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An investigation of mental health in national, state and district level handball players

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Abstract

The purpose of this study was to compare Mental Health among National Level, State Level and District Level Handball Players. For the purpose of this investigation Seventy (N=70), Male subjects between the age group of 18-28 years (Mean \pm SD: Age 21.942 ± 2.442 (yrs), Body Height 168.2 ± 5.864 (cm), Body Mass 65.16 ± 4.089 (kg)) volunteered to participate in the study. The investigator has used the Mental Health Battery (MHB) constructed by (Singh and Gupta, 2000) for measuring all the dimensions of mental health of the subjects and their overall mental health. The Statistical Package for the Social Sciences (SPSS) was used for all analyses. To conclude, it is significant to mention in relation to Emotional Stability, Overall Adjustment, Autonomy, Intelligence and Mental Health that results of Analysis of Variance (ANOVA) among Handball Players (i.e., National Level, State Level and District Level) were found statistically insignificant ($P > .05$). Furthermore, in relation to Security-Insecurity and Self-Concept that result of Analysis of Variance (ANOVA) among Handball Players (i.e., National Level, State Level and District Level) were found statistically significant ($P < .05$).

Keywords: Mental health, emotional stability, overall adjustment, autonomy, security-insecurity, self-concept, intelligence

1. Introduction

Despite the stressors athletes face, there is a paucity of research on the mental health of elite athletes (Reardon and Factor, 2010; Hughes and Leavey, 2012) ^[1, 2]. A study of elite athletes in Australia reported almost half were experiencing symptoms of a mental health problem, and the proportion meeting caseness cutoffs for mental illness were deemed comparable to community data (Gulliver *et al.*, 2015) ^[3]. More broadly, (Rice *et al.*, 2016) ^[4] conducted a systematic narrative review and also suggested the prevalence of mental illness in elite athletes was comparable to the general population. The authors cautioned that relatively few studies in this area are methodologically rigorous or well reported and that more high-quality systematic and intervention research is required.

There are several barriers to elite athletes accessing help for mental health concerns. Competitive athletes may have less positive attitudes toward help-seeking for mental health problems than non-athletes (Watson, 2005) ^[5], perhaps partially due to being perceived as a weakness (Bauman, 2016) ^[6]. This perceived stigma among elite athletes is a primary barrier, followed by a lack of awareness of mental health problems, and negative past experiences of seeking help (Gulliver *et al.*, 2012a) ^[7]. Moreover, some sporting organizations may not recognize the prevalence and significance of mental health problems in elite athlete populations access to timely and appropriate care is likely to be restricted if athletes do not feel that the culture of sporting organizations are supportive of these issues.

2. Material and Methods

2.1 Selection of Subjects

For the purpose of the present study, Seventy (N=70), Male subjects between the age group of 18-28 years (Mean \pm SD: Age 21.942 ± 2.442 (yrs), Body Height 168.2 ± 5.864 (cm), Body Mass 65.16 ± 4.089 (kg)) volunteered to participate in the study. The demographics of subjects are brought forth in Table-1.

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Table 1: Subject’s Demographics (N=70) of Handball Players (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30))

Variable (s)	Sample Size (N=70)			
	Total N=70	National Level (N ₁ =15)	State Level (N ₂ =25)	District Level (N ₃ =30)
Age (yrs)	21.942±2.442	22.26±3.514	21.84±1.92	21.86±1.84
Body Height (cm)	168.2±5.864	167.8±6.54	168.44±5.37	168.2±6.09
Body Mass (kg)	65.16±4.089	63.09±4.90	65.24±3.21	66.13±4.04

N; sample size, yrs; years, cm; centimeters, kg; kilograms.

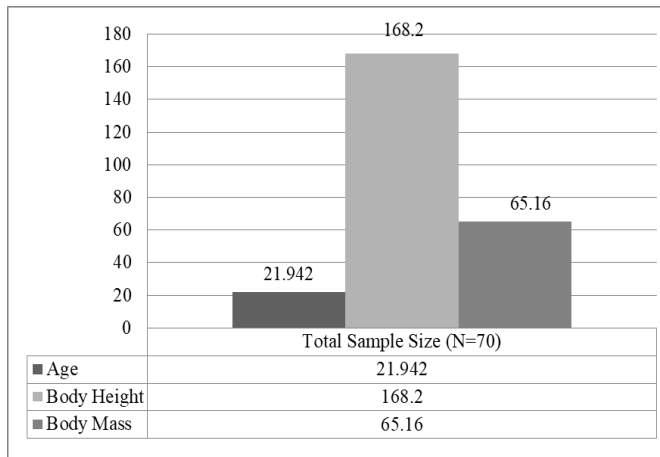


Fig 1: Subject’s Demographics (N=70) of Handball Players (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30))

3. Selection of Tools

Mental Health Battery (MHB)

The investigator has used the Mental Health Battery (MHB) constructed by Singh and Gupta (2000) for measuring all the dimensions of mental health of the subjects and their overall mental health. The six areas of mental health covered by this battery are:

- Emotional Stability
- Overall Adjustment

Table 2: Analysis of variance (ANOVA) results among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Emotional Stability

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	10.311	2	5.156	1.267	.288
Within Groups	272.560	67	4.068		
Total	282.871	69			

The p-value is .288. The result is not significant at $p > .05$.

Table 3: Analysis of variance (ANOVA) results among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Overall Adjustment

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	5.836	2	2.918	.302	.740
Within Groups	646.507	67	9.649		
Total	652.343	69			

The p-value is .740. The result is not significant at $p > .05$.

Table 4: Analysis of variance (ANOVA) results among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Autonomy

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	8.978	2	4.489	1.241	.296
Within Groups	242.293	67	3.616		
Total	251.271	69			

The p-value is .269. The result is not significant at $p > .05$.

- It is evident from Table-2 that results of Analysis of Variance (ANOVA) among Handball Players with regards to Emotional Stability were found statistically insignificant ($P > .05$).

- Autonomy
- Security–Insecurity
- Self-Concept
- Intelligence

The battery consisted of 130 items covering all the areas of mental health. Validity coefficient for various items was found to be significant at .01 levels. Both temporal stability reliability and internal consistency reliability of the questionnaire were computed.

4. Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) was used for all analyses. The differences in the mean of each group for selected variable were tested for the significance of difference by One-way Analysis of Variance (ANOVA). For testing the hypotheses, the level of significance was set at 0.05.

5. Results

For each of the chosen variable, the result pertaining to Analysis of variance (ANOVA) among National Level, State Level and District Level Handball Players on the variable Mental Health. (i.e., Emotional Stability, Overall Adjustment, Autonomy, Security- Insecurity, Self-Concept and Intelligence) are presented in the following tables:

- It is evident from Table-3 that results of Analysis of Variance (ANOVA) among Handball Players with regards to Overall Adjustment were found statistically insignificant ($P > .05$).

- It is evident from Table-4 that results of Analysis of Variance (ANOVA) among Handball Players with

regards to Autonomy were found statistically insignificant ($P > .05$).

Table 5: Analysis of variance (ANOVA) results among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Security–Insecurity

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	27.440	2	13.720	3.816	.027
Within Groups	240.860	67	3.595		
Total	268.300	69			

The p-value is .027. The result is significant at $p < .05$.

- It is evident from Table-5 that results of Analysis of Variance (ANOVA) among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30)) with regards to Security–Insecurity were found statistically significant ($P < .05$). Since the obtained F-value was found significant, therefore, post-hoc test was employed to study the direction and significance of differences between paired means. The results of post-hoc test have been presented in Table-6.

Table 6: Analysis of post-hoc test among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Security–Insecurity

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
National (11.2667)	State	1.30667	.116
	District	1.63333*	.030
State (9.9600)	National	-1.30667	.116
	District	.32667	.817
District (9.6333)	National	-1.63333*	.030
	State	-.32667	.817

- A glance at Table-6 showed that the mean value of National group was 11.2667 whereas State had mean value as 9.9600 and the mean difference between both the groups was found 1.30667. This shows that the National group had demonstrated significantly better on Security–Insecurity than their counterpart’s 9.9600group.
- The mean value of National group was 11.2667 whereas District had mean value as 9.6333 and the mean difference between both the groups was found 1.63333. This shows that the National group had demonstrated significantly better on Security–Insecurity than their counterpart’s 9.6333group.
- The mean value of State group was 9.9600 whereas District had mean value as 9.6333 and the mean difference between both the groups was found .32667. This shows that the State group had demonstrated significantly better on Security–Insecurity than their counterpart’s 9.9333group.

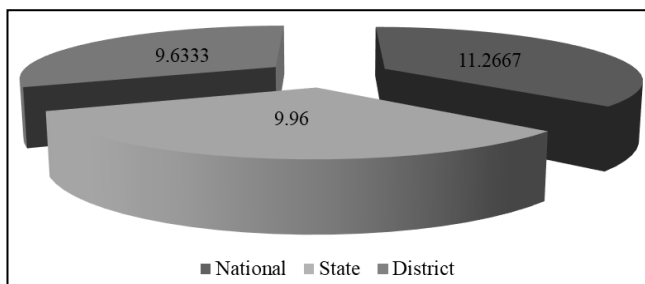


Fig 5: Graphical representation of mean scores Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Security–Insecurity

Table 7: Analysis of post-hoc test among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Self-Concept

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	38.171	2	19.086	4.964	.010
Within Groups	257.600	67	3.845		
Total	295.771	69			

The p-value is .010. The result is significant at $p < .05$

- It is evident from Table-7 that results of Analysis of Variance (ANOVA) among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Self-Concept were found statistically significant ($P < .05$). Since the obtained F-value was found significant, therefore, post-hoc test was employed to study the direction and significance of differences between paired means. The results of post-hoc test have been presented in Table-8.

Table 8: Analysis of post-hoc test among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Self-Concept

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
National (10.0667)	State	1.06667	.257
	District	-.60000	.628
State (9.0000)	National	-1.06667	.257
	District	-1.66667*	.010
District (10.6667)	National	.60000	.628
	State	1.66667*	.010

- A glance at Table-8 showed that the mean value of National group was 10.0667 whereas State had mean value as 9.0000 and the mean difference between both the groups was found 1.06667. This shows that the National group had demonstrated significantly better on Self-Concept than their counterpart’s 9.0000 group.
- The mean value of National group was 10.0667 whereas District had mean value as 10.6667 and the mean difference between both the groups was found .60000. This shows that the District group had demonstrated significantly better on Self-Concept than their counterpart’s 10.0667group.
- The mean value of State group was 9.0000 whereas District had mean value as 10.6667 and the mean difference between both the groups was found 1.66667. This shows that the District group had demonstrated significantly better on Self-Concept than their counterpart’s 9.0000 group.

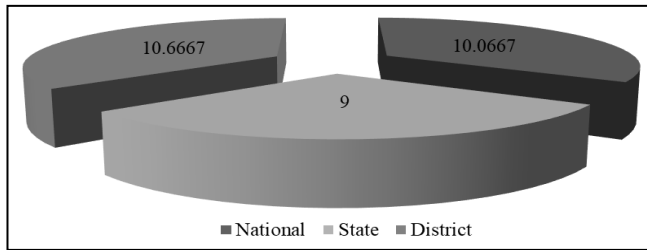


Fig 5: Graphical representation of mean scores Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Self-Concept

Table 9: Analysis of variance (ANOVA) results among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Intelligence

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	18.260	2	9.130	.676	.512
Within Groups	904.540	67	13.501		
Total	922.800	69			

The p-value is .512. The result is not significant at $p > .05$.

- It is evident from Table-9 that results of Analysis of Variance (ANOVA) among Handball Players with regards to Intelligence. were found statistically insignificant ($P > .05$).

Table 10: Analysis of variance (ANOVA) results among Handball Players (N=70) (i.e., National Level (N₁=15), State Level (N₂=25) and District Level (N₃=30) with regards to Mental Health

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	51.531	2	25.766	1.042	.358
Within Groups	1656.240	67	24.720		
Total	1707.771	69			

The p-value is .358. The result is not significant at $p > .05$.

- It is evident from Table-10 that results of Analysis of Variance (ANOVA) among Handball Players with regards to Mental Health were found statistically insignificant ($P > .05$).

6. Hypothesis Testing

It was hypothesized that there will be significant differences among National Level, State Level and District Level Handball Players on the variable Mental Health (i.e., Emotional Stability, Overall Adjustment, Autonomy, Intelligence, Security–Insecurity and Self-Concept).

At this point in the research study, the researcher rejected the hypothesis of this study.

7. Conclusions

To conclude, it is significant to mention in relation to Emotional Stability, Overall Adjustment, Autonomy, Intelligence and Mental Health that results of Analysis of Variance (ANOVA) among Handball Players (i.e., National Level, State Level and District Level) were found statistically insignificant ($P > .05$).

Furthermore, in relation to Security–Insecurity and Self-Concept that result of Analysis of Variance (ANOVA) among Handball Players (i.e., National Level, State Level and District Level) were found statistically significant ($P < .05$).

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