A comparative study of mental toughness in elite taekwondo players

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Abstract
The beneficial effects of mental toughness in terms of sports performance have been found in sports psychology literature. But the results are somewhat inconsistent not only in terms of effect of mental toughness on sports performance but its theoretical framework. In view of these contradictory findings and variability of definition and framework of mental toughness, the objective to the present study is to compare mental toughness between elite and sub-elite Taekwondo players. To conduct the study, 50 elite male Taekwondo players (between ages 15-20 years) were selected as sample. Similarly 50 sub-elite male Taekwondo players (between ages 15-20 years) were also selected as sample for the present study. The selection of elite male Taekwondo players were done from only those who took part in District, State or National level tournaments as well as who came in First Three position in various weight categories. The criterion for selection of sub – elite male Taekwondo players was set to participation in district level events in various weight categories. Purposive sampling method was used for selection of subjects. To assess mental toughness, 6 dimensional mental toughness inventory prepared by Tiwari (2007) was used. Results showed that mental toughness of elite male Taekwondo players was significantly superior as compared to sub – elite male Taekwondo players. On the basis of results, it may be concluded that at the highest level where physical, tactical and technical ability of Taekwondo players are almost same, psychological quality such as mental toughness differentiates between winners and looser.

Keywords: Taekwondo players, elite, mental toughness, physical, tactical and technical ability.

Introduction
Psychological variables have been considered to be one of most important facilitator in terms of sports performance. One of the psychological variable i. e. mental toughness has been considered most Potgieter (2001) definition of mental comprise of motivation level, coping skills, confidence maintenance, cognitive skill, discipline and goal directedness, competitiveness, possession of prerequisite physical and mental requirements, team unity, preparation skills, psychological hardiness and ethics. The sports psychologist has included quite a few aspects while describing mental toughness. Researchers like Moradi et al. (2013) [1], Sathe (2013) [3], Ghosh (2014) [4], Ragab (2015) [5] have also documented the beneficial effects of mental toughness in terms of sports performance. But the performance but its theoretical framework. In view of these contradictory findings and variability of definitions and framework of mental toughness, researcher decided to compare mental toughness of elite and sub elite male Taekwondo players. The choice of Taekwondo players in the present study is associated with physical as well as mental demands of this sport. The other reason to study mental toughness of elite and sub elite Taekwondo players is dearth of studies although few studies are found in research literature on psychological aspects of Taekwondo players conducted by Singh and Singh (2013) [6], Saini and Sinha (2013) [7], Elemiri and Aly (2014) [8] etc.

Hypothesis
It was hypothesized that elite male Taekwondo players will show more magnitude of mental toughness as compared to sub elite male Taekwondo players.

Methodology
To test the above mentioned hypothesis, following procedure was adopted:
Sample
To conduct the study, 50 elite male Taekwondo players (between ages 15-20 years) were selected as sample. Similarly 50 sub – elite male Taekwondo players (between ages 15-20 years) were also selected as sample for the present study. The selection of elite male Taekwondo players were done from only those who took part in District, State and National level Taekwondo tournaments as well as who came in First Three positions in various weight categories. The criterion for selection of sub – elite male Taekwondo players was set to participation in district level events in various weight categories. Purposive Sampling method was used for selection of subject.

Tools
To assess mental toughness of selected male Taekwondo players, mental Toughness Questionnaire prepared by Tiwari (2007) was used. It consists of 48 items which measures overall mental toughness covering sub variables i.e. self-confidence, motivation, attention control, goal setting, visual and imagery control and attitude control.

Procedure
Mental toughness inventory prepared by Tiwari et al. (2007) was administered to all 100 subjects according to their availability and convenience. After scoring mental toughness as per author’s manual, it was tabulated according to their respective study groups. To compared mental toughness of elite and sub – elite male Taekwondo players, independent sample ‘t’ test was used. The result is presented in table 1.

Result and Discussion

Table 1: Comparison of Mental Toughness between Elite and sub – elite Male Taekwondo players

<table>
<thead>
<tr>
<th>Groups (Male Taekwondo players)</th>
<th>Mean</th>
<th>S. D.</th>
<th>Mean Difference</th>
<th>‘t’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elite (N = 50)</td>
<td>195.74</td>
<td>26.36</td>
<td>30.08</td>
<td>3.62**</td>
</tr>
<tr>
<td>Sub – elite (N = 50)</td>
<td>165.66</td>
<td>52.39</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Entries reported in table 1 reveal statistically significant difference in mean mental toughness scores of elite and sub – elite male Taekwondo players. The reported t = 3.62, which is statistically significant at .01 level, indicate that mental toughness in elite male Taekwondo players (M = 195.74) is significantly superior as compared to sub – elite male Taekwondo players (M = 165.66). The result clearly indicates that elite male Taekwondo players are mentally tougher as compared to sub – elite male Taekwondo players. Mental toughness encompasses sub variables such as self-confidence, motivation, attention control, goal setting, visual and imagery control and attitude control. Hence there is no surprise that elite male wrestlers showed more magnitude of mental toughness as compared to sub – elite male Taekwondo players because all these above mentioned psychological characteristics which constitute mental toughness have significant bearing upon sports performance. In a similar study with different psychological construct of mental toughness, Elemiri and Aly (2014) found similar result.

Conclusion
On the basis of results, it may be concluded that there exist a significant association between performances of male Taekwondo players with their mental toughness. It may also be concluded that apart from Physical, tactical and other allied skill, mental toughness is the foremost psychological requisite to achieve success at highest level in Taekwondo arena.

References