

Comparison of Mood State Between Team Sports and Individual Sports among Young Athletes

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The aim of this study was to compare the mood state between team sports and individual sports among young athletes. A total number of 279 ($n=279$) secondary school athletes who participated in Majlis Sukan Sekolah Daerah (MSSD) Tuaran, Sabah competition were recruited in the present study. The participants were asked to answer the Brunel of Mood Scale (BRUMS) one hour prior to the competition. Independent Sample T-Test were used to compare the mood state between team and individual sports among young athletes. Result showed higher mean of mood state in individual sports ($M=1.22$) as compared to team sports ($M=1.19$). There was a significant difference between team and individual sports on fatigue ($p=.017$) and confusion ($p=.009$), while there was no significant difference on depression ($p=.296$), tension ($p=.565$), vigour ($p=.296$) and anger ($p=.79$) among young athletes. Team sports shown significantly lower level of confusion as compared to individual sports, whereas fatigue is significantly higher in team sports as compared to individual sports.

Keywords: mood states, Brunel of Mood Scale (BRUMS), youth athletes, team sports, individual sports

Sport is known as a primarily endeavour, involve the body to do various specialized and demanding physical task (Harikrishna & Chittibabu, 2014). It is widely claimed that high performance sports not only demand optimum physical attribute but also require optimum psychological factors to perform better in sport. According to Bompa (2009) in the training pyramid of an athlete, psychology of the athlete is one of the main elements in preparing an athlete.

Sports and appropriate mood states are usually linked, as physical exercises enables endorphin generation and leads to an increments in euphoria and satisfaction levels, thus helps people to be positive and

feel well (Sungwoon & Jinfu, 2007). Therefore, both physical and psychological preparation are necessary to ensure the improvement of physical performance.

Terry (1995) stated that maintaining a functional mood profile when training and competing in adverse environmental conditions is important in order to teach athletes strategies to regulate mood states for competition, and this is a crucial role of applied sport psychologist. As a results, athletes have a better control in concentrating and identify creative solutions to a challenging sport situations. The ability to maintain the best and appropriate mind prior to the competition

is known as one of the important factors in the performance outcome.

Russell and Barrett (1999) defined emotion as the first emotional episode (what is commonly called as happening of an emotion) as a complex set of interconnected sub-events concerned with a specific object. Weiss and Cropanzano (1996) defined mood as feelings that tend to be less intense than emotion and that often (though not always) lack a contextual stimulus.

Mood state used as an objective tool for assessing emotional and affecting response during exercise or training (Berger & Motl, 2000). Mood state defined as a set of feelings, ephemeral in nature, varying in intensity and duration and usually involving more than one emotion (Lane & Terry, 2000).

There are two dimensions of mood which are positive and negative (Terry, Dinsdale, Karageorghis, Lane, 2006). The positive mood includes vigour referred as feelings of excitement, alertness, and physical energy (Anshel, Heywood, Fredson, Horvart, Jozef & Sharon, 1990). Anxiety, depression, anger, fatigue and confusion were set as the negative mood (Terry et al., 2006). Mousavi and Samandar (2003) defined depression as a negative self-schema characterized by themes such as hopelessness, personal deficiency, worthlessness and self-blame. Anger is defined as a person's response to a threat or the perception of a threat against an individual or group (Lazarus, 1991). Fatigue is a feeling of mental and physical tiredness, while tension as feelings of nervousness, apprehension, worry and anxiety (Anshel et al., 1990). Mousavi and Samandar (2003) defined confusion as a state characterized by the feeling of bewilderment, uncertainty, and is associated with general failure to control attention and emotions. Depression whereas a negative self-schema

characterized by themes such as hopelessness, personal deficiency, worthlessness and self-blame (Mousavi & Samandar, 2003).

Kavanagh and Hausfeld (1986) claimed that mood states can affect self-efficacy, performance as well as people's attitude. For that reason, psychologist studies the effect of various kind of physical activities on mood and searching the affective ingredients on mood states (Leppamaki, 2006).

According to Morgan, Brown, Raglin, O'Conner and Ellickson (1987), changes in mood can be used as an early sign of over training and staleness. This is supported by Pierce (2002) which suggested that mood change can be used to indicate those athletes predisposed to the condition long before symptoms of poor performance and prolonged fatigue are observed.

Pre-competition mood states and state anxiety have been known as two main psychological factors which may be influential on the performance of athlete and their outcomes (Mehdipoor Keikha, Md Yusof & Jourkesh, 2015). When an athlete is not in an optimum emotional state, it can affect their performance while competing in sports. Many researches were focusing on adult athletes. However, it is also important to measure the mood state among junior athletes. According to Wong, Thung and Pieter (2006), the mood-performance relationship was not the same between the children and adult athletes. Recent research proved that the link between pre-competition mood and performance may draw upon variables such as the duration of the event, sport type, or even the place of the game or match (Brandt, Viana, Crocetta, & Andrade, 2016).

Majlis Sukan Sekolah Daerah (MSSD) refers as an organized competition among all school in a district. Thus, athletes that

won the game will able to represent in a higher level of competition. MSSD Tuaran, Sabah is ranked as one of the top three team among the district every year, in Majlis Sukan Sekolah Sabah (MSSS) 2019. As for example, an athlete from MSSD Tuaran, 17 years old, Mohd. Raid Ramlee made three new records in 400-meter hurdles, 110-meter hurdles and in high jump event. Study by Novak and Cirkovic (2015) which studied the changes of mood states during the preparation period of the world's top junior tennis player claimed that it is necessary for the coach to evaluate the athlete's psychology before the competition. This was the reason why MSSD Tuaran athletes were selected as the respondents of the present study as the researcher can see the potential of the young athletes from MSSD Tuaran Sabah.

Participation in competition is one of the main stressors for youth athletes (Nicholls, Holt, Polman & James, 2005). Sports competition during youth gives an opportunity for the athletes to learn and develop skills that will be beneficial in the future (MacNamara, Collins & Button, 2010). Athletes experience several emotions when participate in sports (Kristiansen & Roberts, 2010), and most of the young athletes may not know how to regulate and handle athlete's mood in order to avoid any distraction. Thus, there is a need of study to compare the mood states of team sports and individual sports among young athletes.

Team sport refers to any sports which involves two or more players, practice mostly in groups, shared the same objectives, compete with a team and the team shares the results, whereas individual sport referred as an athlete who compete individually and have individual results, which can be a part of a team result (Lindwall, Johnson & Astrom, 2002). Batinić, Švaić, and Babić (2014) used track and field, karate, table tennis and

produced many young athletes from secondary school to the highest level of sports. As for example in 2019, MSSD Tuaran successfully made two new records swimming as individual sports, while football, basketball, handball, volleyball and rugby as the team sports. Mehdipoor Keikha et al. (2013) claimed that there is difference between individual and team sports in mood state before the competition begun. The aim of the study was to identify and compare the mood state between team and individual sports among young athletes during MSSD, Tuaran, Sabah 2019.

Method

Participants

The participants were young student-athletes (comprised of team sports and individual sports) who participated in MSSD, Tuaran, Sabah 2019 competition. A total of 279 participants (15 ± 2 y) from team (netball, basketball, rugby, football, tenpin bowl, sepak takraw, hockey, cricket, handball) and individual (track and field, tennis, cross country, table tennis, skuasy, badminton) sports were recruited as the respondents in the present study which was calculated by using Krejcie and Morgan (1990) formula. The total of population of MSSD, Tuaran, Sabah 2019 600 student-athletes. According to Krejcie and Morgan (1970) a total number of 234 respondents ($n=234$) will represent the population. A total of 279 questionnaires ($n=279$) were distributed as twenty percents (20%) was added to original the calculation [$234 + (234 \times 20\%)$] as a precaution of missing and incomplete data.

Instruments

The present study used a non-experimental design in which the researcher distributed the Brunel of Mood Scale (BRUMS) questionnaire one hour prior to the competition to the respondents. Studies

has claimed that the closer the evaluation of psychological signs in athletes prior to competitions, the more comprehensive and precise prediction of performance it would be (Robazza, Gallina, D'Amico, Izzicupo, Bascelli, Di Fonso & Di Baldassarre, 2012). Respondents answered the questionnaire according to the actual feelings before the competition begin.

In this study, the pre-competition of mood states among young athletes was measured using the Brunel of Mood Scale (BRUMS) by Terry, Lane and Fogarty (2003) which was first known as the Profile of Mood States-Adolescents (POMS-A). BRUMS was developed to serve as a brief measure of mood states among adolescent and adult populations. Brandt et al. (2016) confirmed that the internal consistency of the 24 items are ($\alpha = 0.85$).

BRUMS contains 24 items, comprised of six subscales which are vigour, anger, confusion, depression, fatigue and tension. Based on Gendolla and Krusken (2001) mood can categorized as negative mood (including anger, confusion, depression, fatigue and tension) and as positive mood (including vigour).

All of the items of the instrument were using a 5-point Likert scale (0 = not at all, 1 = a little, 2 = moderately, 3 = quite a bit, 4 = extremely) according to their current mood. The item in each sub scale are anger (annoyed, bitter, angry, bad tempered-items 7, 11, 19, 22), confusion (confused, mixed up, muddled, uncertain-items 3, 9, 17, 24), depression (depressed, downhearted, unhappy, miserable-items 5, 6, 12, 16), fatigue (worn out, exhausted, sleepy, tired-items 4, 8, 10, 21), tension (panicky, anxious, worried, nervous-items 1, 13, 14, 18), and vigour (lively, energetic, active, alert-items 2, 15, 20, 23).

Data Collection

The research proposal was presented to the ethics committee to get the ethical clearance. Approval on conducting the study was retrieved from the Pejabat Pelajaran Daerah Tuaran to obtained data from the MSSDs' athletes and approved by assistant regional education officer Tuaran. Other than that, researcher also gain approval by the tournament technical officer and the coaches to distribute questionnaire by showing the approval letter from Pejabat Pendidikan Daerah Tuaran before the tournament begun. The coaches and managers of the participating teams was informed and briefed about the study prior to the competition. The respondents were required to complete the BRUMS questionnaire consisted of 24 questions. Descriptive data was presented in mean and standard deviation ($M \pm SD$) to describe the variables. Independent T-Test was used in order to analyse the data: to compare the mood states between team sports and individual sports. SPSS 22.0 was used to analysed the data.

Results

Table 1 shows the distribution according to the age of 279 respondents. Independent T-Test was used to examine the comparison of mood states between team sport and individual sport among young athletes (Table 2). The participants were categorized into two groups according to their sports: team or individual sport.

Table 1
Age of participants

Age	n	(%)
13	17	5.8
14	49	16.8
15	54	18.5
16	78	26.7
17	81	27.7
Total	279	100.0

Table 2
Mean and standard deviation of mood state between team and individual sports.

Mood State	Team Sport (n=120)	Individual Sport (n=159)	p-value
Anger	.41 (± .55)	.39 (± .54)	.79
Confusion	.64 (± .43)	.81 (± .6)	.01*
Depression	.58 (± .48)	.65 (± .6)	.30
Fatigue	.97 (± .63)	1.17 (± .8)	.02*
Tension	1.37 (± .63)	1.33 (± .7)	.57
Vigour	3.17 (± 1.1)	2.96 (± .71)	.30

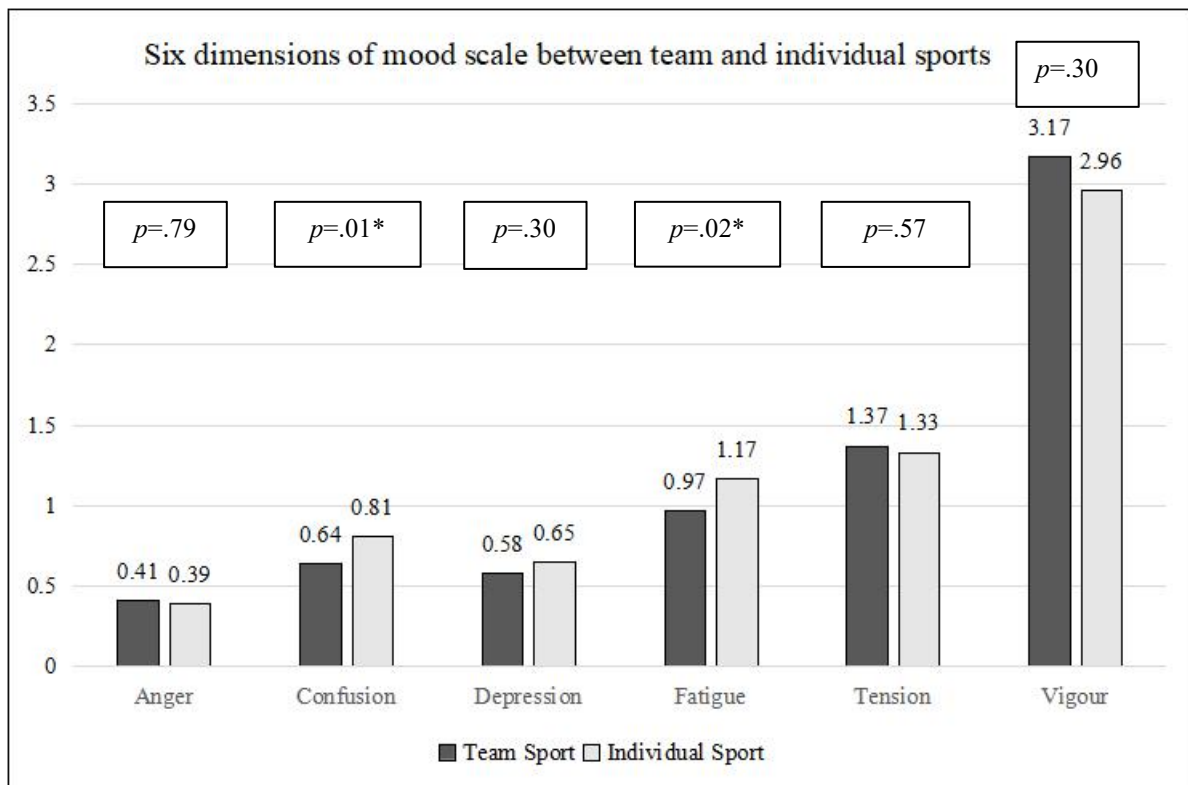


Figure 1. The difference for six dimension of mood scales between team and individual sports.

Figure 1 shows the difference of six dimension of mood scale between team and individual sports. The study showed that there was a significant difference in confusion and fatigue. In other hand, there was no significant difference in depression, tension, vigour and anger between individual and team sports.

Discussion

Anger is among the most frequently experienced states in competitive sports (Hanin & Syrja, 1995; Hanin, 2000; Robazza & Bortoli, 2003). In this study, there was no significant difference between anger ($p=.79$) on team sports ($M=.41$) and individual sports ($M=.39$). Anger caused athletes to feel annoyed, bitter, angry and bad tempered. The results carried out from both individual and team sports caused by the spectators as well as loud cheering from the rival's team supporters are the same between both sports. This study is in contrast with Mehdipoor Keikha et al. (2013), which claimed that team sport shown higher

anger an hour before the competition as compared to individual sports.

Despite the insignificant difference of anger between both type of sports, team sports showed higher mean which was 0.02% higher than individual sports. The researcher can conclude that individual sports used in the present study (that includes archery, gold and bowling) probably required more concentration, and precision with lower level of anger for optimum performance, while sports (team sports include rugby, karate and taekwondo) that require physical strength may have advantages if the athletes have higher score of anger prior to competition.

Studies have found that athletes from sports with more physical contact tend to be more aggressive (Guilbert, 2006). For that reason, aggressive can lead to anger which may improve the athlete physical strength. Anger may lead to the increment of vigour, thus leads to greater motivation for a higher physical strength. For example, in rugby, anger may lead to aggression

thus, increase physical strength and may increase the performance as well. McGowan and Miller (1989) stated that anger in the female winner karateka may indeed use to enhance self-confidence. Terry and Slade (1995) also found that the male winning karateka score higher on pre-competition anger as well as self-confidence.

When athletes experienced confusion, athletes may feel confused, mixed up, muddled and uncertain things. Result showed that there was a significant difference of confusion ($p=.01$) between team sports ($M=.64$) and individual sports ($M=.81$). This may due to the lack of recognition of the athletes about the opponents. Individual athlete tends to feel more nervous and uncertain to perform because athletes did not know the performance of the rival. Thus, this make the individual athletes more difficult in planning a strategy for the competition. On the other hand, a member of a team sports usually not entirely changed, thus some of the team player may know at least several of the rivals. Athletes will acknowledge appropriate and best tactical and technical strategies in order to face the rival in a competition. This may have explained the significantly confuse feeling in individual athletes as compared to team sport. The result of the present study was also parallel to Mehdipoor Keikha et al. (2013).

Results showed that there was no significant difference of depression ($p=.30$) between team sports ($M=.58$) and individual sports ($M=.65$). Due to all the preparation made prior to the game, both of team and individual sports athletes were concluded to experience similar level of depression and worry with the outcome performance. All athletes need to achieve set goals to meet the expectation of the coach, family and friends. Mehdipoor Keikha et al. (2013) also claimed that depression showed greater rate for both team and individual sports before the

competition begin. Despite the insignificant difference between both sports, individual sports shown a higher score in depression with 0.07% greater than team sports. This could be due to the structure of single individual games which expose the athletes to bear the hardship of the game by him/herself. In team sport, it allows the athletes to share the hardship or problem as a whole team. Basharat, Abbasi and Mirzamani (2008) stated that teammates' mood state may affect every individual's mood state. As an example by lifting up the mood and motivates each other will help to psych up the team especially new team members. Nevertheless, the negative mood states such anxiety of one individual member may also affect negatively other team members too. This showed how important was each member in team sport in influencing each other when competing in sports. Hence, the depression could be lowered as there will be support and motivation from other team members.

When athletes experienced fatigue, athletes will feel worn out, exhausted, sleepy and tired. Results showed that there was a significant difference ($p=.02$) of fatigue between both type of sports. Individual sports showed higher mean in fatigue ($M=1.17$) than team sports ($M=.97$). Individual athletes significantly feel fatigue as the athlete train alone with the coaches and fight individually with other athletes that may have the similar training session. Training individually by themselves may contribute the lower level of motivation as compare to team sports. Most individual athletes feel the lack of motivation compare to the team sport. Conversely, in team sports the pressure of training and stress distribute the whole team, thus allow them to talk, discuss and support each other.

James and Lane (2002) indicated that the high level of fatigue could be an indicator of staleness or over training. Besides,

when athletes fail to recover from training, the athletes could grow a progressive fatigued and suffer from prolonged under performance (Richard Budgett, 1998). Most of athletes will experienced the over training syndrome which also defined as the over training syndrome; a condition of fatigue and less successful, often associated with frequent infections and depression which occurs following hard training and competition.

Tension is linked to the feeling of panic, anxious, worried and nervous. Results showed that there was no significant difference ($p=.57$) in tension between team sports ($M=1.37$) and individual sports ($M=1.33$). It illustrated that all athletes regardless of the type of sport were experiencing the same amount of tension on them. Apart from that, it also illustrated that coaches and trainers put equal amount of concentration and focus for both team sports and individual sports athletes since the aim of participation in a competition is to perform athlete's personal best or to win. This produce great tension towards the athletes.

Despite the insignificant difference on tension, team sports showed higher score in tension (0.04%) more than individual sports. Perhaps it is because of the structure of the team game that require tremendous amount of cooperation required between team members such as game strategy in order to achieve the goal. The inability to understand each other may arise conflict in the team. Those factor may explain the tension felt by team sports athletes. It is very important for the athletes to find the solutions to deal the negative mood states to deal or avoid distractions when competing.

Lim, Balbir and Chong (2011) states that vigour as positive factor that play the significant roles in predicting sports performance among athletes. The result showed that there was no significant

difference ($p=.30$) in vigour between team sports ($M=3.17$) and individual sports ($M=2.96$). This may because both team and individual athletes feel energetic before the competition begun. Neil, Hanton, Mellalieu and Fletcher (2011) stated that when athletes are in a positive mood, athletes attempt more actively before competition.

Despite the insignificant difference, team sports showed 0.21% higher mean than individual sports. Mehdipoor Keikha et al. (2013) stated that the vigour usually increased one hour before competition due to the fact of hype up, thus, increasing self confidence among team members. Athletes in team sports that showing a high self-confidence would boost other's (team members) confidence too.

Conclusion

In the six dimensions of mood scale, there was a significant difference recorded in fatigue and confusion between team sports and individual sports among young athletes, while on the other hand there was no significant difference on depression, tension, vigour and anger.

Researcher found that the mean of confusion, fatigue and depression were higher in individual sports. This were probably because the nature of individual sports that train competitively individually against other, mostly bear the hardship and failure alone with coaches thus resulted on higher mean of confusion, fatigue and depression within the athlete. Meanwhile, team sport allows the athletes to share, discuss the problems, and support each other within the team resulted in lower confusion, fatigue and depression. That help to boost self-confidence, trust and spirit amongst the team.

Researcher also found that vigour and anger were higher in team sports because

anger may increase vigour hence produce a better physical strength in team sports.

Last but not least, from the recent research, researcher would like to emphasize that it is crucial assessing mood states among athletes prior to the competition is very important. Coaches should focus on psychology of athletes as well as other physical preparation because psychology believed to include in training by 10%, while in a competition, psychology claimed may influence 90% of the performance (Kuan, 2017).

Recommendations

The future researcher should go in depth by integrating the effect of mood states to outcome performance (winning or losing). This will help in investigating or reviewing the effect and relationship between mood states and performance outcome (winning/losing). This will significantly be helpful for the coaches, athletes and sports scientist to regulate and set the appropriate mood prior to and during competition.

Practical Application

The results of the study can be applied as a references of the mood state prior to the competition. Hence with the result presented, it allows coaches, sports psychologist and athletes to acknowledge the psychological states of athletes prior to the game and prepare psychological methods or solutions needed including imagery, self-talk and peep-talk, in order to regulate appropriate mood in order to improve the athlete's performance/physical strength in sports. This investigation will help to produce large number of athletes that have better ability in controlling emotion especially before and during competition.

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