

TEACHING AND EDUCATION

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Martial Arts Students' Motivation and Health Related Behaviours in Changshu¹

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Abstract

This study was to investigate martial arts (MA) students' motivation and health related behaviours in the city of Changshu² and to provide meaningful information and feedback that enable the professionals to upgrade their qualities of instruction and administration. Participants were MA students ($N = 128$, boys = 80, girls = 48; age 12-18) who came from five different MA schools/programmes. The questionnaire of health related behaviours of MA students [QHBMAS; Cynarski, Zeng 2011] with 50 items concerning MA students' motivation and health related behaviours was employed; data analyses were done by frequency, percentage, and qualitative analyses techniques. Results/findings were summarized in tables 3, 4, 5, and 6 that reflected four unique themes, included: 'Practice-times', 'Motivation Factors', 'Health Related Behaviours', and 'Risk and Hygiene Behaviours' of the martial arts students. Among these themes, some factors (e.g., 'Motivation Factors', 'Practice-times', and 'Risk Behaviours') were administrated very well; while other factors (e.g., 'Hygiene', 'Nutrition', and 'Fitness') were not administrated well and need to be improved. The reasons behind those findings were subject to in-depth discussion.

Introduction and Background

Martial arts (MA) practices, instruction and training can be traced back about 3,000 years. As a unique part of Chinese culture MA have been passed down from generation to generation. Western society regards Chinese MA as ancient forms of combat. Nowadays, MA are not only a part of traditional cultural activities but also a wonderful pastime that possesses all the same values and features as western sports, which help the physical and mental developments of practitioners. Actually, in recent decades, MA have been modified into a brand of modern sport and exercise. MA practices,

instruction and training are rapidly increasing regardless age, gender, and career as more and more benefits are identified by researchers, e.g., greater autonomy [Duthie *et al.* 1978], emotional stability and assertiveness [Konzak, Boudreau 1984], response to physical challenge [Richman, Rehberg 1986; Trulson 1986], positive self-esteem development [Fuller 1988; Tarabanov 2011], and reduced anxiety and depression [Cai 2000]. Participating in MA practices and training by young people is even more popular. As a whole, MA practices, instruction and training have provided health-promoting and meaningful physical exercise for millions of practitioners worldwide [Cynarski, Litwiniuk 2001; Kogel 2001].

Over the years MA have been defined by many scholars in many different ways; Cynarski [2004] defined MA in the following ways: “martial arts are various forms of physical, or to be more precise, psychophysical instruction, which on the basis of the tradition of the warrior's code and in training

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² Changshu is a county-level city under the jurisdiction of Suzhou Prefecture City, about 50 and 100 km far from the metropolises of Suzhou and Shanghai.

fighting techniques, leads to psychophysical mastery and self-fulfillment” (p. 148). At the same time martial arts are the processes of education and positive asceticism which combine bodily exercise with conscious self-discipline; the focus of MA is moral and spiritual progress [Cynarski 2004]. MA have also provided a prescription to achieve spiritual progress through using the proper form of implementation [Cynarski 2004]. Moreover, the philosophy of the Chinese was almost identical to religious practices through the expression of body movement and active self-expression in a variety of ways. Lastly, Cynarski [2004: 148], declared that “a manifestation of ancient Chinese thought and spiritual culture which holds that spiritual development is closely connected with exercise of the body”.

Others researchers [e.g. Kiyota, Kinoshita 1990; Kim, Bäck 2000] believed that martial arts anthropology does not apply to combat sports, in which competitive domination has replaced the tenet of finding a moral way towards self-improvement. There are schools or educational programmes that also combine the ways of MA with sport; however, many experts point to a difference between the purposes of sport and MA [Kiyota, Kinoshita 1990; Kim, Bäck 2000].

The specificity of Chinese physical culture determines its ascetic qualities. Asceticism must be understood here as a way of observing ethical principles and in practicing psychophysical exercises with the goal above all, of spiritual development. Physical perfection enables or allows one to achieve spiritual mastery [Szymańska, Trzciński 1994].

Despite that, Chinese Taoism has developed many psychophysical practices, such as meditative, breathing, static and dynamic exercises that are used to strengthen the body's health and attain a state of inner harmony and liberation or sanctification [Cynarski *et al.* 2012]; the ascetic principles between Chinese kung-fu and Zen Buddhism actually have so many similarities [Cynarski, Obodyński 2007]. The health aspect comes from the presence of medical knowledge within the content of the educational school systems within traditionally oriented forms of organization. Martial arts are not only a way to defend the body (self-defense) but also a way of strengthening the body, in overall wellness, as well as having preventive and therapeutic effects [Cynarski, Litwiniuk 2001].

Regarding the benefits of practising or training in martial arts, Galantino *et al.* [2005] believed that “martial arts are not a simple physical exercise intervention, but a body-mind-spirit practice”. More significantly, after completion of a special review of English literature on research in Tai chi chuan

(which is one type of MA) published from 1989 to 2006, Mansky and his colleagues [2006] indicated that *Tai chi chuan* is not just a physical exercise, but a body-mind exercise intervention; “the unique characteristics of *Tai chi chuan* compared to physical exercise that may highlight characteristic features of this mind-body intervention in cancer survivors”.

According to Bin *et al.* [2011], martial arts have by now been developed into about 200 distinct disciplines; each discipline has its own specific style and each style has its own traditions of training and philosophy. However, all styles share a common goal to defend oneself from physical threat. Bin *et al.* [2011] further described that MA have evolved into part of the worldwide fitness industry; almost every town has established MA training schools. It is estimated that there are approximate 120 million individuals including youth, young adults and seniors who are practising various forms of MA throughout the world. Today, MA are studied for various reasons, including fitness, sport, self-defense, combat skills, self-cultivation (or meditation), mental discipline, character development, self-confidence, and as a complementary or alternative therapy [Bin *et al.* 2011].

Despite all the published work on MA, studies focused on schoolchildren are very limited, with questions like: What facts motivate children to participate in and maintain regular practising? How often and how many times do these children practice MA? What is their health and fitness status? How are their hygiene behaviours? What are their risk behaviours and diet / nutrition statuses, and so on. All these questions and concerns remain unanswered; hence, conducting a study to uncover those questions and concerns is significantly meaningful. The purpose of this study, therefore, was to investigate MA students' motivation, practice times, and health related behaviours in Changshu, to uncover the psychological and sociological factors behind those questions and concerns; to provide meaningful information and feedback to enable professionals to improve the quality of the teaching and administration in their MA schools/programmes.

Theoretical Framework

1. Motivation Theory

According to Reykowski [1976], *motivation* is a process of psychological regulation which determines the direction of human activities and the quantity of energy that an individual is ready to devote to pursue and achieve the given direction.

Table 1. Maslow’s Hierarchy of Human Needs

<u>Higher Level Needs</u>	<u>To Satisfy, Offer:</u>
1. Self-actualization needs Participation in decision making	Creative and challenging work Job flexibility and autonomy
2. Esteem needs	Responsibility of an important job Promotion to higher status job Praise and recognition from boss
<u>Lower Level Needs</u>	<u>To Satisfy, Offer:</u>
3. Social needs	Friendly coworkers Interaction with customers Pleasant supervisor
4. Safety needs	Safe working conditions Obtain security Base compensation and benefits
5. Physiological needs	Rest and refreshment breaks Physical comfort on the job Reasonable work hours

Note. Table 1 was retrieved and edited from Cliffsnotes.com [2013]

Galloway [2004] explained the motives underlying competitive karate practice from the perspective of Bandura’s self-efficacy theory. A better and deeper understanding of motivation issues can be found in sport psychology textbooks [e.g. Jarvis 1999; Jones, Mackay, Peters 2006].

More recently, Cherry [2013] stated that “Motivation is the force that initiates, guides and maintains goal-oriented behaviours. It is what causes us to take action, whether to grab a snack to reduce hunger or enroll in college to earn a degree. The forces that lie beneath motivation can be biological, social, emotional or cognitive in nature.

Furthermore, according to Cliffsnotes.com [2013]³, “motivation is a complex phenomenon of human beings. For explaining how motivation works, several theories or models have achieved fantastic works.” In school administration, probably the most suitable explanations for motivation are the needs of an individual. The following were the scholars’ points of view:

The basic needs model, referred to as the *content theory* of motivation, highlights the specific factors that motivate an individual. Although these factors are found within an individual, things outside the individual can affect him or her as well. In short, all people have needs that they want to satisfy. Some are *primary needs*, such as those for food, sleep, and water — needs that deal with the physical aspects of behaviour and are considered unlearned. These

needs are biological in nature and relatively stable. Their influences on behaviour are usually obvious and hence easy to identify.

Secondary needs, on the other hand, are psychological, which means that they are learned primarily through experience. These needs vary significantly by culture and by individual. Secondary needs consist of internal states, such as the desire for power, achievement, and love. Identifying and interpreting these needs is more difficult because they are demonstrated in a variety of ways. Secondary needs are responsible for most of the behaviour that a supervisor is concerned with and for the rewards a person seeks in an organization.

Several popular theorists, such as Abraham Maslow, Frederick Herzberg, David McClelland, and Clayton Alderfer, have established theories to illustrate needs as a source of motivation. This study has adopted the Abraham Maslow’s theory as the theoretical framework. Abraham Maslow defined a need as a physiological or psychological deficiency that a person feels the compulsion to satisfy. This need can create tensions that can influence a person’s work attitudes and behaviours. Maslow formed a theory based on his definition of a need that proposes that humans are motivated by multiple needs and that these needs exist in a hierarchical order. His premise is that only an unsatisfied need can influence behaviour; a satisfied need is not a motivator. [Cliffsnotes.com *Motivation Theories: Individual Needs* <http://www.cliffsnotes.com/studyguide/topicArticleId-8944>]

Maslow’s theory is based on the following two principles: (a) *Deficit principle*, that is: a satisfied

need no longer motivates behaviour because people act to satisfy deprived needs; and (b) *Progression principle*, that is: the five needs as identified by Maslow (see table 1) exist in the hierarchy, which means, a need at any level only comes into play after a need at a lower-level has been satisfied.

Maslow's theory identified five levels of human needs. Table 1 illustrates these levels and recommended how each need would be satisfied. [Cliffsnotes.com *Motivation Theories: Individual Needs* <http://www.cliffsnotes.com/study guide/topicArticleId-8944>]

2. The creation of the Questionnaire of Health Behaviour of Martial Arts Student (QHBMAS)

The original *Health Behaviour of University Students Questionnaire* (HBUSQ) was created by Drs. Litwiniuk and Grants [2010]. The project and questionnaire was accepted by the Baltic Sport Sciences Society (Latvia, Lithuania, Estonia, Sweden, and Poland) and this instrument was translated from the original Polish into English, English to Latvian, to Estonian, and to Lithuanian. The validity and reliability were checked in every country. In the HBUSQ, researcher(s) can diagnose a student from a university, college or other school levels (but need to provide extra explanations when used for younger students). This questionnaire was adapted by Drs. Wojciech J. Cynarski and Howard Z. Zeng [2011] for research among student of martial arts and combat sport.

Cynarski and Zeng [2011] created the QHBMAS [Cynarski, Zeng, Litwiniuk 2011], according to the 'Humanistic Theory of Martial Arts' [cf. Cynarski 2004, 2012; Cynarski, Obodyński, Zeng 2012]. The QHBMAS (–Due to limited space the questionnaire was omitted) was used in a project of the International Martial Arts and Combat Sports Scientific Society (IMACSSS.1/2011 Project, under the auspices of the Division of Sociology and Anthropology and the Division of Pedagogy, IMACSSS).

Methods

128 martial arts (MA) students were randomly selected from five different schools/programmes as **participants** and these five schools were picked from 15 MA schools/programmes in the city of Changshu; their ages ranged from 12 to 18 of whom 80 were boys and 48 were girls. The Questionnaire of Health Behaviour of Martial Arts Student –^{Chinese version} [QHBMAS; Cynarski, Zeng 2011] with 50 questions concerning participant's *General Information, Motivation, Practice-times, Diet-Nutrition, Risk Behaviour, and Hygiene Behaviour* was used for data

collection. Data analysis was done by Frequency and percentage methods.

Procedure

Martial arts background in Changshu

Changshu has always been a cultural city in the province of Jiangsu. The influence of martial arts (MA) is currently very strong; there are many MA associations such as: Yang style Taijiquan club, Wu style Taijiquan Branch, Mulan Boxing branch, Chen's Taijiquan, Wu boxing club, Laoniantixie Taijiquan Branch act. 11 school clubs, local boxing club; there are more than five thousand members. Changshu City Martial Arts Association Schools Branch is a branch of Changshu MA Association. The schools branch has more than 20 martial arts teacher /coaches ; the objectives of the schools branch is training students at school, through dozens of MA schools, social organizations, and Sunshine sports activities. Under the schools branch, many martial arts programmes provide MA training / practice every day. For many years the schools branch has organized, trained and fostered many talented MA students who participate in a variety of competitions, performances, and cultural activities.

Data collection

Prior to this survey, the English version of the QHBMAS [Cynarski, Zeng 2011] was translated into Chinese by the principal investigator who possesses both English and Chinese language skills. A pilot study "*Young Martial Arts Athletes' Motivation and Their Health Related Behaviours*" was conducted using the Chinese Version of the QHBMAS in 2012; and the abstract was presented at the 2013 AAHPERD National Convention (Charlotte, NC, UAS). For this survey, one hundred and fifty copies of the QHBMAS ^{Chinese} version were delivered to students (who voluntarily participated in this investigation and signed the "Informed Consent" form) in five different MA schools / programmes. In the process of answering the questions, to ensure accuracy, their teachers/coaches clearly interpreted each question. If any student (e.g., under the age of 13) needed further explanation, those teachers/coaches would provide extra help until the students correctly completed the survey. On average it took about 20-25 minutes to complete. The test-retest rate for this survey was $R = 9.0$, the valid questionnaires returned, was 128 (boys = 80, girls = 48; age 12-18).

Results

The results/findings were summarized into five tables that reflected five unique themes, as follows:

Table 2. Martial Arts Students' General Information

Questions and Concerns	Summarized results	Frequency / percentage
1) The name of the martial arts school you attend?	Changshu (CS) martial arts school, CS city school Wushu team, CS Children's Palace Wushu team, Wushu Team of CS, and Wushu Association	128 100%
2) What martial arts style(s) are you learning / practising?	Fist, Tai-chi, Knife, Stick, Sword, and Other traditional martial arts.	N/A
3) Where are you living?	Rural	6 4.68%
	Towns	26 20.32%
	City	96 75.00%
4) What school level are you currently at?	Elementary school	80 62.50%
	Middle school	40 31.25%
	High school	8 6.25%
5) What are parents' occupation?	Workers	32 25.00%
	Teachers	15 11.72%
	Medical Doctors	10 7.81%
	City Government Officers	10 7.81%
	Business Owners	31 24.22%
	Employee of Industry Company	11 8.59%
	Others	19 14.84%
6) What is your height and weight?	Weight (Males $M = 52 \text{ kg} \pm 9.5 \text{ kg}$, Females $M = 48 \text{ kg} \pm 7.6 \text{ kg}$) Height (Males $M = 157 \text{ cm} \pm 9.5 \text{ cm}$, Females $M = 152 \text{ cm} \pm 8.9 \text{ cm}$)	
7) Your parents' educational level is ?	Father à Junior High School	14 10.93%
	High School	12 9.38%
	Two years college	68 53.12%
	Undergraduate college	26 20.31%
	Master	8 6.25%
	Mother à Junior High School	18 14.06%
	High School	19 14.84%
	Two years college	62 48.43%
	Undergraduate college	22 17.18%
	Master	7 5.47%
8) Where do you live during the training/practising?	School dormitory	20 15.62%
	Private residential	108 84.38%

General information, Free time and frequency of practicing, Motivations for taking part in physical activity, Health related factors, and Risk and hygiene behaviours of the martial arts students. Details can be found in Table 2 to 6.

According to the participants' self-reporting, the styles of martial arts they were learning and practising were: fist, tai-chi, knife, stick sword, and other traditional martial arts. Most of them ($n = 96 / 75\%$) lived in the city; about 20% ($n = 26$) lived in towns, and only 5% ($n = 6$) lived in rural areas. Among of them 80 or 62.5% were elementary school students, 40 or 31.3% were middle school students; and only 8 or 6.3% were high school students.

The Educational levels of their parents were: Father, Junior High School = 14 or (10.9%), High School = 12 or (9.4%), Two years college = 68 or (53.1%), Undergraduate college = 26 or (20.3%), Master = 8 or (6.2%). Mother, Junior High School = 18 or (14.0%), High School = 19 or (14.8%), Two years college = 62 or (48.4%), Undergraduate college = 22 or (17.2%), Master = 7 or (5.5%).

Parents' occupations were: blue collar workers = 32 or (25%), K-12 school teachers = 15 or (11.7%), medical doctors = 10 or (7.8%), city government officers = 15 or (7.8%), business owners = 31 or (24.2%), industry company workers = 11 or (8.6%), others = 19 or (14.8%). When asked "Where do you live during training/practising?" the majority of them answered they were living in private residential = 108 or (84.4%); only 20 or (15.6%) of them were living in a school dormitory.

Concerning the factors of MA Students' free time and frequency of practising/training, we would like to summarize below: On a week day, 64.1% of them reported they had 2 – 4 hours. At weekend, 35.9% said they had 5– 6 hours, and 33.6% said they had 3- 4 hours. For what kind of activities they do in their free time (besides martial arts training), the most significant activities they did were watching TV (76.5%) and reading books/magazines (71.8%). When asked "Do you undertake physical activity willingly in your free time?" 54.6 % answered "Yes", and 45 % answered "No"; and the reasons

Table 3. Martial Arts Students' Free Time and Frequency of Practising

Questions and Concerns	Summarized results	Frequency / percentage
9) How much free time do you have in a week day?		
a) I don't have any 0	b) 1 hour	25 (19.5 %)
c) 2 – 4 hours	d) more than 4 hours	82 (64.1%) 21(16.4 %)
10) How much free time per day do you have at weekend?		
a) 1 –2 hours	b) 3- 4 hours	12 (9.3%) 43 (33.6%)
c) 5– 6 hours	d) 7 hours and more	46 (35.9%) 27 (21.1 %)
11) What kind of activities do you do in your free time (besides martial arts training)? (Choose as many as fit your situation)		
a) Reading books/magazines	b) Watching TV	92 (71.8%) 98 (76.5%)
c) Computer work	d) Listening to music	72 (56.3 %) 32 (25.0%)
e) Social meetings	f) Physical activity	0 57 (44.5 %)
g) No activity	h) Others	3 (2.3%) 40 (31.3 %) [-Be specific]
12) Do you undertake physical activity willingly in your free time (both martial arts and other kinds of activity)?		
a) Yes,	No,	70 (54.6 %) 58 (45.3%)
b) Under what kind of organization?		
Recreationally individual – 29 (41.4 %).		
Recreationally organised -- 41 (58.6%) by school – by individually meetings.		
c) Sport – professionally, Chinese Wushu		8 (6%) Changshu City Wushu School, Skill level = City to province.
d) No,		58 (45.3%) why? (Reasons: parents, school, friendship, social)
13) Among the following physical activities which one do you do most often? (You can check multiple items)		
a) Swimming	b) Jogging	20 (15.6%) 25 (19.5%)
c) Body building		5 (4%)
d) Fitness	e) Gymnastics	7 (5%) 0
f) Team sports		5 (4%)
g) Riding a bike	h) Walking	40 (31.2%) 19 (14.8%)
i) Windsurfing,	j) Canoeing	0 0
k) Martial arts		92 (71.8%)
l) Others		2 (1.5%) (– be specific. please write here. – no specific)
14) How often do you do physical activity?		
a) Every day	b) 3 times a week	78 (60.9 %) 36 (28.1%)
c) Twice a week	d) Once a week	10 (7.8%) 4 (3.1%)
	e) Sometimes	0 (%)

behind this were: some said because of parents, or school, others said for friendship or for a social need. When asked which activity do you do most often? The most remarkable answer was: martial arts 92 (71.8%).

With regard to what factors motivated MA students to take part in physical activities, the following are the key factors (ranked from highest to lowest percentage): In factor 1, nearly 58 percent of the MA students reported they were motivated by the need “to make new friends”; (50% of the MA students reported they were “for health” purposes; forty-eight percent 48% of the MA students reported they were due to the need to “improve physical condition”; forty-four percent 44% of them said that they wanted to obtain “good sports results”; about forty percent 40% of them claimed they wanted “to meet with friends”; “shape body” factor drove 39% percent of the MA students; about thirty percent 30% of them said just “for pleasure”; and nearly the same percent of the MA students reported they just wanted to have fun “for entertainment, and out of boredom”. Moreover, among the eight factors, the results showed that 50% of the participants claimed that the “Health factor” was the maximum match to their situation. Similarly, for the “to Improve

physical condition” factor, there were 48.4% of the participants claiming that as the maximum match to their situation as well (see table 4).

For question 16 “Can you access recreational-sports facilities easily or with difficulty?” the majority of them 118 (92.2 %) said they could easily access recreational-sports facilities, only about 10 (7.8 %) of them reported they had had a hard time accessing recreational-sports facilities. Next, with regard to their financial situation for participating in the physical activities (DEL: you) they preferred, 109 (85.1 %) of them claimed they had no problem, but 19 (14.9%) of them said they did not have enough money supporting them to participate in the physical activities they preferred.

For question 18 “How often do you travel for tourist reasons during an academic/school year?” 50.8% of the students said they travelled once per year, and 43% claimed they travelled 2 – 3 times per year, while their answers to the question “Do you travel for tourist reasons on winter/summer holidays?” was: Yes, always $n = 29$ or 22.6%; and usually $n = 88$ or 68.7%. In regard to using or not using travel agencies / tour operators, 19 or 14.8% of them reported they “always use”, 51 or 39.8 % of them reported they “usually use”, and 50 or 39.1% of them said they only “Sometimes use”. When asked

Table 4. Martial Arts Students' Motivations for taking part in a physical activity

Questions and Concerns	Summarized results	Frequency / percentage
15) Why do you take part in a physical activity? (Note that: Rank from 1 to 7, 1 means minimum match, and 7 means maximum match. Please circle the number that is best reflecting your situation)		
1.1 For entertainment, out of boredom	[1-16 (12.5%) 2-12 (9.4%) 3-38 (29.7%) 4-9 (%) 5-9 (7%) 6-9 (7%) 7-10 (8%)	
1.2 For health	[1-0 2-10 (8%) 3-7 (5.5%) 4-15 (12%) 5-16 (12.5%) 6-16 (12.5%) 7-64 (50.0 %)]	
1.3 For pleasure	[1-9 (7%) 2-15 (12%) 3-0 4-39 (30.5%) 5-7 (5.5%) 6-16 (12.5%) 7-6]	
1.4 To meet with friends	[1-18 (14%) 2-17 (13.3%) 3-14 (11%) 4-51 (39.8 %) 5-7 6-11 (8.6 %) 7-0]	
1.5 To make new friends	[1-13 (10%) 2-10 (7.8%) 3-13 (10%) 4-74 (57.8 %) 5-9 (7.0%) 6-9 (7.0%) 7-0]	
1.6 For good sports results	[1-6 (4.70%) 2-7(5.5%) 3-23 (18%) 4-17 (13.30%) 5-56 (43.7%) 6-15 (12%) 7-4 (3%)]	
1.7 To shape body	[1-11 (8.6%) 2-12 (9.4%) 3-7 (5.5%) 4-22 (17.2%) 5-50 (39.0 %) 6-18 (14%) 7-8 (6.2%)]	
1.8 To improve physical condition	[1-4 2-6 3-10 4-11 5-13 (10%) 6-22 7-62 (48.4%)]	
16) Can you access recreational-sports facilities easily or with difficulty?		
a) Easily	118 (92.2 %)	b) With difficulty 10 (7.8 %)
17) Does your financial situation allow you to participate in the physical activities you prefer?		
a) Yes	109 (85.1 %)	b) No 19 (14.9%) (Please tell us why? <i>Low income family</i>)
18) How often do you travel for tourist reasons during an academic/school year?		
a) Never	18 (14%)	
b) Once per year	65 (50.8%)	
c) 2 – 3 times per year	55 (43%)	
d) 4 and more times per year	0	
19) Do you travel for tourist reasons on winter/summer holidays?		
a) Yes, always	29 (22.6%)	
b) Usually	88 (68.7%)	
c) No (Because? - no money for it)		
20) Do you use travel agencies/tour operators?		
a) Yes, always	19 (14.8%)	
b) Usually	51 (39.8 %)	
c) Sometimes	50 (%)	
d) No, I don't use travel agencies	18 (14.1%)	
21) What kind of holidays/trips do you prefer?		
a) One-day	11 (8.6%)	
b) A few-days	78 (60.9 %)	
c) Weekend	11 (8.6%)	
d) One-week	12 (9.4%)	
e) Longer more one week	16 (12.5%)	
22) Where do you like to go to rest the most?		
a) to the mountains	27 (21.1%)	b) to the beach 84 (65.6 %) c) to the lake area 10 (7.8%) d) interesting town/cities 17(13.3%) e) abroad 0
23) Do you spend your time actively while on holiday?		
a) Yes	62 (48.4%)	b) Usually 57 (44.5%) c) No 5 (4%)
24) Which following factors limit your holiday/tourist activities?		
a) Not enough of money	22 (17.2%)	b) Lack of free time 84 (65.6 %)
c) No interest	14 (11%)	d) Others 8 (6.2%) (Just want to relax!)

"What kind of holidays/trips do you prefer?" the most significant answer was: a few-days ($n = 78$ or 61%).

For question 19 "Where do you like to go to rest the most?" the top two answers were: to the beach ($n = 84$ or 65.6 %), and to the mountains ($n = 27$ or 21.1%). When they were answering the question "Do you spend your time actively while on holiday?", sixty-two or 48.4% of them said "Yes"; 57 or 44.5% of them said "Usually"; only 5 or 4% of them said "No".

For question 20 "Which of the following factors limit your holiday/tourist activities?" their responses were: 1) lack of free time, $n = 84$ or 65.6

%; 2) not enough money, $n = 22$ or 17.2%; 3) no interest $n = 14$ or 11%; and 4) just want to relax! $n = 8$ or 6.2%.

Concerning their 'Health Related Factors or Behaviours' (item 25-40), 109 or (85.1%) of them indicated that they "can evaluate the level of their physical fitness" but there were 27 or 21% of them who cannot. When asked, "What is your level of physical fitness?", seventy or 54.7 % of them believed they are at a medium level, and 48 or 37.5% of them claimed they are at a high level; there were also 10, or 7.8% of them reported that they are at a low level.

Regarding the Cooper test, 96 or 75% of them admitted they did not have this kind experience.

Table 5. Martial Arts Students' Health Related Factors or Behaviours

Questions and Concerns	Summarized results	Frequency / Percentage
25) Can you evaluate the level of your physical fitness?	a) Yes 109 (85.1%) b) No 27 (21%)	
26) What is your level of physical fitness?	a) Low 10 (7.8%) b) Medium 70 (54.7 %) c) High 48 (37.5%)	
27) Have you run the Cooper test* in the last 12 months? (How was your score level?)	a) Yes 32 (40.9 %) [High 19/59.4%] Medium 13/40.6% Low 0	
	b) No 96 (75%)	
	(* The Cooper test means: Test the distance you can run within 12 minutes.)	
28) Do you eat regularly?	a) Yes 96 (75.0%) b) No 32 (25.0%)	
29) How many meals do you eat a day?	a) Less than 3 times per day 0 b) 3 times per day 99 (77.3%)	
	C) 4-5 times per day 29 (22.7%) d) Others (please be specific__ No specific _)	
30) Do you have any basic knowledge concerning proper nutrition?	a) Yes 52 (40.6%) b) No 76 (59.4%)	
31) For the following three major components of food, please estimate what percentage you would like to be in your daily diet?		
Males: Fat (18 %) Protein (20 %) Carbohydrates (62 %)		
Females: Fat (12 %) Protein (16%) Carbohydrates (72 %)		
32) Do you take any other supplements or pharmacological substances?		
	a) No 95 (74.2%)	
	b) Yes 33 (25.8%) - vitamins (Not exactly know) - supplements (Not exactly know)	
33) Do you eat fruit and vegetables every day?		
	a) Yes 125 (97.6%) b) No 3 (2.4%)	
34) How often do you eat fish?		
	a) Once a week and more 88 (68.7 %) b) Once in two week 21 (16.4%)	
	c) Once a month 0 (%) d) Rather seldom 19 (14.8 %)	
35) Do you add salt to your dishes?		
	a) Yes 107 (83.6 %) b) Once in a while no salt 11 (8.6%)	
	c) Just add a little salt 8 (%) d) Not add any 2 (%)	
36) Do you try to cut down on the amount of sweets you eat?		
	a) yes 7 (5.5%) b) rather yes 37 (28.9%)	
	c) rather no 47 (36.7%) d) no 37 (28.9 %)	
37) How many glasses of milk or dairy products (yoghurt, milk) do you drink per day?		
	a) 1-2 cups 113 (88.3 %) b) 3-4 cups 7 (11.7%) c) more cups 0 d) don't drink milk	
38) Do you eat wholemeal bread?		
	a) no 11 (8.6%) b) once in a while 109 (85.1 %) c) yes 8 (6.2 % - it depends on the food provider)	
39) How many times do you eat dinner with meat in a week?		
	a) 1-2 times 15 (11.7%)	
	b) 3-4 times 46 (35.9%)	
	c) more than 4 times 63 (49.2%)	
	d) never 4 (3.1%)	
40) What kind of meat do you eat?		
	a) chicken 46 (35.9%) b) pork 67 (52.3%)	
	c) chicken and pork 60 (46.8%) d) veal (calf) 55 (43%)	
	e) mutton/ lamb 32 (25%) f) every kind of meat 24 (18.7%)	

Only 32 or 41 % of them have done so; among them 19 or 59% claimed their score was high and 13 or 41% claimed their score was medium.

With regard to eating habits, 96 or 75% of the students reported that they ate regularly, and 32 or 25% of them said their eating habits are irregular. When asked, "How many meals do you eat a day?", the answers were: three times per day, $n = 99$ or 77.3%) and 4-5 times per day, $n = 29$ or 22.7%. For the question of, "Do you have any basic knowledge concerning proper nutrition?" Seventy-six or 59% of them said "No"; only 52 or 41% of them claimed "Yes".

For the three major components of food, their estimations were as below: Males: Fat (18 %), Protein (20 %), Carbohydrates (62 %); Females: Fat (12 %); Protein (16%), Carbohydrates (72 %). To the question "Do you take any other supplements or pharmacological' substances?" ninety-five or 74% of them said "no" and 33 or 26% reported that they took vitamins. Their responses to the question "Do you eat fruit and vegetables every day?" were: one hundred and twenty-five or 97.6 % of them claimed "Yes", and only 3 or 2.4% of them responded "no".

When asked, "How often do you eat fish?" two significant answers were: 1) Once a week or more,

Table 6. Martial Arts Students' Risk and Hygiene Behaviours

Questions and Concerns	Summarized results	Frequency / percentage
41) Do you drink alcohol?	Yes 5 (3.9%) No 123 (96.1%)	
42) How often do you drink alcohol?	Once in a while (e.g., party, family get together)	
	Beer 5 (3.9%) Wine 10 (9.2%) Not drink alcohol 113 (88.3%)	
43) Do you smoke cigarettes?	Yes 0 No, I never smoke. 128 (100 %)	
44) How many times have you used any psychoactive substances?	Yes 0 No, I never use any psychoactive substances. 128 (100 %)	
45) Have you used anabolic steroids or other similar substances?	Yes 0 No, I never use any anabolic steroid. 128 (100 %)	
46) Do you know what health consequences there are to applying prohibited anabolic steroids or different kinds of doping substances?	Yes 67 (52.3%) No 61 (47.7%)	
47) Do you take a shower every day?	Yes 103 (80.5%) No 15 (11.7%) Other 10 (7.8%) -----	
48) How often do you wash your hands daily?	One time per day 2 (1.5%). 2-3 times per day 30 (23.4%). Before every meal 86 (67.2%). Other 10 (7.8%, -sometimes there is no water or place to wash hands).	
49) How often do you wash/brush your teeth daily?	One time 48 (37.5%) 2-3 times 54 (42.2%) After every meal 5 (3.9%) Other 21 (-sometimes do not brush teeth daily, 16.4%)	
50) Do you use extra mouth hygiene?	Dentist's threads 18 (14.1%) Liquids for rinsing 30 (23.4%) Toothpick 80 (62.5%)	

$n = 88$ or 68.7 %; and 2) Once in two weeks, $n = 21$ or 16.4%.

For the question "Do you add salt to your dishes? 107 or 83.6 % responded "Yes" and 11 or 8.6% of them said they "once in a while add no salt to their dishes".

However to the question "Do you try to cut down on the amount of sweets you eat?", their answers were: a) yes $n = 7$ or 6%, b) rather yes 37 $n = 29\%$, c) rather no $n = 47$ or 37%), and d) no $n = 37$ (29%). For the question "How many glasses of milk or dairy products (yogurt, milk) do you drink per day?" their answers were: a) 1-2 cups, $n = 113$ or 88%), b) 3-4 cups, $n = 7$ or 11.7%, and c) do not drink milk.

For question 38, "Do you eat wholemeal bread?", only 8 students or 6% of them said "yes", and more students $n = 11$ or 9% of them indicated "No". However, most of them $n = 109$ or 85% reported that they ate wholemeal bread "once in a while". To question 39 "How many times do you eat dinner with meat in a week?" their responses were: more than 4 times $n = 63$ or 49.2%, 3-4 times $n = 46$ or 35.9%, 1-2 times $n = 15$ or 11.7%, and never ate dinner with meat $n = 4$ or 3.1%. Regarding "what kind of meat do you eat?" the answers were pretty interesting because they actually eat all kinds of meat. Their ranks (from high to low) were: pork $n = 67$ (52.3%), chicken and pork $n = 60$ (46.8%), veal (calf) $n = 55$ (43%), chicken $n = 46$ (35.9%), mutton / lamb $n = 32$ (25%), and every kind of meat $n = 24$ (18.7%).

Concerning MA students' risk and hygiene behaviours, the results were as following: 123 (96.1%) of the students claimed they do not drink alcohol, but 5 (4%) of them reported that they did drink alcohol and indicated they are high school students. However, when asked, "How often do you drink alcohol?" 15 of them said they drink alcohol once in a while (e.g., party, family get together . . . etc.); the kinds of alcohol were beer 5 (3.9%) and wine 10 (9.2%). Again the majority of the students $n = 113$ (88%) reported that they "do not drink alcohol".

To the question "Do you smoke cigarettes?" all students $n = 128$ (100 %) claimed that "I never smoke". Similarly for the use of psychoactive substances and anabolic steroid, all participants $n = 128$ (100 %) claimed that "I never use any psychoactive substances" and "I never use any anabolic steroid". To the question "Do you know what health consequences there are to applying prohibited anabolic steroids or different kinds of doping substances?", their responses were 67 (52.3%) said they knew, and 61 (47.7%) said they did not know.

When turning to the questions on hygiene behaviours or habits, 103 (80.5%) of them reported they took a shower every day; only 5 (4%) of them did not. To the question "How often do you wash your hands daily?" 86 (67%) of them claimed they washed their hands before every meal; 30 (23.4%) of them reported that they washed their hands 2-3 times per day; only about 8% of students

did not wash their hands due to lack of water or place to wash. Next to the question "How often do you brush your teeth daily?", the answers were: 2-3 times 54 (42%), 1 time 48 (37%), brush their teeth after every meal 5 (4%), and Other 21 (16.4%) said that sometimes they do not brush teeth daily. Lastly, to the question "Do you use extra hygiene for your mouth?" their responses were: "Yes!" wherein Toothpick 80 (62.5%), Liquids for rinsing 30 (23.4%), and Dentist's threads 18 (14.1%).

Discussion

Two significant findings from the participants' general information were: seventy-five percent of these martial arts student were living in a city; ninety-four percent of them were under the age of fourteen (they were elementary and middle school students). Two typical careers of their parents were manufacturing workers (32%) and business owners (31%); two typical education levels of their parents were: a) on father's side two years college (53%); and b) on mother's side also two years college (48%); the majority of these kids (84%) live in their home (private residential) during their practising / training in martial arts. The above information tells us that living in the city is more convenient for participating in martial arts practising / training; before kids enter high school they probably have more free time for the activities they prefer to do; parents' education levels at about two years college are more likely to support their children's participation in martial arts practising / training. In other words, parents who had more education are less likely to send their children to martial arts school; kids prefer to live in their home instead of a school dormitory.

In terms of their 'Free Time' and 'Frequency of Practising', the typical answer was between 2 – 4 hours (64%) in a week day; 5–6 hours (36%) per day at weekend; in their free time besides martial arts training, the activity they most wanted to do was watch TV (77%). As for willingness or not to take part in martial arts training or other physical activities in their free time, 55% reported they were willing to participate in martial arts practising or fitness training in their free time; 45% said they were not willing to take part in martial arts practising or fitness training in their free time; they do it just because their parents or school requested them to ; there were also some of them who claimed they desired having friendship and social activity.

Among the 12 physical activities listed, 72% of them said their most favoured activity was martial arts and they had practised it most often; then the

second, third and fourth preference were: *Riding a bike* (31%), *Jogging* (20%), and *Swimming* (16%) respectively. This information revealed that although MA students favour martial arts they also like to do / try some other physical activities.

As for the question "How often do you do physical activity?" the two significant answers were: 61% of them claimed they exercised every day, and 28% of them reported they took physical exercise three times a week.

In terms of what factors have driven these students to participate in MA practising / training, the results showed that: among the eight listed factors, '*for health*' and '*to improve physical condition*' were the most powerful factors, and the primary factors that motivated these MA students to continue to take part in a physical activity. The second powerful factor was '*For good sports results*'; this factor possesses power because some of them may have chances to be selected as professional athletes or movie/TV actors; this opportunity attracted the MA students as well.

Then, the third drivers were '*To make new friends*', '*To meet with friends*' and '*To shape body*'; these factors can make the participants have better social life, more attractive outlook, and better body shape; that might make a difference in their lives. Lastly, '*For pleasure*' and '*For entertainment*' became the fourth drivers; these two factors are important to whether or not they can continually take part in the practising and training of martial arts.

As mentioned previously, Abraham Maslow's five needs motivation theory (see Table 1 for detail) are: the needs of *Self-actualization*, *Esteem*, *Social*, *Safety*, and *Physiological*. When comparing these five needs with the current results, the following are some meaningful differences and similarities. In the differences: the participants' rank '*for health*' and '*to improve physical condition*' as the first factor, which is equivalent to the *Safety* and the *Physiological* needs (which are the number four and five needs in the Maslow's theory); place '*For good sports results*' which is equivalent to the *Self-actualization* need as the second factor; order '*To make new friends*', '*To meet with (old) friends*' and '*To shape body*' as the third factor which is equivalent to the *Social* and the *Self-Esteem* needs (which are the number three and number two needs in the Maslow's theory).

Lastly, the participants ranked '*For pleasure*' and '*For entertainment*' as their fourth factor (these factors do not have equivalent needs in the Maslow's theory). This finding might indicate: in today's society if you want to fully motivate people to persistently do something, you have to make it fun or make things really enjoyable; this has become a very important element. In the similarities: although

all the needs were ranked differently, all needs were included. Note that the 'safety needs' in our survey were not included), these MA students, however, feel that they are all safe while participating in MA practising.

Additionally, although the other elements in our survey do not belong to Abraham Maslow's five needs motivation theory, all of them have something to do with participants' motivation. The following elements were the most significant: a) enabling easy access to recreational-sports facilities (92%) has a positive effects on maintaining the highest motivation; b) a suitable financial situation (85%) is necessary to keep up enthusiasm for the activity they love; c) enjoying travel and having no financial burden to travel is a plus for maintaining the motivation level and for continuing their practising / training, even though some claimed they lack free time (66%) for travel during holiday. This information reflected the additional factors that explained why the participants can keep participating in the physical activities they choose.

Now let's turn to discuss MA students' health related behaviours. Surprisingly, the results prove to be adequate, with 38% of students claiming their fitness was at a high level and 55% reporting their fitness was right at a medium level. Next, as for the results of eating habits, participants who reported they ate three times per day reached 77% and participants who ate four to five times per day was 23%. Nowadays, society is busy with many things, and eating regularly is definitely not an easy habit to maintain; therefore, it is believed that their eating habits are very good and healthy.

For their nutrition, 97% of them reported that they ate fruit and vegetables every day; 69% of them ate fish once a week and more; 84% of them added salt to their dishes; 88% of them drank one to two glasses of milk or dairy products (yogurt, milk) per day; a total of 85% percent of them said they "eat dinner with meat 3-4 times in a week; their favourite meats were (ranked by higher percentage): pork, chicken, veal / calf, and mutton / lamb.

According to the information listed above, it is believed that these MA students' nutrition status is fine. Although there are some areas where they can do better, for example: only a few students eat wholemeal bread which means the majority of students eat white bread only; most of them were not aware there was so much sugar in their meal; only a few of them cut down on the amount of sweets they eat; there were 25% of them who eat irregularly. Based on their estimate of the three major components of food in their daily diet, boys and girls all need to cut down on the amount of fat and increase the amount of protein (details can be

found in Table 5 item 31).

Lastly, let's discuss the fifth theme, which is: the **participants' risk and hygiene behaviours**. In the risk aspect, we have to say that they really did an excellent job. Here is why: a) 96% of them do not drink alcohol; b) 100 % of them never smoke cigarettes; c) 100 % of them never use any psychoactive substances; and 100 % of them never use any anabolic steroid. However, the awareness of the consequences of using prohibited anabolic steroid or different kinds of doping substances need to be improved, because there were about 48% of them who had no idea what would happen or how his/her health would be harmed if they were to take a prohibited anabolic steroid.

With regard to their hygiene behaviours, we strongly believe that this is the worst aspect; below is why: there were about 12% of them who did not take a shower every day; 8% of them did not wash hands daily (said that was due to no water or place to wash hands); about 16% of them did not brush teeth daily; only about 37% of them used extra hygiene for the mouth (Dentist's threads and Liquids for rinsing), while the other 80% still used the traditional way – the toothpicks, which is believed to be an out-of-date way to clear up food between the teeth.

Conclusion

In conclusion, the martial arts students in this survey have a minimum of two hours on weekdays and five hours at weekend to participate in martial arts or other physical activities; they almost all have physical activities every day but the most favoured activity is practicing martial arts. Not all these students are willingly taking part in martial arts practicing or fitness training in their free time, but they still persist in taking part because they want to develop and maintain friendships ; besides that, their parents and school have played significant roles in their participation. 'For health', 'To improve physical condition' and 'For good sports results' are their primary motivation factors. 'For friendship' and to have 'Good body shape' are the secondary factors that drive them to keep participating in martial arts practicing / training. Other factors, such as 'For pleasure' and 'For entertainment', are not as powerful as the first two categories but are definitely important factors for keeping these kids staying in the martial arts schools/ programs. The nutrition status of these martial arts students is fine but some areas need to be improved; e.g., nutrition knowledge and hygiene habits were not so good and need to be improved.

Recommendation

Based on the findings and discussions above, our recommendations are: 1) Teachers /coaches of the martial arts schools /programmes need to improve the enjoyment elements of their practicing/training routines and bring more fun for the students; 2) provide lecture(s) on nutrition; 3) provide lecture(s) on hygiene behaviours and the consequences /side effects of taking performance enhancing drugs; 4) improve pedagogical methods to sufficiently match the needs and characteristics of diverse students.

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Motywacja i zachowanie związane ze zdrowiem wśród adeptów sztuk walki w chińskim mieście Changshu

Słowa kluczowe: motywacja, potrzeby, praktyka, higiena, fitness, diety, żywienie

Abstrakt

Celem badania było ustalenie motywacji i zachowania związanego ze zdrowiem wśród ćwiczących sztuki walki w chińskim mieście Changshu oraz dostarczenie istotnych informacji i spostrzeżeń, które umożliwią specjalistom podnoszenie jakości nauczania i zarządzania nim. Uczestnikami

badania byli uczniowie sztuk walki (N = 128, chłopcy = 80, dziewczęta = 48, wiek 12-18), którzy należeli do jednej z pięciu szkół walki. Zastosowano wobec nich kwestionariusz dotyczący motywacji i zachowań związanych ze zdrowiem obejmujący 50 pozycji. Analizę danych przeprowadzono według analizy częstotliwości, procentowej i jakościowej. Wyniki i wnioski zostały zestawione w tabelach 3, 4, 5 i 6, które odzwierciedlały cztery odrębne tematy, m.in.: „Czas ćwiczeń”, „Czynniki motywacyjne”, „Zachowania związane ze zdrowiem” oraz „Zachowania związane z ryzykiem” wśród adeptów sztuk walki. Wśród tych tematów, niektóre czynniki (np. „Czynniki motywacyjne”, „Czas ćwiczeń” i „Zachowania związane z ryzykiem”) realizowano bardzo dobrze, podczas gdy inne czynniki (np. „Higiena”, „Odżywianie” i „Sprawność”) nie były przeprowadzone dobrze i wymagały poprawy. Przyczyny tych ustaleń stały się przedmiotem pogłębionej dyskusji.

Na podstawie wyników badań i dyskusji autorzy sformułowali następujące zalecenia: 1) nauczyciele / trenerzy sztuk walki powinni poprawić procedury szkoleniowe i wnieść więcej zabawy dla ćwiczących, 2) zapewnić wykłady na temat żywienia, 3) zapewnić wykłady na temat zachowania higieny i konsekwencji oraz skutków ubocznych przyjmowania leków zwiększających wydajność, 4) poprawić stosowane metody pedagogiczne.