in a setting may form and affect the type of motivation that people manifest in different aspects or activities (Kaplan, 2010).

Stipek (1996) indicated that the research literature is consistent with regard to the benefits of intrinsic motivation to learning and development; that is, engagement based on intrinsic motivation does not need external incentives or rewards, and enhances the motivations necessary for athletes to engage in the same activity again and again in the future. Researchers also indicated that engagements based on intrinsic motivations are connected with enhanced comprehension, creativity, cognitive flexibility, and accomplishment (Kaplan, 2010).

Furthermore, Breese (1998) illustrated that athletes' initial motivation should be defined as intrinsic motivation (participating in sport for enjoyment) or extrinsic motivation (participating in sport to gain rewards). Breese further illustrated that athletes' initial motivation usually predicts their attendance and adherence to a sport. Such as in the present study, a youth soccer athlete who is intrinsically motivated would play or practice skills every other day for fun, whereas a youth soccer athlete who is extrinsically motivated would practice soccer skills to become a better player at the competition so that he could win a medal at competitions. It is interesting that intrinsic and extrinsic motivation have different effects on athletes, including whether they continue on with the sport.

Likewise, Ryan, Frederick, Lepes, Rubio, and Sheldon (1997) explained that individuals who are mainly motivated by competence (engaging in practices to improve skills) and enjoyment (desire to have fun and enjoyment) could be primarily defined as being motivated intrinsically. In contrast, extrinsically motivated individuals are motivated by those behaviors aimed at obtaining rewards, recognitions, and so forth. Breese (1998) further explained that when beginning participation in a sport, athletes are motivated not only by intrinsic factors but also by extrinsic factors. Some sports, however, rely more on *intrinsic motivation* than *extrinsic motivation* (as described by Ryan et al., 1997). The reasons include that different types of sports need different types of motivation (Breese, 1998). In the present study, we tried to find factors or reasons that motivate youth athletes who have engaged in soccer for numbers of years.

Additionally, in regard to how educators (coach or teacher) apply SDT to enhance their coaching or teaching, Kaplan (2010) described in his review of the literature, "While some important variation exists, there seems to be a wide-spread consensus among researchers and educators that enhancing intrinsic motivation among athletes or students is beneficial" (Implications for Educators section, para. 1). Kaplan continued, kids' intrinsic motivation is enhanced when practices promote their sense of personal autonomy, when team or schoolwork are challenging and relevant to them, when social relationships are supportive, and when environments are physically and psychologically safe. Practices that promote these environmental characteristics include providing athletes/students with choices

among activities and between ways of completing tasks, encouraging athletes/students to explore and pursue their ambition, building on their backgrounds and prior experiences in constructing tasks, encouraging them to collaborate, incorporating fantasy in activities, providing feedback that is informative and frequent, and reducing external rewards.

In many cases, however, athletes and students are required to engage in tasks that they are not motivated to do or do not understand why they have to do. In such situations, the extrinsic motivations should be implemented to those tasks. However, coaches and teachers should pursue the internalization of athletes' and students' extrinsic motivation for these tasks. They can promote such internalization by employing as many of the descriptions specified as possible. Furthermore, coaches and teachers should make the value of the activity and tasks explicit and clear. They can do this most effectively through modeling and by providing a clear and age-appropriate rationale for the youth (Kaplan, 2010).

Method

Sampling

Participants in this study were selected from the Jiangsu province top 10 middle schools in the youth soccer category (five from youth sport school and five from the traditional school with soccer as a sport) according to the resources from the division of Jiangsu province youth sports administration (Jiangsu Sports Administration, 2017).

Moreover, as said on Jiangsu.net (n.d.), Jiangsu province has the following unique features: (a) Jiangsu is one of the most developed areas in economy, technology, and culture in China; its industries' total output is one of the largest in the nation. (b) Jiangsu is a center of education and science, having the highest density of academic institutions and universities, colleges, and research institutes in China. (c) Athletes of Jiangsu province have won more gold medals during the past 10 years than did athletes from any other province in China; remarkably, the city of Nanjing, the capital of provinces, held the 2014 Summer Youth Olympic Games not long ago. This is why we intentionally selected Jiangsu province as the sample of our study.

Instrumentation

The Adapted Questionnaire of Soccer Athlete's Motivation and Health Related Behaviors-Chinese Version (AQSAMHRB; Zeng & Xie, 2015) was employed for data collection. The reasons for using the AQSAMHRB included (a) availability of an existing questionnaire with similar purposes; (b) for a new questionnaire to be developed, times and funding would be needed; (c) availability of specialists in soccer motivation and health-related behaviors to revise the wordings for use with youth soccer athletes; and (d) availability of research assistants or youth soccer coaches for distributing and collecting the questionnaire.

Reliability and Validity of the Instrument

According to Child (1990), the exploratory factor analysis is the best solution for exploring the possible underlying factor of the structure for a set of measured variables without imposing a preconceived structure on the outcome; therefore, the exploratory factor analysis was executed for the AQSAMHRB (Zeng & Xie, 2015). The analysis extracted six factors with perfect correspondence to the 18 items, with eigenvalues for the reasons or factors ranging from 2.69 to 8.62 and structure coefficients from .78 to .92, and the majority of the fitted residuals reached the pre-setup significant difference ($p < .05$) level.

Additionally, the validation process was done through a pilot study, for review of the content or items. These processes (a) confirmed the readability and writing skills of the participants (14 to 15 years old); (b) confirmed whether young participants can understand and respond to the questions in the questionnaire correctly; (c) may have resulted in rewording on some questions or statements, for improved understanding among youth athletes; (d) may have resulted in cutting or adding questions or statements in the questionnaire; and (e) confirmed whether the questions or statements asked all possible motivation reasons or factors for the athletes' participation in soccer practices and competitions.

As a result, the AQSAMHRB contained three parts. Part I included seven questions and asked general information about participants. Part II asked, "What reasons/factors motivate you to take part in soccer practices and competitions continually" with 18

MFs provided. In each MF, the participant responded on a 5-point Likert-type scale (5 = *strongly agree*, 4 = *agree*, 3 = *somewhat agree*, 2 = *little agree*, and 1 = *disagree*). Part III asked 27 health-related questions or behaviors under four subcategories: Eating Habits, Nutrition Knowledge and Status, Risk Behavior, and Hygiene Behaviors. These 27 health-related questions or behaviors in Part III are qualitative data; hence, frequency and percentage were used with these data.

In summary, Part II of the questionnaire contains nine intrinsic motivation factors (MFs; Items 1, 2, 6, 7, 9, 13, 14, 15, and 18) and nine extrinsic motivation factors (Items 3, 4, 5, 8, 10, 11, 12, 16, and 17). In other words, it included the three basic psychological needs (competence, relatedness, and autonomy) described by Ryan and Deci (2000). Part III contains 27 health-related behaviors of the youth athletes, which is qualitative data. Tables 1 and 2 show all questions and items in the AQSAMHRB.

Data Collection

The questionnaires were distributed to the participants during a planned practice day of their team by the researchers under the supervision of their coach and administrators. The participants were given their right to participate or not participate and were also educated on the confidentiality of the survey. Then an explanation was given about responding to the questions and the questionnaire items; then an envelope for preventing the participant's coach or instructor from viewing the answers on the questionnaires was provided. Then the participants signed the Informed Consent Form and submitted it to the researchers. The researchers also informed coaches that after the study, the overall outcomes would be provided to their school. As a result, among the 150 questionnaires delivered, 98 were correctly completed and returned to the researchers, for a return rate of 65.33%.

Research Design and Data Analyses

The research design and data analyses for this study included first looking at the effects of two independent variables, Supporting (By School vs. By Parents) × Goal-Setting (For Professional vs. For Non-Professional), on 18 dependent variables, at the same time. Therefore, a 2 × 2 MANOVA was implemented, and a follow-up MANOVA was implemented after significant differences were

found. The descriptive statistics reflect the general status of how the participants were motivated to participate in soccer practices and competition; the 2 × 2 MANOVA examined whether there were significant differences among the two independent variables and the 18 dependent variables; the follow-up MANOVA test reflected the differences among the dependent variables. IBM SPSS Version 22 was used for data analyses.

Second, concerning participants' health-related behaviors, Part III of the questionnaire, which included the subareas of (1) Eating Habits, (2) Nutrition Knowledge and Status, (3) Risk Behaviors, and (4) Hygiene Behaviors, included 27 questions/behaviors. Because of the structures and characters of these questions, frequency and percentage methods were utilized for data analyses. The findings from this part reflected the participants' current health-related behaviors.

Results

Participants' General Information

This section presents the findings from this study; Tables 1 to 5 summarize the results. It reveals what reasons or factors motivated these youth soccer athletes to engage in the sport, and it gives their health-related behaviors status. Of the 150 questionnaires distributed, 98 were completed correctly returned, and this represents a good return rate of 65.33%. Data in Table 1 reflect general information about the participants. For example, the participants self-reported that they have been officially engaged in soccer practice and competitions for 3 to 5 years. Their height ranged from 158 to182 cm, and their weight ranged from 43 to 69 kg. They studied in Grades 7 to 9 and ranged in age from 14 to 15, and 52 attended sport school and 46 attended the traditional soccer school. It is worth noting that athletes from the sport school represent the highest skill and competitive capability at the non-professional level in the Chinese competitive sport system; athletes in sport school practice at least 5.5 days/week, including a morning exercise and an afternoon practice. While the athletes from the traditional soccer school represent the level of skill and competitive capability slightly below those athletes in the sport school, they might have the talents to become soccer stars but for their academic purchase (e.g., aim to attend a top university or college). Athletes in the traditional soccer school have 3 to 4 after-school practices/week.

Table 1
General Information About Youth Soccer Athletes (N = 98, age = 14–15, boys only)

Question		Answer	Frequency	%
1.	What is your gender?	Male	98	100
2.	What are your height and weight?	Height Range: 158–182 cm Weight Range: 43–69 kg		
3.	What is your age rank?	14–15 (± 1.21)		
4.	How long have you engaged in official soccer training?	3–5 years	98	100
5.	What type is your soccer school?	Sport School Traditional Soccer School	52 46	53.06 46.94
6.	What is your current school level?	Middle School (Grades 7–9)	98	100
7.	Where do you live when you have soccer training/practicing?	School Home	58 40	59.18 40.82

Table 2 presents mean scores and standard deviations for the MFs. Table 3 shows the results of the 2 × 2 MANOVA for comparing the MFs of youth soccer athletes.

Table 2
Factors or Reasons That Motivate Youth Soccer Athletes: Mean Scores and Standard Deviations (N = 98, age = 14–15, boys only)

Motivation factors or reasons (MF)	*M* ± *SD*	Sum	Place
MF1. Because soccer has high technical content and unique value.	4.734 ± .488	463.932	1
MF2. For the fun and get rid of boredom.	4.346 ± .813	425.908	3
MF3. For getting healthier.	4.193 ± 1.011	410.914	9
MF4. To meet friends.	4.418 ± .895	432.964	2
MF5. To make new friends.	4.306 ± .817	421.988	4
MF6. To contest winners.	4.193 ± .833	411.012	8

Table 2 (cont.)

Motivation factors or reasons (MF)	*M* ± *SD*	Sum	Place
MF7. To shape the body.	4.112 ± 1.044	402.976	11
MF8. To improve health status.	4.071 ± .944	398.958	14
MF9. For near future, become a professional soccer player.	3.581 ± 1.746	350.938	17
MF10. To establish self-esteem.	4.255 ± 1.018	416.990	7
MF11. To improve my own biography.	4.295 ± .954	421.008	5
MF12. To establish prestige among my friends.	4.275 ± .822	418.950	6
MF13. To get recognition from my teacher/coach.	4.081 ± 1.090	399.938	13
MF14. To reduce pressure from academic learning.	4.092 ± 1.036	400.916	12
MF15. To reduce troubles from schoolwork.	4.000 ± 1.157	329.000	16
MF16. To develop one unique skill.	4.061 ± 1.119	397.978	15
MF17. Want to become a soccer coach in the future.	4.132 ± 1.001	404.936	10
MF18. To satisfy the will of family.	3.306 ± 1.213	323.988	18

Note. MF1, MF2, MF6, MF7, MF9, MF13, MF14, MF15, and MF18 are intrinsic factors. MF3, MF4, MF5, MF8, MF10, MF11, MF12, MF16, and MF17 are extrinsic factors. MF1, MF4, MF2, MF5, MF11, and MF12 scored on the top; MF10, MF6, MF3, MF17, MF7, and MF14 scored in the middle; and the MF13, MF8, M16, MF15, MF9, and MF18 scored on the bottom.

Table 3

2 (Supporting: By School vs. By Parents) × 2 (Goal-Settings: For Professional vs. For Non-Professional) Factorial MANOVA for Youth Soccer Athletes' Motivation Factors (N = 98, age = 14-15, boys only)

Source	Wilks' lambda	*F*	Hypo *df*	Error *df*	*p*
Support By	.787	1.157	18.000	77.000	.318
Goals-Setting	.029	143.612	18.000	77.000	.000
Support × Goals	.859	.700	18.000	77.000	.801

Note. Design: Intercept + Gender + School Levels + Athletes Types. Exact statistics shown.

The 2 (Supporting: By School vs. By Parents)] × 2 (Goal-Setting: For Professional vs. For Non-Professional) MANOVA in Table 3 showed no significant difference in the Supporting aspect, $p > .05$, $\Lambda = .787$, $F = 1.157$; however, a significant difference effect was found for Goal-Setting, $p < .000$, $\Lambda = .029$, $F = 143.612$.

According to the research design, after a significant difference effect was found, a follow-up MANOVA test was conducted. This post hoc test determined where and what factors or reasons motivated these participants to engage in soccer practice and competitions. Table 4 details these findings.

Table 4

Descriptive Statistics of Youth Soccer Athletes' Motivation Factors After Significant Differences Were Found in Goal-Setting (For Professional vs. For Non-Professional)

	Goals-setting			
	For professional ($n_1 = 58$)		**For non-professional ($n_2 = 40$)**	
Motivations factors (MF)	***M***	***SD***	***M***	***SD***
MF1. Because soccer has high technical content and unique value.	4.741	(.441)	4.725	(.554)
MF2. For the fun and get rid of boredom.	4.362	(.852)	.325	(.764)
MF3. For getting healthier.	4.275	(1.056)	4.075	(.944)
MF4. To meet friends.	4.689	(.706)*	4.025	(.999)
MF5. To make new friends.	4.586	(.701)*	3.900	(.810)
MF6. To contest winners.	4.431	(.678)*	3.850	(.921)
MF7. To shape the body.	4.293	(1.008)	3.850	(1.051)
MF8. To improve health status.	4.241	(.942)	3.825	(.902)
MF9. For near future, become a professional soccer player.	4.367	(.698)**	1.525	(.505)
MF10. To establish self-esteem.	4.396	(.972)	4.050	(.872)
MF11. To improve my own biography.	4.517	(.800)*	3.975	(.073)

Table 4 (cont.)

Motivations factors (MF)	Goals-setting: For professional ($n_1 = 58$) *M*	*SD*	For non-professional ($n_2 = 40$) *M*	*SD*
MF12. To establish prestige among my friends.	4.551	(.705)*	3.875	(.822)
MF13. To get recognition from my teacher/coach.	4.413	(.991)**	3.600	(1.057)
MF14. To reduce pressure from academic learning.	4.413	(.937)**	3.625	(1.004)
MF15. To reduce troubles from schoolwork.	4.310	(1.202)**	3.550	(.932)
MF16. To develop one unique skill.	4.448	(1.011)**	3.550	(1.037)
MF17. Want to become a soccer coach in the future.	4.697	(.502)**	3.325	(.997)
MF18. To satisfy the will of family.	3.500	(1.314)*	3.025	(.999)

Note. This follow-up test determined what MFs and which Goal-Setting had significant differences. The results show that 12 out of 18 comparisons had significant differences, wherein six comparisons were significant at $p < .05$ and six comparisons were significant at $p < .01$.

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

Data in Table 4 were from the follow-up test. It determined what MFs had differences and reflected the factors that motivated the youth soccer athletes to initially take part in and continually engage in soccer practices and competitions. As Table 4 shows, the top six factors were MF1, technical content and unique value ($M = 4.741 \pm .441$); MF17, become a soccer coach ($M = 4.697 \pm .502$); MF4, to meet friends ($M = 4.689 \pm .706$); MF5, make new friends ($M = 4.586 \pm .701$); MF12, to establish prestige ($M = 4.551 \pm .705$); and MF11, for my biography ($M = 4.517 \pm .800$). These six factors had the highest impact power on these youth soccer players' motivation.

The bottom six factors were MF9, to be a professional ($M = 1.525 \pm .505$); MF18, to satisfy family's will ($M = 3.025 \pm .999$);

MF15, to reduce troubles from schoolwork (3.500 ± .932); MF16, to develop one unique skill ($M = 3.500 \pm 1.037$); MF13, to get recognition ($M = 3.600 \pm 1.057$); and MF14, to reduce pressure ($M = 3.625 \pm 1.004$); these six factors had less or lower impact power on these youth soccer players' motivation.

The mean scores of the other six factors were at the medium level, from $M = 4.025 \pm .944$ to $M = 4.413 \pm .937$. These factors have medium impact power on these youth soccer players' motivations.

The findings from Part III of the AQSAMHRB, including four subareas of Eating Habits, Nutrition Knowledge and Status, Risk Behaviors, and Hygiene Behaviors, involved 27 health-related behaviors, as presented in Table 5.

Table 5
Health-Related Behaviors in Part III of the Questionnaire (N = 98, age = 14–15)

Question	Answers	Frequency	%
	Subcategory 1. Eating Habits		
1. Do you eat regularly?	a) My eating is very regular	47	47.96
	b) My eating is regular	15	15.31
	c) My eating is unregular	36	36.73
	d) My eating is very unregular	0	0
2. How many meals do you eat a day?	a) Less than 3 times per day	0	0
	b) 3 times per day	82	83.67
	c) 4–5 times per day	16	16.33
	d) Others (please be specific____)	0	0
3. Do you add salt to your dishes?	a) Yes, always	8	8.16
	b) Sometimes, yes	17	17.35
	c) Sometimes, no	0	0
	d) No, I don't	73	74.49

Table 5 (cont.)

Question	Answers	Frequency	%
4. Do you try to cut down on the amount of sugars you eat?	a) Yes	0	0
	b) Sometimes, yes	18	18.37
	c) Sometimes, no	25	25.51
	d) No, I don't	55	56.12
5. How many glasses of milk or dairy products (yogurt, juice) do you drink per day?	a) 1–2 cups	8	8.16
	b) 3–4 cups	73	74.49
	c) More cups	5	5.10
	d) I don't drink milk	6	6.12
6. Do you dine before and after strenuous exercise?	a) Yes	0	0
	b) Sometimes I do	8	8.16
	c) I occasionally do	5	5.10
	d) I never do do	85	86.73
Subcategory 2. Nutrition Knowledge and Status			
7. How is your knowledge status about nutrition?	a) Very good	26	26.53
	b) Good	34	34.69
	c) Ordinary	31	31.63
	d) Not so good	1	1.02
8. How often do you eat fruit?	a) Once per day	19	19.39
	b) Twice per day	29	29.59
	c) More than three times per day	50	51.10
	d) Once every other day	0	0
9. How often do you eat vegetables?	a) Once per day	0	0
	b) Twice per day	78	79.59
	c) More than 3 times per day	20	20.41
	d) Once every other day	0	0

Table 5 (cont.)

Question	Answers	Frequency	%
10. How often do you eat fish?	a) Once per day	35	35.71
	b) Twice per day	0	0
	c) More than 3 times per day	0	0
	d) Once every other day	63	64.29
11. Do you eat wholemeal bread?	Yes:		
	a) Once per day	54	55.10
	b) Twice per day	19	19.39
	c) More than 3 times per day	0	0
	d) Once every other day	25	25.51
12. How many times do you eat dinner with meat in a week?	a) 1–2 times	0	0
	b) 3–4 times	9	9.18
	c) More than 4 times	8	8.16
	d) Every day in a week	79	80.61
	e) No, I don't eat meat, I am a vegetarian	2	2.04
13. What is your favorite meat?	a) Chicken	43	43.88
	b) Pork	37	37.76
	c) Veal / Calf	9	9.18
	d) Mutton / Lamb	8	8.16
14. Do you eat fried foods?	a) Occasionally eat	49	50.00
	b) Sometimes eat	40	40.81
	c) Yes, I eat fried foods	5	5.10
	d) No, I do not eat fried foods	4	4.08
Subcategory 3. Risk Behavior			
15. How often do you drink alcohol?	a) Never	65	66.33
	b) Seldom	5	5.10
	c) Once in a while	9	9.18
	d) Whenever have a reason	19	19.39

Table 5 (cont.)

Question	Answers	Frequency	%
16. Do you smoke cigarettes?	a) Never	82	83.67
	b) Seldom	5	5.10
	c) Once in a while	7	7.14
	d) Whenever have a reason	4	4.08
17. Do you use any psychoactive substances?	a) Never	98	100
	b) Seldom	0	0
	c) Once in a while	0	0
	d) Whenever have a reason	0	0
18. Did you use anabolic steroid?	a) Never	98	100
	b) Seldom	0	0
	c) Once in a while	0	0
	d) Whenever have a reason	0	0
19. Do you know the health consequences of applying prohibited anabolic steroid or different kinds of doping substances?	a) Yes, I know them well	35	35.71
	b) Yes, I know some of them	25	25.51
	c) No, I am not sure	38	38.78
	d) No, I don't know them at all	0	0
Subcategory 4. Hygiene Behaviors			
20. Do you use sun cream when you play soccer?	a) Never	75	76.53
	b) Seldom	7	7.14
	c) Once in a while	7	7.14
	d) Whenever have a reason	9	9.18
21. Do you take a shower after practicing or competition?	a) Yes, of course I do	92	93.88
	b) No, reason: want to go home ASAP	6	6.12

Table 5 (cont.)

Question	Answers	Frequency	%
22. How often do you wash your hands daily?	a) One time	0	0
	b) Two to three times	41	41.84
	c) Before every meal	52	53.06
	d) Other, reason: whenever it is needed	5	5.10
23. How often do you brush your teeth daily?	a) Once per day	0	0
	b) Twice per day	43	43.88
	c) Three times per day	55	56.12
	d) Never	0	0
24. Do you use extra mouth hygiene?	Yes! — circle the things you used:		
	a) Dentist's threads	23	23.47
	b) Liquids for rinsing	8	8.16
	c) Toothpick	59	60.20
	d) No, I never use extra hygiene mouth	0	0
25. After an intensive practice, how was the quality of your sleep?	a) Very good	67	68.37
	b) Good	14	14.28
	c) Normal	9	9.18
	d) Not so good	6	6.12
	e) Poor	2	2.04
26. After an intensive competition/ game, how is the quality of your sleep?	a) Very good	46	46.94
	b) Good	25	25.51
	c) Normal	14	14.29
	d) Not so good	6	6.12
	e) Poor	7	7.14
27. When sweating, do you drink water or beverages immediately?	a) Yes, I drink water immediately	55	56.12
	b) I don't drink any of them immediately	8	8.16
	c) I drink beverages immediately	30	38.77
	d) I drink water but not immediately	5	5.10

Data in Table 5 reflect the unique features and status of these youth soccer athletes' health-related behaviors. We believe that these four subareas of health-related behaviors are important to the youth athletes and have a positive relationship with their success rate. That is, the better their health-related behaviors, the higher success rate for them to become an elite soccer player. Moreover, from an educational perspective, coaches or teachers in their soccer team or soccer school do need to educate their athletes or students to gradually develop these positive health-related behaviors.

The significant findings regarding participants' health-related behaviors status include the following:

- For Eating Habits, (1) 63% reported eating regulary to very regulary; (2) 84% claimed to eat 3 meals/day; (3) 74% reported they do not add salt to their dishes; (4) 82% said they do not reduce the amount of sugars they eat; (5) 94% reported they drink 1 to 5 cups/day of milk, yogurt, or juice; and (6) 87% claimed they never dine before and after strenuous exercise.
- For Nutrition Knowledge and Status, (7) 61% reported having good to very good nutrition knowledge; (8) 81% said they eat fruit 2 to 3 times/day; (9) 100% said they eat vegetables every day; (10) 36% reported eating fish once a day, and 64% said they eat fish once every other day; (11) 100% said they eat wholemeal bread; (12) 81% reported they eat dinner with meat every day; (13) as to their favorite meat, 44% favored chicken and 38% favored pork; and (14) 91% reported they eat fried foods.
- For Risk Behavior, (15) 66% claimed they never drink alcohol, (16) 84% claimed they never smoke cigarettes, (17) 100% said they never use psychoactive substances, (18) 100% said they never use anabolic steroid, and (19) 61% reported they know the health consequences of using the prohibited anabolic steroid.
- For Hygiene Behaviors, (20) 77% claimed they never use sun cream when playing soccer, (21) 94% said they take a shower after practicing or competition, (22) 100% claimed they wash their hands often, (23) 100% claimed they brush their teeth at least twice a day, (24) 60% said they use toothpicks as extra

mouth hygiene, (25) 82% claimed they have a good sleep after an intensive practice, (26) 72% reported they have a good sleep after an intensive competition or game, and (27) 56% said that when sweating they drink water immediately.

Discussion

This study explored the participation motivations of youth soccer athletes (aged 14–15) from two types of soccer schools in Jiangsu, China. It also examined the differences of the MFs or reasons among the participants' for Supporting and Goal-Setting aspects. Finally, it investigated the health-related behaviors of this sample of participants.

Table 2 shows the scores for each MF, and the scores can be divided into three groups based on the Place column. First, the high impact factors with higher scores include MF1, MF4, MF2, MF5, MF11, and MF12; these MFs had the highest impact power on these youth soccer athletes' motivation. Among these six, MF1 and MF2 are intrinsic factors, while MF4, MF5, MF11, and MF12 are extrinsic factors.

Second, the MFs group with medium-high scores includes MF10, MF6, MF3, MF7, MF17, and MF14; these MFs had medium impact power on these youth soccer athletes' motivation. Remarkably, this group has three intrinsic MFs and three distributed MFs.

Third, the lower impact MFs with lower scores include MF13, MF8, MF16, MF9, MF15, and MF18; these MFs had significantly lower impact power on these participants' motivation. Unbelievably, four MFs were intrinsic factors (MF13, MF9, MF15, and MF18), while only two MFs were extrinsic factors (MF8 and MF16; see Table 2).

In summary, (1) with regard to this sample's participants' motivation features, intrinsic and extrinsic factors had similar impact power on their motivations, (2) the nine intrinsic factors in the AQSAMHRB (Zeng & Xie, 2015) were the core MFs for the participants, (3) some factors or reasons had higher impact power than other factors, and (4) some factors or reasons held less impact power than other factors. Based on the findings from this study, youth soccer coaches, trainers, or administrators should diagnosis and analyze their athletes' specific situation and carefully implement the findings

accordingly. Figure 1 summarizes the motivation features of this sample.

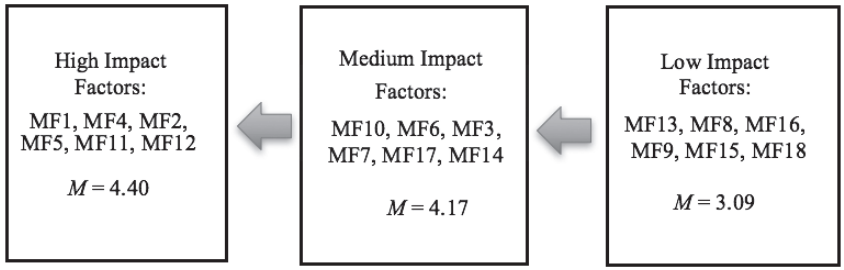

Figure 1. Three groups of youth soccer athletes' motivation factors. Intrinsic factors include MF1, MF2, MF6, MF7, MF9, MF13, MF14, MF15, and MF18. Extrinsic factors include MF3, MF4, MF5, MF8, MF10, MF11, MF12, MF16, and MF17. These 18 factors reflect the competence, relatedness, and autonomy needs in self-determination Theory interpreted by Ryan and Deci (2000).

Furthermore, the follow-up MANOVA revealed significant differences in 12 of 18 comparisons in Goal-Setting (For Professional vs. For Non-Professional) , whereas six MFs reach significant difference at $p < .01$, with For Professional scoring significantly greater than For Non-Professional; these six MFs include MF9, to become a professional player; MF13, to get recognition; MF14, to reduce pressure; MF15, to reduce troubles from schoolwork; MF16, to develop a unique skill; and MF17, to become a soccer coach. Six MFs reached significant differences at $p < .05$: MF4, to meet friends; MF5, make new friends; MF6, to contest winners; MF11, for my biography; MF9, to become a professional player. Therefore, when facing these 12 MFs, they responded warmly, even with passion, because they were motivated to keep participating and playing with their friends and teammates, and they love their training environment, for example, the cohesive atmosphere in the soccer school.

These youth soccer athletes need all of these motivations to accomplish their soccer dream. This is why these MFs had significant impact power on their participation motivation. For MF12, to establish prestige, and MF18, for family will, again, For Professional scored significantly greater than For Non-Professional (see Table 4). What would be the reasons behind those significant differences? We

believe there should be some special facts behind this finding. When a youth soccer athlete sets up in his mind to be a professional player who will want to meet his friends and make new friends or teammates, he will try his best to be on the top of his team during his practices and competitions because he wants to become a winner; this will build up his biography and establish his positive prestige. Moreover, if he achieves his goal—becoming a professional soccer player—this will satisfy his family's will. This is why these MFs scored significantly higher than MFs preferred by those who set up in their mind to be non-professional players.

On the other hand, youth soccer athletes who set up in their mind to be a non-professional (note that most of these athletes were from the traditional school) did not respond as warmly as those who wished to be professional players to MFs such as meet friends, contest winners, get recognition, establish prestige, and become a professional player. They showed less excitement because they were practicing, receiving training, and attending competition in a different environment. More important, these type of athletes have higher academic ambition. They may plan to play on a college or university team, but motivations such as make new friends, contest winners, become a professional, establish prestige in soccer, and become a soccer coach might not be on their list of most important things to accomplish. Additionally, like athletes playing at National Collegiate Athletic Association[1] institutions, these youth soccer athletes who love to player soccer can still pursue their soccer dream by playing on a division team at their future college or university; therefore, the results of this survey were reasonable and logical.

Not so surprising, comparisons of the MFs between the two Goal-Setting aspects produced the following interesting and unique facts: (1) Athletes in the sport school were significantly more appreciate of MF4, meet friends; MF5, make new friends; MF6, to contest winner, and (2) they scored significant higher in MF9, to become a professional player; MF12, to establish prestige, and MF17, to become a coach, than those in the traditional soccer school. As

[1]The National Collegiate Athletic Association is a nonprofit association that regulates athletes of 1,281 institutions, conferences, organizations, and individuals. It also organizes the athletic programs of many colleges and universities in the United States and Canada and helps more than 450,000 college student athletes who compete annually in college sports ("National Collegiate Athletic Association," n.d.).

introduced before, athletes in sport schools represent the highest skill and competitive capability at the non-professional level in the Chinese competitive sport system; they practice 5.5 days/week and attend 2 to 3 major youth competitions every semester (Spring and Autumn), plus every 4 years a National Middle School Games. Those promising teenagers eagerly hope they will be sent to sport schools to receive specialized training so that they can make their sport-star dream come true; therefore, the expectations on their winning from all aspects are high. Maybe that was their top external motivation resource. Instead, although the youth athletes at the traditional sport school have less time for practicing and competing, plus reality tells them there is less opportunity to become a soccer star, they are still in the category of promising youth soccer player and could play at the college or university level. Over the years, many youth athletes who graduate from the traditional soccer school have played and competed in the National Collegiate Soccer Games. Where do these motivations come from? Probably these reasons can be attributed to intrinsic motivation.

As we stated at the beginning, research studies of youth soccer athletes' motivations for participating are extremely limited. This is why we defined this investigation as an exploratory study. Fortunately, after searching the whole database for youth soccer players' motivations, we found the study *Motivation, Need Support, and Need Satisfaction in Youth Soccer Players* (Lippitt, 2012). In this study, the researcher examined the motivations of 109 youth soccer players (13 years old). This study found no significant differences in motivational processes (e.g., support, need satisfaction, and motivation) between the two ethnic groups. Scores from the three questionnaires gave an overview of the motivation for the 109 youth soccer players from Georgia, USA (Lippitt, 2012). On the Sport Motivation Scale, the participants scored higher in learning new skills and learning new knowledge. Additionally, factors such as external rewards or punishments had higher impact in these youth soccer players. The researcher concluded that at this age level, soccer players' motivations appear to match up with what they were getting in support and satisfaction (Lippitt, 2012).

Besides some similarities between the current study and previous studies, there are many differences. For example, using another

study's findings for the sport of tennis (due to a lack of research resources in youth soccer athletes' participation motivations, we had to rely on the research resources from youth tennis). In their review of literature motivation in tennis, Miguel and Machar (2007) summarized that (1) enjoyment, having fun, and passion on the sport were ranked the top three important MFs for the success of youth tennis players; (2) improving performance, keeping fit, and socializing were rated as their basic reasons for keeping involved in the sport; (3) feeling important and popular, and earning rewards were ranked as lower influence motivations; and (4) school/club/team atmosphere and having a good relationship with the coach were also ranked as less or lower important factors on players' motivation.

Although this study and the Miguel and Machar (2007) study were conducted with different sports, findings from the studies show similarities and differences. Specifically, the top important and basic factors or reasons for the youth athletes to keep engaging in sports practices and competitions were similar.

As for differences, the factors of feeling important and popular, earning rewards, team atmosphere, and good relationship with coach from the Miguel and Machar (2007) study compared with the MFs from this study of technical content and unique value, unique skills, for fun, for biography, for establishing prestige, to become a professional, for establishing self-esteem, and to contest winners show many differences between the two studies.

Because no study has covered health-related behaviors in the youth soccer domain, this study did an exploratory investigation in this regard; because it is the first try, its design, data collection, and analysis are all fall far from perfection. However, it could be a good start to attract the attention of researchers in the study domain of youth sports.

Based on the results presented in Table 5 and summarized in this article, from the assessment point of view we are not going to comment on how good or bad the youth soccer athletes' health-related behaviors were, but the results in Table 5 and the summary reflect the status of health-related behaviors of this sample of youth soccer athletes. General speaking, for this type of data a qualitative description should be made or provided. With the assumption of employing a 5-point scale of *excellent* (5), *very good* (4), *good* (3), *not so good* (2),

and *poor* (1), then we can conclude that their health-related behaviors in all four subcategories were just right in the position between *very good* and *good* on the scale. What does this means? It means (1) when engaging in soccer practices and competitions for their teams or schools, these youth athletes obtain corrective and positive education in eating habits, nutrition knowledge, risk behaviors, and hygiene behaviors from their coaches, instructors, and administrators. (2) There is room for improvement regarding these youth soccer athletes' health-related behaviors. (3) It also indirectly reflects that these youth soccer teams and schools have strict regulations or legislation to manage their athletes' daily life. From the health education perspective, we believe this is a positive and beautiful thing that deserves to be applied to youth sports. With this consideration, this point is consistent with the point of a literature review article by Geidne, Quennerstedt, and Eriksson (2013); the researchers indicated that with regard to building healthy public policy, youth sports teams and schools should recognize and match up with the changes in regulations or legislation at a central level and then carry out these regulations or legislation to different types of teams or schools. These changes in legislation, organization, or policies have one thing in common: Put health on the agenda (Geidne et al., 2013).

Conclusion

With regard to the two hypotheses that guided this study, the findings revealed that the first hypothesis is true, which is, no significant differences exist for the MFs of the Supporting aspects (By School vs. By Parents) of the athlete. The second hypothesis is not true, which is, in the Goal-Setting aspect significant differences exist on the MFs between For Professional vs. For Non-Professional of the athlete.

In conclusion, the findings of this investigation showed that Supporting is not the determination aspect, but the Goal-Setting aspect is. The youth soccer athletes who set up as their goal to be a professional player had higher motivation than youth soccer athletes who set up their goal to be non-professional players. Moreover, with regard to the motivations of the participants, the intrinsic factors had higher impact power than the extrinsic factors. Specifically, MF1, technical content and unique value; MF4, to meet friends; MF2, for fun; MF5, to make new friends; MF11, for my biography;

and MF12, to establish prestige, had extraordinary impact power on these youth soccer athletes' motivations, which means some MFs have higher impact power, while some MFs have lower impact power. Youth soccer educators need diagnose and analyze their athletes' situations and utilize these research findings correspondingly. On the health-related behaviors aspect, we can qualitatively conclude that the grand mean score of the participants' health-related behaviors in all four subcategories was located between the position of *very good* (4) and *good* (3) on a 5-point assessment scale.

Limitations

We realize this study had several limitations. First, the size of sample was relatively small. Second, the data collection scope only covered one province. Third, youth soccer coaches might somehow affect their athletes' participation motivations, but that was not the objective of this study. Last, the participants in this study were purposefully selected. Future studies can improve on these limitations by including coaches from the participants' teams (e.g., creating open-ended questions for coaches to answer), extending data collection to multiple provinces or districts, and selecting participants using other sampling methods.

Recommendations

This study explored the participation motivations and health-related behaviors of youth soccer athletes from Jiangsu province, China. The MFs of technical content and unique value, unique skills, for fun, for biography, to establish prestige, to be a professional, to establish self-esteem, and to contest winners were the top eight factors or reasons these youth soccer athletes engaged in their practices and competitions.

From another perspective, team atmosphere and having a good relationship with coaches also influenced youth athletes' participation motivations. Moreover, although the values of youth athletes' participation motivations have been recognized by judicious youth sports researchers (e.g., Lippitt, 2012; Miguel & Machar, 2007; Smith et al., 2006), future studies are certainly needed, especially in the area of how intrinsic and extrinsic motivation work differently on different types of youth soccer athletes (e.g., players from a sport school soccer team or players from other types of schools' soccer team).

Additionally, those health-related behaviors explored in this study deserve the attention of researchers who have a research interest in youth sports, because only athletes who have developed positive health-related behaviors during their youth years have a chance to become future soccer stars.

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