# Evaluating Psychological Traits of Taekwondo Athletes Competing in World Classes and League superior

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*Abstract*

*The present research deals with psychological traits of Taekwondo athletes in global and division classes. The study population included all taekwondo athletes in Iran. The research sample involves 110 taekwondo athletes (54 in world class: world and Olympic medalist and 56 in division one) were chosen as per systematic sampling. For data collection, questionnaire sports oriented Gale (1998), NEO-Five Factor Inventory, Short Form (NEO) - Subject Follow-up (Costa and McGraw, 1985), mental skills assessment questionnaire (Durand Bush and Salmela, 2001) and Anxiety Inventory (Martens, 1977) were used. After determining descriptive statistics (mean and standard deviation), the data were analyzed through one-way ANOVA at the significant level (P<0.05) using SPSS version 21. The results showed that there is significant difference between both groups (motivation) development, mental skills and competitive anxiety and in personality factors except neuroticism there were no significant differences between the two groups. Overall, the results denote on the superiority of world-class athletes compared to division one in psychological characteristic.*

*Keywords: Psychological characteristics, the World class Taekwondo athletes, Taekwondo League Division One*

## 1. Introduction

In today's world, sport has become a powerful tool for identifying potential in different countries. Of the main outstanding aspect of sports are the main important factors involved in the championship and awareness of the various features and functional capacity of the winning athletes. Lack of public recognition on success of teams and athletes leads to waste energy and time and cost because success in professional sports is not only contingent upon defense-related and fitness, but also depends on mental skills (Shahrzad, 2013). Boss Sham pointed out that 90% of the athletes' experiences indicate that when they compete in large field with athletes compete on par in terms of physical fitness, this is psychological fitness ultimately determines winner (Martens, 1993). Arlick & Partington (1988) presented evidence indicating the importance of psychological skills in sports. They found that among variables involved in sport, such as physical and technical variables, only the psychological variables helped to predict the championship with 235 participants in the Canadian Olympic Games. Many modern sport psychology researchers are convinced that the psychological skills are associated with excellence and superiority in sport and these skills are essential for the development of sport and should be refined to achieve high levels of performance (Ali Aghaee, 2005). Elite athletes in many sports that have special mental strategies are associated with specific levels of performance (Elizabeth, 2005). Murphy et al. (1989) found that world class, young elite athletes, squad endowed with better judgment in choosing their mental skills (Shahrzad, 2013).

Many research described and compared the psychological characteristics as the distinguishing factor between sports groups with different competitive levels of performance noted that the characteristics of achievement motivation (McNamara et al., 2010), self-esteem, love, flexibility and realism, tactical and technical capabilities of personality (Brown 2003; quoted from Arshlm & Radnyla, 2004), mental skills (Pashabadi et al., 2011) and competitive anxiety (Ziv & Lidor, 2013). serve as psychological characteristics affecting performance Research on the psychological differences among athletes include Jafari et al. (2006), Kashani et al. (2011), YZ (2009), Yazid et al. (2012) and Sabina et al. (2014). All of them concluded that there was no difference in the mental athlete's components. Research on the lack of psychological differences among athletes involved (Kakhajaleh, 1999; Umenski et al., 2011; Mirzaee & Rahmaniyan, 2008). The role of psychological factors is important in all sports competitions, studies also show that all of the study variables are important

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in skilled performance given the lack of research in sports such as taekwondo and taking the position of the taekwondo field into account in Olympic sport in the world and limited research on the psychology of the psychological differences at the global level and  Division A, improving the growth and development of the sport psychology. In practical debate it helps coaches and sports psychologist to acquaint with the psychological characteristics and psychological differences to better understand the different competitive levels and to develop sports and understanding the importance and role of these variables in sports performance, to match them with the appropriate training.

## 2. Methodology

The present study is causal-comparative research and the participants in this research were Iranian athletes Taekwondo Camps in preparation for the Asian and the World Games in the field of Poomse and Kiorogi in two categories of youth and adults were present at the club level and the internal competition about 110 taekwondo athletes (54 for world class and 56 for league division) both men and women selected in systematically manner. After explaining the necessity and importance of research to the relevant authorities (Taekwondo Federation, armed forces and Taekwondo coaches and Taekwondo board (National and League) permits for research in national taekwondo team in the preparation of the Asian and worldwide camp were prepared from Taekwondo clubs in the province of Tehran and Karaj and coordination of the activity obtained by the researcher with the opportunity to attend training camp and the players were provided on a frequent basis Taekwondo with explanations about the importance and necessity of research and how to complete the booklet and give sufficient time to complete the questionnaire, the sample booklet (Poomse and Kiorogi) in two parts (men and women) distributed and then collected.

## 3. Tools

### 3.1 Achievement motivation (Sports orientation)

Questionnaire sports oriented Gale was used to collect information with reliability and validity 0.86 determined by a questionnaire designed to determine achievement motivation in sports competition and standardized by Bahram, et al. (2002) (r=91 for validity and r=89 for reliability).

The questionnaire consists of three subscales with titles competitiveness, success-oriented and goal-oriented and has 25 items that are scored on a five points Likert (Bahram, et al., 2002).

### 3.2 NEO Personality Inventory

In this study, in order to gather information on Personality the Five-Factor NEO Inventory and Costa Mack Gray (1985) were used. Hasan Hagh Shenas (1999) and Garossi farshi (2001) standardized it.

Validity test coefficient for all five attributes is more than 73%. The questionnaire consisted of five personality factors such as neuroticism, extraversion, agreeableness, conscientiousness and openness, and has 60 items that are scored on a five points Likert (Hagh Shenas, 1999; Shahrzad 2013).

### 3.3 Ottawa Mental Skills Assessment Tool (OMSAT-3)

In order to collect information on mental skills questionnaire by Bush and Salmela (2001) was used with the internal reliability of the questionnaire, 68% -88% and reliability 78% - 96%. The internal consistency of the questionnaire based on the Cronbach alpha was 37% -71% and reliability test-retest was 64% - 92% (Sanati Monfared, 2006).

The questionnaire consisted of 12 mental skills, including target selection, confidence, commitment, relaxation, response to stress, fear, control, refreshment, focus, focus recycling, illustration, mental practice and the race with 48 questions scored based seven points Likert (Sanati Monfared 2006; Vaez Mousavi et al., 2007).

### 3.4 Sport Competition Anxiety Test (SCAT)

Sport Competition Anxiety Test is a test measuring the tendency of an athlete to experience anxiety when competing in a sport. It is used to measure competitive trait anxiety. Test scoring is based on 10 questions that ask individuals how they feel when competing in sports and games. Each item is answered on a three-point scale (often, sometimes, hardly ever)

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and a summary score ranging from 10 (low competitive trait anxiety) to 30 (high competitive trait anxiety) is computed for each respondent (Martens, 1993).

### 3.5 Statistical Method

To data analysis, the statistical description (mean and standard deviation) and statistical inference (one-way ANOWA) after the normal distribution using the Kolmogorov - Smirnov test for equality of variance using Levin test. All statistical operations were performed using SPSS version 21 (P<0.05).

## 4. Results

The present study was designed to "explore the psychological characteristics of Taekwondo athletes in World and League Division One" classes. After data collection results were tabulated in terms of descriptive characteristics (mean and standard deviation) and inferential statistics (ANOVA) and writing reports for the main variables have been documented.

**Table 1.** Statistical description of the taekwondo athlete's characteristics

| Variables | Age | | Number | | Number of years with professional practice (League Racing) | |
|---|---|---|---|---|---|---|
| | SD | M | SD | M | Poomse | Kiorogi |
| **World class** | 23 | 31 | 21/27 | 57/10 | 9/97 | 23 |
| **League division 1** | 26 | 30 | 23 | 6/17 | 2/92 | 26 |

Results Kolmogorov - Smirnov test showed that the all variables in the groups are distributed normally (P>0.5). Levine's test for homogeneity of variance also showed that the variances are equal in all variables (P>0.5). so applying parametric tests and analysis of variance is allowed.

**Table 2.** Results of statistical description of the progress motivation in both taekwondo athletes

| Variable | Class | M | SD |
|---|---|---|---|
| Racing | World class | 50/59 | **11/19** |
| | League division 1 | 54/71 | **7/51** |
| Desire to win | World class | 28/08 | **6/55** |
| | League division 1 | 26/77 | **5/51** |
| Goal-orientation | World class | 26/88 | **2/59** |
| | League division 1 | /0025 | **4/51** |

**Table 3.** ANOVA test results for taekwondo advancement

| Variables | ANOVA | | | |
|---|---|---|---|---|
| | Df | Mean square | F | Sig |
| **Competiveness** | 1 | 627/791 | 6/410 | 0/013 |
| **Desire to win** | 1 | 146.801 | 8/347 | 0/005 |
| **Goal oriented** | 1 | 97/461 | 7/223 | 0/008 |

Data analysis (Table 7) show that in all subscales retail oriented sports such as competitiveness, desire to win and goal oriented, there was significant difference between the two groups (P<0.5).

**Table 4.** Results of the statistical description of personality characteristics in two groups of taekwondo athletes

| Variable | Class | M | SD |
|---|---|---|---|
| Neuroticism | World class | 21/90 | **5/75** |
| | League division 1 | 24/88 | **5/85** |
| Extraversion | World class | 32/01 | **5/55** |

| | | | |
|---|---|---|---|
| flexibility | League division 1 | 30/81 | **12/05** |
| | World class | 25/66 | **5/09** |
| | League division 1 | 26/54 | **10/05** |
| agreement | World class | 29/29 | **5/55** |
| | League division 1 | 30/06 | **7/65** |
| conscientious | World class | 37/26 | **6/03** |
| | League division 1 | 38/42 | **6/63** |

**Table 5.** Results of the ANOVA test on personality characteristics in two groups of taekwondo athletes

| Variables | ANOVA | | | |
|---|---|---|---|---|
| | Df | Mean square | F | Sig |
| **Neuroticism** | 1 | 243/675 | 7/223 | 0/08 |
| **Extraversion** | 1 | 34/342 | 0/385 | 0/536 |
| **flexibility** | 1 | 21/571 | 0/345 | 0/565 |
| **Agreement** | 1 | 16/276 | 0/750 | 0/388 |
| **conscientious** | 1 | 37/437 | 1/295 | 0/275 |

Data analysis (Table 5) show that the personality traits significant differed only in Neuroticism between the two groups, but it was not true for extraversion, flexibility, compromise and conscience(P<0.05).

**Table 6.** Results of statistical description on mental skills between two athletes groups

| Variable | Group | M | SD |
|---|---|---|---|
| Goal setting | World class | 23/68 | **2/98** |
| | League division 1 | 22/14 | **3/28** |
| Confidence | World class | 24/05 | **2/83** |
| | League division 1 | 21/73 | **4/01** |
| commitment | World class | 23/91 | **3/65** |
| | League division 1 | 21/91 | **4/22** |
| Relaxation | World class | 21/05 | **2/99** |
| | League division 1 | 18/79 | **3/88** |
| Stress response | World class | 20/50 | **3/88** |
| | League division 1 | 18/22 | **4/22** |
| Stress control | World class | 18/92 | **3/36** |
| | League division 1 | 17/28 | **2/80** |
| Refreshment | World class | 22/02 | **2/95** |
| | League division 1 | 20/22 | **3/35** |
| concentration | World class | 20/62 | **5/09** |
| | League division 1 | 18/42 | **4/91** |
| Refocus | World class | 17/32 | **3/19** |
| | League division 1 | 15/42 | **3/42** |
| imagination | World class | 21/94 | **4/42** |
| | League division 1 | 19/82 | **3/94** |
| Mental practice | World class | 21/70 | **3/42** |
| | League division 1 | 20/25 | **3/25** |
| Match plan | World class | 21/62 | **3/42** |
| | League division 1 | 21/01 | **3/05** |

**Table 7.** Results of ANOVA on mental skills between two athletes groups

| Variables | ANOVA | | | |
|---|---|---|---|---|
| | Df | Mean square | F | Sig |
| **Goal setting** | 1 | 65/718 | 6/753 | 0/011 |
| **Confidence** | 1 | 148/265 | 12/887 | 0/001 |
| **commitment** | 1 | 109/724 | 7/207 | 0/009 |
| **Relaxation** | 1 | 141/121 | 11/968 | 0/001 |

| | | | | |
|---|---|---|---|---|
| **Stress response** | 1 | 142/156 | 7/923 | 0/006 |
| **Stress control** | 1 | 73/959 | 7/716 | 0/006 |
| **Refreshment** | 1 | 96/117 | 9/569 | 0/003 |
| **concentration** | 1 | 135/648 | 5/417 | 0/022 |
| **Refocus** | 1 | 131/185 | 11/514 | 0/001 |
| **imagination** | 1 | 123/903 | 7/418 | 0/008 |
| **Mental practice** | 1 | 57/467 | 5/153 | 0/025 |
| **Match plan** | 1 | 60/703 | 5/790 | 0/018 |

Data analysis (Table 7) show that all subscales of mental skills including goal selection, confidence, commitment, relaxation, response to stress, fear, control, refreshment, focus, refocus, illustration, mental practice and match plan vary significantly in both groups (p<0.05).

**Table 8.** Results of statistical description of competitive anxiety in both taekwondo athletes

| Variable | Group | M | SD |
|---|---|---|---|
| competitive anxiety | World class | 15/90 | **3/18** |
| | League division 1 | 17/98 | **3/96** |

**Table 9.** Results of ANOVA on competitive anxiety in both taekwondo athletes

| Variables | ANOVA | | | |
|---|---|---|---|---|
| | Df | Mean square | F | Sig |
| **competitive anxiety** | 1 | 118/618 | 9/128 | 0/003 |

Data analysis (Table 9) shows that the competitive anxiety differed significantly between the two groups (P<0.5).

## 5. Discussion and Conclusion

To identify personality athletes characteristics and psychological at all professional levels and to recognize different groups, with lower levels of competition are considered as clues and open trails to determine the scheduling of sport and exercise planners providing the basic information; Hence, in recent years sports psychologists have taken personality and psychological characteristics of athletes as main subject to study. Therefore, the current study examines the psychological characteristics of the Taekwondo athletes in both world classes and division 1 and this study involving psychological characteristics such as achievement motivation, personality traits, mental skills and competitive anxiety. The study results were obtained using analysis of variance as follows.

ANOVA analysis on distinction between psychological characteristics and Taekwondo world classes and division 1 showed that racing, success orientation and goal-orientation were differed significantly between the two groups so that latter acquired higher scores on components of racing, success-oriented and goal-oriented manner. These are in line with Unierzyski (2003), Melki et al. (2011), Wartenberg & McCutcheon(1988) who stated that athletes at high levels (international) compared to athletes lower levels (national athletes, academic and amateur) at three scales SOQ, and in general have more athletic achievement motivation. However, they are not in line with Khan & Haider (2012), They dealt with achievement motivation among athletes (badminton, basketball, hockey and tennis) at national and international levels and the results showed that the levels of international players to the national team had lower achievement motivation. The inconsistency may be due to differences in the study population and the level of competition in the study. The present findings are in line with other research Skordtlis et al. (2003) and Ahmadi (2009) on win orientation or those by Finn et al. (1998) on competitiveness and not confirmed by Skordtis (2003) and Ahmadi (2009), on goal and success orientation and Finn (1998), goal and success. The inconsistency may be due to differences in the study population and the level of competition in the relevant research. They compared achievement motivation research team compared the top and bottom of the league. According to Kokaridas et al. (2005) and Elizabeth et al. (2005) this seems to confirm that people with high achievement motivation rather than with the usually the results of their performance and are responsible for the success and providing a better understanding of the experience of successful athletes in the world will increase achievement motivation. The findings also showed that in personality factors except neuroticism there were no significant differences in other factors so that division one athletes obtained a lower score and findings of this study are in

line with the results Allen et al. (2011), Kierkaldy (1982), Fratzk (1975) and their research showed that neuroticism personality traits in the athlete group were lower than others and high levels of neuroticism are less competitive compared to group with low competitive levels. Study by Vipene (2013) and Shahrzad (2013) showed that athletes in personality traits of neuroticism obtained lower scores compared to non-athletes.

Neuroticism represents the experience of negative emotions, such as anxiety, anger or depression (Johnson, 2000; quoted Ali Aghaee, 2005). It seems that the number of years of practice experience in Taekwondo will lead to lower neuroticism, since it is negatively correlated with success at high levels (Shahrzad, 2013; Ali Aghaee, 2005). Similar results on relationship between neuroticism and participation in sport can be found in Mac Cleves (2003) and Lodvic (1980) who pointed out that athlete's score on a scale of neuroticism levels were significantly lower than non-athletes. The findings also showed that neuroticism is somewhat reduced by exercise (Chavris, 2009). The findings also showed that the mental skills in all subscales of mental skills were significantly differed so that those in league division 1 achieved a higher score. Importance of mental skills has been repeatedly expressed and investigating the relationship between the success of these skills and sports athletes performance dealt with factor between success and failure. Orrick and Parrington (1988), Kruger (2010) confirmed this.

Athletes at a high level competition seem area affected by high levels of stress, so athletes can tolerate high external pressure, to maintain their optimum performance. To deal with this stress, athletes adopt certain strategies and the mental skills to improve their confidence and protection. The other strongpoint on mental skills is that these skills are learned (Vaez Mousavi et al., 2007). It seems that due to stressful experience events Taekwondo athlete learn to develop their mental skills to focus on high-pressure situations, confidence and better mental performance as well as positive interpretation of competitive anxiety. Numerous studies have shown that competitive anxiety in successful athletes is lower than others our research findings confirm these (kakhajaleh, 1998; Neil et al., 2012; Géczi et al., 2009).

Current research findings is not in line with that by Soltani et al. (2012), who showed that that is no difference between groups in terms of anxiety, probably a due to difference in skill level and the target population. As a whole, results indicate that regular physical activity lowers anxiety to much extent (Lut.tamam, 2010; Neil et al., 2012).

The skilled athletes adopt competitive anxiety in better manner and anxiety in sports is affected by age, training, abilities (skills) and previous achievements (Hanton et al., 2008; Kul et al., 2008). So it seems that Taekwondo is a reducing factor in competitive anxiety. The current results highlighted role of competitive experience and performance of competitive anxiety. The last but not the least, findings indicate world class athletes outperformed psychological and it seems that these psychological characteristics are common among elite athletes: High self-esteem, anxiety, low and high motivation are closely related, and it seems to be a cyclical pattern. It also appears that the competitive experience is a factor influencing the psychological characteristics and on the other hand it may be psychological characteristics is associated with success in competitive levels Thus, sports psychologists, sports scientists, coaches who are active in the field of Taekwondo recommended to adopt scientific methods to the develop psychological characteristics of in low-class athlete to talent nurturing and attain to achievements.

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