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Baljinder Singh Bal

Assistant Professor, Department
of Physical Education (T), Guru
Nanak Dev University,
Amritsar, Punjab, India

Kamal Kishore

Department of Physical
Education (T), Guru Nanak Dev
University, Amritsar, Punjab,
India

Jaswant Singh

Department of Physical
Education (T), Guru Nanak Dev
University, Amritsar, Punjab,
India

Gurjit Singh

Department of Physical
Education (T), Guru Nanak Dev
University, Amritsar, Punjab,
India

A study of mental health among university level handball players

Baljinder Singh Bal, Kamal Kishore, Jaswant Singh and Gurjit Singh

Abstract

The purpose of this study was to compare Mental Health among Handball Players of Guru Nanak Dev University, Panjab University and Punjabi University. For the purpose of this investigation One Hundred Forty Four (N=144), Male subjects between the age group of 18-28 years (Mean \pm SD: Age 22.722 \pm 2.962 (yrs), Body Height 168.548 \pm 5.879 (cm), Body Mass 64.583 \pm 4.605 (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 Overall Adjustment, Security-Insecurity, Intelligence and Mental Health that results of Analysis of Variance (ANOVA) among Handball Players (i.e., Guru Nanak Dev University, Panjab University and Punjabi University) were found statistically insignificant ($P > .05$). Furthermore, in relation to Emotional Stability, Autonomy and Self-Concept that result of Analysis of Variance (ANOVA) among Handball Players (i.e., Guru Nanak Dev University, Panjab University and Punjabi University) were found statistically significant ($P < .05$).

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

1. Introduction

According to the World Health Organization (WHO), mental health is “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization, 2004) ^[1].

Athletes experience a unique set of pressures in their jobs from scoring goals and winning trophies to facing media scrutiny and meeting the high expectations of adoring fans. Athletes are considered a unique population with special needs pertaining to sport performance and mental health (Etzel & Watson, 2007) ^[2]. They have been found to evidence significant time constraints, pressure to maintain optimum fitness, social isolation, difficulty satisfying complicated multiple relationships, fatigue, financial concerns, criticism from others, and injury (Parham, 1993) ^[3].

It is well accepted that physical activity has a positive impact on mental health and well-being, and can play an integral role in the treatment of many mental health issues. However, this does not mean that athletes are immune to mental illnesses. In fact, athletes competing at higher levels face unique stressors which may increase the risk for developing mental health problems. The fact is that athletes face an enormous amount of stress and pressure from frequent competition that predisposes some to developing feelings of depression or anxiety.

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) ^[4, 5]. 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) ^[6]. More broadly, (Rice *et al.*, 2016) ^[7] 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.

**Correspondence****Baljinder Singh Bal**

Assistant Professor, Department
of Physical Education (T), Guru
Nanak Dev University,
Amritsar, Punjab, India

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) [8], perhaps partially due to being perceived as a weakness (Bauman, 2016) [9]. 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) [10]. 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, One Hundred Forty Four (N=144), Male subjects between the age group of 18-28 years (Mean ± SD: Age 22.722 ± 2.962 (yrs), Body Height 168.548 ± 5.879 (cm), Body Mass 64.583 ± 4.605 (kg)) volunteered to participate in the study. The demographics of subjects are brought forth in Table 1.

Table 1: Subject’s Demographics (N=144) of Handball Players (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48)).

Variable (s)	Sample Size (N=144)			
	Total N=144	Guru Nanak Dev University (N ₁ =48)	Panjab University (N ₂ =48)	Punjabi University (N ₃ =48)
Age (yrs)	22.722 ± 2.962	22.812 ± 2.638	22.812 ± 3.200	22.541 ± 3.073
Body Height (cm)	168.548 ± 5.879	168.541 ± 5.295	168.916 ± 5.652	168.187 ± 6.702
Body Mass (kg)	64.583 ± 4.605	65.145 ± 4.031	64.937 ± 4.628	63.666 ± 5.054

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

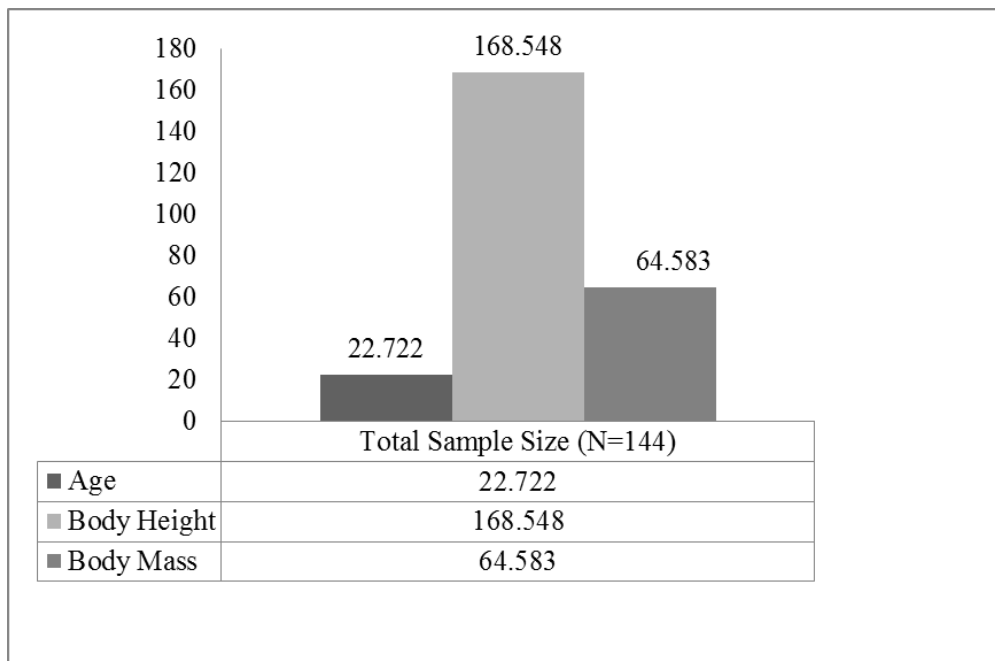


Fig 1: Subject’s Demographics (N=144) of Handball Players (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48))

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:

1. Emotional Stability
2. Overall Adjustment
3. Autonomy
4. Security–Insecurity
5. Self-Concept
6. 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 Guru Nanak Dev University, Panjab University and Punjabi University 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:

Table 2: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Emotional Stability.

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	80.889	2	40.444	8.179	.000
Within Groups	697.271	141	4.945		
Total	778.160	143			

The p-value is .000. The result is significant at $P < .05$.

- It is evident from Table 2 that results of Analysis of Variance (ANOVA) among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48)) with regards to Emotional Stability 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 3.

Table 3: Analysis of post-hoc test among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Emotional Stability.

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
Guru Nanak Dev University (11.8125)	Panjab University	.83333	.189
	Punjabi University	1.83333*	.000
Panjab University (10.9792)	Guru Nanak Dev University	-.83333	.189
	Punjabi University	1.00000	.092
Punjabi University (9.9792)	Guru Nanak Dev University	-1.83333*	.000
	Panjab University	-1.00000	.092

- A glance at Table 3 showed that the mean value of Guru Nanak Dev University group was 11.8125 whereas Panjab University had mean value as 10.9792 and the mean difference between both the groups was found .83333. This shows that the Guru Nanak Dev University group had demonstrated significantly better on Emotional Stability than their counterpart's 10.9792 group.
- The mean value of Guru Nanak Dev University group was 11.8125 whereas Punjabi University had mean value as 9.9792 and the mean difference between both the

groups was found 1.83333. This shows that the Guru Nanak Dev University group had demonstrated significantly better on Emotional Stability than their counterpart's 9.9792 group.

- The mean value of Panjab University group was 10.9792 whereas Punjabi University had mean value as 9.9792 and the mean difference between both the groups was found 1.00000. This shows that the Panjab University group had demonstrated significantly better on Emotional Stability than their counterpart's 9.9792 group.

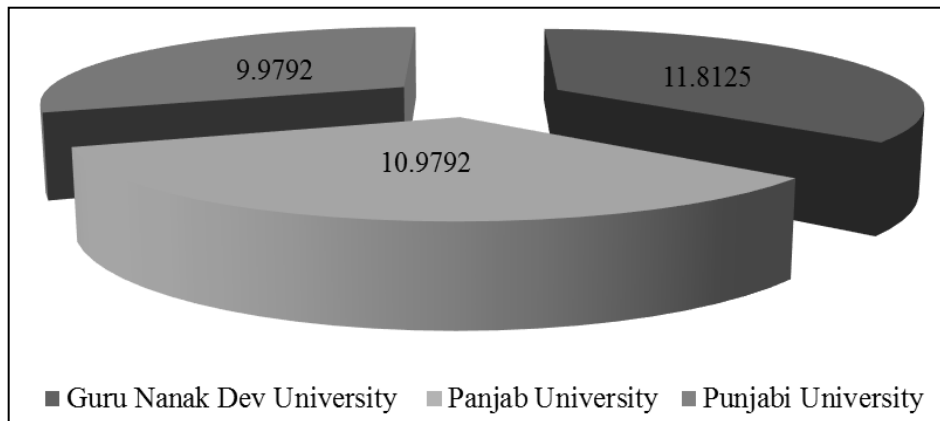


Fig 2: Graphical representation of mean scores of Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Emotional Stability.

Table 4: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Overall Adjustment.

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	18.597	2	9.299	.730	.484
Within Groups	1796.896	141	12.744		
Total	1815.493	143			

The p-value is .484. The result is not significant at $P > .05$.

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

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

Table 5: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Autonomy.

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	29.167	2	14.583	3.179	.045
Within Groups	646.833	141	4.587		
Total	676.000	143			

The p-value is .045. The result is significant at $P < .05$.

- It is evident from Table 5 that results of Analysis of Variance (ANOVA) among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48)) with regards to Autonomy 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=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Autonomy.

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
Guru Nanak Dev University (11.0833)	Panjab University	.20833	.893
	Punjabi University	1.04167	.062
Panjab University (10.8750)	Guru Nanak Dev University	-.20833	.893
	Punjabi University	.83333	.166
Punjabi University (10.0417)	Guru Nanak Dev University	-1.04167	.062
	Panjab University	-.83333	.166

- A glance at Table 6 showed that the mean value of Guru Nanak Dev University group was 11.0833 whereas Panjab University had mean value as 10.8750 and the mean difference between both the groups was found .20833. This shows that the Guru Nanak Dev University group had demonstrated significantly better on Autonomy than their counterpart's 10.8750 group.
- The mean value of Guru Nanak Dev University group was 11.0833 whereas Punjabi University had mean value as 10.0417 and the mean difference between both the groups was found 1.04167. This shows that the Guru

Nanak Dev University group had demonstrated significantly better on Autonomy than their counterpart's 10.0417 group.

- The mean value of Panjab University group was 10.8750 whereas Punjabi University had mean value as 10.0417 and the mean difference between both the groups was found .83333. This shows that the Panjab University group had demonstrated significantly better on Autonomy than their counterpart's 10.0417 group.

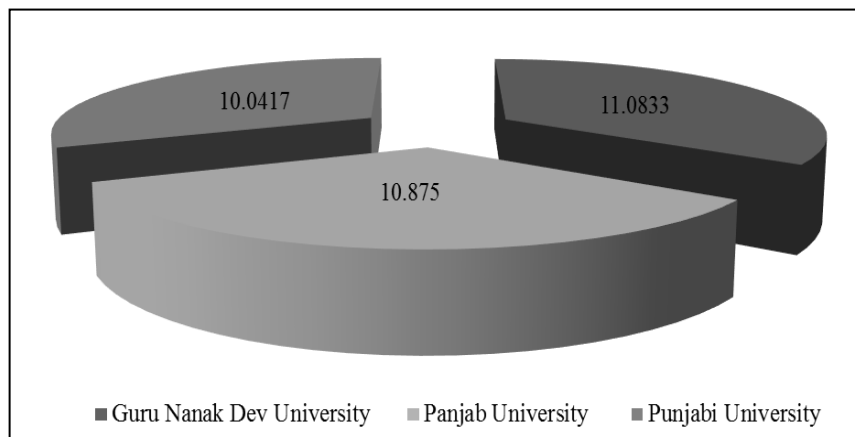


Fig 3: Graphical representation of mean scores of Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Autonomy

Table 7: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Security–Insecurity.

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	5.056	2	2.528	.762	.469
Within Groups	467.771	141	3.318		
Total	472.826	143			

The p-value is .469. The result is not significant at $P < .05$.

- It is evident from Table 7 that results of Analysis of Variance (ANOVA) among Handball Players with

regards to Security–Insecurity were found statistically insignificant ($P > .05$).

Table 8: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Self-Concept.

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	38.097	2	19.049	4.560	.012
Within Groups	589.063	141	4.178		
Total	627.160	143			

The p-value is .012. The result is significant at $P < .05$.

- It is evident from Table 8 that results of Analysis of Variance (ANOVA) among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) 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 9.

Table 9: Analysis of post-hoc test among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Self-Concept.

Multiple Comparisons			
Group (A)	Group (B)	Mean Difference	Sig.
Guru Nanak Dev University (11.2708)	Panjab University	1.18750*	.019
	Punjabi University	.22917	.860
Panjab University (10.0833)	Guru Nanak Dev University	-1.18750*	.019
	Punjabi University	-.95833	.075
Punjabi University (11.0417)	Guru Nanak Dev University	-.22917	.860
	Panjab University	.95833	.075

- A glance at Table 9 showed that the mean value of Guru Nanak Dev University group was 11.2708 whereas Panjab University had mean value as 10.0833 and the mean difference between both the groups was found 1.18750. This shows that the Guru Nanak Dev University group had demonstrated significantly better on Self-Concept than their counterpart's 10.0833 group.
- The mean value of Guru Nanak Dev University group was 11.2708 whereas Punjabi University had mean value as 11.0417 and the mean difference between both the

groups was found.22917. This shows that the Guru Nanak Dev University group had demonstrated significantly better on Self-Concept than their counterpart's 11.0417 group.

- The mean value of Panjab University group was 10.0833 whereas Punjabi University had mean value as 11.0417 and the mean difference between both the groups was found.95833. This shows that the Punjabi University group had demonstrated significantly better on Self-Concept than their counterpart's 10.0833 group.

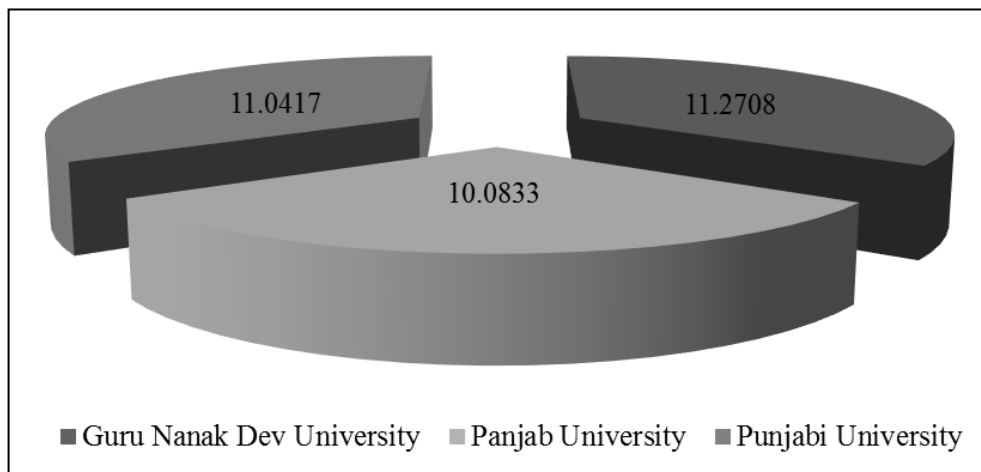


Fig 4: Graphical representation of mean scores Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Self-Concept

Table 10: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Intelligence.

Source of Variation	Sum of Squares	d.f.	Mean Square	F-value	p-value
Between Groups	35.097	2	17.549	1.923	.150
Within Groups	1286.896	141	9.127		
Total	1321.993	143			

The p-value is .150. The result is not significant at $P > .05$.

Table 11: Analysis of variance (ANOVA) results among Handball Players (N=144) (i.e., Guru Nanak Dev University (N₁=48), Panjab University (N₂=48) and Punjabi University (N₃=48) with regards to Mental Health.

Source of Variation	Sum of Squares	D.F.	Mean Square	F-value	p-value
Between Groups	147.875	2	73.938	2.671	.073
Within Groups	3902.563	141	27.678		
Total	4050.438	143			

The p-value is .073. 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 Intelligence. Were found statistically insignificant ($P > .05$).
 - It is evident from Table 11 that results of Analysis of Variance (ANOVA) among Handball Players with regards to Mental Health were found statistically insignificant ($P > .05$).
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6. Hypothesis testing

It was hypothesized that there will be significant differences among Guru Nanak Dev University, Panjab University, and Punjabi University 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 Overall Adjustment, Security–Insecurity, Intelligence and Mental Health that results of Analysis of Variance (ANOVA) among Handball Players (i.e., Guru Nanak Dev University, Panjab University and Punjabi University) were found statistically insignificant ($P > .05$).

Furthermore, in relation to Emotional Stability, Autonomy and Self-Concept that result of Analysis of Variance (ANOVA) among Handball Players (i.e., Guru Nanak Dev University, Panjab University and Punjabi University) were found statistically significant ($P < .05$).

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