Chapter V
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SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Research on the mental skill, mental toughness and anxiety aspect of athletes has been an important area of investigation. Taking athletes into account, differences concerning mental skill and mental toughness of different sport groups have been investigated by many researchers in other countries. We assume that such studies are also required in the context of Indian athletes.

The purpose of the study is to assess the psychological profile of Indian track and field athletes.

The subordinate purpose of the investigation is to look into:

1. The psychological differences between the senior and junior track and field athletes for both female and male section.

2. The mental skills, mental toughness, state and trait anxiety of female and male track and field athletes of junior and senior sections.

On the basis of literature gone through, research finding and the scholar’s understandings of the problem, following hypothesis are formulated.

Hypothesis 1: There would be significant difference between the senior and junior track and field athletes in their score of mental skill.

Hypothesis 2: There would be significant difference between the senior and junior track and field athletes in their score of mental toughness.

Hypothesis 3: There would be significant difference between the senior and junior track and field athletes in their score of anxiety (State and Trait)
For the purpose of the study 125 athletes in the age group of 13-25 years, from the sport discipline of track and field, having the playing experience of 3-12 years of national level competition were selected as subjects. Junior and senior athletes of Indian camp were the subjects.

The first section was demographic information sheet consisting of several questions used to describe the sample’s age, gender and number of years participating in sport.

The test item selected for psychological parameter to be assessed for this study was

1. Mental Skills Questionnaire
2. Mental Toughness Questionnaire
3. State and Trait Anxiety Inventory

Mental Skills questionnaire measures various aspects of mental skills such as imagery ability, mental preparation, self confidence, anxiety and worry management, concentration ability and relaxation ability.

Mental toughness questionnaire measures various aspects of mental toughness such as:

1. Reboundability
2. Dealing with Pressure
3. Concentration
4. Confidence
5. Motivation
6. Overall Mental Toughness

Findings and discussion with regards to an understanding of the psychological profile of Indian track and field athletes has been presented here. Prior to the testing of hypotheses the demographic background of the present sample was taken into consideration to get an indepth knowledge of the sample. They belong to the elite group being part of Indian National Athletic Team.

The demographic information includes age, sports achievement, training hours, years of participation, and psychological factor that contribute for success for the present sample of track and field athletes. The athletes that were opted were from both the gender and belong to two different categories that are junior and senior.
The mean and SD of Jr. girls in their demographic status in total for their age; years of participation; training hours and psychological factor for success is 16.98 ± 1.52, 4.55 ± 2.09; 4.94 ± 1.92; 7.6 ± 3.30 respectively.

The mean and SD of Sr. girls in their demographic status in total for their age; years of participation; training hours and psychological factor for success is 22.05 ± 1.9, 6.9 ± 1.94; 4.50 ± 0.86; 9.1 ± 1.59 respectively.

The mean and SD of Jr. boys in their demographic status in total for their age; years of participation; training hours and psychological factor for success is 17.93 ± 1.2, 4.14 ± 1.79; 5.3 ± 0.96 and 8.45 ± 2.61 respectively.

The mean and SD of Sr. boys in their demographic status in total for their age; years of participation; training hours and psychological factor for success is 23.79 ± 3.65, 7.11 ± 2.67; 4.97 ± 1.11; and 8.05 ± 2.47 respectively.

In both section it was observed that the senior athlete do gave their opinin that psychological factor plays a very important role in their success factor apart from there training and participation.

Further the present study was designed to test the following hypotheses:

**Hypothesis 1:** There would be significant difference between the senior and junior track and field athletes in their score of mental skill.

Among all the variables of the mental skills i.e. imagery ability (F=1.62, p=.188), mental preparation (F=14.17, p=0.000), self confidence (F=7.19,p=0.000), anxiety and worry management (F=4.39, p=0.006), concentration ability (F=2.74, p=0.056) and relaxation ability (F=2.05, p=0.111), there was a significant difference in mental preparation, self control and anxiety & worry management only. The junior girls had least mental preparation among the groups. The mean score of self confidence varied significantly in comparison to the mean scores of junior girls and senior girls. In anxiety and worry management junior boys have found to be better than junior girls and senior boys.
The hypothesis hence stated for mental skill is accepted for the factors of mental preparation, self control and anxiety & worry management.

**Hypothesis 2**: There would be significant difference between the senior and junior track and field athletes in their score of mental toughness.

Among all the variables of the mental toughness i.e. there was a significant difference in confidence only (F=3.75, p=0.01). In mental toughness the junior boys’ mean score varied significantly from the confidence level of senior boys. A positive mean difference denotes that the junior boys had better confidence than the senior boys. Hence the hypothesis stated is accepted in this factor.

In reboundability (F=1.58, p=.19), ability to handle pressure (F=2.14, p=0.09), concentration ability (F=1.06, p=0.37), motivation (F=2.15, p=0.09) and total mental toughness there was no significant difference. Hence the hypothesis stated was rejected here.

**Hypothesis 3**: There would be significant difference between the senior and junior track and field athletes in their score of anxiety (State and Trait)

The calculated f value for the state anxiety (F=4.21) was found to be significant 0.05 level of significance (p=0.01), which indicated that there is a significant difference among the sports achievement groups in state anxiety. In case of trait anxiety (F=2.61) the calculated f value was not found to be significant at 0.05 level of significance.

The null hypothesis may not be accepted. It may be owing to the reason of sample size.

**Recommendations**

On the basis of the findings of the study and conclusions drawn, the following recommendations are made:

1. Research studies need to be designed keeping in mind the kind of sport the athlete play and how that sport affects various psychological aspects that have a high relevance on the performance in that particular sport.
2. Research should establish guidelines for appropriate training levels. When establishing these guidelines, scholars should consider areas relating to athletes’ coping strategies, in order to get an idea about how the athletes cope up with the training demands.

3. We need to increase our research agenda to be more inclusive. For example, future research must be expanded beyond an analysis of highly competitive sport to include a broader range of activities (e.g., personal fitness) and settings (e.g., physical education classrooms).

4. Research studies must utilize an interdisciplinary perspective. We also need to develop "research teams" that enhance partnerships between scholars and practitioners.

5. Future research should be guided by the principle that strategies for identification and development of talent in sport should give consideration to various predictive model and profiles in Psycho-physiological aspects of the athletes.

6. Profiling studies of such kind should motivate the scholars to take up longitudinal research in understanding the psycho-physiological abilities of athletes at various grass root level of performance throughout various stages of growth and development, which will add clarity in understanding the performance characteristic of athletes in the country.

7. The study may be conducted on subjects of different age groups and sex.

8. The study may be done for athletes of different level and with larger sample.

9. Physical Education Teachers, Coaches and athletes may use the goal setting and feedback training programs while formulating their training programs.