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Published in the Slovak Republic European Journal of Physical Education and Sport Has been issued since 2013. E-ISSN: 2409-1952 2019, 7(1): 28-43

DOI: 10.13187/ejpe.2019.1.28 www.ejournal7.com



# An Exploratory Study of Collegiate Track and Field Athletes' Participation Motivations and Health Related Behaviors

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# Abstract

Using 'self-determination-theory' as a theoretical framework, this study examined: features of the collegiate track and field athletes' (CT&FAs') participation-motivations; their current healthrelated behaviors; and their participation-motivations associate to the dependent variables. Participants were 283 CT&FAs (159 males, 124 females). Data correction was employed Adapt Collegiate Track and Field Athletes' Participation Motivations and Healthy Related Behaviors Questionnaire (ACTFAPMHRBQ); containing 54 items (eight invested general information, 19 examined motivation-factors (MFs) and 27 examined health-related behaviors). Results showed: the top four MFs are: 'to improve-reputation', 'high technical-content and unique-value'; 'for professional'; and 'for fun & not boredom'. The MANOVA revealed: 'Disciplines' and 'Original Motivations' did not reach significant different but 'Gender', 'Supports', 'Years in college' and 'Athlete-Grade' did. The current 'health-related behaviors' status of these participants was identified. Additionally, when using a four points scale of "Excellent, Very-good, Good, and Notgood", their overall status was on the position between excellent and very-good.

Keywords: Sport, practices, competitions, coaching, management.

# 1. Introduction

The sport of track and field (T&F) is defined as the foundation of all types of sports. National Collegiate Athletic Association (NCAA) in the US is "a member-led organization dedicated to the well-being and lifelong success of college athletes" (NCAA, 2018: 1). Members in this organization included 1,117 colleges and universities, 100 conference and 40 affiliated sports organizations. There are about 52,500 participants that makeup about 19,500 teams to compete each year in the NCAA's 90 championships in 24 sports across three divisions (NCAA, 2018). To make this largest sports organization become a successful organization, thousands and thousands of professionals from colleges/university presidents, athletics directors, coaches, academic advisors, athletics representatives, to relative officers, health and safety personals have to contribute their best and the most careful service. A general perception for the highest mission of NCAA is to represent the USA attending the International Universiade organized by the International University Sports Federation (IUSF, 2018). According to the IUSF (2018), the USA has won 1,300 medals in 25 appearances at the Summer Universiade and is in the first place on the all-time Summer Universiade medal table (IUSF, 2018).

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In contrast, according to Federation of University Sport of China (FUSC, 2018), the only national organization for university sports in the People's Republic of China (PRC), although their collegiate sports were started later (since 1979) and it is not as advanced and well developed as the collegiate sports in the USA. The collegiate athletics in the PRC, however, have made incredible progress in its 19 appearances at the Summer Universiade; the Chinese collegiate athletes have won 963 medals; ranked No. 2 and next to the USA (FUSC, 2018).

The construction of high-level collegiate athletic teams in the PRC's university system began in the 1980s. Its development process can be roughly divided into three stages: the first phase called the pilot phase (1987–1995); the main task is to encourage, guide and promote the development of extracurricular sports training in universities (Liu, 2018). For the first time, 51 pilot universities across the country that recruit high-level collegiate athletes were established. The second stage called the diversified development stage (1996–2005); the main task was striving to improve the competitive level of collegiate athletes and prepare for the World University Games (Liu, 2018). During this period, the universities that built high-level collegiate athletic teams were divided into two levels: one was the national pilot schools approved by the former State Education Commission; the other was the pilot schools set up by the provincial education administrative departments (Liu, 2018; Ma, 2018). The Ministry of Education established a total of 161 collegiate athletic teams. By 2001, the scales of the two-level pilot construction of high-level collegiate athletic teams were eventually adjusted to about 120 teams (Liu, 2018; Ma, 2018). The third stage called the standardization development stage (2006 - present); the main task was to continuously improve the collegiate' sports level, undertake the team and the task of the World University Games, establish a multi-channel training method for excellent athletes and strengthen the comprehensive level of high-level collegiate' sports teams (Liu, 2018; Xu et al., 2009). The scale of high-level collegiate' sports teams once again been expanded, which has led to problems such as reducing quality enrollment, re-declaration, and low quality of running teams, etc. (Liu, 2018; Ma, 2018). After the adjustment in December 2017, the total number of colleges and universities that have qualified for high-level collegiate' sports teams was 279 or 20.1 % of the total universities number, including 144 universities with qualifications for track and field events (Liu, 2018; Ma, 2018; Xu et al., 2009).

Despite people have perceived many substantial benefits, however, collegiate sports have their problems as well. Concerns have been voiced regarding the highly competitive nature of collegiate sports and it is often argued that young athletes become injured or burnout as a result of excessive stress and pressure. Still, others are thought to learn inappropriate behaviors such as aggression or poor sportsmanship from their involvement (Malina, Cumming, 2003; Jeffery, Camiré, 2016).

On the other hand, Geidne, Quennerstedt, and Eriksson (2013), Jeffery and Camiré (2016) based on their research findings indicated that: over the years, youth and collegiate sports research has failed to address the influential role of socialization agents in shaping collegiate athletes' motivation processes in sports. They recommended that collegiate sport researchers should integrate socialization influences, identifies the influence on participates' socialization patterns upon the athletes' self-perception characteristics, orientations toward achievement (both in athletics and academic success), and the patterns of motivated behavior (Geidne et al., 2013; Jeffery, Camiré, 2016).

With respect to what factors motivate the collegiate to involve sports and physical activities, Kilpatrick, Hebert, and Bartholomew (2010) indicated that although active lifestyles have many obvious benefits, lack of physical activity is still a major health problem in the collegiate population. A key point for solving this issue is to develop an understanding of participation motivation in physical activity (Jeffery, Camiré, 2016). Based on those assumptions, Kilpatrick et al. (2010) conducted a study of "College Students' Motivation for Physical Activity: Differentiating Men's and Women's Motives for Sports Participation and Exercise". Their findings suggested that: 1) for the sports engagement, they are most likely motivated by the intrinsic factors, such as enjoyment and challenge; and 2) for the physical exercise or activities, they tend to motivate by more extrinsic factors, such as appearance, weight control and reduce life stress.

Furthermore, issues and problems facing on the collegiate athletics have been found, such as: teams' leaders (e.g., coaches and faculty athletics representatives); policymakers (e. g., college presidents or program directors) lack of first hand information on what factors that really

motivated the collegiate athletes keep involved the sport they like; and lack of the relative scientific knowledge that explain why the collegiate athletes can or cannot continually participated in the sports he/she chooses (Zeng, 2019). However, little study has been conducted to cover the collegiate athletes' participation motivations and their health-related behaviors, especially in the sport of track and field. Hence conducting a study to address the above issues appear to be urgent necessary and important. Therefore, the purposes of the present study were to: (1) examine the motivation factors between their gender (male or female), disciplines (natural science or social science), and financing support (by-parents or by-school) of the collegiate track and filed athletes; (2) examine differences exist or not on the motivation factors among the collegiate track and filed athletes' year(s) in college/university (1 year, 2 years, 3 and more years), athletics-grades (grade 1, grade 2, grade 3), and original motivations (for-professional athlete, for non-professional athlete, for extra credits in enrolment). (3) To investigate the current status of the collegiate track and filed athletes' health-related behaviors. Additionally, based on the findings of this study providing strategies for the professionals in the collegiate athletics to transfer their athletics motivations to their academic efforts and accomplish higher success both in athletics and academic performance.

# 2. Theoretical Framework

The theoretical framework that guided this study is the 'self-determination theory' (SDT et al., 2000). The SDT is comprised of intrinsic motivation (IM) and extrinsic motivation (EM) theories. Researchers in the field of participation motivations indicated that all people possess multiple motivations, both intrinsic and extrinsic, that are simultaneously in play and must together be assumed to determine the overall quality of motivation (Ryan, Deci, 2000; Stellion, Sinclair, 2013). Researchers further indicated that individuals actually be motivated by three psychological needs: competence, relatedness, and autonomy (Deci, Ryan, 2002; Stellion, Sinclair, 2013). The competence needs in the SDT model is called effectiveness motivation; the relatedness need refers to people's needs to belong and to feel accepted by others; however, the autonomy needs refer to people's need to feel self-determined that is the source of persons' own action (Ryan, Deci, 2000; Stellion, Sinclair, 2013). The organismic needs energize intrinsic and extrinsic motivations. Researchers, however, indicated that the concept of need is too general and vague to illustrate the participation in particular behaviors and it is hard to guide empirical research (Kaplan, 2010; Pintrich, Schunk, 2002). Therefore, a few models describing how different motivations triggered by need manifest in intrinsic and extrinsic motivation in specific aspects or activities were developed (Deci, Ryan, 2002; Ryan, Connell, 1989; Kaplan, 2010; Pintrich, Schunk, 2002; Stellion, Sinclair, 2013).

Breese (1998) illustrated that athletes' intrinsic motivation should be defined as participating in a sport for enjoyment, and extrinsic motivation as participating in a sport to gain rewards. Breese (1998) further explained that when athletes begin to engage in a particular sport, they are motivated not only by intrinsic motivations but also by extrinsic motivations. Some particular sports, however, may be more dependent on intrinsic motivations than EM extrinsic motivations (Breese, 1998). The reasons are different types of sports need different types of motivations (Breese, 1998; Deci, Ryan, 2002; Stellion, Sinclair, 2013).

More specifically, other researchers illustrated that athletes' intrinsic motivation usually predicts athletes' attendance and adherence to a particular sport (Chen et al., 2014; Smith et al., 2006). In the present study, CT&FAs who are intrinsically motivated would be those who go to practice their techniques and fitness regularly for fun and for self-satisfaction; whereas those CT&FAs who are extrinsically motivated would be those who go to practice to become a better track and field athletes for winning a medal in competition (Kaplan, 2010; Stellion, Sinclair, 2013). It is interesting to know that intrinsic and extrinsic motivations have different effects on collegiate athletes (Stellion, Sinclair, 2013).

In this study, we are trying to find evidence to support those previous research findings. Additionally, we also wanted to explore how the professionals (e.g., coaches, instructors, and program managers) can better apply the SDT to their coaching, teaching, and administration; from there they may get new ideas to improve the athletics program.

Measures/Instrumentation

The Adapt Collegiate Track and Field Athlete's Participation Motivations and Healthy Related Behaviors Questionnaire (ACTFAPMHRBQ, Zeng, 2019) were employed for data

collection. The ACTFAPMHRBQ contained three parts: Part I asked 'General Information', contained eight questions that covered participant's general information. Such as: How long have you officially engage in T&F? Financially, who supported you engaged in T&F practices and competitions? Part II asked, "What factors/reasons motivated you took part in T&F practices and competitions continually"? With 19 motivation factors (MFs) providing, the participant can respond to each MF in a 5-points Likert type scale (5-points represents "Strongly agree ", 4-points represents "Agree", 3-points represents "Somewhat-agree", 2-points represents "Little-agree", and 1-point represents "Disagree"). Part II of the questionnaire contains 10 IM factors (items 1, 2, 4, 7, 8, 10, 13, 14, 15, and 17) and nine EM factors (items 3, 5, 6, 9, 11, 12, 16, 18, and 19). In other words, it included all three basic psychological needs (competence, relatedness, and autonomy) described by Ryan and Deci (2000). Part III examines the health-related behaviors, containing 27 questions that allow the participant to respond in his/her best choice within A, B, C, and D options.

Reliability and Validity of the Instrument. According to Child (1990), in order to explore the possible underlying factor of the structure for a set of measured variables without imposing any preconceived structure on the outcome, the exploratory factor analysis (EFA) is the best solution (Child, 1990); therefore, the EFA was performed for the CTFAPMHRBQ (Zeng, 2019). Results revealed: the analysis extracted six factors with perfect correspondence to the 19 items with eigenvalues for the reasons or factors ranging from 2.75 to 8.67 and structure coefficients from .78 to .92 and the majority of the fitted residuals reached the pre-set-up significant difference (P < .05) level (Child, 1990).

Furthermore, the validation process was through a pilot study, reviewing the content or items. These processes confirmed the following concerns: a) the readability and writing skills of the collegiate athletes (with the consideration of translate from English version to Chinese version); b) whether or not those participants can truly understand and respond to the questions in the questionnaire correctly; c) it may result in re-wording on some questions or statements to improve the understanding for those collegiate athletes; d) it may result in cutting or adding numbers of the questions or statements in the questionnaire, and e) whether or not the questions or statements have covered all the possible motivation factors or reasons for the collegiate athletes engaging in T&F practices and competitions. As a result, the CTFAPMHRBQ (Zeng, 2019) contained three parts (as described previously). All questions and options in CTFAPMHRBQ can be found in Tables 1, 2, 4 and 6.

## Methods

The sports of track and field (T&F) are the earliest and most representative competitive collegiate sports projects in Chinese universities (13). The main features of high-level athletes are there were significant differences among their sports technical level and cultural foundation (Liu, 2018). Since the establishment of high-level T&F teams in colleges/universities, it has experienced more than 30 years of trials and developments; and has cultivated many high-level, high-quality athletes, which greatly promoted the popularization and development of university sports activities (Liu, 2018; Ma, 2018).

## Participants

The T&F athletes in this study were from 18 universities with advanced admission qualifications (these universities enrolled students from all regions and provinces in China), and general high (grades 10-12) schools, youth sport schools (grades 8-12), provincial team athletes (current or retired) three sources. Their Athletic-Grade were: Elite/Master = 18 / 6.36 %; Grade-one = 91/32.15 %; Grade-two= 135 / 47.70 %; Grades-three = 39/13.78 %. Male athletes = 159 / 56.79%; and female athletes = 121 / 43.21 % (for the 'Athletic-Grade' refer to "Chinese Athlete Technical Grade Standard, 2018)".

The procedures of recruiting the participant were as follows: 1) obtained an approval for conducting this survey study from the Institutional Review Board (IRB) of the college/university; 2) followed the proposal guidelines for conducting survey study within the colleges/universities of the Federation of University Sport of China (Chinese Athlete Technical Grade Standard, 2018); 3) submitted all the necessary documentation to the colleges / universities administrator(s); 4) contact the participants and have the "Inform Consent" signed; 5) recruited 350 participants from 18 Track and field varsity teams; 6) delivering the "Questionnaire" to the participants. Except for marathon, race-walking, pole-vaulting, hammer, female heptathlon and male decathlon,

the events of these collegiate athletes included all the events that been held in the International University Track and Field Championship.

As a result, 350 athletes filled out the questionnaire, and 283 athletes (159 male, 124 female) correctly answered and returned the questionnaire to their coaches (return rate 81 %). Of which first-year collegiate athletes were 68 / 24 %; second-year collegiate athletes were 94 / 33 %; three & more years were 121 / 43 %. Furthermore, Athlete-Grade three were 39 / 14 %; Athlete-Grade two were 135 / 48%, and the Elite and the Grade-one athletes' combination group\* were 109 / 38 % (\*because the Grade one has particular reasons, this combination group represent the competitive level of each team). The all selected colleges and universities in the current study are under the administration of the Federation of University Sport of China (FUSC, 2018), and the FUSC has 15 branches – Track and Field is one of these branches, named the Track and Field Federation of University Sport of China (TFFUSC, 2018). All national and international collegiate track and field competitions and championships held in China were governed by the TFFUSC.

Research design

The following specific research hypotheses and questions guided this study: (1) no significant differences exist on the motivation factors between the 'gender' (male, female) 'disciplines' (natural science, social science), 'financing supports' (by-parents or by-school)? (2) No significant differences would be found on the motivation factors among the collegiate athletes who's 'year in the college' (1 year, 2 years, 3 and more years); 'Athlete-Grades' (Grade 1, Grade 2, Grade 3); 'original motivation' (for-professional, for non-professional, for extra-credits)? (3) What would be the current health-related behaviors status of the participant? To answer the above questions, the data analyses included descriptive statistics, reliability analysis and a  $2 \times 2 \times 2$  Gender (male or female) x Disciplines (natural science or social science) x Financing supported (by parents or by school); and a  $3 \times 3 \times 3$  [Year in the college (One year, Two years, Three and more years) x Athletics Grades (Grade 1, Grade 2, Grade 3) x Original Motivations (for-professional, for non-professional, for extra-credits)] factorial multivariate analysis of variance (MANOVA). The statistical program used for the data analysis was the IBM Statistical Package for the Social Sciences (SPSS) Version 25.

## 3. Results

All the results were summarized in Table 1 to Table 6. It aims at revealing what factors or reasons motivated these collegiate athletes (CAs) engaged in the sport of T & F and revealing the status of their health-related behavior. Of the 350 questionnaires distributed, 283 were completed correctly and returned to the researcher. The return rate is 81 %. Data in Table 1 reflected "General Information of the participants".

Number / Questions	Answers / Frequency / P	ercentage			
1. What is your gender?	Male= 159 / 56.79%	Female = 121 / 43.21%			
2. What is your BMI? <sup>Note</sup>	Answer	for male: Mean BMI = $24.13 (\pm 2.07)$			
	Answer fo	r female: Mean BMI = $21.87 (\pm 2.31)$			
3. What is your year in college / $u$	university?				
	Freshmen = 65 / 22.97%	Sophomore = 99 / 34.98%			
	Junior = 56 / 19.79%	Senior / $\hat{G}$ raduate = 60 / 21.20%			
4. How long have you officially p	racticed Track & Field?				
(	One year = $30 / 10.60\%$	Two years $= 41 / 14.49\%$			
r.	Three year = $90 / 31.80\%$	Four or more years = $122 / 43.211\%$			
5. What is your Athletics-class?					
a) El	lite / master = $18 / 6.36\%$	b) First-class = $91/32.15\%$			
c) Se	econd-class = 135 / 47.70%	d) Third-class = $39/13.78\%$			
6. Financially, who supported you engaged in Track & Field practices and competitions?					
a) My p	parents $= 87 / 31.07\%$	b) my school / team $= 176/62.86\%$			
c) By m	yself = 17 / 6.07	d) sport club = $0 / 0\%$			
7. Which science your major in?					

**Table 1.** General Information about the Participants (N = 283, 159 Male, 124 Female)

a) Natural science = 10236.43% b) Social science = 178/ 63.57% 8. What reason or factor originally motivated you participated in track & field competition? a) For become a professional athletes = 69 /24.89% b) For go to a good college / university =108 /38.57% c) For become a non-professional athletes but a stronger person = 78 / 27.86% d) For others reasons = 25 / 8.93%

Note. The BMI were calculated using the formula of  $kg/m^{\scriptscriptstyle 2}$ 

Mean scores and the standard deviations of the motivation factors (MF) that motivated these collegiate T & F athletes are presented in Table 2; the ranks of the mean scores of the 19 MFs' are also presented in Table 2.

**Table 2.** Motivation factors (MF) that motivated the collegiate T & F athletes: Means score and Standard deviations (S.D); (N = 283, 159 Male, 124 Female)

Motivation Factors (MF)	Mean $\pm$ S.D.	Sum	Rank
MF 1 Because T & F high technical content and unique value.	$3.852 \pm 1.070$	1090.00	2
MF 2 For the fun and get rid of boredom.	$3.759 \pm .925$	1064.00	4
MF 3 For getting healthier whole body	$3.583\pm\ .868$	1086.00	9
MF 4 For the enjoyment and have happiness.	$3.583 \pm .926$	1014.00	10
MF 5 In order to meet my friends.	$3.481 \pm 1.069$	985.00	15
MF 6 In order to make new friends.	$3.583 \pm 1.019$	1014.00	11
MF 7 In order to contest winners.	$3.583\pm.907$	1014.00	12
MF 8 In order to shape the body.	$3.652 \pm 1.011$	1062.00	7
MF 9 In order to improve physical health.	$3.738 \pm 1.029$	1058.00	5
MF 10 For the near future may become a professional athlete.	$3.795 \pm 1.078$	1074.00	3
MF 11 In order to foster self-esteem.	$3.583 \pm 1.012$	1014.00	13
MF 12 In order to improve my own reputation	$4.042 \pm \! 1.574$	1144.00	1
MF 13 In order to establish prestige among my friends.	$3.374 \pm 1.092$	955.00	16
MF 14 In order to get the recognition from my teacher / coach.	$3.368 \pm 1.071$	1010.00	17
MF 15 In order to reduce the learning / working pressure.	$3.516 \pm 1.018$	998.00	14
MF 16 In order to reduce the troubles from learning / work.	$3.661 \pm 1.023$	1036.00	8
MF 17 In order to develop a unique sport skill.	$3.692 \pm 1.088$	1045.00	6
MF 18 Hope to become a T &F coach in the future.	$3.049 \pm 1.405$	863.00	18
MF 19 In order to satisfy the will of family.	$2.625 \pm 1.350$	743.00	19

**Note.** a) The motivation factor (MF) 1, 2, 4, 7, 8, 10, 13, 14, 15, and 17 are 'Intrinsic motivation factors'; b) the MF 3, 5, 6, 9, 11, 12, 16, 18, and 19 are 'Extrinsic motivation factors'.

As showed in Table 2, the top six MFs were MF 12 'to improve reputation' (M = 4.042); MF 1 'high technical content and unique value' (M = 3.852); MF 10 'for become a professional' (M = 3.795); MF 2 'For fun & get rid of boredom' (M = 3.759); MF 9 'for improve physical health' (M = 3.738); and MF 17 'for develop a unique sport skill' (M = 3.692), These six factors possessed the highest impact power on these collegiate athletes' motivation. The bottom seven factors were MF 11 'for foster self-esteem' (M = 3.583), MF 15 'for reduce the learning / working pressure' (M = 3.516); MF 5 'for meet my friends' (M = 3.481); MF 13 'for establishing prestige' (M = 3.374); MF 14 'to get the recognition' (M = 3.368), MF 18 'to become a T&F coach' (M = 3.049); and MF 19 'to satisfy the will of family' (M = 2.625); these seven factors possessed less or lowest impact power on these collegiate athletes' motivation. The other six factors' mean score was at the medium level. These MFs were: MF 8 'to shape the body'; MF 16 'to reduce the troubles from learning/work'; MF 3 'for getting healthier whole body', MF 4 'for the enjoyment and have happiness'; MF 6 'to make new friends'; and MF 7 'to contest winners'. The mean scores were from 3.583 to 3.652. These six factors possess a medium impact power on these collegiate athletes' motivation. The results of the 2 x 2 x 2 and a 3 x 3 x 3 MANOVA for comparing the motivational factors for the collegiate T & F athletes are presented in Table 3.

**Table 3.** The 2 x 2 x 2 (*Gender*: male, female) x (*Disciplines*: natural-science, social-science) x (*Financing Supports*: by parents, by school); and a 3 x 3 x 3(*Years in College*: 1 year, 2 years, 3 & more years) x (*Athletic-Grades*: Grade 1, Grade 2, Grade 3) x 3 (*Original Motivations*: for professional-athlete, for non-professional-athlete, for extra-credits) factorial MANOVA of the participants' motivation factors (N = 283, 159 Male, 124 Female).

Source	Wilks' Lambda	F	Hypo df	Error df	P	
Gender	.869	2.029 <sup>b</sup>	19.000	256.000	.008**	
Disciplines	.917	1.216 <sup>b</sup>	19.000	256.000	.244	
Financing support	.892	1.626b	19.000	256.000	.050*	
Years in college	.267	1.964	38.000	482.000	.001**	
Athletics-Grade	.783	1.645	38.000	480.000	.011*	
Original Motivations	.852	1.052b	38.000	480.000	.389	

**Note.** b. Exact statistic; c. Computed using alpha = .05

The results of the 2 x 2 x 2 MANOVA in Table 3 showed that: no significant difference in the 'Disciplines' aspect (p > .05),  $\Lambda = .917$ , F = 1.216; however, significant differences effect was found in the 'Gender' aspect (p < .008),  $\Lambda = .869$ , F = 2.029. And the 3 x 3 x 3 MANOVA in Table 3 also showed that: no significant difference in the 'Original Motivations' aspect (p > .05),  $\Lambda = .852$ , F = 1.052; however, significant differences effect was found in the 'Years in college' aspect (p < .001),  $\Lambda = .267$ , F = 1.964. According to the research design, after the effect of the significant difference was found, the follow-up MANOVA was conducted. Data presenting in Table 4 and Table 5 were from the follow-up MANOVA, its determined what "Motivation Factors" really had differences and reflected the "Factors that truly motivated the collegiate athletes to continually engage in T & F practices and competitions."

**Table 4.** Descriptive statistics of the collegiate T & F athletes' motivation factors after significant differences showed in *Gender and Financing-support* (N = 283)

Motivations	Gender Mean (SD)		- Financing-support Mean (SD)	
Factors (MF)	Female (n=124)	vs. Male ( <i>n</i> =159)	By Parents $(n=88)$ v	vs. By School $(n=165)$
MF1.	3.854 ±1.138	$3.849 \pm 1.026$	3.652 ±1.119	4.115 ± .955*
MF2.	$3.758 \pm 1.038$	$3.761 \pm .830$	$3.683 \pm .924$	$3.861 \pm .921*$
MF3.	$3.927 \pm .866*$	$3.767 \pm .865$	$3.826\pm\ .870$	$3.852 ~\pm~ .868$
MF4.	$3.613 \pm 1.116$	$3.559 \pm .875$	$3.552 \pm .967$	$3.623 \pm 1.015$
MF5.	$3.484 \pm 1.107$	$3.478 \pm 1.042$	$3.484 \pm 1.090$	$3.478 \ \pm 1.046$
MF6.	$3.506 \pm 1.081$	$3.572 \pm .971$	$3.521 \pm 1.006$	$3.664 \pm 1.033$
MF7.	$3.911 \pm .987*$	$3.635 \pm .822$	$3.670 \pm .857$	$3.869 \pm .961*$
MF8.	$3.629 \pm 1.115$	$3.849 \pm .915*$	$3.795 \pm .962$	$3.696 \ \pm 1.074$
MF9.	$3.742 \pm 1.058$	$3.735 \pm 1.009$	$3.708 \pm 1.052$	$3.778 \ \pm 1.000$
MF10.	$3.604 \pm 1.174$	$3.043 \pm .975*$	$3.813 \pm 1.079$	$3.770 \ \pm 1.081$
MF11.	$3.572 \pm 1.098$	$3.591 \pm .942$	$3.540 \pm 1.042$	$3.639 ~\pm~ .971$
MF12.	$3.702 \pm 1.035$	$4.308 \pm 1.067*$	$3.956 \pm 1.087$	$4.155 \ \pm 1.079 *$
MF13.	$3.209 \pm 1.113$	$3.503 \pm 1.060*$	$3.329 \pm 1.128$	$3.347 \ \pm 1.073$
MF14	$3.427 \pm 1.176$	$3.679 \pm .969*$	$3.509 \pm 1.067$	$3.647 \ \pm 1.075$
MF15.	$3.492 \pm 1.093$	$3.553\pm~.958$	$3.472 \pm 1.019$	$3.598 \ \pm 1.017$
MF16.	$3.524 \pm 1.077$	$3.767 \pm .969*$	$3.633 \pm 1.034$	$3.697 \pm 1.011$
MF17.	$3.685 \pm 1.114$	$3.698 \pm 1.071 *$	$3.577 \pm 1.116$	$3.844 \pm 1.036*$

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MF18. MF19.	$3.363 \pm 1.308$ $2.846 \pm 1.402*$	$2.805 \pm 1.434*$ $2.453 \pm 1.286$	$\begin{array}{c} 2.882 \pm \!$	$\begin{array}{r} 3.271 \ \pm 1.366 * \\ 2.647 \ \pm 1.207 \end{array}$		

**Note.** There are results from the follow-up test: a) In 'Gender' aspect, 11 out of 19 comparisons showed significant differences at p < .05\*level; and b) In 'Financing-support' aspect, 6 out of 19 comparisons showed significant differences at p < .05\*level.

**Table 5.** Descriptive statistics of the collegiate T & F athletes' motivation factors after significant differences showed in *Years in college and Athletics-classe* (N = 283, 159 Male, 124 Female)

MF	Years in college Mean (SD)			Athletic-Grades Mean (SD)			
	1 year ( <i>n</i> =68)	2 years (n=94)	3+ years (n=121)	Grade-1 ( <i>n=109</i> )	Grade-2 ( <i>n</i> =135)	Grade-3 ( <i>n=39</i> )	
MF1.	3.662 ±1.216	4.085 ± .946*	3.776±1.060	4.119 ± .997*	3.755 ±1.054	3.435 ±1.187	
MF2.	3.706 ± .993	3.893 ± .901	3.686±.875	3.779 ± .984	3.829 ± .842*	3.461 ± .996	
MF3.	$4.014 \pm .849^*$	3.808 ± .871	3.760±.885	3.893 ± .901	3.815 ± .857	$3.871 \pm .832$	
MF4.	3.647 ±1.033	3.755 ± .900*	3.413 ±1.000	3.559 ±1.057	3.652 ± .900*	3.410 ±1.069	
MF5.	3.397 ±1.211	3.628 ± .938*	3.413 ±1.077	3.413 ±1.082	3.518 ±1.013	3.538 ±1.232	
MF6.	3.609 ±1.134	3.723 ± .932*	3.462±1.001	3.541 ±1.032	3.629 ± .959	3.538 ±1.188	
MF7.	$3.926 \pm .869^*$	3.755 ± .876*	3.661 ± .944	3.853 ±.921	3.718 ± .886	3.615 ± .935	
MF8.	3.838 ± .940	3.829 ± .979*	3.644 ±1.071	3.642 ±1.093	3.889 ± .886*	3.589 ±1.140	
MF9.	3.764 ±1.052	3.797 ± .979	3.677 ±1.058	3.853 ±1.052*	3.644 ± .949	3.743 ±1.207	
MF10.	3.882±1.139	3.915 ± .946*	$3.653 \pm 1.130$	3.825 ±1.052	3.718 ±1.090	3.974 ±1.111	
MF11.	3.632±1.049	3.648 ± .958*	3.504 ±1.033	3.706 ±1.011*	3.459 ±1.027	3.667 ± .927	
MF12.	4.558±1.566*	3.776 ± .857	3.958±1.493	3.963 ±1.442	4.237 ±1.338*	3.589 ± .818	
MF13.	3.338±1.154	3.553 ±1.053*	3.256±1.076	3.403 ±1.114	3.331 ±1.054	3.512 ±1.166	
MF14.	3.603±1.108	3.861 ± .945*	3.322 ±1.089	3.614 ±1.104*	3.563 ±1.026	3.461 ±1.143	
MF15.	3.514±1.085	3.744 ± .815*	3.363±1.095	3.651 ±1.021*	3.488 ±.991	3.308 ±1.079	
MF16.	3.647±1.075	3.862 ± .887*	3.512±1.073	3.697 ±.976	3.681 ±1.048	3.487 ±1.073	
MF17.	3.721±1.130	3.766 ±1.041	3.619±1.105	3.779 ±1.083*	3.637 ±1.076	3.641 ±1.158	
MF18.	3.220±1.347*	2.946 ±1.401	3.033 ±1.442	3.275 ±1.346*	2.881 ±1.425	3.000 ±1.451	
MF19.	$2.558 \pm 1.320$	2.553 ±1.395	2.719±1.336	2.752 ±1.375	2.525 ±1.343	2.615 ±1.311	

**Note.** There are results from the follow-up test: a) In 'Years in college ' aspect, 16 comparisons reached significant differences at p < .05\*level. b) In 'Athletics-classes' aspect, 11 comparisons reached significant differences at p < .05\* level

The findings from the Part III of the QCAPMHRB (Zeng, 2019) including four sub-categories such as, 'Eating Habits', Nutrition Knowledge and Status', 'Risk Behaviours', and 'Hygiene Behaviors' involved a total of 27 health-related behaviors as presented in Table 6.

**Table 6.** Summerize of collegiate T & F athletes' health-related behaviors in Part III of the QCAMHRB (*N* = 283, 159 Male, 124 Female)

Behaviore catogories	Anwser / Ferency and Percentage		
Sub-category one. The 'Eating habits'			
1. Do you eat regularly?			
a) My eating is very regular (201 / 71.02%)	b) My eating is regular $(51/14.43\%)$		
c) My eating is unregularly (31/10.95%)	d) My eating is very unregularly $(0/0\%)$		
2. How many meals do you eat a day?			
a) Less than 3 times per day $(0/0\%)$	b) 3 times per day (223/78.79%)		
c) 4-5 times per day $(49/17.31\%)$	d) Others (11 / 3.89%)		
3. Do you add salt to your dishes?			
a) Yes, always $(0/0\%)$	b) Sometimes, yes (109/38.51%)		
c) Sometimes - no (168/59.36%)	d) No, I never $(6/2.12\%)$		
4. Do you try to cut down on the amount of sugars you	eat?		

a) Yes (56 / 19.79%) b) Sometimes - no (145 / 51.12%) c) Sometimes - yes (135/47.78%) d) No, I don't (87 / 30.74%) 5. How many glasses of milk or dairy products (yoghurt, juce) do you drink per day? a) 1-2 cups (139 / 49.12%) b) 3-4 cups (68 / 24.03%) c) more than 5 cups (7/2.47%)d) I don' drink milk but yoghurt (69 / 24.38%) 6. Do you dine before and after strenuous exercise? a) Yes (0/0%)b) Sometimes I do (0/0%)c) I occasionally do (16/ 5.56%) d) I never do so (267/94.34%)Sub-category two. 'Nutrition knowledge and status' 7. How is your knowledge status about nutrition? a) Very good (89 / 31.76%) b) Good (182/64.31%) c) Ordinary (12/4.24%)d) Not so good (0 / 0%)8. How often do you eat fruit? a) Once per day (99/34.98%) b) Twice per day (128 / 45.23%)c) More than three times per day (0/0%)d) Once every other day (56 / 19.78%)9. How often do you eat vegetables? a) Once per day (0/0%)b) Twice per day (215 / 75.97%) c) Three times per day (68 / 24.03%) d) Once every other day (0/0%)10. How often do you eat fish? a) Once per day (45 / 15.90%)b) Twice per day (0/0%)c) Three times per day (0/0%)d) Twice per week (238 / 84.10%) 11. Do you eat wholemeal bread? Yes: a) Once per day (162 / 57.24%)b) Twice per day (48 / 16.96%) c) Three times per day (0/0%)d) Once every other day (73 / 25.79%)12. How many times do you eat dinner with meat in a week? a) 1-2 times (0/0%)b) 3-4 times (0/0%)c) more than 4 times (189 / 66.78%)d) every day in a week (94/33.22%)13. What is your favourite meat? a) Chicken (99 / 34.98%) b) Pork (81 / 28.62%) c) Veal / Calf (78 / 27.65%) d) Mutton / Lamb (25 / 8.83%) 14. Do you eat fried foods? a) Occasionally eat (89/34.45%)b) Sometimes eat (138 / 48.76%) c) Yes I like eat fried foods (45 / 15.90%) d) No, I do not eat fried food (11 / 3.89%) Sub-category three. 'Risk behaviour' 15. How often do you drink alcohol? a) Never (45 / 15.90%) b) Seldom (76 / 26.85%) c) Once in a while (79 / 27.92%) d) whenever have a reason (83 / 29.33%) 16. Do you smoke cigarettes? a) Never (112 / 39.58%) b) seldom (157 / 55.48%) c) Once in a while (9/3.18%)d) whenever have a reason (5 / 1.77%)17. Do you use any psychoactive substances? a) Never (283/100%) b) seldom (0 / 0%)d) whenever have a reason (0 / 0%)c) once in a while (0 / 0%)18. Did you use anabolic steroid? a) Never (283 / 100%) b) seldom (0 / 0%)c) once in a while (0/0%)d) whenever have a reason (0 / 0%)19. Do you know what health consequences to applying prohibited anabolic steroid or different kind of doping substances? a) Yes, I know them well (178 / 62.90%)b) Yes, I know some of them (91 / 32.15%) c) No, I am not sure (14 / 4.95%) d) No, I don't know them at all (0 / 0%)Sub-category four. 'Hygiene behaviours' 20. Do you use sun cream when you practice in T&F? a) Never (45 / 15.90%) b) seldom (49 / 19.4%) c) once in a while (91 / 32.15%) d) whenever have a reason (98/34.63%)

21. Do you take a shower after practicing or competition	?
a) Yes, of cause I do (269 / 95.0	b) No (14 / 4.95%), just
want to back to my dorm.	
c) Mostof time I do $(0 / 0\%)$	d) No, because I do not want to $(0 / 0\%)$
22. How often do you wash your hands daily?	
a) One time $(0 / \%)$	b) Two to three times $(0/0\%)$
c) Before every meal (189 / 66.78 %)	d) Whenever it is need to (94 / 32.22%)
23. How often do you brush your teeth daily?	
a) Once per day $(0/0\%)$	b) Twice per day (159 / 56.18%)
c) Three times per day $(124/43.82\%)$	d) Never (0 / %)
24. Do you use extra hygiene mouth? (If a 'Yes' circle th	e things you used):
a) Dentist's threads (81 / 28.62%)	b) Teeth Liquids to rinsing (68 / 24.03%)
c) Dental floss (89 / 31.45%)	d) No, I never use extra hygiene mouth
(48/16.96%)	
25. After a intensive practice, how was the quality of you	r sleep?
a) Very good (77 / 27.21%)	b) Good (89/31.45%)
c) Normal (59 / 20.85%)	d) Not so good (58 / 20.49%)
26. After a intensive competition, how is the quality of y	our sleep?
a) Very good (66 / 23.32%)	b) Good (68/24.03%)
c) Normal (88/31.09%)	d) Not so good (61 / 21.55%)
27. When sweating, do you drink water or beverages im	mediately?
a) Yes, I drink water immediately (175 / 61.84%)	b) I don't drink any of them immediately $(0 / 0\%)$
c) I drink beverages immediately (86 / 30.39%)	d) I drink water but not immediately (22 / 7.77%)

Data presented in Table 6 reflected the precious features and current status of these collegiate T&F athletes' health-related behaviors. The researchers believe that these four sub-areas of health-related behaviors are very important to these collegiate T&F athletes and possess a positive relationship with their success rate during the collegiate athletes period. That is, the better their health-related behaviors, the higher the success rate for them to become elite collegiate athletes. Furthermore, these findings worth coaches, trainers, teachers, and administrators who have been worked for the collegiate athletes to pay closer attention, and really figure out the ways to educate and reinforce their collegiate athletes students to gradually develop positive health-related behaviors, so that the athletes from the day one of he/she represent his/her college/university clearly know that gradually develop a positive participation motivations and health-related behaviors are two very important factors during they compete in the collegiate athletes level.

The following are the most significant findings highlighted from Table 6: 1) 85 % of them eat regularly to very regularly. 2) 96 % of them eat three meals or more per day. 3) 38 % of them did add salt to their dishes but 59% of them did not. 4) About 68 % of them did try to reduce the number of sugars they eat. 5) 76 % of them drink one to five cups of milk/yoghurt/ juice per day. 6) 94% of them reported they never eat before and after strenuous exercise. 7) 96 % of them reported they possess good to very good nutrition knowledge. 8) 80 % of them claimed they eat fruit every day. 9) 100 % of them reported they eat vegetables every day. 10) 100 % of them reported they eat fish but 16% of them ate fish once per day and 20 % of them said they eat fish once every other day. 11) 74 % of them reported they eat whole meal bread; 12) 100 % of them reported they eat dinner with meat at least four days per week. 13) 35 % in favor eat chicken, 29 % in favor eat pork, 28 % in favor eat Veal / Calf, and 9% in favor eat Mutton / Lamb. 14) 96 % of them reported they eat fried foods. 15) 84 % of them admitted they drink alcohol; 16) 40 % of them reported they never smoke cigarettes, but 60 % of them admitted they smoke cigarettes. 17) 100 % of them said they never use any psychoactive substances. 18) 100% of them said they never use anabolic steroids; 19) 95 % of them reported they know the health consequences of using the prohibited anabolic steroid. 20) 84 % of them claimed they use sun cream during their practice/competition. 21) 95 % of them said they take a shower after practicing or competition. 22) 100 % of them reported they wash their hands before eating or whenever it is needed. 23) 100 % of them claimed they brush teeth 2-3 times per day. 24) 87 % of them said they use extra hygiene mouth. 25) About 80 % of them claimed they had normal to a good sleep after an intensive practice. 26) About 22 % of them claimed they did not have good sleep after an intensive competition. 27) 62 % of them said that when they sweat they drink water immediately, and 30 % of them said they drink beverages immediately (As described in Table 6).

# 4. Discussion

The present study was designed for 1) exploring the current status and features of the collegiate T&F athletes' participation motivations from a selected regional conference; 2) examining if differences exist on the MFs among the participants' *'Gender', 'Disciplines' 'Financing support'. 'Years in College', 'Athlete-Grade', and 'Original motivations'*; and 3) investigating the current status of health-related behaviors of these collegiate athletes.

First, according to the data exhibited in Table 2, the scores placements can be divided into three groups: 1) The high impact factors group, containing MF12, MF1, MF10, F2, MF9, MF17, and these six FMs possessed the highest score and impact power on this collegiate athletes' motivation. Interestingly, among these six MFs, the MF1, MF10, FM2, and MF17 are in the 'Intrinsic factors' category, while the MF12 and MF9 are in 'Extrinsic factors' category. Second, the medium impact MFs group with medium-high scores, containing MF8, MF16, MF3, MF4, MF6, and MF7, possessed medium impact power on these collegiate athletes' motivation. Different from the first group, this group has two MFs (that are MFs 8, 6) belong to the 'Intrinsic factors' category; but contain four MFs (that are MFs 16, 3, 6, and 11) belong to the 'Extrinsic factors' category. Third, the lower impact MFs group, consisting of MF11, MF15, MF13, MF14, MF5, MF18, and MF19 (with lowest scores), possessed significantly lower impact power on these participants' motivations. Incredibly, there are four MFs belong to the 'Extrinsic factors' category (MFs 11, 5, 18, and 19); while containing three MFs from the 'Intrinsic factors' category (MFs 13, 14, and 15).

In summary, 1) with regard to this sample's participation motivation features, both 'Intrinsic factors' and 'Extrinsic factors' possess a quite similar impact power on their motivations; but with the 2) 'Intrinsic factors' possess slightly stronger impact power than those of the 'Extrinsic factors'. It can be concluded that: the ten 'Intrinsic factors' in the QCAPMHRB (Zeng, 2019) were the core motivation factors for these collegiate athletes. 3) There are some factors or reasons that possessed a higher impact power than the other factors, and some factors or reasons possessed less impact power than the other factors as well. Based on the findings from the present study, the collegiate athletes' coaches, trainers or administrators should diagnose and analyze their athletes' specific situation and implement the findings accordingly.

Furthermore, the two after significant findings follow up MANOVA test revealed that: 11 out of 19 comparisons in the 'Gender' aspect showed significant differences at p < .05 level. First, females scored significantly higher than males in the following three MFs: MF3 'getting healthier whole body'; MF7 'contest winners' and MF19 'satisfy family will '. These three MFs exactly reflected the characteristics of females in value higher in 'healthier whole body', 'family-will', and 'winning or lost'. Second, there were eight MFs reached p < .05 level with male scored significantly higher than females that were: MF8 'shape the body'; MF10 'become a professional athlete'; MF12 'improve my own reputation'; MF 13 'establish prestige' among friends; MF14 'get the recognition'; MF16 'reduce the troubles from learning/work' MF 17 'develop a unique sport skill'; and MF 18 'become a T & F coach in the future'. It is understandable that when these male athletes were facing these eight MFs, their reaction or responses were different from their female teammates, these male athletes who were motivated by 'become a professional' and 'become a T & F coach' were much more exciting, because these athletes possessed more competition experience, higher athletics-level, and stronger feelings, and that were true motivation factors have driven them to involve T&F practices and competitions for years. Moreover, these athletes were also serious on 'getting extra credits' for their future, because in the near future their athletics achievement might beneficial for them to get into their ideal job, etc. (As described in Tables 4 and 5)

On the other hand, the second after significant findings follow up MANOVA test revealed that: there were 16 out of 19 comparisons reached significant differences at p < .05 level in 'Year in college' aspect. Wherein the '2 years' group scored significantly higher than that of '1 year' and '3/more years' group in MF1 'high technical content and unique value', MF4 'enjoyment and happiness', MF5 'meet friends', MF6 'to make new friends', MF7 'contest winners', MF8 'shape the body', MF10 'become a professional athlete', M11 'foster self-esteem', MF13 'establish prestige' among friends', MF14 'get the recognition', MF15 'reduce pressure'', MF16 'reduce the troubles

from learning/work'. While there were the following four MFs in the '1 year' group scored significant higher than the 'two years' group and 'three/more years': MF3 'getting healthier whole body', MF7 'contest winners', MF12 'improve my own reputation', and 'become a T&F coach in the future'. It is understandable that the 'one-year' group is more care about 'getting healthier body', 'winning or lost', 'improve reputation', and to 'become a T&F coach' than the other years' groups.

Last, with regard to the 11 out of 19 comparisons reached significant differences at p < .05 level in 'Athletic-Grades', the Grade-one group (The highest athletics level in this sample) is much mature athlete students in terms of their athletic and academic performance. This group score much higher than those of 'level 2' and 'level 3' group in MF1 'high technical content and unique value', MF9 'to improve physical health', MF11 'to foster self-esteem', MF14 'to get the recognition', MF15. 'to reduce pressure', MF17. 'to develop a unique sport skill', and MF18 'to become a coach in the future'. Findings support that, the athletes in the 'Grade one' group were much more appreciative of the 'T&F" with 'high technical content and unique value', and want to become a T&F coach after they graduate.

Interestingly, in the following FMs the 'Grade two" group scored significantly higher than 'Grade one' and 'Grade 3' groups in MF2 'for the fun and get rid of boredom', MF4 'for enjoyment and happiness', MF8 'to shape the body', and MF12 'to improve my own reputation'. It is not difficult to find out that those are more external driven powers work for them, reflecting this level of athletes need to 'have fun', 'enjoyment', 'happiness', 'good body shape' and a 'good reputation' supported them to continually participate in their practices and competitions, etc. (see Table 5 for detail)

Jeffery and Camiré (2016) indicated that student-athletes engaged in the sports they like having a response: first is to satisfy their needs for autonomy, competence, and relatedness. Second, motivations to participate in a sport for certain periods of time are a complex combination of intrinsic and extrinsic motivations and not a simple type of motivation (Jeffery, Camiré, 2016). Participation in sports practices and competition during the college/university years helped the student-athletes gain the knowledge and understanding the need for their future career decisions and able to develop a willingness for long-term participation (Jeffery, Camiré, 2016). First, which are highly consistent with our findings on the three needs: 1) autonomy, 2) competence, and 3) relatedness. Second, the present study also indicated that the selected collegiate athletes were motivated by both intrinsic and extrinsic motivations. Moreover, the present study also provided specific factors/data supported by different genders and different athlete-grades or levels of collegiate athletes who need different MFs to drive and stimulate them to continually participate in their T&F practices and competitions.

Kilpatrick and Bartholomew (2010) stated that college-students participant in sports was more likely to relate to intrinsic motivations, such as enjoyment and challenge, while for physical exercises were more tend to be extrinsic motivations such as focused on appearance and weight and stress management. The researchers suggest that for motivating collegiate athletes' participation, the coachers or athletics advisers need to do more in deeper understand their needs that may generate more appropriate advice or recommendations (Kilpatrick, Bartholomew, 2010).

As presented above, although our study and their study were conducted in different sports events and counties, the findings have many similarities. Specifically, top to medium influence power factors or reasons for the collegiate-athletes keeping engaged in the sports they like were similar. Meanwhile, when contrasting the factors or reasons of 'feeling important and popular', 'earning rewards', 'team atmosphere' and 'good relationship with coach' from the previous studies with the factors of 'technical content and unique value', 'unique skills', 'for fun', 'for establish prestige', 'become a professional athlete', 'for self-esteem', 'to contest winners', and 'become a coach'; many differences between their studies and our study are exist.

Regard to athletes' health-related behaviors, Diehl, K., et al. (2012) conducted a profound review of literature in athletes' eating behaviors, the researchers summarized that: Many studies reported that the eating behavior of athletes was healthier in some respects than those of nonathletes or less athletic young peoples; and Several large studies demonstrated that athletes selfreported they were in favor eating fruit and vegetable (Diehl et al., 2012). The researcher also summarized that both high-involved athletes and low-involved athletes had macro- and micronutrient intakes below recommended levels for essential minerals, carbohydrates, and overall caloric intake (Diehl et al., 2012) As to the 'performance-enhancing drug use', the research stated that Performance-enhancing drug use was discussed in 16 articles. The prevalence of ever having used anabolic steroids ranged between 2 % and 6 % with a combined prevalence of 4 %, and the researchers further indicated that the prevalence increased by the level of competition. Young adolescents engaged in strength training football and weight-dependent sports were more likely to use anabolic steroids than athletes engaged in other kinds of sport (Diehl et al., 2012). The researchers concluded that: 1) athletes were more likely to consume alcohol, smokeless tobacco, and steroids than non-athletes; and 2) athletes were less likely to smoke and to use marihuana than non-athletes (Diehl et al., 2012).

Our study did an exploring investigation in the area of athletes' health-related behaviors; because this an initial try, its design, data collection and analyses are far from perfection. However, it should be a good start for notifying researchers to pay attention to health-related behaviors study in the domain of collegiate athletics research. To the results presented in Table 6, we cannot accurately make an assessment on how good or not about their 'Health-Related Behaviors', but the findings in Table 6 did reflect the current status of 'Health-Related Behaviors' of the participants. Generally speaking, when using four points of "Excellent [4], Very-good [3], Good [2], and Not so good [1], then, their overall status should be on the position between excellent and very good of the scale.

What does that mean? It means 1) during their practices and competitions these collegiateathletes had obtained positive and corrective education in 'Eating habits', 'Nutrition knowledge', 'Risk behaviors', and 'Hygiene behaviors' from their coaches, academic advisers, and administrators. 2) There are rooms for improvement regarding these collegiate-athletes although their status was pretty good. 3) The results of the assessments have also indirectly reflected these collegiate-athletes teams/colleges/universities have strict regulations or legislation to manage their athletes' daily life. From the health education perspective, we believe that is a positive and beautiful thing deserves to recommend to the other collegiate-athletes. 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/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. All of these changes in legislation, organization, or policies there is one thing in common: that is put health on the agenda (Geidne et al., 2013).

## 5. Conclusion

With respect to the research questions that guided this study, the findings revealed that: (1) No significant difference in the 'Disciplines' aspect (p > .05), however, significant differences effect was found in the 'Gender' aspect (p < .008). (2) Findings verified that no significant differences in the 'Original motivation' aspect (p > .05), however, significant differences effect was found in the 'Year in the college/university' (p < .001) and 'Athletics-Grades' aspects (p < .011). (3) Regarding "what would be the current health-related behaviors status of the participant? Table 6 provides detail pieces of evidence, and in the discussion section, more reasons behind the findings are also illustrated and discussed.

In conclusion, (1) the findings of this investigation exposed: 'Disciplines' and 'Original motivation' are not the determine aspects; but the 'Gender' 'Financing supported', 'Years in the college/university', and 'Athlete-Grades' aspects are. (2) Male CT&FAs possesses higher participation motivations than female CT&FAs. (3) Financing supported by college/university possess higher participation motivations than those of supporting by parent. (4) Those athletes who in their first and second years possess higher participation motivations than those of supporting by parent. (4) Those athletes who in their third or 4<sup>th</sup> years. (5) Athletes who possess higher 'Athlete-Grades' also possess higher participation motivations. (6) As to the types of motivations, those 'Intrinsic factors' possess slightly higher impact power than those of the 'Extrinsic factors' (As described in Table 2, 4 & 5). (7) With regard to the health-related behaviors, a qualitatively conclude can be made: the mean score of the participants' health-related behaviors for all 27 items were 3.5 – between the position of 'Excellent [4] and 'Very good' [3] by using a four points assessment scale (see Table 6).

#### 6. Limitations

The following limitations have existed when we conducted this study: 1) the size of sampling

for reflecting the participation motivations status and health-related behaviors of CT&FAs was relatively small. 2) Coaches and academic advisers of the CT&FAs might have impact or influence on their athletes' participation motivations, such as Mageau and Vallerand (2003) described that along with the athletics training processes through which coachers behaviors may have generated a positive influence on athletes' intrinsic and self-determined extrinsic Motivation; but coachers behaviors were not be included in the objects of the present study. 3) The participants in the current study were selected on purpose. Future study can be improved on overcoming the above limitations by enlarging the sampling size, extend to more CT&FAs associations; and involving coaches and academic advisers of the select CT&FAs teams, this can be done by using some openended questions for the objects you want to cover.

# 7. Recommendations

The present study explored the CT&FAs' participation motivations and health-related behaviors from one particular collegiate athletics associations, the top 10 MFs for these collegiate athletes' engaged in track and field practices and competitions are: 'for improve reputation', 'technical content and unique value', 'to become a professional athlete', 'for fun and not boredom', 'to improve physical health' 'to develop a unique sport skill', 'to shape the body', 'to reduce troubles from learning / work', 'for getting healthier whole body', and 'for enjoyment and happiness'; and these 10 MFs have been found as the core value of these collegiate athletics' participation motivations. Other than that, the team atmosphere and good relationship between coaches and athletes also influenced these collegiate athletes' participation motivations. Moreover, although the values of collegiate athletes' participation motivations have been recognized by those previous sports researchers (e.g., Jeffery, Camiré, 2016; Kilpatrick et al., 2010; Xu et al., 2009; Zeng, 2019). Further studies, however, are definitely needed, especially in the area of how intrinsic motivation and extrinsic motivation work differently on different types of collegiate athletes; for example, a) athletes who competed in different types of track and field events; b) athletes who financing support by their parent or by the team they represent for. Additionally, the health-related behaviors were explored in the present study might be another topic for researchers who are interested in collegiate athletics to pay attention, because only those athletes who have developed their positive health-related behaviors during their collegiate years have a chance to 'become elite athletes' and reach their original goalsetting, 'become elite athletes' and academic successful college-students. To apply the findings of this investigation more effectively and accurately, collegiate athletics educators need to base on a profound diagnosis and analysis of their athletes' situations.

What does this article add?

The findings of the present investigation added a set of new data and information regarding the essential factors or reasons that motivated the CT&FAs to participate in T&F practices and competitions; the precious features about these CT&FAs' health-related behaviors are also identified. These findings provided examples and meaningful pieces of evidence for the coaches, instructors, and managers/administrators who want to reform or reinforce their collegiate athletics programs. If this can be done, it will lead to better coaching strategies, sport pedagogy, academic instruction, even all kinds of management strategies that need in the domain of collegiate athletics.

## 8. Acknowledgments

## Funding

This research project was supported by: 1) "National Social Science Fund", funding number: 13CTY035. 2) "Fundamental Research Funds for the Central Universities", funding number: WUT. 2018VI013

The researchers of this study would like to express their deepest appreciations to the coaches and administrators in the 18 colleges/universities' athletics department/program, for their sincerely assisting during our visiting and the data collection. Thank you again!

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