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ABSTRACT

Student athletes have to balance numerous demands such as academic pursuit, training and competition, thus these could bring stress and challenges. This study examined personal issues as sources of stress experienced by university student athletes. A total of 273 student athletes (Males = 160, Females = 113; Age = 20.4 ± 2.5 years) participated in this study. A 16-item questionnaire was adopted from the Organizational Stress Inventory developed by Fletcher and Hanton (2003). The inventory was divided into three sub-scales of 'nutrition', 'injury', and goals and expectations'. The results suggested that both male and female student athletes were stressed, in order of importance by 'nutrition', 'injury' and 'goal & expectation' respectively. Inferential statistics showed that there were no significant differences in 'nutrition', 'injury' sub-scales according to gender. However, for the 'goal and expectations' sub-scale, there was a statistically significant difference in 'unclear goals' and 'tension because of personal goals within the team' where male athletes demonstrated higher stress than female athletes. The findings are important to coaches and sport managers in addressing personal issues among athletes. More research is needed to include athletes from other educational institutions and from national sport associations.

Keywords: *Personal issues, sources of stress, student athletes, nutrition, injury. Goal setting.*

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INTRODUCTION

The undergraduate years are a period of time when young student-athletes experience a significant amount of change and a variety of novel challenges. They are required to balance multiple demands and challenges associated with their education and sporting life compared to other students. In education, they face with the burdens of academic performance (completing course works, passing tests and examinations), social demands, adjusting to life away from home, and financial challenges (Aquilina, 2013; Dos Santos, 2020; Humphrey et al., 2000; Paule & Gilson, 2010).

In sport, student-athletes are required to spend a substantial amount of time participating in activities related to their sport, such as attending practices and training sessions which are frequent and exhaustive, team meetings, frequent travelling, and competitions (Davis et al., 2019; Humphrey et al., 2000; Hyatt and Kavazis, 2019; López de Subijana, Barriopedro, & Conde, 2015) as well as facing a range of competitive pressures (Brown et al., 2015; Cosh & Tully, 2015). Besides that, they have to engage in tasks that require sustained effort such as developing relationship with coaches and teammates, taking precaution to avoid injuries or taking care of injuries, as well as achieving performance goals (Etzel, 2009; Fogaca, 2019; Scott, Paskus, Miranda, Petr, & McArdle, 2008). Thus, student-athletes are very vulnerable to stress. These commitments may increase a student-athlete's risk of experiencing both physical and mental issues (Li, Moreland, Peek-Asa, & Yang, 2017; Moreland, Coxe, & Yang, 2018) that may affect their overall health and wellness.

Due to these unique challenges faced by student-athletes, many researchers are attracted to issues related to stress in athletes which has become a popular area of research. Stress among athletes has been studied in numerous sport such as alpine skiers (Davis et al., 2019), track and field (McKay, Niven, Lavallee, & White, 2008), cricket (Thelwell, Weston, & Greenlees, 2007), rugby (Nicholls, Holt, Polman, & Bloomfield, 2006), tennis (Puente-Diaz, & Anshel, 2005), skaters (Vredenburg, 2007), Australian Rugby (Noblet & Gifford, 2002), and college athletes (Anshel & Sutarso, 2007; White, 2008). From those studies, common stressors prevail which included the lack of confidence, worries about performing

poorly, worries of being injured, pressure to perform at higher standard set, concerns about training and competition environment, coaches related behaviours (behaviour, styles, feedback, negative comments), and difficulties balancing sport and non-sport commitments. (Abedalhafiz, Altahayneh, & Al-Haliq, 2010; Mckay, Niven, Lavalle, & White, 2008).

Student-athletes encountered stress relative to their dual role of being a student and an athlete (Etzel, 2009; Fogaca, 2019; Scott et al., 2008). When the demand of the dual roles is perceived as exceeding their ability to cope, the stress could be detrimental to the student athletes' mental and physical health as well as to sport performance (Ivarsson et al., 2017; Li, Moreland, Peek-Asa, & Yang, 2017).

For competitive student-athletes, they may encounter stress related to nutrition, injury, and goal and expectation. Often, athletes travel to competition and training venues and commonly live in an unfamiliar environment with a different food supply. Besides, some athletes live in a training facility with buffet-style dining hall with many nutritional options, resulting in difficult choices about what to eat. In fact, the variety of offerings could be confusing and potentially lead to over or underconsumption or inappropriate food choices, impacting dietary intake, as has been previously demonstrated in this environment (Burkhart & Pelly, 2016). Similarly, Pelly and Thurecht (2019) concur that athletes are often exposed to many food choices, and varied food environments which could influence food selection and consequently affect the quality of their diet.

Other studies (Pelly, Burkhart, & Dunn, 2018; Thurecht, & Pelly, 2019) revealed that decision on food intake was related to athletes' training and competition. Athletes often focused on macronutrients, especially carbohydrate especially carbohydrate, and protein before and during competition to enhance their sport performance. The food choice suggested that athletes did not consider the quality of their meals but merely focused on the macronutrients that fuel their sport. The food choice changed once the competition was over. On the contrary, it was found that other reasons also influenced the food selection. Food selection was predominately related to physiological considerations, such as hunger, satiety and gut comfort (Blennerhassett, McNaughton, & Sparks, 2019; Thurecht, & Pelly, 2019). In

addition, Pelly and Thurecht (2019) reported that other factors such as sensory appeal and usual eating practices may be the reasons for food selection. Those factors were considered priority by athletes over sport performance. As such, one third of the athletes studied chose foods discretionally with the majority not choosing fruits and around one third not choosing vegetables. Burkhart and Pelly (2016) revealed that athletes' food intake was affected when they travel to competition and training venues. The athletes could not consume proper food as they usually live in an unfamiliar environment with a different food supply.

In training and competitions, student-athletes face varied degree of injuries. According to Yang et al. (2012), different category and modality of sports injuries increased dramatically when there was an increase in professionalization, competitiveness and extended practices. In the injury process, athletes were involved both in the pre-injury phase actions that could lead to injury to himself or others, and in the post-injury phase that contributing or hampering the rehabilitation of the injuries (Almeida, Olmedilla, Rubio, & Palou, 2014). Even though common response to sport injury was fear of re-injury (Podlog & Eklund, 2010), other psychological responses of an injured athlete include anxiety, depression, frustration, tension, and decreased self-esteem (Cozzi, Dunn, Harding, Valovich McLeod, & Welch, 2015; Hamson-Utley, & Vazquez, 2008; Nippert, & Smith, 2008; Vibe Fersum, O'Sullivan, Skouen, Smith, & Kvale 2013).

Student-athletes also are stressed when facing with issues related to goals and expectation. Stress is experienced when a person perceived that the demands exceeded the personal and social resources the individual is able to mobilize (Burton, & Raedeke, 2008). According to Lazarus' Model of Stress (Burton, & Raedeke, 2008), there are three aspects of stressful situations which include competitive demand, personal control and coping strategies. Competitive demand is when athletes perceived that a demanding situation would affect their performance in order to achieve the set goals. The competitive demand increases with the importance of the goal set and the uncertainty of achieving it (Burton, & Raedeke, 2008). Personal control is influenced by athletes' perceptions of the ability to manage the competitive demand and achieve important goals (Burton, & Raedeke, 2008).

Weinberg and Gould (2019) reported relationship of various type of goals and sport such as physical fitness, swimming, and basketball (Button & Weiss, 2008; Weinberg & Butt, 2005). It was found that short-term and long-term specific goals, moderate to very difficult goals were associated with best performances. According to Burton (1989a) goal setting enhance performance in low-complexity tasks as compared to high-complexity tasks. Other research has shown positive effects of goal setting on sport performance such as in basketball (Swain & Jones, 1995), ice hockey (Anderson, Crowell, Doman, & Howard, 1988) lacrosse (Weinberg, Stitcher, Richardson, & Jackson, 1994), golf (Kingston & Hardy, 1997), soccer (Brobst & Ward, 2002), and swimming (Burton, 1989b). Collegiate, Olympic, and youth athletes have reported their preference on goal settings; the top three preferences for goal difficulty were moderately difficult, difficult, and very difficult goals (Weinberg, Burke, & Jackson, 1997; Weinberg, Burton, Yukelson, & Weigand, 2000). The research also revealed barriers to achieving goals and type of athletes. Collegiate athletes were hindered by stress, fatigue, academic pressure, social relationship, and a lack of time. As for Olympic athletes, barriers of achieving goals were due to internal barriers (lack of confidence, lack of goal feedback, too many goals or conflicting goals), or external barriers (lack of time, work commitments, family and personal responsibilities). Female athletes set goals more often and found them more effective than male athletes. In addition, all athletes concur that goals provide them direction and keep them focused on their sporting tasks. Further they experienced best performance when engaging in multiple goal strategies.

With the above-mentioned issues, it is important to initiate investigation into the sources of stress among student athletes. This exploratory study will focus on personal issue related stress among athletes from Malaysian public universities.

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METHODOLOGY

Participants

The athlete population size in the 6 public universities were estimated as 1368 based on the number of sporting event of the 2019 Inter Public University Games (MASUM 2019) (https://www.hmetro.com.my/arena/2019/08/482683/uitm-juara-sukan-masum). According to Krejcie and Morgan, (1970) for a population size of 4000, the sample size would be 302. Thus, the sample size of 273 athletes was considered adequate for this research.

The sample consisted of 273 undergraduate athletes (160 males, 113 females) aged 17-26 years (M = 20.4 years, SD = 2.5) and they have participated in 23 sports. Forty-nine of the athletes participated in individual sport (e.g. shooting, weight lifting, athletics, rhythmic gymnastics and martial arts), 192 in team sport (e.g. netball, basketball, volleyball, hockey, and softball) and 32 in mixed sport (e.g. badminton, archery, ping-pong and squash).

Conceptual Framework

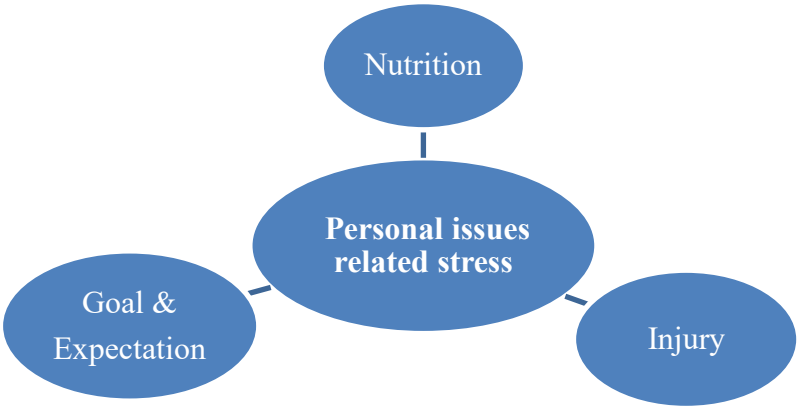

Figure 1. Conceptual framework for the Personal Issue Related Stress Model

The conceptual framework of this study is a composite of a schematic conception of three factors of the personal issues (Figure 1). The conception of personal issues is based on the

model of the organizational stress proposed by Fletcher and Hanton (2003). The personal issues include nutrition, injury, and goal and expectation.

The 'nutrition' sub-scale is concerned with the feelings toward food based on internal and external factors. The 'injury' sub-scale focus on fear, frustration and pressure because of injury as well as injury treatment and training with injury. The 'goals and expectations' sub-scale emphasized on tensions due to personal, coach and teammates expectations.

Measures

The Personal Issues Inventory (PII) was adopted from a dimension (personal issues) of the organizational stress proposed by a study carried out by Fletcher and Hanton (2003). The PII consisted of 16 items ($\alpha = 0.815$) which are sub-divided into three sub-scales of nutrition (4 items; $\alpha = 0.841$), injury (5 items; $\alpha = 0.783$), and goals and expectations (7 items; $\alpha = 0.749$). The perceived level of stress was determined by participants by ranking on a 5-point Likert-type scale. Each item response ranged from 1 (strongly disagree) to 5 (strongly agree). The athletes were given as much time as needed to complete the questionnaire.

Procedure

Institutional ethical approval was obtained prior to recruiting participants. Student athletes from six public universities were surveyed using convenience sampling method. They were recruited from a variety of university programmes as well as through the Student Affairs Departments. They were contacted by the contact persons from the public universities. The contact persons were briefed by the researcher through telephone communication and the questionnaire were emailed to them. The contact persons then printed the questionnaire and administered to those interested student-athletes. All the participants were briefed on the purpose of the study before providing their response. There were told to respond in the sequence of demographic data, followed by Personal Issues Related Stress Inventory.

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Data Collection and Analysis

Two sets of data were collected for this study namely demographic data and data from Personal Issues (nutrition, injury, and goal and expectation). Descriptive statistics such as mean, standard deviation and unweighted mean were calculated. Unweighted mean is calculated by dividing the mean value of each sub-category with the number of items. T-tests were computed to determine whether differences existed in the stress mean scores for each sub-category for gender. All the descriptive and inferential statistical data were analyzed using SPSS 23 for Windows software (IBM Corp, Armonk, NY, USA). The level of significance was set at $p < 0.05$.

RESULTS

As shown in Table 1, both the male and female athletes were more stressed by the nutrition related issues and the injury related issues rather than the goals and expectations issues.

Table 1: Descriptive statistics of personal issues sub-scales for male (n=160) and female (n=113) athletes

Sub-scale	No. of item	Mean Scores		Unweighted Mean		Std. Deviation		Rank	
		M	F	M	F	M	F	M	F
Nutrition	4	18.19	17.48	4.55	4.37	4.07	4.22	1	1
Injury	5	16.85	16.62	3.37	3.32	4.75	4.63	2	2
Goals & Expectations	7	22.84	21.61	3.26	3.09	6.39	5.89	3	3

Note: M = Male, F = Female.

When the unweighted mean scores for the three sub-scales were further scrutinized, the higher mean scores showed that male athletes were more stressed in all the three sub-scales as compared to the female athletes.

Inferential statistical results in Table 2 showed the mean scores of male and female athletes were not significantly different on the sub-scales of 'nutrition', and 'injury' but

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significant for 'goals and expectations'. For 'goals and expectations', two issues were significant; 'tension because of personal goals within the team' (t = 2.347, p<.05), and 'unclear goals' (t = 2.394, p <.05).

Table 2: Extent of agreement on statements relating to personal issues (nutrition, injury, goals & expectation) according to gender (mean, SD, SEM and t-value)

Statement relating to personal issues	Gender	N	M	SD	SEM	t-value
A. Nutrition						
Poor provision of food.	Male	160	3.46	1.177	.093	-
	Female	113	3.46	1.224	.115	0.022
Disordered eating (disturbances during eating; unruly situations).	Male	160	3.41	1.114	.088	0.789
	Female	113	3.30	1.156	.109	
Upsets due to foreign cuisine.	Male	160	3.51	1.127	.089	1.781
	Female	113	3.26	1.245	.117	
Guilty feelings toward food (eating too much; eating food that should not have been eaten).	Male	160	3.52	1.144	.090	1.841
	Female	113	3.26	1.214	.114	
B. Injury						
Training despite injury.	Male	160	3.25	1.232	.097	-
	Female	113	3.28	1.226	.115	0.179
Too much pressure because of injury.	Male	160	3.38	1.163	.092	-
	Female	113	3.40	1.120	.105	0.082
Frustration at own injury	Male	160	3.48	1.133	.090	-
	Female	113	3.52	1.118	.105	0.289
Lack of injury treatment structure	Male	160	3.47	1.152	.091	0.849
	Female	113	3.35	1.186	.112	
Fear of being seen to be injured	Male	160	3.27	1.215	.096	1.296
	Female	113	3.08	1.193	.112	
C. Goals and Expectations						
Tension because of personal goals within the team.	Male	160	3.29	1.204	.095	2.347*
	Female	113	2.94	1.220	.115	
Own high expectations.	Male	160	3.63	1.162	.092	0.803
	Female	113	3.52	1.077	.101	
Expectation from past performances.	Male	160	3.57	1.179	.093	0.196
	Female	113	3.54	1.085	.102	
Pressure from teammates.	Male	160	3.23	1.111	.088	0.412
	Female	113	3.18	1.144	.108	
Unclear goals.	Male	160	3.09	1.137	.090	2.394*
	Female	113	2.77	1.052	.099	
Coach's unrealistic expectations.	Male	160	2.99	1.239	.098	1.008
	Female	113	2.84	1.138	.107	
Unrealistic goals for the team.	Male	160	3.04	1.218	.096	1.482
	Female	113	2.82	1.128	.106	

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Male and female athletes were significant different on 'tension because of personal goals' (t = 2.347, p <.05) and 'unclear goal' (t=2.394). Based on the means scores in Table 2, male athletes were more stressed than the female counterparts on both the issues.

DISCUSSION

Personal Issues and Gender

The findings of this study showed that student-athletes from the Malaysian public universities demonstrated favourable responses toward 'personal issue'. In addition, both male and female student athletes ranked all the three sub-scales the same. However, unweighted means indicated that males are slightly more dominant in all sub-scales when compared to their female counterparts.

This finding is inconsistent with the findings of a study of the sources of acute stress among Chinese college athletes as a function of gender and skill level. The research found that female athletes perceived verbal abuse by coaches as markedly more stressful than their male peers (Gan & Anshel, 2001). However, the finding is supported by Hammermeister and Burton's (2004) investigation on athletes use of coping strategies as a function of perceived controllability. Male athletes' dominance on 'personal issues' may be due to the fact that they were able to control their stress levels. The critical factor in determining the nature and extent of stress reactions may be how these individuals perceive their skills (Weinberg & Gould, 2019).

Nutritional Related Stress and Gender

The data on nutritional related stress of this study showed no significant differences between male and female student athletes in food provision, disordered eating, upsets due to foreign cuisine, and guilty feelings toward food, male athletes seemed to have higher level of stress on the last three issues as compared to female athletes. Among the three issues, male athletes

experienced the highest level of stress for guilty feelings toward food (eating too much; eating food that should not have been eaten). The guilty feeling toward food has led to disordered eating among athletes. In a study of prevalence of eating disorders, body image issues, and weight control behaviours of NCAA Division I student-athletes (146 males and 156 female), DiPasquale, and Petrie (2013) reported that 6.5% of female athletes and 12.2% of male athletes reported engaging in unhealthy eating and weight control behaviours. However, this compensatory behavior among female and male athletes were lower if compared to the findings of other previous research (Carter & Rudd, 2005; Greenleaf, Petrie, Carter, & Reel., 2009; Petrie, Greenleaf, Reel, & Carter, 2008). Among female and male collegiate athletes, respectively, 3.0% vs. 6.5% vomit, 1.0% vs. 7.9% use laxatives, 1.5% vs. 7.0% use diuretics, 40.7% vs. 46.9% exercise to burn calories, and 15.6% vs. 14.2% fast.

On the issue of 'upsets due to foreign cuisine', previous research reported that food choice was known to be influenced by many factors, including taste, convenience, price, and cultural and/or religious beliefs (Sobal, & Bisogni, 2009; Furst, Connors, Bisogni, Sobal, & Falk, 1996). As for 'poor provision of food', previous researcher revealed that food consumption among athletes were very much influenced by the availability of food and security of food (Mello et al., 2010). Other researchers reported that hunger may influence individual food choice (Lowe & Butryn, 2007). Hunger may motivate individual to make food choices (Furst, Connors, Bisogni, Sobal, & Falk, 1996) and it may override the importance of preference (Hoefling & Strack, 2010). Thus, immediate availability of food is more important than taste to the individuals who are deprived of food (Hoefling & Strack, 2010).

Injury Related Stress and Gender

Injury related stress was ranked second out of the three personal issues related stress for both male and female student-athletes. Comparison of the means scores show that female athletes are stressed due to injury especially so when they need to train despite injury, and are frustrated over the injury. While male athletes are stressed to avoid being seen as injured, and

they are also stressed due to the lack of injury treatment structure when seeking rehabilitation for their injury.

When athletes are injured, they are frustrated as discussed by Weinberg and Gould (2019) that individuals have different psychological response to injury. They revealed that an individual may view an injury as disaster while others may view injury as a relief to get a break from tedious training, saving face when perform badly, or as an excuse to quit sport. The results of this study found that female injured athletes were more frustrated over the injury than male injured athletes, while male athletes were stressed to avoid being seen as injured. Those findings could be explained by Granito (2002) study of 31 injured intercollegiate athletes (16 women & 15 men; mean age = 20 years old) where he reported that almost 44% of female athletes (7 of 16) expressed concern over how the injury would influence their health at a future point. Other sport sociologists (Curry, 1993; Hughes & Coakley, 1991; Nixon, 1994, 1996; Walk, 1997) explained the subcultures of male and female teams could affect women athletes toward injury and to look at how injury could affect them beyond their sporting career. Then, male athletes compete in a cultural context which rewards athletes for playing in pain, taking risks, and doing what it takes to keep competing, and Granito (2002) posit that there is a possible that the male athletes tend to be focused on the here and now. Thus, male athletes did not wish to been seen being injured but continue playing with injury.

Often, athletes do not want to be seen as injured because of coaches' attitude; coaches viewed athletes who are injured as worthless (William & Scherzer, 2015). In fact, Weinberg and Gould (2019) concur that coaches may convey consciously or otherwise, that winning is more important than athlete's well-being. Thus, injured athletes do not want to feel worthless and wanted to be seen as contributing toward winning. The act-tough orientation has put athletes into believing that training more is better and must train through pain (Weinberg & Gould, 2019). This situation could be explained by Basic Psychological Needs Theory (BPNT) proposed by Deci and Ryan (2000) where injured athlete might want to feel competent and have capacities to accomplish goals, and the need to experience interpersonal connection and caring (relatedness).

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The data analysis in Table 2 shows that the sample Malaysian student-athletes have problems with 'unclear goals' and 'tension because of personal goals within the team'. Male athletes were more stressed with the two problems.

According to Weinberg & Gould (2019) although goal setting is not difficult, many problems such as failing to set specific goals, setting too many goals too soon, failing to adjust goals when they are not achieved, failing to recognize individual differences and failure to evaluate goal, and follow up could contribute to the situation of 'unclear goal'. In addition, Widmeyer and Ducharme (1997) explain that the situation may be due to non-establishment of clear paths of short-term goals enroute to long-term goals and not all team members are involved or agreed to the goals. According to Burton (1989), goal setting is more successful if it is specific, although performance enhancement is related to low-complexity tasks than high-complexity tasks.

In fact, as coaches have to be cautious in the process of goal setting. In some situation, not all athletes approved of setting goals and some may be negative about it (Weinberg & Gould, 2019). Coaches emphasized that the process of setting team goal is seen as element of force in accepting goal which is not in line with personal desire. This leads to inefficiency and promote lack of commitments among athletes. In addition, Lambert, Moore, and Dixon (1999) stressed that individual differences should be taken into consideration when setting goals. They confirmed that for athlete dependent on their locus of control like gymnasts, setting own goal was most effective.

In some instances, athletes may be confused because of the existence of too many goals. Dawson, Bray & Widmeyer (2002) revealed that there are four types of sport team goals which include individual goal for oneself, individual goal for the team, the team's goal, and the team's goal for individual. Thus, it is important to be clear about individual goal as well as team's goal. However, group and team goal setting are not given the due attention until it was reported in a research conducted by Widmeyer & Ducharme (1997).

On the issue of personal goal within team goal, Larumbe-Zabala, García-Lluch, Agea and Peris-Delcampo (2019) revealed that male athletes as compared to female athletes were more ambitious and perceived higher self-confidence and fitness, although overestimated their goals. As such they are more stressed if they do not achieve their personal goals. These gender differences in competitiveness have been found to reflect different orientations to competition, with males much more oriented to win-loss outcomes and females more oriented to personal goals and standards (Gill, 1986). Similarly, Hanek, Garcia, and Tor (2016) reported that male and female athletes do not differ in abilities but rather in their response to competition.

CONCLUSION

University student-athletes experience a variety of challenges and are required to manage numerous stressors related to academic pursuit, and sport training and competition. In this study, personal issues related stress such as 'nutrition', 'injury', and 'goals and expectations' are measured through the Personal Issues Inventory.

The findings of this study indicate that both male and female athletes are more stressed by the nutrition related issues, followed by injury related issues, and they are the least stressed with goals and expectations issues. Further scrutiny of unweighted mean scores revealed that male student-athletes are more stressed as compared to the female counterparts in all the three categories of personal issues related stress. In addition, the results of this study also reported that male student-athletes are more affected by 'unclear goal', and 'goal within team goal'.

In order to ensure that student-athletes could balance their academic and sport involvement, coaches, managers and all the stake holders who are involved in promoting sport among students need to take into consideration of the three sources of personal related issues.

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